

**Environment Testing** 

# **ANALYTICAL REPORT**

# PREPARED FOR

5 6

Attn: Terri Choy AECOM 1001 Bishop Street Honolulu, Hawaii 96813 Generated 5/3/2023 10:22:48 AM

# JOB DESCRIPTION

Red Hill - AFFF Assessment Sampling

# **JOB NUMBER**

580-126567-1

Eurofins Seattle 5755 8th Street East Tacoma WA 98424





# **Eurofins Seattle**

# Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northwest, LLC Project Manager.

Authorization

M. Elaine Walker

Generated 5/3/2023 10:22:48 AM

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Authorized for release by Marie Walker, Senior Project Manager <u>M.Elaine.Walker@et.eurofinsus.com</u> (253)248-4972

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### Job ID: 580-126567-1

### Laboratory: Eurofins Seattle

Narrative

### CASE NARRATIVE

**Case Narrative** 

## Client: AECOM Project: Red Hill - AFFF Assessment Sampling Report Number: 580-126567-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) resulting from a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are an unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes within the calibration range of the instrument or that reduces the interferences thereby enabling the quantification of target analytes.

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

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

### <u>RECEIPT</u>

Five samples were received on 4/26/2023 10:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.6° C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

### **GLYCOLS**

Samples AF-RHMW16-WGN01LF-2304W4 (580-126567-1), AF-RHMW12A-WGN01LF-2304W4 (580-126567-2), AF-RHMW12A-WGFD01LF-2304W4 (580-126567-3), AF-RHMW06-WGN01LF-2304W4 (580-126567-4) and AF-RHMW04-WGN01LF-2304W4 (580-126567-5) were analyzed for glycols in accordance with EPA SW-846 Method 8015B - DAI. The samples were analyzed on 05/01/2023.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# **Definitions/Glossary**

### Client: AECOM Project/Site: Red Hill - AFFF Assessment Sampling

Job ID: 580-126567-1

## Qualifiers

GC Semi VO	4
Qualifier	Qualifier Description

GC Semi VO		
Qualifier	Qualifier Description	4
U	Undetected at the Limit of Detection.	
Glossary		5
Abbreviation	These commonly used abbreviations may or may not be present in this report.	6
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis	
%R	Percent Recovery	
CFL	Contains Free Liquid	
CFU	Colony Forming Unit	0
CNF	Contains No Free Liquid	0
DER	Duplicate Error Ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	9
DL	Detection Limit (DoD/DOE)	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DLC	Decision Level Concentration (Radiochemistry)	
EDL	Estimated Detection Limit (Dioxin)	
LOD	Limit of Detection (DoD/DOE)	
LOQ	Limit of Quantitation (DoD/DOE)	
MCL	EPA recommended "Maximum Contaminant Level"	
MDA	Minimum Detectable Activity (Radiochemistry)	
MDC	Minimum Detectable Concentration (Radiochemistry)	
MDL	Method Detection Limit	
ML	Minimum Level (Dioxin)	
MPN	Most Probable Number	
MQL	Method Quantitation Limit	
NC	Not Calculated	
ND	Not Detected at the reporting limit (or MDL or EDL if shown)	
NEG	Negative / Absent	
POS	Positive / Present	
PQL	Practical Quantitation Limit	
PRES	Presumptive	
QC	Quality Control	
RER	Relative Error Ratio (Radiochemistry)	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	
TEF	Toxicity Equivalent Factor (Dioxin)	
TEQ	Toxicity Equivalent Quotient (Dioxin)	
TNTC	Too Numerous To Count	

Job ID: 580-126567-1

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Client: AECOM Project/Site: Red Hill - AFFF Assessment Sampling

#### Client Sample ID: AF-RHMW16-WGN01LF-2304W4 Lab Sample ID: 580-126567-1 Date Collected: 04/24/23 12:55 Matrix: Water Date Received: 04/26/23 10:30 Method: SW846 8015C GLY - Glycols- Direct Injection (GC/FID) Result Qualifier Analyte LOQ DL Unit D Prepared Analyzed Dil Fac 3.0 U 05/01/23 17:18 2-(2-Butoxyethoxy)ethanol 5.0 1.1 mg/L

Job ID: 580-126567-1

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Client: AECOM Project/Site: Red Hill - AFFF Assessment Sampling

#### Client Sample ID: AF-RHMW12A-WGN01LF-2304W4 Lab Sample ID: 580-126567-2 Date Collected: 04/24/23 10:00 Matrix: Water Date Received: 04/26/23 10:30 Method: SW846 8015C GLY - Glycols- Direct Injection (GC/FID) Result Qualifier Analyte LOQ DL Unit D Prepared Analyzed Dil Fac 3.0 U 05/01/23 17:42 2-(2-Butoxyethoxy)ethanol 5.0 1.1 mg/L 1

Job ID: 580-126567-1

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Client: AECOM Project/Site: Red Hill - AFFF Assessment Sampling

#### Client Sample ID: AF-RHMW12A-WGFD01LF-2304W4 Lab Sample ID: 580-126567-3 Date Collected: 04/24/23 10:00 Matrix: Water Date Received: 04/26/23 10:30 Method: SW846 8015C GLY - Glycols- Direct Injection (GC/FID) Result Qualifier Analyte LOQ DL Unit D Prepared Analyzed Dil Fac 3.0 U 05/01/23 18:05 2-(2-Butoxyethoxy)ethanol 5.0 1.1 mg/L 1

Job ID: 580-126567-1

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Client: AECOM Project/Site: Red Hill - AFFF Assessment Sampling

#### Client Sample ID: AF-RHMW06-WGN01LF-2304W4 Lab Sample ID: 580-126567-4 Date Collected: 04/24/23 10:45 Matrix: Water Date Received: 04/26/23 10:30 Method: SW846 8015C GLY - Glycols- Direct Injection (GC/FID) Result Qualifier Analyte LOQ DL Unit D Prepared Analyzed Dil Fac 3.0 U 05/01/23 19:15 2-(2-Butoxyethoxy)ethanol 5.0 1.1 mg/L 1

Job ID: 580-126567-1

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Client: AECOM Project/Site: Red Hill - AFFF Assessment Sampling

#### Client Sample ID: AF-RHMW04-WGN01LF-2304W4 Lab Sample ID: 580-126567-5 Date Collected: 04/24/23 09:30 Matrix: Water Date Received: 04/26/23 10:30 Method: SW846 8015C GLY - Glycols- Direct Injection (GC/FID) Result Qualifier Analyte LOQ DL Unit D Prepared Analyzed Dil Fac 3.0 U 2-(2-Butoxyethoxy)ethanol 5.0 1.1 mg/L 05/01/23 19:38 1

# **QC Sample Results**

### Client: AECOM Project/Site: Red Hill - AFFF Assessment Sampling

Job ID: 580-126567-1

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# Method: 8015C GLY - Glycols- Direct Injection (GC/FID)

Lab Sample ID: MB 680-770	6218/9						CI	lient Sam	ple ID: Me		
Matrix: Water									Prep Typ	be: Tot	tal/NA
Analysis Batch: 776218											
Ameliate		MB MB		~~			<b>_</b>	Duran and	<b>A</b> a h		
Analyte	Re:	sult Qualifier		<b>OQ</b> 5.0	DL Unit		D	Prepared	_ Analyz		Dil Fac
2-(2-Butoxyethoxy)ethanol		3.0 U		5.0	1.1 mg/L				05/01/23	14:59	
Lab Sample ID: LCS 680-77	6218/5					Cli	ent S	ample ID	: Lab Con	trol Sa	ample
Matrix: Water									Prep Typ		
Analysis Batch: 776218											
			Spike	LCS	LCS				%Rec		
Analyte			Added	Result	Qualifier	Unit	[	D %Rec	Limits		
2-(2-Butoxyethoxy)ethanol			20.0	18.0		mg/L		90	50 - 150		
	770040/0								0		- <b>D</b>
Lab Sample ID: LCSD 680-	//6218/6				, c	Slient S	ampi	e ID: Lac	Control S		
Matrix: Water									Prep Typ	be: 101	
Analysis Batch: 776218			Spike		LCSD				%Rec		RP
Analyte			Added	-	Qualifier	Unit	г	D %Rec	Limits	RPD	Limi
2-(2-Butoxyethoxy)ethanol			20.0	17.6		mg/L		88	50 - 150	2	5
_ ()) /											
Lab Sample ID: 580-126567	'-3 MS			Cli	ient Sam	ple ID:	AF-R	HMW12	-WGFD01	LF-23	04W
Matrix: Water									Prep Typ	be: Tot	tal/N/
Analysis Batch: 776218											
	Sample	-	Spike	MS	MS				%Rec		
Analyte		Qualifier	Added		Qualifier	Unit		D %Rec	Limits		
2-(2-Butoxyethoxy)ethanol	3.0	U	20.0	18.2		mg/L		91	50 - 150		
Lab Sample ID: 580-126567	2 MOD			CI	iont Som				-WGFD01	1 = 22	0.4147
Lab Sample ID. 500-120507	-3 14130				ient Sam	pie iD.			Prep Typ		
Matrix: Wator									I ICH IV	56. 100	
Matrix: Water Analysis Batch: 776218	Sample	Sample	Spike	MSD	MSD				%Rec		RPI
	Sample Result	Sample Qualifier	Spike Added		MSD Qualifier	Unit	[	D %Rec	%Rec Limits	RPD	RPI Limi

Date Received	d: 04/24/23 1		SN01LF-2	2304W4			Lab	Sample ID:	580-126567-' Matrix: Wate
—	Batch	Batch		Dilution	Batch			Prepared	
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed	
Total/NA	Analysis	8015C GLY		1	776218	GEM	EET SAV	05/01/23 17:18	
Client Samp	le ID: AF-	RHMW12A-W	GN01LF	-2304W4			Lab	Sample ID:	580-126567-2
Date Collected									Matrix: Wate
-	Batch	Batch		Dilution	Batch			Prepared	
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed	
Total/NA	Analysis	8015C GLY		1	776218		EET SAV	05/01/23 17:42	
Date Received	I: 04/26/23 1 Batch	0:30 Batch		Dilution	Batch			Prepared	
Dren Tune	Туре	Method	_					•	
Prep Type	iype	weinou	Run	Factor	Number	Analyst	Lab	or Analyzed	
Total/NA	Analysis	8015C GLY	Run	<b>Factor</b> 1	776218		EET SAV	or Analyzed 05/01/23 18:05	
Total/NA Client Samp Date Collected	Analysis Die ID: AF- 1: 04/24/23 1	8015C GLY RHMW06-W0 0:45		1			EET SAV	05/01/23 18:05	
Total/NA Client Samp Date Collected	Analysis Die ID: AF- 1: 04/24/23 1	8015C GLY RHMW06-W0 0:45		1			EET SAV	05/01/23 18:05	
Total/NA Client Samp Date Collected	Analysis Die ID: AF- d: 04/24/23 1 d: 04/26/23 1	8015C GLY RHMW06-WC 0:45 0:30		1 2304W4	776218 Batch		EET SAV	O5/01/23 18:05 Sample ID: Prepared or Analyzed	
Total/NA Client Samp Date Collected Date Received	Analysis Die ID: AF- d: 04/24/23 1 l: 04/26/23 1 Batch	8015C GLY RHMW06-WC 0:45 0:30 Batch	SN01LF-2	1 2304W4 Dilution	776218 Batch	GEM	EET SAV	05/01/23 18:05 Sample ID: Prepared	
Total/NA Client Samp Date Collected Date Received Prep Type Total/NA Client Samp Date Collected	Analysis Die ID: AF- d: 04/24/23 1 1: 04/26/23 1 Batch Type Analysis Die ID: AF- d: 04/24/23 0	8015C GLY RHMW06-WC 0:45 0:30 Batch Method 8015C GLY RHMW04-WC 99:30	GN01LF-2	1 2304W4 Dilution Factor 1	776218 Batch Number	GEM	EET SAV Lab EET SAV	O5/01/23 18:05           Sample ID:           Prepared           or Analyzed           05/01/23 19:15	Matrix: Wate
Total/NA Client Samp Date Collected Date Received Prep Type Total/NA Client Samp Date Collected	Analysis Die ID: AF- d: 04/24/23 1 1: 04/26/23 1 Batch Type Analysis Die ID: AF- d: 04/24/23 0	8015C GLY RHMW06-WC 0:45 0:30 Batch Method 8015C GLY RHMW04-WC 99:30	GN01LF-2	1 2304W4 Dilution Factor 1	776218 Batch Number	GEM	EET SAV Lab EET SAV	O5/01/23 18:05           Sample ID:           Prepared           or Analyzed           05/01/23 19:15	Matrix: Wate
Total/NA Client Samp Date Collected Date Received Prep Type Total/NA	Analysis Die ID: AF- d: 04/24/23 1 1: 04/26/23 1 Batch Type Analysis Die ID: AF- d: 04/24/23 0	8015C GLY RHMW06-WC 0:45 0:30 Batch Method 8015C GLY RHMW04-WC 99:30	GN01LF-2	1 2304W4 Dilution Factor 1	776218 Batch Number	GEM	EET SAV Lab EET SAV	O5/01/23 18:05           Sample ID:           Prepared           or Analyzed           05/01/23 19:15	580-126567-4 Matrix: Wate 580-126567-4 Matrix: Wate

Lab Chronicle

Laboratory References:

Client: AECOM

EET SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

5/3/2023

Job ID: 580-126567-1

# Accreditation/Certification Summary

Client: AECOM Project/Site: Red Hill - AFFF Assessment Sampling

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### Laboratory: Eurofins Savannah

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority ANAB	Program Dept. of Defense ELAP	Identification Number	Expiration Date 09-22-24
The following analytes are included in this the agency does not offer certification.	report, but the laboratory is not certified t	by the governing authority.	This list may include analytes for which

 Analysis Method
 Prep Method
 Matrix
 Analyte

 8015C GLY
 Water
 2-(2-Butoxyethoxy)ethanol

### Client: AECOM Project/Site: Red Hill - AFFF Assessment Sampling

Job ID: 580-126567-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-126567-1	AF-RHMW16-WGN01LF-2304W4	Water	04/24/23 12:55	04/26/23 10:30
580-126567-2	AF-RHMW12A-WGN01LF-2304W4	Water	04/24/23 10:00	04/26/23 10:30
580-126567-3	AF-RHMW12A-WGFD01LF-2304W4	Water	04/24/23 10:00	04/26/23 10:30
580-126567-4	AF-RHMW06-WGN01LF-2304W4	Water	04/24/23 10:45	04/26/23 10:30
580-126567-5	AF-RHMW04-WGN01LF-2304W4	Water	04/24/23 09:30	04/26/23 10:30

5755 8th Street East

Tacoma, WA 98424

**Chain of Custody Record** 



Carrier Tracking No(s): Lab PM: COC No: Sampier ZoeDermer Elaine Walker FedEx 2304W4AFEA06 **Client Information** E-Mail: State of Origin; Page: Client Contact: Phone: 805 218 7453 M, Elaine.Walker@EurolinsET.com Hawail Page 1 of 1 PWSID: Job # Company: AECOM 26567 **Analysis Requested** Address: Due Date Requested: Preservation Codes: 1001 Bishop St. Suite 1600 see subcontract A HCL M - Hexane TAT Requested (days): B NaOH City: N - None Honolulu Rush - 5 Day C - Zn Acetate O - AsNaO2 D Nitric Acid P Na2O4S State, Zo: E NaHSO4 Q - Na2SO3 Hawaii 96813 Compliance Project: A Yes & No 8015C\_DAI\_GL\_DS/ 2-(2-butoxyethoxy)-eth F - MeOH R - Na2S2O3 PO #: Phone: G - Amehior S - H2SO4 808-954-4512 / 770-331-0794 T - TSP Dodecahydrate H · Ascorbic Acld WO #: 1 - Ice U - Acetone Email: Watson Tanji (watson tanji@aecom.com)/ Mark Kromis (mark.kromis@aecom.com) J - DI Water V-MCAA K·ED K·ED L·ED K · EDTA W-pH4-5 A STATE OF A rolect Name: Project #: L - EDA Z - other (specify) CTO N6274223F0104 60697810 SSOW#: SILA: 10 RHSF Sample Matrix Type (Wewster, Sesolici. Sample (C≃comp. O-wasta/ol Special Instructions/Note: Sample Identification Sample Date Time G⊨grab) BT+Tiense, A-A Preservation Code: AF-RHMW18-WGN01LF-2304W4 4/24/23 1255 G w NX 3 N 1 Ζ 580-126567 Chain of Custody Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) Possible Hazard Identification Archive For Non-Hazard Flammable Skin Irritant Polson B Unknown radiological Disposal By Lab Return To Client Months Prelim data (Level tor2)=see TAT above. DoD Stage Special Instructions/QC Requirements: DOD QSM project. Deliverable Requested: I, II, III, IV, Other (specify) 4 report standard TAT, AECOM EQuIS EDD. Aethod of Shipmer Empty Kit Relinquished by: Date: Time: leknquished by: Company lecelyed by: AL-DA H24/23 40 AE Anord 190 Zoe Diermier AECOM Date/Ijme Company\_ **Received** by Company telinepished by:  $(\mathbf{y})$ 1030 non <u>ルーズ) く入</u> Relinguished by: Company Date/Dme Company Herelvasti Cooler Tempera dre(s) \*C and Other Remarks: Custody Seals Intact: Custody Seal No.: 2 A Yes A No

Ver: 01/16/2019

5755 8th Street East Tacoma, WA 98424 **Chain of Custody Record** 

Securofins Environment Testing

Cilent Information	Sampler: M . (	Basch	ιο		PM: Ine W:	alker							niar Tr dEx	rackin	g No(	в):			COC №: 2304W4AFEA0	J5
Client Contact:	Phone: 224	-508-	9732	E-M	afi:		er@Eu	urofin	sET.o	om		Sta		Origin:					Page: Page 1 of 1	
Company: AECOM	1		PWSID:		Τ				Ana		is Re	eque	ste	d					Job #:	
Address; 1001 Bishop St. Sulle 1600 City: Honolulu State, Zip:	Due Date Reques See Subcontrac TAT Requested (c	ct days): Rush -		· · · · · · · · · · · · · · · · · · ·		jer										V	1		Preservation Co A - HCL B - NaOH C - Zn Acetala D - Nitric Acid E - NaHSO4	M - Hexene N - None O - AsNaO2 P - Ne2O4S
Hawaii 96813 Phone: 808-954-4512 / 770-331-0794 Email: Watson Tanji (watson.lanji@aecom.com)/ Mark Kromis (mark.kromis@aecom.com)	Compliance Proje PO #: WO #:	icl: ∆Yes	A No		or No)	.GL_D5/ 2-(2-butoxyethoxy)-ethanol			ll		,			ľ				5 2 12 12 12 12 12	E - Narr304 F - MeOH G - Amchior H - Ascorbic Acid I - Ice J - Di Water	Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acelone V - MCAA
Project Name: CTO N6274223F0104 Site:	Project #: 60697810 SSOW#:	Sample (Yes	V 2-(2-buto)		4	/2[)		1	1						container	K - EDTA L - EDA Other:	W - pH 4-5 2 - other (specily)			
RHSF Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=oreb)	Matrix (W=water, S=solid, C=westaroli, BT#Tissies, Ander	ald Filtered	BOISC_DALGL_DS												Total Number of	Special In	structions/Note:
	$\geq \leq$	Ň		ation Code:	$\otimes$	<b>A</b>	Ľ			1								X		
AF-RHMW12A-WGN01LF-2304W4	4/24/23	1000	G	W	NN	<u>'  ×</u>												3		
AF-RHMW12A-WGFD01LF-2304W4	4/24/23	1000	G	w	NN					-				<u> </u>				3		
nt i'v	9/21	122				1					1			F					······	Analisa ayan ayan ayan ayan ayan ayan ayan ay
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Possible Hazard Identification		n Rada	iological		St		e Disp leturn "		-	e ma		asse Dispo							ed longer than 1 ve For	1 month) Months
Deliverable Requested: I, II, III, IV, Other (specify)	Prelim data (Lev 4 report standar	vel tor2)=se	e TAT abo		ge Sp	eclal	Instru	ction	s/QC F	lequ	lreme	ints:	000	QSI	M pr	oject				· · · · · · · · · · · · · · · · · · ·
Emply Kit Bellinguished by: Relinguished by: ZOE Diffrmier Belinguished by: A Forminguished by:	Date/Time: 4/2 4 Date/Time: 4/2 4 Date/Time: 4/2 4 Date/Time:	Date:  23    23	101	AECOM Company AECO Company	Time: 'h	Rece	ived by: ived by: ived by:	1	ey.	E	jn	nr	Mein 1,	od of	Dale Date	nent: /Time: /Time: /Time:	472 U	9) [2;	23 1200 3 1070	HE RM Company
Custody Seals Inlact:  Custody Seal No.:						L	er Temp		ə (s) °C (	and O	ther fl	emark	9;						,	
																			1	Ver: 01/16/2019

0.6/1.2

5/3/2023

🔅 eurofins Environment Testing 5755 8th Street East **Chain of Custody Record** Tacoma, WA 98424 America Leb PM: Elaine Walker COC No: 2304W4AFEA09 Carrier Tracking No(s): sten **Client Information** FedEx Client Contact: 804-873-0525 E-Mail. State of Origin Page: M.Elaine.Walker@EurolinsET.com Hawaii Page 1 of 1 Job #: Сопралу AECOM **Analysis Requested** Due Date Requested: Preservation Codes: Address 1001 Bishop St. Suite 1600 see subcontract A-HCL M - Hexana City: TAT Requested (days): 8 - NeOH N None Honolulu Rush - 5 Day C - Zn Acelate O AsNaO2 D - Nitric Acid P - Na204S State, Zip: E · NaHSO4 Q Ne2SO3 Compliance Project: A Yes A No Hawali 96813 F MeCH R - Na25203 hone: PO #: G - Amchior S - H2SO4 808-954-4512 / 770-331-0794 H - Ascorbic Aclt T · TSP Dodecahydrale U - Acetone Email: NO #: I - Ice Held Filtered Sample (Yes or Partorn MSASD (Yes or 190) Walson Tanji (walson lan) @secom.com)/ Mark Kromis (mark kromis@aecom.com) J - DI Water V - MCAA K EDTA W - pH 4-5 mieri Nama Project #: D5/2-(2-bu L EDA Z - other (specify) CTO N6274223F0104 60697810 5 SSOW#: Other: RHSF ъ BOISC DAL GL Sample Matrix Туре (C≈comp, water, Sesti 1 B Sample (Cacomp, O-westalor, G=grab) statistics, Andri) Sample Identification Sample Date Time Special instructions/Note: Preservation Code: A 4/24/23 w Ν х 3 AF-RHMW08-WGN01LF-2304W4 1045 G İ٨ 123 Sample Disposal ( A fee may be assessed if samples are relained longer than 1 month)
Return To Client Disposal By Lab Archive For Month Possible Hazard Identification Non-Hazard Flammable Skin Irritant Poison B Hadiological Unknown Monihs Prelim data (Level 1or2)=see TAT above. DoD Stage 4 report standard TAT. AECOM EQuIS EDD. Deliverable Requested: I, II, III, IV, Other (specify) Special Instructions/QC Requirements: DOD QSM project. Method of Shipmeni Emply Kit Relinquished by: Time: Date: lelinovished by: 1111/23 Compeny AECOM AECON HICY Edmond 1135 U. 4/2 Date/Time: HECON Relinauis ale/Nate U 17 NO らえ IJ 22 daynda 1030 Alt Pelinguished by: Date/Time: eceived b oronaby Custody Seals Intact: Custody Seal No.; Cooler Temperature(s) °C and Other Remarks: ∆ Yes ∆ No Ver: 01/16/2019

**Eurofins FGS, Seattle** 

### 5755 8th Street East Tacoma, WA 98424

Chain of Custody Record

Securofins Environment Testing

Client Information	Sampler: KaiHin	Ostern	1an		b PM: Iaine V	Valker	r						nier Tr dEx	racking	) Na(s	s);			COC No: 2304W4AFEA0	08
Cilent Contact:	Phone: 614 - 551	9-623	21		Mail: Elaine	Mall	ലത	Eurof	nsFT	com			ie of ( wali	Crigin:					Page:	
Company: AECOM		<u>- We</u>	PWSID:	121			<u>ici er c</u>	uion				-							Page 1 of 1 Job #:	
Address:	Due Dale Reques		1	<u></u>	+	986) 1		-		aiys	is Ro	aque	ste	3	T	1			Preservation Co	dar
1001 Bishop St. Suite 1600 Chy.	See Subcontrat TAT Requested (r							X							ļ				A - HCL	M - Hexane
Honolulu	INI Saddertaŭ (	Rush -	5 Day					$ \rangle$											B · NeOH C · Zn Acetate	N - None O - AsNaO2
Stale, Zip: Hawall 96813	Compliance Proje	ici: A Yas	A No		_				Ν	rd	ĺ								D - Nitric Acid E - NaHSO4	P - Na2O4S Q - Na2SO3
Phone:	PO #:				-	thoxy)-ethanol				V.	4/2	Jul.			1				F MeOH G - Arnchior	A - Na2S2O3 S - H2SO4
80B-954-4512 / 770-331-0794 Email:	WO #:				or No)	thox					$\langle $	772	13						H - Ascarbic Acid	T - TSP Dodecahydrate
Watson Tanji (watson.tanji@aecom.com)/ Mark Kromis (mark.kromis@aecom.com Prolect Name:	m)				s S	on a					X							2	I - fce J - DI Water	U - Acetone V - MCAA
CTO N6274223F0104	Project #: 60697810				ž	5-Put						K						containe	K - EDTA L - EDA	W - pH 4-5 Z - other (specify)
Site: RHSF	SSOW#:					DS/ 2-(2-butoxye							Ν					5	Other:	·
Sample Identification	Samala Date	Sample	Sample Type (C=comp,	Matrix (Wowater, Bosolid, Dowesta/oil,	eid Filtered	SC_DALGL												Total Number o		
Sample Identification	Sample Date	Time	G=grab) Preservi	BT-Tiesus, A-Ai		K A		┝─┥		+	+-						-k	빍	Speciel In	structions/Note:
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Possible Hazard Identification	<b></b>				Si	mpie	a Disp	osal	( A fe	e may	be a	5505	sed	if san	nple	s are	reta.	inec	d longer than 1	month)
Non-Hazard Flammable Skin Imilant Poisor Deliverable Requested: I, II, III, IV, Other (specify)	Prelim data (Lev	matik natik	ological	in Dall Sta			leturn	To C	lient	<u>.</u>	L III	lispos	al B	v Lab			<sup>1</sup> Arc	chiv	e For	Months
	4 report standard	LTAT AE(	COM EQUIS	EDD.	ge ist	Jecial	instru	CUON	s/QC i	requi	reme	માડ: L	00	QSM	proj	ect.				
mply Kil Relinquished by:		Date:			Time							1	Vetho	d ol St	slpme	nt:				
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evinquished by:	Date/Time:	3/		Company Ala Ci	0 r		( / ived by		Æ	Þ	-	<u>·</u> )			eto/Ti		51	> 5/	, (12)	Company 1070
elinquished by:	Date/Time:	21		20mpeny		Recei	Ived by	_	A					- 6	ate/Ti	/ me:/	μ	69		LOYO Company
Custody Seals Intact: Custody Seal No.:						Cont	v Te	_	<u></u>	-						•			<u>ب</u> ــــــــــــــــــــــــــــــــــــ	
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																		1		Ver: 01/16/2019

## **Chain of Custody Record**

💸 eurofins €nvironment Testing | Am-rica

5755 8th Street East Tacoma, WA 98424

Client Information	Sampler 7,0	Derw	.37	Lab	PM: Ine W	alker							arrier 1 edEx	Fracking	No(s)			COC №. 2304W4AFEA0	3
Cilent Contact.	Phone:	1 94		E-Ma	ail		er@E	urofir				s	tate of lawaii	Origin				Page Page 1 of 1	
Company	ia *	1 1 1 1	> PWSID		name.	wan	<u>erwe</u>	uroni										Job #	
AECOM Address	Due Date Request	ha				999			Ar	naly	sis F	Requ	leste	ed	r r			Preservation Cod	les
1001 Bishop St Suite 1600	see subcontract	t																A HCL	M Hexane
City Honolulu	TAT Requested (da	ays) Rush - 5	Day															B NaOH C Zn Acetate	N None O AsNaO2
State Zip Hawaii 96813	Compliance Projec	t: A Yes	A No		- 1	lone									and the second			D Nitric Acid E NaHSO4	P Na2O4S Q Na2SO3
Phone	PO #					v)-et								X				F MeOH G Amchlor	R Na2S2O3 S H2SO4
808-954-4512 / 770-331-0794 Email	WO #				or No	ethox			/		Ľ.						2	H Ascorbic Acid I Ice	T TSP Dodecahydrate U Acetone
Watson Tanji (watson.tanji@aecom.com)/ Mark Kromis (mark.kromis@aecom.com) Project Name	Project #				eso	t NO				Ι,	. J	TÍ	_				Jers	J DIWater K EDTA	V MCAA W pH4-5
CTO N6274223F0104	60697810				ample (Yes	Yes C		~	t/	1.	A	5.	4				containers	L EDA	Z other (specify)
Sile RHSF	SSOW# <sup>,</sup>				Sam	SU(			Ċ								ot	Other	
			Sample Type	Matrix (W=water	Filtered	Perform MS/MS/J (Yes or No) 8015C DALG D5/2-(2-hittorvethorv)-ethanol											Number		
Sample Identification	Sample Date	Sample Time	(C=comp, G=grab)	S≕solid, O=waste/oil, BT=Tissue, A=Air)	Field	Perto											Total	Special In	structions/Note:
	$\sim$	$\ge$		tion Code	X	Ζ,											X		
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Possible Hazard Identification			ological		S		le Dis Returi				may E	be as	sesse	ed if sa I By La	ample:	s are r	etair Arci	n <b>ed longer than</b> : hive For	f month) Months
Deliverable Requested I, II, III, IV, Other (specify)	Prelim data (Lev	vel 1or2)=se	e TAT abo	ve DoD Sta	ige S												710		Montho
Empty Kit Relinquished by	4 report standar	d TAT. AE Date	COM EQui	S EDD.	Tim	е							Me	athod of	Shipme	nt:			
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Relinquished by:	4/24/23 Date/Time	11	V)	AECOM Company		Re	/4/ ceived t	e /	Ą		A		$\gamma_{\zeta}$		Ƴ Date/Tj		1.1	· · · · · · · · · · · · · · · · · · ·	Company
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Custody Seals Intact Custody Seal No	,	·····				Co	oler Ter	npera	dre(s)	°C ar	nd Othe	er Rem	arks.			21	11	. 2	
Δ Yes Δ No															(	<u></u>	$\mu$		Ver: 01/16/2019

5755 8th Street East

Tacoma, WA 98424

# **Chain of Custody Record**

seurofins

America

Client Information	Sampler M Casello				°M: ne W	alke	er					F	arrier T edEx		No(s)			COC №. 2304W4AFEA05		
Client Contact.	Phone 224	SUB	9732	E-Ma M E		.Wal	lker@	Euro	finsE	T con	)		itate of Iawaii	Drigin				Page Page 1 of 1		
Company AECOM			PWSID		Γ				۸	nalv	sis F	2011	iasta	ч				Job #		
Address. 1001 Bishop St Suite 1600 City- Honolulu State Zip. Hawaii 96813	Due Date Request see subcontrac TAT Requested (d Compliance Projec	t <sup>ays)</sup> Rush - 5	-				thanol											Preservation Codes           A         HCL         M         Hexane           B         NaOH         N         None           C         Zn Acetate         O         AsNaO2           D         Nitric Acid         P         Na2O4S           E         NaHSO4         Q         Na2SO3           F         MeOH         R         Na2S203		
Phone <sup>.</sup> 808-954-4512 / 770-331-0794 Email Watson Tanji (watson.tanji@aecom.com)/ Mark Kromis (mark.kromis@aecom.com)	PO # WO #	Sample (Yes or No)	(oN	D5/ 2-(2-butoxyethoxy)-ethano		()	1	1 1						ars	G Amchlor S H2SO4 H Ascorbic Acid T TSP Dodecahydr I Ice U Acelone	rate				
Project Name CTO N6274223F0104	Project # 60697810	ple (Ye	Yes or	2-(2-but	9	{/2	5//	1						containers	K EDTA W pH 4-5 L EDA Z other (specify) Other					
Site RHSF	SSOW#				Sam	ash	DS/										ð			
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Alr)	Field Filtered	Perfor	B015C_DAI_GL	_	/								Total Number	Special Instructions/Note		
AF-RHMW12A-WGN01LF-2304W4	when last	$\geq$		tion Code W	ĽΨ	-4-	A X	+				-					3		_	
AF-RHMW12A-WGN01LF-2304W4 AF RHMW12A-WGFD01LF-2304W4	4/24/23	1000	G G		┝╍┥╴		$\frac{1}{x}$					_					3			
	4/24/23	1000	G	~~~			<u> </u>			-		_	_							
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Possible Hazard Identification	3 Unknowr	n Rad	iological		5	Sam		l <b>ispos</b> urn Ta			may b		<b>sesse</b> sposa			es are	]	ned longer than 1 month) hive For Months		
Deliverable Requested I, II, III, IV, Other (specify)	Prelim data (Le 4 report standa				ge S	Spec	ial Ins	structi	ions/C	QC Re	equire	ment	s DC	D QS	M pro	ject				
Empty Kit Relinguished by:		Date.			Tim	A							Me	thod of	Shipme	ent.				
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Relinquished by: AIX K dr. Dr. Dr.	Date/Time·	113	1211	Company AECU Company	9h		leceive leceive	-	U	F.C.	1				Date/	<u> 912</u>	6/1	Company Company		
Custody Seals Intact Custody Seal No						С	cooler T	Temper	ature	s) °C a	nd Othe	r Ren	arks.					Ver: 01/16/2019		

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5755 8th Street East

Tacoma, WA 98424

**Chain of Custody Record** 

Seurofins

America

City TAT Requested (days) B NaOH N None	des M Hexane N None O AsNaO2
Company AECOM     PWSID     Analysis Requested       Address     Due Date Requested     Preservation Codes       Address     See subcontract     A HCL     M Hexan       City     TAT Requested (days)     Image: City of the subcontract of the subcont	M Hexane N None O AsNaO2
AECOM Action Act	M Hexane N None O AsNaO2
1001 Bishop St Suite 1600     see subcontract     A HCL     M Hexam       City     TAT Requested (days)     B NaOH     N None	M Hexane N None O AsNaO2
City TAT Requested (days) B NaOH None	N None O AsNaO2
Honolulu Rush - 5 Day C Zn Acetale O AsNaC	
State, Zip Hawaii 96813 Compiliance Project. A Yes A No	Q Na2SO3 R Na2S2O3
Phone PO #	S H2SO4 T TSP Dodecahydrale
Email WO # WO # V MAAK Komis (mark.kromis@aecom.com) Wark Kromis@aecom.com)	U Acetone
Walson Tanji (watson.tanji@aecom.com)/ Mark Kromis (mark.kromis@aecom.com) Project Water Project Wat	W pH 4-5
Watson Tanji (watson tanji@aecom.com)       Project #:       V MCAA         Project Name.       Project #:       Project #:         CTO N6274223F0104       60697810         Site       SSOW#	Z olher (specify)
Sample Sample Type Matrix	
Sample Identification Sample Date Time G=grab G=grab Sample (C=comp, G=grab) G=grab G=Grad G=	
Sample Identification Sample Date Time G=grab) BT=Tissue, A=Min III & B	nstructions/Note
AF-RHMW06-WGN01LF-2304W4 4/24/23 iOUS G W N N X 4 3	
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	]
4/24/23	23
Possible Hazard Identification Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month)	1 month)
	Months
Deliverable Requested: I, II, III, IV, Other (specify) Prelim data (Level 1or2)=see TAT above DoD Stage Special Instructions/QC Requirements DOD QSM project	
4 report standard TAT. AECOM EQuIS EDD.           Empty Kit Relinquished by         Date         Time         Method of Shipment	
Lating the foundation of the second s	Company
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Company A.E.O.M.
	Lompany 1030
Relinquished by Date/Time Company Received by Date/Time Company	Company
Custody Seals Intact. Custody Seal No Cooler Temperature(s) <sup>©</sup> C and Other Remarks.	
Δ Yes Δ No	Ver: 01/16/2019

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# **Chain of Custody Record**

Seurofins | Environment Testing America

5755 8th Street East Tacoma, WA 98424

													Carrier Tracking No(s) FedEx					COC No: 2304W4AFEAC	NO
Client Information Client Contact.	Phone E-M				lail.							State of Origin:					Page	0	
	614-556	-623	1	<u>M.</u> E	M.Elaine.Walker@EurofinsET.com				ł	Hawaii					Page 1 of 1				
Company AECOM			PWSID <sup>.</sup>						Aı	naly	sis F	Requ	este	d				Jop #.	
Address.	Due Date Request							N				1					Π	Preservation Co	des
1001 Bishop St Suite 1600 City	see subcontract TAT Requested (days)				-	101		IN										A HCL B NaOH	M Hexane N None
Honolulu		Rush - 5	Day				_	`										C Zn Acetate D Nitric Acid	O AsNaO2
State Zip Hawaii 96813	Compliance Project. 🛆 Yes 🛆 No				- 1		8015C_DA!_GL_D5/ 2-(2-butoxyethoxy)-ethanol			K								E NaHSO4 F MeOH G Amchlor	P Na2O4S Q Na2SO3
Phone	PO #				11		Z)-et				4	24	1/23						R Na2S2O3 S H2SO4
808-954-4512 / 770-331-0794 Email.	WO #				-₽		Ě					ľ	93					H Ascorbic Acid I Ice	T TSP Dodecahydrate U Acetone
Watson Tanji (watson tanji@aecom.com)/ Mark Kromis (mark.kromis@aecom.com)					_ S	Ŷ	oxye										l s	J DIWater K EDTA L EDA Other	V MCAA W pH 4-5 Z other (specify)
Project Name CTO N6274223F0104	Project # 60697810				Sample (Yes or No)	5 S	5 2 2										containers		
Site	SSOW#				Ē	Š	212-(												
RHSF					- Ş	ISIN								and the second			er of		
			Sample	Matrix	Field Filtered	Perform MS/MSD (Yes or	<u>z</u>   [								Non and		Total Number		
		Sample	Type (C=comp,	(₩=water S=solid,	ΗP	form	<u>.</u>								10 A				
Sample Identification	Sample Date	Time	G=grab)	O=waste/oil, BT=Tissue, A=Ai	n 면	Per	<u>ا</u>										٩ ٩	Special II	nstructions/Note:
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Possible Hazard Identification			· · · · ·			Sam	ple D	spos	al ( A	fee	may t	e as	sesse	d if sa	mple	s are i	etaiı	ned longer than	1 month)
Non-Hazard Flammable Skin Irritant Poison E			ological				Retu							By La			Arc	hive For	Months
Deliverable Requested I, II, III, IV, Other (specify)	Prelim data (Lev 4 report standar	/el1or2)=se dTAT AF	e TAT abo COM FOul	ve DoD Sta S EDD	age	Spec	ial Ins	tructio	ons/Q	C Re	equire	ment	s DO	D QSI	A proj	ect.			
Empty Kit Relinquished by		Date			Tin	ne							Me	hod of s	Shipme	nt:			
Relinquished by	Date/Time <sup>.</sup> 4/24/23	11)	<~	Company		R	leçeiye	i by	1	En	1 201	h 1	,		Date/T	me' Li	12	11115	Company AFSON
ICUIMIN OSTERMAN Relinquished by:	Update/Time     Upda					Alex Flynis							Date/Time AL				(1)27		
A i instruct L	Date/Time			1	M							4/26/2				26/	23	Company 1070	
Relinquished by	Date/Time·			Company		R	leceiveo	i by	1						Date/T	ime'/	Τ		Company
Custody Seals Intact Custody Seal No						с	Cooler Temperature(s) °C and Other Remarks.								06/1.7				
Δ Yes Δ No																(		<u> &gt;/!//</u>	11 0102/0010
																		(	Ver 01/16/2019

## Login Sample Receipt Checklist

### Client: AECOM

### Login Number: 126567 List Number: 2 Creator: Johnson, Corey M

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

List Source: Eurofins Savannah

List Creation: 04/28/23 12:15 PM