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**APPENDIX B**  
**LAB DATA**



**Tetra Tech EC, Inc.**

**MULIWAI TISSUE/838**

**ARF 51706**

**Sampling Dates August 02 - 24, 2006**

Number of pages in this report: \_\_\_\_\_



## Case Narrative

ARF: 51706

Project: Muliwai Tissue/838

State Certification Number: CA1312

Results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

### Sample Receipt Information:

The sample group was received September 21, 2006, frozen on dry ice. The samples were assigned Analytical Request Form (ARF) number 51706. The sample numbers and requested analyses were compared to the chains of custody. No exception was noted. On October 13, 2006 the client requested perchlorate analysis by LC-Mass Spec (in order to achieve lower reporting limits than allowed by EPA method 314) for the following samples: 2FD, NW1FD, NW2FD, NW1SW1-1FD and 9AFD and 10A COMP.

Sample Table

CLIENT ID	APPL ID	Matrix	Date Sampled	Date Received
1	AX49331	MISC	8/2/06	9/21/06
3	AX49332	MISC	8/2/06	9/21/06
4	AX49333	MISC	8/2/06	9/21/06
1B	AX49334	MISC	8/3/06	9/21/06
5	AX49335	MISC	8/3/06	9/21/06
6	AX49336	MISC	8/3/06	9/21/06
7	AX49337	MISC	8/3/06	9/21/06
9	AX49338	MISC	8/3/06	9/21/06
10	AX49339	MISC	8/3/06	9/21/06
12	AX49340	MISC	8/4/06	9/21/06
13	AX49341	MISC	8/4/06	9/21/06
14	AX49342	MISC	8/4/06	9/21/06
NW1	AX49343	MISC	8/5/06	9/21/06
NW2	AX49344	MISC	8/6/06	9/21/06
NW3	AX49345	MISC	8/6/06	9/21/06
NW4	AX49346	MISC	8/5/06	9/21/06
NW5	AX49347	MISC	8/5/06	9/21/06
NW6	AX49348	MISC	8/19/06	9/21/06
NW7	AX49349	MISC	8/19/06	9/21/06
NW8	AX49350	MISC	8/19/06	9/21/06
NW9	AX49351	MISC	8/19/06	9/21/06
NW10	AX49352	MISC	8/20/06	9/21/06
NW1SW3-1	AX49353	MISC	8/24/06	9/21/06
NW1SW1-1	AX49354	MISC	8/24/06	9/21/06
NW1SW2-1	AX49355	MISC	8/9/06	9/21/06
COMP 8,8A	AX49356	MISC	8/3/06	9/21/06

2FD	AX49357	MISC	8/3/06	9/21/06
NW1FD	AX49358	MISC	8/5/06	9/21/06
NW2FD	AX49359	MISC	8/19/06	9/21/06
NW1SW1-1FD	AX49360	MISC	8/9/06	9/21/06
9AFD AND 10A COMP	AX49361	MISC	8/3/06	9/21/06

Percent moisture was provided by Tetra Tech.

# EPA Method 8081A

## Organochlorine Pesticides

### Sample Preparation:

The fish tissue samples were extracted according to EPA method 3550B. The extracts were cleaned with florisil prior to analysis.

### Analysis Information:

#### Samples:

The samples were analyzed according to EPA method 8081A using a Hewlett Packard GC equipped with an ECD.

#### Calibrations:

Initial and continuing calibrations were performed according to the method. All acceptance criteria were met.

#### Blanks:

No target analyte was detected above the reporting limit for the method blank.

#### Spikes and Duplicates:

A Laboratory Control Spike (LCS) was used for quality assurance. Sample NW1FD and the MS/MSD performed on the sample had low surrogate recoveries. All other recoveries were acceptable.

Sample NW1FD was designated by the client for MS/MSD analysis. All target compounds recovered low in the MS and MSD; all RPDs exceeded the 30% limit.

#### Surrogates:

All surrogates recovered within acceptance limits.

### Summary:

No other analytical problem was encountered.

## EPA Method 8270C

### Sample Preparation:

The tissue samples were extracted according to EPA method 3550B. Samples 2FD, NW1FD, and the matrix spikes performed on sample NW1FD were concentrated to a final volume of 5mL since they could not be concentrated to 1mL. As a result, the reporting limits for 2FD and NW1FD are raised accordingly.

### Sample Analysis Information:

The samples were analyzed according to EPA Method 8270C using a Hewlett Packard GC/MS.

### Quality Control/Assurance

#### Spike Recovery

A Laboratory Control Spike (LCS) was used for quality assurance. All spike recoveries were acceptable.

Sample NW1FD was designated by the client for an MS/MSD analysis. All spike recoveries were acceptable.

#### Method blanks

No target compound was detected at or above the reporting level.

#### Surrogates

Sample NW1SW1-1FD recovered 2-Fluorophenol and Fluorobiphenyl below the lower control limits at 44.6% and 26.2% respectively. Re-analysis of the sample at a dilution factor of 5 provided similar results. Due to limited sample volume, the sample could not be re-extracted. Only the undiluted analysis is reported. All other surrogate recoveries were within control limits.

#### Calibration

The initial and continuing calibrations were performed according to the method. All method acceptance criteria were met.

#### Tuning:

The instrument was tuned using DFTPP. All method criteria were met.

#### Internal Standards

Chrysene-d12 recovered below the lower control limit in sample 9AFD AND 10A COMP. Sample 9AFD AND 10A COMP was also analyzed at a dilution factor of 5 where the internal standards are acceptable. Both analyses are reported. Perylene-d12 recovered below the lower control limit in samples NW2FD, NW1SW1-1FD, 9AFD AND 10A COMP, and the MS/MSD performed on sample NW1FD. No target analyte is quantitated using the Perylene-d12 internal standard. All other method criteria were met.

### Summary:

No other problem was encountered.

# EPA Method 8330A

## Explosives

### Sample Preparation:

The samples were extracted according to EPA method 8330A, within acceptable holding times. Two grams of fish sample were weighed and then dried overnight prior to extraction.

### Analysis:

The samples were analyzed according to EPA Method 8330A using a Hewlett Packard 1050 HPLC with UV detector and an Agilent 1100 HPLC with UV detector. The system's computer program inaccurately calculated the baseline on some of the peak integrations. These baselines were manually integrated for an accurate peak area count. Chromatograms for both before and after manual integration are contained in the report.

An additional LC/Mass Spec analysis was performed by the laboratory for three samples (1B, NW9 and NW1SW1-1) in order to confirm the presence of 2,4-DNT that was detected on both LC/UV columns. The LC/MS analysis indicated that 2,4-DNT was not present in the samples, and the Extracted Ion Profiles (EIP) were included in the package behind the LC/UV sample chromatograms.

The samples were reported without correcting for % moisture, since the fish were dried prior to extraction.

### Quality Control/Assurance:

#### Spike Recovery

Laboratory Control Spikes (LCS/LCSD) were used for quality assurance. All spike recoveries met acceptance criteria.

Samples "4" and "NW1SW3-1" were selected by the client for MS/MSD analysis. For "4 MS/MSD", the RDX recovered above control limits, at 152% and 194% due to an elevated chromatographic baseline from the sample matrix. For "NW1SW3-1 MS/MSD", the 2,4-DNT recovered below control limits, at 77.3% and 68.4%. Nitroglycerine for the MSD recovered below control limits, at 63.9%, and the %RPD was greater than the 25% acceptance criteria, at 33%. Both sets of MS/MSD were re-analyzed with similar results, and no further action was taken.

#### Method blanks:

No target analyte was detected above the reporting limits for the method blanks.

#### Surrogates:

All surrogate recoveries were within control limits, with the exception of sample "NW1SW3-1" in which the surrogate recovered at 47.2%. The sample was re-analyzed with similar results. There were no target analytes detected in the sample, and no further action was taken.

#### Calibration:

The initial and continuing calibrations and second source were analyzed according to the method. All acceptance criteria were met.

#### Summary:

No other analytical problem was encountered. All data are acceptable.

# Perchlorate by LC-Mass Spec

## Sample Preparation and Analysis Information:

The samples were prepared according to the cleanup method CA CDFA CFSAN Rev 2 April 2005 and analyzed according to the DoD Perchlorate Handbook March 2006, using an Agilent 1100 LC-Mass Spec (ESI). The samples were prepared past the recommended 28-day hold time.

Sample "9AFD/10A COMP" was J-flagged as an "estimated value", even though the concentration was greater than the reporting limit, in accordance with the DoD acceptance criteria for the 83/85 ion ratio.

## Quality Control/Assurance

### Calibrations:

Calibrations were performed according to the DoD Perchlorate Handbook March 2006. All calibration acceptance criteria were met. The second source met acceptance criteria.

### Blanks:

The method blanks contained no Perchlorate at or above the MDL.

### Spikes:

A Laboratory Control Spike (LCS) was prepared using DI water. The LCS recoveries met acceptance criteria.

An Interference Check Sample (I.C.S.) was prepared using a mixed anions solution. The ICS recovery met acceptance criteria.

Sample NW1FD was selected by the client for matrix spike / matrix spike duplicate analysis; however there was insufficient sample volume remaining to perform matrix spikes for this sample. The laboratory randomly selected sample 2FD for MS/MSD analysis. The spike recoveries were outside acceptance criteria due to the parent sample perchlorate response at approximately six times the spike level. The MS/MSD were re-analyzed with similar results.

### Internal Standards:

The area counts of the sample Internal Standards were compared to the average I.S. area counts of the second source and initial CCV. All I.S. were within the 50%D DoD Perchlorate Handbook March 2006 acceptance criteria.

## Summary:

All data were acceptable. No other analytical exception is noted.

# **EPA Method 8260B**

## **Volatile Organic Compounds**

### **Preparation Information:**

The fish tissue samples were purged according to EPA method 5035.

### **Analysis Information:**

The samples were analyzed according to EPA method 8260B using a Hewlett Packard GC/MS. The samples were screened for J-values between the MDL and the PQL.

### **Quality Control/Assurance**

#### **Spike Recoveries**

Laboratory Control Spikes (LCS) and matrix spikes (MS/MSD) were used for quality assurance. A second source standard was used for the LCS. All recoveries met acceptance criteria.

Samples NW1FD was designated by the client for MS/MSD analysis. Most target compounds recovered outside the control limits.

#### **Method blanks**

The blanks contained no other target compound at or above reporting limits.

#### **Surrogates**

The surrogate recoveries are summarized on the Forms 2 & 8. Sample 2FD recovered Bromofluorobenzene below the 82% limit at 76.9%. All other recoveries were within acceptance limits.

#### **Initial and Continuing Calibrations**

Initial and continuing calibrations were analyzed according to the method. All acceptance criteria were met.

#### **Internal Standards**

Internal standard recoveries were checked against the mid-point of the initial calibrations. All IS recoveries were acceptable.

#### **Tuning:**

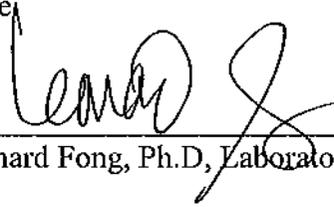
The instrument was tuned using BFB. All method criteria were met.

### **Summary:**

No other exception was noted.

**CERTIFICATION**

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the hard copy has been authorized by the Laboratory Manager or his designee, as verified by the following signature



10/23/06

Leonard Fong, Ph.D, Laboratory Director / Date

# ARF Summary Chain of Custody

# APPL - Analysis Request Form

51706

Client: Tetra Tech, Inc.  
 Address: 820 Millilani St, Ste 700  
Hololulu, HI 96813  
 Attn: SUSAN CARSTENN  
 Phone: 808-533-3366 Fax: 808-533-3306  
 Job: MULIWAI TISSUE/838  
 PO #: NA  
 Chain of Custody (Y/N): Y #  
 RAD Screen (Y/N): Y pH (Y/N): N  
 Turn Around Type: STD

Received by: CM   
 Date Received: 09/21/06 Time: 10:30  
 Delivered by: FED EX  
 Shuttle Custody Seals (Y/N): Y  
 Chest Temp(s): FROZEN  
 Color: VOA FRIG  
 Samples Chilled until Placed in Refrig/Freezer: Y  
 Project Manager: Cynthia Heeb  
 QC Report Type: DVP4/HI/EDD  
 Due Date: 10/03/06

Comments:

**\*\*See ATTACHED SPECIAL ANALYTE LIST and Reporting Limits!!**  
**Columbia Analytical will provide moisture data.**  
**Tissue Samples homgenized and frozen at CAS/Kelso prior to shipment**  
**Use moisture corrected self calculating forms**  
**FINAL results due to Client 10-11-06**  
**send Excel EDD w/QC to mark Rigby and Gary Floyd**  
**send pdf of report to scarstenn@ttsfo.com, GFloyd@ttsfo.com, and Mark.Rigby@tetrattech.com**  
**10-5-06: Add pentachlorophenol to the 8270C analyte list**

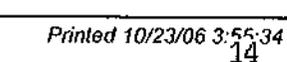
Sample Distribution:

**GC: 5-\$8270S, 5-\$88SS**  
**Extractions: 25- MSE018, 5- SON002LL, 5- SON009**  
**VOA: 1-\$8260SX, 4-\$8260S**  
**LCMS: 25-\$83TTS, 5-\$CLO4LCS**  
**Wellab: 30-MOIST**  
**Other: 1-HOLD**

Charges:

Invoice To:

**GARY FLOYD**  
**180 Howard St., Ste 250**  
**San Francisco, CA 94105**  
**415-974-1221**

Client ID	APPL ID	Sampled	Analyses Requested
1. 1	AX49331M 	08/02/06 00:00	\$83TTS, MOIST
2. 3	AX49332M 	08/02/06 00:00	\$83TTS, MOIST
3. 4	MS/MSD AX49333M 	08/02/06 00:00	\$83TTS, MOIST
4. 1B	AX49334M 	08/03/06 00:00	\$83TTS, MOIST
5. 5	AX49335M 	08/03/06 00:00	\$83TTS, MOIST
6. 6	AX49336M 	08/03/06 00:00	\$83TTS, MOIST
7. 7	AX49337M 	08/03/06 00:00	\$83TTS, MOIST

# APPL - Analysis Request Form

51706

8.	9		AX49338M	08/03/06	00:00	\$83TTS, MOIST
9.	10		AX49339M	08/03/06	00:00	\$83TTS, MOIST
10.	12		AX49340M	08/04/06	00:00	\$83TTS, MOIST
11.	13		AX49341M	08/04/06	00:00	\$83TTS, MOIST
12.	14		AX49342M	08/04/06	00:00	\$83TTS, MOIST
13.	NW1		AX49343M	08/05/06	00:00	HOLD
14.	NW2		AX49344M	08/06/06	00:00	\$83TTS, MOIST
15.	NW3		AX49345M	08/06/06	00:00	\$83TTS, MOIST
16.	NW4		AX49346M	08/05/06	00:00	\$83TTS, MOIST
17.	NW5		AX49347M	08/05/06	00:00	\$83TTS, MOIST
18.	NW6		AX49348M	08/19/06	00:00	\$83TTS, MOIST
19.	NW7		AX49349M	08/19/06	00:00	\$83TTS, MOIST
20.	NW8		AX49350M	08/19/06	00:00	\$83TTS, MOIST
21.	NW9		AX49351M	08/19/06	00:00	\$83TTS, MOIST
22.	NW10		AX49352M	08/20/06	00:00	\$83TTS, MOIST
23.	NW1SW3-1	MS/MSD	AX49353M	08/24/06	00:00	\$83TTS, MOIST
24.	NW1SW1-1		AX49354M	08/24/06	00:00	\$83TTS, MOIST
25.	NW1SW2-1		AX49355M	08/09/06	00:00	\$83TTS, MOIST
26.	COMP 8,8A		AX49356M	08/03/06	00:00	\$83TTS, MOIST
27.	2FD		AX49357M	08/03/06	00:00	\$8260SX, \$8270S, \$88SS, \$CLO4LCS, MOIST
28.	NW1FD	MS/MSD	AX49358M	08/05/06	00:00	\$8260S, \$8270S, \$88SS, \$CLO4LCS, MOIST
29.	NW2FD		AX49359M	08/19/06	00:00	\$8260S, \$8270S, \$88SS, \$CLO4LCS, MOIST
30.	NW1SW1-1FD		AX49360M	08/09/06	00:00	\$8260S, \$8270S, \$88SS, \$CLO4LCS, MOIST
31.	9AFD AND 10A COMP		AX49361M	08/03/06	00:00	\$8260S, \$8270S, \$88SS, \$CLO4LCS, MOIST

Initials \_\_\_\_\_ Date \_\_\_\_\_

# APPL Sample Receipt Form

ARF# 51706

Sample	Container Type	Count	Sample	Container Type	Count	Sample	Container Type	Count
AX49331	21 8oz Jar	1						
AX49332	21 8oz Jar	1						
AX49333	21 8oz Jar	3						
AX49334	21 8oz Jar	1						
AX49335	21 8oz Jar	1						
AX49336	21 8oz Jar	1						
AX49337	21 8oz Jar	1						
AX49338	21 8oz Jar	1						
AX49339	21 8oz Jar	1						
AX49340	21 8oz Jar	1						
AX49341	21 8oz Jar	1						
AX49342	21 8oz Jar	1						
AX49343	21 8oz Jar	3						
AX49344	21 8oz Jar	1						
AX49345	21 8oz Jar	1						
AX49346	21 8oz Jar	1						
AX49347	21 8oz Jar	1						
AX49348	21 8oz Jar	1						
AX49349	21 8oz Jar	1						
AX49350	21 8oz Jar	1						
AX49351	21 8oz Jar	1						
AX49352	21 8oz Jar	1						
AX49353	21 8oz Jar	1						
AX49354	21 8oz Jar	3						
AX49355	21 8oz Jar	1						
AX49356	21 8oz Jar	1						
AX49357	21 8oz Jar	1						
AX49358	21 8oz Jar	2						
AX49359	21 8oz Jar	1						
AX49360	21 8oz Jar	1						
AX49361	21 8oz Jar	1						

Company Name	Tetra Tech	LAB ID	Number of Containers	REMARKS
Requester Name/Number	Multival Tissue/838			
Analyst Name	Susan Carstenn			
1	08/02/06	Tissue	1	X
3	08/02/06	Tissue	1	X
4	08/02/06	Tissue	3	X
1b	08/03/06	Tissue	1	X
5	08/03/06	Tissue	1	X
6	08/03/06	Tissue	1	X
7	08/03/06	Tissue	1	X
9	08/03/06	Tissue	1	X
10	08/03/06	Tissue	1	X

Comments/Special Instructions:  
Contact Susan Carstenn at Tetra Tech for testing requirements.

Custody of sample aliquots relinquished to APPL/Fresno  
Samples homogenized and frozen at CAS/Kelso prior to shipment.

**REPORTING REQUIREMENTS**  
24 hr 48 hr 5 day  
Standard (21 days)  
Provide FAX Preliminary Results  
Requested Report Date: \_\_\_\_\_

**REPORTING REQUIREMENTS**  
I. Routine Report  
II. Report Dup., MS, MSD as r  
III. Data Validation Report (in raw data)

RELINQUISHED BY:  
Signature: \_\_\_\_\_  
Printed Name: Amanda Juell  
Firm: CAS/KELSO

RECEIVED BY:  
Signature: *A. Juell*  
Printed Name: Juell  
Firm: CAS/KELSO  
Date/Time: 9/20/06 1420

RELINQUISHED BY:  
Signature: \_\_\_\_\_  
Printed Name: \_\_\_\_\_  
Firm: \_\_\_\_\_  
Date/Time: \_\_\_\_\_

RECEIVED BY:  
Signature: *C. Neuen*  
Printed Name: C. Neuen  
Firm: *Appl Inc*  
Date/Time: 9/21/06 1030

Sample Name/Number	Client Name	LAB ID	Matrix	Number of Containers	Contact Tetra Tech for testing requirements	REMARKS
Muliwai Tissue/838	Tetra Tech					
	Susan Carstenn					
12	08/04/06		Tissue	1	X	K0607294-020
13	08/04/06		Tissue	1	X	K0607294-021
14	08/04/06		Tissue	1	X	K0607294-022
NW1	08/05/06		Tissue	3	X	K0607294-024
NW2	08/06/06		Tissue	1	X	K0607294-025
NW3	08/06/06		Tissue	1	X	K0607294-026
NW4	08/05/06		Tissue	1	X	K0607294-027
NW5	08/05/06		Tissue	1	X	K0607294-029
NW6	08/19/06		Tissue	1	X	K0607294-030
NW7	08/19/06		Tissue	1	X	K0607294-031
NW8	08/19/06		Tissue	1	X	K0607294-032

Comments/Special Instructions:

Contact Susan Carstenn at Tetra Tech for testing requirements.

Custody of sample aliquots relinquished to APPL/Firmo  
Samples homogenized and frozen at CAS/Kelso prior to shipment.

**REPORT REQUIREMENTS**

24 hr \_\_\_\_\_ 48 hr \_\_\_\_\_ 5 day \_\_\_\_\_  
Standard (21 days)  
Provide FAX Preliminary Results

Requested Report Date: \_\_\_\_\_

**REPORT REQUIREMENTS**

I. Routine Report

II. Report Dup., MS, MSD as raw data)

III. Data Validation Report (in raw data)

V. EDD

**RELINQUISHED BY:**

Signature: \_\_\_\_\_  
Printed Name: Amanda Juell  
Firm: CAS/KELSO

**RELINQUISHED BY:**

Signature: \_\_\_\_\_  
Printed Name: \_\_\_\_\_  
Firm: \_\_\_\_\_  
Date/Time: \_\_\_\_\_

**RECEIVED BY:**

Signature: \_\_\_\_\_  
Printed Name: C. Moun  
Firm: Appl Firm  
Date/Time: 2/21/06 1030

**RECEIVED BY:**

Signature: \_\_\_\_\_  
Printed Name: \_\_\_\_\_  
Firm: \_\_\_\_\_  
Date/Time: 9/20/06 1420

Company Name	Tetra Tech	LAB ID	Quantity	Contact Tetra Tech for testing requirements	REMARKS
Mulwa Tissue/838					
Susan Carstenn					
NW9	08/19/06	Tissue	1	X	K0607294-034
NW10	08/20/06	Tissue	1	X	K0607294-035
NW1SW3-1	08/24/06	Tissue	1	X	K0607294-036
NW1SW1-1	08/24/06	Tissue	3	X	K0607294-037
NW1SW2-1	08/09/06	Tissue	1	X	K0607294-039
Comp 8, 8a	08/03/06	Tissue	1	X	K0607294-040

**Comments/Special Instructions:**  
 Contact Susan Carstenn at Tetra Tech for testing requirements.

Custody of sample aliquots relinquished to APPL/Fresno  
 Samples homogenized and frozen at CAS/Kelso prior to shipment.

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: *[Signature]*  
 Printed Name: C. Moran  
 Firm: Appli Inc  
 Date/Time: 9/21/06 1030

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: *[Signature]*  
 Printed Name: J. Well  
 Firm: CAS/Kelso  
 Date/Time: 9/20/06 1420

**Requested Report Date:** \_\_\_\_\_

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: Amanda Juell  
 Firm: CAS/KELSO

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_

**Requested Report Date:** \_\_\_\_\_

**RELINQUISHED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_

**RECEIVED BY:**  
 Signature: \_\_\_\_\_  
 Printed Name: \_\_\_\_\_  
 Firm: \_\_\_\_\_



Client	Sample ID	Labcode	Explosives Subaliquot for APPL	Field Duplicate Subaliquot for APPL
			40	
		1 K0607294-001	40	
		3 K0607294-004	40	
		4 K0607294-005	40	
		1b K0607294-006	40	
		5 K0607294-007	40	
		6 K0607294-008	40	
		2fd K0607294-009	-	120
		7 K0607294-012	40	
		8 K0607294-014	-	
		9 K0607294-016	40	
		9afd K0607294-017	-	120
		10 K0607294-018	40	
		12 K0607294-020	40	
		13 K0607294-021	40	
		14 K0607294-022	40	
		NW1 K0607294-024	40	
		NW2 K0607294-025	40	
		NW3 K0607294-026	40	
		NW4 K0607294-027	40	
		NW1fd K0607294-028	-	360
		NW5 K0607294-029	40	
		NW6 K0607294-030	40	
		NW7 K0607294-031	40	
		NW8 K0607294-032	40	
		NW2fd K0607294-033	-	120
		NW9 K0607294-034	40	
		NW10 K0607294-035	40	
		NW1SW3-1 K0607294-036	40	
		NW1SW1-1 K0607294-037	40	
		NW1SW1-1fd K0607294-038	-	120
		NW1SW2-1 K0607294-039	40	
		Comp 8, 8a K0607294-040	40	
		9 Safd and 10a K0607294-042	-	120

Client	Labcode	Field Duplicate Subaliquot for APPL	Field Duplicate Subaliquot for STL	Field Duplicate Subaliquot for Battelle
	2fd   K0607294-009	120	30	40
	9afd   K0607294-017	120	30	40
	NW1fd   K0607294-028	360	90	120
	NW2fd   K0607294-033	120	30	40
	NW1SW1-1fd   K0607294-038	120	30	40
	p 9afd and 10a   K0607294-042	120	30	40

[Redacted]

Contact: Cynthia Herb

APPL

4203 West Swift Ave.

Fresno, CA 93722

559 - 275-2175

<b>Chemical</b>	<b>method</b>	<b>MDL</b>	<b>PQL</b>	<b>unit</b>
<b>Purgeable Organics</b>	<b>10g, 14 days</b>			
Styrene	8260B	0.69	5	ug/Kg
Ethylbenzene	8260B	0.64	5	ug/Kg
m-Xylene	8260B		5	ug/Kg
p-Xylene	8260B	0.43	5	ug/Kg
o-Xylene	8260B	0.61	5	ug/Kg
Toluene	8260B	0.65	5	ug/Kg
1,2,4-Trimethylbenzene	8260B	1.18	5	ug/Kg
<b>Pesticides</b>	<b>30g, 14 days</b>	<b>low level</b>		
4,4'-DDT	8081A	0.4	5	ug/Kg
Aldrin	8081A	1.4	5	ug/Kg
alpha BHC	8081A	1	5	ug/Kg
beta BHC	8081A	1	5	ug/Kg
delta BHC	8081A	1.1	5	ug/Kg
gamma BHC (lindane)	8081A	0.9	5	ug/Kg
Heptachlor	8081A	1.1	5	ug/Kg
Heptachlor epoxide	8081A	1.1	5	ug/Kg
<b>Energetics</b>	<b>30g, 14 days</b>			
2,4-DNT	8330	80	500	ug/Kg
RDX (Cyclonite)	8330	80	500	ug/Kg
Nitroglycerine	8330 modified	185	500	ug/Kg
<b>Other</b>	<b>5g, 28days</b>			
Perchlorate	314m	2.06	20	ug/Kg
<b>Phthalate Esters</b>	<b>30g, 14 days</b>			
Bis(2-ethylhexyl) phthalate	8270C	61.6	330	ug/Kg
Dimethyl phthalate	8270C	63.3	330	ug/Kg
Di-n-butyl phthalate	8270C	65.9	330	ug/Kg
Diethyl phthalate	8270C	62.1	330	ug/Kg
Di-n-octyl phthalate	8270C	58.4	330	ug/Kg
Pyrene	8270C	54.1	330	ug/Kg

**EPA METHOD 8081A  
Organochlorine Pesticides**

**APPL, INC.**

**EPA METHOD 8081A  
Organochlorine Pesticides  
QC Summary**

**APPL, INC.**

Method Blank  
EPA 8081A SOIL

Blank Name/QCG: 061006S-49358 - 105638  
Batch ID: \$88SS-061006A

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Sample Type	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
BLANK	4,4'-DDT	Not detected	5	0.4	ug/Kg	10/6/06	10/10/06
BLANK	a-BHC	Not detected	5	1	ug/Kg	10/6/06	10/10/06
BLANK	Aldrin	Not detected	5	1.4	ug/Kg	10/6/06	10/10/06
BLANK	b-BHC	Not detected	5	1	ug/Kg	10/6/06	10/10/06
BLANK	d-BHC	Not detected	5	1.1	ug/Kg	10/6/06	10/10/06
BLANK	g-BHC (Lindane)	Not detected	5	0.9	ug/Kg	10/6/06	10/10/06
BLANK	Heptachlor	Not detected	5	1.1	ug/Kg	10/6/06	10/10/06
BLANK	Heptachlor epoxide	Not detected	5	1.1	ug/Kg	10/6/06	10/10/06
BLANK	Surrogate: 2,4,5,6-Tetrachloro-m-xylene	59.0	40-123		%	10/6/06	10/10/06
BLANK	Surrogate: DECA-PCB	66.9	29-125		%	10/6/06	10/10/06

Run #: 132  
Instrument: LUCY  
Sequence: 061005  
Initials: MA

GC SC-Blank-REG MDLs  
Printed: 10/10/06 1:35:21 PM

Surrogate Recovery - Retention Time Summary

Lab Name: APPL, Inc.

SDG No: 51706

Case No: 51706

Date Analyzed: 10/10/06

Matrix: MISC

Instrument: LUCY

APPL ID.	Client Sample No.	Surrogate: 2,4,5,6-Tetrachloro-m-	Surrogate: DECA-PCB
061006A-BLK	Blank	59.0	66.9
061006A-LCS	Lab Control Spike	73.0	84.0
AX49357	2FD	67.1	50.5
AX49358	NW1FD	31.8 #	27.4 #
AX49359	NW2FD	75.5	58.8
AX49360	NW1SW1-1FD	49.4	61.9
AX49361	9AFD AND 10A COMP	68.2	56.0
061006A-MS	Matrix Spike	24.9 *	20.4 *
061006A-MSD	Matrix SpikeD	31.5 *	24.0 *

Comments: Batch: \$88SS-061006A

Laboratory Control Spike Recovery  
EPA 8081A SOIL

APPL ID: 061006S-49358 LCS - 105638  
 Batch ID: \$88SS-061006A

APPL Inc.  
 4203 West Swift Avenue  
 Fresno, CA 93722

Compound Name	Spike Level ug/Kg	SPK Result ug/Kg	SPK % Recovery	Recovery Limits
4,4'-DDT	667	637	95.5	47-120
a-BHC	667	585	87.7	41-114
Aldrin	667	545	81.7	40-108
b-BHC	667	521	78.1	63-129
d-BHC	667	559	83.8	52-105
g-BHC (Lindane)	667	572	85.8	46-114
Heptachlor	667	543	81.4	48-115
Heptachlor epoxide	667	538	80.7	61-110
-----				
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	333	243	73.0	40-123
Surrogate: DECA-PCB	257	216	84.0	29-125
-----				

Comments:

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Primary	SPK
Extraction Date :	10/6/06
Analysis Date :	10/10/06
Instrument :	LUCY
Run :	133
Initials :	MA

Printed: 10/10/06 1:35:21 PM  
 APPL Standard LCS

**Matrix Spike Recoveries**  
**EPA 8081A SOIL**

APPL ID: 061006S-49358 MS - 105638  
Batch ID: \$88SS-061006A  
Sample ID: AX49358  
Client ID: NW1FD

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Compound Name	Spike Lvl ug/Kg	Matrix Result ug/Kg	SPK Result ug/Kg	DUP Result ug/Kg	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
4,4'-DDT	667	ND	138	187	20.7 #	28.0 #	47-120	30.2 #	30
a-BHC	667	2.7	148	218	21.8 #	32.3 #	41-114	38.3 #	30
Aldrin	667	ND	142	193	21.3 #	28.9 #	40-108	30.4 #	30
b-BHC	667	ND	127	190	19.0 #	28.5 #	63-129	39.7 #	30
d-BHC	667	ND	131	200	19.6 #	30.0 #	52-105	41.7 #	30
g-BHC (Lindane)	667	ND	160	228	24.0 #	34.2 #	46-114	35.1 #	30
Heptachlor	667	11	147	209	20.4 #	29.7 #	48-115	34.8 #	30
Heptachlor epoxide	667	4.6	130	179	18.8 #	26.1 #	61-110	31.7 #	30
Surrogate: 2,4,5,6-Tetrachloro-m-xylene	333	NA	82.9	105	24.9 #	31.5 #	40-123		
Surrogate: DECA-PCB	257	NA	52.4	61.7	20.4 #	24.0 #	29-125		

# = Recovery is outside QC limits.

Comments:

Primary	SPK	DUP
Extraction Date :	10/6/06	10/6/06
Analysis Date :	10/10/06	10/10/06
Instrument :	LUCY	LUCY
Run :	148	149
Initials :	MA	

Printed: 10/11/06 3:10:16 PM  
APPL Standard MSD

# EPA 8081A

Form 4

## Blank Summary

Lab Name: APPL, Inc.

SDG No: 51706

Case No: 51706

Date Analyzed: 10/10/06

Matrix: MISC

Instrument: LUCY

Blank ID: 061006A-BLK

Time Analyzed: 1020

APPL ID.	Client Sample No.	File ID.	Date Analyzed
061006A-BLK	Blank	132	10/10/06 1020
061006A-LCS	Lab Control Spike	133	10/10/06 1035
AX49357	2FD	134	10/10/06 1051
AX49358	NW1FD	135	10/10/06 1107
AX49359	NW2FD	136	10/10/06 1123
AX49360	NW1SW1-1FD	137	10/10/06 1138
AX49361	9AFD AND 10A COMP	138	10/10/06 1154
061006A-MS	Matrix Spike	148	10/10/06 1355
061006A-MSD	Matrix Spiked	149	10/10/06 1531

Comments: Batch: \$88SS-061006A

Printed: 10/11/06 3:13:06 PM  
Form 4, Blank Summary

**EPA METHOD 8081A**  
**Organochlorine Pesticides**  
**Sample Data**

**APPL, INC.**

# EPA 8081A SOIL

Tetra Tech, Inc.  
820 Millilani St, Ste 700  
Honolulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN  
Project: MULIWAI TISSUE/838  
**Sample ID: 2FD**  
Sample Collection Date: 8/3/06

ARF: 51706  
**APPL ID: AX49357**  
QCG: \$88SS-061006A-105638

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
(Concentrations and Limits have been adjusted to reflect 69.2 Percent Moisture.)							
EPA 8081A	4,4'-DDT	Not detected	16	1.3	ug/Kg	10/6/06	10/10/06
EPA 8081A	a-BHC	Not detected	16	3.0	ug/Kg	10/6/06	10/10/06
EPA 8081A	Aldrin	Not detected	16	4.5	ug/Kg	10/6/06	10/10/06
EPA 8081A	b-BHC	Not detected	16	3.0	ug/Kg	10/6/06	10/10/06
EPA 8081A	d-BHC	Not detected	16	3.6	ug/Kg	10/6/06	10/10/06
EPA 8081A	g-BHC (Lindane)	Not detected	16	2.9	ug/Kg	10/6/06	10/10/06
EPA 8081A	Heptachlor	Not detected	16	3.6	ug/Kg	10/6/06	10/10/06
EPA 8081A	Heptachlor epoxide	Not detected	16	3.6	ug/Kg	10/6/06	10/10/06
EPA 8081A	Surrogate: 2,4,5,6-Tetrachloro-m-xylene	67.1	40-123		%	10/6/06	10/10/06
EPA 8081A	Surrogate: DECA-PCB	50.5	29-125		%	10/6/06	10/10/06

Run #: 134 Instrument: LUCY Sequence: 061005 Dilution Factor: 1 Initials: MA
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Printed: 10/13/06 12:24:31 PM  
APPL-F1-SC-MCRes/MCPQL-REG MDLs

# EPA 8081A SOIL

Tetra Tech, Inc.  
820 Millilani St, Ste 700  
Hololulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN  
Project: MULIWAI TISSUE/838  
Sample ID: NW1FD  
Sample Collection Date: 8/5/06

ARF: 51706  
APPL ID: AX49358  
QCG: \$88SS-061006A-105638

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
(Concentrations and Limits have been adjusted to reflect 66.9 Percent Moisture.)							
EPA 8081A	4,4'-DDT	Not detected	15	1.2	ug/Kg	10/6/06	10/10/06
EPA 8081A	a-BHC	8.2 J	15	3.0	ug/Kg	10/6/06	10/10/06
EPA 8081A	Aldrin	Not detected	15	4.2	ug/Kg	10/6/06	10/10/06
EPA 8081A	b-BHC	Not detected	15	3.0	ug/Kg	10/6/06	10/10/06
EPA 8081A	d-BHC	Not detected	15	3.3	ug/Kg	10/6/06	10/10/06
EPA 8081A	g-BHC (Lindane)	Not detected	15	2.7	ug/Kg	10/6/06	10/10/06
EPA 8081A	Heptachlor	33 Y	15	3.3	ug/Kg	10/6/06	10/10/06
EPA 8081A	Heptachlor epoxide	14 J	15	3.3	ug/Kg	10/6/06	10/10/06
EPA 8081A	Surrogate: 2,4,5,6-Tetrachloro-m-xylene	31.8 #	40-123		%	10/6/06	10/10/06
EPA 8081A	Surrogate: DECA-PCB	27.4 #	29-125		%	10/6/06	10/10/06

J = Estimated value.  
# = Recovery (or RPD) is outside QC limits.  
Y = % Difference between primary and confirmation column is > 40%.

Run #: 135 Instrument: LUCY Sequence: 061005 Dilution Factor: 1 Initials: MA
--

Printed: 10/13/06 12:24:31 PM  
APPL-F1-SC-MCRes/MCPQL-REG MDLs

# EPA 8081A SOIL

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
Honolulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN

Project: MULIWAI TISSUE/838

Sample ID: NW2FD

Sample Collection Date: 8/19/06

ARF: 51706

APPL ID: AX49359

QCG: \$88SS-061006A-105638

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
(Concentrations and Limits have been adjusted to reflect 71.2 Percent Moisture.)							
EPA 8081A	4,4'-DDT	Not detected	17	1.4	ug/Kg	10/6/06	10/10/06
EPA 8081A	a-BHC	Not detected	17	3.0	ug/Kg	10/6/06	10/10/06
EPA 8081A	Aldrin	Not detected	17	4.9	ug/Kg	10/6/06	10/10/06
EPA 8081A	b-BHC	Not detected	17	3.0	ug/Kg	10/6/06	10/10/06
EPA 8081A	d-BHC	Not detected	17	3.8	ug/Kg	10/6/06	10/10/06
EPA 8081A	g-BHC (Lindane)	Not detected	17	3.1	ug/Kg	10/6/06	10/10/06
EPA 8081A	Heptachlor	Not detected	17	3.8	ug/Kg	10/6/06	10/10/06
EPA 8081A	Heptachlor epoxide	7.6 J	17	3.8	ug/Kg	10/6/06	10/10/06
EPA 8081A	Surrogate: 2,4,5,6-Tetrachloro-m-xylene	75.5	40-123		%	10/6/06	10/10/06
EPA 8081A	Surrogate: DECA-PCB	58.8	29-125		%	10/6/06	10/10/06

J = Estimated value.

Run #: 136
Instrument: LUCY
Sequence: 061005
Dilution Factor: 1
Initials: MA

Printed: 10/13/06 12:24:31 PM  
APPL-F1-SC-MCRes/MCPQL-REG MDLs

EPA 8081A SOIL

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
Hololulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN

Project: MULIWAI TISSUE/838

Sample ID: NW1SW1-1FD

Sample Collection Date: 8/9/06

ARF: 51706

APPL ID: AX49360

QCG: \$88SS-061006A-105638

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
(Concentrations and Limits have been adjusted to reflect 75.4 Percent Moisture.)							
EPA 8081A	4,4'-DDT	Not detected	20	1.6	ug/Kg	10/6/06	10/10/06
EPA 8081A	a-BHC	Not detected	20	4.0	ug/Kg	10/6/06	10/10/06
EPA 8081A	Aldrin	Not detected	20	5.7	ug/Kg	10/6/06	10/10/06
EPA 8081A	b-BHC	Not detected	20	4.0	ug/Kg	10/6/06	10/10/06
EPA 8081A	d-BHC	Not detected	20	4.5	ug/Kg	10/6/06	10/10/06
EPA 8081A	g-BHC (Lindane)	Not detected	20	3.7	ug/Kg	10/6/06	10/10/06
EPA 8081A	Heptachlor	Not detected	20	4.5	ug/Kg	10/6/06	10/10/06
EPA 8081A	Heptachlor epoxide	Not detected	20	4.5	ug/Kg	10/6/06	10/10/06
EPA 8081A	Surrogate: 2,4,5,6-Tetrachloro-m-xylen	49.4	40-123		%	10/6/06	10/10/06
EPA 8081A	Surrogate: DECA-PCB	61.9	29-125		%	10/6/06	10/10/06

Run #: 137  
Instrument: LUCY  
Sequence: 061005  
Dilution Factor: 1  
Initials: MA

Printed: 10/13/06 12:24:31 PM  
APPL-F1-SC-MCRes/MCPQL-REG MDLs

# EPA 8081A SOIL

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
Hololulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN

Project: MULIWAI TISSUE/838

Sample ID: 9AFD AND 10A COMP

Sample Collection Date: 8/3/06

ARF: 51706

APPL ID: AX49361

QCG: \$88SS-061006A-105638

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
(Concentrations and Limits have been adjusted to reflect 72.9 Percent Moisture.)							
EPA 8081A	4,4'-DDT	Not detected	18	1.5	ug/Kg	10/6/06	10/10/06
EPA 8081A	a-BHC	Not detected	18	4.0	ug/Kg	10/6/06	10/10/06
EPA 8081A	Aldrin	Not detected	18	5.2	ug/Kg	10/6/06	10/10/06
EPA 8081A	b-BHC	Not detected	18	4.0	ug/Kg	10/6/06	10/10/06
EPA 8081A	d-BHC	Not detected	18	4.1	ug/Kg	10/6/06	10/10/06
EPA 8081A	g-BHC (Lindane)	Not detected	18	3.3	ug/Kg	10/6/06	10/10/06
EPA 8081A	Heptachlor	Not detected	18	4.1	ug/Kg	10/6/06	10/10/06
EPA 8081A	Heptachlor epoxide	Not detected	18	4.1	ug/Kg	10/6/06	10/10/06
EPA 8081A	Surrogate: 2,4,5,6-Tetrachloro-m-xylene	68.2	40-123		%	10/6/06	10/10/06
EPA 8081A	Surrogate: DECA-PCB	56.0	29-125		%	10/6/06	10/10/06

Run #: 138 Instrument: LUCY Sequence: 061005 Dilution Factor: 1 Initials: MA
--

Printed: 10/13/06 12:24:31 PM  
APPL-F1-SC-MCRes/MCPQL-REG MDLs

**EPA METHOD 8270C**  
**Semivolatile Organic Compounds**

**APPL, INC.**

**EPA METHOD 8270C**  
**Semivolatile Organic Compounds**  
**QC Summary**

**APPL, INC.**

**Method Blank**  
**EPA 8270C Soils**

Blank Name/QCG: 061006S-49358 - 105614  
Batch ID: \$8270S-061005A

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Sample Type	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
BLANK	Bis (2-ethylhexyl) phthalate	Not detected	330	61.6	ug/Kg	10/6/06	10/9/06
BLANK	Di-n-butylphthalate	Not detected	330	65.9	ug/Kg	10/6/06	10/9/06
BLANK	Di-n-octylphthalate	Not detected	330	58.4	ug/Kg	10/6/06	10/9/06
BLANK	Diethyl phthalate	Not detected	330	62.1	ug/Kg	10/6/06	10/9/06
BLANK	Dimethyl phthalate	Not detected	330	63.3	ug/Kg	10/6/06	10/9/06
BLANK	Pentachlorophenol	Not detected	330	58.7	ug/Kg	10/6/06	10/9/06
BLANK	Pyrene	Not detected	330	54.1	ug/Kg	10/6/06	10/9/06
BLANK	Surrogate recovery (2FP)	61.1	48-118		%	10/6/06	10/9/06
BLANK	Surrogate recovery (FBP)	77.6	39-116		%	10/6/06	10/9/06
BLANK	Surrogate recovery (NBZ)	85.3	49-142		%	10/6/06	10/9/06
BLANK	Surrogate recovery (PHL)	63.7	47-122		%	10/6/06	10/9/06
BLANK	Surrogate recovery (TBP)	61.4	44-114		%	10/6/06	10/9/06
BLANK	Surrogate recovery (TPH)	72.3	40-135		%	10/6/06	10/9/06

Run #: 1009L003
Instrument: Linus
Sequence: L061005
Initials: LF

GC SC-Blank-REG MDLs  
Printed: 10/10/06 10:55:26 AM

**Surrogate Recovery - Retention Time Summary**

Lab Name: APPL, Inc.

SDG No: 51706

Case No: 51706

Date Analyzed: 10/9/06

Matrix: MISC

Instrument: Linus

APPL ID.	Client Sample No.	Surrogate recovery (2FP)	Surrogate recovery (FBP)
061005A-BLK	Blank	61.1	77.6
061005A-LCS	Lab Control Spike	62.7	80.5
AX49361	9AFD AND 10A COMP	54.8	83.1
AX49357	2FD	65.5	92.7
AX49358	NW1FD	63.3	101
AX49359	NW2FD	53.1	77.6
AX49360	NW1SW1-1FD	44.6 #	26.2 #
AX49361	9AFD AND 10A COMP	55.0	78.5
061005A-MS	Matrix Spike	60.7	94.0
061005A-MSD	Matrix SpikeD	61.0	94.3

Comments: Batch: \$8270S-061005A

**Surrogate Recovery - Retention Time Summary**

Lab Name: APPL, Inc.

SDG No: 51706

Case No: 51706

Date Analyzed: 10/9/06

Matrix: MISC

Instrument: Linus

APPL ID.	Client Sample No.	Surrogate recovery (NBZ)	Surrogate recovery (PHL)
061005A-BLK	Blank	85.3	63.7
061005A-LCS	Lab Control Spike	85.3	64.3
AX49361	9AFD AND 10A COMP	77.2	60.4
AX49357	2FD	91.6	72.3
AX49358	NW1FD	94.1	70.8
AX49359	NW2FD	76.3	58.2
AX49360	NW1SW1-1FD	80.2	65.0
AX49361	9AFD AND 10A COMP	77.7	60.0
061005A-MS	Matrix Spike	93.1	66.1
061005A-MSD	Matrix Spiked	91.6	66.9

Comments: Batch: \$8270S-061005A

**Surrogate Recovery - Retention Time Summary**

Lab Name: APPL, Inc.

SDG No: 51706

Case No: 51706

Date Analyzed: 10/9/06

Matrix: MISC

Instrument: Linus

APPL ID.	Client Sample No.	Surrogate recovery (TBP)	Surrogate recovery (TPH)
061005A-BLK	Blank	61.4	72.3
061005A-LCS	Lab Control Spike	63.3	80.2
AX49361	9AFD AND 10A COMP	61.6	52.8
AX49357	2FD	71.3	93.4
AX49358	NW1FD	72.6	103
AX49359	NW2FD	60.3	70.3
AX49360	NW1SW1-1FD	52.4	63.4
AX49361	9AFD AND 10A COMP	63.4	75.8
061005A-MS	Matrix Spike	68.5	118
061005A-MSD	Matrix SpikeD	64.8	124

Comments: Batch: \$8270S-061005A

## Laboratory Control Spike Recovery

### EPA 8270C Soils

APPL ID: 061006S-49358 LCS - 105614  
 Batch ID: \$8270S-061005A

APPL Inc.  
 4203 West Swift Avenue  
 Fresno, CA 93722

Compound Name	Spike Level ug/Kg	SPK Result ug/Kg	SPK % Recovery	Recovery Limits
Bis (2-ethylhexyl) phthalate	1670	1400	83.8	38-148
Di-n-butylphthalate	1670	1380	82.6	36-151
Di-n-octylphthalate	1670	1380	82.6	51-139
Diethyl phthalate	1670	1370	82.0	51-126
Dimethyl phthalate	1670	1360	81.4	33-142
Pentachlorophenol	1670	1550	92.8	32-150
Pyrene	1670	1380	82.6	45-137
<hr style="border-top: 1px dashed black;"/>				
Surrogate recovery (2FP)	6670	4180	62.7	48-118
Surrogate recovery (FBP)	3330	2680	80.5	39-116
Surrogate recovery (NBZ)	3330	2840	85.3	49-142
Surrogate recovery (PHL)	6670	4290	64.3	47-122
Surrogate recovery (TBP)	6670	4220	63.3	44-114
Surrogate recovery (TPH)	3330	2670	80.2	40-135

Comments: \_\_\_\_\_

<b>Primary</b>	<b>SPK</b>
Extraction Date :	10/6/06
Analysis Date :	10/9/06
Instrument :	Linus
Run :	1009L004
Initials :	LF

Printed: 10/10/06 10:16:54 AM

APPL Standard LCS

## Matrix Spike Recoveries EPA 8270C Soils

APPL ID: 061006S-49358 MS - 105614  
 Batch ID: \$8270S-061005A  
 Sample ID: AX49358  
 Client ID: NW1FD

APPL Inc.  
 4203 West Swift Avenue  
 Fresno, CA 93722

Compound Name	Spike Lvl ug/Kg	Matrix Result ug/Kg	SPK Result ug/Kg	DUP Result ug/Kg	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
Bis (2-ethylhexyl) phthalate	1670	1200	2790	2820	95.2	97.0	38-148	1.1	30
Di-n-butylphthalate	1670	480	1900	1930	85.0	86.8	36-151	1.6	30
Di-n-octylphthalate	1670	ND	1300	1370	77.8	82.0	51-139	5.2	30
Diethyl phthalate	1670	ND	1630	1700	97.6	102	51-126	4.2	30
Dimethyl phthalate	1670	ND	1620	1650	97.0	98.8	33-142	1.8	30
Pentachlorophenol	1670	ND	733	761	43.9	45.6	32-150	3.7	30
Pyrene	1670	ND	1880	1920	113	115	45-137	2.1	30
-----									
Surrogate recovery (2FP)	6670	NA	4050	4070	60.7	61.0	48-118		
Surrogate recovery (FBP)	3330	NA	3130	3140	94.0	94.3	39-116		
Surrogate recovery (NBZ)	3330	NA	3100	3050	93.1	91.6	49-142		
Surrogate recovery (PHL)	6670	NA	4410	4460	66.1	66.9	47-122		
Surrogate recovery (TBP)	6670	NA	4570	4320	68.5	64.8	44-114		
Surrogate recovery (TPH)	3330	NA	3930	4130	118	124	40-135		
-----									

Comments: \_\_\_\_\_

Primary	SPK	DUP
Extraction Date :	10/6/06	10/6/06
Analysis Date :	10/10/06	10/10/06
Instrument :	Linus	Linus
Run :	1009L017	1009L018
Initials :	LF	

Printed: 10/10/06 10:17:00 AM  
 APPL MSD SCII

# EPA 8270C

Form 4

## Blank Summary

Lab Name: APPL, Inc.

SDG No: 51706

Case No: 51706

Date Analyzed: 10/9/06

Matrix: MISC

Instrument: Linus

Blank ID: 061005A-BLK

Time Analyzed: 1954

APPL ID.	Client Sample No.	File ID.	Date Analyzed
061005A-BLK	Blank	1009L003	10/9/06 1954
061005A-LCS	Lab Control Spike	1009L004	10/9/06 2021
AX49361	9AFD AND 10A COMP	1009L009	10/9/06 2232
AX49357	2FD	1009L012	10/9/06 2351
AX49358	NW1FD	1009L013	10/10/06 0018
AX49359	NW2FD	1009L014	10/10/06 0044
AX49360	NW1SW1-1FD	1009L015	10/10/06 0111
AX49361	9AFD AND 10A COMP	1009L016	10/10/06 0137
061005A-MS	Matrix Spike	1009L017	10/10/06 0203
061005A-MSD	Matrix Spiked	1009L018	10/10/06 0229

Comments: Batch: \$8270S-061005A

Printed: 10/10/06 10:17:03 AM  
Form 4, Blank Summary

Form 5  
Tune Summary

Lab Name: APPL Inc.  
Case No: 51706  
Matrix: Soil  
ID: SVTUNE 06-07-06

SDG No: 51706  
Date Analyzed: 10/9/06  
Instrument: Linus  
Time Analyzed: 19:08

Client Sample No.	APPL ID.	File ID.	Date Analyzed	
1	Blank	061005A BLK 1/30.00G	1009L003.D	10/9/06 19:54
2	Lab Control Spike	061005A LCS-1 1/30.0	1009L004.D	10/9/06 20:21
3	9AFD AND 10A COMP	AX49361M01 1/30.00G	1009L009.D	10/9/06 22:32
4	2FD	AX49357M01 5/30.00G	1009L012.D	10/9/06 23:51
5	NW1FD	AX49358M01 5/30.00G	1009L013.D	10/10/06 0:18
6	NW2FD	AX49359M01 1/30.00G	1009L014.D	10/10/06 0:44
7	NW1SW1-1FD	AX49360M01 1/30.00G	1009L015.D	10/10/06 1:11
8	9AFD AND 10A COMP	AX49361M01 1/30.00G	1009L016.D	10/10/06 1:37
9	Matrix Spike	AX49358M01 MS-1 5/30	1009L017.D	10/10/06 2:03
10	Matrix Spike Dup	AX49358M01 MSD-1 5/3	1009L018.D	10/10/06 2:29
11				
12				
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17				
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19				
20				
21				
22				

m/e

51	30 - 60% of mass 198	35.9
68	0 - 2% of mass 69	1.5
70	0 - 2% of mass 69	0.6
127	40 - 60% of mass 198	45.5
197	0 - 1% of mass 198	0.2
198	100 - 100% of mass 198	100.0
199	5 - 9% of mass 198	6.8
275	10 - 30% of mass 198	24.6
365	1 - 100% of mass 198	2.7
441	0.01 - 100% of mass 443	77.2
442	40 - 150% of mass 198	77.3
443	17 - 23% of mass 442	19.1

8A  
INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: APPL Inc. Contract: Review  
 Lab Code: \_\_\_\_\_ SDG No.: 51706  
 Lab File ID (Standard): 1009L002.D Date Analyzed: 9 Oct 06 19:28  
 Instrument ID: Linus Time Analyzed: 9 Oct 06 19:28  
 GC Column: \_\_\_\_\_ ID: \_\_\_\_\_ Heated Purge: (Y/N) \_\_\_\_\_

	1,4-dichlorobenzene-D4(IS)		Napthalene-D8(IS)		Acenaphthene-D10(IS)	
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD	530658	4.32	2112610	5.71	1122000	7.71
UPPER LIMIT	1061316	4.82	4225220	6.21	2244000	8.21
LOWER LIMIT	265329	3.82	1056305	5.21	561000	7.21
SAMPLE NO.						
01 061005A BLK 1/30.00G	522160	4.31	2244080	5.70	1257120	7.71
02 061005A LCS-1 1/30.00	501925	4.32	2116530	5.71	1156120	7.71
03 AX49361M01 1/30.00G	532589	4.32	2242590	5.71	1199330	7.71
04 AX49357M01 5/30.00G	477375	4.32	2019730	5.71	1133820	7.72
05 AX49358M01 5/30.00G	464652	4.32	1930850	5.72	1031670	7.72
06 AX49359M01 1/30.00G	440801	4.33	1851560	5.72	994146	7.72
07 AX49360M01 1/30.00G	430961	4.33	1911550	5.73	1098000	7.73
08 AX49361M01 1/30.00G	421155	4.33	1762850	5.72	931370	7.73
09 AX49358M01 MS-1 5/30	433118	4.34	1797210	5.73	976886	7.74
10 AX49358M01 MSD-1 5/30	444697	4.34	1852570	5.73	1001950	7.74
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = -50% of internal standard area.  
 RT UPPER LIMIT = +0.50 minutes of internal standard RT  
 RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.  
 \* Values outside of QC limits.

8A  
INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: APPL Inc. Contract: Review  
 Lab Code: \_\_\_\_\_ SDG No.: 51706  
 Lab File ID (Standard): 1009L002.D Date Analyzed: 9 Oct 06 19:28  
 Instrument ID: Linus Time Analyzed: 9 Oct 06 19:28  
 GC Column: \_\_\_\_\_ ID: \_\_\_\_\_ Heated Purge: (Y/N) \_\_\_\_\_

	Phenanthrene-D10(IS)		Chrysene-D12(IS)		Perylene-D12(IS)	
	AREA #	RT #	AREA #	RT #	AREA #	RT #
12 HOUR STD	1821770	9.43	1482750	12.50	1421010	14.04
UPPER LIMIT	3643540	9.93	2965500	13.00	2842020	14.54
LOWER LIMIT	910885	8.93	741375	12.00	710505	13.54
SAMPLE NO.						
01 061005A BLK 1/30.00G	2019310	9.43	1896990	12.50	1624400	14.04
02 061005A LCS-1 1/30.00	1832330	9.43	1605590	12.50	1585550	14.04
03 AX49361M01 1/30.00G	1920720	9.43	1630970	12.55	1311490	14.10
04 AX49357M01 5/30.00G	1772160	9.44	1375350	12.56	925378	14.10
05 AX49358M01 5/30.00G	1690230	9.44	1200490	12.55	710982	14.10
06 AX49359M01 1/30.00G	1546620	9.45	799786	12.69	520340 *	14.16
07 AX49360M01 1/30.00G	1804360	9.45	1276940	12.53	686871 *	14.09
08 AX49361M01 1/30.00G	1102620	9.45	712723 *	12.69	415805 *	14.17
09 AX49358M01 MS-1 5/30	1563540	9.46	822680	12.57	451236 *	14.13
10 AX49358M01 MSD-1 5/30	1605130	9.46	786936	12.57	442666 *	14.12
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

AREA UPPER LIMIT = +100% of internal standard area.  
 AREA LOWER LIMIT = -50% of internal standard area.  
 RT UPPER LIMIT = +0.50 minutes of internal standard RT  
 RT LOWER LIMIT = -0.50 minutes of internal standard RT

# Column used to flag values outside QC limits with an asterisk.  
 \* Values outside of QC limits.

**EPA METHOD 8270C**  
**Semivolatile Organic Compounds**  
**Sample Data**

## EPA 8270C Soils

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
HoloLulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN  
Project: MULIWAI TISSUE/838  
Sample ID: 2FD  
Sample Collection Date: 8/3/06

ARF: 51706  
APPL ID: AX49357

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
(Concentrations and Limits have been adjusted to reflect 69.2 Percent Moisture.)							
EPA 8270C	Bis (2-ethylhexyl) phthalate	Not detected	5400	1000	ug/Kg	10/6/06	10/9/06
EPA 8270C	Di-n-butylphthalate	1500 J	5400	1100	ug/Kg	10/6/06	10/9/06
EPA 8270C	Di-n-octylphthalate	Not detected	5400	950	ug/Kg	10/6/06	10/9/06
EPA 8270C	Diethyl phthalate	Not detected	5400	1000	ug/Kg	10/6/06	10/9/06
EPA 8270C	Dimethyl phthalate	Not detected	5400	1000	ug/Kg	10/6/06	10/9/06
EPA 8270C	Pentachlorophenol	Not detected	5400	950	ug/Kg	10/6/06	10/9/06
EPA 8270C	Pyrene	Not detected	5400	880	ug/Kg	10/6/06	10/9/06
EPA 8270C	Surrogate recovery (2FP)	65.5	48-118		%	10/6/06	10/9/06
EPA 8270C	Surrogate recovery (FBP)	92.7	39-116		%	10/6/06	10/9/06
EPA 8270C	Surrogate recovery (NBZ)	91.6	49-142		%	10/6/06	10/9/06
EPA 8270C	Surrogate recovery (PHL)	72.3	47-122		%	10/6/06	10/9/06
EPA 8270C	Surrogate recovery (TBP)	71.3	44-114		%	10/6/06	10/9/06
EPA 8270C	Surrogate recovery (TPH)	93.4	40-135		%	10/6/06	10/9/06

J = Estimated value.

Run #: 1009L012  
Instrument: Linus  
Sequence: L061005  
Dilution Factor: 5  
Initials: LF

Printed: 10/16/06 8:25:34 AM  
APPL-F1-SC-MCRes/MCPQL-REG MDLs

## EPA 8270C Soils

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
Honolulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN  
Project: MULIWAI TISSUE/838  
Sample ID: NW1FD  
Sample Collection Date: 8/5/06

ARF: 51706  
APPL ID: AX49358

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
(Concentrations and Limits have been adjusted to reflect 66.9 Percent Moisture.)							
EPA 8270C	Bis (2-ethylhexyl) phthalate	3500 J	5000	930	ug/Kg	10/6/06	10/10/06
EPA 8270C	Di-n-butylphthalate	1400 J	5000	1000	ug/Kg	10/6/06	10/10/06
EPA 8270C	Di-n-octylphthalate	Not detected	5000	880	ug/Kg	10/6/06	10/10/06
EPA 8270C	Diethyl phthalate	Not detected	5000	940	ug/Kg	10/6/06	10/10/06
EPA 8270C	Dimethyl phthalate	Not detected	5000	960	ug/Kg	10/6/06	10/10/06
EPA 8270C	Pentachlorophenol	Not detected	5000	890	ug/Kg	10/6/06	10/10/06
EPA 8270C	Pyrene	Not detected	5000	820	ug/Kg	10/6/06	10/10/06
EPA 8270C	Surrogate recovery (2FP)	63.3	48-118		%	10/6/06	10/10/06
EPA 8270C	Surrogate recovery (FBP)	101	39-116		%	10/6/06	10/10/06
EPA 8270C	Surrogate recovery (NBZ)	94.1	49-142		%	10/6/06	10/10/06
EPA 8270C	Surrogate recovery (PHL)	70.8	47-122		%	10/6/06	10/10/06
EPA 8270C	Surrogate recovery (TBP)	72.6	44-114		%	10/6/06	10/10/06
EPA 8270C	Surrogate recovery (TPH)	103	40-135		%	10/6/06	10/10/06

J = Estimated value.

Run #: 1009L013
Instrument: Linus
Sequence: L061005
Dilution Factor: 5
Initials: LF

Printed: 10/16/06 8:25:34 AM  
APPL-F1-SC-MCRes/MCPQL-REG MDLs

## EPA 8270C Soils

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
Hololulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN  
Project: MULIWAI TISSUE/838  
Sample ID: NW2FD  
Sample Collection Date: 8/19/06

ARF: 51706  
APPL ID: AX49359

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
(Concentrations and Limits have been adjusted to reflect 71.2 Percent Moisture.)							
EPA 8270C	Bis (2-ethylhexyl) phthalate	Not detected	1100	210	ug/Kg	10/6/06	10/10/06
EPA 8270C	Di-n-butylphthalate	610 J	1100	230	ug/Kg	10/6/06	10/10/06
EPA 8270C	Di-n-octylphthalate	Not detected	1100	200	ug/Kg	10/6/06	10/10/06
EPA 8270C	Diethyl phthalate	Not detected	1100	220	ug/Kg	10/6/06	10/10/06
EPA 8270C	Dimethyl phthalate	Not detected	1100	220	ug/Kg	10/6/06	10/10/06
EPA 8270C	Pentachlorophenol	Not detected	1100	200	ug/Kg	10/6/06	10/10/06
EPA 8270C	Pyrene	Not detected	1100	190	ug/Kg	10/6/06	10/10/06
EPA 8270C	Surrogate recovery (2FP)	53.1	48-118		%	10/6/06	10/10/06
EPA 8270C	Surrogate recovery (FBP)	77.6	39-116		%	10/6/06	10/10/06
EPA 8270C	Surrogate recovery (NBZ)	76.3	49-142		%	10/6/06	10/10/06
EPA 8270C	Surrogate recovery (PHL)	58.2	47-122		%	10/6/06	10/10/06
EPA 8270C	Surrogate recovery (TBP)	60.3	44-114		%	10/6/06	10/10/06
EPA 8270C	Surrogate recovery (TPH)	70.3	40-135		%	10/6/06	10/10/06

J = Estimated value.

Run #: 1009L014
Instrument: Linus
Sequence: L061005
Dilution Factor: 1
Initials: LF

Printed: 10/16/06 8:25:34 AM  
APPL-F1-SC-MCRes/MCPQL-REG MDLs

## EPA 8270C Soils

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
Hololulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN  
Project: MULIWAI TISSUE/838  
Sample ID: NW1SW1-1FD  
Sample Collection Date: 8/9/06

ARF: 51706  
APPL ID: AX49360

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
(Concentrations and Limits have been adjusted to reflect 75.4 Percent Moisture.)							
EPA 8270C	Bis (2-ethylhexyl) phthalate	Not detected	1300	250	ug/Kg	10/6/06	10/10/06
EPA 8270C	Di-n-butylphthalate	480 J	1300	270	ug/Kg	10/6/06	10/10/06
EPA 8270C	Di-n-octylphthalate	Not detected	1300	240	ug/Kg	10/6/06	10/10/06
EPA 8270C	Diethyl phthalate	Not detected	1300	250	ug/Kg	10/6/06	10/10/06
EPA 8270C	Dimethyl phthalate	Not detected	1300	260	ug/Kg	10/6/06	10/10/06
EPA 8270C	Pentachlorophenol	Not detected	1300	240	ug/Kg	10/6/06	10/10/06
EPA 8270C	Pyrene	Not detected	1300	220	ug/Kg	10/6/06	10/10/06
EPA 8270C	Surrogate recovery (2FP)	44.6 #	48-118		%	10/6/06	10/10/06
EPA 8270C	Surrogate recovery (FBP)	26.2 #	39-116		%	10/6/06	10/10/06
EPA 8270C	Surrogate recovery (NBZ)	80.2	49-142		%	10/6/06	10/10/06
EPA 8270C	Surrogate recovery (PHL)	65.0	47-122		%	10/6/06	10/10/06
EPA 8270C	Surrogate recovery (TBP)	52.4	44-114		%	10/6/06	10/10/06
EPA 8270C	Surrogate recovery (TPH)	63.4	40-135		%	10/6/06	10/10/06

J = Estimated value.  
# = Recovery (or RPD) is outside QC limits.

Run #: 1009L015  
Instrument: Linus  
Sequence: L061005  
Dilution Factor: 1  
Initials: LF

Printed: 10/16/06 8:25:34 AM  
APPL-F1-SC-MCRes/MCPQL-REG MDLs

## EPA 8270C Soils

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
Hololulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN

Project: MULIWAI TISSUE/838

Sample ID: 9AFD AND 10A COMP

Sample Collection Date: 8/3/06

ARF: 51706

APPL ID: AX49361

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
(Concentrations and Limits have been adjusted to reflect 72.9 Percent Moisture.)							
EPA 8270C	Bis (2-ethylhexyl) phthalate	3100	1200	230	ug/Kg	10/6/06	10/10/06
EPA 8270C	Di-n-butylphthalate	960 J	1200	240	ug/Kg	10/6/06	10/10/06
EPA 8270C	Di-n-octylphthalate	Not detected	1200	220	ug/Kg	10/6/06	10/10/06
EPA 8270C	Diethyl phthalate	Not detected	1200	230	ug/Kg	10/6/06	10/10/06
EPA 8270C	Dimethyl phthalate	Not detected	1200	230	ug/Kg	10/6/06	10/10/06
EPA 8270C	Pentachlorophenol	Not detected	1200	220	ug/Kg	10/6/06	10/10/06
EPA 8270C	Pyrene	Not detected	1200	200	ug/Kg	10/6/06	10/10/06
EPA 8270C	Surrogate recovery (2FP)	55.0	48-118		%	10/6/06	10/10/06
EPA 8270C	Surrogate recovery (FBP)	78.5	39-116		%	10/6/06	10/10/06
EPA 8270C	Surrogate recovery (NBZ)	77.7	49-142		%	10/6/06	10/10/06
EPA 8270C	Surrogate recovery (PHL)	60.0	47-122		%	10/6/06	10/10/06
EPA 8270C	Surrogate recovery (TBP)	63.4	44-114		%	10/6/06	10/10/06
EPA 8270C	Surrogate recovery (TPH)	75.8	40-135		%	10/6/06	10/10/06

J = Estimated value.

Run #: 1009L016
Instrument: Linus
Sequence: L061005
Dilution Factor: 1
Initials: LF

Printed: 10/16/06 8:25:34 AM  
APPL-F1-SC-MCRes/MCPQL-REG MDLs

## EPA 8270C Soils - Dilution

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
Honolulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN

Project: MULIWAI TISSUE/838

Sample ID: 9AFD AND 10A COMP

Sample Collection Date: 8/3/06

ARF: 51706

APPL ID: AX49361

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
(Concentrations and Limits have been adjusted to reflect 72.9 Percent Moisture.)							
EPA 8270C	Bis (2-ethylhexyl) phthalate	3600 J	6100	1100	ug/Kg	10/6/06	10/9/06
EPA 8270C	Di-n-butylphthalate	1500 J	6100	1200	ug/Kg	10/6/06	10/9/06
EPA 8270C	Di-n-octylphthalate	Not detected	6100	1100	ug/Kg	10/6/06	10/9/06
EPA 8270C	Diethyl phthalate	Not detected	6100	1100	ug/Kg	10/6/06	10/9/06
EPA 8270C	Dimethyl phthalate	Not detected	6100	1200	ug/Kg	10/6/06	10/9/06
EPA 8270C	Pentachlorophenol	Not detected	6100	1100	ug/Kg	10/6/06	10/9/06
EPA 8270C	Pyrene	Not detected	6100	1000	ug/Kg	10/6/06	10/9/06
EPA 8270C	Surrogate recovery (2FP)	54.8	48-118		%	10/6/06	10/9/06
EPA 8270C	Surrogate recovery (FBP)	83.1	39-116		%	10/6/06	10/9/06
EPA 8270C	Surrogate recovery (NBZ)	77.2	49-142		%	10/6/06	10/9/06
EPA 8270C	Surrogate recovery (PHL)	60.4	47-122		%	10/6/06	10/9/06
EPA 8270C	Surrogate recovery (TBP)	61.6	44-114		%	10/6/06	10/9/06
EPA 8270C	Surrogate recovery (TPH)	52.8	40-135		%	10/6/06	10/9/06

J = Estimated value.

Run #: 1009L009
Instrument: Linus
Sequence: L061005
Dilution Factor: 5
Initials: LF

Printed: 10/16/06 8:25:34 AM  
APPL-F1-SC-MCRes/MCPQL-REG MDLs

**EPA METHOD 8330A**

**APPL, INC.**

**EPA METHOD 8330A**

**QC Summary**

**APPL, INC.**

**Method Blank**  
**EPA 8330A Explosives-Soil**

Blank Name/QCG: 060929S - 105776  
Batch ID: \$83TTS-060929B

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Sample Type	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
BLANK	2,4-DNT	Not detected	0.60	mg/kg	9/29/2006	10/8/2006
BLANK	Nitroglycerine	Not detected	0.60	mg/kg	9/29/2006	10/8/2006
BLANK	RDX	Not detected	0.60	mg/kg	9/29/2006	10/8/2006
BLANK	Surrogate recovery: 1,2-DNB	93.0	70-130	%	9/29/2006	10/8/2006

Run #: LUX07\_17  
Instrument: AGIL\_1100  
Sequence: LU1007A  
Initials: SD

Printed: 10/13/2006 11:18:10 AM

**Laboratory Control Spike Recoveries**  
**EPA 8330A Explosives-Soil**

APPL ID: 060929S-49351 LCS - 105776  
 Batch ID: \$83TTS-060929B

APPL Inc.  
 4203 West Swift Avenue  
 Fresno, CA 93722

Compound Name	Spike Lvl mg/kg	SPK Result mg/kg	DUP Result mg/kg	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
2,4-DNT	3.13	3.23	2.88	103	92.0	80-125	11.5	25
Nitroglycerine	3.13	2.88	2.87	92.0	91.7	75-125	0.35	25
RDX	3.13	2.73	2.79	87.2	89.1	70-135	2.2	25
1,2-DNB (S)	5.00	4.64	4.63	92.8	92.6	70-130		

Comments:

<u>Primary</u>	<u>SPK</u>	<u>DUP</u>
Extraction Date :	9/29/06	9/29/06
Analysis Date :	10/8/06	10/8/06
Instrument :	AGIL_1100	AGIL_1100
Run :	LUX07_14	LUX07_15
Initials :	SD	

**Method Blank**  
**EPA 8330A Explosives-Soil**

Blank Name/QCG: 061003S - 105767  
Batch ID: \$83TTS-061003A

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Sample Type	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
BLANK	2,4-DNT	Not detected	0.60	mg/kg	10/3/2006	10/6/2006
BLANK	Nitroglycerine	Not detected	0.60	mg/kg	10/3/2006	10/6/2006
BLANK	RDX	Not detected	0.60	mg/kg	10/3/2006	10/6/2006
BLANK	Surrogate recovery: 1,2-DNB	100	70-130	%	10/3/2006	10/6/2006

Run #: LUX05\_18  
Instrument: AGIL\_1100  
Sequence: LU1005A  
Initials: SD

Printed: 10/13/2006 11:18:02 AM

**Laboratory Control Spike Recovery**  
**EPA 8330A Explosives-Soil**

APPL ID: 061003S-49333 LCS - 105767  
 Batch ID: \$83TTS-061003A

APPL Inc.  
 4203 West Swift Avenue  
 Fresno, CA 93722

Compound Name	Spike Level mg/kg	SPK Result mg/kg	SPK % Recovery	Recovery Limits
2,4-DNT	3.13	2.86	91.4	80-125
Nitroglycerine	3.13	2.93	93.6	75-125
RDX	3.13	3.12	99.7	70-135
1,2-DNB (S)	5.00	4.75	95.0	70-130

Comments:

<u>Primary</u>	<u>SPK</u>
Extraction Date :	10/3/06
Analysis Date :	10/6/06
Instrument :	AGIL_1100
Run :	LUX05_14
Initials :	SD

Printed: 10/13/06 11:42:01 AM  
 APPL Standard LCS

**Matrix Spike Recoveries**  
**EPA 8330A Explosives-Soil**

APPL ID: 061003S-49333 MS - 105767  
 Batch ID: \$83TTS-061003A  
 Sample ID: AX49333  
 Client ID: 4

APPL Inc.  
 4203 West Swift Avenue  
 Fresno, CA 93722

Compound Name	Spike Lvl mg/kg	Matrix Result mg/kg	SPK Result mg/kg	DUP Result mg/kg	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
2,4-DNT	3.13	ND	3.23	3.30	103	105	80-125	2.1	25
Nitroglycerine	3.13	ND	3.15	3.51	101	112	75-125	10.8	25
RDX	3.13	ND	4.76	6.07	152 #	194 #	70-135	24.2	25
1,2-DNB (S)	5.00	NA	4.69	4.79	93.8	95.8	70-130		

# = Recovery is outside QC limits.

Comments:

Primary	SPK	DUP
Extraction Date :	10/3/06	10/3/06
Analysis Date :	10/6/06	10/6/06
Instrument :	AGIL_1100	AGIL_1100
Run :	LUX05_15	LUX05_16
Initials :	SD	

Printed: 10/13/06 11:39:39 AM  
 APPL Standard MSD

## Matrix Spike Recoveries

### EPA 8330A Explosives-Soil

APPL ID: 061003S-49353 MS - 105768  
 Batch ID: \$83TTS-061003AA  
 Sample ID: AX49353  
 Client ID: NW1SW3-1

APPL Inc.  
 4203 West Swift Avenue  
 Fresno, CA 93722

Compound Name	Spike Lvl mg/kg	Matrix Result mg/kg	SPK Result mg/kg	DUP Result mg/kg	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
2,4-DNT	3.13	ND	2.42	2.14	77.3 #	68.4 #	80-125	12.3	25
Nitroglycerine	3.13	ND	2.79	2.00	89.1	63.9 #	75-125	33.0 #	25
RDX	3.13	ND	3.60	2.92	115	93.3	70-135	20.9	25
1,2-DNB (S)	5.00	NA	4.16	3.63	83.2	72.6	70-130		

# = Recovery is outside QC limits.

Comments:

<u>Primary</u>	<u>SPK</u>	<u>DUP</u>
Extraction Date :	10/3/06	10/3/06
Analysis Date :	10/7/06	10/7/06
Instrument :	AGIL_1100	AGIL_1100
Run :	LUX05_47	LUX05_48
Initials :	SD	

Printed: 10/13/06 11:39:39 AM  
 APPL Standard MSD

**Surrogate Recovery - Retention Time Summary**

Lab Name: APPL, Inc.  
 Case No: 51706  
 Matrix: MISC

SDG No: 51706  
 Date Analyzed: 10/8/06  
 Instrument: AGIL\_1100

APPL ID.	Client Sample No.	1,2-DNB (S)
060929B-LCS	Lab Control Spike	92.8
060929B-LCSD	Lab Control SpikeD	92.6
060929B-BLK	Blank	93.0
AX49351	NW9	81.5
AX49352	NW10	83.9
AX49354	NW1SW1-1	93.0
AX49355	NW1SW2-1	84.9
AX49356	COMP 8,8A	80.8

Comments: Batch: \$83TTS-060929B

Surrogate Recovery - Retention Time Summary

Lab Name: APPL, Inc.

SDG No: 51706

Case No: 51706

Date Analyzed: 10/6/06

Matrix: MISC

Instrument: AGIL\_1100

APPL ID.	Client Sample No.	1,2-DNB (S)
061003A-LCS	Lab Control Spike	95.0
061003A-MS	Matrix Spike	93.8
061003A-MSD	Matrix SpikeD	95.8
061003A-BLK	Blank	100
AX49331	1	89.0
AX49332	3	111
AX49333	4	106
AX49334	1B	102
AX49335	5	118
AX49336	6	111
AX49337	7	121
AX49338	9	98.5
AX49339	10	89.4
AX49340	12	94.1
AX49341	13	109
AX49342	14	109
AX49344	NW2	87.0
AX49345	NW3	82.1
AX49346	NW4	130
AX49347	NW5	78.8
AX49348	NW6	77.8
AX49349	NW7	90.7
AX49350	NW8	83.0

Comments: Batch: \$83TTS-061003A

Surrogate Recovery - Retention Time Summary

Lab Name: APPL, Inc.  
Case No: 51706  
Matrix: MISC

SDG No: 51706  
Date Analyzed: 10/7/06  
Instrument: AGIL\_1100

APPL ID.	Client Sample No.	1,2-DNB (S)
AX49353	NW1SW3-1	47.2 #
061003AA-MS	Matrix Spike	83.2
061003AA-MSD	Matrix SpikeD	72.6

Comments: Batch: \$83TTS-061003AA

# EPA 8330A

Form 4

## Blank Summary

Lab Name: APPL, Inc.

SDG No: 51706

Case No: 51706

Date Analyzed: 10/8/06

Matrix: MISC

Instrument: AGIL\_1100

Blank ID: 060929B-BLK

Time Analyzed: 0357

<u>APPL ID.</u>	<u>Client Sample No.</u>	<u>File ID.</u>	<u>Date Analyzed</u>
060929B-LCS	Lab Control Spike	LUX07_14	10/8/06 0149
060929B-LCSD	Lab Control SpikeD	LUX07_15	10/8/06 0231
060929B-BLK	Blank	LUX07_17	10/8/06 0357
AX49351	NW9	LUX07_18	10/8/06 0440
AX49352	NW10	LUX07_19	10/8/06 0523
AX49354	NW1SW1-1	LUX07_20	10/8/06 0606
AX49355	NW1SW2-1	LUX07_21	10/8/06 0649
AX49356	COMP 8,8A	LUX07_22	10/8/06 0732

Comments: Batch: \$83TTS-060929B

Printed: 10/12/06 2:53:04 PM  
Form 4, Blank Summary

# EPA 8330A

## Form 4

### Blank Summary

Lab Name: APPL, Inc.

SDG No: 51706

Case No: 51706

Date Analyzed: 10/6/06

Matrix: MISC

Instrument: AGIL\_1100

Blank ID: 061003A-BLK

Time Analyzed: 0713

APPL ID.	Client Sample No.	File ID.	Date Analyzed
061003A-1CS	Lab Control Spike	LUX05_14	10/6/06 0421
061003A-MS	Matrix Spike	LUX05_15	10/6/06 0504
061003A-MSD	Matrix Spiked	LUX05_16	10/6/06 0547
061003A-BLK	Blank	LUX05_18	10/6/06 0713
AX49331	1	LUX05_19	10/6/06 0756
AX49332	3	LUX05_20	10/6/06 0838
AX49333	4	LUX05_21	10/6/06 0921
AX49334	1B	LUX05_22	10/6/06 1004
AX49335	5	LUX05_23	10/6/06 1047
AX49336	6	LUX05_24	10/6/06 1130
AX49337	7	LUX05_29	10/6/06 1504
AX49338	9	LUX05_30	10/6/06 1547
AX49339	10	LUX05_31	10/6/06 1630
AX49340	12	LUX05_32	10/6/06 1713
AX49341	13	LUX05_34	10/6/06 1842
AX49342	14	LUX05_34	10/6/06 1842
AX49344	NW2	LUX05_35	10/6/06 1925
AX49345	NW3	LUX05_36	10/6/06 2008
AX49346	NW4	LUX05_37	10/6/06 2051
AX49347	NW5	LUX05_38	10/6/06 2134
AX49348	NW6	LUX05_43	10/7/06 0108
AX49349	NW7	LUX05_44	10/7/06 0151
AX49350	NW8	LUX05_45	10/7/06 0234

Comments: Batch: \$83TTS-061003A

Printed: 10/12/06 2:53:04 PM  
Form 4, Blank Summary

# EPA 8330A

Form 4

## Blank Summary

Lab Name: APPL, Inc.

SDG No: 51706

Case No: 51706

Date Analyzed:

Matrix: MISC

Instrument: AGIL\_1100

Blank ID:

Time Analyzed:

<u>APPL ID.</u>	<u>Client Sample No.</u>	<u>File ID.</u>	<u>Date Analyzed</u>
AX49353	NW1SW3-1	LUX05_46	10/7/06 0317
061003AA-MS	Matrix Spike	LUX05_47	10/7/06 0400
061003AA-MSD	Matrix Spiked	LUX05_48	10/7/06 0443

Comments: Batch: \$83TTS-061003AA

Printed: 10/12/06 2:53:04 PM  
Form 4, Blank Summary

# **EPA METHOD 8330A**

## **Sample Data**

## EPA 8330A Explosives-Soil

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
Hololulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN

Project: MULIWAI TISSUE/838

Sample ID: 1

Sample Collection Date: 8/2/06

ARF: 51706

APPL ID: AX49331

QCG: \$83TTS-061003A-105767

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8330A	2,4-DNT	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Nitroglycerine	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	RDX	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Surrogate recovery: 1,2-DNB	89.0	70-130	%	10/3/06	10/6/06

Run #: LUX05_19
Instrument: AGIL_1100
Sequence: LU1005A
Dilution Factor: 1
Initials: SD

Printed: 10/13/06 11:43:47 AM  
Form 1 - APPL Standard GC - No MC

## EPA 8330A Explosives-Soil

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
HoloLulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN

Project: MULIWAI TISSUE/838

Sample ID: 3

Sample Collection Date: 8/2/06

ARF: 51706

APPL ID: AX49332

QCG: \$83TTS-061003A-105767

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8330A	2,4-DNT	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Nitroglycerine	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	RDX	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Surrogate recovery: 1,2-DNB	111	70-130	%	10/3/06	10/6/06

Run #: LUX05\_20  
Instrument: AGIL\_1100  
Sequence: LU1005A  
Dilution Factor: 1  
Initials: SD

Printed: 10/13/06 11:43:47 AM  
Form 1 - APPL Standard GC - No MC

## EPA 8330A Explosives-Soil

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
Hololulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN  
Project: MULIWAI TISSUE/838  
Sample ID: 4  
Sample Collection Date: 8/2/06

ARF: 51706  
APPL ID: AX49333  
QCG: \$83TTS-061003A-105767

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8330A	2,4-DNT	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Nitroglycerine	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	RDX	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Surrogate recovery: 1,2-DNB	106	70-130	%	10/3/06	10/6/06

Run #: LUX05_21 Instrument: AGIL_1100 Sequence: LU1005A Dilution Factor: 1 Initials: SD
---

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Form 1 - APPL Standard GC - No MC

## EPA 8330A Explosives-Soil

Tetra Tech, Inc.  
820 Millilani St, Ste 700  
Honolulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN  
Project: MULIWAI TISSUE/838

ARF: 51706

Sample ID: 1B

APPL ID: AX49334

Sample Collection Date: 8/3/06

QCG: \$83TTS-061003A-105767

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8330A	2,4-DNT	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Nitroglycerine	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	RDX	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Surrogate recovery: 1,2-DNB	102	70-130	%	10/3/06	10/6/06

Run #: LUX05\_22  
Instrument: AGIL\_1100  
Sequence: LU1005A  
Dilution Factor: 1  
Initials: SD

Printed: 10/13/06 11:43:48 AM  
Form 1 - APPL Standard GC - No MC

## EPA 8330A Explosives-Soil

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
Honolulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN  
Project: MULIWAI TISSUE/838  
Sample ID: 5  
Sample Collection Date: 8/3/06

ARF: 51706  
APPL ID: AX49335  
QCG: \$83TTS-061003A-105767

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8330A	2,4-DNT	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Nitroglycerine	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	RDX	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Surrogate recovery: 1,2-DNB	118	70-130	%	10/3/06	10/6/06

Run #: LUX05\_23  
Instrument: AGIL\_1100  
Sequence: LU1005A  
Dilution Factor: 1  
Initials: SD

Printed: 10/13/06 11:43:48 AM  
Form 1 - APPL Standard GC - No MC

## EPA 8330A Explosives-Soil

Tetra Tech, Inc.  
820 Millitani St, Ste 700  
Hololulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN  
Project: MULIWAI TISSUE/838

ARF: 51706

**Sample ID: 6**

**APPL ID: AX49336**

Sample Collection Date: 8/3/06

QCG: \$83TTS-061003A-105767

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8330A	2,4-DNT	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Nitroglycerine	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	RDX	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Surrogate recovery: 1,2-DNB	111	70-130	%	10/3/06	10/6/06

Run #: LUX05_24 Instrument: AGIL_1100 Sequence: LU1005A Dilution Factor: 1 Initials: SD
---

Printed: 10/13/06 11:43:49 AM  
Form 1 - APPL Standard GC - No MC

# EPA 8330A Explosives-Soil

Tetra Tech, Inc.  
820 Milliani St, Ste 700  
Hololulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN  
Project: MULIWAI TISSUE/838  
**Sample ID: 7**  
Sample Collection Date: 8/3/06

ARF: 51706  
**APPL ID: AX49337**  
QCG: \$83TTS-061003A-105767

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8330A	2,4-DNT	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Nitroglycerine	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	RDX	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Surrogate recovery: 1,2-DNB	121	70-130	%	10/3/06	10/6/06

Run #: LUX05\_29  
Instrument: AGIL\_1100  
Sequence: LU1005A  
Dilution Factor: 1  
Initials: SD

Printed: 10/13/06 11:43:49 AM  
Form 1 - APPL Standard GC - No MC

## EPA 8330A Explosives-Soil

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
Honolulu, HI 96813

Attn: SUSAN CARSTENN  
Project: MULIWAI TISSUE/838

Sample ID: 9

Sample Collection Date: 8/3/06

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

ARF: 51706

APPL ID: AX49338

QCG: \$83TTS-061003A-105767

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8330A	2,4-DNT	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Nitroglycerine	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	RDX	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Surrogate recovery: 1,2-DNB	98.5	70-130	%	10/3/06	10/6/06

Run #: LUX05\_30  
Instrument: AGIL\_1100  
Sequence: LU1005A  
Dilution Factor: 1  
Initials: SD

Printed: 10/13/06 11:43:49 AM  
Form 1 - APPL Standard GC - No MC

## EPA 8330A Explosives-Soil

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
Honolulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN  
Project: MULIWAI TISSUE/838

ARF: 51706

Sample ID: 10

APPL ID: AX49339

Sample Collection Date: 8/3/06

QCG: \$83TTS-061003A-105767

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8330A	2,4-DNT	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Nitroglycerine	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	RDX	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Surrogate recovery: 1,2-DNB	89.4	70-130	%	10/3/06	10/6/06

Run #: LUX05\_31  
Instrument: AGIL\_1100  
Sequence: LU1005A  
Dilution Factor: 1  
Initials: SD

Printed: 10/13/06 11:43:49 AM  
Form 1 - APPL Standard GC - No MC

## EPA 8330A Explosives-Soil

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
Honolulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN

Project: MULIWAI TISSUE/838

Sample ID: 12

Sample Collection Date: 8/4/06

ARF: 51706

APPL ID: AX49340

QCG: \$83TTS-061003A-105767

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8330A	2,4-DNT	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Nitroglycerine	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	RDX	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Surrogate recovery: 1,2-DNB	94.1	70-130	%	10/3/06	10/6/06

Run #: LUX05\_32  
Instrument: AGIL\_1100  
Sequence: LU1005A  
Dilution Factor: 1  
Initials: SD

Printed: 10/13/06 11:43:50 AM  
Form 1 - APPL Standard GC - No MC

## EPA 8330A Explosives-Soil

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
Honolulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN  
Project: MULIWAI TISSUE/838  
Sample ID: 13  
Sample Collection Date: 8/4/06

ARF: 51706  
APPL ID: AX49341  
QCG: \$83TTS-061003A-105767

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8330A	2,4-DNT	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Nitroglycerine	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	RDX	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Surrogate recovery: 1,2-DNB	109	70-130	%	10/3/06	10/6/06

Run #: LUX05\_34  
Instrument: AGIL\_1100  
Sequence: LU1005A  
Dilution Factor: 1  
Initials: SD

Printed: 10/13/06 11:43:50 AM  
Form 1 - APPL Standard GC - No MC

## EPA 8330A Explosives-Soil

Tetra Tech, Inc.  
820 Millilani St, Ste 700  
Honolulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN

Project: MULIWAI TISSUE/838

Sample ID: 14

Sample Collection Date: 8/4/06

ARF: 51706

APPL ID: AX49342

QCG: \$83TTS-061003A-105767

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8330A	2,4-DNT	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Nitroglycerine	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	RDX	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Surrogate recovery: 1,2-DNB	109	70-130	%	10/3/06	10/6/06

Run #: LUX05\_34  
Instrument: AGIL\_1100  
Sequence: LU1005A  
Dilution Factor: 1  
Initials: SD

Printed: 10/13/06 11:43:51 AM  
Form 1 - APPL Standard GC - No MC

## EPA 8330A Explosives-Soil

Tetra Tech, Inc.  
820 Milliani St, Ste 700  
Hololulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN  
Project: MULIWAI TISSUE/838  
Sample ID: **NW2**  
Sample Collection Date: 8/6/06

ARF: 51706  
APPL ID: **AX49344**  
QCG: \$83TTS-061003A-105767

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8330A	2,4-DNT	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Nitroglycerine	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	RDX	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Surrogate recovery: 1,2-DNB	87.0	70-130	%	10/3/06	10/6/06

Run #: LUX05_35 Instrument: AGIL_100 Sequence: LU105A Dilution Factor: 1 Initials: SD
---

Printed: 10/13/06 11:43:51 AM  
Form 1 - APPL Standard GC - No MC

## EPA 8330A Explosives-Soil

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
Hololulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN  
Project: MULIWAI TISSUE/838

ARF: 51706

**Sample ID: NW3**

**APPL ID: AX49345**

Sample Collection Date: 8/6/06

QCG: \$83TTS-061003A-105767

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8330A	2,4-DNT	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Nitroglycerine	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	RDX	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Surrogate recovery: 1,2-DNB	82.1	70-130	%	10/3/06	10/6/06

Run #: LUX05\_36  
Instrument: AGIL\_1100  
Sequence: LU1005A  
Dilution Factor: 1  
Initials: SD

Printed: 10/13/06 11:43:51 AM  
Form 1 - APPL Standard GC - No MC

## EPA 8330A Explosives-Soil

Tetra Tech, Inc.  
820 Millani St, Ste 700  
Hololulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN  
Project: MULIWAI TISSUE/838  
Sample ID: NW4  
Sample Collection Date: 8/5/06

ARF: 51706  
APPL ID: AX49346  
QCG: \$83TTS-061003A-105767

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8330A	2,4-DNT	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Nitroglycerine	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	RDX	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Surrogate recovery: 1,2-DNB	130	70-130	%	10/3/06	10/6/06

Run #: LUX05\_37  
Instrument: AGIL\_1100  
Sequence: LU1005A  
Dilution Factor: 1  
Initials: SD

Printed: 10/13/06 11:43:52 AM  
Form 1 - APPL Standard GC - No MC

# EPA 8330A Explosives-Soil

Tetra Tech, Inc.  
820 Millilani St, Ste 700  
Honolulu, HI 96813

Attn: SUSAN CARSTENN  
Project: MULIWAI TISSUE/838  
Sample ID: NW5  
Sample Collection Date: 8/5/06

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

ARF: 51706  
APPL ID: AX49347  
QCG: \$83TTS-061003A-105767

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8330A	2,4-DNT	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Nitroglycerine	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	RDX	Not detected	0.60	mg/kg	10/3/06	10/6/06
EPA 8330A	Surrogate recovery: 1,2-DNB	78.8	70-130	%	10/3/06	10/6/06

Run #: LUX05\_38  
Instrument: AGIL\_1100  
Sequence: LU1005A  
Dilution Factor: 1  
Initials: SD

Printed: 10/13/06 11:43:52 AM  
Form 1 - APPL Standard GC - No MC

## EPA 8330A Explosives-Soil

Tetra Tech, Inc.  
820 Milliani St, Ste 700  
Hololulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN

Project: MULIWAI TISSUE/838

Sample ID: NW6

Sample Collection Date: 8/19/06

ARF: 51706

APPL ID: AX49348

QCG: \$83TTS-061003A-105767

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8330A	2,4-DNT	Not detected	0.60	mg/kg	10/3/06	10/7/06
EPA 8330A	Nitroglycerine	Not detected	0.60	mg/kg	10/3/06	10/7/06
EPA 8330A	RDX	Not detected	0.60	mg/kg	10/3/06	10/7/06
EPA 8330A	Surrogate recovery: 1,2-DNB	77.8	70-130	%	10/3/06	10/7/06

Run #: LUX05_43
Instrument: AGIL_1100
Sequence: LU1005A
Dilution Factor: 1
Initials: SD

Printed: 10/13/06 11:43:52 AM  
Form 1 - APPL Standard GC - No MC

## EPA 8330A Explosives-Soil

Tetra Tech, Inc.  
820 Millilani St, Ste 700  
HoloLulu, HI 96813

Attn: SUSAN CARSTENN  
Project: MULIWAI TISSUE/838

**Sample ID: NW7**

Sample Collection Date: 8/19/06

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

ARF: 51706

**APPL ID: AX49349**

QCG: \$83TTS-061003A-105767

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8330A	2,4-DNT	Not detected	0.60	mg/kg	10/3/06	10/7/06
EPA 8330A	Nitroglycerine	Not detected	0.60	mg/kg	10/3/06	10/7/06
EPA 8330A	RDX	Not detected	0.60	mg/kg	10/3/06	10/7/06
EPA 8330A	Surrogate recovery: 1,2-DNB	90.7	70-130	%	10/3/06	10/7/06

Run #: LUX05_44 Instrument: AGIL_1100 Sequence: LU1005A Dilution Factor: 1 Initials: SD
---

Printed: 10/13/06 11:43:53 AM  
Form 1 - APPL Standard GC - No MC

## EPA 8330A Explosives-Soil

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
Hololulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN

Project: MULIWAI TISSUE/838

Sample ID: NW8

Sample Collection Date: 8/19/06

ARF: 51706

APPL ID: AX49350

QCG: \$83TTS-061003A-105767

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8330A	2,4-DNT	Not detected	0.60	mg/kg	10/3/06	10/7/06
EPA 8330A	Nitroglycerine	Not detected	0.60	mg/kg	10/3/06	10/7/06
EPA 8330A	RDX	Not detected	0.60	mg/kg	10/3/06	10/7/06
EPA 8330A	Surrogate recovery: 1,2-DNB	83.0	70-130	%	10/3/06	10/7/06

Run #: LUX05_45 Instrument: AGIL_1100 Sequence: LU1005A Dilution Factor: 1 Initials: SD
---

Printed: 10/13/06 11:43:53 AM  
Form 1 - APPL Standard GC - No MC

## EPA 8330A Explosives-Soil

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
Honolulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN

Project: MULIWAI TISSUE/838

Sample ID: NW9

Sample Collection Date: 8/19/06

ARF: 51706

APPL ID: AX49351

QCG: \$83TTS-060929B-105776

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8330A	2,4-DNT	Not detected	0.60	mg/kg	9/29/07	10/8/06
EPA 8330A	Nitroglycerine	Not detected	0.60	mg/kg	9/29/07	10/8/06
EPA 8330A	RDX	Not detected	0.60	mg/kg	9/29/07	10/8/06
EPA 8330A	Surrogate recovery: 1,2-DNB	81.5	70-130	%	9/29/07	10/8/06

Run #: LUX07\_18  
Instrument: AGIL\_1100  
Sequence: LU1007A  
Dilution Factor: 1  
Initials: SD

Printed: 10/13/06 11:43:53 AM  
Form 1 - APPL Standard GC - No MC

## EPA 8330A Explosives-Soil

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
Honolulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN

Project: MULIWAI TISSUE/838

Sample ID: NW10

Sample Collection Date: 8/20/06

ARF: 51706

APPL ID: AX49352

QCG: \$83TTS-060929B-105776

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8330A	2,4-DNT	Not detected	0.60	mg/kg	9/29/07	10/8/06
EPA 8330A	Nitroglycerine	Not detected	0.60	mg/kg	9/29/07	10/8/06
EPA 8330A	RDX	Not detected	0.60	mg/kg	9/29/07	10/8/06
EPA 8330A	Surrogate recovery: 1,2-DNB	83.9	70-130	%	9/29/07	10/8/06

Run #: LUX07\_19  
Instrument: AGIL\_1100  
Sequence: LU1007A  
Dilution Factor: 1  
Initials: SD

Printed: 10/13/06 11:43:53 AM  
Form 1 - APPL Standard GC - No MC

## EPA 8330A Explosives-Soil

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
HoloLulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN

Project: MULIWAI TISSUE/838

Sample ID: NW1SW3-1

Sample Collection Date: 8/24/06

ARF: 51706

APPL ID: AX49353

QCG: \$83TTS-061003AA-10576

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8330A	2,4-DNT	Not detected	0.60	mg/kg	10/3/06	10/7/06
EPA 8330A	Nitroglycerine	Not detected	0.60	mg/kg	10/3/06	10/7/06
EPA 8330A	RDX	Not detected	0.60	mg/kg	10/3/06	10/7/06
EPA 8330A	Surrogate recovery: 1,2-DNB	47.2 #	70-130	%	10/3/06	10/7/06

# = Recovery (or RPD) is outside QC limits.

Run #: LUX05_46
Instrument: AGIL_1100
Sequence: LU1005A
Dilution Factor: 1
Initials: SD

Printed: 10/13/06 11:43:54 AM  
Form 1 - APPL Standard GC - No MC

## EPA 8330A Explosives-Soil

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
Hololulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN

Project: MULIWAI TISSUE/838

Sample ID: NW1SW1-1

Sample Collection Date: 8/24/06

ARF: 51706

APPL ID: AX49354

QCG: \$83TTS-060929B-105776

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8330A	2,4-DNT	Not detected	0.60	mg/kg	9/29/07	10/8/06
EPA 8330A	Nitroglycerine	Not detected	0.60	mg/kg	9/29/07	10/8/06
EPA 8330A	RDX	Not detected	0.60	mg/kg	9/29/07	10/8/06
EPA 8330A	Surrogate recovery: 1,2-DNB	93.0	70-130	%	9/29/07	10/8/06

Run #: LUX07_20 Instrument: AGIL_1100 Sequence: LU1007A Dilution Factor: 1 Initials: SD
---

Printed: 10/13/06 11:43:54 AM  
Form 1 - APPL Standard GC - No MC

## EPA 8330A Explosives-Soil

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
Honolulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN

Project: MULIWAI TISSUE/838

Sample ID: NW1SW2-1

Sample Collection Date: 8/9/06

ARF: 51706

APPL ID: AX49355

QCG: \$83TTS-060929B-105776

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8330A	2,4-DNT	Not detected	0.60	mg/kg	9/29/07	10/8/06
EPA 8330A	Nitroglycerine	Not detected	0.60	mg/kg	9/29/07	10/8/06
EPA 8330A	RDX	Not detected	0.60	mg/kg	9/29/07	10/8/06
EPA 8330A	Surrogate recovery: 1,2-DNB	84.9	70-130	%	9/29/07	10/8/06

Run #: LUX07\_21  
Instrument: AGIL\_1100  
Sequence: LU1007A  
Dilution Factor: 1  
Initials: SD

Printed: 10/13/06 11:43:54 AM  
Form 1 - APPL Standard GC - No MC

## EPA 8330A Explosives-Soil

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
Hololulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN  
Project: MULIWAI TISSUE/838  
Sample ID: **COMP 8,8A**  
Sample Collection Date: 8/3/06

ARF: 51706  
APPL ID: **AX49356**  
QCG: \$83TTS-060929B-105776

Method	Analyte	Result	PQL	Units	Extraction Date	Analysis Date
EPA 8330A	2,4-DNT	Not detected	0.60	mg/kg	9/29/07	10/8/06
EPA 8330A	Nitroglycerine	Not detected	0.60	mg/kg	9/29/07	10/8/06
EPA 8330A	RDX	Not detected	0.60	mg/kg	9/29/07	10/8/06
EPA 8330A	Surrogate recovery: 1,2-DNB	80.8	70-130	%	9/29/07	10/8/06

Run #: LUX07_22
Instrument: AGIL_1100
Sequence: 061007A
Dilution Factor: 1
Initials: SD

Printed: 10/13/06 11:43:54 AM  
Form 1 - APPL Standard GC - No MC

**Perchlorate  
LC-MS**

**APPL, INC.**

**Perchlorate  
LC-MS**

**QC Summary**

**APPL, INC.**

**Method Blank**  
**Perchlorate in Solids**

Blank Name/QCG: 061014S-49357 - 105898  
Batch ID: \$CLO4LCS-061014A

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Sample Type	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
BLANK	Perchlorate	Not detected	5.0	2	ug/Kg	10/14/06	10/17/06

Run #: LQ1017\_20  
Instrument: AGIL\_1100  
Sequence: LQ061017  
Initials: SD

GC SC-Blank-REG MDLs  
Printed: 10/23/06 11:25:12 AM

**Laboratory Control Spike Recovery**  
**Perchlorate in Solids**

APPL ID: 061014S-49357 LCS - 105898  
Batch ID: \$CLO4LCS-061014A

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Compound Name	Spike Level ug/Kg	SPK Result ug/Kg	SPK % Recovery	Recovery Limits
Perchlorate	8.00	7.26	90.8	85-115

Comments: \_\_\_\_\_

<b>Primary</b>	<b>SPK</b>
Extraction Date :	10/14/06
Analysis Date :	10/17/06
Instrument :	AGIL_1100
Run :	LQ1017_15
Initials :	SD

Printed: 10/23/06 11:25:45 AM

APPL Standard LCS

**Laboratory Control Spike Recovery**  
**Perchlorate in Solids**

APPL ID: 061017S-49358 LCS - 105899  
Batch ID: \$CLO4LCS-061017A

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Compound Name	Spike Level ug/Kg	SPK Result ug/Kg	SPK % Recovery	Recovery Limits
Perchlorate	5.00	4.80	96.0	70-130

Comments:

<b>Primary</b>	<b>SPK</b>
Extraction Date :	10/17/06
Analysis Date :	10/17/06
Instrument :	AGIL_1100
Run :	LQ1017_16
Initials :	SD

Printed: 10/23/06 11:25:45 AM

APPL Standard LCS

## Matrix Spike Recoveries Perchlorate in Solids

APPL ID: 061017S-49357 MS - 105898  
 Batch ID: \$CLO4LCS-061014A  
 Sample ID: AX49357  
 Client ID: 2FD

APPL Inc.  
 4203 West Swift Avenue  
 Fresno, CA 93722

Compound Name	Spike Lvl ug/Kg	Matrix Result ug/Kg	SPK Result ug/Kg	DUP Result ug/Kg	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
Perchlorate	8.00	50	55.1	82.7	63.8 #	409 #	85-115	40.1 #	15

# = Recovery is outside QC limits.

Comments:

	SPK	DUP
Extraction Date :	10/17/06	10/17/06
Analysis Date :	10/17/06	10/17/06
Instrument :	AGIL_1100	AGIL_1100
Run :	LQ1017_17	LQ1017_18
Initials :	SD	

Printed: 10/23/06 2:57:32 PM  
 APPL MSD SCII

# LC/MS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY FORM

DATA SEQUENCE : 10/17/06\_A

DETECTOR ID : AGILENT 1100 G1946D SL

Perchlorate IS Average Area Count Response					306665.50	---
Lower Limit Response					153332.75	---
Upper Limit Response					459998.25	---
SAMPLE INJECTION ID :			DATA FILE ID:	RT	AREA COUNT	
PER IS	0.005 PPM	10/17/06	>LQ1017_01	15.490	315298.00	---
PERCHLORATE	0.0002PPM	10/17/06	>LQ1017_02	15.529	310124.00	---
PERCHLORATE	0.0005PPM	10/17/06	>LQ1017_03	15.499	308815.00	---
PERCHLORATE	0.001 PPM	10/17/06	>LQ1017_04	15.512	313970.00	---
PERCHLORATE	0.002 PPM	10/17/06	>LQ1017_05	15.549	317506.00	---
PERCHLORATE	0.005 PPM	10/17/06	>LQ1017_06	15.572	303898.00	---
PERCHLORATE	0.010 PPM	10/17/06	>LQ1017_07	15.524	303962.00	---
PER IS	0.005 PPM	10/17/06	>LQ1017_08	15.622	314217.00	---
*PER_SS	0.0005PPM	10/17/06	>LQ1017_09	15.648	320188.00	---
*PER_SS	0.002 PPM	10/17/06	>LQ1017_10	15.663	309507.00	---
PER IS	0.005 PPM	10/17/06	>LQ1017_11	15.686	299408.00	---
*PER_CCV_1	0.0005PPM	10/17/06	>LQ1017_12	15.666	297542.00	---
*PER_CCV_1	0.002 PPM	10/17/06	>LQ1017_13	15.701	299425.00	---
ACN	1 DF	10/17/06	>LQ1017_14	15.669	9259.78	***
061014MLCSA	8421 DF	10/14/06	>LQ1017_15	15.675	320981.00	---
061017M ICSA	8421 DF	10/17/06	>LQ1017_16	14.509	249508.00	---
59357M-MS	8421 DF	10/17/06	>LQ1017_17	14.765	279577.00	---
59357M-MSD	8421 DF	10/17/06	>LQ1017_18	14.699	239725.00	---
PER IS	0.005 PPM	10/15/06	>LQ1017_19	15.763	316663.00	---
061014MBLKA	8421 DF	10/14/06	>LQ1017_20	15.699	309280.00	---
59357M	8421 DF	10/14/06	>LQ1017_21	14.754	305154.00	---
59358M	8421 DF	10/14/06	>LQ1017_22	14.835	276503.00	---
59359M	8421 DF	10/14/06	>LQ1017_23	14.708	255533.00	---
59360M	8421 DF	10/14/06	>LQ1017_24	15.059	371997.00	---
59361M	8421 DF	10/14/06	>LQ1017_25	14.385	347144.00	---
PER IS	0.005 PPM	10/17/06	>LQ1017_26	15.758	305267.00	---
PER_CCV_2	0.0005PPM	10/17/06	>LQ1017_27	15.676	312812.00	---
PER_CCV_2	0.002 PPM	10/17/06	>LQ1017_28	15.815	315248.00	---

\*\*\* Internal Standard Response Outlier

\* Area Count Used for Averaging Purposes

FILE ID : LQ1017A.INT

**Perchlorate  
LC-MS**

**Sample Data**

**APPL, INC.**

## Perchlorate in Solids

Tetra Tech, Inc.  
820 Milliani St, Ste 700  
Hololulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN  
Project: MULIWAI TISSUE/838  
**Sample ID: 2FD**  
Sample Collection Date: 8/3/06

ARF: 51706  
**APPL ID: AX49357**  
QCG: \$CLO4LCS-061014A-1058

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
(Concentrations and Limits have been adjusted to reflect 69.2 Percent Moisture.)							
LCMS	Perchlorate	160	16.0	6.5	ug/Kg	10/14/06	10/17/06

Run #: LQ1017_21 Instrument: AGIL_1100 Sequence: LQ061017 Dilution Factor: 1 Initials: SD
---

Printed: 10/23/06 11:25:25 AM  
APPL-F1-SC-MCRes/MCPQL-REG MDLs

## Perchlorate in Solids

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
Hololulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN  
Project: MULIWAI TISSUE/838  
Sample ID: NW1FD  
Sample Collection Date: 8/5/06

ARF: 51706  
APPL ID: AX49358  
QCG: \$CLO4LCS-061017A-1058

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
(Concentrations and Limits have been adjusted to reflect 66.9 Percent Moisture.)							
LCMS	Perchlorate	8.8 J	15.0	6.0	ug/Kg	10/14/06	10/17/06

J = Estimated value.

Run #: LQ1017\_22  
Instrument: AGIL\_1100  
Sequence: LQ061017  
Dilution Factor: 1  
Initials: SD

Printed: 10/23/06 11:25:25 AM  
APPL-F1-SC-MCRes/MCPQL-REG MDLs

## Perchlorate in Solids

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
Hololulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN  
Project: MULIWAI TISSUE/838  
**Sample ID: NW2FD**  
Sample Collection Date: 8/19/06

ARF: 51706  
**APPL ID: AX49359**  
QCG: \$CLO4LCS-061014A-1058

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
(Concentrations and Limits have been adjusted to reflect 71.2 Percent Moisture.)							
LCMS	Perchlorate	10 J	17.0	6.9	ug/Kg	10/14/06	10/18/06

J = Estimated value.

Run #: LQ1017_23 Instrument: AGIL_1100 Sequence: LQ061017 Dilution Factor: 1 Initials: SD
---

Printed: 10/23/06 11:25:25 AM  
APPL-F1-SC-MCRes/MCPQL-REG MDLs

## Perchlorate in Solids

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
Hololulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN  
Project: MULIWAI TISSUE/838  
Sample ID: NW1SW1-1FD  
Sample Collection Date: 8/9/06

ARF: 51706  
APPL ID: AX49360  
QCG: \$CLO4LCS-061014A-1058

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
(Concentrations and Limits have been adjusted to reflect 75.4 Percent Moisture.)							
LCMS	Perchlorate	Not detected	20.0	8.1	ug/Kg	10/14/06	10/18/06

Run #: LQ1017_24 Instrument: AGIL_1100 Sequence: LQ061017 Dilution Factor: 1 Initials: SD
---

Printed: 10/23/06 11:25:25 AM  
APPL-F1-SC-MCRes/MCPQL-REG MDLs

## Perchlorate in Solids

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
Honolulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN

Project: MULIWAI TISSUE/838

Sample ID: 9AFD AND 10A COMP

Sample Collection Date: 8/3/06

ARF: 51706

APPL ID: AX49361

QCG: \$CLO4LCS-061014A-1058

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
(Concentrations and Limits have been adjusted to reflect 72.9 Percent Moisture.)							
LCMS	Perchlorate	21 J	18.0	7.4	ug/Kg	10/14/06	10/18/06

J = Estimated value.

Run #: LQ1017\_25  
Instrument: AGIL\_1100  
Sequence: LQ061017  
Dilution Factor: 1  
Initials: SD

Printed: 10/23/06 11:25:25 AM  
APPL-F1-SC-MCRes/MCPQL-REG MDLs

**EPA METHOD 8260B**  
**Volatile Organic Compounds**

**APPL, INC.**

**EPA METHOD 8260B**  
**Volatile Organic Compounds**  
**QC Summary**

**APPL, INC.**

**Method Blank**  
**EPA 8260B Soil**

Blank Name/QCG: **061004S-49358 - 105602**  
Batch ID: \$8260S-061004AC

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Sample Type	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
BLANK	1,2,4-Trimethylbenzene	Not detected	5.0	1.18	ug/Kg	10/4/2006	10/4/2006
BLANK	Ethylbenzene	Not detected	5.0	0.64	ug/Kg	10/4/2006	10/4/2006
BLANK	m&p-Xylenes	2.4 J	5.0	0.43	ug/Kg	10/4/2006	10/4/2006
BLANK	o-Xylenes	Not detected	5.0	0.61	ug/Kg	10/4/2006	10/4/2006
BLANK	Styrene	Not detected	5.0	0.69	ug/Kg	10/4/2006	10/4/2006
BLANK	Toluene	Not detected	5.0	0.65	ug/Kg	10/4/2006	10/4/2006
BLANK	Surrogate recovery (BFB)	95.2	82-121		%	10/4/2006	10/4/2006
BLANK	Surrogate recovery (DBFM)	96.9	74-122		%	10/4/2006	10/4/2006
BLANK	Surrogate recovery (DCA)	93.5	59-120		%	10/4/2006	10/4/2006
BLANK	Surrogate recovery (TOL)	101	71-127		%	10/4/2006	10/4/2006

J = Estimated value.

Run #: 1004C17
Instrument: Chico
Sequence: C061004
Initials: GM

GC SC-Blank-REG MDLs  
Printed: 10/23/2006 4:46:06 PM

**Method Blank**  
**EPA 8260B Soil Re-analysis**

Blank Name/QCG: 061003S-49357 - 105604  
Batch ID: \$8260S-061002BC

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Sample Type	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
BLANK	1,2,4-Trimethylbenzene	Not detected	5.0	1.18	ug/Kg	10/3/2006	10/3/2006
BLANK	Ethylbenzene	Not detected	5.0	0.64	ug/Kg	10/3/2006	10/3/2006
BLANK	m&p-Xylenes	Not detected	5.0	0.43	ug/Kg	10/3/2006	10/3/2006
BLANK	o-Xylenes	Not detected	5.0	0.61	ug/Kg	10/3/2006	10/3/2006
BLANK	Styrene	Not detected	5.0	0.69	ug/Kg	10/3/2006	10/3/2006
BLANK	Toluene	Not detected	5.0	0.65	ug/Kg	10/3/2006	10/3/2006
BLANK	Surrogate recovery (BFB)	86.6	82-121		%	10/3/2006	10/3/2006
BLANK	Surrogate recovery (DBFM)	90.4	74-122		%	10/3/2006	10/3/2006
BLANK	Surrogate recovery (DCA)	95.8	59-120		%	10/3/2006	10/3/2006
BLANK	Surrogate recovery (TOL)	87.8	71-127		%	10/3/2006	10/3/2006

Run #: 1002C23  
Instrument: Chico  
Sequence: C060928  
Initials: GM

GC SC-Blank-REG MDLs  
Printed: 10/23/2006 4:46:06 PM

Surrogate Recovery - Retention Time Summary

Lab Name: APPL, Inc.

SDG No: 51706

Case No: 51706

Date Analyzed: 10/03/06

Matrix: MISC

Instrument: Chico

APPL ID.	Client Sample No.	Surrogate recovery (BFB)	Surrogate recovery (DBFM)
061002BC-LCS	Lab Control Spike	89.8	86.1
061002BC-BLK	Blank	86.6	90.4
AX49357	2FD	76.9 #	95.8

Comments: Batch: \$8260S-061002BC

Surrogate Recovery - Retention Time Summary

Lab Name: APPL, Inc.  
Case No: 51706  
Matrix: MISC

SDG No: 51706  
Date Analyzed: 10/03/06  
Instrument: Chico

APPL ID.	Client Sample No.	Surrogate recovery (DCA)	Surrogate recovery (TOL)
061002BC-LCS	Lab Control Spike	87.9	82.2
061002BC-BLK	Blank	95.8	87.8
AX49357	2FD	106	89.7

Comments: Batch: \$8260S-061002BC

Surrogate Recovery - Retention Time Summary

Lab Name: APPL, Inc.

SDG No: 51706

Case No: 51706

Date Analyzed: 10/04/06

Matrix: MISC

Instrument: Chico

APPL ID.	Client Sample No.	Surrogate recovery (BFB)	Surrogate recovery (DBFM)
061004AC-LCS	Lab Control Spike	100	96.3
061004AC-BLK	Blank	95.2	96.9
AX49358	NW1FD	87.6	98.9
AX49359	NW2FD	86.6	104
AX49360	NW1SW1-1FD	98.5	102
AX49361	9AFD AND 10A COMP	93.8	106
061004AC-MS	Matrix Spike	91.2	102
061004AC-MSD	Matrix SpikeD	97.8	96.3

Comments: Batch: \$8260S-061004AC

Surrogate Recovery - Retention Time Summary

Lab Name: APPL, Inc.

SDG No: 51706

Case No: 51706

Date Analyzed: 10/04/06

Matrix: MISC

Instrument: Chico

APPL ID.	Client Sample No.	Surrogate recovery (DCA)	Surrogate recovery (TOL)
061004AC-LCS	Lab Control Spike	96.6	98.6
061004AC-BLK	Blank	93.5	101
AX49358	NW1FD	111	96.5
AX49359	NW2FD	118	98.1
AX49360	NW1SW1-1FD	113	101
AX49361	9AFD AND 10A COMP	120	101
061004AC-MS	Matrix Spike	108	97.7
061004AC-MSD	Matrix SpikeD	99.7	108

Comments: Batch: \$8260S-061004AC

**Laboratory Control Spike Recovery**  
**EPA 8260B Soil Re-analysis**

APPL ID: 061003S-49357 LCS - 105604  
 Batch ID: \$8260S-061002BC

APPL Inc.  
 4203 West Swift Avenue  
 Fresno, CA 93722

Compound Name	Spike Level ug/Kg	SPK Result ug/Kg	SPK % Recovery	Recovery Limits
Ethylbenzene	50.0	47.4	94.8	78-127
m&p-Xylenes	100	96.9	96.9	87-121
o-Xylenes	50.0	46.3	92.6	87-121
Styrene	50.0	46.7	93.4	65-135
Toluene	50.0	48.2	96.4	81-131
Surrogate recovery (BFB)	35.4	31.8	89.8	82-121
Surrogate recovery (DBFM)	34.6	29.8	86.1	74-122
Surrogate recovery (DCA)	34.0	29.9	87.9	59-120
Surrogate recovery (TOL)	36.6	30.1	82.2	71-127

Comments:

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<u>Primary</u>	<u>SPK</u>
Extraction Date :	10/3/2006
Analysis Date :	10/3/2006
Instrument :	Chico
Run :	1002C19
Initials :	GM

Printed: 10/23/2006 4:46:08 PM

APPL Standard LCS

**Laboratory Control Spike Recovery**  
**EPA 8260B Soil**

APPL ID: 061004S-49358 LCS - 105602  
Batch ID: \$8260S-061004AC

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Compound Name	Spike Level ug/Kg	SPK Result ug/Kg	SPK % Recovery	Recovery Limits
1,2,4-Trimethylbenzene	50.0	46.1	92.2	65-135
Ethylbenzene	50.0	46.3	92.6	78-127
m&p-Xylenes	100	93.3	93.3	87-121
o-Xylenes	50.0	48.9	97.8	87-121
Styrene	50.0	48.7	97.4	65-135
Toluene	50.0	45.8	91.6	81-131
<hr/>				
Surrogate recovery (BFB)	31.9	31.9	100	82-121
Surrogate recovery (DBFM)	29.8	28.7	96.3	74-122
Surrogate recovery (DCA)	29.1	28.1	96.6	59-120
Surrogate recovery (TOL)	35.3	34.8	98.6	71-127

Comments:

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Primary	SPK
Extraction Date :	10/4/2006
Analysis Date :	10/4/2006
Instrument :	Chico
Run :	1004C15
Initials :	GM

Printed: 10/23/2006 4:46:08 PM

APPL Standard LCS

# Matrix Spike Recoveries

## EPA 8260B Soil

APPL ID: 061005S-49358 MS - 105602  
 Batch ID: \$8260S-061004AC  
 Sample ID: AX49358  
 Client ID: NW1FD

APPL Inc.  
 4203 West Swift Avenue  
 Fresno, CA 93722

Compound Name	Spike Lvl ug/Kg	Matrix Result ug/Kg	SPK Result ug/Kg	DUP Result ug/Kg	SPK % Recovery	DUP % Recovery	Recovery Limits	RPD %	RPD Limits
1,2,4-Trimethylbenzene	250	ND	28.9	37.3	11.6 #	14.9 #	65-135	25.4	30
Ethylbenzene	250	ND	40.7	56.9	16.3 #	22.8 #	78-127	33.2 #	30
m&p-Xylenes	100	6.5	73.4	113	66.9 #	107	87-121	42.5 #	30
o-Xylenes	50.0	ND	34.4	45.2	68.8 #	90.4	87-121	27.1	30
Styrene	250	ND	30.0	35.5	12.0 #	14.2 #	65-135	16.8	30
Toluene	250	ND	64.6	74.9	25.8 #	30.0 #	81-131	14.8	30
Surrogate recovery (BFB)	31.9	NA	29.1	31.2	91.2	97.8	82-121		
Surrogate recovery (DBFM)	29.8	NA	30.3	28.7	102	96.3	74-122		
Surrogate recovery (DCA)	29.1	NA	31.3	29.0	108	99.7	59-120		
Surrogate recovery (TOL)	35.3	NA	34.5	38.0	97.7	108	71-127		

# = Recovery is outside QC limits.

Comments:

Primary	SPK	DUP
Extraction Date :	10/5/2006	10/5/2006
Analysis Date :	10/5/2006	10/5/2006
Instrument :	Chico	Chico
Run :	1005C13	1005C14
Initials :	GM	

Printed: 10/23/2006 4:46:14 PM  
 APPL MSD SCII

# EPA 8260B

## Form 4

### Blank Summary

Lab Name: APPL, Inc.

SDG No: 51706

Case No: 51706

Date Analyzed: 10/03/06

Matrix: MISC

Instrument: Chico

Blank ID: 061002BC-BLK

Time Analyzed: 0310

APPL ID.	Client Sample No.	File ID.	Date Analyzed
061002BC-LCS	Lab Control Spike	1002C19	10/03/06 0007
061002BC-BLK	Blank	1002C23	10/03/06 0310
AX49357	2FD	1002C28	10/03/06 0652

Comments: Batch: \$8260S-061002BC

Printed: 10/12/06 3:09:43 PM  
Form 4, Blank Summary

# EPA 8260B

Form 4

## Blank Summary

Lab Name: APPL, Inc.

SDG No: 51706

Case No: 51706

Date Analyzed: 10/04/06

Matrix: MISC

Instrument: Chico

Blank ID: 061004AC-BLK

Time Analyzed: 2229

APPL ID.	Client Sample No.	File ID.	Date Analyzed
061004AC-LCS	Lab Control Spike	1004C15	10/04/06 2058
061004AC-BLK	Blank	1004C17	10/04/06 2229
AX49358	NW1FD	1004C22	10/05/06 0220
AX49359	NW2FD	1004C23	10/05/06 0309
AX49360	NW1SW1-1FD	1004C24	10/05/06 0354
AX49361	9AFD AND 10A COMP	1004C26	10/05/06 0522
061004AC-MS	Matrix Spike	1005C13	10/05/06 1916
061004AC-MSD	Matrix Spiked	1005C14	10/05/06 1959

Comments: Batch: \$8260S-061004AC

Printed: 10/12/06 3:09:43 PM  
Form 4, Blank Summary

**EPA METHOD 8260B  
Volatile Organic Compounds  
Sample Data**

**APPL, INC.**

## EPA 8260B Soil Re-analysis

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
HoloLulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN

Project: MULIWAI TISSUE/838

Sample ID: 2FD

Sample Collection Date: 8/3/2006

ARF: 51706

APPL ID: AX49357

QCG: \$8260S-061002BC-105604

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
(Concentrations and Limits have been adjusted to reflect 69.2 Percent Moisture.)							
EPA 8260B	Ethylbenzene	Not detected	16.0	2.1	ug/Kg	10/3/2006	10/3/2006
EPA 8260B	m&p-Xylenes	1.6 J	16.0	1.4	ug/Kg	10/3/2006	10/3/2006
EPA 8260B	o-Xylenes	Not detected	16.0	2.0	ug/Kg	10/3/2006	10/3/2006
EPA 8260B	Styrene	Not detected	16.0	2.2	ug/Kg	10/3/2006	10/3/2006
EPA 8260B	Toluene	Not detected	16.0	2.1	ug/Kg	10/3/2006	10/3/2006
EPA 8260B	Surrogate recovery (BFB)	76.9 #	82-121		%	10/3/2006	10/3/2006
EPA 8260B	Surrogate recovery (DBFM)	95.8	74-122		%	10/3/2006	10/3/2006
EPA 8260B	Surrogate recovery (DCA)	106	59-120		%	10/3/2006	10/3/2006
EPA 8260B	Surrogate recovery (TOL)	89.7	71-127		%	10/3/2006	10/3/2006

J = Estimated value.

# = Recovery (or RPD) is outside QC limits.

Run #: 1002C28
Instrument: Chico
Sequence: C060928
Dilution Factor: 1
Initials: GM

Printed: 10/23/2006 4:45:12 PM  
APPL-F1-SC-MCRes/MCPQL-REG MDLs

## EPA 8260B Soil

Tetra Tech, Inc.  
820 Milliani St, Ste 700  
Hololulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN

Project: MULIWAI TISSUE/838

Sample ID: NW1FD

Sample Collection Date: 8/5/2006

ARF: 51706

APPL ID: AX49358

QCG: \$8260S-061004AC-105602

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
(Concentrations and Limits have been adjusted to reflect 66.9 Percent Moisture.)							
EPA 8260B	1,2,4-Trimethylbenzene	Not detected	76.0	18	ug/Kg	10/5/2006	10/5/2006
EPA 8260B	Ethylbenzene	Not detected	76.0	9.7	ug/Kg	10/5/2006	10/5/2006
EPA 8260B	m&p-Xylenes	20 J	76.0	6.5	ug/Kg	10/5/2006	10/5/2006
EPA 8260B	o-Xylenes	Not detected	76.0	9.2	ug/Kg	10/5/2006	10/5/2006
EPA 8260B	Styrene	Not detected	76.0	10	ug/Kg	10/5/2006	10/5/2006
EPA 8260B	Toluene	Not detected	76.0	9.8	ug/Kg	10/5/2006	10/5/2006
EPA 8260B	Surrogate recovery (BFB)	87.6	82-121		%	10/5/2006	10/5/2006
EPA 8260B	Surrogate recovery (DBFM)	98.9	74-122		%	10/5/2006	10/5/2006
EPA 8260B	Surrogate recovery (DCA)	111	59-120		%	10/5/2006	10/5/2006
EPA 8260B	Surrogate recovery (TOL)	96.5	71-127		%	10/5/2006	10/5/2006

J = Estimated value.

Run #: 1004C22
Instrument: Chico
Sequence: C061004
Dilution Factor: 5
Initials: GM

Printed: 10/23/2006 4:45:13 PM  
APPL-F1-SC-MCRes/MCPQL-REG MDLs

## EPA 8260B Soil

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
Honolulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN

Project: MULIWAI TISSUE/838

Sample ID: NW2FD

Sample Collection Date: 8/19/2006

ARF: 51706

APPL ID: AX49359

QCG: \$8260S-061004AC-105602

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
(Concentrations and Limits have been adjusted to reflect 71.2 Percent Moisture.)							
EPA 8260B	1,2,4-Trimethylbenzene	Not detected	87.0	20	ug/Kg	10/5/2006	10/5/2006
EPA 8260B	Ethylbenzene	Not detected	87.0	11	ug/Kg	10/5/2006	10/5/2006
EPA 8260B	m&p-Xylenes	16 J	87.0	7.5	ug/Kg	10/5/2006	10/5/2006
EPA 8260B	o-Xylenes	Not detected	87.0	11	ug/Kg	10/5/2006	10/5/2006
EPA 8260B	Styrene	Not detected	87.0	12	ug/Kg	10/5/2006	10/5/2006
EPA 8260B	Toluene	Not detected	87.0	11	ug/Kg	10/5/2006	10/5/2006
EPA 8260B	Surrogate recovery (BFB)	86.6	82-121		%	10/5/2006	10/5/2006
EPA 8260B	Surrogate recovery (DBFM)	104	74-122		%	10/5/2006	10/5/2006
EPA 8260B	Surrogate recovery (DCA)	118	59-120		%	10/5/2006	10/5/2006
EPA 8260B	Surrogate recovery (TOL)	98.1	71-127		%	10/5/2006	10/5/2006

J = Estimated value.

Run #: 1004C23
Instrument: Chico
Sequence: C061004
Dilution Factor: 5
Initials: GM

Printed: 10/23/2006 4:45:13 PM  
APPL-F1-SC-MCRes/MCPQL-REG MDLs

## EPA 8260B Soil

Tetra Tech, Inc.  
820 Milliani St, Ste 700  
HoloLulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN

Project: MULIWAI TISSUE/838

ARF: 51706

Sample ID: NW1SW1-1FD

APPL ID: AX49360

Sample Collection Date: 8/9/2006

QCG: \$8260S-061004AC-105602

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
(Concentrations and Limits have been adjusted to reflect 75.4 Percent Moisture.)							
EPA 8260B	1,2,4-Trimethylbenzene	Not detected	100.0	24	ug/Kg	10/5/2006	10/5/2006
EPA 8260B	Ethylbenzene	Not detected	100.0	13	ug/Kg	10/5/2006	10/5/2006
EPA 8260B	m&p-Xylenes	16 J	100.0	8.7	ug/Kg	10/5/2006	10/5/2006
EPA 8260B	o-Xylenes	Not detected	100.0	12	ug/Kg	10/5/2006	10/5/2006
EPA 8260B	Styrene	Not detected	100.0	14	ug/Kg	10/5/2006	10/5/2006
EPA 8260B	Toluene	Not detected	100.0	13	ug/Kg	10/5/2006	10/5/2006
EPA 8260B	Surrogate recovery (BFB)	98.5	82-121		%	10/5/2006	10/5/2006
EPA 8260B	Surrogate recovery (DBFM)	102	74-122		%	10/5/2006	10/5/2006
EPA 8260B	Surrogate recovery (DCA)	113	59-120		%	10/5/2006	10/5/2006
EPA 8260B	Surrogate recovery (TOL)	101	71-127		%	10/5/2006	10/5/2006

J = Estimated value.

Run #: 1004C24
Instrument: Chico
Sequence: C061004
Dilution Factor: 5
Initials: GM

Printed: 10/23/2006 4:45:13 PM  
APPL-F1-SC-MCRes/MCPQL-REG MDLs

## EPA 8260B Soil

Tetra Tech, Inc.  
820 Mililani St, Ste 700  
Holoofulu, HI 96813

APPL Inc.  
4203 West Swift Avenue  
Fresno, CA 93722

Attn: SUSAN CARSTENN

Project: MULIWAI TISSUE/838

Sample ID: 9AFD AND 10A COMP

Sample Collection Date: 8/3/2006

ARF: 51706

APPL ID: AX49361

QCG: \$8260S-061004AC-105602

Method	Analyte	Result	PQL	MDL	Units	Extraction Date	Analysis Date
(Concentrations and Limits have been adjusted to reflect 72.9 Percent Moisture.)							
EPA 8260B	1,2,4-Trimethylbenzene	Not detected	92.0	22	ug/Kg	10/5/2006	10/5/2006
EPA 8260B	Ethylbenzene	Not detected	92.0	12	ug/Kg	10/5/2006	10/5/2006
EPA 8260B	m&p-Xylenes	17 J	92.0	7.9	ug/Kg	10/5/2006	10/5/2006
EPA 8260B	o-Xylenes	Not detected	92.0	11	ug/Kg	10/5/2006	10/5/2006
EPA 8260B	Styrene	Not detected	92.0	13	ug/Kg	10/5/2006	10/5/2006
EPA 8260B	Toluene	Not detected	92.0	12	ug/Kg	10/5/2006	10/5/2006
EPA 8260B	Surrogate recovery (BFB)	93.8	82-121		%	10/5/2006	10/5/2006
EPA 8260B	Surrogate recovery (DBFM)	106	74-122		%	10/5/2006	10/5/2006
EPA 8260B	Surrogate recovery (DCA)	120	59-120		%	10/5/2006	10/5/2006
EPA 8260B	Surrogate recovery (TOL)	101	71-127		%	10/5/2006	10/5/2006

J = Estimated value.

Run #: 1004C26
Instrument: Chico
Sequence: C061004
Dilution Factor: 5
Initials: GM

Printed: 10/23/2006 4:45:13 PM  
APPL-F1-SC-MCRes/MCPQL-REG MDLs

# **Analytical Chemistry Data Package Inorganics Analysis**

**Project: USACE - HAWAII  
Tetra Tech**

**Analysis of Metals in Tissue**

Battelle Project No. 52222  
CF No. 2613



Marine Sciences Laboratory  
1529 West Sequim Bay Road  
Sequim, WA 98382  
(360) 681-4564

**BATTELLE MARINE SCIENCES LABORATORY**

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**TETRA TECH - Hawaii**  
 METALS IN TISSUES, Dry Weight

(concentrations in µg/g Dry wt. - data are not blank corrected)

Client Code	Field Sample ID	MSL Code	Matrix	Collection Date	Percent Dry Wt.	Al	Sb	As	Ba	Be	Cd	Cr
						Instrument: ICP-OES	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-OES
K0607294-009	2fd	2613-1	Tissue	8/3/06	30.8	1517	0.0527 J	1.46 J	19.5	0.0100 J	0.0292 J	12.4
K0607294-028	NW1fd	2613-2	Tissue	8/5/06	33.1	21.2	0.02 U	25.2	0.620 J	0.005 U	0.155	1.56
K0607294-028DUP	NW1fd DUP	2613-2DUP	Tissue	8/5/06	33.1	11.3	0.02 U	26.2	0.697 J	0.005 U	0.151	1.41
K0607294-033	NW2fd	2613-3	Tissue	8/19/06	28.8	15.6	0.0259 J	6.17	7.58	0.005 U	0.132	1.49
K0607294-038	NW1SW1-1fd	2613-4	Plant	8/9/06	24.6	337	0.145	109	13.3	0.00559 J	0.265	1.59
K0607294-038DUP	NW1SW1-1fd DUP	2613-4DUP	Plant	8/9/06	24.6	377	0.145	110	12.8	0.005 U	0.256	1.98
K0607294-042	9afd and 10a Comp	2613-5	Tissue	8/3/06	27.1	2711	0.0481 J	29.8	12.5	0.0261	0.147	13.2
K0607294-042DUP	9afd and 10a Comp DUP	2613-5DUP	Tissue	8/3/06	27.1	2683	0.0469 J	30.6	11.9	0.0277	0.143	13.5

**DETECTION LIMITS**

Achieved Method Detection Limit (DRY Wt.)<sup>(1)</sup>

**0.374      0.02      0.585      0.5      0.0048      0.008      0.041**

Reporting Limit (RL)

**1.2      0.06      2      2      0.015      0.03      0.13**

**METHOD BLANK**

Blank	Blank 092506 R1	28.0	0.374 U	0.02 U	0.585 U	0.5 U	0.005 U	0.008 U	0.0468 J
Blank	Blank 092506 R2	28.0	0.374 U	0.02 U	0.585 U	0.5 U	0.005 U	0.008 U	0.0570 J
	Mean Blank								0.0519 J
Blank	Blank 100606	28.0	NA	NA	NA	NA	NA	NA	NA

**BLANK SPIKE RESULTS**

Blank	Blank 092506 R1	28.0	0.374 U	0.02 U	0.585 U	0.5 U	0.005 U	0.008 U	0.0468 J
LCS	LCS 092506 L1	28.0	NA	2.06	1.66 J	2.04	1.84	2.07	2.14
	Spike Concentration		NA	2.0	2.0	2.0	2.0	2.0	2.0
	Percent Recovery		NA	103%	83%	102%	92%	104%	105%
Blank	Blank 092506 R2	28.0	0.374 U	0.02 U	0.585 U	0.5 U	0.005 U	0.008 U	0.0570 J
LCS	LCS 092506 L2	28.0	104	25.0	24.0	26.8	24.0	24.8	26.3
	Spike Concentration		101	25	25	25	25	25	25
	Percent Recovery		103%	100%	96%	107%	96%	99%	105%

**MATRIX SPIKE RESULTS**

K0607294-038MS	2613-4 MS	446	2.12	125	15.2	1.92	2.14	25.9				
K0607294-038MSD	2613-4 MSD	458	2.28	130	15.2	2.02	2.24	25.7				
K0607294-038	NW1SW1-1fd	2613-4	Plant	8/9/06	24.6	337	0.145	109	13.3	0.00559 J	0.265	1.59
	Spike Concentration, MS					100.4	1.90	24.9	1.90	1.90	24.9	
	Spike Concentration, MSD					96.6	2.01	23.9	2.01	2.01	23.9	
	Percent Recovery, MS					108%	104%	SL	100%	101%	99%	98%
	Percent Recovery, MSD					125%	106%	SL	95%	100%	98%	101%
	RPD					14%	2%	NA	6%	1%	0%	3%

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**TETRA TECH - Hawaii**  
 METALS IN TISSUES, Dry Weight

(concentrations in µg/g Dry wt. - data are not blank corrected)

Client Code	Field Sample ID	MSL Code	Matrix	Collection Date	Percent Dry Wt.	Al	Sb	As	Ba	Be	Cd	Cr
						Instrument: ICP-OES	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-MS	ICP-OES
<b><u>MATRIX SPIKE RESULTS (cont.)</u></b>												
K0607294-042MS		2613-5 MS				2337	2.16	50.5	43.2	1.78	2.16	35.5
K0607294-042MSD		2613-5 MSD				2517	2.01	51.9	40.8	1.66	1.99	36.8
K0607294-042	9afd and 10a Comp	2613-5	Tissue	8/3/06	27.1	2711	0.0481 J	29.8	12.5	0.0261	0.147	13.2
	Spike Concentration, MS					101.2	2.06	25.1	25.1	2.06	2.06	25.1
	Spike Concentration, MSD					100.6	1.92	24.9	24.9	1.92	1.92	24.9
	Percent Recovery, MS					SL	103%	82%	122%	85%	98%	89%
	Percent Recovery, MSD					SL	102%	89%	114%	85%	96%	95%
	RPD					NA	0%	7%	7%	0%	2%	6%
<b><u>REPLICATE ANALYSIS RESULTS</u></b>												
K0607294-028	NW1fd	2613-2	Tissue	8/5/06	33.1	21.2	0.02 U	25.2	0.620	0.005 U	0.155	1.56
K0607294-028DUP	NW1fd DUP	2613-2DUP	Tissue	8/5/06	33.1	11.3	0.02 U	26.2	0.697	0.005 U	0.151	1.41
	Mean					16.3		25.7	0.659		0.153	1.49
	RPD					61% &	NA	4%	12%	NA	3%	10%
K0607294-038	NW1SW1-1fd	2613-4	Plant	8/9/06	24.6	337	0.145	109	13.3	0.00559 J	0.265	1.59
K0607294-038DUP	NW1SW1-1fd DUP	2613-4DUP	Plant	8/9/06	24.6	377	0.145	110	12.8	0.005 U	0.256	1.98
	Mean					357	0.145	110	13.1		0.261	1.79
	RPD					11%	0%	1%	4%	NA	3%	22%
K0607294-042	9afd and 10a Comp	2613-5	Tissue	8/3/06	27.1	2711	0.0481 J	29.8	12.5	0.0261	0.147	13.2
K0607294-042DUP	9afd and 10a Comp DUP	2613-5DUP	Tissue	8/3/06	27.1	2683	0.0469 J	30.6	11.9	0.0277	0.143	13.5
	Mean					2697	0.0475	30.2	12.2	0.0269	0.145	13.4
	RPD					1%	3%	3%	5%	6%	3%	2%
<b><u>STANDARD REFERENCE MATERIAL</u></b>												
SRM 1566b		1566-b 092506				152	0.010 U	6.42	8.02	0.00663 J	2.48	0.587
		Certified Value				197	0.011	7.65	8.6	NC	2.48	NC
		PD				23%	5%	16%	7%	NA	0%	NA
SRM DORM-2		DORM-2 092506				9.42	0.0333 J	16.3	2.22	0.005 U	0.0448	30.9
		Certified Value				10.9	NC	18.0	NC	NC	0.043	34.7
		PD				14%	NA	9%	NA	NA	4%	11%
SRM IAEA 140		IAEA 140 092506				868	0.147	36.7	10.4	0.0355	0.486	9.00
		Certified Value				NC	NC	44.3	NC	NC	0.537	10.4
		PD				NA	NA	17%	NA	NA	9%	13%

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**TETRA TECH - Hawaii**  
METALS IN TISSUES, Dry Weight

(concentrations in  $\mu\text{g/g}$  Dry wt. - data are not blank corrected)

Client Code	Field Sample ID	MSL Code	Matrix	Collection Date	Percent Dry Wt.	Al	Sb	As	Ba	Be	Cd	Cr
						<i>Instrument: ICP-OES</i>	<i>ICP-MS</i>	<i>ICP-MS</i>	<i>ICP-MS</i>	<i>ICP-MS</i>	<i>ICP-MS</i>	<i>ICP-OES</i>

**U** Analyte not detected above the laboratory achieved method detection limit, MDL reported

**J** Value detected is greater than the MDL, but less than the reporting limit (RL or PQL)

**&** QC value outside the accuracy or precision criteria goal

(spike recovery  $\pm 25\%$ ; SRM  $\pm 25\%$  PD; duplicate precision  $< 25\%$  RSD).

**B** Blank concentration greater than 3 X MDL and sample concentration less than 10 times detected blank.

**RPD** Relative Percent Difference

**NS** Sample was not spiked for this analyte

**SL** Inappropriate spike level relative to the native sample concentration

**PD** Percent Difference

**NC** Not Certified

**NA** Not Applicable/appropriate

<sup>(1)</sup> Detection limits converted between dry weight and wet weight using mean percent dry wt.

<sup>(2)</sup> Achieved Detection limits reported from the 2006 Tissue MDL Study

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**TETRA TECH - Hawaii**  
 METALS IN TISSUES, Dry Weight

(concentrations in µg/g Dry wt. - data are not blank corrected)

Client Code	Field Sample ID	MSL Code	Matrix	Collection Date	Percent Dry Wt.	Co	Cu	Fe	Pb	Mn	Se	Ag
						Instrument: ICP-MS	ICP-MS	ICP-OES	ICP-MS	ICP-MS	FIAS	ICP-MS
K0607294-009	2fd	2613-1	Tissue	8/3/06	30.8	2.58	17.3	2818	1.31	125	2.14	0.0546
K0607294-028	NW1fd	2613-2	Tissue	8/5/06	33.1	0.133	3.32	71.5	0.146	2.23	1.19	0.0132 J
K0607294-028DUP	NW1fd DUP	2613-2DUP	Tissue	8/5/06	33.1	0.145	3.45	68.5	0.178	2.78	1.20	0.0135 J
K0607294-033	NW2fd	2613-3	Tissue	8/19/06	28.8	0.133	2.95	80.5	2.24	6.27	0.879	0.01 U
K0607294-038	NW1SW1-1fd	2613-4	Plant	8/9/06	24.6	0.791	2.34	459	0.967	10.1	0.0743	0.0601
K0607294-038DUP	NW1SW1-1fd DUP	2613-4DUP	Plant	8/9/06	24.6	0.803	2.44	537	0.985	10.5	0.0686	0.0622
K0607294-042	9afd and 10a Comp	2613-5	Tissue	8/3/06	27.1	2.23	67.8	3460	2.61	150	2.83	0.610
K0607294-042DUP	9afd and 10a Comp DUP	2613-5DUP	Tissue	8/3/06	27.1	2.13	67.5	3463	2.52	145	2.85	0.603

**DETECTION LIMITS**

Achieved Method Detection Limit (DRY Wt.)<sup>(1)</sup>

Reporting Limit (RL)

<b>0.0014</b>	<b>0.08</b>	<b>1.4</b>	<b>0.02</b>	<b>0.02</b>	<b>0.0109</b>	<b>0.01</b>
<b>0.0045</b>	<b>0.3</b>	<b>4</b>	<b>0.06</b>	<b>0.06</b>	<b>0.035</b>	<b>0.03</b>

**METHOD BLANK**

Blank	Blank 092506 R1	28.0	0.0014 U	0.08 U	1.6 U	0.2 U	0.2 U	0.0109 U	0.01 U
Blank	Blank 092506 R2	28.0	0.0014 U	0.08 U	1.6 U	0.2 U	0.2 U	0.0109 U	0.01 U
	Mean Blank								
Blank	Blank 100606	28.0	NA	NA	NA	NA	NA	0.0134 J	NA

**BLANK SPIKE RESULTS**

Blank	Blank 092506 R1	28.0	0.0014 U	0.08 U	1.6 U	0.2 U	0.2 U	0.0109 U	0.01 U
LCS	LCS 092506 L1	28.0	2.1	2.09	NA	2.03	2.37	1.84	1.97
	Spike Concentration		2.0	2.0	NA	2.0	2.0	2.0	2.0
	Percent Recovery		<b>105%</b>	<b>105%</b>	<b>NA</b>	<b>102%</b>	<b>119%</b>	<b>92%</b>	<b>99%</b>
Blank	Blank 092506 R2	28.0	0.0014 U	0.08 U	1.6 U	0.2 U	0.2 U	0.0109 U	0.01 U
LCS	LCS 092506 L2	28.0	26.4	26.0	26.2	25.5	26.4	NA	25.5
	Spike Concentration		25	25	25	25	25	NA	25
	Percent Recovery		<b>106%</b>	<b>104%</b>	<b>105%</b>	<b>102%</b>	<b>106%</b>	<b>NA</b>	<b>102%</b>

**MATRIX SPIKE RESULTS**

K0607294-038MS	2613-4 MS	25.9	4.09	485	26.0	34.3	1.82	1.71				
K0607294-038MSD	2613-4 MSD	25.7	4.56	517	25.3	36.0	1.72	1.83				
K0607294-038	NW1SW1-1fd	2613-4	Plant	8/9/06	24.6	0.791	2.34	459	0.967	10.1	0.0743	0.0601
	Spike Concentration, MS				24.9	1.90	24.9	24.9	24.9	1.90	1.90	
	Spike Concentration, MSD				23.9	2.01	23.9	23.9	23.9	2.01	2.01	
	Percent Recovery, MS				<b>101%</b>	<b>92%</b>	<b>SL</b>	<b>101%</b>	<b>97%</b>	<b>92%</b>	<b>87%</b>	
	Percent Recovery, MSD				<b>104%</b>	<b>110%</b>	<b>SL</b>	<b>102%</b>	<b>108%</b>	<b>82%</b>	<b>88%</b>	
	RPD				<b>3%</b>	<b>18%</b>	<b>NA</b>	<b>1%</b>	<b>11%</b>	<b>12%</b>	<b>1%</b>	

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**TETRA TECH - Hawaii**  
 METALS IN TISSUES, Dry Weight

(concentrations in µg/g Dry wt. - data are not blank corrected)

Client Code	Field Sample ID	MSL Code	Matrix	Collection Date	Percent Dry Wt.	Co	Cu	Fe	Pb	Mn	Se	Ag
						Instrument: ICP-MS	ICP-MS	ICP-OES	ICP-MS	ICP-MS	FIAS	ICP-MS
<b><u>MATRIX SPIKE RESULTS (cont.)</u></b>												
K0607294-042MS		2613-5 MS				26.5	89.6 D	2870	28.2	161	4.44	25.1
K0607294-042MSD		2613-5 MSD				26.6	93.9 D	3121	27.9	168	4.30	25.1
K0607294-042	9afd and 10a Comp	2613-5	Tissue	8/3/06	27.1	2.23	67.8	3460	2.61	150	2.83	0.610
	Spike Concentration, MS					25.1	25.1	25.1	25.1	25.1	2.06	25.1
	Spike Concentration, MSD					24.9	24.9	24.9	24.9	24.9	1.92	24.9
	Percent Recovery, MS					97%	87%	SL	102%	SL	78%	98%
	Percent Recovery, MSD					98%	105%	SL	102%	SL	77%	98%
	RPD					1%	19%	NA	0%	NA	2%	1%
<b><u>REPLICATE ANALYSIS RESULTS</u></b>												
K0607294-028	NW1fd	2613-2	Tissue	8/5/06	33.1	0.133	3.32	71.5	0.146	2.23	1.19	0.0132 J
K0607294-028DUP	NW1fd DUP	2613-2DUP	Tissue	8/5/06	33.1	0.145	3.45	68.5	0.178	2.78	1.20	0.0135 J
	Mean					0.139	3.39	70.0	0.162	2.51	1.20	0.0134
	RPD					9%	4%	4%	20%	22%	1%	2%
K0607294-038	NW1SW1-1fd	2613-4	Plant	8/9/06	24.6	0.791	2.34	459	0.967	10.1	0.0743	0.0601
K0607294-038DUP	NW1SW1-1fd DUP	2613-4DUP	Plant	8/9/06	24.6	0.803	2.44	537	0.985	10.5	0.0686	0.0622
	Mean					0.797	2.39	498	0.976	10.3	0.0715	0.0612
	RPD					2%	4%	16%	2%	4%	8%	3%
K0607294-042	9afd and 10a Comp	2613-5	Tissue	8/3/06	27.1	2.23	67.8	3460	2.61	150	2.83	0.610
K0607294-042DUP	9afd and 10a Comp DUP	2613-5DUP	Tissue	8/3/06	27.1	2.13	67.5	3463	2.52	145	2.85	0.603
	Mean					2.18	67.7	3461	2.57	148	2.84	0.607
	RPD					5%	0%	0%	4%	3%	1%	1%
<b><u>STANDARD REFERENCE MATERIAL</u></b>												
SRM 1566b		1566-b 092506				0.345	68.6	201	0.285	18.1	2.01	0.620
		Certified Value				0.371	71.6	205.8	0.308	18.5	2.06	0.666
		PD				7%	4%	2%	7%	2%	2%	7%
SRM DORM-2		DORM-2 092506				0.172	2.12	141	0.0608	3.66	1.26	0.0372
		Certified Value				0.182	2.34	142	0.065	3.7	1.40	0.041
		PD				5%	9%	1%	6%	0%	10%	9%
SRM IAEA 140		IAEA 140 092506				0.864	4.22	1157	2.61	55.8	0.0829	0.0760
		Certified Value				0.876	5.05	1256	2.19	56.1	NC	NC
		PD				1%	16%	8%	19%	1%	NA	NA

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METALS IN TISSUES, Dry Weigh

(concentrations in µg/g Dry wt. - data are not blank corrected)

Client Code	Field Sample ID	MSL Code	Matrix	Collection Date	Percent Dry Wt.	Co	Cu	Fe	Pb	Mn	Se	Ag	
						Instrument:	ICP-MS	ICP-MS	ICP-OES	ICP-MS	ICP-MS	FIAS	ICP-MS

**U** Analyte not detected above the laboratory achieved method detection limit, ME

**J** Value detected is greater than the MDL, but less than the reporting limit (RL or

**&** QC value outside the accuracy or precision criteria goal

(spike recovery ±25%; SRM ±25% PD; duplicate precision <25% RSD).

**B** Blank concentration greater than 3 X MDL and sample concentration less than

**RPD** Relative Percent Difference

**NS** Sample was not spiked for this analyte

**SL** Inappropriate spike level relative to the native sample concentration

**PD** Percent Difference

**NC** Not Certified

**NA** Not Applicable/appropriate

<sup>(1)</sup> Detection limits converted between dry weight and wet weight using mean perc

<sup>(2)</sup> Achieved Detection limits reported from the 2006 Tissue MDL Study

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**TETRA TECH - Hawaii**  
 METALS IN TISSUES, Dry Weight

(concentrations in µg/g Dry wt. - data are not blank corrected)

Client Code	Field Sample ID	MSL Code	Matrix	Collection Date	Percent Dry Wt.	Instrument:		Zn	Total Hg
						ICP-MS	ICP-OES		
K0607294-009	2fd	2613-1	Tissue	8/3/06	30.8	0.00325 J	10.3	104	0.0581
K0607294-028	NW1fd	2613-2	Tissue	8/5/06	33.1	0.003 U	0.106	54.2	0.0978
K0607294-028DUP	NW1fd DUP	2613-2DUP	Tissue	8/5/06	33.1	0.003 U	0.107	57.2	0.0918
K0607294-033	NW2fd	2613-3	Tissue	8/19/06	28.8	0.0126	0.312	73.0	0.0285 J
K0607294-038	NW1SW1-1fd	2613-4	Plant	8/9/06	24.6	0.0268	4.42	12.1	0.00958 U
K0607294-038DUP	NW1SW1-1fd DUP	2613-4DUP	Plant	8/9/06	24.6	0.0262	5.22	12.6	0.00958 U
K0607294-042	9afd and 10a Comp	2613-5	Tissue	8/3/06	27.1	0.00586 J	12.9	201	0.0922
K0607294-042DUP	9afd and 10a Comp DUP	2613-5DUP	Tissue	8/3/06	27.1	0.00536 J	12.8	196	0.0896

**DETECTION LIMITS**

Achieved Method Detection Limit (DRY Wt.)<sup>(1)</sup>

Reporting Limit (RL)

**0.003      0.011      0.5      0.00958**  
**0.01      0.035      2      0.03**

**METHOD BLANK**

Blank	Blank 092506 R1	28.0	0.003 U	0.011 U	0.5 U	0.00958 U
Blank	Blank 092506 R2	28.0	0.003 U	0.011 U	0.5 U	0.00958 U
	Mean Blank					
Blank	Blank 100606	28.0	NA	NA	NA	NA

**BLANK SPIKE RESULTS**

Blank	Blank 092506 R1	28.0	0.003 U	0.011 U	0.5 U	0.00958 U
LCS	LCS 092506 L1	28.0	2.09	2.06	2.11	2.13
	Spike Concentration		2.0	2.0	2.0	2.0
	Percent Recovery		<b>105%</b>	<b>103%</b>	<b>105%</b>	<b>107%</b>
Blank	Blank 092506 R2	28.0	0.003 U	0.011 U	0.5 U	0.00958 U
LCS	LCS 092506 L2	28.0	25.5	25.7	103	NA
	Spike Concentration		25	25	101	NA
	Percent Recovery		<b>102%</b>	<b>103%</b>	<b>102%</b>	<b>NA</b>

**MATRIX SPIKE RESULTS**

K0607294-038MS	2613-4 MS				2.08	28.9	118	2.04	
K0607294-038MSD	2613-4 MSD				2.24	28.6	117	2.06	
K0607294-038	NW1SW1-1fd	2613-4	Plant	8/9/06	24.6	0.0268	4.42	12.1	0.00958 U
	Spike Concentration, MS				1.90	24.9	100.4	1.90	
	Spike Concentration, MSD				2.01	23.9	96.6	2.01	
	Percent Recovery, MS				<b>108%</b>	<b>99%</b>	<b>106%</b>	<b>108%</b>	
	Percent Recovery, MSD				<b>110%</b>	<b>101%</b>	<b>108%</b>	<b>102%</b>	
	RPD				<b>2%</b>	<b>3%</b>	<b>3%</b>	<b>5%</b>	

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**TETRA TECH - Hawaii**  
 METALS IN TISSUES, Dry Weigh

(concentrations in µg/g Dry wt. - data are not blank corrected)

Client Code	Field Sample ID	MSL Code	Matrix	Collection Date	Percent Dry Wt.				
						Instrument:	Tl	V	Zn
						ICP-MS	ICP-OES	ICP-OES	CVAA
<b><u>MATRIX SPIKE RESULTS (cont.)</u></b>									
K0607294-042MS		2613-5 MS				2.23	38.2	299	2.26
K0607294-042MSD		2613-5 MSD				2.08	38.5	310	2.09
K0607294-042	9afd and 10a Comp	2613-5	Tissue	8/3/06	27.1	0.00586 J	12.9	201	0.0922
	Spike Concentration, MS					2.06	25.1	101.2	2.06
	Spike Concentration, MSD					1.92	24.9	100.6	1.92
	<b>Percent Recovery, MS</b>					<b>108%</b>	<b>101%</b>	<b>97%</b>	<b>105%</b>
	<b>Percent Recovery, MSD</b>					<b>108%</b>	<b>103%</b>	<b>108%</b>	<b>104%</b>
	<b>RPD</b>					<b>0%</b>	<b>2%</b>	<b>11%</b>	<b>1%</b>
<b><u>REPLICATE ANALYSIS RESULTS</u></b>									
K0607294-028	NW1fd	2613-2	Tissue	8/5/06	33.1	0.003 U	0.106	54.2	0.0978
K0607294-028DUP	NW1fd DUP	2613-2DUP	Tissue	8/5/06	33.1	0.003 U	0.107	57.2	0.0918
	Mean						0.107	55.7	0.0948
	<b>RPD</b>					<b>NA</b>	<b>1%</b>	<b>5%</b>	<b>6%</b>
K0607294-038	NW1SW1-1fd	2613-4	Plant	8/9/06	24.6	0.0268	4.42	12.1	0.00958 U
K0607294-038DUP	NW1SW1-1fd DUP	2613-4DUP	Plant	8/9/06	24.6	0.0262	5.22	12.6	0.00958 U
	Mean					0.0265	4.82	12.3	
	<b>RPD</b>					<b>2%</b>	<b>17%</b>	<b>4%</b>	<b>NA</b>
K0607294-042	9afd and 10a Comp	2613-5	Tissue	8/3/06	27.1	0.00586 J	12.9	201	0.0922
K0607294-042DUP	9afd and 10a Comp DUP	2613-5DUP	Tissue	8/3/06	27.1	0.00536 J	12.8	196	0.0896
	Mean					0.00561	12.8	199	0.0909
	<b>RPD</b>					<b>9%</b>	<b>1%</b>	<b>3%</b>	<b>3%</b>
<b><u>STANDARD REFERENCE MATERIAL</u></b>									
SRM 1566b		1566-b 092506				0.00543 J	0.527	1462	0.0402
		Certified Value				NC	0.577	1424	0.0371
		<b>PD</b>				<b>NA</b>	<b>9%</b>	<b>3%</b>	<b>8%</b>
SRM DORM-2		DORM-2 092506				0.00529 J	0.107	28.9	4.57
		Certified Value				NC	NC	25.6	4.64
		<b>PD</b>				<b>NA</b>	<b>NA</b>	<b>13%</b>	<b>2%</b>
SRM IAEA 140		IAEA 140 092506				0.0187	3.72	46.3	0.0374
		Certified Value				NC	3.67	47.3	0.038
		<b>PD</b>				<b>NA</b>	<b>1%</b>	<b>2%</b>	<b>2%</b>

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**TETRA TECH - Hawaii**  
 METALS IN TISSUES, Dry Weight

(concentrations in µg/g Dry wt. - data are not blank corrected)

Client Code	Field Sample ID	MSL Code	Matrix	Collection	Percent	Tl	V	Zn	Total Hg
				Date	Dry Wt.				
				<i>Instrument:</i>					
						<i>ICP-MS</i>	<i>ICP-OES</i>	<i>ICP-OES</i>	<i>CVAA</i>

- U** Analyte not detected above the laboratory achieved method detection limit, ME
- J** Value detected is greater than the MDL, but less than the reporting limit (RL or
- &** QC value outside the accuracy or precision criteria goal  
 (spike recovery ±25%; SRM ±25% PD; duplicate precision <25% RSD).
- B** Blank concentration greater than 3 X MDL and sample concentration less than
- RPD** Relative Percent Difference
- NS** Sample was not spiked for this analyte
- SL** Inappropriate spike level relative to the native sample concentration
- PD** Percent Difference
- NC** Not Certified
- NA** Not Applicable/appropriate
- <sup>(1)</sup> Detection limits converted between dry weight and wet weight using mean perc
- <sup>(2)</sup> Achieved Detection limits reported from the 2006 Tissue MDL Study

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**TETRA TECH - Hawaii**  
 METALS IN TISSUES  
 (data are not blank corrected)

Client Code	Field Sample ID	MSL Code	Matrix	Collection Date	Percent Dry Wt.	Percent Lipids (%)	Methylmercury (ug/g DRY WT)
<i>Instrument:</i>							<i>CVAF</i>
K0607294-009	2fd	2613-1	Tissue	8/3/06	30.8	16.0	0.0544
K0607294-028	NW1fd	2613-2	Tissue	8/5/06	33.1	21.3	0.200
K0607294-028DUP	NW1fd	2613-2DUP	Tissue	8/5/06	33.1	22.8	NA
K0607294-033	NW2fd	2613-3	Tissue	8/19/06	28.8	9.09	0.0491
K0607294-038	NW1SW1-1fd	2613-4	Plant	8/9/06	24.6	NA	0.00129 U
K0607294-038DUP	NW1SW1-1fd DUP	2613-4DUP	Plant	8/9/06	24.6	NA	0.00129 U
K0607294-042	9afd and 10a Comp	2613-5	Tissue	8/3/06	27.1	13.9	0.0618
K0607294-042DUP	9afd and 10a Comp DUP	2613-5DUP	Tissue	8/3/06	27.1	NA	0.0633

**DETECTION LIMITS**

Achieved Detection Limit	<i>Mean Dry Wt.</i>	28.0	0.1	<b>0.00129</b>
Achieved Reporting Limit			0.3	<b>0.00410</b>

**METHOD BLANK**

Blank	Blank 092506 R1	28.0	0.14 J	0.00129 U
Blank	Blank 092506 R2	28.0	NA	0.00129 U
Blank	Blank 092506 R3	28.0	NA	0.00129 U

**MATRIX SPIKE RESULTS**

K0607294-033MS	2613-3 MS						2.13
K0607294-033MSD	2613-3 MSD						2.11
K0607294-033	NW2fd	2613-3	Tissue	8/19/06	28.8	9.09	0.0491
	Spike Concentration, MS						2.00
	Spike Concentration, MSD						1.99
	<b>Percent Recovery, MS</b>						<b>104%</b>
	<b>Percent Recovery, MSD</b>						<b>103%</b>
	<b>RPD</b>						<b>1%</b>
K0607294-038MS	2613-4 MS						0.200
K0607294-038MSD	2613-4 MSD						0.213
K0607294-038	NW1SW1-1fd	2613-4	Plant	8/9/06	24.6	NA	0.00129 U
	Spike Concentration, MS						0.200
	Spike Concentration, MSD						0.201
	<b>Percent Recovery, MS</b>						<b>100%</b>
	<b>Percent Recovery, MSD</b>						<b>106%</b>
	<b>RPD</b>						<b>6%</b>

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**TETRA TECH - Hawaii**  
 METALS IN TISSUES  
 (data are not blank corrected)

Client Code	Field Sample ID	MSL Code	Matrix	Collection Date	Percent Dry Wt.	Percent Lipids (%)	Methylmercury (ug/g DRY WT)
<i>Instrument:</i>							<i>CVAF</i>
<b><u>REPLICATE ANALYSIS RESULTS</u></b>							
K0607294-028	NW1fd	2613-2	Tissue	8/5/06	33.1	21.3	0.200
K0607294-028DUP	NW1fd	2613-2DUP	Tissue	8/5/06	33.1	22.8	NA
	Mean					22.1	
	<b>RPD</b>					<b>7%</b>	<b>NA</b>
K0607294-038	NW1SW1-1fd	2613-4	Plant	8/9/06	24.6	NA	0.00129 U
K0607294-038DUP	NW1SW1-1fd DUP	2613-4DUP	Plant	8/9/06	24.6	NA	0.00129 U
	Mean						0.00129 U
	<b>RPD</b>						<b>NA</b>
K0607294-042	9afd and 10a Comp	2613-5	Tissue	8/3/06	27.1	13.9	0.0618
K0607294-042DUP	9afd and 10a Comp DUP	2613-5DUP	Tissue	8/3/06	27.1	NA	0.0633
	Mean						0.0626
	<b>RPD</b>						<b>2%</b>
<b><u>STANDARD REFERENCE MATERIAL</u></b>							
SRM Dolt-2		DOLT-2 092506					0.693
		Certified Value					0.693
		<b>PD</b>					<b>0%</b>
SRM IAEA 140		IAEA 140 092506					0.000795
		Certified Value					0.000626
		<b>PD</b>					<b>27% &amp;</b>

**U** Analyte not detected above the laboratory achieved method detection limit, MDL reported  
**J** Value detected is greater than the MDL, but less than the reporting limit (RL or PQL)  
**&** QC value outside the accuracy or precision criteria goal  
 (spike recovery  $\pm 25\%$ ; SRM  $\pm 25\%$  PD; duplicate precision  $< 25\%$  RPD).  
**B** Blank concentration greater than 3 X MDL and sample concentration less than 10 times detected blank.  
**RPD** Relative Percent Difference  
**NS** Sample was not spiked for this analyte  
**PD** Percent Difference

## QA/QC NARRATIVE

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**PROJECT:** USACE Hawaii

**PARAMETER:** Total Metals – Al, Sb, As, Ba, Be, Cd, Cr, Co, Cu, Fe, Pb, Mn, Se, Ag, Tl, V, Zn, THg

**LABORATORY:** Battelle Marine Sciences Laboratory (MSL), Sequim, Washington

**MATRIX:** Fish Tissue and Seaweed

**SAMPLE CUSTODY AND PROCESSING:** Battelle received four fish tissue samples and one seaweed sample on 09/21/06. The samples were received in good condition (i.e. cooler temperature acceptable and containers intact). Samples were assigned a Battelle Central File (CF) identification number 2613 and sample information was entered into Battelle’s sample tracking system.

The following lists information on sample receipt and processing activities:

---

<b>Sample Receipt Date:</b>	09/21/06
<b>Sample IDs:</b>	2613*1-3,5 (Fish) 2613*4 (Seaweed)
<b>Collection dates:</b>	August 2006
<b>Cooler temp. on arrival:</b>	-3.4°C
<hr/>	
<b>Digestion Date (Aqua Regia)</b>	09/25/06
<b>CVAA analysis: (Total Hg)</b>	09/29/06
<b>HG-AAS analysis: (Se)</b>	10/06/06 and 10/09/06
<b>ICP-OES analysis: (Al, Cr, Fe, V, Zn)</b>	10/06/06
<b>ICP-MS analysis:</b> (Sb, As, Ba, Be, Cd, Co, Cu, Pb, Mn, Se, Ag, Tl, V)	10/04/06 and 10/05/06

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**METHODS:** The samples were analyzed for 18 metals including: aluminum (Al), antimony (Sb), arsenic (As), barium (Ba), beryllium (Be), cadmium (Cd), chromium (Cr), cobalt (Co), copper (Cu), iron (Fe), lead (Pb), manganese (Mn), selenium (Se), silver (Ag), thallium (Tl), vanadium (V), zinc (Zn), and total mercury (THg).

Samples were freeze-dried and homogenized using a ball-mill prior to digestion according to Battelle SOP MSL-C-003, Percent Dry Weight and Homogenizing Dry Sediment, Soil and Tissue. Tissue samples were digested according to Battelle SOP MSL-I-024, Mixed Acid Tissue Digestion. An approximately 500-mg aliquot of each dried, homogeneous sample was combined with nitric and hydrochloric acids (aqua regia) in a Teflon vessel and heated in an oven at 130°C (±10°C) for a minimum of eight hours. After heating and cooling, deionized water was added to the acid-digested tissue to achieve analysis volume and the digestates were submitted for analysis by four methods.

Digested samples were analyzed for THg by cold-vapor atomic absorption spectroscopy (CVAA) according to Battelle SOP MSL-I-016, *Total Mercury in Tissues and Sediments by Cold Vapor Atomic Absorption*, which is based on EPA Method 245.6, *Determination of Mercury in Tissue by Cold Vapor Atomic Absorption Spectrometry*.

Digested samples were analyzed for Se using hydride generation flow injection atomic

## QA/QC NARRATIVE

### **METHODS cont.**

absorption spectroscopy (HG-AAS) according to Battelle SOP MSL-I-030, *Determination of Metals in Aqueous and Digestate Samples by Hydride Generation Atomic Absorption Flow Injection Spectroscopy (HGAA-FIAS)*. The base method for this procedure is EPA Method 270.3.

Digested samples were analyzed for Cr, Al, Fe, and Zn using inductively coupled plasma optical emissions spectroscopy (ICP-OES) according to Battelle SOP MSL-I-033, *Determination of Elements in Aqueous and Digestate Samples by ICP-OES*. This procedure is based on two methods modified and adapted for analysis of low-level samples: EPA Method 6010B and 200.7.

Digested samples were analyzed for all other metals using inductively coupled plasma-mass spectrometry (ICP-MS) according to Battelle SOP MSL-I-022, *Determination of Elements in Aqueous and Digestate Samples by ICP/MS*. This procedure is based on two methods modified and adapted for analysis of solid sample digestates: EPA Method 1638, *Determination of Trace Elements in Ambient Waters by Inductively Coupled Plasma-Mass Spectrometry* and EPA Method 200.8, *Determination of Trace Elements in Water and Wastes by ICP-MS*.

All results are reported in units of  $\mu\text{g/g}$  dry weight. Reported results are NOT BLANK CORRECTED.

### **HOLDING TIMES:**

The recommended holding times for metals analyses is one year frozen. The recommended holding times were achieved for all metals.

### **DETECTION LIMITS and DATA**

#### **QUALIFIERS:**

Analytical results were reported to the laboratory achieved detection limit (MDL) from the Annual MDL study determined following 40 CFR Part 136 Appendix B. The MDL was determined using seven replicates of clean tissue process through the entire preparation and analytical procedure. Laboratory reporting limits (RL) are determined by multiplying the MDL by 3.14 to determine a statistical reporting limit.

Data were evaluated and flagged in accordance with the following criteria:

- U Analyte not detected above the laboratory achieved detection limit, MDL reported
- J Analyte detected above the MDL, but less than the reporting limit
- & QC value outside the accuracy or precision criteria goal
- B Blank concentration greater than 3 times the MDL and sample concentration < 10 times the detected blank

## QA/QC NARRATIVE

### QA/QC METHOD QUALITY CRITERIA (MQC):

Analyte	Analytical Method	Range of Recovery	SRM Accuracy	Relative Precision	MDL ( $\mu\text{g/g dry wt.}$ )	RL ( $\mu\text{g/g dry wt.}$ )
Al	ICP-OES	75-125%	$\leq 25\%$	$\leq 25\%$	0.374	1.2
Sb	ICP-MS	75-125%	$\leq 25\%$	$\leq 25\%$	0.02	0.06
As	ICP-MS	75-125%	$\leq 25\%$	$\leq 25\%$	0.585	2
Ba	ICP-MS	75-125%	$\leq 25\%$	$\leq 25\%$	0.5	2
Be	ICP-MS	75-125%	$\leq 25\%$	$\leq 25\%$	0.0048	0.015
Cd	ICP-MS	75-125%	$\leq 25\%$	$\leq 25\%$	0.008	0.03
Cr	ICP-OES	75-125%	$\leq 25\%$	$\leq 25\%$	0.041	0.13
Co	ICP-MS	75-125%	$\leq 25\%$	$\leq 25\%$	0.0014	0.0045
Cu	ICP-MS	75-125%	$\leq 25\%$	$\leq 25\%$	0.08	0.3
Fe	ICP-OES	75-125%	$\leq 25\%$	$\leq 25\%$	1.4	4
Pb	ICP-MS	75-125%	$\leq 25\%$	$\leq 25\%$	0.02	0.06
Mn	ICP-MS	75-125%	$\leq 25\%$	$\leq 25\%$	0.02	0.06
Se	HG-AAS	75-125%	$\leq 25\%$	$\leq 25\%$	0.0109	0.035
Ag	ICP-MS	75-125%	$\leq 25\%$	$\leq 25\%$	0.01	0.03
Tl	ICP-MS	75-125%	$\leq 25\%$	$\leq 25\%$	0.003	0.01
V	ICP-OES	75-125%	$\leq 25\%$	$\leq 25\%$	0.011	0.035
Zn	ICP-OES	75-125%	$\leq 25\%$	$\leq 25\%$	0.5	2
Hg	CVAA	75-125%	$\leq 25\%$	$\leq 25\%$	0.00958	0.03

**METHOD BLANKS:** Two method blanks were analyzed with the tissue and seaweed sample batch. The blank concentrations were less than the RL for all metals; therefore, no further action is required. Data are not blank corrected.

**LABORATORY CONTROL SAMPLE/BLANK SPIKE ACCURACY:** Two laboratory control samples (LCS) were analyzed with this batch of samples. The LCS samples were spiked at the low range (2 ppm) and the high range (25 ppm) for all metals except Al, Fe, Se, and Hg. The low range is not appropriate for Al and Fe and the high range is not appropriate for Se and Hg. LCS recoveries were within the QC acceptance criterion of 75% to 125% for all metals.

**MATRIX SPIKE ACCURACY:** One tissue sample and one seaweed sample were selected for a matrix spike and matrix spike duplicate (MS/MSD). The MS recoveries were within the QC criterion of 75% to 125% recovery for all metals spiked at an appropriate level relative to the native sample concentration. The tissue sample concentration was significantly higher than a majority of whole fish tissue and therefore underspiked for Al, Fe, and Mn. The seaweed sample concentration was significantly higher than anticipated for selected metals and therefore underspiked for As and Fe. Acceptable accuracy was demonstrated by multiple SRMs both tissue and plant material and LCS samples for these metals.

**REPLICATE PRECISION:** Precision for this digestion batch was assessed by the analysis of laboratory duplicates (a split of the sample carried through the entire sample preparation and analysis process) and duplicate matrix spikes. Precision was expressed as the relative percent difference (RPD) of replicate results. Precision was evaluated for both the tissue and seaweed matrices. The RPD values were within the QC criterion of  $\leq 25\%$  for all detected metals except one fish tissue replicate for Al (61%). Acceptable precision was demonstrated on the alternate measure of precision for Al.

## QA/QC NARRATIVE

**STANDARD  
REFERENCE  
MATERIAL  
ACCURACY:**

SRM accuracy was expressed as the percent recovery between the measured and certified value for each SRM. Recovery of a particular analyte exceeded QC criteria if the percent recovery was outside the range of 75% to 125% recovery.

Tissue SRMs certified at an acceptable levels for Be and Tl were not available in appropriate matrices for this set of samples. Certified high purity standards were used to verify instrument calibration accuracy. An independent standard lot number was used to verify analytical accuracy.

SRM 1566b Oyster Tissue was analyzed with this digestion batch. The percent recoveries were within the QC acceptance criterion for all certified metals. SRM 1566b provides a reference value for Sb. The percent recovery is provided for information purposes.

SRM DORM-2 Dogfish Muscle was analyzed with this digestion batch. The percent recoveries were within the QC acceptance criterion for all certified metals.

SRM IAEA 140 FUCUS was analyzed with this digestion batch. The percent recoveries were within the QC acceptance criterion for all certified metals.

**Analytical Note:**

Selected tissue sample concentrations for Al, Fe, and Mn were significantly higher than a majority of whole fish tissues analyzed previously. This could indicate a problem with contamination in the preparation step. If a metal blade made of any metal except titanium was used in the homogenization process, these metals could have been introduced to the sample during homogenization.

## QA/QC SUMMARY

**PROJECT:** USACE Hawaii  
**PARAMETER:** Methyl Mercury and Lipids  
**LABORATORY:** Battelle/Marine Sciences Laboratory, Sequim, Washington  
**MATRIX:** Tissue and seaweed

**SAMPLE CUSTODY:** Battelle received four tissue samples and one seaweed sample on 09/21/06. The samples were received in good condition (i.e. cooler temperature acceptable and containers intact). Samples were assigned a Battelle Central File (CF) identification number 2613 and sample information was entered into Battelle's sample tracking system.

The following lists information on sample receipt and processing.

<b>Sample Receipt Date:</b>	09/21/06
<b>Sample IDs:</b>	2613*1-3,5 (tissue) and 2613*4 (seaweed)
<b>Collection dates:</b>	August 2006
<b>Cooler temp. on arrival:</b>	-3.4°C
<b>Lipids Analysis Date</b>	10/03/06 and 10/06/06
<b>Methyl Hg Extraction Date</b>	9/25/06
<b>Methyl Hg Analysis Date</b>	9/28/06

### QA/QC DATA QUALITY OBJECTIVES:

<u>Analyte</u>	<u>Analytical Method</u>	<u>Range of Recovery</u>	<u>Relative Precision</u>	<u>Achieved Detection Limit (µg/g dry Wt.)</u>
% Lipids	Bligh-Dyer, 1959	NA	±25%	0.1%
Methylmercury	CVAF (EPA 1630)	65-135%	±35%	0.00129

**ANALYTICAL NOTE:** The first % lipids extraction of sample NW2fd yielded a value of 9%, which did not agree with other fish samples. The sample was extracted a second time with a value of 9%. Therefore, the value has been confirmed.

**HOLDING TIMES:** The suggested holding time for methyl mercury in tissue following EPA draft Method 1630 is six months frozen. All samples were archived frozen until analysis. Following these guidelines, holding times were achieved for all samples.

**DETECTION LIMITS:** Analytical results were reported to the laboratory achieved detection limit (MDL) from the Annual MDL study determined following CFR 40 Part 136 Appendix B. The MDL was determined using seven replicates of clean tissue.

Data were evaluated and flagged in accordance with the following criteria:

- U Analyte not detected above the laboratory achieved detection limit, MDL reported
- J Analyte detected above the MDL, but less than the reporting limit

cc: Project Manager/Central File  
Login File

2613

**SAMPLE LOGIN**  
(SOP# MSL-A-001)

Project Manager: Brandenberge ✓  
Date Received: 09/21/06  
Batch: 1

PROJECT: CAS/ Tetra Tech

SPONSOR CODE	Sample I.D.	BATTELLE CODE	MATRIX	STORAGE LOCATION	PARAMETERS REQUESTED	COLLECTION DATE	INITIALS
K0607294-009 ✓	2fd ✓	2613-1 ✓	tissue	Deep Freezer D-1	metals	08/03/06	MLFM
K0607294-028 ✓	NW1fd ✓	2613-2	tissue	Deep Freezer D-1	metals	08/05/06	MLFM
K0607294-033 ✓	NW2fd ✓	2613-3	tissue	Deep Freezer D-1	metals	08/19/06	MLFM
K0607294-038 ✓	NW1SW1-1fd ✓	2613-4	tissue	Deep Freezer D-1	metals	08/09/06	MLFM
K0607294-042 ✓	9afd and 10a Comp ✓	2613-5 ✓	tissue	Deep Freezer D-1	metals	08/03/06	MLFM

*V/d 9/22/06*

**Columbia Analytical Services, Inc.**

1317 South 13th, Kelso, WA 98626

Phone: (360) 5677-7222 Fax: (360) 636-1068

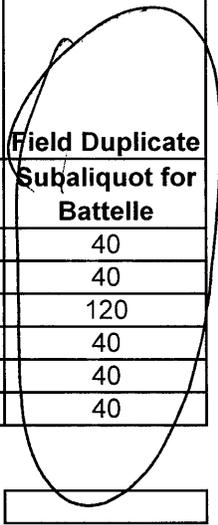
SR# K0607294

PAGE \_\_\_\_\_ OF \_\_\_\_\_

Company Name:		Tetra Tech			Number of Containers	Analysis Requested					REMARKS	
Project Name/Number:		Muliwai Tissue/Project 838				Field Duplicates Contact Tetra Tech						
Project Manager:		Susan Carstenn										
Sample I.D.	Date	Time	LAB ID	Matrix								
2fd	08/03/06		2613-1	Tissue	1	X					K0607294-009	
NW1fd	08/05/06		1 2	Tissue	1	X					K0607294-028	
NW2fd	08/19/06		1 3	Tissue	1	X					K0607294-033	
NW1SW1-1fd	08/09/06		1 4	Tissue	1	X					K0607294-038	
9afd and 10a Comp	08/03/06		2613-5	Tissue	1	X					K0607294-042	
<b>TURNAROUND REQUIREMENTS</b>				<b>REPORT REQUIREMENTS</b>				<b>Comments/Special Instructions:</b> Contact Susan Carstenn at Tetra Tech for testing requirements. NW1fd=extra volume provided for MS/MSD. Custody of sample aliquots relinquished to Batelle/Sequim, Wa. Samples homogenized and frozen at CAS/Kelso prior to shipment.				
___ 24 hr ___ 48 hr ___ 5 day ___ Standard (21 days) ___ Provide FAX Preliminary Results				___ I. Routine Report: ___ II. Report Dup., MS, MSD as req. ___ III. Data Validation Report (includes raw data) ___ V. EDD								
<b>Requested Report Date:</b> _____								<b>RELINQUISHED BY:</b>			<b>RECEIVED BY:</b>	
<b>RELINQUISHED BY:</b> Signature: _____ Printed Name: Amanda Juell Firm: CAS/KELSO				<b>RECEIVED BY:</b> Signature: <i>A. Juell</i> Printed Name: <i>Juell</i> Firm: <i>CAS/Kelso</i>				Signature: _____ Printed Name: _____ Firm: _____ Date/Time: _____			Signature: <i>MLF McGahan</i> Printed Name: <i>MLF McGahan</i> Firm: <i>MSL</i> Date/Time: <i>09/21/06 1115</i>	

9/20/06 1420

Client Sample ID	Labcode	Field Duplicate Subaliquot for APPL	Field Duplicate Subaliquot for STL	Field Duplicate Subaliquot for Battelle
2fd	k0607294-009	120	30	40
9afd	k0607294-017	120	30	40
NW1fd	k0607294-028	360	90	120
NW2fd	k0607294-033	120	30	40
NW1SW1-1fd	k0607294-038	120	30	40
p 9afd and 10a	k0607294-042	120	30	40



Attn: Jill Brandenberger  
~~Battelle~~ Battelle

1529 W. Sequim Bay Rd.  
 Sequim, WA 98382

360-681-3698

HI /USACE

LOG-IN CHECKLIST

Reference SOP# MSL-A-001

Central File #: 2613 Sample No(s): 1-5 Project Manager: Brandenburg

**TO BE COMPLETED BY PROJECT MANAGER (prior to arrival when possible)**

Matrix: TISS WP# \_\_\_\_\_

Yes No

Navy-type Project (requires high-level sample tracking procedures)

Filter Samples: Amount:  Entire sample  Half of sample

Freeze dry sample(s) - samples will be weighed and placed in ultralow temp freezer (Lab# 130)

Special instructions: \_\_\_\_\_

Sample Preservation Instructions: \_\_\_\_\_

Date To Archive: \_\_\_\_\_ Date To Dispose: \_\_\_\_\_

**TO BE COMPLETED UPON SAMPLE ARRIVAL/LOG-IN**

Yes No N/A Indicate in Appropriate Box

Was a custody seal present?

Was the custody seal intact?

Was cooler(s) temperature(s) within acceptable range of  $4 \pm 2^\circ\text{C}$  or frozen? -3.4  $^\circ\text{C}$   
(if multiple coolers, note temp. of each)

Was Project Manager notified of any custody/login discrepancies (cooler temp, sponsor codes, etc)?  
Comment/Remedy: Samples on dry ice

Were all chain of custody forms signed and dated?

Were samples filtered at MSL?

Sample condition(s):  Acceptable  Other (explain): \_\_\_\_\_

Container type: Teflon Poly  Glass Spex Other: \_\_\_\_\_

Notes: Rec in glass jars. Transferred to spex jars & put into Deep freezer

Completed By: [Signature] Date/Time: 09/21/06 1135

**SAMPLE PRESERVATION**

Sample(s) were preserved at MSL

Sample(s) were preserved prior to arrival at MSL (noted on CoC / Sample / per PM Instruction)

Random pH checked for ~10% of samples (use dip paper) Sample IDs: \_\_\_\_\_

Complete pH check required for project (use pH meter and record on pH Record form)

If preservation necessary, record Acid Lot#

Type:  0.2% HNO3 Notes: \_\_\_\_\_

0.5% HCl (Hg samples) Notes: \_\_\_\_\_

Refrigerate/Freeze Notes: Deep freezer D-1

Other Notes: \_\_\_\_\_

Completed By: [Signature] Date/Time: 09/21/06 1145

October 9, 2006

Service Request No: K0607294

Gary Floyd  
Tetra Tech, Incorporated  
180 Howard Street, Suite 250  
San Francisco, CA 94105

**RE: MuliwaiTissue/Project 838**

Dear Gary:

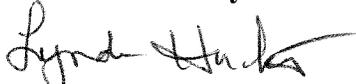
Enclosed are the results of the sample(s) submitted to our laboratory on August 29, 2006. For your reference, these analyses have been assigned our service request number K0607294.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAC standards. Exceptions are noted in the case narrative report where applicable. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3358. You may also contact me via Email at LHuckestein@kelso.caslab.com.

Respectfully submitted,

**Columbia Analytical Services, Inc.**

  
Lynda Huckestein  
Client Services Manager

LH/lmb

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

### Inorganic Data Qualifiers

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
- U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
  - i The MRL/MDL has been elevated due to a matrix interference.
- X See case narrative.

### Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- B The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
  - i The MRL/MDL has been elevated due to a matrix interference.
- X See case narrative.
- \* The duplicate analysis not within control limits. See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.

### Organic Data Qualifiers

- \* The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results (25% for CLP Pesticides).
- U The compound was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
  - i The MRL/MDL has been elevated due to a chromatographic interference.
- X See case narrative.

### Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

## **Case Narrative**

COLUMBIA ANALYTICAL SERVICES, INC.

**Client:** Tetra Tech, Inc.  
**Project:** Muliwai Tissue  
**Sample Matrix:** Tissue

**Service Request No.:** K0607294  
**Date Received:** 8/29/2006

**CASE NARRATIVE**

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier III validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

**Sample Receipt**

Thirty nine tissue samples were received for analysis at Columbia Analytical Services on 8/29/2006. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored frozen at -20°C upon receipt at the laboratory. The samples were approved for testing by Tetra Tech, Inc. on 9/12/06. Revisions to the analytical request were received on 9/21/06 (Sample NW1 was placed on hold) and 10/4/06 (Benzene, Acetone and PCP were added to the target analyte list).

**General Discussion**

In accordance with instructions from Tetra Tech, Inc., the samples were homogenized at CAS. Subaliquots of the homogenized samples were frozen and relinquished under chain of custody to the designated laboratories.

**Methyl Mercury**

**Matrix Spike Recovery Exceptions:**

The matrix spike and duplicate matrix spike recoveries of Methyl Mercury for samples 4, and NW1 SW1-1 were outside control criteria. Recovery in the Standard Reference Materials (SRM) as well as all other associated QA/QC results (i.e. Method Blanks, OPR, QCS, etc.) were acceptable, which indicates the analyses were in control. Additionally, the matrix spike and duplicate matrix spike were prepared for sample 4 a second time with similar results. The matrix spike outliers suggest a potential low bias in this matrix. No further corrective action was appropriate.

**Total Metals**

**Matrix Spike Recovery Exceptions:**

The matrix spike recovery of Antimony for samples 4 and NW1 SW1-1 and Silver for samples NW2 and NW1 SW1-1 were below the lower control limit established for biological tissues analyzed at CAS/Kelso. The recoveries suggest a potential low bias to these samples. The samples were relatively high in insoluble material which may have contributed to the low recoveries. The recoveries for Silver in the Standard Reference Materials (SRM) were very good, which indicate the analytical batches were in control. Note the SRMs analyzed do not have certified values for Antimony. No further corrective action was appropriate.

The control criteria for matrix spike recoveries of Aluminum, Iron, and Manganese for sample 4 are not applicable. The analyte concentration in the sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recovery.

Approved by \_\_\_\_\_  Date 10/23/06

The control criteria for matrix spike recoveries of Aluminum and Iron for sample NW1 SW1-1 are not applicable. The analyte concentration in the sample was significantly higher than the added spike concentration, preventing accurate evaluation of the spike recovery.

The matrix spike recovery of Manganese by method 6020 for sample NW1 SW1-1 was outside the CAS control criteria as a result of the heterogeneous character of the sample. The Relative Percent Difference (RPD) for the replicate analysis supports this. Variability between replicates was sufficient to bias the percent recoveries outside normal CAS control criteria. The associated QA/QC results (e.g. control sample, calibration standards, etc.) indicate the analysis was in control. No further corrective action was appropriate.

**Relative Percent Difference Exceptions:**

The Relative Percent Difference (RPD) for the replicate analysis of Aluminum and Iron in sample NW1 SW1-1 was outside the normal CAS control limits. The variability in the results is attributed to the heterogeneous character of the sample. Standard mixing techniques were used (i.e. the samples were homogenized in a blender), but were not sufficient for complete homogenization of this sample.

**Organochlorine Pesticides by EPA Method 8081A**

**Sample Confirmation Notes:**

The confirmation comparison criteria of 40% difference for a few analytes was exceeded in most field samples. The higher of the two values is reported when no evidence of a peak anomaly was observed. The lower of the two values was reported when an apparent interference on the alternate column produced the higher value.

**Elevated Method Reporting Limits:**

The reporting limit is elevated for a few analytes in all field samples. The chromatogram indicated the presence of non-target background components. The matrix interference prevented adequate resolution of the target compounds at the reporting limit. The results are flagged to indicate the matrix interference.

The reporting limit is elevated for all analytes in samples NW2, NW9, and NW10. The sample extract was diluted prior to instrumental analysis due to relatively high levels of non-target background components. The extract was highly colored and viscous, which indicated the need to perform a dilution prior to injection into the instrument. Clean-up of the extract was performed within the scope of the method, but did not eliminate enough of the background components to prevent dilution. A semiquantitative screen was performed prior to final analysis. The results of the screening indicated the need to perform a dilution. The results are flagged to indicate the matrix interference.

**Volatile Organic Compounds by EPA Method 8260B**

**Initial Calibration Exceptions:**

The primary evaluation criterion was exceeded for the following analyte in Initial Calibration (ICAL) ID CAL5163: 1,3,5-Trimethylbenzene. In accordance with CAS standard operating procedures, the alternative evaluation specified in the EPA method was performed using the mean Relative Standard Deviation (RSD) of all analytes in the calibration. The result of the mean RSD calculation was 9.9%. The calibration meets the alternative evaluation criteria. Note that CAS/Kelso policy does not allow the use of averaging if any analyte in the ICAL exceeds 30% RSD.

**Surrogate Exceptions:**

The control criteria were exceeded for one or more of the following surrogates in samples 1, 4, 10, NW4, NW5, NW6, NW7, NW9, NW10, NW1 SW2-1, Comp 8,8a, 3, 1b, 6, 7, 9, 12, 13, 14, NW2, NW3, and NW8 due to matrix interferences: Dibromofluoromethane, Toluene-d8 and 4-Bromofluorobenzene. Reanalyses were performed, but produced similar results. The results of the original analyses are reported. No further corrective action was required.

Approved by \_\_\_\_\_ Date 10/13/06

**Semivolatile Organic Compounds by EPA Method 8270C**

**Continuing Calibration Verification Exceptions:**

The upper control criterion was exceeded for the following analytes in Continuing Calibration Verifications (CCV) MS17\1006F033.D and MS17\1010F002.D: 2,4,6-Tribromophenol. The analyte in question was not reported from the field samples analyzed in this sequence. The data quality is not affected. No further corrective action was required.

**Matrix Spike Recovery Exceptions:**

The matrix spike recoveries of Di-n-butyl Phthalate, Pyrene, and Bis(2-ethylhexyl) Phthalate for sample 4 were outside control criteria because of matrix interference. All recoveries in the associated LCS were within control criteria, indicating the analytical batch was in control. The results of the original analysis are reported. No further corrective action was appropriate.

**Elevated Method Reporting Limits:**

The reporting limit is elevated for Di-n-octyl Phthalate in several samples. The chromatogram indicated the presence of non-target background components. The matrix interference prevented adequate resolution of the target compound at the reporting limit. The results are flagged to indicate the matrix interference.

**Perchlorate**

The analysis for Perchlorate was performed at CAS in Rochester New York. The analytical report is included in its entirety herein.

**Dioxins and Furans by EPA Method 8290**

The analysis for dioxins and furans was performed at CAS in Houston Texas. The analytical report is included in its entirety herein.

Approved by \_\_\_\_\_ Date 10/13/02

**Chain of Custody  
Documentation**



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PAGE 1 OF 1 COC #

# CHAIN OF CUSTODY

SR#: 10607262

PROJECT NAME: Martin Resources Study  
 PROJECT NUMBER: K838-0404  
 PROJECT MANAGER: Barry Floyd  
 COMPANY/ADDRESS: 880 William St. Suite 700  
 CITY/STATE/ZIP: Honolulu, HI 96813  
 EMAIL ADDRESS: Susanne Carstensen @tototech.h.com  
 PHONE: 808-533-3366 FAX: 808-533-3306  
 SAMPLER'S SIGNATURE: [Signature]

SAMPLE ID.	DATE	TIME	LAB ID.	MATRIX	NUMBER OF CONTAINERS	REMARKS
NW2-F17-1	8/19/06	1100	1	Fish	1	
NW2-F17-2D		1130	2	1	1	
NW2-F9-1		1200	3	1	1	
NW2-F6-1		1230	4	1	1	
NW2-F18-1		1400	5	1	1	
NW2-F14-1		1700	6	1	1	
NW2-F5-1	8/19/06	1200	7	1	1	
NW2-F13-1		1300	8	1	1	
NW15W3-1	8/19/06	0845	9	Seawater	1	
NW15W1-1		0845	10	1	1	

REPORT REQUIREMENTS:  
 I. Routine Report: Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes all raw data)  
 IV. CLP Deliverable Report  
 V. EDD

INVOICE INFORMATION:  
 P.O. # \_\_\_\_\_  
 Bill To: \_\_\_\_\_

TURNAROUND REQUIREMENTS:  
 24 hr. \_\_\_\_\_ 48 hr. \_\_\_\_\_  
 5 Day \_\_\_\_\_  
 Standard (10-15 working days)  
 Provide FAX Results \_\_\_\_\_

RELINQUISHED BY: \_\_\_\_\_ Requested Report Date: \_\_\_\_\_

RECEIVED BY: \_\_\_\_\_ Date/Time: \_\_\_\_\_

SPECIAL INSTRUCTIONS/COMMENTS:  
 \*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER: \_\_\_\_\_ (CIRCLE ONE)

Circle which metals are to be analyzed:  
 Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Ti Sn V Zn Hg  
 Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Ti Sn V Zn Hg

RELINQUISHED BY: [Signature] Date/Time: 8/25/06 1148  
 Signature: [Signature] Date/Time: 8/25/06 1148  
 Printed Name: [Name] Firm: [Firm]

RECEIVED BY: [Signature] Date/Time: 8/25/06 1300  
 Signature: [Signature] Date/Time: 8/25/06 1300  
 Printed Name: [Name] Firm: [Firm]

RELINQUISHED BY: [Signature] Date/Time: 8/25/06 148  
 Signature: [Signature] Date/Time: 8/25/06 148  
 Printed Name: [Name] Firm: [Firm]

RECEIVED BY: [Signature] Date/Time: 8/25/06 148  
 Signature: [Signature] Date/Time: 8/25/06 148  
 Printed Name: [Name] Firm: [Firm]





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PAGE \_\_\_\_\_ OF \_\_\_\_\_ SR#: \_\_\_\_\_ COC # \_\_\_\_\_

# CHAIN OF CUSTODY

PROJECT NAME: WVTRD Resource Study  
 PROJECT NUMBER: K936-0408  
 PROJECT MANAGER: Gary Ford  
 COMPANY/ADDRESS: Tetatech Inc.  
 CITY/STATE/ZIP: Homolulu HI 96813  
 E-MAIL ADDRESS: SUSAN.CUSTOM@TETATECH.COM  
 PHONE: 808-933-9900 FAX: 808-933-9900  
 SAMPLER'S SIGNATURE: [Signature]  
 SAMPLE I.D.: NW1 F19-2 DATE: 10 August 2000 TIME: 1400 LAB I.D.: F641 MATRIX: F641

NUMBER OF CONTAINERS	Semi-volatile Organics by GC/MS		Volatile Organics		Hydrocarbons (*see below)		Fuel Fingerprint (FIQ)		Oil & Grease/TRPH		PCB's		Pesticides/Herbicides		Chlorophenolics - 8151M		PAHS		Metals, Total or Dissolved (See list below)		pH, Cond., Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS (circle)		NH3-N, COD, Total-P, TKN, TOC, DOC (circle) NO2+NO3		TOX 9020		REMARKS	
	625	8270	624	8260	Gas	Diesel	Oil	NW-HCID Screen	1664 HEM	1664 SGT	Aroclors	Congeners	608	8081A	8141A	8151A	Tri	Tetra	PCP	SIM	Hex-Chrom	AOX 1650	506					

RECEIVED BY: [Signature] DATE/TIME: 8-7-06 1720 FIRM: WVND CAS

RELINQUISHED BY: [Signature] DATE/TIME: 8-8-06 1020 FIRM: WVND CAS

RECEIVED BY: [Signature] DATE/TIME: 8/9/06 1000 FIRM: WVND CAS

REPORT REQUIREMENTS

I. Routine Report: Method Blank, Surrogate, as required

II. Report Dup., MS, MSD as required

III. Data Validation Report (includes all raw data)

IV. CLP Deliverable Report

V. EDD

INVOICE INFORMATION

P.O. # \_\_\_\_\_

Bill To: \_\_\_\_\_

TURNAROUND REQUIREMENTS

24 hr. \_\_\_\_\_ 48 hr. \_\_\_\_\_

5 Day \_\_\_\_\_

Standard (10-15 working days)

Provide FAX Results

Requested Report Date \_\_\_\_\_

RELINQUISHED BY: [Signature] DATE/TIME: 8-22-1700 FIRM: [Signature]

RECEIVED BY: [Signature] DATE/TIME: 8-7-06 1720 FIRM: WVND CAS

RELINQUISHED BY: [Signature] DATE/TIME: 8-8-06 1020 FIRM: WVND CAS

RECEIVED BY: [Signature] DATE/TIME: 8/9/06 1000 FIRM: WVND CAS



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PAGE \_\_\_\_\_ OF \_\_\_\_\_ SR#: 101006658

# CHAIN OF CUSTODY

COC # \_\_\_\_\_

PROJECT NAME: Waino Reservoir Study  
 PROJECT NUMBER: K020-019  
 PROJECT MANAGER: Paul Brown  
 COMPANY ADDRESS: Totafish, Inc. 920 Millikan St Suite 100 Honolulu, HI 96812  
 CITY/STATE/ZIP: Honolulu, HI 96812  
 E-MAIL ADDRESS: SUSAN.DAUSTON@TOTAFISH.COM  
 PHONE # (808) 933-3300 FAX # (808) 933-3300  
 SAMPLER'S SIGNATURE: Donna DeSteno

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	REMARKS
NW1 F9-2	10 Aug 00	1400		Fgn	Semivolatile Organics by GC/MS 625 <input type="checkbox"/> 8270 <input type="checkbox"/> 8270LL <input type="checkbox"/>	
NW1 F12-2	10 Aug 00	1400		Fgn	Volatile Organics 624 <input type="checkbox"/> 8260 <input type="checkbox"/> 8021 <input type="checkbox"/> BTEX <input type="checkbox"/>	
NW1 F14-2	10 Aug 00	1400		Fgn	Hydrocarbons (*see below) Gas <input type="checkbox"/> Diesel <input type="checkbox"/> Oil <input type="checkbox"/>	
NW1 F13-2	10 Aug 00	1400		Fgn	<input type="checkbox"/> Fuel Fingerprint (FIQ) <input type="checkbox"/> NW-HCID Screen	
NW1 F15-2	10 Aug 00	1400		Fgn	Oil & Grease/TRPH 1664 HEM <input type="checkbox"/> 1664 SGT <input type="checkbox"/>	
NW1 F16-2	10 Aug 00	1400		Fgn	PCB's Aroclors <input type="checkbox"/> Congeners <input type="checkbox"/>	
NW1 F17-2	10 Aug 00	1400		Fgn	Pesticides/Herbicides 608 <input type="checkbox"/> 8081A <input type="checkbox"/> 8141A <input type="checkbox"/> 8151A <input type="checkbox"/>	
NW1 F20-2	10 Aug 00	1400		Fgn	Chlorophenolics - 8151M Tri <input type="checkbox"/> Tetra <input type="checkbox"/> PCP <input type="checkbox"/>	
NW1 F9-2	10 Aug 00	1400		Fgn	PAHS 8310 <input type="checkbox"/> SIM <input type="checkbox"/>	
					Metals, Total or Dissolved (See list below)	
					Cyanide <input type="checkbox"/> Hex-Chrom <input type="checkbox"/>	
					pH, Cond., Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS (circle)	
					NH3-N, COD, Total-P, TKN, TOC, DOC (circle) NO2+NO3	
					TOX 9020 <input type="checkbox"/> AOX 1650 <input type="checkbox"/> 506 <input type="checkbox"/>	
						As Per Contract

**REPORT REQUIREMENTS**

I. Routine Report: Method Blank, Surrogate, as required

II. Report Dup., MS, MSD as required

III. Data Validation Report (Includes all raw data)

IV. CLP Deliverable Report

V. EDD

**RELINQUISHED BY:** [Signature] Date/Time 8-7-00 17:00  
 Printed Name Yvonne Firm FTS

**RECEIVED BY:** [Signature] Date/Time 8-7-06 17:00  
 Printed Name Tracie Sobce Firm FTS

**RELINQUISHED BY:** [Signature] Date/Time 8-7-06 19:00  
 Printed Name Tracie Sobce Firm FTS

**RECEIVED BY:** [Signature] Date/Time 8-7-06 19:00  
 Printed Name Tracie Sobce Firm FTS

**RELINQUISHED BY:** [Signature] Date/Time 8-8-06 10:20  
 Printed Name WVD CAS Firm WVD CAS

**RECEIVED BY:** [Signature] Date/Time 8-8-06 10:20  
 Printed Name WVD CAS Firm WVD CAS

**RELINQUISHED BY:** [Signature] Date/Time 8-9-06 10:20  
 Printed Name WVD CAS Firm WVD CAS

**RECEIVED BY:** [Signature] Date/Time 8-9-06 10:20  
 Printed Name WVD CAS Firm WVD CAS

**CHAIN OF CUSTODY**

PROJECT NAME: Warrior Resources Study  
 PROJECT NUMBER: K990-0404  
 PROJECT MANAGER: Gary Floyd  
 COMPANY/ADDRESS: 920 Milviani St, Suite 700  
 CITY/STATE/ZIP: Honolulu, HI 96813  
 EMAIL ADDRESS: Susan.Carstensen@tetra-tech.com  
 PHONE #: 900 553-3800 FAX: 900 553-3900  
 SAMPLER'S SIGNATURE: Susan Carstensen

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	REMARKS
MIF1-1 S	9/2/00	1200		Fish		
MIF2-2	9/2/00	1200		Fish		
MIF2-3 8	9/2/00	1200		Fish		
MIF1-4	9/2/00	1200		Fish		
MIF3-5	9/2/00	1200		Fish		
MIF4-10 S	9/2/00	1200		Fish		
MIF4-1	9/2/00	1200		Fish		
MIF2-8	9/2/00	1200		Fish		

**REPORT REQUIREMENTS**  
 I. Routine Report: Method Blank, Surrogate, as required  
 II. Report Dup.: MS, MSD as required  
 III. Data Validation Report (includes all raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**INVOICE INFORMATION**  
 P.O. # \_\_\_\_\_  
 Bill To: \_\_\_\_\_

**TURNAROUND REQUIREMENTS**  
 24 hr. \_\_\_\_\_ 48 hr. \_\_\_\_\_  
 5 Day \_\_\_\_\_  
 Standard (10-15 working days)  
 Provide FAX Results \_\_\_\_\_  
 Requested Report Date \_\_\_\_\_

**RELINQUISHED BY:**  
 Signature: Susan Carstensen Date/Time: 8/2/06 16:00  
 Printed Name: Susan Carstensen Firm: Tetra Tech

**RECEIVED BY:**  
 Signature: Tom Siva Date/Time: 8-2-06 16:00  
 Printed Name: Tom Siva Firm: VND CAS

**RELINQUISHED BY:**  
 Signature: Tom Siva Date/Time: 8-3-06 10:05  
 Printed Name: Tom Siva Firm: VND CAS

**RECEIVED BY:**  
 Signature: Amanda Gell Date/Time: 8/10/06  
 Printed Name: Amanda Gell Firm: CRS

**NUMBER OF CONTAINERS**  
 Semivolatile Organics by GC/MS: 625  8270  8270LL   
 Volatile Organics: 624  8260  8021  BTEX   
 Hydrocarbons (\*see below): Gas  Diesel  Oil   
 Fuel Fingerprint (FIQ)  NW-HCID Screen  
 Oil & Grease/TRPH: 1664 HEM  1664 SGT   
 PCB's: Aroclors  Congeners   
 Pesticides/Herbicides: 608  8081A  8141A  8151A   
 Chlorophenolics - 8151M: Tri  Tetra  PCP   
 PAHS: 8310  SIM   
 Metals, Total or Dissolved (See list below)  
 Cyanide  Hex-Chrom   
 pH, Cond., Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS (circle)  
 NH3-N, COD, Total-P, TKN, TOC, DOC (circle) NO2+NO3  
 TOX 9020  AOX 1650  506   
As per contract

**SPECIAL INSTRUCTIONS/COMMENTS:**  
 \*Indicate State Hydrocarbon Procedure: AK CA WI NORTHWEST OTHER: (CIRCLE ONE)  
 Circle which metals are to be analyzed:  
 Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Ti Sn V Zn Hg  
 Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Ti Sn V Zn Hg  
 Hold testing per instructions from Susan Carstensen 8/10/06



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PAGE 1 OF 1 SR#: 16106562 COC #

# CHAIN OF CUSTODY

PROJECT NAME: Marine Resource Study  
 PROJECT NUMBER: K099-0404  
 PROJECT MANAGER: Paul Floyd  
 COMPANY/ADDRESS: 9200 Midway Street Suite 700  
 CITY/STATE/ZIP: Honolulu, HI 96813  
 EMAIL ADDRESS: Susan.Cristina@hatchad.com  
 PHONE #: (609) 933-3300 FAX: (609) 933-3300  
 SAMPLER'S SIGNATURE: (Dawn DePina)

SAMPLE ID.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	REMARKS
M2F1-1	0/9/00	1130	1	Ash	<input type="checkbox"/> Semivolatile Organics by GC/MS 625 <input type="checkbox"/> 8270 <input type="checkbox"/> 8270LL <input type="checkbox"/> <input type="checkbox"/> Volatile Organics 624 <input type="checkbox"/> 8260 <input type="checkbox"/> 8021 <input type="checkbox"/> BTEX <input type="checkbox"/> <input type="checkbox"/> Hydrocarbons (*see below) Gas <input type="checkbox"/> Diesel <input type="checkbox"/> Oil <input type="checkbox"/> <input type="checkbox"/> Fuel Fingerprint (FIQ) <input type="checkbox"/> NW-HCID Screen <input type="checkbox"/> Oil & Grease/TRPH 1664 HEM <input type="checkbox"/> 1664 SGT <input type="checkbox"/> <input type="checkbox"/> PCB's <input type="checkbox"/> Aroclors <input type="checkbox"/> Congeners <input type="checkbox"/> <input type="checkbox"/> Pesticides/Herbicides 608 <input type="checkbox"/> 8081A <input type="checkbox"/> 8141A <input type="checkbox"/> 8151A <input type="checkbox"/> <input type="checkbox"/> Chlorophenolics - 8151M Tri <input type="checkbox"/> Tetra <input type="checkbox"/> PCP <input type="checkbox"/> <input type="checkbox"/> PAHS 8310 <input type="checkbox"/> SIM <input type="checkbox"/> <input type="checkbox"/> Metals, Total or Dissolved (See list below) <input type="checkbox"/> Cyanide <input type="checkbox"/> Hex-Chrom <input type="checkbox"/> <input type="checkbox"/> pH, Cond., Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS (circle) <input type="checkbox"/> NH3-N, COD, Total-P, TKN, TOC, DOC (circle) NO2+NO3 <input type="checkbox"/> TOX 9020 <input type="checkbox"/> AOX 1650 <input type="checkbox"/> 506 <input type="checkbox"/> <u>As Per Contract</u>	
M2F4-2	0/9/00	1130	2	Ash		
M2F4-3	0/9/00	1130	3	Ash		
M2F3-4	0/9/00	1130	4	Ash		
M2F3-	0/9/00					
NW1 U1-1	0/9/00	1050	5	urchin		

**REPORT REQUIREMENTS**  
 I. Routine Report: Method Blank, Surrogate, as required  
 II. Report Dup., MS, MSD as required  
 III. Data Validation Report (includes all raw data)  
 IV. CLP Deliverable Report  
 V. EDD

**INVOICE INFORMATION**  
 P.O. # \_\_\_\_\_  
 Bill To: \_\_\_\_\_  
**TURNAROUND REQUIREMENTS**  
 24 hr. \_\_\_\_\_ 48 hr. \_\_\_\_\_  
 5 Day \_\_\_\_\_  
 Standard (10-15 working days)  
 Provide FAX Results  
 Requested Report Date \_\_\_\_\_

**RELINQUISHED BY:**  
 Signature: Dawn A. DePina Date/Time: 1524 Aug 3, 2000  
 Printed Name: Dawn A. DePina Firm: Vital Tech

**RECEIVED BY:**  
 Signature: Tram Sobel Date/Time: 8:30 6 1524  
 Printed Name: Tram Sobel Firm: VMD CAS

**RELINQUISHED BY:**  
 Signature: Tram Sobel Date/Time: 8:46 1055  
 Printed Name: Tram Sobel Firm: VMD CAS

**RECEIVED BY:**  
 Signature: Frank... Date/Time: 8/10/00  
 Printed Name: Frank... Firm: VMD CAS

Requested Report Date: H260123





An Employee - Owned Company

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PAGE \_\_\_\_\_ OF \_\_\_\_\_ SR#: \_\_\_\_\_ COC # \_\_\_\_\_

# CHAIN OF CUSTODY

PROJECT NAME: **MARINO RESOURCES STUDY**  
 PROJECT NUMBER: **K999-0404**  
 PROJECT MANAGER: **GARY FLOYD**  
 COMPANY/ADDRESS: **Tetradich Inc**  
 910 Millview St, Suite 700  
 Honolulu, HI 96813  
 CITY/STATE/ZIP  
 EMAIL ADDRESS: **Susan.Christman@tetradich.com**  
 PHONE #: **(808) 939-3910** FAX: **(808) 939-3900**  
 SAMPLER'S SIGNATURE: **Dawn [Signature]**

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	REMARKS
M9F2-1	9 AUG 06	1300		Fish	Semivolatile Organics by GC/MS 625 <input type="checkbox"/> 8270 <input type="checkbox"/> 8270LL <input type="checkbox"/>	
M9F2-2	9 AUG 06	1300		Fish	Volatile Organics 624 <input type="checkbox"/> 8260 <input type="checkbox"/> 8021 <input type="checkbox"/> BTEX <input type="checkbox"/>	
M2F3-90	9 AUG 06	1300		Fish	Hydrocarbons (*see below) Gas <input type="checkbox"/> Diesel <input type="checkbox"/> Oil <input type="checkbox"/>	
M2F1-91	9 AUG 06	1300		Fish	<input type="checkbox"/> Fuel Fingerprint (FIQ) <input type="checkbox"/> NW-HCID Screen	
M2F1-92	9 AUG 06	1300		Fish	Oil & Grease/TRPH 1664 HEM <input type="checkbox"/> 1664 SGT <input type="checkbox"/>	
M2F1-93	9 AUG 06	1300		Fish	PCB's Aroclors <input type="checkbox"/> Congeners <input type="checkbox"/>	
MW1SW1-1	9 AUG 06	1400		Shoreland	Pesticides/Herbicides 608 <input type="checkbox"/> 8081A <input type="checkbox"/> 8141A <input type="checkbox"/> 8151A <input type="checkbox"/>	
NW1SW2-1	9 AUG 06	1400		Shoreland	Chlorophenolics - 8151M Tri <input type="checkbox"/> Tetra <input type="checkbox"/> PCP <input type="checkbox"/>	

PAHS 8310  SIM   
 Metals, Total or Dissolved (See list below)  
 Cyanide  Hex-Chrom   
 pH, Cond., Cl, SO4, PO4, F, NO2, NO3, BOD, TSS, TDS (circle)  
 NH3-N, COD, Total-P, TKN, TOC, DOC (circle) NO2+NO3  
 TOX 9020  AOX 1650  506

As per contract

**REPORT REQUIREMENTS**

I. Routine Report: Method Blank, Surrogate, as required

II. Report Dup., MS, MSD as required

III. Data Validation Report (includes all raw data)

IV. CLP Deliverable Report

V. EDD

**RELINQUISHED BY:**  
 Signature: **Dawn A. Lees** Date/Time: **8/10/06 10:35**  
 Printed Name: **Dawn A. Lees** Firm: **Tetra Tech**

**RECEIVED BY:**  
 Signature: **Tamm S. [Signature]** Date/Time: **8/9/06 16:35**  
 Printed Name: **Tamm S. [Signature]** Firm: **WWD CAS**

**RELINQUISHED BY:**  
 Signature: **[Signature]** Date/Time: **8/10/06 11:20**  
 Printed Name: **[Signature]** Firm: **WWD CAS**

**RECEIVED BY:**  
 Signature: **[Signature]** Date/Time: **8/10/06 11:20**  
 Printed Name: **[Signature]** Firm: **WWD CAS**

**Columbia Analytical Services Inc.  
Cooler Receipt and Preservation Form**

PC LYNDA

Project/Client TETRA TECH, INC Service Request K06 0658

Cooler received on 8/19/10 and opened on 8/19/10 by AB

1. Were custody seals on outside of coolers?  Y  N  
If yes, how many and where? \_\_\_\_\_
2. Were custody seals intact?  Y  N
3. Were signature and date present on the custody seals?  Y  N
4. Is the shipper's airbill available and filed? If no, record airbill number: 832971898175  Y  N  
8529169314950
5. COC# \_\_\_\_\_  
Temperature of cooler(s) upon receipt: (°C) -9.6 -4.0 \_\_\_\_\_  
Temperature Blank: (°C) \_\_\_\_\_
- Were samples hand delivered on the same day as collection?  Y  N
6. Were custody papers properly filled out (ink, signed, etc.)?  Y  N
7. Type of packing material present ICE, GEL PACKS
8. Did all bottles arrive in good condition (unbroken)?  Y  N
9. Were all bottle labels complete (i.e analysis, preservation, etc.)?  Y  N
10. Did all bottle labels and tags agree with custody papers?  Y  N
11. Were the correct types of bottles used for the tests indicated?  Y  N
12. Were all of the preserved bottles received at the lab with the appropriate pH?  Y  N
13. Were VOA vials checked for absence of air bubbles, and if present, noted below?  Y  N
14. Were the 1631 Mercury bottles checked for absence of air bubbles, and if present, noted below?  Y  N
15. Did the bottles originate from CAS/K or a branch laboratory?  Y  N
16. Are CWA Microbiology samples received with >1/2 the 24hr. hold time remaining from collection?  Y  N
17. Was C12/Res negative?  Y  N

Explain any discrepancies: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

RESOLUTION: \_\_\_\_\_

Samples that required preservation or received out of temperature:

Sample ID	Reagent	Volume	Lot Number	Bottle Type	Rec'd out of Temperature	Initials

**Columbia Analytical Services Inc.  
Cooler Receipt and Preservation Form**

PC MT

Project/Client Tepco Tech Service Request K06 06562

Cooler received on 8/5/06 and opened on 8/5/06 by FA

1. Were custody seals on outside of coolers?  Y  N  
 If yes, how many and where? 1 front
2. Were custody seals intact?  Y  N
3. Were signature and date present on the custody seals?  Y  N
4. Is the shipper's airbill available and filed? If no, record airbill number: \_\_\_\_\_  Y  N
5. COC# \_\_\_\_\_  
 Temperature of cooler(s) upon receipt: (°C) Dry Ice \_\_\_\_\_  
 Temperature Blank: (°C) Frozen Solid \_\_\_\_\_
- Were samples hand delivered on the same day as collection? ~~Y~~  N
6. Were custody papers properly filled out (ink, signed, etc.)?  Y  N
7. Type of packing material present Shrinkwrap
8. Did all bottles arrive in good condition (unbroken)?  Y  N
9. Were all bottle labels complete (i.e analysis, preservation, etc.)?  Y  N
10. Did all bottle labels and tags agree with custody papers?  Y  N
11. Were the correct types of bottles used for the tests indicated?  Y  N
12. Were all of the preserved bottles received at the lab with the appropriate pH? ~~Y~~  N
13. Were VOA vials checked for absence of air bubbles, and if present, noted below? ~~Y~~  N
14. Were the 1631 Mercury bottles checked for absence of air bubbles, and if present, noted below? ~~Y~~  N
15. Did the bottles originate from CAS/K or a branch laboratory? Y  N
16. Are CWA Microbiology samples received with >1/2 the 24hr. hold time remaining from collection? ~~Y~~  N
17. Was C12/Res negative? ~~Y~~  N

Explain any discrepancies: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

RESOLUTION: \_\_\_\_\_

Samples that required preservation or received out of temperature:

Sample ID	Reagent	Volume	Lot Number	Bottle Type	Rec'd out of Temperature	Initials

**Columbia Analytical Services Inc.  
Cooler Receipt and Preservation Form**

PC LTT

Project/Client MARINE RESOURCES STUDY Service Request K06 06543

Cooler received on 8/4/06 and opened on 8/4/06 by AKB

1. Were custody seals on outside of coolers?  Y  N  
If yes, how many and where? 1 FRONT
2. Were custody seals intact?  Y  N
3. Were signature and date present on the custody seals?  Y  N
4. Is the shipper's airbill available and filed? If no, record airbill number: 257228208692 Y  N
5. COC# \_\_\_\_\_  
Temperature of cooler(s) upon receipt: (°C) -49 \_\_\_\_\_  
Temperature Blank: (°C) N/A \_\_\_\_\_
- Were samples hand delivered on the same day as collection? Y  N
6. Were custody papers properly filled out (ink, signed, etc.)?  Y  N
7. Type of packing material present DRY ICE, NEWSPAPER, PHONEBOOKS
8. Did all bottles arrive in good condition (unbroken)?  Y  N
9. Were all bottle labels complete (i.e analysis, preservation, etc.)?  Y  N
10. Did all bottle labels and tags agree with custody papers?  Y  N
11. Were the correct types of bottles used for the tests indicated?  Y  N
12. Were all of the preserved bottles received at the lab with the appropriate pH? ~~Y~~  N
13. Were VOA vials checked for absence of air bubbles, and if present, noted below? ~~Y~~  N
14. Were the 1631 Mercury bottles checked for absence of air bubbles, and if present, noted below? ~~Y~~  N
15. Did the bottles originate from CAS/K or a branch laboratory? Y  N
16. Are CWA Microbiology samples received with >1/2 the 24hr. hold time remaining from collection? ~~Y~~  N
17. Was C12/Res negative? ~~Y~~  N

Explain any discrepancies: 2 samples for MIFI-1S

---



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RESOLUTION: \_\_\_\_\_

Samples that required preservation or received out of temperature:

Sample ID	Reagent	Volume	Lot Number	Bottle Type	Rec'd out of Temperature	Initials

**Columbia Analytical Services Inc.  
Cooler Receipt and Preservation Form**

PC Lijuan

Project/Client Tetra Tech Service Request K06 6779

Cooler received on 8-11-06 and opened on 8-11-06 by BW

1. Were custody seals on outside of coolers? 1 front  Y  N  
If yes, how many and where? \_\_\_\_\_
  2. Were custody seals intact?  Y  N
  3. Were signature and date present on the custody seals?  Y  N
  4. Is the shipper's airbill available and filed? If no, record airbill number: Fed Ex 8329-7189-8153  Y  N
  5. COC# \_\_\_\_\_  
Temperature of cooler(s) upon receipt: (°C) 3.8 \_\_\_\_\_  
Temperature Blank: (°C) NP \_\_\_\_\_
- Were samples hand delivered on the same day as collection?  Y  N
6. Were custody papers properly filled out (ink, signed, etc.)?  Y  N
  7. Type of packing material present ICE, Daggie
  8. Did all bottles arrive in good condition (unbroken)?  Y  N
  9. Were all bottle labels complete (i.e analysis, preservation, etc.)?  Y  N
  10. Did all bottle labels and tags agree with custody papers?  Y  N
  11. Were the correct types of bottles used for the tests indicated?  Y  N
  12. Were all of the preserved bottles received at the lab with the appropriate pH?  Y  N
  13. Were VOA vials checked for absence of air bubbles, and if present, noted below?  Y  N
  14. Were the 1631 Mercury bottles checked for absence of air bubbles, and if present, noted below?  Y  N
  15. Did the bottles originate from CAS/K or a branch laboratory?  Y  N
  16. Are CWA Microbiology samples received with >1/2 the 24hr. hold time remaining from collection?  Y  N
  17. Was C12/Res negative?  Y  N

Explain any discrepancies: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

RESOLUTION: \_\_\_\_\_

Samples that required preservation or received out of temperature:

Sample ID	Reagent	Volume	Lot Number	Bottle Type	Rec'd out of Temperature	Initials

Columbia Analytical Services Inc.  
Cooler Receipt and Preservation Form

PC LH

Project/Client MARINE RESOURCES STUDY Service Request K06 07262

Cooler received on 8/26/06 and opened on 8/26/06 by AB

1. Were custody seals on outside of coolers? Y  N   
If yes, how many and where? \_\_\_\_\_
2. Were custody seals intact? ~~Y~~ N
3. Were signature and date present on the custody seals? ~~Y~~ N
4. Is the shipper's airbill available and filed? If no, record airbill number: 832971898164 Y  N
5. COC# \_\_\_\_\_  
Temperature of cooler(s) upon receipt: (°C) -3.7 \_\_\_\_\_  
Temperature Blank: (°C) - \_\_\_\_\_
- Were samples hand delivered on the same day as collection? Y  N
6. Were custody papers properly filled out (ink, signed, etc.)?  Y  N
7. Type of packing material present gel packs, bubble wrap, ice
8. Did all bottles arrive in good condition (unbroken)?  Y  N
9. Were all bottle labels complete (i.e analysis, preservation, etc.)?  Y  N
10. Did all bottle labels and tags agree with custody papers?  Y  N
11. Were the correct types of bottles used for the tests indicated?  Y  N
12. Were all of the preserved bottles received at the lab with the appropriate pH? ~~Y~~ N
13. Were VOA vials checked for absence of air bubbles, and if present, noted below? ~~Y~~ N
14. Were the 1631 Mercury bottles checked for absence of air bubbles, and if present, noted below? ~~Y~~ N
15. Did the bottles originate from CAS/K or a branch laboratory? ~~Y~~ N
16. Are CWA Microbiology samples received with >1/2 the 24hr. hold time remaining from collection? ~~Y~~ N
17. Was C12/Res negative? ~~Y~~ N

Explain any discrepancies: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

RESOLUTION: \_\_\_\_\_

Samples that required preservation or received out of temperature:

Sample ID	Reagent	Volume	Lot Number	Bottle Type	Rec'd out of Temperature	Initials

Columbia Analytical Services Inc.  
Cooler Receipt and Preservation Form

PC LH

Project/Client TETRA TECH, INC Service Request K06 06602

Cooler received on 8/8/06 and opened on 8/8/06 by AR

1. Were custody seals on outside of coolers?  Y  N  
If yes, how many and where? 1 FRONT
2. Were custody seals intact?  Y  N
3. Were signature and date present on the custody seals?  Y  N
4. Is the shipper's airbill available and filed? If no, record airbill number: \_\_\_\_\_  Y  N
5. COC# \_\_\_\_\_  
Temperature of cooler(s) upon receipt: (°C) -20 \_\_\_\_\_  
Temperature Blank: (°C) N/A \_\_\_\_\_
- Were samples hand delivered on the same day as collection?  Y  N
6. Were custody papers properly filled out (ink, signed, etc.)?  Y  N
7. Type of packing material present BUBBLE WRAP, ICE, GEL PACKS
8. Did all bottles arrive in good condition (unbroken)?  Y  N
9. Were all bottle labels complete (i.e analysis, preservation, etc.)?  Y  N
10. Did all bottle labels and tags agree with custody papers?  Y  N
11. Were the correct types of bottles used for the tests indicated?  Y  N
12. Were all of the preserved bottles received at the lab with the appropriate pH? ~~Y~~  N
13. Were VOA vials checked for absence of air bubbles, and if present, noted below? ~~Y~~  N
14. Were the 1631 Mercury bottles checked for absence of air bubbles, and if present, noted below? ~~Y~~  N
15. Did the bottles originate from CAS/K or a branch laboratory?  Y  N
16. Are CWA Microbiology samples received with >1/2 the 24hr. hold time remaining from collection? ~~Y~~  N
17. Was C12/Res negative?  Y  N

Explain any discrepancies: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

RESOLUTION: \_\_\_\_\_

Samples that required preservation or received out of temperature:

Sample ID	Reagent	Volume	Lot Number	Bottle Type	Rec'd out of Temperature	Initials

Columbia Analytical Services Inc.  
Cooler Receipt and Preservation Form

PC LH

Project/Client TETRA TECH, INC Service Request K06 06602

Cooler received on 8/8/06 and opened on 8/8/06 by AR

1. Were custody seals on outside of coolers?  Y  N  
If yes, how many and where? 1 FRONT
2. Were custody seals intact?  Y  N
3. Were signature and date present on the custody seals?  Y  N
4. Is the shipper's airbill available and filed? If no, record airbill number: \_\_\_\_\_  Y  N
5. COC# \_\_\_\_\_  
Temperature of cooler(s) upon receipt: (°C) -20 \_\_\_\_\_  
Temperature Blank: (°C) N/A \_\_\_\_\_
- Were samples hand delivered on the same day as collection?  Y  N
6. Were custody papers properly filled out (ink, signed, etc.)?  Y  N
7. Type of packing material present BUBBLE WRAP, ICE, GEL PACKS
8. Did all bottles arrive in good condition (unbroken)?  Y  N
9. Were all bottle labels complete (i.e analysis, preservation, etc.)?  Y  N
10. Did all bottle labels and tags agree with custody papers?  Y  N
11. Were the correct types of bottles used for the tests indicated?  Y  N
12. Were all of the preserved bottles received at the lab with the appropriate pH? ~~Y~~ ~~N~~
13. Were VOA vials checked for absence of air bubbles, and if present, noted below? ~~Y~~ ~~N~~
14. Were the 1631 Mercury bottles checked for absence of air bubbles, and if present, noted below? ~~Y~~ ~~N~~
15. Did the bottles originate from CAS/K or a branch laboratory?  Y  N
16. Are CWA Microbiology samples received with >1/2 the 24hr. hold time remaining from collection? ~~Y~~ ~~N~~
17. Was C12/Res negative?  Y  N

Explain any discrepancies: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

RESOLUTION: \_\_\_\_\_

Samples that required preservation or received out of temperature:

Sample ID	Reagent	Volume	Lot Number	Bottle Type	Rec'd out of Temperature	Initials

# Metals

**COLUMBIA ANALYTICAL SERVICES, INC.**

Analytical Report

**Client:** Tetra Tech, Incorporated  
**Project:** MuliwaiTissue/Project 838  
**Sample Matrix:** Tissue

**Service Request:** K0607294  
**Date Collected:** 8/2/06  
**Date Received:** 8/29/06

Solids, Total

Prep Method: NONE  
 Analysis Method: Freeze Dry  
 Test Notes:

Units: PERCENT  
 Basis: Wet

Sample Name	Lab Code	Date Analyzed	Result	Result Notes
1	K0607294-001	9/15/06	24.4	
3	K0607294-004	9/15/06	27.7	
4	K0607294-005	9/15/06	27.4	
1b	K0607294-006	9/15/06	28.1	
5	K0607294-007	9/15/06	26.1	
6	K0607294-008	9/15/06	29.0	
7	K0607294-012	9/15/06	30.6	
9	K0607294-016	9/15/06	26.3	
10	K0607294-018	9/15/06	25.7	
12	K0607294-020	9/15/06	28.7	
13	K0607294-021	9/15/06	28.2	
14	K0607294-022	9/15/06	27.3	
NW1	K0607294-024	9/15/06	30.2	
NW2	K0607294-025	9/15/06	30.3	
NW3	K0607294-026	9/15/06	30.7	
NW4	K0607294-027	9/20/06	34.2	
NW5	K0607294-029	9/15/06	27.6	
NW6	K0607294-030	9/15/06	27.1	
NW7	K0607294-031	9/15/06	26.5	
NW8	K0607294-032	9/15/06	28.7	
NW9	K0607294-034	9/15/06	31.8	
NW10	K0607294-035	9/15/06	30.0	
NW1 SW3-1	K0607294-036	9/15/06	18.1	
NW1 SW1-1	K0607294-037	9/15/06	18.8	
NW1 SW2-1	K0607294-039	9/15/06	11.6	
Comp 8,8a	K0607294-040	9/15/06	26.3	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

**Client:** Tetra Tech, Incorporated  
**Project:** MuliwaiTissue/Project 838  
**Sample Matrix:** Tissue

**Service Request:** K0607294  
**Date Collected:** 8/2/06  
**Date Received:** 8/29/06  
**Date Extracted:** NA  
**Date Analyzed:** 9/15/06

Duplicate Summary  
Total Metals

Sample Name: 4  
Lab Code: K0607294-005D  
Test Notes:

Units: PERCENT  
Basis: Wet

Analyte	Prep Method	Analysis Method	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Solids, Total	NA	Freeze Dry	27.4	27.0	27.2	1	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

**Client:** Tetra Tech, Incorporated  
**Project:** MuliwaiTissue/Project 838  
**Sample Matrix:** Tissue

**Service Request:** K0607294  
**Date Collected:** 8/5/06  
**Date Received:** 8/29/06  
**Date Extracted:** NA  
**Date Analyzed:** 9/15/06

Duplicate Summary  
Total Metals

Sample Name: NW1  
Lab Code: K0607294-024D  
Test Notes:

Units: PERCENT  
Basis: Wet

Analyte	Prep Method	Analysis Method	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Solids, Total	NA	Freeze Dry	30.2	30.8	30.5	2	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

**Client:** Tetra Tech, Incorporated  
**Project:** Muliwai Tissue/Project 838  
**Sample Matrix:** Tissue

**Service Request:** K0607294  
**Date Collected:** 8/24/06  
**Date Received:** 8/29/06  
**Date Extracted:** NA  
**Date Analyzed:** 9/15/06

Duplicate Summary  
Total Metals

Sample Name: NW1 SW1-1  
Lab Code: K0607294-037D  
Test Notes:

Units: PERCENT  
Basis: Wet

Analyte	Prep Method	Analysis Method	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference	Result Notes
Solids, Total	NA	Freeze Dry	18.8	17.8	18.3	5	

**COLUMBIA ANALYTICAL SERVICES, INC.**

Analytical Report

**Client:** Tetra Tech, Incorporated  
**Project:** MuliwaiTissue/Project 838  
**Sample Matrix:** Tissue

**Service Request:** K0607294  
**Date Collected:** 08/02/06  
**Date Received:** 08/29/06

Methyl Mercury

Prep Method: CAS SOP  
 Analysis Method: CAS SOP  
 Test Notes:

Units: mg/Kg  
 Basis: Dry

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
1	K0607294-001	0.01	0.004	1	10/03/06	10/04/06	0.070	
3	K0607294-004	0.01	0.004	1	10/03/06	10/04/06	0.044	
4	K0607294-005	0.01	0.004	1	10/03/06	10/04/06	0.020	
1b	K0607294-006	0.01	0.004	1	10/03/06	10/04/06	0.021	
5	K0607294-007	0.01	0.004	1	10/03/06	10/04/06	0.012	
6	K0607294-008	0.01	0.004	1	10/03/06	10/04/06	0.038	
7	K0607294-012	0.01	0.004	1	10/03/06	10/04/06	0.040	
9	K0607294-016	0.01	0.004	1	10/03/06	10/04/06	0.072	
10	K0607294-018	0.01	0.004	1	10/03/06	10/04/06	0.086	
12	K0607294-020	0.01	0.004	1	10/03/06	10/04/06	0.053	
13	K0607294-021	0.01	0.004	1	10/03/06	10/04/06	0.033	
14	K0607294-022	0.01	0.004	1	10/03/06	10/04/06	0.032	
NW2	K0607294-025	0.01	0.004	1	10/03/06	10/04/06	0.059	
NW3	K0607294-026	0.01	0.004	1	10/03/06	10/04/06	0.084	
NW4	K0607294-027	0.01	0.004	1	10/03/06	10/04/06	0.043	
NW5	K0607294-029	0.01	0.004	1	10/03/06	10/04/06	0.034	
NW6	K0607294-030	0.01	0.004	1	10/03/06	10/04/06	0.045	
NW7	K0607294-031	0.01	0.004	1	10/03/06	10/04/06	0.038	
Method Blank 1	K0607294-MB1	0.01	0.004	1	10/03/06	10/04/06	ND	
Method Blank 2	K0607294-MB2	0.01	0.004	1	10/03/06	10/04/06	ND	
Method Blank 3	K0607294-MB3	0.01	0.004	1	10/03/06	10/04/06	ND	

**COLUMBIA ANALYTICAL SERVICES, INC.**

Analytical Report

**Client:** Tetra Tech, Incorporated  
**Project:** MuliwaiTissue/Project 838  
**Sample Matrix:** Tissue

**Service Request:** K0607294  
**Date Collected:** 08/19/06  
**Date Received:** 08/29/06

Methyl Mercury

Prep Method: CAS SOP  
 Analysis Method: CAS SOP  
 Test Notes:

Units: mg/Kg  
 Basis: Dry

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
NW8	K0607294-032	0.01	0.004	1	10/05/06	10/06/06	0.027	
NW9	K0607294-034	0.01	0.004	1	10/05/06	10/06/06	0.006	B
NW10	K0607294-035	0.01	0.004	1	10/05/06	10/06/06	0.056	
NW1 SW3-1	K0607294-036	0.01	0.004	1	10/05/06	10/06/06	ND	
NW1 SW1-1	K0607294-037	0.01	0.004	1	10/05/06	10/06/06	ND	
NW1 SW2-1	K0607294-039	0.01	0.004	1	10/05/06	10/06/06	ND	
Comp 8,8a	K0607294-040	0.01	0.004	1	10/05/06	10/06/06	0.170	
Method Blank 1	K0607294-MB1	0.01	0.004	1	10/05/06	10/06/06	ND	
Method Blank 2	K0607294-MB2	0.01	0.004	1	10/05/06	10/06/06	ND	
Method Blank 3	K0607294-MB3	0.01	0.004	1	10/05/06	10/06/06	ND	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

**Client:** Tetra Tech, Incorporated  
**Project:** Muliwai Tissue/Project 838  
**Sample Matrix:** Tissue

**Service Request:** K0607294  
**Date Collected:** 08/02/06  
**Date Received:** 08/29/06  
**Date Extracted:** 10/03/06  
**Date Analyzed:** 10/04/06

Matrix Spike/Duplicate Matrix Spike Summary  
 Metals

Sample Name: 4 Units: mg/Kg  
 Lab Code: K0607294-005MS, K0607294-005DMS Basis: Dry  
 Test Notes:

Analyte	Prep Method	Analysis Method	MRL	Spike Level		Sample Result	Spike Result		Percent Recovery		CAS Acceptance Limits	Relative Percent Difference	Result Notes
				MS	DMS		MS	DMS	MS	DMS			
Methyl Mercury	CAS SOP	CAS SOP	0.01	0.39	0.38	0.020	0.248	0.247	58	60	65-135	<1	N

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

**Client:** Tetra Tech, Incorporated  
**Project:** Muliwai Tissue/Project 838  
**Sample Matrix:** Tissue

**Service Request:** K0607294  
**Date Collected:** 08/24/06  
**Date Received:** 08/29/06  
**Date Extracted:** 10/05/06  
**Date Analyzed:** 10/06/06

Matrix Spike/Duplicate Matrix Spike Summary  
 Metals

Sample Name: NW1 SW1-1 Units: mg/Kg  
 Lab Code: K0607294-037MS, K0607294-037DMS Basis: Dry  
 Test Notes:

Analyte	Prep Method	Analysis Method	MRL	Spike Level		Sample Result	Spike Result		Percent Recovery		CAS Acceptance Limits	Relative Percent Difference	Result Notes
				MS	DMS		MS	DMS	MS	DMS			
Methyl Mercury	CAS SOP	CAS SOP	0.01	0.39	0.37	ND	0.156	0.182	40	49	65-135	15	N

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

**Client:** Tetra Tech, Incorporated  
**Project:** MuliwaiTissue/Project 838  
**LCS Matrix:** Water

**Service Request:** K0607294  
**Date Collected:** NA  
**Date Received:** NA  
**Date Extracted:** 10/03/06  
**Date Analyzed:** 10/04/06

Ongoing Precision and Recovery (OPR) Sample Summary  
Metals

Sample Name: Ongoing Precision and Recovery (Initial)

Units: picograms (pg)  
Basis: NA

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Methyl Mercury	CAS SOP	CAS SOP	25	20.1	80	67-133	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

**Client:** Tetra Tech, Incorporated  
**Project:** MuliwaiTissue/Project 838  
**LCS Matrix:** Water

**Service Request:** K0607294  
**Date Collected:** NA  
**Date Received:** NA  
**Date Extracted:** 10/03/06  
**Date Analyzed:** 10/04/06

Ongoing Precision and Recovery (OPR) Sample Summary  
Metals

Sample Name: Ongoing Precision and Recovery (Final)

Units: picograms (pg)  
Basis: NA

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Methyl Mercury	CAS SOP	CAS SOP	25	20.8	83	67-133	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

**Client:** Tetra Tech, Incorporated  
**Project:** MuliwaiTissue/Project 838  
**LCS Matrix:** Water

**Service Request:** K0607294  
**Date Collected:** NA  
**Date Received:** NA  
**Date Extracted:** 10/05/06  
**Date Analyzed:** 10/06/06

Ongoing Precision and Recovery (OPR) Sample Summary  
Metals

Sample Name: Ongoing Precision and Recovery (Initial)

Units: picograms (pg)  
Basis: NA

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits	Result Notes
Methyl Mercury	CAS SOP	CAS SOP	25	22.3	89	67-133	

**COLUMBIA ANALYTICAL SERVICES, INC.**

-----QA/QC Report-----

**Client:** Tetra Tech, Incorporated  
**Project:** MuliwaiTissue/Project 838  
**LCS Matrix:** Water

**Service Request:** K0607294  
**Date Collected:** NA  
**Date Received:** NA  
**Date Extracted:** 10/05/06  
**Date Analyzed:** 10/06/06

Ongoing Precision and Recovery (OPR) Sample Summary  
 Metals

Sample Name: Ongoing Precision and Recovery (Final) Units: picograms (pg)  
 Basis: NA

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS	Result Notes
						Percent Recovery Acceptance Limits	
Methyl Mercury	CAS SOP	CAS SOP	25	18.9	76	67-133	

**COLUMBIA ANALYTICAL SERVICES, INC.**

QA/QC Report

**Client:** Tetra Tech, Incorporated  
**Project:** MuliwaiTissue/Project 838  
**LCS Matrix:** Tissue

**Service Request:** K0607294  
**Date Collected:** NA  
**Date Received:** NA  
**Date Extracted:** 10/03/06  
**Date Analyzed:** 10/04/06

Quality Control Sample (QCS) Summary  
 Total Metals

Sample Name: Quality Control Sample Units: mg/Kg  
Basis: Dry

Source: NRCC DOLT-3

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS	Result Notes
						Percent Recovery Acceptance Limits	
Methyl Mercury	CAS SOP	CAS SOP	1.59	1.70	107	1.15-2.05	

**COLUMBIA ANALYTICAL SERVICES, INC.**

QA/QC Report

**Client:** Tetra Tech, Incorporated  
**Project:** MuliwaiTissue/Project 838  
**LCS Matrix:** Tissue

**Service Request:** K0607294  
**Date Collected:** NA  
**Date Received:** NA  
**Date Extracted:** 10/05/06  
**Date Analyzed:** 10/06/06

Quality Control Sample (QCS) Summary  
 Total Metals

Sample Name: Quality Control Sample

Units: mg/Kg  
 Basis: Dry

Source: NRCC DORM-2

Analyte	Prep Method	Analysis Method	True Value	Result	Percent Recovery	CAS	Result Notes
						Percent Recovery Acceptance Limits	
Methyl Mercury	CAS SOP	CAS SOP	4.47	3.48	78	3.32-5.75	

**Batch Number: K0607294**  
**Method Number: MeHg in Tissue**

**Project Number(s):**  
**Instrument ID: K-AFS-02**

**Date Analyzed: 10/6/06**  
**Analyst Name: Guy Reggio**

Run	Run Type	Name/ID	Method Blank	Peak	Peak Height	Analyzed Result (ng)	Final Result (mg/Kg)	QA Results	Criteria	Notes
1	CB	BBLR 1		3	210	0.000509		0.000509	< 0.002	accept
2	CB	BBLR 1		2	191	0.000463		0.000463	< 0.002	accept
3	STD	STD 2		2	1,094	0.00217		108	75-125	accept
4	STD	STD 5		2	2,444	0.00544		109	75-125	accept
5	STD	STD 50		2	19,198	0.0461		92.2	75-125	accept
6	STD	STD 250		3	94,514	0.229		91.5	75-125	accept
7	STD	STD 500		5	210,358	0.510		102	75-125	accept
8	QCS	CRM DORM2	MBA	2	58,319	0.141	3.48	77.9	67-133	accept
9	OPR	OPR		5	9,385	0.0223		89.1	67-133	accept
10	MBA	MBLK1		3	197	-0.00000849	-0.0000425	-0.0000425	< 0.005	accept
11	MBA	MBLK2		2	233	0.0000788	0.000394	0.000394	< 0.005	accept
12	MBA	MBLK3		3	274	0.000178	0.000891	0.000891	< 0.005	accept
13	S	K0607294-005	MBA	2	1,526	0.00322	0.0122		< HS	accept
14	MS	K0607294-005	(1) MBA	3	18,684	0.0448	0.161	41.3	65-135	reject
15	MSD	K0607294-005	MBA	2	18,374	0.0441	0.159	40.6	65-135	reject
16	S	K0607294-032	MBA	3	3,179	0.00723	0.0267		< HS	accept
17	S	K0607294-034	MBA	2	942	0.00180	0.00621		< HS	accept
18	S	K0607294-035	MBA	3	6,350	0.0149	0.0558		< HS	accept
19	S	K0607294-036	MBA	2	264	0.000154	0.000204		< HS	accept
20	QCS	QCS		2	8,400	0.0199		79.6	67-133	accept
21	S	K0607294-037	MBA	3	274	0.000178	0.000253		< HS	accept
22	MS	K0607294-037	MBA	2	16,601	0.0398	0.156	39.6	65-135	reject
23	MSD	K0607294-037	MBA	2	20,300	0.0488	0.182	48.6	65-135	reject
24	S	K0607294-039	MBA	3	388	0.000455	0.00139		< HS	accept
25	S	K0607294-040	MBA	2	19,208	0.0461	0.170		< HS	accept
26	OPR	OPR		3	7,994	0.0189		75.6	67-133	accept

**Comments** (1) Confirmation only. Not reported

PMT 684  
 Offset50407  
 Noise36

**Batch Number: K0607294**  
**Method Number: MeHg in Tissue**

**Project Number(s):**  
**Instrument ID: K-AFS-02**

**Date Analyzed: 10/6/06**  
**Analyst Name: Guy Reggio**

**Bias and Precision**

Run Type	Name/ID	Final Result	Units	Spike Level	Source Result	% REC	% REC Limit	RPD	RPD Limit	Notes
MS	K0607294-005	0.161	mg/Kg	0.3596	0.0122	41.3	65-135			reject
	K0607294-037	0.156	mg/Kg	0.3934	0.000253	39.6	65-135			reject
MSD	K0607294-005	0.159	mg/Kg	0.3611	0.0122	40.6	65-135			reject
	K0607294-037	0.182	mg/Kg	0.3732	0.000253	48.6	65-135			reject
OPR	OPR	0.0223	ng	0.025		89.1	67-133			accept
	OPR	0.0189	ng	0.025		75.6	67-133			accept
QCS	CRM DORM2	3.48	mg/Kg	4.47		77.9	67-133			accept
	QCS	0.0199	ng	0.025		79.6	67-133			accept

**Calibration**

QA Sample Type	Name/ID	Analyzed Result	Units	Spike Level	% REC	% REC Limit	RSD	RSD Limit	Notes
Calibration	STD 2	0.00217	ng	0.002	108	75-125			accept
	STD 5	0.00544	ng	0.005	109	75-125			accept
	STD 50	0.0461	ng	0.050	92.2	75-125			accept
	STD 250	0.229	ng	0.250	91.5	75-125			accept
	STD 500	0.510	ng	0.500	102	75-125			accept
Calibration Factor		0.00000243	ng/PH				8.48	< 15	accept
Calibration Date		10/6/06							

**Batch Number: K0607294**  
**Method Number: MeHg in Tissue**

**Project Number(s):**  
**Instrument ID: K-AFS-02**

**Date Analyzed: 10/6/06**  
**Analyst Name: Guy Reggio**

**Blank Summary**

QA Sample Type	Name/ID	Analyzed Result	Units	Criteria	StDev	StDev Limit	Notes
CB	BBLR 1	0.000509	ng	< 0.002			accept
	BBLR 1	0.000463	ng	< 0.002			accept
	Average	0.000486	ng	< 0.002	0.000032	25	accept
MBA	MBLK1	-0.0000425	mg/Kg	< 0.005			accept
	MBLK2	0.000394	mg/Kg	< 0.005			accept
	MBLK3	0.000891	mg/Kg	< 0.005			accept
	Average	0.000414	mg/Kg		0.000467		

**Comments**

PMT 684  
 Offset50407  
 Noise36

**Batch Number: K0607294**  
**Method Number: MeHg in Tissue**

**Project Number(s):**  
**Instrument ID: K-AFS-02**

**Date Analyzed: 10/6/06**  
**Analyst Name: Guy Reggio**

Run	Name/ID	Final Result (mg/Kg)	Notes
13	K0607294-005	0.0122	accepted
16	K0607294-032	0.0267	accepted
17	K0607294-034	0.00621	accepted
18	K0607294-035	0.0558	accepted
19	K0607294-036	0.000204	accepted
21	K0607294-037	0.000253	accepted
24	K0607294-039	0.00139	accepted
25	K0607294-040	0.170	accepted

Service Request Number(s):				K0607294		Sample Number(s):						
Analysis for:		Methyl Mercury		Method:		Methyl Mercury in Tissue						
Analyst:		G Reggio/J. Bailey		Freeze Dried		Yes						
DATA FILE:		K0607294T3		Date Prepared		10/5/06						
STAR LIMS PREP #				Date Run		10/6/06						
Sample	Bot ID	Teflon Bomb	SPL WT (mg) (200 typical)	Aliquot VOL (mL)	Final SPL VOL (mL)	Dilution	Spike STD name	STD CONC. pg/mL	Spike Vol (mL)	Spike AMT (pg) in bomb	Spike amt(pg) in 50mL	Comment factor in guru ( soln / spl wt)
1	MBLK 1	1										
2	MBLK 2	2										
3	MBLK 3	3										
4	K0607294	-005	254.9	0.05	50							
5	K0607294	-005MS	278.1	0.05	50			10000	0.5	5000	100.000	0.3596
6	K0607294	-005DMS	276.9	0.05	50			10000	0.5	5000	100.000	0.3611
7	K0607294	-032	266.2	0.05	50							
8	K0607294	-034	271.5	0.05	50							
9	K0607294	-035	265.4	0.05	50							
10	K0607294	-036	248.9	0.05	50							
11	K0607294	-037	267.0	0.05	50							
12	K0607294	-037 MS	254.2	0.05	50			10000	0.5	5000	100.000	0.3934
13	K0607294	-037 MSD	267.9	0.05	50			10000	0.5	5000	100.000	0.3733
14	K0607294	-039	251.8	0.05	50							
15	K0607294	-040	271.2	0.05	50							
16	DORM-2	16	202.3	0.05	250							4.47 mg/Kg
Calibration Standard		Bubbler Vessel		Spike STD name	STD CONC. pg/mL	Spike Vol (mL)	Spike AMT (pg)					
BBLK1		1										
BBLK2		2										
STD 2		3			10	0.2	2					
STD 5		4			10	0.5	5					
STD 50		5			100	0.5	50					
STD 200		6			100	2	200					
STD 500		7			1000	0.5	500					

Calibration Standard	Bubbler Vessel	Spike STD name	STD CONC. pg/mL	Spike Vol (mL)	Spike AMT (pg)
BBLK1	1				
BBLK2	2				
STD 2	3	AF1-24-C	10	0.20	2
STD 5	4	AF1-24-C	10	0.50	5
STD 50	5	AF1-24-B	100	0.50	50
STD 250	6	AF1-24-A	1000	0.25	200
STD 500	7	AF1-24-A	1000	0.50	500
OPR (same source cal ver)		AF1-24-B	100	0.25	25
QCS (2 <sup>nd</sup> Source Cal Ver)		AF1-24-E	100	0.25	25

Source	STD name	STD CONC. pg/mL	Expires
MeHgCl	AF1-24-G	10000	10/4/06
MeHgCl	AF1-24-A	1000	10/4/06
MeHgCl	AF1-24-B	100	10/4/06
MeHgCl	AF1-24-C	10	10/4/06
MeHgOH	AF1-24-D	1000	10/4/06
MeHgOH	AF1-24-E	100	10/4/06
MeHgOH	AF1-24-F	10	10/4/06

METALS

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INORGANIC ANALYSIS DATA PACKAGE

Client: Tetra Tech, Incorporated  
Project No.: Project 838  
Project Name: MuliwaiTissue

Service Request: K0607294

Sample No.	Lab Sample ID.
1	K0607294-001
3	K0607294-004
4	K0607294-005
4D	K0607294-005D
4S	K0607294-005S
1b	K0607294-006
5	K0607294-007
6	K0607294-008
7	K0607294-012
9	K0607294-016
10	K0607294-018
12	K0607294-020
13	K0607294-021
14	K0607294-022
NW2	K0607294-025
NW2D	K0607294-025D
NW2S	K0607294-025S
NW3	K0607294-026
NW4	K0607294-027
NW5	K0607294-029
NW6	K0607294-030
NW7	K0607294-031
NW8	K0607294-032

Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES

If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

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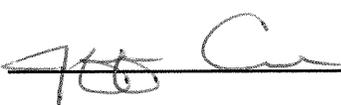
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Signature: 

Date: 10/20/06

METALS

- Cover Page -

INORGANIC ANALYSIS DATA PACKAGE

Client: Tetra Tech, Incorporated  
Project No.: Project 838  
Project Name: MuliwaiTissue

Service Request: K0607294

<u>Sample No.</u>	<u>Lab Sample ID.</u>
NW9	K0607294-034
NW10	K0607294-035
NW1 SW3-1	K0607294-036
NW1 SW1-1	K0607294-037
NW1 SW1-1D	K0607294-037D
NW1 SW1-1S	K0607294-037S
NW1 SW2-1	K0607294-039
Comp 8, 8a	K0607294-040
Method Blank	K0607294-MB
Method Blank	K0607294-MB2

Were ICP interelement corrections applied? Yes/No YES

Were ICP background corrections applied? Yes/No YES

If yes-were raw data generated before application of background corrections? Yes/No NO

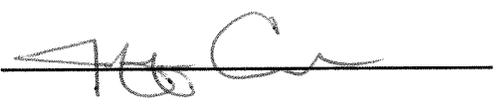
Comments:

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Signature: 

Date: 10/20/06

## METALS

-1-

## INORGANIC ANALYSIS DATA SHEET

Client: Tetra Tech, Incorporated

Service Request: K0607294

Project No.: Project 838

Date Collected: 08/02/06

Project Name: MuliwaiTissue

Date Received: 08/29/06

Matrix: ANIMAL T

Units: mg/kg

Basis: Dry

Sample Name: 1

Lab Code: K0607294-001

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010B	5.0	4.0	1	9/22/06	10/2/06	2950		
Antimony	6020	0.05	0.02	5	9/22/06	10/3/06	0.02	U	N
Arsenic	6020	0.50	0.05	5	9/22/06	10/3/06	2.25		
Barium	6020	0.05	0.03	5	9/22/06	10/3/06	22.7		
Beryllium	6020	0.020	0.003	5	9/22/06	10/3/06	0.037		
Cadmium	6020	0.02	0.02	5	9/22/06	10/3/06	0.06		
Chromium	6010B	0.5	0.4	1	9/22/06	10/2/06	11.9		
Cobalt	6020	0.020	0.005	5	9/22/06	10/3/06	2.580		
Copper	6020	0.10	0.02	5	9/22/06	10/3/06	166		
Iron	6010B	2.0	0.9	1	9/22/06	10/2/06	3460		
Lead	6020	0.020	0.006	5	9/22/06	10/3/06	3.160		
Manganese	6010B	0.5	0.1	1	9/22/06	10/2/06	239		
Mercury	7471A	0.019	0.002	1	10/2/06	10/4/06	0.074		
Selenium	7740	1.00	0.50	10	9/22/06	10/3/06	3.71		
Silver	6020	0.020	0.008	5	9/22/06	10/3/06	1.130		N
Thallium	6020	0.020	0.009	5	9/22/06	10/3/06	0.009	U	
Vanadium	6020	0.20	0.02	5	9/22/06	10/3/06	19.3		
Zinc	6020	0.50	0.06	5	9/22/06	10/3/06	129		

Comments:

## METALS

-1-

## INORGANIC ANALYSIS DATA SHEET

Client: Tetra Tech, Incorporated

Service Request: K0607294

Project No.: Project 838

Date Collected: 08/02/06

Project Name: MuliwaiTissue

Date Received: 08/29/06

Matrix: ANIMAL T

Units: mg/kg

Basis: Dry

Sample Name: 3

Lab Code: K0607294-004

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6020	2.0	0.2	5	9/22/06	10/3/06	48.3		
Antimony	6020	0.05	0.02	5	9/22/06	10/3/06	0.04	B	N
Arsenic	6020	0.50	0.05	5	9/22/06	10/3/06	2.87		
Barium	6020	0.05	0.03	5	9/22/06	10/3/06	5.53		
Beryllium	6020	0.020	0.003	5	9/22/06	10/3/06	0.003	U	
Cadmium	6020	0.02	0.02	5	9/22/06	10/3/06	0.02		
Chromium	6010B	0.5	0.4	1	9/22/06	10/2/06	0.9		
Cobalt	6020	0.020	0.005	5	9/22/06	10/3/06	0.397		
Copper	6020	0.10	0.02	5	9/22/06	10/3/06	6.39		
Iron	6010B	2.0	0.9	1	9/22/06	10/2/06	122		
Lead	6020	0.020	0.006	5	9/22/06	10/3/06	5.390		
Manganese	6020	0.05	0.02	5	9/22/06	10/3/06	11.9		
Mercury	7471A	0.020	0.002	1	10/2/06	10/4/06	0.038		
Selenium	7740	0.99	0.50	10	9/22/06	10/3/06	1.83		
Silver	6020	0.020	0.008	5	9/22/06	10/3/06	0.014	B	N
Thallium	6020	0.020	0.009	5	9/22/06	10/3/06	0.009	U	
Vanadium	6020	0.20	0.02	5	9/22/06	10/3/06	1.24		
Zinc	6020	0.50	0.06	5	9/22/06	10/3/06	98.8		

Comments:

## METALS

-1-

## INORGANIC ANALYSIS DATA SHEET

Client: Tetra Tech, Incorporated

Service Request: K0607294

Project No.: Project 838

Date Collected: 08/02/06

Project Name: MuliwaiTissue

Date Received: 08/29/06

Matrix: ANIMAL T

Units: mg/kg

Basis: Dry

Sample Name: 4

Lab Code: K0607294-005

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6020	99.4	9.9	250	9/22/06	10/3/06	2000		
Antimony	6020	0.05	0.02	5	9/22/06	10/3/06	0.02	U	N
Arsenic	6020	0.50	0.05	5	9/22/06	10/3/06	2.53		
Barium	6020	0.05	0.03	5	9/22/06	10/3/06	26.1		
Beryllium	6020	0.020	0.003	5	9/22/06	10/3/06	0.028		
Cadmium	6020	0.02	0.02	5	9/22/06	10/3/06	0.05		
Chromium	6010B	0.5	0.4	1	9/22/06	10/2/06	8.2		
Cobalt	6020	0.020	0.005	5	9/22/06	10/3/06	2.670		
Copper	6020	0.10	0.02	5	9/22/06	10/3/06	44.1		
Iron	6010B	2.0	0.9	1	9/22/06	10/2/06	2140		
Lead	6020	0.020	0.006	5	9/22/06	10/3/06	2.040		
Manganese	6020	2.48	0.99	250	9/22/06	10/3/06	259		
Mercury	7471A	0.020	0.002	1	10/2/06	10/4/06	0.024		
Selenium	7740	0.99	0.50	10	9/22/06	10/3/06	2.24		
Silver	6020	0.020	0.008	5	9/22/06	10/3/06	0.285		N
Thallium	6020	0.020	0.009	5	9/22/06	10/3/06	0.009	U	
Vanadium	6020	0.20	0.02	5	9/22/06	10/3/06	11.2		
Zinc	6020	0.50	0.06	5	9/22/06	10/3/06	103		

Comments:

## METALS

-1-

## INORGANIC ANALYSIS DATA SHEET

Client: Tetra Tech, Incorporated

Service Request: K0607294

Project No.: Project 838

Date Collected: 08/03/06

Project Name: MuliwaiTissue

Date Received: 08/29/06

Matrix: ANIMAL T

Units: mg/kg

Basis: Dry

Sample Name: 1b

Lab Code: K0607294-006

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010B	4.9	3.9	1	9/22/06	10/2/06	2840		
Antimony	6020	0.05	0.02	5	9/22/06	10/3/06	0.02	U	N
Arsenic	6020	0.49	0.05	5	9/22/06	10/3/06	3.18		
Barium	6020	0.05	0.03	5	9/22/06	10/3/06	26.1		
Beryllium	6020	0.020	0.003	5	9/22/06	10/3/06	0.034		
Cadmium	6020	0.02	0.02	5	9/22/06	10/3/06	0.06		
Chromium	6010B	0.5	0.4	1	9/22/06	10/2/06	10.5		
Cobalt	6020	0.020	0.005	5	9/22/06	10/3/06	3.250		
Copper	6020	0.10	0.02	5	9/22/06	10/3/06	45.3		
Iron	6010B	2.0	0.9	1	9/22/06	10/2/06	2810		
Lead	6020	0.020	0.006	5	9/22/06	10/3/06	1.250		
Manganese	6010B	0.5	0.1	1	9/22/06	10/2/06	328		
Mercury	7471A	0.020	0.002	1	10/2/06	10/4/06	0.029		
Selenium	7740	0.98	0.49	10	9/22/06	10/3/06	1.97		
Silver	6020	0.020	0.008	5	9/22/06	10/3/06	0.245		N
Thallium	6020	0.020	0.009	5	9/22/06	10/3/06	0.009	U	
Vanadium	6020	0.20	0.02	5	9/22/06	10/3/06	15.0		
Zinc	6020	0.49	0.06	5	9/22/06	10/3/06	112		

Comments:

## METALS

-1-

## INORGANIC ANALYSIS DATA SHEET

Client: Tetra Tech, Incorporated

Service Request: K0607294

Project No.: Project 838

Date Collected: 08/03/06

Project Name: MuliwaiTissue

Date Received: 08/29/06

Matrix: ANIMAL T

Units: mg/kg

Basis: Dry

Sample Name: 5

Lab Code: K0607294-007

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010B	4.9	3.9	1	9/22/06	10/2/06	4240		
Antimony	6020	0.05	0.02	5	9/22/06	10/3/06	0.02	U	N
Arsenic	6020	0.49	0.05	5	9/22/06	10/3/06	3.81		
Barium	6020	0.05	0.03	5	9/22/06	10/3/06	23.5		
Beryllium	6020	0.020	0.003	5	9/22/06	10/3/06	0.051		
Cadmium	6020	0.02	0.02	5	9/22/06	10/3/06	0.08		
Chromium	6010B	0.5	0.4	1	9/22/06	10/2/06	14.7		
Cobalt	6020	0.020	0.005	5	9/22/06	10/3/06	4.170		
Copper	6020	0.10	0.02	5	9/22/06	10/3/06	48.8		
Iron	6010B	2.0	0.9	1	9/22/06	10/2/06	4530		
Lead	6020	0.020	0.006	5	9/22/06	10/3/06	1.340		
Manganese	6010B	0.5	0.1	1	9/22/06	10/2/06	386		
Mercury	7471A	0.020	0.002	1	10/2/06	10/4/06	0.030		
Selenium	7740	0.98	0.49	10	9/22/06	10/3/06	2.16		
Silver	6020	0.020	0.008	5	9/22/06	10/3/06	0.302		N
Thallium	6020	0.020	0.009	5	9/22/06	10/3/06	0.009	U	
Vanadium	6020	0.20	0.02	5	9/22/06	10/3/06	17.3		
Zinc	6020	0.49	0.06	5	9/22/06	10/3/06	127		

Comments:

## METALS

-1-

## INORGANIC ANALYSIS DATA SHEET

Client: Tetra Tech, Incorporated

Service Request: K0607294

Project No.: Project 838

Date Collected: 08/03/06

Project Name: MuliwaiTissue

Date Received: 08/29/06

Matrix: ANIMAL T

Units: mg/kg

Basis: Dry

Sample Name: 6

Lab Code: K0607294-008

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010B	4.9	3.9	1	9/22/06	10/2/06	1250		
Antimony	6020	0.05	0.02	5	9/22/06	10/3/06	0.02	U	N
Arsenic	6020	0.49	0.05	5	9/22/06	10/3/06	2.35		
Barium	6020	0.05	0.03	5	9/22/06	10/3/06	16.6		
Beryllium	6020	0.019	0.003	5	9/22/06	10/3/06	0.018	B	
Cadmium	6020	0.02	0.02	5	9/22/06	10/3/06	0.02		
Chromium	6010B	0.5	0.4	1	9/22/06	10/2/06	23.0		
Cobalt	6020	0.019	0.005	5	9/22/06	10/3/06	2.530		
Copper	6020	0.10	0.02	5	9/22/06	10/3/06	20.9		
Iron	6010B	1.9	0.9	1	9/22/06	10/2/06	2570		
Lead	6020	0.019	0.006	5	9/22/06	10/3/06	1.200		
Manganese	6010B	0.5	0.1	1	9/22/06	10/2/06	94.9		
Mercury	7471A	0.020	0.002	1	10/2/06	10/4/06	0.044		
Selenium	7740	0.97	0.49	10	9/22/06	10/3/06	2.03		
Silver	6020	0.019	0.008	5	9/22/06	10/3/06	0.047		N
Thallium	6020	0.019	0.009	5	9/22/06	10/3/06	0.009	U	
Vanadium	6020	0.19	0.02	5	9/22/06	10/3/06	9.23		
Zinc	6020	0.49	0.06	5	9/22/06	10/3/06	91.5		

Comments:

## METALS

-1-

## INORGANIC ANALYSIS DATA SHEET

Client: Tetra Tech, Incorporated

Service Request: K0607294

Project No.: Project 838

Date Collected: 08/03/06

Project Name: MuliwaiTissue

Date Received: 08/29/06

Matrix: ANIMAL T

Units: mg/kg

Basis: Dry

Sample Name: 7

Lab Code: K0607294-012

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010B	4.9	3.9	1	9/22/06	10/2/06	1150		
Antimony	6020	0.05	0.02	5	9/22/06	10/4/06	0.02	U	N
Arsenic	6020	0.49	0.05	5	9/22/06	10/4/06	2.18		
Barium	6020	0.05	0.03	5	9/22/06	10/4/06	15.1		
Beryllium	6020	0.020	0.003	5	9/22/06	10/4/06	0.018	B	
Cadmium	6020	0.02	0.02	5	9/22/06	10/4/06	0.03		
Chromium	6010B	0.5	0.4	1	9/22/06	10/2/06	31.5		
Cobalt	6020	0.020	0.005	5	9/22/06	10/4/06	2.390		
Copper	6020	0.10	0.02	5	9/22/06	10/4/06	14.2		
Iron	6010B	2.0	0.9	1	9/22/06	10/2/06	2690		
Lead	6020	0.020	0.006	5	9/22/06	10/4/06	1.020		
Manganese	6010B	0.5	0.1	1	9/22/06	10/2/06	113		
Mercury	7471A	0.020	0.002	1	10/2/06	10/4/06	0.034		
Selenium	7740	0.98	0.49	10	9/22/06	10/3/06	1.61		
Silver	6020	0.020	0.008	5	9/22/06	10/4/06	0.046		N
Thallium	6020	0.020	0.009	5	9/22/06	10/4/06	0.009	U	
Vanadium	6020	0.20	0.02	5	9/22/06	10/4/06	9.19		
Zinc	6020	0.49	0.06	5	9/22/06	10/4/06	85.2		

Comments:

## METALS

-1-

## INORGANIC ANALYSIS DATA SHEET

Client: Tetra Tech, Incorporated

Service Request: K0607294

Project No.: Project 838

Date Collected: 08/03/06

Project Name: MuliwaiTissue

Date Received: 08/29/06

Matrix: ANIMAL T

Units: mg/kg

Basis: Dry

Sample Name: 9

Lab Code: K0607294-016

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010B	4.9	3.9	1	9/22/06	10/2/06	2880		
Antimony	6020	0.05	0.02	5	9/22/06	10/4/06	0.02	U	N
Arsenic	6020	0.49	0.05	5	9/22/06	10/4/06	1.72		
Barium	6020	0.05	0.03	5	9/22/06	10/4/06	21.2		
Beryllium	6020	0.020	0.003	5	9/22/06	10/4/06	0.032		
Cadmium	6020	0.02	0.02	5	9/22/06	10/4/06	0.05		
Chromium	6010B	0.5	0.4	1	9/22/06	10/2/06	12.4		
Cobalt	6020	0.020	0.005	5	9/22/06	10/4/06	2.210		
Copper	6020	0.10	0.02	5	9/22/06	10/4/06	109		
Iron	6010B	2.0	0.9	1	9/22/06	10/2/06	3450		
Lead	6020	0.020	0.006	5	9/22/06	10/4/06	2.600		
Manganese	6010B	0.5	0.1	1	9/22/06	10/2/06	184		
Mercury	7471A	0.020	0.002	1	10/2/06	10/4/06	0.068		
Selenium	7740	0.97	0.49	10	9/22/06	10/3/06	2.80		
Silver	6020	0.020	0.008	5	9/22/06	10/4/06	0.822		N
Thallium	6020	0.020	0.009	5	9/22/06	10/4/06	0.009	U	
Vanadium	6020	0.20	0.02	5	9/22/06	10/4/06	18.2		
Zinc	6020	0.49	0.06	5	9/22/06	10/4/06	106		

Comments:

## METALS

-1-

## INORGANIC ANALYSIS DATA SHEET

Client: Tetra Tech, Incorporated

Service Request: K0607294

Project No.: Project 838

Date Collected: 08/03/06

Project Name: MuliwaiTissue

Date Received: 08/29/06

Matrix: ANIMAL T

Units: mg/kg

Basis: Dry

Sample Name: 10

Lab Code: K0607294-018

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010B	5.0	4.0	1	9/22/06	10/2/06	2140		
Antimony	6020	0.05	0.02	5	9/22/06	10/4/06	0.02	U	N
Arsenic	6020	0.50	0.05	5	9/22/06	10/4/06	1.46		
Barium	6020	0.05	0.03	5	9/22/06	10/4/06	18.7		
Beryllium	6020	0.020	0.003	5	9/22/06	10/4/06	0.024		
Cadmium	6020	0.02	0.02	5	9/22/06	10/4/06	0.05		
Chromium	6010B	0.5	0.4	1	9/22/06	10/2/06	10.9		
Cobalt	6020	0.020	0.005	5	9/22/06	10/4/06	1.940		
Copper	6020	0.10	0.02	5	9/22/06	10/4/06	67.3		
Iron	6010B	2.0	0.9	1	9/22/06	10/2/06	2540		
Lead	6020	0.020	0.006	5	9/22/06	10/4/06	2.250		
Manganese	6010B	0.5	0.1	1	9/22/06	10/2/06	159		
Mercury	7471A	0.020	0.002	1	10/2/06	10/4/06	0.075		
Selenium	7740	1.00	0.50	10	9/22/06	10/3/06	2.65		
Silver	6020	0.020	0.008	5	9/22/06	10/4/06	0.657		N
Thallium	6020	0.020	0.009	5	9/22/06	10/4/06	0.009	U	
Vanadium	6020	0.20	0.02	5	9/22/06	10/4/06	11.7		
Zinc	6020	0.50	0.06	5	9/22/06	10/4/06	117		

Comments:

## METALS

-1-

## INORGANIC ANALYSIS DATA SHEET

Client: Tetra Tech, Incorporated

Service Request: K0607294

Project No.: Project 838

Date Collected: 08/04/06

Project Name: MuliwaiTissue

Date Received: 08/29/06

Matrix: ANIMAL T

Units: mg/kg

Basis: Dry

Sample Name: 12

Lab Code: K0607294-020

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010B	4.9	3.9	1	9/22/06	10/2/06	3810		
Antimony	6020	0.05	0.02	5	9/22/06	10/4/06	0.02	U	N
Arsenic	6020	0.49	0.05	5	9/22/06	10/4/06	2.51		
Barium	6020	0.05	0.03	5	9/22/06	10/4/06	39.7		
Beryllium	6020	0.019	0.003	5	9/22/06	10/4/06	0.078		
Cadmium	6020	0.02	0.02	5	9/22/06	10/4/06	0.11		
Chromium	6010B	0.5	0.4	1	9/22/06	10/2/06	22.3		
Cobalt	6020	0.019	0.005	5	9/22/06	10/4/06	4.590		
Copper	6020	0.10	0.02	5	9/22/06	10/4/06	70.0		
Iron	6010B	1.9	0.9	1	9/22/06	10/2/06	5410		
Lead	6020	0.019	0.006	5	9/22/06	10/4/06	2.010		
Manganese	6010B	0.5	0.1	1	9/22/06	10/2/06	501		
Mercury	7471A	0.020	0.002	1	10/2/06	10/4/06	0.042		
Selenium	7740	0.97	0.49	10	9/22/06	10/3/06	2.19		
Silver	6020	0.019	0.008	5	9/22/06	10/4/06	0.527		N
Thallium	6020	0.019	0.009	5	9/22/06	10/4/06	0.009	U	
Vanadium	6020	0.19	0.02	5	9/22/06	10/4/06	19.6		
Zinc	6020	0.49	0.06	5	9/22/06	10/4/06	108		

Comments:

## METALS

-1-

## INORGANIC ANALYSIS DATA SHEET

Client: Tetra Tech, Incorporated

Service Request: K0607294

Project No.: Project 838

Date Collected: 08/04/06

Project Name: MuliwaiTissue

Date Received: 08/29/06

Matrix: ANIMAL T

Units: mg/kg

Basis: Dry

Sample Name: 13

Lab Code: K0607294-021

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010B	4.9	3.9	1	9/22/06	10/2/06	5170		
Antimony	6020	0.05	0.02	5	9/22/06	10/4/06	0.02	U	N
Arsenic	6020	0.49	0.05	5	9/22/06	10/4/06	2.57		
Barium	6020	0.05	0.03	5	9/22/06	10/4/06	43.6		
Beryllium	6020	0.020	0.003	5	9/22/06	10/4/06	0.094		
Cadmium	6020	0.02	0.02	5	9/22/06	10/4/06	0.12		
Chromium	6010B	0.5	0.4	1	9/22/06	10/2/06	24.7		
Cobalt	6020	0.020	0.005	5	9/22/06	10/4/06	5.250		
Copper	6020	0.10	0.02	5	9/22/06	10/4/06	64.9		
Iron	6010B	2.0	0.9	1	9/22/06	10/2/06	7010		
Lead	6020	0.020	0.006	5	9/22/06	10/4/06	2.020		
Manganese	6010B	0.5	0.1	1	9/22/06	10/2/06	603		
Mercury	7471A	0.020	0.002	1	10/2/06	10/4/06	0.047		
Selenium	7740	0.98	0.49	10	9/22/06	10/3/06	2.39		
Silver	6020	0.020	0.008	5	9/22/06	10/4/06	0.594		N
Thallium	6020	0.020	0.009	5	9/22/06	10/4/06	0.009	U	
Vanadium	6020	0.20	0.02	5	9/22/06	10/4/06	23.6		
Zinc	6020	0.49	0.06	5	9/22/06	10/4/06	111		

Comments:

## METALS

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## INORGANIC ANALYSIS DATA SHEET

Client: Tetra Tech, Incorporated

Service Request: K0607294

Project No.: Project 838

Date Collected: 08/04/06

Project Name: MuliwaiTissue

Date Received: 08/29/06

Matrix: ANIMAL T

Units: mg/kg

Basis: Dry

Sample Name: 14

Lab Code: K0607294-022

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010B	4.9	3.9	1	9/22/06	10/2/06	4420		
Antimony	6020	0.05	0.02	5	9/22/06	10/4/06	0.02	U	N
Arsenic	6020	0.49	0.05	5	9/22/06	10/4/06	2.54		
Barium	6020	0.05	0.03	5	9/22/06	10/4/06	39.1		
Beryllium	6020	0.020	0.003	5	9/22/06	10/4/06	0.082		
Cadmium	6020	0.02	0.02	5	9/22/06	10/4/06	0.13		
Chromium	6010B	0.5	0.4	1	9/22/06	10/2/06	19.7		
Cobalt	6020	0.020	0.005	5	9/22/06	10/4/06	4.860		
Copper	6020	0.10	0.02	5	9/22/06	10/4/06	79.9		
Iron	6010B	2.0	0.9	1	9/22/06	10/2/06	5570		
Lead	6020	0.020	0.006	5	9/22/06	10/4/06	2.150		
Manganese	6010B	0.5	0.1	1	9/22/06	10/2/06	611		
Mercury	7471A	0.020	0.002	1	10/2/06	10/4/06	0.043		
Selenium	7740	0.98	0.49	10	9/22/06	10/3/06	2.57		
Silver	6020	0.020	0.008	5	9/22/06	10/4/06	0.703		N
Thallium	6020	0.020	0.009	5	9/22/06	10/4/06	0.009	U	
Vanadium	6020	0.20	0.02	5	9/22/06	10/4/06	19.7		
Zinc	6020	0.49	0.06	5	9/22/06	10/4/06	116		

Comments:

## METALS

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## INORGANIC ANALYSIS DATA SHEET

Client: Tetra Tech, Incorporated

Service Request: K0607294

Project No.: Project 838

Date Collected: 08/06/06

Project Name: MuliwaiTissue

Date Received: 08/29/06

Matrix: ANIMAL T

Units: mg/kg

Basis: Dry

Sample Name: NW2

Lab Code: K0607294-025

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6020	9.9	1.0	25	9/22/06	10/4/06	51.3		
Antimony	6020	0.05	0.02	5	9/22/06	10/4/06	0.02	U	N
Arsenic	6020	0.49	0.05	5	9/22/06	10/4/06	37.3		
Barium	6020	0.05	0.03	5	9/22/06	10/4/06	1.27		
Beryllium	6020	0.020	0.003	5	9/22/06	10/4/06	0.003	U	
Cadmium	6020	0.02	0.02	5	9/22/06	10/4/06	0.21		
Chromium	6010B	0.5	0.4	1	9/22/06	10/2/06	8.8		
Cobalt	6020	0.020	0.005	5	9/22/06	10/4/06	0.413		
Copper	6020	0.10	0.02	5	9/22/06	10/4/06	9.78		
Iron	6010B	2.0	0.9	1	9/22/06	10/2/06	302		
Lead	6020	0.020	0.006	5	9/22/06	10/4/06	0.945		
Manganese	6020	0.05	0.02	5	9/22/06	10/4/06	15.7		
Mercury	7471A	0.019	0.002	1	10/2/06	10/4/06	0.055		
Selenium	7740	0.99	0.49	10	9/22/06	10/3/06	1.60		
Silver	6020	0.020	0.008	5	9/22/06	10/4/06	0.008	U	N
Thallium	6020	0.020	0.009	5	9/22/06	10/4/06	0.009	U	
Vanadium	6020	0.20	0.02	5	9/22/06	10/4/06	1.24		
Zinc	6020	0.49	0.06	5	9/22/06	10/4/06	149		

Comments:

## METALS

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## INORGANIC ANALYSIS DATA SHEET

Client: Tetra Tech, Incorporated

Service Request: K0607294

Project No.: Project 838

Date Collected: 08/06/06

Project Name: MuliwaiTissue

Date Received: 08/29/06

Matrix: ANIMAL T

Units: mg/kg

Basis: Dry

Sample Name: NW3

Lab Code: K0607294-026

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6010B	4.9	4.0	1	9/22/06	10/2/06	65.0		
Antimony	6020	0.05	0.02	5	9/22/06	10/4/06	0.02	U	N
Arsenic	6020	0.49	0.05	5	9/22/06	10/4/06	4.06		
Barium	6020	0.05	0.03	5	9/22/06	10/4/06	31.6		
Beryllium	6020	0.020	0.003	5	9/22/06	10/4/06	0.003	U	
Cadmium	6020	0.02	0.02	5	9/22/06	10/4/06	0.12		
Chromium	6010B	0.5	0.4	1	9/22/06	10/2/06	6.8		
Cobalt	6020	0.020	0.005	5	9/22/06	10/4/06	0.324		
Copper	6020	0.10	0.02	5	9/22/06	10/4/06	3.00		
Iron	6010B	2.0	0.9	1	9/22/06	10/2/06	258		
Lead	6020	0.020	0.006	5	9/22/06	10/4/06	2.010		
Manganese	6020	0.05	0.02	5	9/22/06	10/4/06	11.5		
Mercury	7471A	0.020	0.002	1	10/2/06	10/4/06	0.070		
Selenium	7740	0.99	0.49	10	9/22/06	10/5/06	0.79	B	
Silver	6020	0.020	0.008	5	9/22/06	10/4/06	0.008	B	N
Thallium	6020	0.020	0.009	5	9/22/06	10/4/06	0.009	U	
Vanadium	6020	0.20	0.02	5	9/22/06	10/4/06	0.90		
Zinc	6020	0.49	0.06	5	9/22/06	10/4/06	64.9		

Comments:

## METALS

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## INORGANIC ANALYSIS DATA SHEET

Client: Tetra Tech, Incorporated

Service Request: K0607294

Project No.: Project 838

Date Collected: 08/05/06

Project Name: MuliwaiTissue

Date Received: 08/29/06

Matrix: ANIMAL T

Units: mg/kg

Basis: Dry

Sample Name: NW4

Lab Code: K0607294-027

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6020	2.0	0.2	5	9/22/06	10/4/06	6.8		
Antimony	6020	0.05	0.02	5	9/22/06	10/4/06	0.02	U	N
Arsenic	6020	0.49	0.05	5	9/22/06	10/4/06	23.9		
Barium	6020	0.05	0.03	5	9/22/06	10/4/06	0.46		
Beryllium	6020	0.020	0.003	5	9/22/06	10/4/06	0.003	U	
Cadmium	6020	0.02	0.02	5	9/22/06	10/4/06	0.13		
Chromium	6010B	0.5	0.4	1	9/22/06	10/2/06	0.8		
Cobalt	6020	0.020	0.005	5	9/22/06	10/4/06	0.107		
Copper	6020	0.10	0.02	5	9/22/06	10/4/06	2.75		
Iron	6010B	2.0	0.9	1	9/22/06	10/2/06	62.5		
Lead	6020	0.020	0.006	5	9/22/06	10/4/06	0.076		
Manganese	6020	0.05	0.02	5	9/22/06	10/4/06	1.44		
Mercury	7471A	0.020	0.002	1	10/2/06	10/4/06	0.044		
Selenium	7740	0.99	0.49	10	9/22/06	10/5/06	1.35		
Silver	6020	0.020	0.008	5	9/22/06	10/4/06	0.010	B	N
Thallium	6020	0.020	0.009	5	9/22/06	10/4/06	0.009	U	
Vanadium	6020	0.20	0.02	5	9/22/06	10/4/06	0.26		
Zinc	6020	0.49	0.06	5	9/22/06	10/4/06	36.8		

Comments:

## METALS

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## INORGANIC ANALYSIS DATA SHEET

Client: Tetra Tech, Incorporated

Service Request: K0607294

Project No.: Project 838

Date Collected: 08/05/06

Project Name: MuliwaiTissue

Date Received: 08/29/06

Matrix: ANIMAL T

Units: mg/kg

Basis: Dry

Sample Name: NW5

Lab Code: K0607294-029

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6020	2.0	0.2	5	9/22/06	10/4/06	8.9		
Antimony	6020	0.05	0.02	5	9/22/06	10/4/06	0.02	U	N
Arsenic	6020	0.50	0.05	5	9/22/06	10/4/06	24.6		
Barium	6020	0.05	0.03	5	9/22/06	10/4/06	0.97		
Beryllium	6020	0.020	0.003	5	9/22/06	10/4/06	0.003	U	
Cadmium	6020	0.02	0.02	5	9/22/06	10/4/06	0.14		
Chromium	6010B	0.5	0.4	1	9/22/06	10/2/06	10.4		
Cobalt	6020	0.020	0.005	5	9/22/06	10/4/06	0.176		
Copper	6020	0.10	0.02	5	9/22/06	10/4/06	2.20		
Iron	6010B	2.0	0.9	1	9/22/06	10/2/06	121		
Lead	6020	0.020	0.006	5	9/22/06	10/4/06	0.320		
Manganese	6020	0.05	0.02	5	9/22/06	10/4/06	7.54		
Mercury	7471A	0.020	0.002	1	10/2/06	10/4/06	0.055		
Selenium	7740	1.00	0.50	10	9/22/06	10/5/06	1.09		
Silver	6020	0.020	0.008	5	9/22/06	10/4/06	0.010	B	N
Thallium	6020	0.020	0.009	5	9/22/06	10/4/06	0.009	U	
Vanadium	6020	0.20	0.02	5	9/22/06	10/4/06	0.56		
Zinc	6020	0.50	0.06	5	9/22/06	10/4/06	67.8		

Comments:

## METALS

-1-

## INORGANIC ANALYSIS DATA SHEET

Client: Tetra Tech, Incorporated

Service Request: K0607294

Project No.: Project 838

Date Collected: 08/19/06

Project Name: MuliwaiTissue

Date Received: 08/29/06

Matrix: ANIMAL T

Units: mg/kg

Basis: Dry

Sample Name: NW6

Lab Code: K0607294-030

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6020	2.0	0.2	5	9/22/06	10/4/06	3.8		
Antimony	6020	0.05	0.02	5	9/22/06	10/4/06	0.02	U	N
Arsenic	6020	0.49	0.05	5	9/22/06	10/4/06	53.0		
Barium	6020	0.05	0.03	5	9/22/06	10/4/06	1.51		
Beryllium	6020	0.020	0.003	5	9/22/06	10/4/06	0.003	U	
Cadmium	6020	0.02	0.02	5	9/22/06	10/4/06	0.20		
Chromium	6010B	0.5	0.4	1	9/22/06	10/2/06	2.7		
Cobalt	6020	0.020	0.005	5	9/22/06	10/4/06	0.109		
Copper	6020	0.10	0.02	5	9/22/06	10/4/06	2.87		
Iron	6010B	2.0	0.9	1	9/22/06	10/2/06	68.4		
Lead	6020	0.020	0.006	5	9/22/06	10/4/06	0.626		
Manganese	6020	0.05	0.02	5	9/22/06	10/4/06	4.17		
Mercury	7471A	0.019	0.002	1	10/2/06	10/4/06	0.035		
Selenium	7740	0.97	0.49	10	9/22/06	10/5/06	0.98		
Silver	6020	0.020	0.008	5	9/22/06	10/4/06	0.008	U	N
Thallium	6020	0.020	0.009	5	9/22/06	10/4/06	0.009	U	
Vanadium	6020	0.20	0.02	5	9/22/06	10/4/06	0.35		
Zinc	6020	0.49	0.06	5	9/22/06	10/4/06	77.0		

Comments:

## METALS

-1-

## INORGANIC ANALYSIS DATA SHEET

Client: Tetra Tech, Incorporated

Service Request: K0607294

Project No.: Project 838

Date Collected: 08/19/06

Project Name: MuliwaiTissue

Date Received: 08/29/06

Matrix: ANIMAL T

Units: mg/kg

Basis: Dry

Sample Name: NW7

Lab Code: K0607294-031

Analyte	Analysis Method	MRL	MDL	Dil.	Date Extracted	Date Analyzed	Result	C	Q
Aluminum	6020	2.0	0.2	5	9/22/06	10/4/06	9.1		
Antimony	6020	0.05	0.02	5	9/22/06	10/4/06	0.02	U	N
Arsenic	6020	0.49	0.05	5	9/22/06	10/4/06	6.62		
Barium	6020	0.05	0.03	5	9/22/06	10/4/06	1.66		
Beryllium	6020	0.020	0.003	5	9/22/06	10/4/06	0.003	U	
Cadmium	6020	0.02	0.02	5	9/22/06	10/4/06	0.09		
Chromium	6010B	0.5	0.4	1	9/22/06	10/2/06	4.9		
Cobalt	6020	0.020	0.005	5	9/22/06	10/4/06	0.141		
Copper	6020	0.10	0.02	5	9/22/06	10/4/06	1.86		
Iron	6010B	2.0	0.9	1	9/22/06	10/2/06	83.7		
Lead	6020	0.020	0.006	5	9/22/06	10/4/06	0.463		
Manganese	6020	0.05	0.02	5	9/22/06	10/4/06	4.82		
Mercury	7471A	0.020	0.002	1	10/2/06	10/4/06	0.027		
Selenium	7740	0.97	0.49	10	9/22/06	10/5/06	0.94	B	
Silver	6020	0.020	0.008	5	9/22/06	10/4/06	0.008	U	N
Thallium	6020	0.020	0.009	5	9/22/06	10/4/06	0.009	U	
Vanadium	6020	0.20	0.02	5	9/22/06	10/4/06	0.35		
Zinc	6020	0.49	0.06	5	9/22/06	10/4/06	74.5		

Comments: