APPENDIX L

Laboratory Reports and Chain-of-Custody Records for Collected Water Quality Data

9/18/2012

HER078.08

Aquatic Research Incorporated

3927 Aurora Ave. N / Seattle, WA 98103 / (206) 632-2715

CHAIN-OF-CUSTODY RECORD

CLIENT: HERRERA

SAMPLING DATE: 9-18-12

SAMPLERS: Dan Bennett

SHEET 1 OF 1

PROJECT ID: Fletcher

CASE FILE NO.:

DATA RECORDED BY:

SAMPLE INFORMATION

PARAMETERS

SAMPLE ID	DATE/TIME COLLECTED	TP	Ortho-P	Total Cu, Zn	Dissolved Cu, Zn	BOTT #	NOTES
FB-IN	9-18-12/1100	✓	✓	✓	✓	2	
FB-OUT	9-18-12/1110	✓	✓	✓	✓	2	

	Relinquished By	Date/Time	Received By	Date/Time
Printed Name	DAN BENNETT	9-18-12	S. HARRISON	9/18/12
Signature		15:45		1545
Affiliation	HERRERA		ARI	

	Relinquished By	Date/Time	Received By	Date/Time
Printed Name				
Signature				
Affiliation				

Miscellaneous Notes (Hazardous Materials, Quick turn-around time, etc.):

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	**HER078-08**	**PAGE 1**	
REPORT DATE:	**10/02/12**		
DATE SAMPLED:	**09/18/12**	**DATE RECEIVED:**	**09/18/12**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

CASE NARRATIVE

Two water samples were delivered to the laboratory in good condition. The samples were analyzed according to the chain of custody. Samples for total metals were digested according to EPA procedures. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages.

SAMPLE DATA

SAMPLE ID	TOTAL-P (mg/L)	SRP (mg/L)
FB-IN	<0.002	<0.001
FB-OUT	<0.002	<0.001

	DISSOLVED METALS		TOTAL METALS	
SAMPLE ID	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
FB-IN	<0.0010	<0,.005	<0.0010	<0.005
FB-OUT	<0.0010	<0.005	<0.0010	<0.005

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REPORT DATE: **10/02/12**

DATE SAMPLED: **09/18/12** **DATE RECEIVED:** **09/18/12**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

QC PARAMETER	TOTAL-P (mg/L)	SRP (mg/L)
METHOD	EPA 365.1	EPA 365.1
DATE ANALYZED	09/21/12	09/19/12
DETECTION LIMIT	0.002	0.001
DUPLICATE		
SAMPLE ID	FB-OUT	BATCH
ORIGINAL	<0.002	0.003
DUPLICATE	<0.002	0.003
RPD	NC	0.00%
SPIKE SAMPLE		
SAMPLE ID	FB-OUT	BATCH
ORIGINAL	<0.002	0.003
SPIKED SAMPLE	0.051	0.022
SPIKE ADDED	0.050	0.020
% RECOVERY	102.00%	95.00%
QC CHECK		
FOUND	0.093	0.032
TRUE	0.090	0.033
% RECOVERY	103.33%	96.97%
BLANK	<0.002	<0.001

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: **HER078-08**

REPORT DATE: **10/02/12**

DATE SAMPLED: **09/18/12** **DATE RECEIVED:** **09/18/12**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

	DISSOLVED METALS		TOTAL METALS	
QC PARAMETER	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
METHOD	EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8
DATE ANALYZED	10/01/12	10/01/12	09/25/12	09/25/12
DETECTION LIMIT	0.0010	0.005	0.0010	0.005
DUPLICATE				
SAMPLE ID	FB-IN	FB-IN	BATCH	BATCH
ORIGINAL	<0.0010	<0.005	<0.0010	<0.005
DUPLICATE	<0.0010	<0.005	<0.0010	<0.005
RPD	NC	NC	NC	NC
SPIKE SAMPLE				
SAMPLE ID	FB-IN	FB-IN	BATCH	BATCH
ORIGINAL	<0.0010	<0.005	<0.0010	<0.005
SPIKED SAMPLE	0.0479	0.052	0.0489	0.056
SPIKE ADDED	0.0500	0.050	0.0500	0.050
% RECOVERY	95.80%	104.00%	97.80%	112.00%
QC CHECK				
FOUND	0.0488	0.048	0.0488	0.052
TRUE	0.0500	0.050	0.0500	0.050
% RECOVERY	97.60%	96.00%	97.60%	104.00%
BLANK	<0.0010	<0.005	<0.0010	<0.005

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OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

SUBMITTED BY:

Damien Gadomski

Damien Gadomski
Project Manager

1/8/2013

HERRERA ENVIRONMENTAL CONSULTANTS

2200 Sixth Avenue, Suite 1100
Seattle, Washington 98121
(206) 441-9080
FAX (206) 441-9108

HERO78.42

CHAIN OF CUSTODY RECORD

PROJECT NAME:	PROJECT NUMBER:	CLIENT:
Filterra-Bellingham	10-04715-003	Herrera Environmental Consultants
REPORT TO: Dylan Ahearn		COPY TO:
SAMPLED BY: Dan Bennett		DELIVERY METHOD: Hand/ in cooler with ice
LABORATORY: Aquatic Research	REQUESTED COMPLETION DATE:	TOTAL # OF CONTAINERS: 2
LAB USE:		

SAMPLE ID:	DATE:	TIME:	SAMPLE DESCRIPTION	# OF CONTAINERS:	Total Suspended Solids- SM 2540D	Total phosphorus - EPA 365.3	Orthophosphorus - EPA 365.3	Hardness as CaCO3-SM 2340B	Copper, dissolved - EPA 200.8	Copper, total - EPA 200.8	Zinc, dissolved - EPA 200.8	Zinc, total - EPA 200.8	Particle size Distribution - ASTM 3977							
FB-IN	01/09/13	00:42	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	X							
FB-OUT	01/09/13	00:42	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	X							

Notes: Use churn splitter to apportion large samples into smaller bottles.

RELINQUISHED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:	RECEIVED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:
[illegible] HEC	DAN BENNETT	1-9-13 1400	S. Hillerson ARI		1/9/13 1435

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	**HER078-42**	**PAGE 1**	
REPORT DATE:	**01/23/13**		
DATE SAMPLED:	**01/09/13**	**DATE RECEIVED:**	**01/09/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

CASE NARRATIVE

Two water samples were delivered to the laboratory in good condition. The samples were analyzed according to the chain of custody. Samples for total metals were digested according to EPA procedures. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages. Results for PSD analysis will follow as a separate report.

SAMPLE DATA

SAMPLE ID	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)
FB-IN	0.084	0.018	15.8	30
FB-OUT	0.034	0.011	19.7	7.0

	DISSOLVED METALS		TOTAL METALS	
SAMPLE ID	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
FB-IN	0.0051	0.008	0.0084	0.013
FB-OUT	0.0034	<0.005	0.0049	<0.005

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3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: **HER078-42** **PAGE 2**

REPORT DATE: **01/23/13**

DATE SAMPLED: **01/09/13** **DATE RECEIVED:** **01/09/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

QC PARAMETER	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)
METHOD	EPA 365.1	EPA 365.1	SM18 2340C	SM18 2540D
DATE ANALYZED	01/15/13	01/10/13	01/21/13	01/10/13
DETECTION LIMIT	0.002	0.001	2.00	0.50
DUPLICATE				
SAMPLE ID	BATCH	BATCH	FB-OUT	BATCH
ORIGINAL	0.006	0.009	19.7	312
DUPLICATE	0.006	0.009	19.9	340
RPD	0.00%	0.00%	1.01%	8.59%
SPIKE SAMPLE				
SAMPLE ID	BATCH	BATCH	FB-OUT	
ORIGINAL	0.006	0.009	19.7	
SPIKED SAMPLE	0.058	0.029	39.1	
SPIKE ADDED	0.050	0.020	20.0	
% RECOVERY	104.00%	100.00%	97.00%	NA
QC CHECK				
FOUND	0.088	0.033	37.9	9.4
TRUE	0.090	0.033	40.0	10
% RECOVERY	97.78%	100.00%	94.75%	94.00%
BLANK	<0.002	<0.001	<2.00	<0.50

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FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

	DISSOLVED METALS		TOTAL METALS	
QC PARAMETER	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
METHOD	EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8
DATE ANALYZED	01/10/13	01/10/13	01/14/13	01/14/13
DETECTION LIMIT	0.0010	0.005	0.0010	0.005
DUPLICATE				
SAMPLE ID	BATCH	BATCH	FB-OUT	FB-OUT
ORIGINAL	0.0043	0.007	0.0048	<0.005
DUPLICATE	0.0044	0.006	0.0042	<0.005
RPD	2.30%	15.38%	13.33%	NC
SPIKE SAMPLE				
SAMPLE ID	BATCH	BATCH	FB-OUT	FB-OUT
ORIGINAL	0.0043	0.007	0.0048	<0.005
SPIKED SAMPLE	0.0555	0.056	0.0597	0.060
SPIKE ADDED	0.0500	0.050	0.0500	0.050
% RECOVERY	102.40%	98.00%	109.80%	120.00%
QC CHECK				
FOUND	0.0475	0.051	0.0519	0.047
TRUE	0.0500	0.050	0.0500	0.050
% RECOVERY	95.00%	102.00%	103.80%	94.00%
BLANK	<0.0010	<0.005	<0.0010	<0.005

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
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OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

SUBMITTED BY:

Damien Gadomski

Damien Gadomski
Project Manager

Analytical Resources, Incorporated
Analytical Chemists and Consultants

17 January 2013

Damian Gadomski
Aquatic Research Incorporated
3927 Aurora Avenue North
Seattle, WA 98103

RE: HER078.42
ARI Job: VZ44

Dear Damian:

Please find enclosed the original chain of custody (COC) record and the final results for the samples from the project referenced above. Analytical Resources, Inc. accepted two water samples on January 11, 2013.

The samples were analyzed for particle size as requested.

Electronic copies of these reports and all associated raw data will be kept on file at ARI. If you have questions or require additional information, please feel free to contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com

Enclosures

cc: file VZ44

MDH/mdh

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

VZ44

Aquatic Research Incorporated

3927 Aurora Ave. N / Seattle, WA 98103 / (206) 632-2715

CHAIN-OF-CUSTODY RECORD

SHEET 1 OF 1

CLIENT: AQUATIC RESEARCH

SAMPLING DATE: 1/9/13

SAMPLERS:

PROJECT ID: HERO 78-42

CASE FILE NO.:

DATA RECORDED BY:

SAMPLE INFORMATION

SAMPLE ID	DATE/TIME COLLECTED	PARAMETERS: PSD	BOTT #	NOTES
FB-IN	1/9/13	X		
FB-OUT	↓	X		

	Relinquished By	Date/Time	Received By	Date/Time
Printed Name		1/10/13 0900	A. Volgardsen	1/11/13 1105
Signature				
Affiliation	ARI		ARI	

	Relinquished By	Date/Time	Received By	Date/Time
Printed Name				
Signature				
Affiliation				

Miscellaneous Notes (Hazardous Materials, Quick turn-around time, etc.):

VZ44 : 00002

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

V

ARI Client: Aquatic

Project Name: _____

COC No(s): _____ NA

Delivered by: (Fed-Ex) UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: VZ4U

Tracking No: 9437666/150116829 NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO
Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)	0.3	

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 90279952

Cooler Accepted by: AV Date: 1/11/13 Time: 1105

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used? ...	Bubble Wrap Wet Ice (Gel Packs) Baggies Foam Block Paper Other:		
Was sufficient ice used (if appropriate)?	NA	YES	NO
Were all bottles sealed in individual plastic bags?		YES	(NO)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)...	(NA)	YES	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)		

Was Sample Split by ARI : (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: TS Date: 1-11-13 Time: 1445

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Small Air Bubbles ~2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm	Small → "sm"
			Peabubbles → "pb"
			Large → "lg"
			Headspace → "hs"

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: VZ44
Client: Aquatic Research
Project Event: HERO 78-42
Project Name: N/A

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	FB-IN	VZ44A	13-771	Water	01/09/13	01/11/13 11:05
2.	FB-OUT	VZ44B	13-772	Water	01/09/13	01/11/13 11:05

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Client: Aquatic Research **ARI Job No.:** VZ44

Client Project No.: HERO 78-42

Case Narrative

1. Two samples were submitted for analysis on January 11, 2013, and were in good condition.
2. The samples were submitted for particle size distribution by laser diffraction according to Ecology TAPE, Appendix F Methods. These methods include running sediment concentration according to modified ASTM D3977, Method C.
3. The less than 250 micron grain size distributions were run on the Beckman Coulter LS13 320. The percentages are calculated using the Fraunhofer Theory of Light Scattering.
4. Particle size distribution is reported as "Concentration per Size Fraction" in mg/L.
5. There were no other noted anomalies in the samples or methods on this project.

Released by: _____ Date: January 15, 2013
Technician

Reviewed by: _____ Date: 1/15/13
Geotechnical Division Manager

Aquatic Research

HERO 78-42

Sediment Concentration per Size Fraction

ASTM D3977 Method C/ TAPE Appendix F

Sample Identification	Concentration of Coarse Fractions (mg/L)		Concentration of <250µm Fraction (mg/L)	Total Sample Concentration (mg/L)	Date Sampled	Analysis Date
	>500 µm	>250 µm				
FB-IN	6.93	4.28	21.13	32.35	1/9/2013	1/12/2013
FB-OUT	5.00	3.47	7.44	15.91	1/9/2013	1/12/2013

Aquatic Research
HERO 78-42

Concentration in Each Size Fraction (mg/L)

Size Range (µm)	>500	500-250	250-125	125-62.5	62.5-3.9	3.9-1	<1
FB-IN	6.93	4.28	0.00	0.00	17.56	2.28	1.28
FB-OUT	5.00	3.47	0.00	0.00	0.00	2.11	5.33

Volume Percent Retained in Each Size Fraction

Size Range (µm)	>500	500-250	250-125	125-62.5	62.5-3.9	3.9-1	<1
FB-IN	21.4	13.2	0.0	0.0	54.3	7.1	4.0
FB-OUT	31.4	21.8	0.0	0.0	0.0	13.3	33.5

1/23/2013

HERO78-45

HERRERA ENVIRONMENTAL CONSULTANTS
2200 Sixth Avenue, Suite 1100
Seattle, Washington 98121
(206) 441-9080
FAX (206) 441-9108

CHAIN OF CUSTODY RECORD

Page ___ of ___

PROJECT NAME:	PROJECT NUMBER:	CLIENT:
Filterra-Bellingham	10-04715-003	Herrera Environmental Consultants
REPORT TO: Dylan Ahearn		COPY TO:
SAMPLED BY: Dan Bennett		DELIVERY METHOD: Hand/ in cooler with ice
LABORATORY: Aquatic Research	REQUESTED COMPLETION DATE:	TOTAL # OF CONTAINERS: 2
LAB USE:		

SAMPLE ID:	DATE:	TIME:	SAMPLE DESCRIPTION	# OF CONTAINERS:	Total Suspended Solids- SM 2540D	Total phosphorus - EPA 365.3	Orthophosphorus - EPA 365.3	Hardness as CaCO3-SM 2340B	Copper, dissolved - EPA 200.8	Copper, total - EPA 200.8	Zinc, dissolved - EPA 200.8	Zinc, total - EPA 200.8	Particle size Distribution – Mod. ASTM 3977 – TAPE (2011)							
FB-IN	1/23/2013	17:23	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	X							
FB-OUT	1/23/2013	17:23	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	X							

Notes: Use churn splitter to apportion large samples into smaller bottles.

RELINQUISHED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:	RECEIVED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:
DAN BENNETT /HEC		1-24-13 14:45	SCHLICSOC DNR		1/24/13 1445

s /c:\users\soggydoggy\downloads\coc template ari filterra stormwater psd2 (1).docx

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	**HER078-45**	**PAGE 1**	
REPORT DATE:	**02/14/13**		
DATE SAMPLED:	**01/23/13**	**DATE RECEIVED:**	**01/24/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

CASE NARRATIVE

Two water samples were delivered to the laboratory in good condition. The samples were analyzed according to the chain of custody. Samples for total metals were digested according to EPA procedures. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages. Results for PSD analysis will follow as a separate report.

SAMPLE DATA

SAMPLE ID	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)
FB-IN	0.047	0.010	15.1	14
FB-OUT	0.035	0.010	17.2	4.7

	DISSOLVED METALS		TOTAL METALS	
SAMPLE ID	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
FB-IN	0.0024	<0.005	0.0036	0.005
FB-OUT	0.0059	<0.005	0.0071	<0.005

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: **HER078-45** **PAGE 2**

REPORT DATE: **02/14/13**

DATE SAMPLED: **01/23/13** **DATE RECEIVED:** **01/24/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

QC PARAMETER	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)
METHOD	EPA 365.1	EPA 365.1	SM18 2340C	SM18 2540D
DATE ANALYZED	01/29/13	01/25/13	02/04/13	01/29/13
DETECTION LIMIT	0.002	0.001	2.00	0.50
DUPLICATE				
SAMPLE ID	BATCH	BATCH	BATCH	BATCH
ORIGINAL	0.022	0.010	28.9	32
DUPLICATE	0.022	0.010	29.3	32
RPD	0.00%	0.00%	1.37%	0.00%
SPIKE SAMPLE				
SAMPLE ID	BATCH	BATCH	BATCH	
ORIGINAL	0.022	0.010	28.9	
SPIKED SAMPLE	0.073	0.031	48.1	
SPIKE ADDED	0.050	0.020	20.0	
% RECOVERY	102.00%	105.00%	96.00%	NA
QC CHECK				
FOUND	0.093	0.033	38.3	9.3
TRUE	0.090	0.033	40.0	10
% RECOVERY	102.91%	100.00%	95.75%	93.00%
BLANK	<0.002	<0.001	<2.00	<0.50

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: **HER078-45**

REPORT DATE: **02/14/13**

DATE SAMPLED: **01/23/13** **DATE RECEIVED:** **01/24/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

	DISSOLVED METALS		TOTAL METALS	
QC PARAMETER	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
METHOD	EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8
DATE ANALYZED	01/29/13	01/29/13	01/29/13	01/29/13
DETECTION LIMIT	0.0010	0.005	0.0010	0.005
DUPLICATE				
SAMPLE ID	FB-OUT	FB-OUT	BATCH	BATCH
ORIGINAL	0.0059	<0.005	0.0071	<0.005
DUPLICATE	0.0060	<0.005	0.0074	<0.005
RPD	1.68%	NC	4.14%	NC
SPIKE SAMPLE				
SAMPLE ID	FB-OUT	FB-OUT	BATCH	BATCH
ORIGINAL	0.0059	<0.005	0.0071	<0.005
SPIKED SAMPLE	0.0526	0.048	0.0560	0.050
SPIKE ADDED	0.0500	0.050	0.0500	0.050
% RECOVERY	93.40%	96.00%	97.80%	100.00%
QC CHECK				
FOUND	0.0476	0.046	0.0476	0.046
TRUE	0.0500	0.050	0.0500	0.050
% RECOVERY	95.20%	92.00%	95.20%	92.00%
BLANK	<0.0010	<0.005	<0.0010	<0.005

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

SUBMITTED BY:

Damien Gadomski

Damien Gadomski
Project Manager

Analytical Resources, Incorporated
Analytical Chemists and Consultants

11 February 2013

Damian Gadomski
Aquatic Research Incorporated
3927 Aurora Avenue North
Seattle, WA 98103

RE: HER078.45
ARI Job: WB44

Dear Damian:

Please find enclosed the original chain of custody (COC) record and the final results for the samples from the project referenced above. Analytical Resources, Inc. accepted two water samples on January 28, 2013.

The samples were analyzed for particle size as requested.

Electronic copies of these reports and all associated raw data will be kept on file at ARI. If you have questions or require additional information, please feel free to contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com

Enclosures

cc: file WB44

MDH/mdh

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

WB44

Aquatic Research Incorporated

3927 Aurora Ave. N / Seattle, WA 98103 / (206) 632-2715

CHAIN-OF-CUSTODY RECORD

SHEET 1 OF 1

CLIENT: AQUATIC RESEARCH

PROJECT ID: HERO 08-45

SAMPLING DATE: 1/23/13

CASE FILE NO.:

SAMPLERS:

DATA RECORDED BY:

SAMPLE INFORMATION

→ MOD. ASTM 3977 - TAPE (2011)

SAMPLE ID	DATE/TIME COLLECTED	PARAMETERS: ISD	BOTT #	NOTES
FB - IN	1/23/13 1723	X	1	
FB - OUT	✓	X	1	

	Relinquished By	Date/Time	Received By	Date/Time
Printed Name		1/25/13 0900	Jennifer Millsap	1/28/13 1030
Signature				
Affiliation	ARI		ARI	

	Relinquished By	Date/Time	Received By	Date/Time
Printed Name				
Signature				
Affiliation				

Miscellaneous Notes (Hazardous Materials, Quick turn-around time, etc.):

WB44 : 00002

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Aquatic Project Name: _____

COC No(s): _____ NA Delivered by: (Fed-Ex) UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: WB44 Tracking No: 9437661 15017246 NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry): 1.5

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 90877952

Cooler Accepted by: JM Date: 1/28/13 Time: 1030

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used? ... Bubble Wrap Wet Ice (Gel Packs) Baggies Foam Block Paper Other: _____			
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
Were all bottles sealed in individual plastic bags?		YES	(NO)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)...	(NA)	YES	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)		

Was Sample Split by ARI: (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: TJ Date: 1-28-13 Time: 1102

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

No date or time Sampled on bottles.

By: TJ Date: 1-28-13

Small → "sm"	
Peabubbles → "pb"	
Large → "lg"	
Headspace → "hs"	

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: WB44
Client: Aquatic Research
Project Event: HERO78-45
Project Name: N/A

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	FB-IN	WB44A	13-1948	Water	01/23/13 17:23	01/28/13 10:30
2.	FB-OUT	WB44B	13-1949	Water	01/23/13 17:23	01/28/13 10:30

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Client: Aquatic Research **ARI Job No.:** WB44

Client Project: HERO78-45

Case Narrative

1. Two samples were submitted for analysis on January 28, 2013, and were in good condition.
2. The samples were submitted for particle size distribution according to Modified Ecology TAPE 2011 Methods. These methods include running sediment concentration according to modified ASTM D3977, Method C.
3. The TAPE 2011 method was modified upon client request to include the 62.5 – 3.9µm, and < 3.9µm size ranges. These ranges required particle size determination by laser diffraction.
4. The less than 62.5 micron grain size distributions were run on the Beckman Coulter LS13 320. The percentages are calculated using the Fraunhofer Theory of Light Scattering.
5. Particle size distribution is reported as "Concentration per Size Fraction" in mg/L.
6. There were no other noted anomalies in the samples or methods on this project.

Released by: Susanna Curtis *Geotechnical Laboratory Manager* Date: 2/5/13

Reviewed by: Katherine J Buchanan *Lead Technician* Date: 02/11/2013

Aquatic Research

HERO78-45

Sediment Concentration per Size Fraction

ASTM D3977 Method C/ TAPE Appendix F

Sample Identification	Concentration of Coarse Fractions (mg/L)		Concentration of <62.5µm Fraction (mg/L)	Total Sample Concentration (mg/L)	Date Sampled	Analysis Date
	>250 µm	250 - 62.5 µm				
FB-IN	2.04	1.33	4.31	7.68	1/23/2013	1/29/2013
FB-OUT	0.00	0.21	5.30	5.50	1/23/2013	1/29/2013

WB44

Aquatic Research
HERO78-45

Concentration in Each Size Fraction (mg/L)

Size Range (µm)	>250	250-62.5	62.5-3.9	< 3.9
FB-IN	2.04	1.33	0.00	4.31
FB-OUT	0.00	0.21	0.00	5.30

Volume Percent Retained in Each Size Fraction

Size Range (µm)	>250	250-62.5	62.5-3.9	< 3.9
FB-IN	26.6	17.3	0.0	56.2
FB-OUT	0.0	3.7	0.0	96.3

WB44

1/24/2013

HERRERA ENVIRONMENTAL CONSULTANTS

2200 Sixth Avenue, Suite 1100
Seattle, Washington 98121
(206) 441-9080
FAX (206) 441-9108

HERO78.48

CHAIN OF CUSTODY RECORD

PROJECT NAME:	PROJECT NUMBER:	CLIENT:
Filterra-Bellingham	10-04715-003	Herrera Environmental Consultants
REPORT TO: Dylan Ahearn		COPY TO:
SAMPLED BY: Dan Bennett		DELIVERY METHOD: Hand/ in cooler with ice
LABORATORY: Aquatic Research	REQUESTED COMPLETION DATE:	TOTAL # OF CONTAINERS: 2
LAB USE:		

SAMPLE ID:	DATE:	TIME:	SAMPLE DESCRIPTION	# OF CONTAINERS:	ANALYSES REQUESTED: Total Suspended Solids- SM 2540D	Total phosphorus - EPA 365.3	Orthophosphorus - EPA 365.3	Hardness as CaCO3-SM 2340B	Copper, dissolved - EPA 200.8	Copper, total - EPA 200.8	Zinc, dissolved - EPA 200.8	Zinc, total - EPA 200.8	Particle size Distribution – Mod. ASTM 3977 – TAPE (2011)
FB-IN	1/24/2013	22:10	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	
FB-OUT	1/24/2013	22:10	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	

Notes: Use churn splitter to apportion large samples into smaller bottles.

RELINQUISHED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:	RECEIVED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:
Dan Bennett / Herrera		1/25/13 1400	S. Hinson Ahearn		1/25/13 1402

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	**HER078-48**	**PAGE 1**	
REPORT DATE:	**02/06/13**		
DATE SAMPLED:	**01/24/13**	**DATE RECEIVED:**	**01/25/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

CASE NARRATIVE

Two water samples were delivered to the laboratory in good condition. The samples were analyzed according to the chain of custody. Samples for total metals were digested according to EPA procedures. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages.

SAMPLE DATA

SAMPLE ID	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)
FB-IN	0.039	0.008	16.0	12
FB-OUT	0.028	0.009	20.3	3.0

	DISSOLVED METALS		TOTAL METALS	
SAMPLE ID	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
FB-IN	0.0016	<0.005	0.0019	<0.005
FB-OUT	0.0015	<0.005	0.0071	<0.005

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

REPORT DATE: **02/06/13**

DATE SAMPLED: **01/24/13** **DATE RECEIVED:** **01/25/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

QC PARAMETER	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)
METHOD	EPA 365.1	EPA 365.1	SM18 2340C	SM18 2540D
DATE ANALYZED	01/29/13	01/25/13	02/04/13	01/29/13
DETECTION LIMIT	0.002	0.001	2.00	0.50
DUPLICATE				
SAMPLE ID	BATCH	BATCH	BATCH	BATCH
ORIGINAL	0.022	0.010	28.9	32
DUPLICATE	0.022	0.010	29.3	32
RPD	0.00%	0.00%	1.37%	0.00%
SPIKE SAMPLE				
SAMPLE ID	BATCH	BATCH	BATCH	
ORIGINAL	0.022	0.010	28.9	
SPIKED SAMPLE	0.073	0.031	48.1	
SPIKE ADDED	0.050	0.020	20.0	
% RECOVERY	102.00%	105.00%	96.00%	NA
QC CHECK				
FOUND	0.093	0.033	38.3	9.3
TRUE	0.090	0.033	40.0	10
% RECOVERY	102.91%	100.00%	95.75%	93.00%
BLANK	<0.002	<0.001	<2.00	<0.50

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AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES
3927 AURORA AVENUE NORTH, SEATTLE, WA 98103
PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: **HER078-48**
REPORT DATE: **02/06/13**
DATE SAMPLED: **01/24/13** **DATE RECEIVED:** **01/25/13**
FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

	DISSOLVED METALS		TOTAL METALS	
QC PARAMETER	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
METHOD	EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8
DATE ANALYZED	01/28/13	01/28/13	01/29/13	01/29/13
DETECTION LIMIT	0.0010	0.005	0.0010	0.005
DUPLICATE				
SAMPLE ID	FB-OUT	FB-OUT	FB-OUT	FB-OUT
ORIGINAL	0.0015	<0.005	0.0071	<0.005
DUPLICATE	0.0015	<0.005	0.0074	<0.005
RPD	0.00%	NC	4.14%	NC
SPIKE SAMPLE				
SAMPLE ID	FB-OUT	FB-OUT	FB-OUT	FB-OUT
ORIGINAL	0.0015	<0.005	0.0071	<0.005
SPIKED SAMPLE	0.0484	0.051	0.0560	0.050
SPIKE ADDED	0.0500	0.050	0.0500	0.050
% RECOVERY	93.80%	102.00%	97.80%	100.00%
QC CHECK				
FOUND	0.0483	0.048	0.0476	0.046
TRUE	0.0500	0.050	0.0500	0.050
% RECOVERY	96.60%	96.00%	95.20%	92.00%
BLANK	<0.0010	<0.005	<0.0010	<0.005

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SUBMITTED BY:

Damien Gadomski

Damien Gadomski
Project Manager

1/26/2013

HER078.49

HERRERA ENVIRONMENTAL CONSULTANTS
2200 Sixth Avenue, Suite 1100
Seattle, Washington 98121
(206) 441-9080
FAX (206) 441-9108

CHAIN OF CUSTODY RECORD

PROJECT NAME:	PROJECT NUMBER:	CLIENT:
Filterra-Bellingham	10-04715-003	Herrera Environmental Consultants
REPORT TO: Dylan Ahearn		COPY TO:
SAMPLED BY: Dan Bennett		DELIVERY METHOD: Hand/ in cooler with ice
LABORATORY: Aquatic Research	REQUESTED COMPLETION DATE:	TOTAL # OF CONTAINERS: 2

LAB USE:

SAMPLE ID:	DATE:	TIME:	SAMPLE DESCRIPTION	# OF CONTAINERS:	ANALYSES REQUESTED: Total Suspended Solids- SM 2540D	Total phosphorus - EPA 365.3	Orthophosphorus - EPA 365.3	Hardness as CaCO3-SM 2340B	Copper, dissolved - EPA 200.8	Copper, total - EPA 200.8	Zinc, dissolved - EPA 200.8	Zinc, total - EPA 200.8	Particle size Distribution – Mod. ASTM 3977 – TARE (2011)
FB-IN	1-26-13	16:58	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	
FB-OUT	1-26-13	1658	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	

Notes: Use churn splitter to apportion large samples into smaller bottles.

64 oz. each

RELINQUISHED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:	RECEIVED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:
DAN BENNETT/HEC		1-27-13	M Chrarten		1/27/13

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	**HER078-49**	**PAGE 1**	
REPORT DATE:	**02/06/13**		
DATE SAMPLED:	**01/26/13**	**DATE RECEIVED:**	**01/27/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

CASE NARRATIVE

Two water samples were delivered to the laboratory in good condition. The samples were analyzed according to the chain of custody. Samples for total metals were digested according to EPA procedures. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages.

SAMPLE DATA

SAMPLE ID	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)
FB-IN	0.031	0.009	16.8	9.5
FB-OUT	0.022	0.008	19.5	2.7

	DISSOLVED METALS		TOTAL METALS	
SAMPLE ID	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
FB-IN	0.0012	<0.005	0.0018	<0.005
FB-OUT	0.0012	<0.005	0.0016	<0.005

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: **HER078-49**

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FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

QC PARAMETER	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)
METHOD	EPA 365.1	EPA 365.1	SM18 2340C	SM18 2540D
DATE ANALYZED	01/29/13	01/28/13	02/04/13	01/31/13
DETECTION LIMIT	0.002	0.001	2.00	0.50
DUPLICATE				
SAMPLE ID	FB-OUT	FB-OUT	BATCH	BATCH
ORIGINAL	0.022	0.008	28.9	56
DUPLICATE	0.022	0.008	29.3	60
RPD	0.00%	0.00%	1.37%	6.90%
SPIKE SAMPLE				
SAMPLE ID	FB-OUT	FB-OUT	BATCH	
ORIGINAL	0.022	0.008	28.9	
SPIKED SAMPLE	0.073	0.027	48.1	
SPIKE ADDED	0.050	0.020	20.0	
% RECOVERY	102.00%	95.00%	96.00%	NA
QC CHECK				
FOUND	0.093	0.034	38.3	9.4
TRUE	0.090	0.033	40.0	10
% RECOVERY	102.91%	103.03%	95.75%	94.00%
BLANK	<0.002	<0.001	<2.00	<0.50

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AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: **HER078-49**

REPORT DATE: **02/06/13**

DATE SAMPLED: **01/26/13** **DATE RECEIVED:** **01/27/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

	DISSOLVED METALS		TOTAL METALS	
QC PARAMETER	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
METHOD	EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8
DATE ANALYZED	01/29/13	01/29/13	01/29/13	01/29/13
DETECTION LIMIT	0.0010	0.005	0.0010	0.005
DUPLICATE				
SAMPLE ID	BATCH	BATCH	BATCH	BATCH
ORIGINAL	0.0059	<0.005	0.0071	<0.005
DUPLICATE	0.0060	<0.005	0.0074	<0.005
RPD	1.68%	NC	4.14%	NC
SPIKE SAMPLE				
SAMPLE ID	BATCH	BATCH	BATCH	BATCH
ORIGINAL	0.0059	<0.005	0.0071	<0.005
SPIKED SAMPLE	0.0526	0.048	0.0560	0.050
SPIKE ADDED	0.0500	0.050	0.0500	0.050
% RECOVERY	93.40%	96.00%	97.80%	100.00%
QC CHECK				
FOUND	0.0476	0.046	0.0476	0.046
TRUE	0.0500	0.050	0.0500	0.050
% RECOVERY	95.20%	92.00%	95.20%	92.00%
BLANK	<0.0010	<0.005	<0.0010	<0.005

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SUBMITTED BY:

Damien Gadomski

Damien Gadomski
Project Manager

1/28/2013

HERO 78.50

HERRERA ENVIRONMENTAL CONSULTANTS
2200 Sixth Avenue, Suite 1100
Seattle, Washington 98121
(206) 441-9080
FAX (206) 441-9108

CHAIN OF CUSTODY RECORD

PROJECT NAME:	PROJECT NUMBER:	CLIENT:
Filterra-Bellingham	10-04715-003	Herrera Environmental Consultants
REPORT TO: Dylan Ahearn		COPY TO:
SAMPLED BY: Dan Bennett		DELIVERY METHOD: Hand/ in cooler with ice
LABORATORY: Aquatic Research	REQUESTED COMPLETION DATE:	TOTAL # OF CONTAINERS: 2
LAB USE:		

SAMPLE ID:	DATE:	TIME:	SAMPLE DESCRIPTION	# OF CONTAINERS:	ANALYSES REQUESTED: Total Suspended Solids- SM 2540D	Total phosphorus - EPA 365.3	Orthophosphorus - EPA 365.3	Hardness as CaCO3-SM 2340B	Copper, dissolved - EPA 200.8	Copper, total - EPA 200.8	Zinc, dissolved - EPA 200.8	Zinc, total - EPA 200.8	Particle size Distribution – Mod. ASTM 3977 – TAPE (2011)
FB-IN	1-28-13	16:47	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	
FB-OUT	1-28-13	16:47	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	

Notes: Use churn splitter to apportion large samples into smaller bottles.

2 1 gallons

RELINQUISHED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:	RECEIVED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:
Dan Bennett/HER		1-29-13 13:30	Olga Andaryan		1-29-13, 13:30

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: **HER078-50** **PAGE 1**

REPORT DATE: **02/11/13**

DATE SAMPLED: **01/28/13** **DATE RECEIVED:** **01/29/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

CASE NARRATIVE

Two water samples were delivered to the laboratory in good condition. The samples were analyzed according to the chain of custody. Samples for total metals were digested according to EPA procedures. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages.

SAMPLE DATA

SAMPLE ID	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)
FB-IN	0.329	0.011	23.1	107
FB-OUT	0.060	0.011	30.5	5.0

	DISSOLVED METALS		TOTAL METALS	
SAMPLE ID	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
FB-IN	0.0019	<0.005	0.0037	0.009
FB-OUT	0.0021	<0.005	0.0023	<0.005

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PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: **HER078-50**

REPORT DATE: **02/11/13**

DATE SAMPLED: **01/28/13** **DATE RECEIVED:** **01/29/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

QC PARAMETER	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)
METHOD	EPA 365.1	EPA 365.1	SM18 2340C	SM18 2540D
DATE ANALYZED	01/29/13	01/29/13	02/04/13	01/31/13
DETECTION LIMIT	0.002	0.001	2.00	0.50
DUPLICATE				
SAMPLE ID	BATCH	BATCH	BATCH	BATCH
ORIGINAL	0.022	0.016	28.9	56
DUPLICATE	0.022	0.017	29.3	60
RPD	0.00%	6.06%	1.37%	6.90%
SPIKE SAMPLE				
SAMPLE ID	BATCH	BATCH	BATCH	
ORIGINAL	0.022	0.016	28.9	
SPIKED SAMPLE	0.073	0.036	48.1	
SPIKE ADDED	0.050	0.020	20.0	
% RECOVERY	102.00%	102.00%	96.00%	NA
QC CHECK				
FOUND	0.093	0.035	38.3	9.4
TRUE	0.090	0.033	40.0	10
% RECOVERY	102.91%	106.06%	95.75%	94.00%
BLANK	<0.002	<0.001	<2.00	<0.50

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

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LABORATORY & CONSULTING SERVICES
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PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: **HER078-50**
REPORT DATE: **02/11/13**
DATE SAMPLED: **01/28/13** **DATE RECEIVED:** **01/29/13**
FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

	DISSOLVED METALS		TOTAL METALS	
QC PARAMETER	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
METHOD	EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8
DATE ANALYZED	01/30/13	01/30/13	02/08/13	02/08/13
DETECTION LIMIT	0.0010	0.005	0.0010	0.005
DUPLICATE				
SAMPLE ID	BATCH	BATCH	FB-OUT	FB-OUT
ORIGINAL	0.0165	<0.005	0.0023	<0.005
DUPLICATE	0.0164	<0.005	0.0024	<0.005
RPD	0.61%	NC	4.26%	NC
SPIKE SAMPLE				
SAMPLE ID	BATCH	BATCH	FB-OUT	FB-OUT
ORIGINAL	0.0165	<0.005	0.0023	<0.005
SPIKED SAMPLE	0.0740	0.058	0.0486	0.051
SPIKE ADDED	0.0500	0.050	0.0500	0.050
% RECOVERY	115.00%	116.00%	92.60%	102.00%
QC CHECK				
FOUND	0.0519	0.051	0.0485	0.046
TRUE	0.0500	0.050	0.0500	0.050
% RECOVERY	103.80%	102.00%	97.00%	92.00%
BLANK	<0.0010	<0.005	<0.0010	<0.005

RPD = RELATIVE PERCENT DIFFERENCE.
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NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

SUBMITTED BY:

Damien Gadomski

Damien Gadomski
Project Manager

1/29/2013

HERRERA
ENVIRONMENTAL
CONSULTANTS

2200 Sixth Avenue, Suite 1100
Seattle, Washington 98121
(206) 441-9080
FAX (206) 441-9108

HERO 78.52

CHAIN OF CUSTODY RECORD

Page ___ of ___

PROJECT NAME: Filterra-Bellingham	PROJECT NUMBER: 10-04715-003	CLIENT: Herrera Environmental Consultants
REPORT TO: Dylan Ahearn		COPY TO:
SAMPLED BY: Dan Bennett		DELIVERY METHOD: Hand/ in cooler with ice
LABORATORY: Aquatic Research	REQUESTED COMPLETION DATE:	TOTAL # OF CONTAINERS: 2
LAB USE:		

SAMPLE ID:	DATE:	TIME:	SAMPLE DESCRIPTION	# OF CONTAINERS:	ANALYSES REQUESTED: Total Suspended Solids- SM 2540D	Total phosphorus - EPA 365.3	Orthophosphorus - EPA 365.3	Hardness as CaCO3-SM 2340B	Copper, dissolved - EPA 200.8	Copper, total - EPA 200.8	Zinc, dissolved - EPA 200.8	Zinc, total - EPA 200.8	Particle size Distribution – Mod. ASTM 3977 – TAPE (2011)	...	...	...				
FB-IN	1-30-13	00:15	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X								
FB-OUT	1-30-13	00:15	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X								

Notes: Use churn splitter to apportion large samples into smaller bottles.

RELINQUISHED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:	RECEIVED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:
DAN BENNETT / HERC		1-30-13 17:00			1/30/13

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3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

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CASE FILE NUMBER:	**HER078-52**	**PAGE 1**	
REPORT DATE:	**02/11/13**		
DATE SAMPLED:	**01/30/13**	**DATE RECEIVED:**	**01/30/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

CASE NARRATIVE

Two water samples were delivered to the laboratory in good condition. The samples were analyzed according to the chain of custody. Samples for total metals were digested according to EPA procedures. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages.

SAMPLE DATA

SAMPLE ID	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)
FB-IN	0.169	0.008	18.4	86
FB-OUT	0.020	0.009	28.9	3.0

	DISSOLVED METALS		TOTAL METALS	
SAMPLE ID	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
FB-IN	0.0012	<0.005	0.0063	0.017
FB-OUT	0.0023	<0.005	0.0032	<0.005

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CASE FILE NUMBER: **HER078-52**

REPORT DATE: **02/11/13**

DATE SAMPLED: **01/30/13** **DATE RECEIVED:** **01/30/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

QC PARAMETER	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)
METHOD	EPA 365.1	EPA 365.1	SM18 2340C	SM18 2540D
DATE ANALYZED	02/11/13	01/30/13	02/04/13	02/01/13
DETECTION LIMIT	0.002	0.001	2.00	0.50
DUPLICATE				
SAMPLE ID	BATCH	BATCH	FB-OUT	BATCH
ORIGINAL	0.093	0.005	28.9	13
DUPLICATE	0.093	0.005	29.3	12
RPD	0.00%	4.00%	1.37%	8.00%
SPIKE SAMPLE				
SAMPLE ID	BATCH	BATCH	FB-OUT	
ORIGINAL	0.093	0.005	28.9	
SPIKED SAMPLE	0.143	0.025	48.1	
SPIKE ADDED	0.050	0.020	20.0	
% RECOVERY	100.00%	97.97%	96.00%	NA
QC CHECK				
FOUND	0.091	0.033	38.3	9.2
TRUE	0.090	0.033	40.0	10
% RECOVERY	101.11%	101.05%	95.75%	92.00%
BLANK	<0.002	<0.001	<2.00	<0.50

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

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CASE FILE NUMBER: **HER078-52**

REPORT DATE: **02/11/13**

DATE SAMPLED: **01/30/13** **DATE RECEIVED:** **01/30/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

	DISSOLVED METALS		TOTAL METALS	
QC PARAMETER	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
METHOD	EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8
DATE ANALYZED	02/11/13	02/11/13	02/08/13	02/08/13
DETECTION LIMIT	0.0010	0.005	0.0010	0.005
DUPLICATE				
SAMPLE ID	FB-OUT	FB-OUT	BATCH	BATCH
ORIGINAL	0.0023	<0.005	0.0023	<0.005
DUPLICATE	0.0022	<0.005	0.0024	<0.005
RPD	4.44%	NC	4.26%	NC
SPIKE SAMPLE				
SAMPLE ID	FB-OUT	FB-OUT	BATCH	BATCH
ORIGINAL	0.0023	<0.005	0.0023	<0.005
SPIKED SAMPLE	0.0513	0.053	0.0486	0.051
SPIKE ADDED	0.0500	0.050	0.0500	0.050
% RECOVERY	98.00%	106.00%	92.60%	102.00%
QC CHECK				
FOUND	0.0480	0.046	0.0485	0.046
TRUE	0.0500	0.050	0.0500	0.050
% RECOVERY	96.00%	92.00%	97.00%	92.00%
BLANK	<0.0010	<0.005	<0.0010	<0.005

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

SUBMITTED BY:

Damien Gadomski

Damien Gadomski
Project Manager

2/22/2013

HERRERA ENVIRONMENTAL CONSULTANTS

2200 Sixth Avenue, Suite 1100
Seattle, Washington 98121
(206) 441-9080
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HER078-56

CHAIN OF CUSTODY RECORD

PROJECT NAME:	PROJECT NUMBER:	CLIENT:
Filterra-Bellingham	10-04715-003	Herrera Environmental Consultants
REPORT TO: Dylan Ahearn		COPY TO:
SAMPLED BY: Dan Bennett		DELIVERY METHOD: Hand/ in cooler with ice
LABORATORY: Aquatic Research	REQUESTED COMPLETION DATE:	TOTAL # OF CONTAINERS: 2
LAB USE:		

SAMPLE ID:	DATE:	TIME:	SAMPLE DESCRIPTION	# OF CONTAINERS:	ANALYSES REQUESTED: Total Suspended Solids- SM 2540D	Total phosphorus - EPA 365.3	Orthophosphorus - EPA 365.3	Hardness as CaCO3-SM 2340B	Copper, dissolved - EPA 200.8	Copper, total - EPA 200.8	Zinc, dissolved - EPA 200.8	Zinc, total - EPA 200.8	Particle size Distribution – Mod. ASTM 3977 – TAPE (2011)							
FB-IN	2/22/2013	15:04	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X								
FB-OUT	2/22/2013	15:04	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X								

Notes: Use churn splitter to apportion large samples into smaller bottles.

RELINQUISHED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:	RECEIVED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:
Dan Bennett / Herrera		~~2/22/13~~ 1600 2/23/13	JAMISON GABOMSK		2/23/12 1600

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

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CASE FILE NUMBER:	**HER078-56**	**PAGE 1**	
REPORT DATE:	**03/08/13**		
DATE SAMPLED:	**02/22/13**	**DATE RECEIVED:**	**02/23/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

CASE NARRATIVE

Two water samples were delivered to the laboratory in good condition. The samples were analyzed according to the chain of custody. Samples for total metals were digested according to EPA procedures. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages.

SAMPLE DATA

SAMPLE ID	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)
FB-IN	0.105	0.011	14.7	26
FB-OUT	0.057	0.010	15.6	2.5

	DISSOLVED METALS		TOTAL METALS	
SAMPLE ID	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
FB-IN	0.0030	<0.005	0.0065	0.011
FB-OUT	0.0029	<0.005	0.0034	<0.005

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PHONE: (206) 632-2715 FAX: (206) 632-2417

REPORT DATE: **03/08/13**

DATE SAMPLED: **02/22/13** **DATE RECEIVED:** **02/23/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

QC PARAMETER	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)
METHOD	EPA 365.1	EPA 365.1	SM18 2340C	SM18 2540D
DATE ANALYZED	02/26/13	02/25/13	03/04/13	02/27/13
DETECTION LIMIT	0.002	0.001	2.00	0.50
DUPLICATE				
SAMPLE ID	BATCH	BATCH	BATCH	BATCH
ORIGINAL	0.056	0.003	<2.00	108
DUPLICATE	0.058	0.003	<2.00	106
RPD	3.51%	0.00%	NC	1.87%
SPIKE SAMPLE				
SAMPLE ID	BATCH	BATCH	BATCH	
ORIGINAL	0.056	0.003	<2.00	
SPIKED SAMPLE	0.104	0.023	20.1	
SPIKE ADDED	0.050	0.020	20.0	
% RECOVERY	96.00%	100.00%	100.65%	NA
QC CHECK				
FOUND	0.091	0.033	38.3	9.5
TRUE	0.090	0.033	40.0	10
% RECOVERY	101.11%	100.00%	95.77%	95.00%
BLANK	<0.002	<0.001	<2.00	<0.50

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OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

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CASE FILE NUMBER: **HER078-56** **PAGE 3**

REPORT DATE: **03/08/13**

DATE SAMPLED: **02/22/13** **DATE RECEIVED:** **02/23/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

	DISSOLVED METALS		TOTAL METALS	
QC PARAMETER	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
METHOD	EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8
DATE ANALYZED	02/25/13	02/25/13	02/26/13	02/26/13
DETECTION LIMIT	0.0010	0.005	0.0010	0.005
DUPLICATE				
SAMPLE ID	BATCH	BATCH	BATCH	BATCH
ORIGINAL	<0.0010	<0.005	0.0082	0.034
DUPLICATE	<0.0010	<0.005	0.0076	0.032
RPD	NC	NC	7.59%	6.06%
SPIKE SAMPLE				
SAMPLE ID	BATCH	BATCH	BATCH	BATCH
ORIGINAL	<0.0010	<0.005	0.0082	0.034
SPIKED SAMPLE	0.0514	0.058	0.0556	0.080
SPIKE ADDED	0.0500	0.050	0.0500	0.050
% RECOVERY	102.80%	116.00%	94.80%	92.00%
QC CHECK				
FOUND	0.0542	0.053	0.0546	0.053
TRUE	0.0500	0.050	0.0500	0.050
% RECOVERY	108.40%	106.00%	109.20%	106.00%
BLANK	<0.0010	<0.005	<0.0010	<0.005

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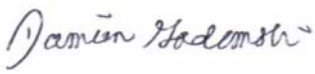
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

SUBMITTED BY:



Damien Gadomski
Project Manager

2/24/2013

HERRERA ENVIRONMENTAL CONSULTANTS
2200 Sixth Avenue, Suite 1100
Seattle, Washington 98121
(206) 441-9080
FAX (206) 441-9108

HER078.59

CHAIN OF CUSTODY RECORD

PROJECT NAME:	PROJECT NUMBER:	CLIENT:
Filterra-Bellingham	10-04715-003	Herrera Environmental Consultants
REPORT TO: Dylan Ahearn		COPY TO:
SAMPLED BY: Dan Bennett		DELIVERY METHOD: Hand/ in cooler with ice
LABORATORY: Aquatic Research	REQUESTED COMPLETION DATE:	TOTAL # OF CONTAINERS: 2
LAB USE:		

SAMPLE ID:	DATE:	TIME:	SAMPLE DESCRIPTION	# OF CONTAINERS:	ANALYSES REQUESTED: Total Suspended Solids- SM 2540D	Total phosphorus - EPA 365.3	Orthophosphorus - EPA 365.3	Hardness as CaCO3-SM 2340B	Copper, dissolved - EPA 200.8	Copper, total - EPA 200.8	Zinc, dissolved - EPA 200.8	Zinc, total - EPA 200.8	Particle size Distribution – Mod. ASTM 3977 – TAPE (2011)
FB-IN	2/25/13	12:03	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	X
FB-OUT	2/25/13	12:03	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	X

Notes: Use churn splitter to apportion large samples into smaller bottles.

RELINQUISHED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:	RECEIVED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:
Dan Bennett/ Herrera		2/26/12 9:20	SWIGERSON HRE		2/26/10 0920

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

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CASE FILE NUMBER:	**HER078-59**	**PAGE 1**	
REPORT DATE:	**03/08/13**		
DATE SAMPLED:	**02/25/13**	**DATE RECEIVED:**	**02/26/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

CASE NARRATIVE

Two water samples were delivered to the laboratory in good condition. The samples were analyzed according to the chain of custody. Samples for total metals were digested according to EPA procedures. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages. Results for PSD analysis will follow as a separate report.

SAMPLE DATA

SAMPLE ID	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)
FB-IN	0.126	0.012	15.2	55
FB-OUT	0.040	0.009	19.9	5.0

	DISSOLVED METALS		TOTAL METALS	
SAMPLE ID	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
FB-IN	0.0026	<0.005	0.0110	0.022
FB-OUT	0.0021	<0.005	0.0032	<0.005

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: **HER078-59** **PAGE 2**

REPORT DATE: **03/08/13**

DATE SAMPLED: **02/25/13** **DATE RECEIVED:** **02/26/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

QC PARAMETER	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)
METHOD	EPA 365.1	EPA 365.1	SM18 2340C	SM18 2540D
DATE ANALYZED	03/01/13	02/27/13	03/04/13	03/01/13
DETECTION LIMIT	0.002	0.001	2.00	0.50
DUPLICATE				
SAMPLE ID	BATCH	BATCH	BATCH	BATCH
ORIGINAL	0.015	0.001	<2.00	14
DUPLICATE	0.015	0.001	<2.00	14
RPD	0.00%	0.00%	NC	0.00%
SPIKE SAMPLE				
SAMPLE ID	BATCH	BATCH	BATCH	
ORIGINAL	0.015	0.001	<2.00	
SPIKED SAMPLE	0.065	0.021	20.1	
SPIKE ADDED	0.050	0.020	20.0	
% RECOVERY	100.00%	100.00%	100.65%	NA
QC CHECK				
FOUND	0.091	0.033	38.3	9.5
TRUE	0.090	0.033	40.0	10
% RECOVERY	101.11%	100.00%	95.77%	95.00%
BLANK	<0.002	<0.001	<2.00	<0.50

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: **HER078-59**

REPORT DATE: **03/08/13**

DATE SAMPLED: **02/25/13** **DATE RECEIVED:** **02/26/13**

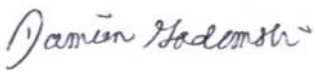
FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

	DISSOLVED METALS		TOTAL METALS	
QC PARAMETER	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
METHOD	EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8
DATE ANALYZED	02/27/13	02/27/13	03/01/13	03/01/13
DETECTION LIMIT	0.0010	0.005	0.0010	0.005
DUPLICATE				
SAMPLE ID	FB-OUT	FB-OUT	FB-OUT	FB-OUT
ORIGINAL	0.0021	<0.005	0.0032	<0.005
DUPLICATE	0.0020	<0.005	0.0029	<0.005
RPD	4.88%	NC	9.84%	NC
SPIKE SAMPLE				
SAMPLE ID	FB-OUT	FB-OUT	FB-OUT	FB-OUT
ORIGINAL	0.0021	<0.005	0.0032	<0.005
SPIKED SAMPLE	0.0591	0.055	0.0621	0.056
SPIKE ADDED	0.0500	0.050	0.0500	0.050
% RECOVERY	114.00%	110.00%	117.80%	112.00%
QC CHECK				
FOUND	0.0540	0.053	0.0522	0.054
TRUE	0.0500	0.050	0.0500	0.050
% RECOVERY	108.00%	106.00%	104.40%	108.00%
BLANK	<0.0010	<0.005	<0.0010	<0.005

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

SUBMITTED BY:



Damien Gadomski
Project Manager

Analytical Resources, Incorporated
Analytical Chemists and Consultants

5 March 2013

Damian Gadomski
Aquatic Research Incorporated
3927 Aurora Avenue North
Seattle, WA 98103

RE: HER078.59
ARI Job: WF49

Dear Damian:

Please find enclosed the original chain of custody (COC) record and the final results for the sample2 from the project referenced above. Analytical Resources, Inc. accepted two water samples on February 28, 2013.

The samples were analyzed for particle size as requested.

Electronic copies of these reports and all associated raw data will be kept on file at ARI. If you have questions or require additional information, please feel free to contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com

Enclosures

cc: file WF49

MDH/mdh

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

Aquatic Research Incorporated

3927 Aurora Ave. N / Seattle, WA 98103 / (206) 632-2715

CHAIN-OF-CUSTODY RECORD

SHEET 1 OF 1

CLIENT: AQUATIC RESEARCH

PROJECT ID: HER078.59

SAMPLING DATE: 2/25/13

CASE FILE NO.:

SAMPLERS:

DATA RECORDED BY:

SAMPLE INFORMATION

ASTM 3977-TAPE (2011)

PARAMETERS

SAMPLE ID	DATE/TIME COLLECTED	PSD	BOTT #	NOTES
FB-IN	2/25/13 1203	X	1	
FB-OUT	↓ 1203		1	

	Relinquished By	Date/Time	Received By	Date/Time
Printed Name		2/27/13		2-28-13
Signature		0900		
Affiliation	AMR		AKI	1120

	Relinquished By	Date/Time	Received By	Date/Time
Printed Name				
Signature				
Affiliation				

Miscellaneous Notes (Hazardous Materials, Quick turn-around time, etc.):

WF19 : 00002

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Aquatic Research

Project Name: _____

COC No(s): _____ NA

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: WF49

Tracking No: 9612019 9897661 15017918 NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES NO

Were custody papers included with the cooler? YES NO

Were custody papers properly filled out (ink, signed, etc.) YES NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)..... 3.5

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 90877952

Cooler Accepted by: TS Date: 2-28-13 Time: 1120

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES NO

What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____

Was sufficient ice used (if appropriate)? NA YES NO

Were all bottles sealed in individual plastic bags? YES NO

Did all bottles arrive in good condition (unbroken)? YES NO

Were all bottle labels complete and legible? YES NO

Did the number of containers listed on COC match with the number of containers received? YES NO

Did all bottle labels and tags agree with custody papers? YES NO

Were all bottles used correct for the requested analyses? YES NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)... NA YES NO

Were all VOC vials free of air bubbles? NA YES NO

Was sufficient amount of sample sent in each bottle? YES NO

Date VOC Trip Blank was made at ARI..... NA _____

Was Sample Split by ARI : NA YES Date/Time: _____ Equipment: _____ Split by: _____

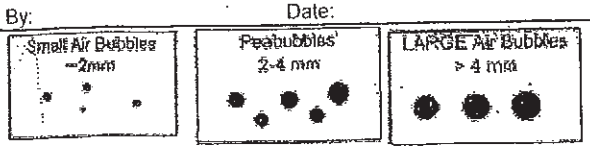
Samples Logged by: TS Date: 2-28-13 Time: 1120

** *Notify Project Manager of discrepancies or concerns* **

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:



Small → "sm"
Peabubbles → "pb"
Large → "lg"
Headspace → "hs"

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: WF49
Client: Aquatic Research
Project Event: HERO78.59
Project Name: N/A

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	FB-IN	WF49A	13-3879	Water	02/25/13 12:03	02/28/13 11:20
2.	FB-OUT	WF49B	13-3880	Water	02/25/13 12:03	02/28/13 11:20

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Client: Aquatic Research **ARI Job No.:** WF49

Client Project No.: HERO78.59

Case Narrative

1. Two samples were submitted for analysis on February 28, 2013, and were in good condition.
2. The samples were submitted for particle size distribution by laser diffraction according to TAPE 2011 Methods. These methods include running sediment concentration according to modified ASTM D3977, Method C.
3. The less than 250 micron grain size distributions were run on the Beckman Coulter LS13 320. The percentages are calculated using the Fraunhofer Theory of Light Scattering.
4. Particle size distribution is reported as "Concentration per Size Fraction" in mg/L.
5. One sample (FB-OUT) did not have enough coarse material retained on the sieves for accurate weighing; therefore, the coarse fraction weights were recorded as zero grams.
6. There were no other noted anomalies in the samples or methods on this project.

Released by: Kathleen J Buchanan Date: 03/04/2013
Lead Technician

Reviewed by: Queenie Curtis Date: 3/5/13
Geotechnical Laboratory Manager

Aquatic Research

HERO78.59

Sediment Concentration per Size Fraction

ASTM D3977 Method C/ TAPE Appendix F

Sample Identification	Concentration of Coarse Fractions (mg/L)		Concentration of <62.5µm Fraction (mg/L)	Total Sample Concentration (mg/L)	Date Sampled	Analysis Date
	>250 µm	250 - 62.5 µm				
FB-IN	7.06	15.04	31.02	53.13	2/25/2013	3/1/2013
FB-OUT	0.00	0.00	4.96	4.96	2/25/2013	3/1/2013

WF49

Aquatic Research
HERO78.59

Concentration in Each Size Fraction (mg/L)

Size Range (μm)	>250	250-62.5	62.5-3.9	< 3.9
FB-IN	7.06	15.04	25.07	5.96
FB-OUT	0.00	0.00	0.00	4.96

Volume Percent Retained in Each Size Fraction

Size Range (μm)	>250	250-62.5	62.5-3.9	< 3.9
FB-IN	13.3	28.3	47.2	11.2
FB-OUT	0.0	0.0	0.0	100.0

3/1/2013

my samples

HER078-62

HERRERA ENVIRONMENTAL CONSULTANTS
2200 Sixth Avenue, Suite 1100
Seattle, Washington 98121
(206) 441-9080
FAX (206) 441-9108

CHAIN OF CUSTODY RECORD

PROJECT NAME:	PROJECT NUMBER:	CLIENT:
Filterra-Bellingham	10-04715-003	Herrera Environmental Consultants
REPORT TO: Dylan Ahearn		COPY TO:
SAMPLED BY: Dan Bennett		DELIVERY METHOD: Hand/ in cooler with ice
LABORATORY: Aquatic Research	REQUESTED COMPLETION DATE:	TOTAL # OF CONTAINERS: 3
LAB USE:		

SAMPLE ID:	DATE:	TIME:	SAMPLE DESCRIPTION	# OF CONTAINERS:	ANALYSES REQUESTED: Total Suspended Solids- SM 2540D	Total phosphorus - EPA 365.3	Orthophosphorus - EPA 365.3	Hardness as CaCO3-SM 2340B	Copper, dissolved - EPA 200.8	Copper, total - EPA 200.8	Zinc, dissolved - EPA 200.8	Zinc, total - EPA 200.8	Particle size Distribution – Mod. ASTM 3977 – TAPE (2011)
FB-IN	3/1/13	4:00	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	
FB-OUT	3/1/13	4:00	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	
QA-1	3/1/13	4:00	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	

Notes: Use churn splitter to apportion large samples into smaller bottles.

RELINQUISHED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:	RECEIVED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:
/ Herrera		3/1/13 4:00			3/2/13 0750

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: **HER078-62** **PAGE 1**

REPORT DATE: **03/07/13**

DATE SAMPLED: **03/01/13** **DATE RECEIVED:** **03/02/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

CASE NARRATIVE

Three water samples were delivered to the laboratory in good condition. The samples were analyzed according to the chain of custody. Samples for total metals were digested according to EPA procedures. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages.

SAMPLE DATA

SAMPLE ID	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)
FB-IN	0.088	0.006	17.4	56
FB-OUT	0.029	0.006	20.7	3.0
QA-1	0.088	0.007	17.2	29

	DISSOLVED METALS		TOTAL METALS	
SAMPLE ID	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
FB-IN	0.0020	<0.005	0.0053	0.025
FB-OUT	0.0023	<0.005	0.0033	0.006
QA-1	0.0020	<0.005	0.0041	0.010

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

REPORT DATE: **03/07/13**

DATE SAMPLED: **03/01/13** **DATE RECEIVED:** **03/02/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

QC PARAMETER	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)
METHOD	EPA 365.1	EPA 365.1	SM18 2340C	SM18 2540D
DATE ANALYZED	03/01/13	03/04/13	03/04/13	03/04/13
DETECTION LIMIT	0.002	0.001	2.00	0.50
DUPLICATE				
SAMPLE ID	BATCH	QA-1	BATCH	BATCH
ORIGINAL	0.036	0.007	<2.00	110
DUPLICATE	0.035	0.007	<2.00	100
RPD	0.85%	1.43%	NC	9.52%
SPIKE SAMPLE				
SAMPLE ID	BATCH	QA-1	BATCH	
ORIGINAL	0.036	0.007	<2.00	
SPIKED SAMPLE	0.086	0.026	20.1	
SPIKE ADDED	0.050	0.020	20.0	
% RECOVERY	100.80%	98.92%	100.65%	NA
QC CHECK				
FOUND	0.088	0.033	38.3	9.4
TRUE	0.090	0.033	40.0	10
% RECOVERY	98.25%	99.71%	95.77%	94.00%
BLANK	<0.002	<0.001	<2.00	<0.50

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: **HER078-62**

REPORT DATE: **03/07/13**

DATE SAMPLED: **03/01/13** **DATE RECEIVED:** **03/02/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

	DISSOLVED METALS		TOTAL METALS	
QC PARAMETER	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
METHOD	EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8
DATE ANALYZED	03/04/13	03/04/13	03/05/13	03/05/13
DETECTION LIMIT	0.0010	0.005	0.0010	0.005
DUPLICATE				
SAMPLE ID	QA-1	QA-1	QA-1	QA-1
ORIGINAL	0.0020	<0.005	0.0041	0.010
DUPLICATE	0.0017	<0.005	0.0041	0.011
RPD	16.22%	NC	0.00%	9.52%
SPIKE SAMPLE				
SAMPLE ID	QA-1	QA-1	QA-1	QA-1
ORIGINAL	0.0020	<0.005	0.0041	0.010
SPIKED SAMPLE	0.0568	0.059	0.0528	0.054
SPIKE ADDED	0.0500	0.050	0.0500	0.050
% RECOVERY	109.60%	118.00%	97.40%	88.00%
QC CHECK				
FOUND	0.0542	0.053	0.0524	0.053
TRUE	0.0500	0.050	0.0500	0.050
% RECOVERY	108.40%	106.00%	104.80%	106.00%
BLANK	<0.0010	<0.005	<0.0010	<0.005

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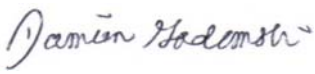
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

SUBMITTED BY:



Damien Gadomski
Project Manager

3/6/2013

HERO78-64

HERRERA ENVIRONMENTAL CONSULTANTS
2200 Sixth Avenue, Suite 1100
Seattle, Washington 98121
(206) 441-9080
FAX (206) 441-9108

CHAIN OF CUSTODY RECORD

Page ___ of ___

PROJECT NAME: Filterra-Bellingham	PROJECT NUMBER: 10-04715-003	CLIENT: Herrera Environmental Consultants
REPORT TO: Dylan Ahearn		COPY TO:
SAMPLED BY: Dan Bennett		DELIVERY METHOD: Hand/ in cooler with ice
LABORATORY: Aquatic Research	REQUESTED COMPLETION DATE:	TOTAL # OF CONTAINERS: 3
LAB USE:		

SAMPLE ID:	DATE:	TIME:	SAMPLE DESCRIPTION	# OF CONTAINERS:	Total Suspended Solids- SM 2540D	Total phosphorus - EPA 365.3	Orthophosphorus - EPA 365.3	Hardness as CaCO3-SM 2340B	Copper, dissolved - EPA 200.8	Copper, total - EPA 200.8	Zinc, dissolved - EPA 200.8	Zinc, total - EPA 200.8	Particle size Distribution – Mod. ASTM 3977 – TAPE (2011)	Turbidity	Conductivity	pH
FB-IN	3-6-13	20:08	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	X	X	X	X
FB-OUT	3-6-13	20:00	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	X	X	X	X
QA-2	3-6-13	20:06	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	X	X	X	X

Notes: Use churn splitter to apportion large samples into smaller bottles.

RELINQUISHED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:	RECEIVED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:
/ Herrera		3-7-13 1500	S. Hilfer ARI		3/7/13 1500

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	**HER078-64**	**PAGE 1**	
REPORT DATE:	**03/21/13**		
DATE SAMPLED:	**03/06/13**	**DATE RECEIVED:**	**03/07/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

CASE NARRATIVE

Three water samples were delivered to the laboratory in good condition. The samples were analyzed according to the chain of custody. Samples for total metals were digested according to EPA procedures. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages. Results for PSD analysis will follow as a separate report.

SAMPLE DATA

SAMPLE ID	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)
FB-IN	0.041	0.009	17.4	7.5
FB-OUT	0.023	0.007	19.0	1.8
QA-2	0.037	0.006	17.4	10

	DISSOLVED METALS		TOTAL METALS	
SAMPLE ID	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
FB-IN	0.0032	<0.005	0.0046	<0.005
FB-OUT	0.0025	<0.005	0.0030	<0.005
QA-2	0.0017	<0.005	0.0034	0.006

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: **HER078-64**

REPORT DATE: **03/21/13**

DATE SAMPLED: **03/06/13** **DATE RECEIVED:** **03/07/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

QC PARAMETER	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)
METHOD	EPA 365.1	EPA 365.1	SM18 2340C	SM18 2540D
DATE ANALYZED	03/11/13	03/08/13	03/20/13	03/11/13
DETECTION LIMIT	0.002	0.001	2.00	0.50
DUPLICATE				
SAMPLE ID	QA-2	BATCH	BATCH	BATCH
ORIGINAL	0.037	0.006	67.9	29
DUPLICATE	0.041	0.006	70.4	29
RPD	10.26%	0.00%	3.62%	0.00%
SPIKE SAMPLE				
SAMPLE ID	QA-2	BATCH	BATCH	
ORIGINAL	0.037	0.006	67.9	
SPIKED SAMPLE	0.087	0.026	86.5	
SPIKE ADDED	0.050	0.020	20.0	
% RECOVERY	100.00%	100.00%	93.00%	NA
QC CHECK				
FOUND	0.090	0.033	39.1	9.7
TRUE	0.090	0.033	40.0	10
% RECOVERY	100.00%	100.00%	97.75%	97.00%
BLANK	<0.002	<0.001	<2.00	<0.50

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AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

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PHONE: (206) 632-2715 FAX: (206) 632-2417

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REPORT DATE: **03/21/13**

DATE SAMPLED: **03/06/13** **DATE RECEIVED:** **03/07/13**

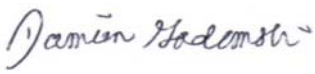
FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

	DISSOLVED METALS		TOTAL METALS	
QC PARAMETER	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
METHOD	EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8
DATE ANALYZED	03/11/13	03/11/13	03/11/13	03/11/13
DETECTION LIMIT	0.0010	0.005	0.0010	0.005
DUPLICATE				
SAMPLE ID	BATCH	BATCH	QA-2	QA-2
ORIGINAL	0.0017	<0.005	0.0034	0.006
DUPLICATE	0.0017	<0.005	0.0036	0.006
RPD	0.00%	NC	5.71%	0.00%
SPIKE SAMPLE				
SAMPLE ID	BATCH	BATCH	QA-2	QA-2
ORIGINAL	0.0017	<0.005	0.0034	0.006
SPIKED SAMPLE	0.0479	0.050	0.0543	0.058
SPIKE ADDED	0.0500	0.050	0.0500	0.050
% RECOVERY	92.40%	100.00%	101.80%	104.00%
QC CHECK				
FOUND	0.0547	0.053	0.0547	0.053
TRUE	0.0500	0.050	0.0500	0.050
% RECOVERY	109.40%	106.00%	109.40%	106.00%
BLANK	<0.0010	<0.005	<0.0010	<0.005

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

SUBMITTED BY:



Damien Gadomski
Project Manager

Analytical Resources, Incorporated
Analytical Chemists and Consultants

14 March 2013

Damian Gadomski
Aquatic Research Incorporated
3927 Aurora Avenue North
Seattle, WA 98103

RE: HER078.64
ARI Job: WG92

Dear Damian:

Please find enclosed the original chain of custody (COC) record and the final results for the samples from the project referenced above. Analytical Resources, Inc. accepted three water samples on March 11, 2013.

The samples were analyzed for particle size as requested.

Electronic copies of these reports and all associated raw data will be kept on file at ARI. If you have questions or require additional information, please feel free to contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

Mark D. Harris
Project Manager
206/695-6210
markh@arilabs.com

Enclosures

cc: file WG92

MDH/mdh

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

WG92

Aquatic Research Incorporated

3927 Aurora Ave. N / Seattle, WA 98103 / (206) 632-2715

CHAIN-OF-CUSTODY RECORD

SHEET 1 OF 1

CLIENT: AQUATIC RESEARCH

SAMPLING DATE: 3/6/13

SAMPLERS:

PROJECT ID: HE2078.64

CASE FILE NO.:

DATA RECORDED BY:

SAMPLE INFORMATION

→ ASTM MOD. TAPE (2011)

PARAMETERS

SAMPLE ID	DATE/TIME COLLECTED	SSC	BOTT #	NOTES
FB-IN	3/6/13 1008		1	
FB-OUT	↓ ↓		1	
QA-2			1	

	Relinquished By	Date/Time	Received By	Date/Time
Printed Name		3/8/13	A. Volgardsen	3/11/13
Signature		0900		1645
Affiliation	ARI		ARI	

	Relinquished By	Date/Time	Received By	Date/Time
Printed Name				
Signature				
Affiliation				

Miscellaneous Notes (Hazardous Materials, Quick turn-around time, etc.):

WG92 : 00002

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Aquatic

COC No(s): _____ (NA)

Assigned ARI Job No: WG92

Project Name: Hc-078-64

Delivered by: (Fed-Ex) UPS Courier Hand Delivered Other: _____

Tracking No: 943746115017963 NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry): 6.1

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 90877952

Cooler Accepted by: AV Date: 3/11/13 Time: 1045

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	(NO)
What kind of packing material was used? ... Bubble Wrap Wet Ice (Gel Packs) Baggies Foam Block Paper Other: _____			
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
Were all bottles sealed in individual plastic bags?		YES	(NO)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)...	(NA)	YES	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)		

Was Sample Split by ARI : (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

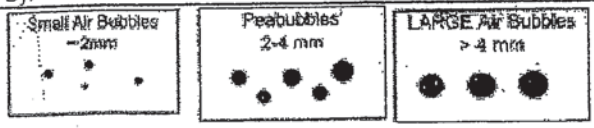
Samples Logged by: JS Date: 3-11-13 Time: 1215

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:



Small → "sm"
Peabubbles → "pb"
Large → "lg"
Headspace → "hs"

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: WG92
Client: Aquatic Research
Project Event: N/A
Project Name: HERO78-64

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	FB-IN	WG92A	13-5000	Water	03/06/13	03/11/13 10:45
2.	FB-OUT	WG92B	13-5001	Water	03/06/13	03/11/13 10:45
3.	QA 2	WG92C	13-5002	Water	03/06/13	03/11/13 10:45

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Client: Aquatic Research **ARI Job No.:** WG92

Client Project No.: HERO78-64

Case Narrative

1. Three samples were submitted for analysis on March 11, 2013, and were in good condition.
2. The samples were submitted for particle size distribution by laser diffraction according to TAPE 2011 Methods. These methods include running sediment concentration according to modified ASTM D3977, Method C.
3. The less than 250 micron grain size distributions were run on the Beckman Coulter LS13 320. The percentages are calculated using the Fraunhofer Theory of Light Scattering.
4. Particle size distribution is reported as "Concentration per Size Fraction" in mg/L.
5. There were no other noted anomalies in the samples or methods on this project.

Released by: Katherine J Buchanan *Lead Technician* Date: 03/14/2013

Reviewed by: Lucinda Curtis *Geotechnical Laboratory Manager* Date: 3/14/13

Aquatic Research

HERO78-64

Sediment Concentration per Size Fraction

ASTM D3977 Method C/ TAPE Appendix F

Sample Identification	Concentration of Coarse Fractions (mg/L)		Concentration of <62.5µm Fraction (mg/L)	Total Sample Concentration (mg/L)	Date Sampled	Analysis Date
	>250 µm	250 - 62.5 µm				
FB-IN	2.05	3.29	2.41	7.75	3/6/2013	3/12/2013
FB-OUT	0.31	0.51	1.32	2.14	3/6/2013	3/12/2013
QA 2	2.97	4.30	4.74	12.01	3/6/2013	3/12/2013

WG92

Aquatic Research
HERO78-64

Concentration in Each Size Fraction (mg/L)

Size Range (µm)	>250	250-62.5	62.5-3.9	< 3.9
FB-IN	2.05	3.29	0.00	2.41
FB-OUT	0.31	0.51	0.00	1.32
QA 2	2.97	4.30	0.00	4.74

Volume Percent Retained in Each Size Fraction

Size Range (µm)	>250	250-62.5	62.5-3.9	< 3.9
FB-IN	26.5	42.4	0.0	31.1
FB-OUT	14.4	24.0	0.0	61.7
QA 2	24.7	35.8	0.0	39.5

3/12/2013

HERO78-66

HERRERA ENVIRONMENTAL CONSULTANTS
2200 Sixth Avenue, Suite 1100
Seattle, Washington 98121
(206) 441-9080
FAX (206) 441-9108

CHAIN OF CUSTODY RECORD

PROJECT NAME:	PROJECT NUMBER:	CLIENT:
Filterra-Bellingham	10-04715-003	Herrera Environmental Consultants
REPORT TO: Dylan Ahearn		COPY TO:
SAMPLED BY: ~~Dan Bennett~~ Alex Svendsen		DELIVERY METHOD: Hand/ in cooler with ice
LABORATORY: Aquatic Research	REQUESTED COMPLETION DATE:	TOTAL # OF CONTAINERS: 2
LAB USE:		

SAMPLE ID:	DATE:	TIME:	SAMPLE DESCRIPTION	# OF CONTAINERS:	ANALYSES REQUESTED: Total Suspended Solids- SM 2540D	Total phosphorus - EPA 365.3	Orthophosphorus - EPA 365.3	Hardness as CaCO3-SM 2340B	Copper, dissolved - EPA 200.8	Copper, total - EPA 200.8	Zinc, dissolved - EPA 200.8	Zinc, total - EPA 200.8	Particle size Distribution – Mod. ASTM 3977 – TAPE (2011)
FB-IN	3/13/13	0217	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	
FB-OUT	3/13/13	0217	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	

Notes: Use churn splitter to apportion large samples into smaller bottles.

RELINQUISHED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:	RECEIVED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:
HEC	Alex Svendsen	3/13/13 1350	Ravinka Sosa		3/13/13 1350

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	**HER078-66**	**PAGE 1**	
REPORT DATE:	**03/27/13**		
DATE SAMPLED:	**03/13/13**	**DATE RECEIVED:**	**03/13/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

CASE NARRATIVE

Two water samples were delivered to the laboratory in good condition. The samples were analyzed according to the chain of custody. Samples for total metals were digested according to EPA procedures. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages.

SAMPLE DATA

SAMPLE ID	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)
FB-IN	0.090	0.007	15.3	60
FB-OUT	0.025	0.006	17.2	3.7

	DISSOLVED METALS		TOTAL METALS	
SAMPLE ID	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
FB-IN	0.0025	0.005	0.0071	0.011
FB-OUT	0.0032	<0.005	0.0037	<0.005

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: **HER078-66**

REPORT DATE: **03/27/13**

DATE SAMPLED: **03/13/13** **DATE RECEIVED:** **03/13/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

QC PARAMETER	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)
METHOD	EPA 365.1	EPA 365.1	SM18 2340C	SM18 2540D
DATE ANALYZED	03/19/13	03/13/13	03/27/13	03/19/13
DETECTION LIMIT	0.002	0.001	2.00	0.50
DUPLICATE				
SAMPLE ID	BATCH	BATCH	BATCH	BATCH
ORIGINAL	0.025	<0.001	18.2	144
DUPLICATE	0.026	<0.001	17.8	152
RPD	3.92%	NC	2.17%	5.41%
SPIKE SAMPLE				
SAMPLE ID	BATCH	BATCH	BATCH	
ORIGINAL	0.025	<0.001	18.2	
SPIKED SAMPLE	0.077	0.020	37.1	
SPIKE ADDED	0.050	0.020	20.0	
% RECOVERY	104.00%	100.00%	94.79%	NA
QC CHECK				
FOUND	0.095	0.033	37.5	9.5
TRUE	0.090	0.033	40.0	10
% RECOVERY	105.56%	100.00%	93.75%	95.00%
BLANK	<0.002	<0.001	<2.00	<0.50

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES
3927 AURORA AVENUE NORTH, SEATTLE, WA 98103
PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: **HER078-66** **PAGE 3**
REPORT DATE: **03/27/13**
DATE SAMPLED: **03/13/13** **DATE RECEIVED:** **03/13/13**
FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

	DISSOLVED METALS		TOTAL METALS	
QC PARAMETER	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
METHOD	EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8
DATE ANALYZED	03/18/13	03/18/13	03/18/13	03/18/13
DETECTION LIMIT	0.0010	0.005	0.0010	0.005
DUPLICATE				
SAMPLE ID	BATCH	BATCH	BATCH	BATCH
ORIGINAL	<0.0010	<0.005	0.0075	0.022
DUPLICATE	<0.0010	<0.005	0.0083	0.024
RPD	NC	NC	10.13%	8.70%
SPIKE SAMPLE				
SAMPLE ID	BATCH	BATCH	BATCH	BATCH
ORIGINAL	<0.0010	<0.005	0.0075	0.022
SPIKED SAMPLE	0.0434	0.047	0.0487	0.066
SPIKE ADDED	0.0500	0.050	0.0500	0.050
% RECOVERY	86.80%	94.00%	82.40%	88.00%
QC CHECK				
FOUND	0.0540	0.053	0.0540	0.053
TRUE	0.0500	0.050	0.0500	0.050
% RECOVERY	108.00%	106.00%	108.00%	106.00%
BLANK	<0.0010	<0.005	<0.0010	<0.005

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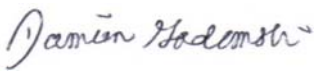
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

SUBMITTED BY:



Damien Gadomski
Project Manager

3/14/2013

HERRERA ENVIRONMENTAL CONSULTANTS
2200 Sixth Avenue, Suite 1100
Seattle, Washington 98121
(206) 441-9080
FAX (206) 441-9108

1112078-68

CHAIN OF CUSTODY RECORD

Page ___ of ___

PROJECT NAME: Filterra-Bellingham	PROJECT NUMBER: 10-04715-003	CLIENT: Herrera Environmental Consultants
REPORT TO: Dylan Ahearn		COPY TO:
SAMPLED BY: Dan Bennett		DELIVERY METHOD: Hand/ in cooler with ice
LABORATORY: Aquatic Research	REQUESTED COMPLETION DATE:	TOTAL # OF CONTAINERS: 3
LAB USE:		

SAMPLE ID:	DATE:	TIME:	SAMPLE DESCRIPTION	# OF CONTAINERS:	ANALYSES REQUESTED: Total Suspended Solids- SM 2540D	Total phosphorus - EPA 365.3	Orthophosphorus - EPA 365.3	Hardness as CaCO3-SM 2340B	Copper, dissolved - EPA 200.8	Copper, total - EPA 200.8	Zinc, dissolved - EPA 200.8	Zinc, total - EPA 200.8	Particle size Distribution – Mod. ASTM 3977 – TAPE (2011)	Turbidity	Conductivity	pH		3/14/13 DC		
FB-IN	3-14-13	19:20	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X		X	X	X		pH = 7.02		
FB-OUT	3-14-13	19:20	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X		X	X	X		pH = 7.18		

Notes: Use churn splitter to apportion large samples into smaller bottles.

RELINQUISHED BY (NAME/CO.): DB / Herrera	SIGNATURE:	DATE/TIME: 3/16/13 10:20	RECEIVED BY (NAME/CO.): AMGEN GLOOMS	SIGNATURE:	DATE/TIME: 3/16/13 10:20

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	**HER078-68**	**PAGE 1**	
REPORT DATE:	**04/02/13**		
DATE SAMPLED:	**03/14/13**	**DATE RECEIVED:**	**03/16/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

CASE NARRATIVE

Two water samples were delivered to the laboratory in good condition. The samples were analyzed according to the chain of custody. Samples for total metals were digested according to EPA procedures. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages.

SAMPLE DATA

SAMPLE ID	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)	CONDUCTIVITY (umhos/cm)	pH	TURBIDITY (NTU)
FB-IN	0.146	0.005	17.4	73	48.7	7.02	6.6
FB-OUT	0.025	0.005	19.5	2.3	50.7	7.18	1.8

	DISSOLVED METALS		TOTAL METALS	
SAMPLE ID	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
FB-IN	0.0015	<0.005	0.0054	0.012
FB-OUT	0.0016	<0.005	0.0019	<0.005

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: **HER078-68** **PAGE 2**

REPORT DATE: **04/02/13**

DATE SAMPLED: **03/14/13** **DATE RECEIVED:** **03/16/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

QC PARAMETER	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)	CONDUCTIVITY (umhos/cm)	pH	TURBIDITY (NTU)
METHOD	EPA 365.1	EPA 365.1	SM18 2340C	SM18 2540D	EPA 120.1	EPA 150.1	EPA 180.1
DATE ANALYZED	03/19/13	03/18/13	03/27/13	03/21/13	03/25/13	03/16/13	03/17/13
DETECTION LIMIT	0.002	0.001	2.00	0.50	0.10	0.10	0.10
DUPLICATE							
SAMPLE ID	BATCH	BATCH	BATCH	BATCH	BATCH		BATCH
ORIGINAL	0.025	0.006	18.2	69	44.4		2.6
DUPLICATE	0.026	0.006	17.8	62	44.6		2.5
RPD	3.92%	0.00%	2.22%	10.69%	0.45%	NA	3.92%
SPIKE SAMPLE							
SAMPLE ID	BATCH	BATCH	BATCH				
ORIGINAL	0.025	0.006	18.2				
SPIKED SAMPLE	0.077	0.027	37.1				
SPIKE ADDED	0.050	0.020	20.0				
% RECOVERY	104.00%	105.00%	94.50%	NA	NA	NA	NA
QC CHECK							
FOUND	0.095	0.030	37.5	9.7	720		7.7
TRUE	0.090	0.033	40.0	10	718		8.0
% RECOVERY	105.56%	90.91%	93.75%	97.00%	100.28%	NA	96.25%
BLANK	<0.002	<0.001	<2.00	<0.50	NA	NA	NA

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OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: **HER078-68**

REPORT DATE: **04/02/13**

DATE SAMPLED: **03/14/13** **DATE RECEIVED:** **03/16/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

	DISSOLVED METALS		TOTAL METALS	
QC PARAMETER	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
METHOD	EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8
DATE ANALYZED	03/20/13	03/20/13	03/20/13	03/20/13
DETECTION LIMIT	0.0010	0.005	0.0010	0.005
DUPLICATE				
SAMPLE ID	BATCH	BATCH	BATCH	BATCH
ORIGINAL	0.0016	0.103	0.0044	<0.005
DUPLICATE	0.0014	0.099	0.0041	<0.005
RPD	13.33%	3.96%	7.06%	NC
SPIKE SAMPLE				
SAMPLE ID	BATCH	BATCH	BATCH	BATCH
ORIGINAL	0.0016	0.103	0.0044	<0.005
SPIKED SAMPLE	0.0453	0.150	0.0465	0.047
SPIKE ADDED	0.0500	0.050	0.0500	0.050
% RECOVERY	87.40%	94.00%	84.20%	94.00%
QC CHECK				
FOUND	0.0532	0.053	0.0532	0.053
TRUE	0.0500	0.050	0.0500	0.050
% RECOVERY	106.40%	106.00%	106.40%	106.00%
BLANK	<0.0010	<0.005	<0.0010	<0.005

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NA = NOT APPLICABLE OR NOT AVAILABLE.
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OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

SUBMITTED BY:

Damien Gadomski

Damien Gadomski
Project Manager

3/16/2013

HER078-69

HERRERA ENVIRONMENTAL CONSULTANTS
2200 Sixth Avenue, Suite 1100
Seattle, Washington 98121
(206) 441-9080
FAX (206) 441-9108

CHAIN OF CUSTODY RECORD

Page ___ of ___

PROJECT NAME: Filterra-Bellingham	PROJECT NUMBER: 10-04715-003	CLIENT: Herrera Environmental Consultants
REPORT TO: Dylan Ahearn		COPY TO:
SAMPLED BY: Dan Bennett		DELIVERY METHOD: Hand/ in cooler with ice
LABORATORY: Aquatic Research	REQUESTED COMPLETION DATE:	TOTAL # OF CONTAINERS: 3
LAB USE:		

SAMPLE ID:	DATE:	TIME:	SAMPLE DESCRIPTION	# OF CONTAINERS:	Total Suspended Solids- SM 2540D	Total phosphorus - EPA 365.3	Orthophosphorus - EPA 365.3	Hardness as CaCO3-SM 2340B	Copper, dissolved - EPA 200.8	Copper, total - EPA 200.8	Zinc, dissolved - EPA 200.8	Zinc, total - EPA 200.8	Particle size Distribution – Mod. ASTM 3977 – TAPE (2011)	Turbidity	Conductivity	pH	3/17/13 DC
FB-IN	3-16-13	14:35	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X		X	X	X	pH< 6.97
FB-OUT	3-16-13	14:35	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X		X	X	X	pH = 7.11

Notes: Use churn splitter to apportion large samples into smaller bottles.

RELINQUISHED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:	RECEIVED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:
Herrera		3-17-13 1430	ANDREW GADOMSKI/Herrera		3/17/13 14:30

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3/19/2013

HERO78.73

HERRERA ENVIRONMENTAL CONSULTANTS
2200 Sixth Avenue, Suite 1100
Seattle, Washington 98121
(206) 441-9080
FAX (206) 441-9108

CHAIN OF CUSTODY RECORD

Page ___ of ___

PROJECT NAME: Filterra-Bellingham	PROJECT NUMBER: 10-04715-003	CLIENT: Herrera Environmental Consultants
REPORT TO: Dylan Ahearn		COPY TO:
SAMPLED BY: Dan Bennett		DELIVERY METHOD: Hand/ in cooler with ice
LABORATORY: Aquatic Research	REQUESTED COMPLETION DATE:	TOTAL # OF CONTAINERS: 3
LAB USE:		

SAMPLE ID:	DATE:	TIME:	SAMPLE DESCRIPTION	# OF CONTAINERS:	ANALYSES REQUESTED: Total Suspended Solids- SM 2540D	Total phosphorus - EPA 365.3	Orthophosphorus - EPA 365.3	Hardness as CaCO3-SM 2340B	Copper, dissolved - EPA 200.8	Copper, total - EPA 200.8	Zinc, dissolved - EPA 200.8	Zinc, total - EPA 200.8	Particle size Distribution – Mod. ASTM 3977 – TAPE (2011)	Turbidity	Conductivity	pH				
FB-IN	3-20-13	11:09	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X		X	X	X				
FB-OUT	3-20-13	11:09	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X		X	X	X				

Notes: Use churn splitter to apportion large samples into smaller bottles.

2 8 Alaska

RELINQUISHED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:	RECEIVED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:
[redacted] / Herrera	DAN BENNETT	3-21-13 15:12	S. NIELSON HERRERA		3/21/13 1512

4/5/2013 A

HER078 84

HERRERA ENVIRONMENTAL CONSULTANTS

2200 Sixth Avenue, Suite 1100
Seattle, Washington 98121
(206) 441-9080
FAX (206) 441-9108

CHAIN OF CUSTODY RECORD

Page ___ of ___

PROJECT NAME: Filterra-Bellingham | PROJECT NUMBER: 10-04715-003 | CLIENT: Herrera Environmental Consultants

REPORT TO: Dylan Ahearn | COPY TO:

SAMPLED BY: Dan Bennett | DELIVERY METHOD: Hand/ in cooler with ice

LABORATORY: Aquatic Research | REQUESTED COMPLETION DATE: | TOTAL # OF CONTAINERS: 2

LAB USE:

ANALYSES REQUESTED

SAMPLE ID:	DATE:	TIME:	SAMPLE DESCRIPTION	# OF CONTAINERS:	Total Suspended Solids- SM 2540D	Total phosphorus - EPA 365.3	Orthophosphorus - EPA 365.3	Hardness as CaCO3-SM 2340B	Copper, dissolved - EPA 200.8	Copper, total - EPA 200.8	Zinc, dissolved - EPA 200.8	Zinc, total - EPA 200.8	Particle size Distribution – Mod. ASTM 3977 – TAPE (2011)							
FB-IN	4-5-13	07:19	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X							
FB-OUT	4-5-13	07:19	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X							

Notes: Use churn splitter to apportion large samples into smaller bottles.

27 ABS

RELINQUISHED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:	RECEIVED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:
[illegible] / HEC	Dan Bennett	4-7-13 14:30	S. Nifeson [illegible]	[signature]	4/7/13 1430

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	**HER078-84**	**PAGE 1**	
REPORT DATE:	**04/22/13**		
DATE SAMPLED:	**04/05/13**	**DATE RECEIVED:**	**04/07/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

CASE NARRATIVE

Two water samples were delivered to the laboratory in good condition. The samples were analyzed according to the chain of custody. Samples for total metals were digested according to EPA procedures. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages.

SAMPLE DATA

SAMPLE ID	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)
FB-IN	0.175	0.011	12.7	80
FB-OUT	0.051	0.011	15.2	5.0

	DISSOLVED METALS		TOTAL METALS	
SAMPLE ID	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
FB-IN	0.0014	<0.005	0.0028	<0.005
FB-OUT	0.0023	<0.005	0.0026	<0.005

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PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: **HER078-84** **PAGE 2**

REPORT DATE: **04/22/13**

DATE SAMPLED: **04/05/13** **DATE RECEIVED:** **04/07/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

QC PARAMETER	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)
METHOD	EPA 365.1	EPA 365.1	SM18 2340C	SM18 2540D
DATE ANALYZED	04/11/13	04/08/13	04/17/13	04/12/13
DETECTION LIMIT	0.002	0.001	2.00	0.50
DUPLICATE				
SAMPLE ID	BATCH	BATCH	BATCH	BATCH
ORIGINAL	0.019	0.009	18.8	60
DUPLICATE	0.018	0.009	18.4	67
RPD	5.41%	0.00%	2.15%	11.02%
SPIKE SAMPLE				
SAMPLE ID	BATCH	BATCH	BATCH	
ORIGINAL	0.019	0.009	18.8	
SPIKED SAMPLE	0.071	0.030	37.3	
SPIKE ADDED	0.050	0.020	20.0	
% RECOVERY	104.00%	105.00%	92.50%	NA
QC CHECK				
FOUND	0.090	0.032	37.5	9.6
TRUE	0.090	0.033	40.0	10
% RECOVERY	100.00%	96.97%	93.75%	96.00%
BLANK	<0.002	<0.001	<2.00	<0.50

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES
3927 AURORA AVENUE NORTH, SEATTLE, WA 98103
PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: **HER078-84** **PAGE 3**
REPORT DATE: **04/22/13**
DATE SAMPLED: **04/05/13** **DATE RECEIVED:** **04/07/13**
FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

	DISSOLVED METALS		TOTAL METALS	
QC PARAMETER	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
METHOD	EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8
DATE ANALYZED	04/10/13	04/10/13	04/10/13	04/10/13
DETECTION LIMIT	0.0010	0.005	0.0010	0.005
DUPLICATE				
SAMPLE ID	BATCH	BATCH	BATCH	BATCH
ORIGINAL	0.0045	0.014	0.0071	0.078
DUPLICATE	0.0044	0.014	0.0069	0.079
RPD	2.25%	0.00%	2.86%	1.27%
SPIKE SAMPLE				
SAMPLE ID	BATCH	BATCH	BATCH	BATCH
ORIGINAL	0.0045	0.014	0.0071	0.078
SPIKED SAMPLE	0.0531	0.066	0.0494	0.121
SPIKE ADDED	0.0500	0.050	0.0500	0.050
% RECOVERY	97.20%	104.00%	84.60%	86.00%
QC CHECK				
FOUND	0.0533	0.052	0.0533	0.052
TRUE	0.0500	0.050	0.0500	0.050
% RECOVERY	106.60%	104.00%	106.60%	104.00%
BLANK	<0.0010	<0.005	<0.0010	<0.005

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

SUBMITTED BY:

Damien Gadomski

Damien Gadomski
Project Manager

4/5/2013 B

HER078.85

HERRERA ENVIRONMENTAL CONSULTANTS
2200 Sixth Avenue, Suite 1100
Seattle, Washington 98121
(206) 441-9080
FAX (206) 441-9108

CHAIN OF CUSTODY RECORD

Page ___ of ___

PROJECT NAME: Filterra-Bellingham	PROJECT NUMBER: 10-04715-003	CLIENT: Herrera Environmental Consultants
REPORT TO: Dylan Ahearn		COPY TO:
SAMPLED BY: Dan Bennett		DELIVERY METHOD: Hand/ in cooler with ice
LABORATORY: Aquatic Research	REQUESTED COMPLETION DATE:	TOTAL # OF CONTAINERS: 2

LAB USE:

SAMPLE ID:	DATE:	TIME:	SAMPLE DESCRIPTION	# OF CONTAINERS:	Total Suspended Solids- SM 2540D	Total phosphorus - EPA 365.3	Orthophosphorus - EPA 365.3	Hardness as CaCO3-SM 2340B	Copper, dissolved - EPA 200.8	Copper, total - EPA 200.8	Zinc, dissolved - EPA 200.8	Zinc, total - EPA 200.8	Particle size Distribution – Mod. ASTM 3977 – TAPE (2011)
FB-IN	4-6-13	05:08	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	
FB-OUT	4-6-13	05:08	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	

ANALYSES REQUESTED

Notes: Use churn splitter to apportion large samples into smaller bottles.

1400.

RELINQUISHED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:	RECEIVED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:
DAN BENNETT / HERR		4-7-13 14:30	S. NELSON / HERR		4/9/13 1430

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LABORATORY & CONSULTING SERVICES

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CASE FILE NUMBER:	**HER078-85**	**PAGE 1**	
REPORT DATE:	**04/22/13**		
DATE SAMPLED:	**04/06/13**	**DATE RECEIVED:**	**04/07/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

CASE NARRATIVE

Two water samples were delivered to the laboratory in good condition. The samples were analyzed according to the chain of custody. Samples for total metals were digested according to EPA procedures. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages.

SAMPLE DATA

SAMPLE ID	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)
FB-IN	0.524	0.012	11.7	70
FB-OUT	0.050	0.009	14.0	9.5

	DISSOLVED METALS		TOTAL METALS	
SAMPLE ID	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
FB-IN	0.0020	<0.005	0.0033	<0.005
FB-OUT	0.0033	<0.005	0.0042	<0.005

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CASE FILE NUMBER: **HER078-85**

REPORT DATE: **04/22/13**

DATE SAMPLED: **04/06/13** **DATE RECEIVED:** **04/07/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

QC PARAMETER	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)
METHOD	EPA 365.1	EPA 365.1	SM18 2340C	SM18 2540D
DATE ANALYZED	04/11/13	04/08/13	04/17/13	04/12/13
DETECTION LIMIT	0.002	0.001	2.00	0.50
DUPLICATE				
SAMPLE ID	BATCH	FB-OUT	BATCH	BATCH
ORIGINAL	0.019	0.009	18.8	60
DUPLICATE	0.018	0.009	18.4	67
RPD	5.41%	0.00%	2.15%	11.02%
SPIKE SAMPLE				
SAMPLE ID	BATCH	FB-OUT	BATCH	
ORIGINAL	0.019	0.009	18.8	
SPIKED SAMPLE	0.071	0.030	37.3	
SPIKE ADDED	0.050	0.020	20.0	
% RECOVERY	104.00%	105.00%	92.50%	NA
QC CHECK				
FOUND	0.090	0.032	37.5	9.6
TRUE	0.090	0.033	40.0	10
% RECOVERY	100.00%	96.97%	93.75%	96.00%
BLANK	<0.002	<0.001	<2.00	<0.50

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

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PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: **HER078-85**

REPORT DATE: **04/22/13**

DATE SAMPLED: **04/06/13** **DATE RECEIVED:** **04/07/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

	DISSOLVED METALS		TOTAL METALS	
QC PARAMETER	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
METHOD	EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8
DATE ANALYZED	04/10/13	04/10/13	04/10/13	04/10/13
DETECTION LIMIT	0.0010	0.005	0.0010	0.005
DUPLICATE				
SAMPLE ID	BATCH	BATCH	BATCH	BATCH
ORIGINAL	0.0045	0.014	0.0071	0.078
DUPLICATE	0.0044	0.014	0.0069	0.079
RPD	2.25%	0.00%	2.86%	1.27%
SPIKE SAMPLE				
SAMPLE ID	BATCH	BATCH	BATCH	BATCH
ORIGINAL	0.0045	0.014	0.0071	0.078
SPIKED SAMPLE	0.0531	0.066	0.0494	0.121
SPIKE ADDED	0.0500	0.050	0.0500	0.050
% RECOVERY	97.20%	104.00%	84.60%	86.00%
QC CHECK				
FOUND	0.0533	0.052	0.0533	0.052
TRUE	0.0500	0.050	0.0500	0.050
% RECOVERY	106.60%	104.00%	106.60%	104.00%
BLANK	<0.0010	<0.005	<0.0010	<0.005

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

SUBMITTED BY:

Damien Gadomski

Damien Gadomski
Project Manager

4/10/2013

HERO78-88

HERRERA ENVIRONMENTAL CONSULTANTS
2200 Sixth Avenue, Suite 1100
Seattle, Washington 98121
(206) 441-9080
FAX (206) 441-9108

CHAIN OF CUSTODY RECORD

Page ___ of ___

PROJECT NAME: Filterra-Bellingham	PROJECT NUMBER: 10-04715-003	CLIENT: Herrera Environmental Consultants
REPORT TO: Dylan Ahearn		COPY TO:
SAMPLED BY: Dan Bennett		DELIVERY METHOD: Hand/ in cooler with ice
LABORATORY: Aquatic Research	REQUESTED COMPLETION DATE:	TOTAL # OF CONTAINERS: 3

LAB USE:

SAMPLE ID:	DATE:	TIME:	SAMPLE DESCRIPTION	# OF CONTAINERS:	Total Suspended Solids- SM 2540D	Total phosphorus - EPA 365.3	Orthophosphorus - EPA 365.3	Hardness as CaCO3-SM 2340B	Copper, dissolved - EPA 200.8	Copper, total - EPA 200.8	Zinc, dissolved - EPA 200.8	Zinc, total - EPA 200.8	Particle size Distribution – Mod. ASTM 3977 – TAPE (2011)
FB-IN	4/10/13	11:20	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	
FB-OUT	"	"	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	

ANALYSES REQUESTED

Notes: Use churn splitter to apportion large samples into smaller bottles.

RELINQUISHED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:	RECEIVED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:
Dan Bennett / Herrera		4/11/13 1235	SHIELDS / Herrera		4/11/13 1235

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

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CASE FILE NUMBER:	**HER078-88**	**PAGE 1**	
REPORT DATE:	**4/23/13 REVISED 06/11/13**		
DATE SAMPLED:	**04/10/13**	**DATE RECEIVED:**	**04/11/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

CASE NARRATIVE

Two water samples were delivered to the laboratory in good condition. The samples were analyzed according to the chain of custody. Samples for total metals were digested according to EPA procedures. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages. The report has been revised to reflect the reanalysis of FB-OUT for Total-P.

SAMPLE DATA

SAMPLE ID	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)
FB-IN	0.044	0.013	15.7	38
FB-OUT	0.034	0.014	18.8	4.8

	DISSOLVED METALS		TOTAL METALS	
SAMPLE ID	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
FB-IN	0.0028	<0.005	0.0040	<0.005
FB-OUT	0.0025	<0.005	0.0030	<0.005

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LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

REPORT DATE: **4/23/13 REVISED 06/11/13**

DATE SAMPLED: **04/10/13** **DATE RECEIVED:** **04/11/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

QC PARAMETER	TOTAL-P (mg/L)	SRP (mg/L)	HARDNESS (mgCaCO3/L)	TSS (mg/L)
METHOD	EPA 365.1	EPA 365.1	SM18 2340C	SM18 2540D
DATE ANALYZED	04/11/13	04/12/13	04/17/13	04/17/13
DETECTION LIMIT	0.002	0.001	2.00	0.50
DUPLICATE				
SAMPLE ID	BATCH	BATCH	FB-OUT	BATCH
ORIGINAL	0.019	0.001	18.8	56
DUPLICATE	0.018	0.001	18.4	56
RPD	5.41%	0.00%	2.15%	0.00%
SPIKE SAMPLE				
SAMPLE ID	BATCH	BATCH	FB-OUT	
ORIGINAL	0.019	0.001	18.8	
SPIKED SAMPLE	0.071	0.020	37.3	
SPIKE ADDED	0.050	0.020	20.0	
% RECOVERY	104.00%	95.00%	92.50%	NA
QC CHECK				
FOUND	0.090	0.032	37.5	9.4
TRUE	0.090	0.033	40.0	10
% RECOVERY	100.00%	98.31%	93.75%	94.00%
BLANK	<0.002	<0.001	<2.00	<0.50

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES
3927 AURORA AVENUE NORTH, SEATTLE, WA 98103
PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: **HER078-88** **PAGE 3**
REPORT DATE: **4/23/13 REVISED 06/11/13**
DATE SAMPLED: **04/10/13** **DATE RECEIVED:** **04/11/13**
FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

	DISSOLVED METALS		TOTAL METALS	
QC PARAMETER	COPPER (mg/L)	ZINC (mg/L)	COPPER (mg/L)	ZINC (mg/L)
METHOD	EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8
DATE ANALYZED	04/15/13	04/15/13	04/15/13	04/15/13
DETECTION LIMIT	0.0010	0.005	0.0010	0.005
DUPLICATE				
SAMPLE ID	FB-OUT	FB-OUT	FB-IN	FB-IN
ORIGINAL	0.0025	<0.005	0.0040	<0.005
DUPLICATE	0.0023	<0.005	0.0035	<0.005
RPD	8.33%	NC	13.33%	NC
SPIKE SAMPLE				
SAMPLE ID	FB-OUT	FB-OUT	FB-IN	FB-IN
ORIGINAL	0.0025	<0.005	0.0040	<0.005
SPIKED SAMPLE	0.0564	0.058	0.0556	0.060
SPIKE ADDED	0.0500	0.050	0.0500	0.050
% RECOVERY	107.80%	116.00%	103.20%	120.00%
QC CHECK				
FOUND	0.0533	0.053	0.0533	0.053
TRUE	0.0500	0.050	0.0500	0.050
% RECOVERY	106.60%	106.00%	106.60%	106.00%
BLANK	<0.0010	<0.005	<0.0010	<0.005

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
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OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

SUBMITTED BY:

Damien Gadomski

Damien Gadomski
Project Manager

5/12/2013

HER079.02

HERRERA ENVIRONMENTAL CONSULTANTS
2200 Sixth Avenue, Suite 1100
Seattle, Washington 98121
(206) 441-9080
FAX (206) 441-9108

CHAIN OF CUSTODY RECORD

PROJECT NAME: Filterra-Bellingham	PROJECT NUMBER: 10-04715-003	CLIENT: Herrera Environmental Consultants
REPORT TO: Dylan Ahearn		COPY TO:
SAMPLED BY: Dan Bennett		DELIVERY METHOD: Hand/ in cooler with ice
LABORATORY: Aquatic Research	REQUESTED COMPLETION DATE:	TOTAL # OF CONTAINERS: 2
LAB USE:		

SAMPLE ID:	DATE:	TIME:	SAMPLE DESCRIPTION	# OF CONTAINERS:	ANALYSES REQUESTED: Total Suspended Solids- SM 2540D	Total phosphorus - EPA 365.3	Orthophosphorus - EPA 365.3	Hardness as CaCO3-SM 2340B	Copper, dissolved - EPA 200.8	Copper, total - EPA 200.8	Zinc, dissolved - EPA 200.8	Zinc, total - EPA 200.8	Particle size Distribution – Med. ASTM-3977 – TAPE (2011)
FB-IN	~~3-13~~ 5-12-13	7:51	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	
FB-OUT	5-12-13	7:54	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	

Notes: Use churn splitter to apportion large samples into smaller bottles.

RELINQUISHED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:	RECEIVED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:
	BENNETT	3-14-13 1600	SCHLICHTING/HERRERA		5/14/13 1600

IEH - AQUATIC RESEARCH

LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	**HER079-02**		**PAGE 1**
REPORT DATE:	**05/30/13**		
DATE SAMPLED:	**05/12/13**	**DATE RECEIVED:**	**05/14/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

CASE NARRATIVE

Two water samples were prepared in the laboratory. The samples were analyzed according to the chain of custody. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages.

SAMPLE DATA

SAMPLE ID	TOTAL-P (mg/L)	TSS (mg/L)
FB-IN	0.293	138
FB-OUT	0.090	47

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LABORATORY & CONSULTING SERVICES

3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: **HER079-02**

REPORT DATE: **05/30/13**

DATE SAMPLED: **05/12/13** **DATE RECEIVED:** **05/14/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

QC PARAMETER	TOTAL-P (mg/L)	TSS (mg/L)
METHOD	EPA 365.1	SM18 2540D
DATE ANALYZED	05/15/13	05/17/13
DETECTION LIMIT	0.002	0.50
DUPLICATE		
SAMPLE ID	BATCH	BATCH
ORIGINAL	0.019	47
DUPLICATE	0.018	46
RPD	5.41%	2.15%
SPIKE SAMPLE		
SAMPLE ID	BATCH	
ORIGINAL	0.019	
SPIKED SAMPLE	0.070	
SPIKE ADDED	0.050	
% RECOVERY	102.00%	NA
QC CHECK		
FOUND	0.091	9.7
TRUE	0.090	10
% RECOVERY	101.11%	97.00%
BLANK	<0.002	<0.50

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

SUBMITTED BY:

Damien Gadomski

Damien Gadomski
Project Manager

5/21/2013

HER079.07

HERRERA ENVIRONMENTAL CONSULTANTS
2200 Sixth Avenue, Suite 1100
Seattle, Washington 98121
(206) 441-9080
FAX (206) 441-9108

CHAIN OF CUSTODY RECORD

PROJECT NAME:	PROJECT NUMBER:	CLIENT:
Filterra-Bellingham	10-04715-003	Herrera Environmental Consultants
REPORT TO: Dylan Ahearn		COPY TO:
SAMPLED BY: Dan Bennett		DELIVERY METHOD: Hand/ in cooler with ice
LABORATORY: Aquatic Research	REQUESTED COMPLETION DATE:	TOTAL # OF CONTAINERS: 2

LAB USE:

SAMPLE ID:	DATE:	TIME:	SAMPLE DESCRIPTION	# OF CONTAINERS:	Total Suspended Solids- SM 2540D	Total phosphorus - EPA 365.3	Orthophosphorus - EPA 365.3	Hardness as CaCO3- SM 2340B	Copper, dissolved - EPA 200.8	Copper, total - EPA 200.8	Zinc, dissolved - EPA 200.8	Zinc, total - EPA 200.8	Particle size Distribution – Mod. ASTM 3977 – TAPE (2011)	SRP
FB-IN	5/22/13	0735 1431	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	X	X
FB-OUT	5/22/13	0735 1431	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	X	X

ANALYSES REQUESTED

Notes: Use churn splitter to apportion large samples into smaller bottles.

RELINQUISHED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:	RECEIVED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:
/ Herrera		5/22 1645	C. HIGGINSON / KHE		5/22 1645

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CASE FILE NUMBER:	**HER079-07**	**PAGE 1**	
REPORT DATE:	**05/30/13**		
DATE SAMPLED:	**05/22/13**	**DATE RECEIVED:**	**05/22/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

CASE NARRATIVE

Two water samples were prepared in the laboratory. The samples were analyzed according to the chain of custody. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages.

SAMPLE DATA

SAMPLE ID	TOTAL-P (mg/L)	SRP (mg/L)	TSS (mg/L)
FB-IN	0.069	0.012	30
FB-OUT	0.032	0.012	5.3

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PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: **HER079-07**
REPORT DATE: **05/30/13**
DATE SAMPLED: **05/22/13** **DATE RECEIVED:** **05/22/13**
FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

QC PARAMETER	TOTAL-P (mg/L)	SRP (mg/L)	TSS (mg/L)
METHOD	EPA 365.1	EPA 365.1	SM18 2540D
DATE ANALYZED	05/24/13	05/24/13	05/28/13
DETECTION LIMIT	0.002	0.001	0.50
DUPLICATE			
SAMPLE ID	BATCH	BATCH	BATCH
ORIGINAL	0.020	0.013	2060
DUPLICATE	0.020	0.014	1980
RPD	0.00%	7.41%	3.96%
SPIKE SAMPLE			
SAMPLE ID	BATCH	BATCH	
ORIGINAL	0.020	0.013	
SPIKED SAMPLE	0.070	0.033	
SPIKE ADDED	0.050	0.020	
% RECOVERY	100.00%	100.00%	NA
QC CHECK			
FOUND	0.091	0.034	9.6
TRUE	0.090	0.033	10
% RECOVERY	101.11%	103.03%	96.00%
BLANK	<0.002	<0.001	<0.50

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

SUBMITTED BY:

Damien Gadomski
Project Manager

5/22/2013

HERO79.09

HERRERA ENVIRONMENTAL CONSULTANTS
2200 Sixth Avenue, Suite 1100
Seattle, Washington 98121
(206) 441-9080
FAX (206) 441-9108

CHAIN OF CUSTODY RECORD

Page ___ of ___

PROJECT NAME: Filterra-Bellingham	PROJECT NUMBER: 10-04715-003	CLIENT: Herrera Environmental Consultants
REPORT TO: Dylan Ahearn		COPY TO:
SAMPLED BY: Dan Bennett		DELIVERY METHOD: Hand/ in cooler with ice
LABORATORY: Aquatic Research	REQUESTED COMPLETION DATE:	TOTAL # OF CONTAINERS: 3
LAB USE:		

SAMPLE ID:	DATE:	TIME:	SAMPLE DESCRIPTION	# OF CONTAINERS:	ANALYSES REQUESTED: Total Suspended Solids- SM 2540D	Total phosphorus - EPA 365.3	Orthophosphorus - EPA 365.3	Hardness as CaCO3- SM 2340B	Copper, dissolved - EPA 200.8	Copper, total - EPA 200.8	Zinc, dissolved - EPA 200.8	Zinc, total - EPA 200.8	Particle size Distribution – Mod. ASTM 3977 – TAPE (2011)
FB-IN	5-22-13	20:28	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	
FB-OUT	5-22-13	20:39	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X	

Notes: Use churn splitter to apportion large samples into smaller bottles.

RELINQUISHED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:	RECEIVED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:
/ Herrera	DANBENNETT		S-MIRSOS KMK		5/23/13 1545

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CASE FILE NUMBER:	**HER079-09**		**PAGE 1**
REPORT DATE:	**06/03/13**		
DATE SAMPLED:	**05/22/13**	**DATE RECEIVED:**	**05/23/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

CASE NARRATIVE

Two water samples were prepared in the laboratory. The samples were analyzed according to the chain of custody. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages.

SAMPLE DATA

SAMPLE ID	TOTAL-P (mg/L)	SRP (mg/L)	TSS (mg/L)
FB-IN	0.239	0.011	122
FB-OUT	0.033	0.013	6.8

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CASE FILE NUMBER: **HER079-09**
REPORT DATE: **06/03/13**
DATE SAMPLED: **05/22/13** **DATE RECEIVED:** **05/23/13**
FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

QC PARAMETER	TOTAL-P (mg/L)	SRP (mg/L)	TSS (mg/L)
METHOD	EPA 365.1	EPA 365.1	SM18 2540D
DATE ANALYZED	06/03/13	05/24/13	05/28/13
DETECTION LIMIT	0.002	0.001	0.50
DUPLICATE			
SAMPLE ID	BATCH	FB-OUT	BATCH
ORIGINAL	0.009	0.013	2060
DUPLICATE	0.009	0.014	1980
RPD	0.00%	7.41%	3.96%
SPIKE SAMPLE			
SAMPLE ID	BATCH	FB-OUT	
ORIGINAL	0.009	0.013	
SPIKED SAMPLE	0.058	0.033	
SPIKE ADDED	0.050	0.020	
% RECOVERY	98.00%	100.00%	NA
QC CHECK			
FOUND	0.092	0.034	9.6
TRUE	0.090	0.033	10
% RECOVERY	102.22%	103.03%	96.00%
BLANK	<0.002	<0.001	<0.50

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

SUBMITTED BY:

Damien Gadomski
Project Manager

6/12/2013

HERO79.13

HERRERA ENVIRONMENTAL CONSULTANTS
2200 Sixth Avenue, Suite 1100
Seattle, Washington 98121
(206) 441-9080
FAX (206) 441-9108

CHAIN OF CUSTODY RECORD

PROJECT NAME: Filterra-Bellingham	PROJECT NUMBER: 10-04715-003	CLIENT: Herrera Environmental Consultants
REPORT TO: Dylan Ahearn		COPY TO:
SAMPLED BY: Dan Bennett		DELIVERY METHOD: Hand/ in cooler with ice
LABORATORY: Aquatic Research	REQUESTED COMPLETION DATE:	TOTAL # OF CONTAINERS: 3
LAB USE:		

SAMPLE ID:	DATE:	TIME:	SAMPLE DESCRIPTION	# OF CONTAINERS:	ANALYSES REQUESTED: Total Suspended Solids- SM 2540D	Total phosphorus - EPA 365.3	Orthophosphorus - EPA 365.3	Hardness as CaCO3- SM 2340B	Copper, dissolved - EPA 200.8	Copper, total - EPA 200.8	Zinc, dissolved - EPA 200.8	Zinc, total - EPA 200.8	Particle size Distribution (PSD) ASTM D977 (TAPE (2011)	SRP
FB-IN	6-12-13	1428	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X		X
FB-OUT		1428	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X		X
FB-QA-3		1429	Stormwater Composite in 20-L HDPE bottle	1	X	X	X	X	X	X	X	X		X
FB-IN-B		2000	Stormwater Composite in 20-L HDPE bottle	1		X	X		X	X	X	X		X
FB-OUT-B		2000	Stormwater Composite in 20-L HDPE bottle	1		X	X		X	X	X	X		X
									DIS Cu		DIS Zn			

Notes: Use churn splitter to apportion large samples into smaller bottles.

please split FB-IN 14:28 to create FB QA-3 (duplicate sample)

Amelia Sytsma 06-13-13

E. Nielsen 6/13/13 1310

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3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	**HER079-13**	**PAGE 1**	
REPORT DATE:	**06/25/13**		
DATE SAMPLED:	**06/12/13**	**DATE RECEIVED:**	**06/13/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

CASE NARRATIVE

Five water samples were delivered to the laboratory in good condition. The samples were analyzed according to the chain of custody. Samples for total metals were digested according to EPA procedures. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages.

SAMPLE DATA

SAMPLE ID	TOTAL-P (mg/L)	SRP (mg/L)	TSS (mg/L)
FB-IN	0.084	0.001	30
FB-OUT	0.056	0.022	2.8
FB-QA-3	0.086	0.002	29
FB-IN-B	<0.002	<0.001	
FB-OUT-B	<0.002	<0.001	

	DISSOLVED METALS	
SAMPLE ID	COPPER (mg/L)	ZINC (mg/L)
FB-IN-B	<0.0010	<0.005
FB-OUT-B	<0.0010	<0.005

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PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: **HER079-13**

REPORT DATE: **06/25/13**

DATE SAMPLED: **06/12/13** **DATE RECEIVED:** **06/13/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

QC PARAMETER	TOTAL-P (mg/L)	SRP (mg/L)	TSS (mg/L)
METHOD	EPA 365.1	EPA 365.1	SM18 2540D
DATE ANALYZED	06/24/13	06/14/13	06/19/13
DETECTION LIMIT	0.002	0.001	0.50
DUPLICATE			
SAMPLE ID	FB-OUT-B	FB-OUT-B	FB-QA-3
ORIGINAL	<0.002	<0.001	29
DUPLICATE	<0.002	<0.001	30
RPD	NC	NC	3.39%
SPIKE SAMPLE			
SAMPLE ID	FB-OUT-B	FB-OUT-B	
ORIGINAL	<0.002	<0.001	
SPIKED SAMPLE	0.051	0.021	
SPIKE ADDED	0.050	0.020	
% RECOVERY	102.00%	105.00%	NA
QC CHECK			
FOUND	0.090	0.033	9.8
TRUE	0.090	0.033	10
% RECOVERY	100.00%	100.00%	98.00%
BLANK	<0.002	<0.001	<0.50

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

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LABORATORY & CONSULTING SERVICES
3927 AURORA AVENUE NORTH, SEATTLE, WA 98103
PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: **HER079-13** **PAGE 3**
REPORT DATE: **06/25/13**
DATE SAMPLED: **06/12/13** **DATE RECEIVED:** **06/13/13**
FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

	DISSOLVED METALS	
QC PARAMETER	COPPER (mg/L)	ZINC (mg/L)
METHOD	EPA 200.8	EPA 200.8
DATE ANALYZED	06/20/13	06/20/13
DETECTION LIMIT	0.0010	0.005
DUPLICATE		
SAMPLE ID	BATCH	BATCH
ORIGINAL	0.0047	<0.005
DUPLICATE	0.0049	<0.005
RPD	4.17%	NC
SPIKE SAMPLE		
SAMPLE ID	BATCH	BATCH
ORIGINAL	0.0047	<0.005
SPIKED SAMPLE	0.0547	0.054
SPIKE ADDED	0.0500	0.050
% RECOVERY	100.00%	108.00%
QC CHECK		
FOUND	0.0485	0.047
TRUE	0.0500	0.050
% RECOVERY	97.00%	94.00%
BLANK	<0.0010	<0.005

RPD = RELATIVE PERCENT DIFFERENCE.
NA = NOT APPLICABLE OR NOT AVAILABLE.
NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

SUBMITTED BY:

Damien Gadomski
Project Manager

6/20/2013

HERO79.16

HERRERA ENVIRONMENTAL CONSULTANTS
2200 Sixth Avenue, Suite 1100
Seattle, Washington 98121
(206) 441-9080
FAX (206) 441-9108

CHAIN OF CUSTODY RECORD

Page ___ of ___

PROJECT NAME:	PROJECT NUMBER:	CLIENT:
~~Redmond Biofiltration Swale~~ FIRCA	~~09-04540-000-~~ 10-04775-03	Herrera Environmental Consultants
REPORT TO: Dylan Ahearn		COPY TO:
SAMPLED BY:		DELIVERY METHOD: Hand/ in cooler with ice
LABORATORY: ~~Aquatic Research~~	REQUESTED COMPLETION ~~DATE~~:	TOTAL # OF CONTAINERS:
LAB USE:		

SAMPLE ID:	DATE:	TIME:	SAMPLE DESCRIPTION	# OF CONTAINERS:	ANALYSES REQUESTED: Total phosphorus - EPA 365.3	Orthophosphorus - EPA 365.3	~~Dissolved Metals (Cd, Cu, Pb, Hg, Zn) – EPA 200.8~~	~~Total Metals (Cd, Cu, Pb, Hg, Zn) – EPA 200.8~~	TSS
~~RBS185-IN-QA~~				1	X	X	X	X	X
~~RBS185-OUT-QA~~				1	X	X	X	X	X
FB-IN	6-20-13	400	SW	1	X	X			X
FB-OUT	6-20-13	400	SW	1	X	X			X

Notes: Use churn-splitter to apportion composite sample into smaller bottles.

RELINQUISHED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:	RECEIVED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:
DAN BENNETT, HERRERA		6-21-13 900	Olga Anaiaryan		6-21-13 9:00
RELINQUISHED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:	RECEIVED BY (NAME/CO.):	SIGNATURE:	DATE/TIME:

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PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER:	**HER079-13**	**PAGE 1**	
REPORT DATE:	**06/28/13**		
DATE SAMPLED:	**06/20/13**	**DATE RECEIVED:**	**06/21/13**

FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

CASE NARRATIVE

Two water samples were delivered to the laboratory in good condition. The samples were analyzed according to the chain of custody. No difficulties were encountered in the preparation or analysis of these samples. Sample data follows while QA/QC data is contained on subsequent pages.

SAMPLE DATA

SAMPLE ID	TOTAL-P (mg/L)	SRP (mg/L)	TSS (mg/L)
FB-IN	0.062	0.020	25
FB-OUT	0.048	0.028	3.0

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LABORATORY & CONSULTING SERVICES
3927 AURORA AVENUE NORTH, SEATTLE, WA 98103
PHONE: (206) 632-2715 FAX: (206) 632-2417

CASE FILE NUMBER: **HER079-13** **PAGE 2**
REPORT DATE: **06/28/13**
DATE SAMPLED: **06/20/13** **DATE RECEIVED:** **06/21/13**
FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

QC PARAMETER	TOTAL-P (mg/L)	SRP (mg/L)	TSS (mg/L)
METHOD	EPA 365.1	EPA 365.1	SM18 2540D
DATE ANALYZED	06/24/13	06/21/13	06/25/13
DETECTION LIMIT	0.002	0.001	0.50
DUPLICATE			
SAMPLE ID	BATCH	FB-OUT	BATCH
ORIGINAL	0.008	0.028	40
DUPLICATE	0.008	0.028	36
RPD	0.00%	0.00%	10.53%
SPIKE SAMPLE			
SAMPLE ID	BATCH	FB-OUT	
ORIGINAL	0.008	0.028	
SPIKED SAMPLE	0.061	0.048	
SPIKE ADDED	0.050	0.020	
% RECOVERY	106.00%	100.00%	NA
QC CHECK			
FOUND	0.090	0.033	9.5
TRUE	0.090	0.033	10
% RECOVERY	100.00%	100.00%	95.00%
BLANK	<0.002	<0.001	<0.50

RPD = RELATIVE PERCENT DIFFERENCE.
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NC = NOT CALCULABLE DUE TO ONE OR MORE VALUES BEING BELOW THE DETECTION LIMIT.
OR = RECOVERY NOT CALCULABLE DUE TO SPIKE SAMPLE OUT OF RANGE OR SPIKE TOO LOW RELATIVE TO SAMPLE CONCENTRATION.

SUBMITTED BY:

Damien Gadomski
Project Manager