



# ANALYTICAL REPORT

## PREPARED FOR

Attn: Terri Choy  
AECOM  
1001 Bishop Street  
Honolulu, Hawaii 96813  
Generated 3/17/2023 1:17:52 PM

## JOB DESCRIPTION

Red Hill - AFFF Assessment Sampling

## JOB NUMBER

580-124531-1

## Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

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



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3/17/2023 1:17:52 PM

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Authorized for release by  
Marie Walker, Senior Project Manager  
[M.Elaine.Walker@et.eurofinsus.com](mailto:M.Elaine.Walker@et.eurofinsus.com)  
(253)248-4972



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# Case Narrative

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

Job ID: 580-124531-1

**Job ID: 580-124531-1**

**Laboratory: Eurofins Seattle**

**Narrative**

## CASE NARRATIVE

Client: AECOM

Project: Red Hill - AFFF Assessment Sampling

Report Number: 580-124531-1

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.

### RECEIPT

Six samples were received on 3/10/2023 1:00 PM. 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 2.7° 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-RHMW12A-WGN01LF-2303W1 (580-124531-1), AF-RHMW12A-WGFD01LF-2303W1 (580-124531-2), AF-RHMW225401-WGN01B-2303W1 (580-124531-3), AF-RHMW10-WGN01LF-2303W1 (580-124531-4), AF-RHMW16-WGN01LF-2303W1 (580-124531-5) and AF-HDMW225303-WGN01LF-2303W1 (580-124531-6) were analyzed for glycols in accordance with EPA SW-846 Method 8015B - DAI. The samples were analyzed on 03/14/2023 and 03/15/2023.**

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

# Definitions/Glossary

Client: AECOM

Job ID: 580-124531-1

Project/Site: Red Hill - AFFF Assessment Sampling

## Qualifiers

### GC Semi VOA

Qualifier	Qualifier Description
M	Manual integrated compound.
U	Undetected at the Limit of Detection.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
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

# Client Sample Results

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

Job ID: 580-124531-1

**Client Sample ID: AF-RHMW12A-WGN01LF-2303W1**

**Lab Sample ID: 580-124531-1**

**Date Collected: 03/06/23 10:30**

**Matrix: Water**

**Date Received: 03/10/23 13:00**

**Method: SW846 8015C GLY - Glycols- Direct Injection (GC/FID)**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
2-(2-Butoxyethoxy)ethanol	3.0	U	5.0	1.1	mg/L			03/14/23 21:09	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

# Client Sample Results

Client: AECOM

Job ID: 580-124531-1

Project/Site: Red Hill - AFFF Assessment Sampling

**Client Sample ID: AF-RHMW12A-WGFD01LF-2303W1**

**Lab Sample ID: 580-124531-2**

**Date Collected: 03/06/23 10:30**

**Matrix: Water**

**Date Received: 03/10/23 13:00**

**Method: SW846 8015C GLY - Glycols- Direct Injection (GC/FID)**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
2-(2-Butoxyethoxy)ethanol	3.0	U M	5.0	1.1	mg/L			03/14/23 22:18	1

# Client Sample Results

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

Job ID: 580-124531-1

**Client Sample ID: AF-RHMW225401-WGN01B-2303W1**

**Lab Sample ID: 580-124531-3**

**Date Collected: 03/08/23 11:25**

**Matrix: Water**

**Date Received: 03/10/23 13:00**

**Method: SW846 8015C GLY - Glycols- Direct Injection (GC/FID)**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
2-(2-Butoxyethoxy)ethanol	3.0	U M	5.0	1.1	mg/L			03/15/23 00:15	1

1

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# Client Sample Results

Client: AECOM

Job ID: 580-124531-1

Project/Site: Red Hill - AFFF Assessment Sampling

**Client Sample ID: AF-RHMW10-WGN01LF-2303W1**

**Lab Sample ID: 580-124531-4**

**Date Collected: 03/07/23 12:35**

**Matrix: Water**

**Date Received: 03/10/23 13:00**

**Method: SW846 8015C GLY - Glycols- Direct Injection (GC/FID)**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
2-(2-Butoxyethoxy)ethanol	3.0	U M	5.0	1.1	mg/L			03/15/23 00:38	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

# Client Sample Results

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

Job ID: 580-124531-1

**Client Sample ID: AF-RHMW16-WGN01LF-2303W1**

**Lab Sample ID: 580-124531-5**

Date Collected: 03/06/23 13:15

Matrix: Water

Date Received: 03/10/23 13:00

**Method: SW846 8015C GLY - Glycols- Direct Injection (GC/FID)**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
2-(2-Butoxyethoxy)ethanol	3.0	U M	5.0	1.1	mg/L			03/15/23 01:02	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

# Client Sample Results

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

Job ID: 580-124531-1

**Client Sample ID: AF-HDMW225303-WGN01LF-2303W1**

**Lab Sample ID: 580-124531-6**

**Date Collected: 03/07/23 10:15**

**Matrix: Water**

**Date Received: 03/10/23 13:00**

**Method: SW846 8015C GLY - Glycols- Direct Injection (GC/FID)**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
2-(2-Butoxyethoxy)ethanol	3.0	U M	5.0	1.1	mg/L			03/15/23 01:25	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

# QC Sample Results

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

Job ID: 580-124531-1

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

**Lab Sample ID: MB 680-767579/12**  
**Matrix: Water**  
**Analysis Batch: 767579**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
2-(2-Butoxyethoxy)ethanol	3.0	U M	5.0	1.1	mg/L			03/14/23 15:42	1

**Lab Sample ID: LCS 680-767579/1006**  
**Matrix: Water**  
**Analysis Batch: 767579**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-(2-Butoxyethoxy)ethanol	20.0	22.2		mg/L		111	50 - 150

**Lab Sample ID: LCSD 680-767579/7**  
**Matrix: Water**  
**Analysis Batch: 767579**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-(2-Butoxyethoxy)ethanol	20.0	15.9		mg/L		79	50 - 150	33	50

**Lab Sample ID: 580-124531-1 MS**  
**Matrix: Water**  
**Analysis Batch: 767579**

**Client Sample ID: AF-RHMW12A-WGN01LF-2303W1**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
2-(2-Butoxyethoxy)ethanol	3.0	U	20.0	18.8		mg/L		94	50 - 150

**Lab Sample ID: 580-124531-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 767579**

**Client Sample ID: AF-RHMW12A-WGN01LF-2303W1**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-(2-Butoxyethoxy)ethanol	3.0	U	20.0	21.3		mg/L		107	50 - 150	12	50

# Lab Chronicle

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

Job ID: 580-124531-1

**Client Sample ID: AF-RHMW12A-WGN01LF-2303W1**

**Lab Sample ID: 580-124531-1**

Date Collected: 03/06/23 10:30

Matrix: Water

Date Received: 03/10/23 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015C GLY		1	767579	JCK	EET SAV	03/14/23 21:09

**Client Sample ID: AF-RHMW12A-WGFD01LF-2303W1**

**Lab Sample ID: 580-124531-2**

Date Collected: 03/06/23 10:30

Matrix: Water

Date Received: 03/10/23 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015C GLY		1	767579	JCK	EET SAV	03/14/23 22:18

**Client Sample ID: AF-RHMW225401-WGN01B-2303W1**

**Lab Sample ID: 580-124531-3**

Date Collected: 03/08/23 11:25

Matrix: Water

Date Received: 03/10/23 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015C GLY		1	767579	JCK	EET SAV	03/15/23 00:15

**Client Sample ID: AF-RHMW10-WGN01LF-2303W1**

**Lab Sample ID: 580-124531-4**

Date Collected: 03/07/23 12:35

Matrix: Water

Date Received: 03/10/23 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015C GLY		1	767579	JCK	EET SAV	03/15/23 00:38

**Client Sample ID: AF-RHMW16-WGN01LF-2303W1**

**Lab Sample ID: 580-124531-5**

Date Collected: 03/06/23 13:15

Matrix: Water

Date Received: 03/10/23 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015C GLY		1	767579	JCK	EET SAV	03/15/23 01:02

**Client Sample ID: AF-HDMW225303-WGN01LF-2303W1**

**Lab Sample ID: 580-124531-6**

Date Collected: 03/07/23 10:15

Matrix: Water

Date Received: 03/10/23 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015C GLY		1	767579	JCK	EET SAV	03/15/23 01:25

**Laboratory References:**

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

# Accreditation/Certification Summary

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

Job ID: 580-124531-1

## Laboratory: Eurofins Savannah

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

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2463	09-22-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C GLY		Water	2-(2-Butoxyethoxy)ethanol



# Sample Summary

Client: AECOM

Job ID: 580-124531-1

Project/Site: Red Hill - AFFF Assessment Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-124531-1	AF-RHMW12A-WGN01LF-2303W1	Water	03/06/23 10:30	03/10/23 13:00
580-124531-2	AF-RHMW12A-WGFD01LF-2303W1	Water	03/06/23 10:30	03/10/23 13:00
580-124531-3	AF-RHMW225401-WGN01B-2303W1	Water	03/08/23 11:25	03/10/23 13:00
580-124531-4	AF-RHMW10-WGN01LF-2303W1	Water	03/07/23 12:35	03/10/23 13:00
580-124531-5	AF-RHMW16-WGN01LF-2303W1	Water	03/06/23 13:15	03/10/23 13:00
580-124531-6	AF-HDMW225303-WGN01LF-2303W1	Water	03/07/23 10:15	03/10/23 13:00

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# Chain of Custody Record

United AWB #: 016-21574201

<b>Client Information</b> Company: AECOM Address: 1001 Bishop St. Suite 1600 City: Honolulu State, Zip: Hawaii 96813 Phone: 808-954-4512 / 770-331-0794 Email: Watson.Tanji@aecom.com / Mark.Kromis@aecom.com Project Name: CTO N6274223F0104 Site: RHSF		Lab Piv: Elaine Walker E-Mail: M.Elaine.Walker@EurofinsET.com PWSID:		Sampler: Zoe Diermier Phone: 805-218-9453		Carrier Tracking No(s): 2303W1AFEA05 Page: 1 of 1 State of Origin: Hawaii Job #:			
Due Date Requested: see subcontract TAT Requested (days): Rush - ASAP Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No PO #: WO #: Project #: 60697810 SSO#:				Analysis Requested					
Sample Identification AF-RHMW12A-WGN01LF-2303W1 AF-RHMW12A-WGFD01LF-2303W1		Sample Date 3-6-23 3-6-23	Sample Time 1030 1030	Sample Type (C=Comp, G=grab) G G	Matrix (W=water, S=solid, O=vegetable, BT=Tissue, A=Air) W W	Field Filtered Sample (Yes or No) N N	Perform MMS/MSD (Yes or No) N N	Total Number of Containers 3 3	Special Instructions/Note:
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological				Sample Disposal ( A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months					
Deliverable Requested: I, II, III, IV, Other (specify)				Prelim data (Level 1 or 2)-see TAT above. DoD Stage 4 report standard TAT. AECOM EQUIS EDD.					
Relinquished by: Zoe Diermier Relinquished by: Alex Edmond Relinquished by:		Date/Time: 3/6/23 1435 Date/Time: 3/8/23 1430 Date/Time:		Date/Time: 3/6/23 1915 Date/Time: 3/9/23 1300 Date/Time: 2.7/2.7		Method of Shipment: AECOM Company: AECOM Company:			
Custody Seals Intact: <input type="checkbox"/> Custody Seal No.:				Cooler Temperature(s) °C and Other Remarks:					





# Chain of Custody Record

COC No: 2303W1AFE07  
Page: 1 of 1  
Job #:

Carrier Tracking No(s): **ANWB**  
**000-27574261**  
State of Origin: Hawaii

Lab P.M.: Elaine Walker  
E-Mail: M.Elaine.Walker@EurofinsET.com

Sampler: **Andy Young**  
Phone: **402-871-5712**

Company: AECOM  
Address: 1001 Bishop St. Suite 1600  
Honolulu, Hawaii 96813  
Phone: 808-954-4512 / 770-331-0794  
Email: Watson.Tanji@aecom.com / Mark.Kromis@aecom.com  
Project Name: CTO N6274223F0104  
Site: RH5F

Due Date Requested: see subcontract  
TAT Requested (days): **Rush - ASAP**  
Compliance Project:  Yes  No  
PO #:   
WO #:   
Project #: 60697810  
SSOW#:   
PWSID:   
Analysis Requested

- Preservation Codes:**
- A - HCL
  - B - NaOH
  - C - Zn Acetate
  - D - Nitric Acid
  - E - NaHSO4
  - F - MeOH
  - G - Amchlor
  - H - Ascorbic Acid
  - I - Ice
  - J - DI Water
  - K - EDTA
  - L - EDA
  - Other:
- M - Hexane**  
**N - None**  
**O - AsNaO2**  
**P - Na2O4S**  
**Q - Na2SO3**  
**R - Na2SO3**  
**S - H2SO4**  
**T - TSP Dodecahydrate**  
**U - Acetone**  
**V - MCAA**  
**W - pH 4-5**  
**Z - other (specify)**

Sample ID	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, G=grab)	Preservation Code	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015C_DAI_GL_DS/2-(2-butoxyethoxy)-ethanol	Total Number of Containers	Special Instructions/Note:
AF-RHMW225401-WGN01B-2303W1	3/8/23	1125	G	W		N	N	X	3	

**Possible Hazard Identification**  
 Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown  Radiological  
 Deliverable Requested: I, II, III, IV, Other (specify)

**Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)**  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

**Empty Kit Relinquished by:**  
 Relinquished by: **Andy Young**  
 Relinquished by: **Miranda DeSearno**  
 Relinquished by:

**Date/Time:**  
 Date/Time: 3/8/23 / 1435  
 Date/Time: 3/8/23 / 1440

**Company:**  
 Company: AECOM  
 Company: AECOM  
 Company: AECOM

**Received by:** **Miranda DeSearno** **3/8/23 1435** **AECOM**  
**Received by:** **Andy Young** **3/8/23 1300** **AECOM**  
**Received by:** **Miranda DeSearno** **3/8/23 1440** **AECOM**

**Cooler Temperature(s) °C and Other Remarks:** **2-7/2-7**

**Custody Seal No.:**  Yes  No



# Chain of Custody Record

**Eurofins FGS, Seattle**  
5755 8th Street East  
Tacoma, WA 98424

Unit: AWB 0V62757420  
COC No: 2303W1AFE003

Carrier Tracking Net(s): FedEx  
State of Origin: Hawaii  
Page: Page 1 of 1  
Job #:

Lab PM: Elaine Walker  
E-Mail: M.Elaine.Walker@EurofinsET.com

Sample: OLIVIA SHIVELY  
Phone: 856-938-7718

**Client Information**  
Client Contact:

**Company:** AECOM  
**Address:** 1001 Bishop St. Suite 1600  
**City:** Honolulu  
**State, Zip:** Hawaii 96813  
**Phone:** 808-954-4512 / 770-331-0794  
**Email:** Watson.Tanji@aeacom.com / Mark.Kromis@aeacom.com  
**Project Name:** CTO N6274223F0104  
**Site:** RHSF

**Due Date Requested:** see subcontract  
**TAT Requested (days):** Rush - ASAP  
**Compliance Project:**  Yes  No  
**PO #:**  
**WO #:**  
**Project #:** 60697810  
**SSOW#:**

**Analysis Requested**

8015C_DAI_GL_DS/2-(2-butoxyethoxy)-ethanol	Perform MS/MSD (Yes or No)	Field Filtered Sample (Yes or No)	Preservation Code:	Sample Type (C=comp, G=grab)	Sample Time	Sample Date	Matrix (Water, Solid, On-site, Air)
	X	N	A	G	1335	3/17/23	

**Sample Identification**  
AF-RHMMW10-WGN01LF-2303W1

**Special Instructions/Note:**

Total Number of containers: 3

Preservation Codes:  
A - HCL  
B - NaOH  
C - Zn Acetate  
D - Nitric Acid  
E - NaHSO4  
F - MeOH  
G - Amchlor  
H - Ascorbic Acid  
I - Ice  
J - DI Water  
K - EDTA  
L - EDA  
Other:

M - Hexane  
N - None  
O - AsNaO2  
P - Na2O4S  
Q - Na2SO3  
R - Na2S2O3  
S - H2SO4  
T - TSP Dodecahydrate  
U - Acetone  
V - MCAA  
W - pH 4-5  
Z - other (specify)

**Possible Hazard Identification**  
 Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown  Radiological

**Deliverable Requested:** I, II, III, IV, Other (specify)

**Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)**  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Received by:	Date/Time:	Company:
James Mason	3/17/23 1430	AECOM
Yaya Vega	3-8-23 1430	AECOM
James Mason	3/17/23 1300	AECOM
Yaya Vega	2/27/23 2.7	AECOM

Relinquished by: OLIVIA SHIVELY  
Relinquished by: James Mason  
Relinquished by: Yaya Vega

Custody Seals Intact:  Yes  No

Custody Seal No.:

# Chain of Custody Record

**Eurofins FGS, Seattle**  
5755 8th Street East  
Tacoma, WA 98424

United AWP: 016-2757 4201

Carrier Tracking No(s):  
COC No: 2303W1AFE06  
Page: Page 1 of 1  
Job #:

Lab PM: Elaine Walker  
E-Mail: M.Elaine.Walker@EurofinsET.com  
Phone: 809-286-5385

Sampler: Hunter Nihilkawa  
Phone: 809-286-5385

Company: AECOM  
Address: 1001 Bishop St. Suite 1600  
City: Honolulu  
State, Zip: Hawaii 96813  
Phone: 808-954-4512 / 770-331-0794  
Email: Watson.Tanji@aecom.com / Mark.Kromis@aecom.com  
Project #: 60697810  
SSOW#: CTO N6274223F0104  
Site: RHSF

Client Information  
Client Contact: M.Elaine.Walker@EurofinsET.com  
State of Origin: Hawaii  
Analysis Requested: **Rush - ASAP**  
Due Date Requested: see subcontract  
TAT Requested (days): **3/6/23**  
Compliance Project:  Yes  No  
PO #: **3/6/23**  
WO #: **3/6/23**  
Project #: **3/6/23**  
SSOW#: **3/6/23**

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Preservation Code	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015C_DAL_GL_DS1/2-(2-butoxyethoxy)-ethanol	Total Number of Containers	Special Instructions/Note:
AF-RHMW16-WGN01LF-2303W1	3/6/23	1315	G	W	N	N	X	3	

Possible Hazard Identification  
 Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown  Radiological  
 Deliverable Requested: I, II, III, IV, Other (specify) **4 report standard IAT, AECOM/EQUIS FDD**

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Received by: **ALY EDMONDS** Date/Time: **3/6/23 1445** Company: **AECOM**  
 Relinquished by: **Hunter Nihilkawa** Date/Time: **3/8/23 1420** Company: **AECOM**  
 Relinquished by: **ALY EDMONDS** Date/Time: **3/8/23 1420** Company: **AECOM**

Cooler Temperature(s) °C and Other Remarks: **2-7/2.7**

# Chain of Custody Record

**Eurofins FGS, Seattle**  
 5755 8th Street East  
 Tacoma, WA 98424

United AWP: 016-27574201

COC No: 2303W1AFE04  
 Page: 1 of 1  
 Job #:

Carrier Tracking No(s):  
 Lab PM: Elaine Walker  
 State of Origin: Hawaii

Sample ID: **QING SHINEY**  
 Phone: **856-938-7770**  
 E-Mail: **M.Elaine.Walker@EurofinsEL.com**

Client Information  
 Client Contact:

Company: AECOM  
 Address: 1001 Bishop St. Suite 1600  
 City: Honolulu  
 State, Zip: Hawaii 96813  
 Phone: 808-954-4512 / 770-331-0794  
 Email: Watson.Tanji@aecom.com / Mark.Kromis@aecom.com  
 Project Name: CTO N6274223F0104  
 Site: RHSF

Due Date Requested: see subcontract  
 TAT Requested (days): **Rush - ASAP**  
 Compliance Project:  Yes  No  
 PO #:   
 WO #:   
 Project #: 60697810  
 SSOW#:   
 PWSID:   
 Analysis Requested

Sample ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Preservation Code	Matrix (W=water, S=solid, O=soil, BT=tissue, A=air)
AF-HDMW25303-WGN01F-2303W1	3/17/23	1015	G	W	

Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015C_DAL_GL_DS/2-(2-butoxyethoxy)-ethanol	Total Number of Containers	Special Instructions/Note:
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3	

Preservation Codes:  
 M - Hexane  
 N - None  
 O - AsNaO2  
 P - Na2O4S  
 Q - Na2SO3  
 R - H2SO4  
 S - H2SO4  
 T - TSP Dodecahydrate  
 U - Acetone  
 V - MCAA  
 W - pH 4-5  
 X - EDTA  
 Y - EDTA  
 Z - other (specify)  
 Other:

Possible Hazard Identification  
 Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown  Radiological  
 Deliverable Requested: I, II, III, IV, Other (specify)  
 Empty Kit Relinquished by: **QING SHINEY**  
 Relinquished by: **James Mason**  
 Relinquished by:

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Received by: **James Mason** Date/Time: **3/17/23 1430**  
 Received by: **[Signature]** Date/Time: **3/18/23 1300**  
 Received by: **[Signature]** Date/Time: **3/17/23 1430**

Company: AECOM  
 Cooler Temperature: **2.7/2.7** °C and Other Remarks:  
 Ver: 01/16/2019





## Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-124531-1

**Login Number: 124531**

**List Number: 1**

**Creator: Presley, Kim A**

**List Source: Eurofins Seattle**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	N/A	
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.	N/A	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	N/A	
Containers are not broken or leaking.	N/A	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-124531-1

**Login Number: 124531**

**List Number: 2**

**Creator: Harley, Tynisha**

**List Source: Eurofins Savannah**

**List Creation: 03/10/23 02:48 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	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	