APPENDIX L

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



9/18/2012



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Aquatic Research Incorporated 40 3927 Aurora Ave. N / Seattle, WA 98103 / (206) 632-2715

HER078.08

CHAIN-OF-CUSTOD	Y RECORD	SHEET OF PROJECT ID: Filesco				
SAMPLING DATE:	9-19	CASE FILE N				
SAMPLERS:		Vin	Bennett		DATA RECO	
SAMPLE INFORMATION		<u></u>				
	5	Ct. 21		AMETERS		<i>n</i> .
sample ID FB-IN	DATE/TIME	Cortu-D S Australia Multi Australia Multi				B O T T # NOTES
FB-art	9-13-1211.70 V	NVV				2
Relinquished By	NEIA-	Date/Time	9-1412 15:45	Received By	zson)	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 ANALYS	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

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

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



CASE FILE NUMBER:	HER078-08	PAG	E 2					
REPORT DATE:	10/02/12							
DATE SAMPLED:	09/18/12	DATE RECEIVED:	09/18/12					
FINAL REPORT, LABORATORY ANA	FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER							
SAMPLES FROM HERRERA ENVIRO	SAMPLES FROM HERRERA ENVIRONMENTAL							

QA/QC DATA WATER

QC PARAMETER	TOTAL-P	SRP
	(mg/L)	(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.



CASE FILE NUMBER: HER078-08 PAGE 3 **REPORT DATE:** 10/02/12 DATE SAMPLED: 09/18/12 **DATE RECEIVED:** FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

	DISSOLV	ED METALS	TOTAL	METALS		
QC PARAMETER	COPPER	ZINC	COPPER	ZINC		
	(mg/L)	(mg/L)	(mg/L)	(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		

RPD = RELATIVE PERCENT DIFFERENCE

ND - NILATIVE FIGURE TO DIFFERENCE. NA = NOT APPLICABLE ON OT 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 Hademohr

Damien Gadomski Project Manager

09/18/12

1/8/2013



HER078.42

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2200 Sixth Avenue, Suite 1100 Seattle, Washington 98121 (206) 441-9080 FAX (206) 441-9108 ۶,

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CHAIN OF CUSTODY RECORD

Page ____ of ____

PROJECT NAME:		T NUMBER:	CLIENT:			ANALYSES REQUESTED						·····									
Filterra-Bellingham	10-04715	-003	Herrera Environmental Con	nsultants		~								1		,				-	
REPORT TO: Dylan Ahearn			COPY TO:			4 2540I	53	53 L	40B	8.0		~		WLSV							
SAMPLED BY: Dan Benneft			DELIVERY METHOD: Hand/ in cooler with ice			lids- SN	36 36	36 A 36	-SM 23	EPA 2(200.8	A 200.1	0.8	- noiti							l
LABORATORY: Aquatic Research		REC DA	UESTED COMPLETION T	OTAL # OI AINERS: 2		nded So	ionus - F	horus - H	CaCO3	olved -	I - EPA	/ed - EP	EPA 20	Distrib							
LAB USE:	······			Ц	OF CON-	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 şize Diştribuțion - ASTM 3977							
SAMPLE ID:	DATE:	TIME:	SAMPLE DESCRIPTION		AINERS:	Tota	Tot	PFO	Har	ပိ	Cop	Zin	Zür	Part 397							
FB-IN	01/09/13		tormwater Composite in 20-L F ottle	HDPE	1	x	x	х	x	х	Х	х	x	x							
FB-OUT	01/09/13	00.72	tormwater Composite in 20-L F ottle	HDPE	1	x	x	х	x	x	х	х	х	x							
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Notes: Use churn spli	tter to apportion	large samples in	to smaller bottles.	, ,,l	·	L <u></u>	<u> </u>	<u></u>	£ <u></u>		L			.!	• 1		• <u> </u>	L			•
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AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AUROR	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 ANALY	SIS OF SELECTED PARAMET	TERS 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

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

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



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	SRP	HARDNESS	TSS
	(mg/L)	(mg/L)	(mgCaCO3/L)	(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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CASE FILE NUMBER: HER078-42 PAGE 3 **REPORT DATE:** 01/23/13 DATE SAMPLED: 01/09/13 **DATE RECEIVED:** FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

	DISSOLV	ED METALS	TOTAL	METALS
QC PARAMETER	COPPER	ZINC	COPPER	ZINC
	(mg/L)	(mg/L)	(mg/L)	(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

ND - NILATIVE FIGURE TO DIFFERENCE. NA = NOT APPLICABLE ON OT 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 Hademohr

Damien Gadomski Project Manager

01/09/13



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.

Tal May

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

Page 1 of

V7 44

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

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AMPLE INFORMA	TION																		
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Miscellaneous Not	tes (Hazardous N	atenais, Quic	is contrai			ź													

AZAA: 09905

Analytical Resources, Incorporated Analytical Chemists and Consultants	Cooler Rece	pipt Fo	rm	
Analytical Chemists and Consultants			\mathbf{V}	
A			•	
ARI Client:AQUCITIC	Project Name:			
COC No(s): NA	Delivered by: Fed-Ex UPS Courie			
Assigned ARI Job No: V240	Tracking No: 943766/	1501685	29	NA
Preliminary Examination Phase:	8 K (а	\sim
Were intact, properly signed and dated custody seals attached to the	ne outside of to cooler?	. Y	ES	(NO)
Were custody papers included with the cooler?		Ć	ES	NO
Were custody papers properly filled out (ink, signed, etc.)		C	'ES)	NO
Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemi				<u> </u>
If cooler temperature is out of compliance fill out form 00070F		Temp Gun ID#	90877	952
	_Date:Time:	1105		
	nd attach all shipping documents		-	
Log-In Phase:				
and the second sec		·*	YES	ND.
Was a temperature blank included in the cooler?	Wet Ice Gel Backs Baggies Foam	Plack Dapar O		CNO
Wildt kind of publicity interest		NA		NO
Was sufficient ice used (if appropriate)?			YES	(10)
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			YES	NO
Did all bottle labels and tags agree with custody papers?			YES	NO
Were all bottles used correct for the requested analyses?		KAD	YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation?) Were all VOC vials free of air bubbles?	servation sheet, excluding voos)	M	YES	NO
		0	YES)	NO
Was sufficient amount of sample sent in each bottle? Date VOC Trip Blank was made at ARI		MA)		
		0	Split by:	
Was Sample Split by ARI : MA YES Date/Time:		111	45	
Samples Logged by: Date:	11-3 Time:	19	45	
	r of discrepancies or concerns **			
Sample ID on Bottle Sample ID on COC	Sample ID on Bottle	Sampl	le ID on COC	>
			*	
Additional Notes, Discrepancies, & Resolutions:				
i.				
100 100		12		
By: Date: Small Air Bubbles Peabubbles' LARGE Air Bubbles	Small → "sm"			,
Small Air Bubbles Peabubbles' LARGE Air Subbles 2mm 2-4 mm > 4 mm	Peabubbles → "pb"		8	See a
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Cooler Receipt Form

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Revision 014

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Sample ID Cross Reference Report



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

Printed 01/11/13 Page 1 of 1

VZHH: 0000H



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.
- 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: Calaboration Reviewed by:

otechnical Division Manager

Date: 1/15/13

Aquatic Research

HERO 78-42

Sediment Concentration per Size Fraction

ASTM D3977 Method C/ TAPE Appendix F

.

	Concentration of (Concentration of Coarse Fractions	Concentration of Total Sample	Total Sample	Date	Analysis
Sample Identification	(mg/L)	J/L)	<250µm Fraction	Concentration	Sampled	Date
	>500 µm	>250 µm	(mg/L)	(mg/L)		
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	1/9/2013 1/12/2013

VZHH:00006

VZ44

Aquatic Research HERO 78-42

Concentration in Each Size Fraction (mg/L)

FB-IN 6.93 4.28 0.00 0.00 17.56 FB-OUT 5.00 3.47 0.00 0.00 0.00	Size Range (µm)	>500	500-250	250-125	125-62.5	62.5-3.9	3.9-1	v	
6.93 4.28 0.00 0.00 5.00 3.47 0.00 0.00									_
5.00 3.47 0.00 0.00	FR-IN	6.93	4.28	00.00	0.00	17.56	2.28	1.28	
5.00 3.47 0.00 0.00		0010						1	
	FB-OUT	5.00	3.47	0.00	0.00	0.00	2.11	5.33	,

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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	₹
				0		1	
FB-IN	21.4	13.2	0.0	0.0	54.3	1.1	4.0
						0.01	
EB OI IT	314	218	000	0.0	0.0	13.3	33.0
		2					

VZ44

1/23/2013



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

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CHAIN OF CUSTODY RECORD

Page ___ of ___

HERO78.45

PROJECT NAME:	PROJEC	PROJECT NUMBER:	CLIENT:				8		A	VALYSE	ANALYSES REQUESTED	TED			1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1		1000
Filterra-Bellingham	10-04715-003	5-003	Herrera Environmental Consultants											9			_
REPORT TO: Dvlan Aheam			COPY TO:		5240D			8.0					-				
SAMPLED BY:			DELIVERY METHOD: Hand/in cooler with ice		MIS -spi			200 Y 200			A – noit						
LABORATORY:			TOTA	L# OF CON-	ilo2.bə			H - bəvl			udintei(
Aquatic Kesearch LAB USE:				4	нıəqsu2.	oudsoudo oudsoud) SR SSƏU	er, disso	हा, राध्य	avlossib 2 - Igiot ,	L əzis ələ			.		a 144	
SAMPLE D:	DATE:	TIME:	SAMPLE DESCRIPTION	# OF CON- TAINERS:	IstoT	2		gqoJ		<u>.</u>	eine I						
FB-IN	1/23/2013	17:23	Stormwater Composite in 20-L HDPE bottle	1	×	x x	×	×	×	×	X						
FB-OUT	1/23/2013	17:23	Stormwater Composite in 20-L HDPE bottle	1	×	x x	×	×	×	×	X						
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Notes: Use churn spli	tter to apportion	ı large sample	Notes: Use churn splitter to apportion large samples into smaller bottles.	2											j.		
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RELINQUISHED BY (NAME/CO.): .) A D.C D.C M.C.	((NAME/CO.):	SIGNATURA		DATE/TIME:	4:47	RECEIVE	RECEIVED BY (NAMÉ/CO.):	AME/CO		SIGNATURE	A A			PA	DATE/TIME:	ы м	
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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:	HER078-45	PAGE 1				
REPORT DATE:	02/14/13					
DATE SAMPLED:	01/23/13	DATE RECEIVED:	01/24/13			
FINAL REPORT, LABORATORY ANALYS	SIS OF SELECTED PARAMET	ERS 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

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

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



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	SRP	HARDNESS	TSS
	(mg/L)	(mg/L)	(mgCaCO3/L)	(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.

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.



CASE FILE NUMBER:	P	AGE 3							
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

	DISSOLV	ED METALS	TOTAL	METALS			
QC PARAMETER	COPPER	ZINC	COPPER	ZINC			
	(mg/L)	(mg/L)	(mg/L)	(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 Hademon

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.

Mal D. Can

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

Enclosures

cc: file WB44

MDH/mdh

Page 1 of 7

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Printed Name																	
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Mine II	otes (Hazardous	Materials, Quic	k turn-	around ti	me, etc	c. <u>):</u>											
Wiscellaneous N	oles (nazaluous	instanting state															

	c es, Incorporated ts and Consultants	Cooler Reco	eipt Fo	rm	
ARI Client: <u>Aquatic</u> COC No(s): Assigned ARI Job No: Preliminary Examination Phase:		Project Name: Delivered by Fed-Ex UPS Cour Tracking No:437661	ier Hand Delivere	ed Other:_	
Were intact, properly signed and Were custody papers included w Were custody papers properly fill	dated custody seals attached to th ith the cooler? ed out (ink, signed, etc.) ecommended 2.0-6.0 °C for chemis mpliance fill out form 00070F	stry)	Temp Gun ID#:		NO NO
	Complete custody forms an	d attach all shipping documents			
What kind of packing material Was sufficient ice used (if approp Were all bottles sealed in individ Did all bottles arrive in good com Were all bottle labels complete a Did the number of containers list Did all bottle labels and tags agr	oriate)? ual plastic bags? dition (unbroken)? nd legible?	Net lice Gel Packs Baggies Foam	Block Paper Oth NA	YES YES YES YES YES YES YES	NO NO NO NO NO
Were all VOC vials free of air bu Was sufficient amount of sample	require preservation? (attach prese bbles? e sent in each bottle? at ARI		E B	YES YES	NO NO NO
	A YES Date/Time:			Split by:	
Samples Logged by:	TiDate:	1-28-13 Time: of discrepancies or concerns **	1102		
Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample	ID on COC	

Additional Notes, Discrepancies, & Resolutions: No deteoritime Sempled By: Date: 1-28-13

By: 5 Date: 1-6-8-13	
Small Air Bubbles Peabubbles LARGE Air Bubbles	Small → "sm"
-2mm >4 mm	Peabubbles \rightarrow "pb"
	Large \rightarrow "lg"
	Headspace \rightarrow "hs"

Revision 014

bottles.

en

Sample ID Cross Reference Report



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

Printed 01/28/13 Page 1 of 1



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: Geotechnical Laboratory Manager

Reviewed by: Katheine OBucharan Lead Technician

Date: $\frac{2/5}{13}$ Date: 02/11/2013

Aquatic Research

HERO78-45

Sediment Concentration per Size Fraction

ASTM D3977 Method C/ TAPE Appendix F

ample Date Analysis tration Samulard Date		8 1/23/2013 1/29/2013	0 1/23/2013 1/29/2013
of Total Sample ion Concentration	(mg/L)	7.68	5.50
Concentration of Total Sample <62.5µm Fraction Concentration	(mg/L)	4.31	5.30
Concentration of Coarse Fractions (mg/L)	250 - 62.5 µm	1.33	0.21
Concentration of (m	>250 µm	2.04	0.00
Sample Identification	•	FB-IN	FB-OUT

MBHH : 00006

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

	1	
< 3.9	56.2	96.3
62.5-3.9	0.0	0.0
250-62.5	17.3	3.7
>250	26.6	0.0
Size Range (µm)	FB-IN	FB-OUT

WB44

1/24/2013



|--|

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

CHAIN OF CUSTODY RECORD

Page of

HERO78.48

PROJECT NAMP.	ſ														1		
Filterra-Bellingham		icu numbel 15-003								A	IALYSES	ANALYSES REOUESTED	ED				
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SAMPLE ID:	DATE:	TIME	SAMPL	SAMPLE DESCRIPTION	TANHES.				obbet			aloini MT8					
FB-IN	1/24/2013	22:10	Stormwater Co	Stormwater Composite in 20-L HDPE	I		1	-	о ,	_	_[-	8d Bd			_		
FB-OUT	1/24/2013	22-10	Stormwater Co	Stormwater Composite in 20.1 HDBD		;	4	-	<	x v	x 						
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Notes: Use churn splitter to apportion large samples into smaller bottles.	ter to apportion la	rge samples i	into smaller bottle				_							_			[
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AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

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

CASE FILE NUMBER:	HER078-48	PAGE 1	l
REPORT DATE:	02/06/13		
DATE SAMPLED:	01/24/13	DATE RECEIVED:	01/25/13
FINAL REPORT, LABORATORY ANALYS	SIS OF SELECTED PARAMET	ERS ON WATER	
SAMPLES FROM HERRERA ENVIRONM	ENTAL		

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

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

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



CASE FILE NUMBER: HER078-48 PAGE 2 **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	SRP	HARDNESS	TSS
	(mg/L)	(mg/L)	(mgCaCO3/L)	(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.

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.



CASE FILE NUMBER:	HER078-48	PA	AGE 3
REPORT DATE:	02/06/13		
DATE SAMPLED:	01/24/13	DATE RECEIVED:	01/25/13
FINAL REPORT, LABORATORY A	NALYSIS OF SELECTED I	PARAMETERS ON WATER	
SAMPLES FROM HERRERA ENVI	RONMENTAL		

QA/QC DATA WATER

	DISSOLV	ED METALS	TOTAL	METALS
QC PARAMETER	COPPER	ZINC	COPPER	ZINC
	(mg/L)	(mg/L)	(mg/L)	(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

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 Hademon

Damien Gadomski Project Manager

1/26/2013



HERRERA ENVIRONMENTAL CONSULTANTS ſ

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

CHAIN OF CUSTODY RECORD

Page ____ of ____

HER078.49

PROJECT NAME:	PROJECT	PROJECT NUMBER:	CLIENT: -						ANALY	ANALYSES REQUESTED	STED			
Filterra-Bellingham	10-04715-003	003	Herrera Environmental Consultants											
REPORT TO: Dylan Ahearn			COPY TO:							.bolb		-	 	
SAMPLED BY:			DELIVERY METHOD: Usud/in cooler with ice						8.002 /				 	
L'AII DEIRICH									∀ d2				 	
LABORATORY: Aquatic Research	·	REQUE DATE:	STED COMPLETION	TOTAL # OF CON- TAINERS: 2					I - bəv					
LAB USE:				# OF CON-	aqzuZ la dzord la	dsoqdoq	ancess as	pper, tots	ossib ,o	c, total - ticle size TM 397				
SAMPLE ID:	DATE:	TIME:	SAMPLE DESCRIPTION	TAINERS:					μīΖ				 	
FB-IN	126-13	/4: 58 bo	Stormwater Composite in 20-L HDPE bottle	1	x x	×	x	×	×	. X				
FB-OUT	1-20-3		Stormwater Composite in 20-L HDPE bottle	1	x x	×	x x	x	x	×			 	
			-											
			-											
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Notes: Use churn splitter to apportion large samples into smaller bottles.	ter to apportion l	arge samples in	to smaller bottles.											
64 mariante	entry.			-					44	-				
RELINQUISHED BY (NAME/CO.):	(NAME/CO.):	SIGNATURE	H H	DATE/TIME:	RE	TEINEDB	RECEIVED BY (NAME/CO.):	;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;	SIGNATORE	PORE:	V \	[]	DATE/TIME	

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AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

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 ANALYS	SIS OF SELECTED PARAMET	ERS ON WATER	
SAMPLES FROM HERRERA ENVIRONM	ENTAL		

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

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

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



CASE FILE NUMBER: HER078-49 PAGE 2 **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

QC PARAMETER	TOTAL-P	SRP	HARDNESS	TSS
	(mg/L)	(mg/L)	(mgCaCO3/L)	(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

RPD = RELATIVE PERCENT DIFFERENCE.

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.



CASE FILE NUMBER:	HER078-49		PAGE	3
REPORT DATE:	02/06/13			
DATE SAMPLED:	01/26/13	DATE RECEIVED:		01/27/1
FINAL REPORT, LABORATORY ANALYS	SIS OF SELECTED PARAMET	FERS ON WATER		
SAMPLES FROM HERRERA ENVIRONM	ENTAL			

QA/QC DATA WATER

	DISSOLV	ED METALS	TOTAL	METALS
QC PARAMETER	COPPER	ZINC	COPPER	ZINC
	(mg/L)	(mg/L)	(mg/L)	(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 Hademon

Damien Gadomski Project Manager

13

1/28/2013



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

CHAIN OF CUSTODY RECORD

HERO78.50

CONSULTANTS		-									ANALY	SES REQ	ANALYSES REQUESTED					
PROJECT NAME:	PRO	PROJECT NUMBER:	JMBER:	CLIENT:		-	-											
Filterra-Bellingham	10-0	10-04715-003		Herrera Environmental Consultants		a		-				*1 					·	
REPORT TO:				COPY TO:							8.0							
Dylan Ahearn SAMPI RD RY:				DELIVERY METHOD:	-					8.005	007 V				. :			
Dan Renneft				Hand/ in cooler with ice					<u>.</u>	Z Vd	EP/							
LABORATORY:			Z A	REQUESTED COMPLETION TOTAL # OF CON- DATE: 2	OF CON-	S babna	smoqu	as CaC(oəv[ossi	II - Isto	- bavlo	A93 - I Tai Dist	1- <i>116</i>					-
Aquatic Research LAB USE:			 						,	pper, tu	ssib , or				_			
	С. 4 Т.D.	\vdash	mMB.	SAMPLE DESCRIPTION	# OF CON- TAINERS:			<u></u>		о <u>э</u>	ıΖ	-+		;				
SAMPLE UV: FR-IN	1-29-62			Stormwater Composite in 20-L HDPE	-	×	×	X	×	×	×	×					+	
				bottle Stormwater Composite in 20-L HDPE	-	×	××	x v	×	×	×	×				. –		
100-41	1-25-13	-		bottle			+	-					+			-	-	
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Notes: Use chum spi	mer to ap	putrion ta	Ardininge og 1				÷				¢.							
2 GLOUISHED BY (NAM)	Y NAME	VCO.):	SIGNAT	inger:	DATE/TIME			/ED BY	RECEIVED BY (NAME/CO.)	co.):	SIG	SIGNATURE	1 aug	1 de	l r		DATE/TI 1-29-1	3 (3)
Notes: Use chum splitter to apportion large samples into smaller bottles. こ イルひょうトチ RELINQUISHED BY (NAME/CO.): SIGNATURE:	itter to apl	portion lat	rge samples into	s into smaller bottles.	DATE/TIME			VED BY	(NAME/	CO.):	Sign 1		noen		1			DATE/TIME

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AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

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 ANALY	SIS OF SELECTED PARAMET	ERS 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

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

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



CASE FILE NUMBER: HER078-50 PAGE 2 **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	SRP	HARDNESS	TSS
	(mg/L)	(mg/L)	(mgCaCO3/L)	(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.

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CASE FILE NUMBER:	HER078-50		PAGE 3
REPORT DATE:	02/11/13		
DATE SAMPLED:	01/28/13	DATE RECEIVED:	01/29/
FINAL REPORT, LABORATORY ANALYS	SIS OF SELECTED PARAMET	TERS ON WATER	
SAMPLES FROM HERRERA ENVIRONM	ENTAL		

QA/QC DATA WATER

	DISSOLV	ED METALS	TOTAL	METALS
QC PARAMETER	COPPER	ZINC	COPPER	ZINC
	(mg/L)	(mg/L)	(mg/L)	(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

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SUBMITTED BY:

Damien Hademon

Damien Gadomski Project Manager

/13

1/29/2013



HERERA ENVIRONMENTAL CONSULTAINTS

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

CHAIN OF CUSTODY RECORD

Page of

HERO 78.52

Filterra-Bellineham		PROJECT NUMBER:	-	-					ANA	ANALYSES REOUESTED	EOUESTE	L.				
TIDISHITA		200-CI	Herrera Environmental Consultants	ts .		-	 									
REPORT TO: Dylan Ahearn			COPY TO:		(10 1 5)					<u> </u>	 F					
SAMPLED BY: Dan Bennett			DELIVERY METHOD: Hand/in cooler with ice	-	z ws -st	E.23E A E.23E A	0752 M	3.002 A			1102) (1102) (
LABORATORY: Aquatic Research			REQUESTED COMPLETION TOTAL#	TOTAL#OFCON-	oilo2 ba) II (
LAB USE:			TAUVER		puədsn				- Intol , bevloss	(a) - EP.	id əsis					
SAMPLE ID:	DATE:	TIME:	SAMPLE DESCRIPTION	# OF CON- TAINERS:	Z letoT						atticle MT2			<u>.</u>		
FB-IN	61-02-1	CU:V	Stormwater Composite in 20-L HDPE bottle	1	×	<u> </u>			-1°	╺┼╌	i 4					
FB-OUT	61-02-1	1. 1		-	×	×	×	×	+	×	+-			_		
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Notes: Use churn splitter to apportion large samples into smaller bottles.	er to apportion la	arge samples in	nto smaller bottles.			-							-			T
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RELINQUISHED BY (NAME/CO.):	NAME/CO.):	SIGNATURE										Q				
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AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

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

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 ANALY	SIS OF SELECTED PARAMET	TERS 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

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

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



CASE FILE NUMBER: HER078-52 PAGE 2 **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	SRP	HARDNESS	TSS
	(mg/L)	(mg/L)	(mgCaCO3/L)	(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

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CASE	FILE NUMBER:	HER078-52	F	PAGE 3
REPC	DRT DATE:	02/11/13		
DATE	E SAMPLED:	01/30/13	DATE RECEIVED:	01/30/13
FINAI	L REPORT, LABORATORY ANALY	SIS OF SELECTED PARAMET	FERS ON WATER	
SAMP	LES FROM HERRERA ENVIRONM	IENTAL		

QA/QC DATA WATER

	DISSOLV	ED METALS	TOTAL	METALS
QC PARAMETER	COPPER	ZINC	COPPER	ZINC
	(mg/L)	(mg/L)	(mg/L)	(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 Hademon

Damien Gadomski Project Manager

2/22/2013





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

CHAIN OF CUSTODY RECORD

Page____of____

HER078-56

PROJECT NAME:	PROJECT	PROJECT NUMBER:	CLIENT:							ANAL	YSES RI	ANALYSES REQUESTED				
10-04715-003	15-(003	Herrera Environmental Consultants		(
		-	COPY TO:		U 2540E					8					 	
			DELIVERY METHOD: Hand/ in cooler with ice		vs -spil				8.002	:002 A	8.0					
			REQUESTED COMPLETION TOTAL #(DATE: TAINERS)	t OF CON- S: 2	oS bəbn				A93 - Ig	ТЭ - Бэү	EPA 2(
1				# OF CON-	ədsu S lis	dsould le	se ssaup - dsoydoy	pper, dis	pper, tot	o, dissol	- listos ,ou	vice slott 792 MT				
12	DATE:	TIME:	SAMPLE DESCRIPTION	TAINERS:	юТ				60)	υiΣ	aiS					
N	2/22/2013	15:04	Stormwater Composite in 20-L HDPE boltle	-1	×	×	x x	X	×	x	х				 	
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de -	portion 1	arge sample	Notes: Use churn splitter to apportion large samples into smaller bottles.								·					
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12	RELINQUISHED BY (NAME/CO.): Dan Bennett / Herrera	SIGNAPORE	office:	DATE/TIME:	E CO	RECEIV	RECEIVED BY (NAME/CO.):	r (NAME/CO.): G 1 DOM (N	ر وي	6 in	SIGNATURE	- Lu-			DATE/TIME 3/23/12	11 16 00
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AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

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

CASE FILE NUMBER:	HER078-56	PA	AGE 1
REPORT DATE:	03/08/13		
DATE SAMPLED:	02/22/13	DATE RECEIVED:	02/23/13
FINAL REPORT, LABORATORY ANALYS	SIS OF SELECTED PARAMET	ERS ON WATER	
SAMPLES FROM HERRERA ENVIRONM	ENTAL		

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

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

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



CASE FILE NUMBER: HER078-56 PAGE 2 **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	SRP	HARDNESS	TSS
	(mg/L)	(mg/L)	(mgCaCO3/L)	(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

RPD = RELATIVE PERCENT DIFFERENCE.

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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

	DISSOLV	ED METALS	TOTAL	METALS
QC PARAMETER	COPPER	ZINC	COPPER	ZINC
	(mg/L)	(mg/L)	(mg/L)	(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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SUBMITTED BY:

Damien Hademohr

Damien Gadomski Project Manager

2/24/2013



HERERA

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

CHAIN OF CUSTODY RECORD

Page ____ of ____

HER078.59

PROJECT NAME: PROJECT NU Filterta-Bellingham 10-04715-003	PROJECT NUMBER: 10-04715-003		8		-				NALYSE	ANALYSES REQUESTED	STED					
		COPY TO:		5240D			8			.bo						
SAMPLED BY: Dan Bennett		DELIVERY METHOD: Hand/ in cooler with ice		M2 -sbi			.002 Aq	8.00		oM – noi						
LABORATORY: Aquatic Research		TOTAL	# OF CON- ts: 2	ilo2 bəbr	E - SUIO	C#CO3-3	a - bavio	- EPA 2	500. EPA	indintsiQ AAAT –						
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SAMPLE ID: DATE:	TIME:	SAMPLE DESCRIPTION	- # OF CON- TAINERS:	leioT		-	ddoD	aqo)	_							
FB-IN 2/25/13	12:03	Stormwater Composite in 20-L HDPE bottle		×	x	×	×	×	×	×						
FB-OUT 2/25/13	12:03	Stormwater Composite in 20-L HDPE bottle		×	x	×	×	×	××	×				+		
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Notes: Use churn splitter to apportion large samples into smaller bottles.	arge samples	into smaller bottles.												-		
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RELINQUISHED BY (NAME/CO.): Dan Bennett' Herrera	SIGNATURE	JRE:	DATE/TIME: 2/26/12 9:20	RI	ECEIVEI 511/16	RECEIVED BY (NAME/CO.): 5441675010 12102	ME/CO.):		SIGNAPURE		\mathbb{N}	$\left \right $		DATE/TIME: 2/26/10	lE: /0	
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AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

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3927 AURORA	AVENUE NORTH,	SEATTLE	, WA	98103

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

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 ANALYS	SIS OF SELECTED PARAMET	ERS ON WATER	
SAMPLES FROM HERRERA ENVIRONM	ENTAL		

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

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

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



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	SRP	HARDNESS	TSS
	(mg/L)	(mg/L)	(mgCaCO3/L)	(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

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CASE FILE NUMBER: HER078-59 PAGE 3 **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

	DISSOLV	ED METALS	TOTAL	METALS
QC PARAMETER	COPPER	ZINC	COPPER	ZINC
	(mg/L)	(mg/L)	(mg/L)	(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

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SUBMITTED BY:

Damien Hademohr

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.

770 D. Cast

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

Enclosures

cc: file WF49

MDH/mdh

Page 1 of _____

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

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Analytical Resource Analytical Chemists	s, Incorporated and Consultants	Cooler Ree	ceipt Form
RI Client: Aquatra	- Cesearch	-	
OC No(s):	NA	Delivered by: Fed-EX UPS C	ourier Hand Delivered Other:
RI Client:	F49	Tracking No: 9612010	989661 15017918 NA
eliminary Examination Phase:			
Were intact, properly signed and d	ated custody seals attached	to the outside of to cooler?	YES NO
Were custody papers included with	the cooler?		YES NO
Were custody papers included with	d out (ink signed etc.)		YES NO
Were custody papers properly line	u but (I(IK, signed, etc.)	hemistry)	
-		<u></u>	Temp Gun ID#: 908.7795
If cooler temperature is out of com	pliance till out form 00070F	A at a -	
ooler Accepted by:		Date: <u>1-2-8-13</u> T	ime; (1 2.0
	Complete custody forn	ns and attach all shipping documer	nts
og-In Phase:			
Was a temperature blank included	t in the cooler?		YES NO
was a temperator e blank included	as used? Bubble W	Irap Wet Ice (el Packs) Baggies Fo	
What kind of packing material w Was sufficient ice used (if appropri	riata)?		NA YES NO
Was sumcient ice used in appropri-	niace):		YES NO
Were an bomes sealed in individu	ition (unbroken)?		YES NO
Did all potties arrive in good cond	d logible?		. YES, NO
Were all bottle labels complete ar	u legible:	umber of containers received?	
Did the number of containers liste	so off COC match with the fill		YES NO
Did all bottle labels and tags agre	e with custody papers?	· · · · · · · · · · · · · · · · · · ·	YES NO
Were all bottles used correct for t	he requested analyses /	- procession sheet excluding VOCs	
Do any of the analyses (bottles) r	equire preservation? (attact	n preservation sheet, excluding VOCs	NA, YES NO
Were all VOC vials free of air but	bles?		
Was sufficient amount of sample	sent in each bottle?		
			Split by:
Was Sample Split by ARI :	A) YES Date/Time:_	Equipment:	Opint Dy
	75 .	Date: 7-28-13 Tin	ne: // 2.0
Samples Logged by:		nager of discrepancies or concerns	
	** Notity Project Mar	rager of discrepancies of concerns	·
			Sample ID and COC
Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC
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 By:
 Date:

 Small Air Bubbles
 Preabubbles'

 2-4 mm
 > 4 mm

 Peabubbles
 Preabubbles

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Revision 014



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

Printed 02/28/13 Page 1 of 1

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: <u>Ratherin (Buchena</u> Lead Technician Reviewed by: <u>Alleuna</u> Geotechnical Laboratory Manager

Date: 03/04/2013 Date: _්

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

Aquatic Research

HERO78.59

Sediment Concentration per Size Fraction

ASTM D3977 Method C/ TAPE Appendix F

	Date Analysis Sampled Date		2/25/2013 3/1/2013		2/25/2013 3/1/2013	
-	Total Sample Concentration	(mg/L-)	E2 13		4.96	
	Concentration of Coarse Fractions Concentration of Total Sample (mg/L) <62.5µm Fraction Concentration	(mg/L)	50 50	31.02	4.96	
	Coarse Fractions /L) 250 - 62.5 µm			15.04	0.00	
	Concentration of Coal (mg/L)	>250 µm		7.06	0.00	1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -
1000	Sample	Identification			FB-OUT	

WF49

Aquatic Research HERO78.59

Concentration in Each Size Fraction (mg/L)

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

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



surplus fine



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

CHAIN OF CUSTODY RECORD

HERO78-63

Page ____ of ____

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AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927 AU	RORA A	AVENUE	NORTH,	SEATTLE,	WA 98103

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

CASE FILE NUMBER:	HER078-62	P	AGE 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

	TOTAL-P	SRP	HARDNESS	TSS
SAMPLE ID	(mg/L)	(mg/L)	(mgCaCO3/L)	(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	
	COPPER	ZINC	COPPER	ZINC
SAMPLE ID	(mg/L)	(mg/L)	(mg/L)	(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



CASE FILE NUMBER: HER078-62 PAGE 2 **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	SRP	HARDNESS	TSS
	(mg/L)	(mg/L)	(mgCaCO3/L)	(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.

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.



CASE FILE NUMBER: HER078-62 PAGE 3 **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	ZINC	COPPER	ZINC
	(mg/L)	(mg/L)	(mg/L)	(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

RPD = RELATIVE PERCENT DIFFERENCE

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SUBMITTED BY:

Damien Hademohr

Damien Gadomski Project Manager

3/6/2013



HERRERA U

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

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Page ____ of ____

HERO78-64

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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:	HER078-64	PAG	Æ 1
REPORT DATE:	03/21/13		
DATE SAMPLED:	03/06/13	DATE RECEIVED:	03/07/13
FINAL REPORT, LABORATORY ANALYS	SIS OF SELECTED PARAMET	ERS ON WATER	
SAMPLES FROM HERRERA ENVIRONM	ENTAL		

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

	TOTAL-P	SRP	HARDNESS	TSS
SAMPLE ID	(mg/L)	(mg/L)	(mgCaCO3/L)	(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

	DISSOLVE	D METALS	TOTAL	METALS
	COPPER	ZINC	COPPER	ZINC
SAMPLE ID	(mg/L)	(mg/L)	(mg/L)	(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



CASE FILE NUMBER: HER078-64 PAGE 2 **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	SRP	HARDNESS	TSS
	(mg/L)	(mg/L)	(mgCaCO3/L)	(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

RPD = RELATIVE PERCENT DIFFERENCE.

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CASE FII	LE NUMBER:	HER078-64	P	PAGE 3
REPORT	DATE:	03/21/13		
DATE SA	MPLED:	03/06/13	DATE RECEIVED:	03/07/13
FINAL RE	PORT, LABORATORY ANALY	SIS OF SELECTED PARAME	FERS ON WATER	
SAMPLES	FROM HERRERA ENVIRONM	IENTAL		

QA/QC DATA WATER

	DISSOLV	ED METALS	TOTAL	METALS
QC PARAMETER	COPPER	ZINC	COPPER	ZINC
	(mg/L)	(mg/L)	(mg/L)	(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 Hademon

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

Page 1 of ____7

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Analytical Resource Analytical Chemist	ts and Consultants	Cooler R	eceipt Fo	rm
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ARI Client:AQUATIC	MIA:	Delivered by: Red-Ex UP		red Other:
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Were intact, properly signed and				
Were custody papers included wi			Q	NO NO
Were custody papers properly fill				TES NO
Temperature of Cooler(s) (°C) (re	ecommended 2.0-6.0 °C for ch	nemistry) (e.)		
If cooler temperature is out of cor	mpliance fill out form 00070F		Temp Gun ID#	90877952
Cooler Accepted by:	AV	Date: 3/11/13		
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Log-In Phase:				
	the the sector			YES (NO)
Was a temperature blank include	ed in the cooler?	rap Wet Ice Gel Packs Baggies	Foam Block Paper O	
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		preservation sheet, excluding VC		YES NO
Were all VOC vials free of air bu			(NA)	YES NO
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Was Sample Split by ARI :	A YES Date/Time:			_ /
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	** Notify Project Man	ager of discrepancies or conce	ems **	
Sample ID on Bottle	Sample ID on COC	Sample ID on Bott	le Samp	le ID on COC
Additional Notes, Discrepanc	ies, & Resolutions:	······································		
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Cooler Receipt Form

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Revision 014

Sample ID Cross Reference Report



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

Printed 03/11/13 Page 1 of 1

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: Katherin GBn charen Lead Technician Reviewed by: Muluna Untur

Geotechnical Laboratory Manager

Date: 03/14/2013 Date: <u>3/14/13</u>

Aquatic Research

HERO78-64

Sediment Concentration per Size Fraction

ASTM D3977 Method C/ TAPE Appendix F

Sample	Concentratio Fraction	Concentration of Coarse Fractions (mg/L)	Concentration of Total Sample <62.5µm Fraction Concentration	Total Sample Concentration	Date Sampled	Analysis Date
Identification	>250 um	>250 µm 250 - 62.5 µm	(mg/L)	(mg/L)	-	
FB-IN	2.05	3.29	2.41	7.75	3/6/2013	3/6/2013 3/12/2013
						010010110
FB-OUT	0.31	0.51	1.32	2.14	3/6/2013	3/6/2013 3/12/2013
						010010110
QA 2	2.97	4.30	4.74	12.01	3/6/2013	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	00.00	1.32
OA 2	2.97	4.30	00.00	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



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

CHAIN OF CUSTODY RECORD

DATE/TIME: 2/13/13/3:50 ANALYSES REQUESTED SIGXATURE (1102) 39AT - 776E MT2A Particle size Distribution - Mod. Sinc, total - EPA 200.8 × × Zinc, dissolved - EPA 200.8 × × 8.00% ATE - Ebot , norgeO × \approx RECEIVED BY (NAME/CO.): Copper, dissolved - EPA 200.8 × × Hardness as CaCO3-SM 2340B × × 6.235 AGE - 205 365.3 × ≍ 5.23£ A93 - strongpool fistoT × × DATE/TIME: 3/13/13 1350 Total Suspended Solids - SM 2540D × × # OF CON-TAINERS: TOTAL # OF CON--⊣. TAINERS: 2 Herrera Environmental Consultants Stormwater Composite in 20-L HDPE Stormwater Composite in 20-L HDPE SAMPLE DESCRIPTION REQUESTED COMPLETION DATE: DELIVERY METHOD: Hand/ in cooler with ice VIENDSCV Notes: Use churn splitter to apportion large samples into smaller bottles. COPY TO: CLENT: SIGNATURE bottle bottle 0217-0217 PROJECT NUMBER: 10-04715-003 TIME: RELANDUSHED BY (NAME/CO.): Ban Bennow RUEX SVEWDSEd 3/13/13 3/13/13 DATE Filterra-Bellingham PROJECT NAME: HERRERA ENVIRONMENTAL CONSULTANTS LABORATORY: Aquatic Research SAMPLE ID: SAMPLED BY: FB-OUT FB-IN REPORT TO: Dylan Ahearn LAB USE:

db Mierrerabiecne Mierrerabina $p_{rab}y_$

HER078-66

Page _ L of _



AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

				00100
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 ANALY	SIS OF SELECTED PARAMET	ERS ON WATER	
SAMPLES FROM HERRERA ENVIRONM	ENTAL		

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

	TOTAL-P	SRP	HARDNESS	TSS
SAMPLE ID	(mg/L)	(mg/L)	(mgCaCO3/L)	(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
	COPPER	ZINC	COPPER	ZINC
SAMPLE ID	(mg/L)	(mg/L)	(mg/L)	(mg/L)
FB-IN	0.0025	0.005	0.0071	0.011
FB-OUT	0.0032	< 0.005	0.0037	< 0.005



CASE FILE NUMBER: HER078-66 PAGE 2 **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	SRP	HARDNESS	TSS
	(mg/L)	(mg/L)	(mgCaCO3/L)	(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.

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.



ſ	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 ANALYS	SIS OF SELECTED PARAMET	TERS ON WATER	
	SAMPLES FROM HERRERA ENVIRONM	ENTAL		

QA/QC DATA WATER

	DISSOLV	ED METALS	TOTAL	METALS
QC PARAMETER	COPPER	ZINC	COPPER	ZINC
	(mg/L)	(mg/L)	(mg/L)	(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

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 Hademon

Damien Gadomski Project Manager

3/14/2013



HERRERA

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

CHAIN OF CUSTODY RECORD

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1124078-68

DATE/TIME: 3//2/13 10:20 2 PN \$7,18 3/14/13 Å N 577 Hq \varkappa ⋈ Conductivity × × ANALYSES REQUESTED Turbidity × ⋈ (1102) A9AT - 779E MT2A Particle size Distribution - Mod. sighature: Sinc, total - EPA 200,8 12 mm \approx × Zinc, dissolved - EPA 200.8 × × Copper, total - EPA 200.8 × × TIME: REGEIVED BY (NAME/CO.): //] 10:70/1/////520/ 640045 Copper, dissolved - EPA 200.8 × × Hardness as CaCO3-SM 2340B × \approx 6.236 AIE - amongaongonnO × × Total phosphorus - EPA 365.3 × × Total Suspended Solids- SM 2540D × \approx DATE/TIME: 3//C/13/ # OF CON-TAINERS: TOTAL # OF CON-TAINERS: 3 -1 Herrera Environmental Consultants Stormwater Composite in 20-L HDPE bottle Stormwater Composite in 20-L HDPE SAMPLE DESCRIPTION DELIVERY METHOD: Hand/ in cooler with ice REQUESTED COMPLETION DATE: Notes: Use chum splitter to apportion large samples into smaller bottles. COPY TO: CLIENT: bottle SIGNATURE: 15:10 PROJECT NUMBER: 02:4 TIME: 10-04715-003 RELINQUISHED BY (NAME/CO.): 5.1.1.5 3-14-13 DATE: / Herrera Filterra-Bellingham PROJECT NAME: LABORATORY: Aquatic Research SAMPLED BY: SAMPLE ID: REPORT TO: FB-OUT Dylan Aheam FB-IN Dan Bennett LAB USE:

db /o:\pro\y2010\0-04715-003\data\cocs\coc templates\coc templates\coc template ari filterra stormwater psd2.docx



AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

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 ANALYS	SIS OF SELECTED PARAMET	TERS ON WATER	
SAMPLES FROM HERRERA ENVIRONM	ENTAL		

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

	TOTAL-P	SRP	HARDNESS	TSS	CONDUCTIVITY	pН	TURBIDITY
SAMPLE ID	(mg/L)	(mg/L)	(mgCaCO3/L)	(mg/L)	(umhos/cm)		(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

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



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	SRP	HARDNESS	TSS	CONDUCTIVITY	pН	TURBIDITY
	(mg/L)	(mg/L)	(mgCaCO3/L)	(mg/L)	(umhos/cm)		(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	Dimorr		D I MOTI		1		
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

RPD = RELATIVE PERCENT DIFFERENCE.

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.



CASE FILE NUMBER: HER078-68 PAGE 3 **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	ZINC	COPPER	ZINC
	(mg/L)	(mg/L)	(mg/L)	(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

RPD = RELATIVE PERCENT DIFFERENCE

ND - NILATIVE FIGURE TO DIFFERENCE. NA = NOT APPLICABLE ON OT 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 Hademohr

Damien Gadomski Project Manager

3/16/2013



HERRERA

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

CHAIN OF CUSTODY RECORD

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HERO78-69

14:32 DATE/TIME: S/)7/12 \overline{C} 6 S C , m ~ പ Hq × \approx Conductivity \times \approx ANALYSES REQUESTED Tubidity \varkappa × (1102) HAAR - TAPE (2011) Particle size Distribution - Mod. SIGNATURE: Vom-8.005 AGE - Intot , 200.5 × × 8.002 ATE - bevlossib ,oniS × × 3-17-13 WAT IAMSEN GADONSIN Copper, total - EPA 200.8 × \varkappa RECEIVED BY (NAME/CO.): Copper, dissolved - EPA 200.8 \approx \approx Hardness as CaCO3-SM 2340B × × 6.236 A93 - amontophonnO × \varkappa £.23£ AGE - sunodqeodq IsioT × \approx Total Suspended Solids - SM 2540D × × DATE/TIME: # OF CON-TAINERS: TOTAL # OF CON-TAINERS: 3 ---يسو Herrera Environmental Consultants Stormwater Composite in 20-L HDPE Stormwater Composite in 20-L HDPE SAMPLE DESCRIPTION REQUESTED COMPLETION DATE: DELIVERY METHOD: Hand/ in cooler with ice Notes: Use churn splitter to apportion large samples into smaller bottles. COPY TO: CLIENT: bottle | イ: スイ bottle SIGNATURE: 14.35 PROJECT NUMBER: 10-04715-003 TIME: 5.11-6 RELINQUISHED BY (NAME/CO.): 3-16- 13 DATE: Filterra-Bellingham PROJECT NAME: LABORATORY: Aquatic Research SAMPLE ID: SAMPLED BY: FB-OUT REPORT TO: Dylan Aheam EB-IN Dan Bennett LAB USE:

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3/19/2013



ENVIRONMENTAL F

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

CHAIN OF CUSTODY RECORD

Page of

HERO78.73

PROJECT NAME:	PROJECT	PROJECT NUMBER:		CLIENT:							ANAL	ANALYSES REQUESTED	QUESTI	G				
Filterra-Bellingham	10-04715-003	-003		Herrera Environmental Consultants		$\left \right $												
REPORT TO: Dylan Aheam			-	COPY TO:		1 5240D	5.3				1							
SAMPLED BY: Dan Bennett				DELIVERY METHOD: Hand/ in cooler with ice		M2 -sbil	596 A93			8.002	8.002 A							
LABORATORY: Aquatic Research			REQUE DATE:	REQUESTED COMPLETION TOTAL # OF CON- DATE: TAINERS: 3	OF CON- : 3	io2 bobn	I - smot			¥d∃ - ľ	ЧЯ - bэv			·.		 		<u> </u>
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SAMPLE ID:	DATE:	TIME:		SAMPLE DESCRIPTION	# OF CON- TAINERS:	stoT	stoT			Çop	οniΣ		ISA		Hq			
FB-IN	5-20-13	11:09	Storm' bottle	Stormwater Composite in 20-L HDPE bottle	1	×	×	x x	×	×	×	×		x x	×			
FB-OUT	5-20-12	li Je	Storm	Stormwater Composite in 20-L HDPE bottle		×	×	××	×	×	×	×	. 1	××	×			
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Notes: Use churn splitter to apportion large samples into smaller bottles.	litter to apportion l	large sample	les into sr	maller bottles.														
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HERO78 84



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CHAIN OF CUSTODY RECORD

Page of

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PROJECT NAME:	PROJECT NUMBER:	ABER:	CLIENT:		+			-				-	-		-	
Filterra-Bellingham	10-04715-003		Herrera Environmental Consultants		C											
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LIVIAN ANCARTI SAMPLED BY:			DELIVERY METHOD:								– noiti 102) 5					
Dan Bennett							_	a - 1			ndin 191					
LABORATORY:		REC DA	REQUESTED COMPLETION TOTAL # 0 DATE: TAINERS:	⊈ OF CON- S: 2	S babna	snıoyd))%) st	pontoss	HH - Isto 	EPA	dzi U oz AT – <i>TT</i>					
LAB USE:		-						oper, di			is ələir 9E MT		~		<u>.</u>	
SAMPLE ID:	DATE: TI	TIME:	SAMPLE DESCRIPTION	TAINERS:				lo D			nsq 2A				-	
FB-IN	5		Stormwater Composite in 20-L HDPE	1	×	x	X	×	x	×			_		-	
			bottle Stormwater Composite in 20-L HDPE		×	××	×	×	x	×						
FB-OUT	-1. 5.13 07: 19 bottle	7: 19 b	ottie			_						-				_
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Notes: Use churn spli	Notes: Use churn splitter to apportion large samples into smaller bottles.	s samples i	into smaller bottles.													
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-				DATE/TIME:		RECEIVED BY (NAME/CO.):	DBY (N/	AME/CO.		SIGNATURE) A	$\left(\right)$			DATE/TIME	IME
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SIGNATURE: DANG UN L RELINQUISHED BY (NAME/CO.):

SIXIFEDON UM RECEIVED BY (NAME/CO.): DATE/TIME: DATE/TIME: 1

1430 2/12 5



AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

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

CASE FILE NUMBER:	HER078-84	PA	GE 1
REPORT DATE:	04/22/13		
DATE SAMPLED:	04/05/13	DATE RECEIVED:	04/07/13
FINAL REPORT, LABORATORY ANALYS	SIS OF SELECTED PARAMET	ERS ON WATER	
SAMPLES FROM HERRERA ENVIRONM	ENTAL		

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

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

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



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	SRP	HARDNESS	TSS
	(mg/L)	(mg/L)	(mgCaCO3/L)	(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.

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.



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

QA/QC DATA WATER

	DISSOLV	ED METALS	TOTAL	METALS
QC PARAMETER	COPPER	ZINC	COPPER	ZINC
	(mg/L)	(mg/L)	(mg/L)	(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

ND - NILATIVE FIGURE TO DIFFERENCE. NA = NOT APPLICABLE ON OT 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 Hademohr

Damien Gadomski Project Manager

04/07/13

4/5/2013 B



HERRERA ENVIRONMENTAL CONSULTANTS U

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

CHAIN OF CUSTODY RECORD

Page____of____

HEROF8.85

CONTRACTOR STATE		- ADATECT NUMBER	Γ	CLIENT:							ANALYSES REQUESTED	ES REQ	DESTED		-			
FIGUEUT NAME: Filterra-Bellingham	10-04715-003	-003-		nvironmental Consultant	s	C												
REPORT TO: Dvlan Ahearn				COPY TO:		N 52401					8.	.boM -	([]					
SAMPLED BY:				DELIVERY METHOD: Hand/in cooler with ice		f8 -sbil				, 200.8			10Z) H					
LABORATORY:			REQUE DATE:	STED COMPLETION TOTAL	,# OF CON- RS: 2	os bobn				¶-Eb∖	H - bav		AT- <i>T</i>					
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AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

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

CASE FILE NUMBER:	HER078-85	PA	GE 1
REPORT DATE:	04/22/13		
DATE SAMPLED:	04/06/13	DATE RECEIVED:	04/07/13
FINAL REPORT, LABORATORY ANALYS	SIS OF SELECTED PARAMET	ERS ON WATER	
SAMPLES FROM HERRERA ENVIRONM	ENTAL		

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

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

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



CASE FILE NUMBER: HER078-85 PAGE 2 **REPORT DATE:** 04/22/13 04/06/13 DATE SAMPLED: **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	SRP	HARDNESS	TSS
	(mg/L)	(mg/L)	(mgCaCO3/L)	(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.

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CASE FILE NUMBER: HER078-85 PAGE 3 **REPORT DATE:** 04/22/13 DATE SAMPLED: 04/06/13 **DATE RECEIVED:** FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

	DISSOLV	ED METALS	TOTAL	METALS
QC PARAMETER	COPPER	ZINC	COPPER	ZINC
	(mg/L)	(mg/L)	(mg/L)	(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

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SUBMITTED BY:

Damien Hademohr

Damien Gadomski Project Manager

04/07/13

4/10/2013



HEROT8-88

Page ____ of ____

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

CHAIN OF CUSTODY RECORD

CONSIGNANTS				-						A NYAL A	SEC DE	AWAT VOES DEOL FETED					ĺ
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Filterra-Bellingham	c00-C1/40-01	-00-i			10D												
REPORT TO: Dylan Ahearn	-		COFT 10:		W 524					8.0		(1)	_				
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AQUATIC RESEARCH INCORPORATED

LABORATORY & CONSULTING SERVICES

3927	AURORA	AVENUE	NORTH	SEATTL	E. WA	98103
5741	AUNONA	ATERUE	TONTIN	DEALLE	Ľ, 11 A	70103

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

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 ANALY	SIS OF SELECTED PARAMET	TERS ON WATER	
SAMPLES FROM HERRERA ENVIRONM	IENTAL		

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

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

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



CASE FILE NUMBER: HER078-88 PAGE 2 **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	SRP	HARDNESS	TSS
	(mg/L)	(mg/L)	(mgCaCO3/L)	(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.

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.



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

QA/QC DATA WATER

	DISSOLV	ED METALS	TOTAL	METALS
QC PARAMETER	COPPER	ZINC	COPPER	ZINC
	(mg/L)	(mg/L)	(mg/L)	(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

ND - NILATIVE FIGUEATE OF DATEMANCE. NA = NOT APPLICABLE ON OT 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 Hademon

Damien Gadomski Project Manager

04/11/13

5/12/2013



HERRERA FAX (206) 441-9080 FAX (206) 441-9108

CHAIN OF CUSTODY RECORD

Page ____ of ____

HER079.02

ENVIRONMENTAL CONSULTANTS	0012-144 (002) VVI	0017-1)								,	
									ANAL	SES REC	AMALYSES REQUESTED					
PROJECT NAME: Filterra-Bellingham	PROJECT NUMBER: 10-04715-003	NUMBER: 03	CLIENT: Herrera Environmental Consultants							 						
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Dylan Ancarn SAMPLED BY: Don Pennett					VIS -sbifo	EPA 36	7. WIS-E(A 200.8	007 V.I	- notiudi 200.8	LPE (201		. x	<u> </u>		
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SAMPLE ID:	DATE:	TIME:	SAMPLE DESCRIPTION	TAINERS:		ŀ	_		2	-+-	¥ -					
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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	S OF SELECTED PARAMETERS	ON WATER	
SAMPLES FROM HERRERA ENVIRONMEN	NTAL		

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

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



CASE FILE NUMBER:	HER079-02	PAG	E 2	
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	TSS
	(mg/L)	(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

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SUBMITTED BY:

amin Godemsh" 1%

Damien Gadomski Project Manager

5/21/2013



HEROFF.07

Page to of 1

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

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CHAIN OF CUSTODY RECORD

14 45 DATE/TIME: 22/5 24k ANALYSES REQUESTED y_ TAPE (2011) LL68 MTRA .boM - notuditizi(azis Carticl SIGNATURE ,oniS 8.002 Aq × Ŷ Zinc, dissolved - EPA 200.8 Copper, total - EPA 200.8 * * RECEIVED BY (NAME/CO.): Sala * Copper, dissolved - EPA 200.8 × S. HIRSON ¥ as CaCO3-SM 2340B Y k ¥ 5.205 AGE - strionq portion O 5.cof A93 - smongroug insoT × × DATE/TIME: Total Suspended Solida Manual Month Contract Con \approx \approx # OF CON-TAINERS: REQUESTED COMPLETION TOTAL # OF CON-DATE: 72. **....** -Herrera Environmental Consultants Stormwater Composite in 20-L HDPE hottle Stormwater Composite in 20-L HDPE MWWWWWWWW SAMPLE DESCRIPTION DELIVERY METHOD: Hand/ in cooler with ice Notes: Use churn splitter to apportion large samples into smaller bottles. COPY TO: **CLIENT:** bottle PROJECT NUMBER: 10-04715-003 27 28 TIME: 10135 RELINQUISHED BY (NAME/CO.): 5/42/5 5/22/13 DATE: / Herrera PROJECT NAME: Filterra-Bellingham LABORATORY: Aquatic Research SAMPLE ID: SAMPLED BY: FB-OUT REPORT TO: FB-IN Dylan Aheam Dan Bennett LAB USE:

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IEH - AQUATIC RESEARCH LABORATORY & CONSULTING SERVICES 3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

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

CASE FILE NUMBER:	HER079-07		PAGE 1
REPORT DATE:	05/30/13		
DATE SAMPLED:	05/22/13	DATE RECEIVED:	05/22/13
FINAL REPORT, LABORATORY ANALYSIS	S OF SELECTED PARAMETERS	ON WATER	
SAMPLES FROM HERRERA ENVIRONME	NTAL		

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.

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



CASE FILE NUMBER: HER079-07 PAGE 2 **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	SRP	TSS
	(mg/L)	(mg/L)	(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.

ND - NILATIVE FIGURED DIFERENCE. NA = NOT APPLICABLE ON OT 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.

amin Hademoh

Damien Gadomski Project Manager

5/22/2013



HERRERA 2200 Sixth A Seattle, Was 2060 441-90 FAX (206) 4

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

CHAIN OF CUSTODY RECORD

Page ____ of ___

HERO79.09

S/23/ ANALYSES REQUESTED (1102) HAAT - TTOPE (2011) Particle size Distribution - Mod. SIGNATURE: \geq 307 200.8 × X SOPPET, TOTAL - EPA 200.8 × BULF RECEIVED BY (NAME/CO.): Copper, dissolved - EPA 200.8 × X 5-14/1622015 Hardness as CaCO3-SM 2340B X × 6.čô£ A93 - smodqzodqodhO × × CORI Photophorus - 265.3 × × Total Suspended Solids- SM 2540D × × DATE/TIME: # OF CON-TAINERS: TOTAL # OF CON-TAINERS: 3 ----Herrera Environmental Consultants Stormwater Composite in 20-L HDPE bottle |7 d; 33| Stormwater Composite in 20-L HIDPE bottle SAMPLE DESCRIPTION REQUESTED COMPLETION DATE: DELIVERY METHOD: Hand/ in cooler with ice SIGNATURE: Notes: Use chum splitter to apportion large samples into smaller bottles. COPY TO: CLIENT: 20.33 PROJECT NUMBER: TIME: 10-04715-003 RELINQUISHED BY (NAME/CO.): 5.23.3 5-22-13 DATE: / Herrera Filterra-Bellingham PROJECT NAME: LABORATORY: Aquatic Research SAMPLE ID: SAMPLED BY: FB-OUT FB-IN REPORT TO: Dylan Ahearn Dan Bennett LAB USE:

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3927 AURORA AVENUE NORTH, SEATTLE, WA 98103

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

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 ENVIRONMEN	TAL		

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.

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



CASE FILE NUMBER: HER079-09 PAGE 2 **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	SRP	TSS
	(mg/L)	(mg/L)	(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.

ND - NILATIVE FIGURED DIFERENCE. NA = NOT APPLICABLE ON OT 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.

amin Hademoh

Damien Gadomski Project Manager

6/12/2013



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

HERERA

CHAIN OF CUSTODY RECORD

										ANAL	YSES RE	ANALYSES REOUESTED	a				
PROJECT NAME: Filterra-Bellingham	PROJECT NUMBER: 10-04715-003	BEK:	Herrera Environmental Consultants	×				VI	2	\mathcal{V}	2	Z					-
REPORT TO: Dvlan Ahearn			COPY TO:	-	N 5240I	£.8	£15	1.29 1/2012	\mathcal{V}	V	M	200 Row					
SAMPLED BY: Dan Bennett	s S		DELIVERY METHOD: Hand/ in cooler with ice		IS -sbild	EPA 36	95 V 451	k for some so	ekek y	69 <i>2</i> /3	- 19	tot) An					
LABORATORY:		DA		TOTAL # OF CON- TAINERS: 3	os bəbn	- snuoy	- snioų	20108 []]]		a-1034							
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SAMPLE ID:	DATE: TIME:		SAMPLE DESCRIPTION	TAINERS:	Tots	зюТ	μO		\square								
		420° 5	Stormwater Composite in 20-L HDPE	1	×	×	×	Ż	L	K	Ø	Ħ			_		
FB-OUT		UZP b	Stormwater Composite in 20-L HDPE bottle		×	×	×				\mathcal{A}	8	7.7			_	
FB-QA-3		1479 h	Stormwater Composite in 20-L HDPE hottle	1	\times	X	<u>/</u> > X	HA J	A N	A	R	74	20				
FB-IN- P	20102		Stormwater Composite in 20-L HDPE bottle	1		×	×			×	H	- -	200				2
FB-OUT- \$	jaz ,	-	Stormwater Composite in 20-L HDPE bottle			×	*	× ///	ly h	×	the	1461	20.				
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Notes: Use churn splitter to apportion large samples into smaller bottles.	to apportion large st	amples ii	nto smaller bottles.											,			
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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	S OF SELECTED PARAMETERS (ON WATER	
SAMPLES FROM HERRERA ENVIRONME	NTAL		

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.

	TOTAL-P	SRP	TSS
SAMPLE ID	(mg/L)	(mg/L)	(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	

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



CASE FILE NUMBER: HER079-13 PAGE 2 **REPORT DATE:** 06/25/13 DATE SAMPLED: 06/12/13 06/13/13 DATE RECEIVED: FINAL REPORT, LABORATORY ANALYSIS OF SELECTED PARAMETERS ON WATER SAMPLES FROM HERRERA ENVIRONMENTAL

QA/QC DATA WATER

QC PARAMETER	TOTAL-P	SRP	TSS
	(mg/L)	(mg/L)	(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.

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.



CASE FILE NUMBER:	HER079-13	Р	AGE 3	
REPORT DATE:	06/25/13			
DATE SAMPLED:	06/12/13	DATE RECEIVED:	06/13/13	
FINAL REPORT, LABORATORY AN	NALYSIS OF SELECTED PARA	AMETERS ON WATER		
SAMPLES FROM HERRERA ENVIR	ONMENTAL			

QA/QC DATA WATER

QU DATA WATEK		
	DISSOLV	ED METALS
QC PARAMETER	COPPER	ZINC
	(mg/L)	(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
DLANK	<0.0010	<0.00J

RPD = RELATIVE PERCENT DIFFERENCE

ND - NOT APPLICABLE OF 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.

Damien Hademotr"

Damien Gadomski Project Manager

6/20/2013





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

HER079.16

CHAIN OF CUSTODY RECORD

Page ____ of ____

PROJECT NAME:	PROJE	CT NUMBER	CLIENT:																	
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REPORT TO:	CA 10-0	4715-63			_		A	Â						1						
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SAMPLED BY:					5	23				1								1 .		
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LABORATORY:		·	Hand/ in cooler with ice		A	BPA	Ŭ	S.							1					
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LAB USE:			DATE: TAI	NERS:	Log	Lot	N N	194 O	S											
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SAMPLE ID:	DATE			# OF CON-	Total phosphorus - EPA 365.3	Orthophosphorus - EPA 365.3	Dissolved Metals (QC, Cu, Pb, Hz, Zn) - EPA 200.8	Total Metals (Ed. C. 72, Hg. Zn) - EPA 200.8		·							1		Į	1
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votes: Use churn-split	er to apportion	composite san	nple into smaller bottles.						<u> </u>					1	4				l.	
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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:	06/28/13						
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.

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



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

QA/QC DATA WATER

QC PARAMETER	TOTAL-P	TSS			
	(mg/L)	(mg/L)	(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.

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.

amien Hademohr

Damien Gadomski Project Manager