TETRA TECH, INC.

September 2, 2020

Lynn Nakashima
Department of Toxic Substances Control
700 Heinz Avenue, Suite 200C
Berkeley, California 94710

Via email: lnakashima@dtsc.ca.gov

Subject: Northern Regional Library Facility (NRLF) Phase 4
Bio-Retention Pond Soil Sampling Results
Richmond Field Station, University of California, Berkeley

Dear Ms. Nakashima:

Tetra Tech, Inc. was contracted by the University of California, Berkeley to conduct sampling activities at the Richmond Field Station associated with the construction of the Northern Regional Library Facility (NRLF) Phase 4. The objective of this sampling effort was to characterize soil remaining in place under the bio-retention pond stormwater mitigation feature. The bio-retention pond is located southeast of the new NRLF Phase 4 building, as shown on the attached figure. The soil sampling was conducted in accordance with the *Final Soil Management Plan, Revision 2*, dated December 31, 2019 (SMP) and the revised Sampling Approach Letter dated December 3, 2019. Consistent with the SMP, UC Berkeley submitted SMP Form A to DTSC dated October 25, 2019 and Form B dated November 21, 2019.

This letter provides the rationale for the selected sampling location and depths, a summary of field sampling protocols, analytical methods and results, and conclusions.

Sample Location and Depths

The project is located within SMP Areas 13 and 17, which per the BMP, Table C-3, are considered "low sampling density areas" for which a minimum of one sample location per 15,625 square feet is required. The project footprint is approximately 6,220 square feet and 2 feet below the existing grade. The sample location is shown on the attached figure. Samples were collected from one location from the depths of 0 – 0.5 and 2.0 – 2.5 feet below the depth of the planned pond excavation activities. These sample depths allow for documentation of potential residual soil contamination beneath the excavation per the SMP.

Field Sampling Protocols

The soil samples were collected on June 2, 2020. The soil samples were collected while an excavator associated with the NRLF construction project was available on-site. The excavator operator dug a narrow trench to 2.5 feet below ground surface at the sample location, and a disposable plastic scoop was used to collect each soil sample. All foreign materials (plants, debris, pebbles, or rocks) were removed prior to placing each sample into a 16-ounce glass jar. The sample jars were labeled and packed into an

insulated cooler and shipped under chain-of-custody to APPL Labs in Clovis, California. A copy of the chain-of-custody form is included within the laboratory results included as an attachment to this letter.

Analytical Methods and Results

Chemicals of potential concern at SMP Areas 13 and 17 are defined within the SMP, Table C-3, as arsenic, lead, mercury, polycyclic aromatic hydrocarbons (PAH), and polychlorinated biphenyls (PCB). The samples were analyzed using the U.S. Environmental Protection Agency (EPA) methods below.

- Arsenic, lead, and mercury analysis by EPA 6020A/7471B
- PCB analysis by EPA 8082A/Soxhlet Extraction 3540C
- PAH analysis by EPA 8270D SIM

Analytical results were compared to Category I and Category II Screening Criteria presented in the SMP, Table C-1. All PCB and PAH results were non-detect. Metals results are presented below.

Sample	Arsenic	Lead	Mercury
Category I *Category II*	*16 mg/kg* *16 mg/kg*	*320 mg/kg* *800 mg/kg*	*39.6 mg/kg* *396 mg/kg*
NRLF-BIO-0-0.5	6.0 mg/kg	6.9 mg/kg	0.062 mg/kg
NRLF-BIO-2-2.5	9.0 mg/kg	6.5 mg/kg	0.13 mg/kg

Note:

mg/kg milligrams per kilogram

Complete analytical results are presented as an attachment to this letter.

Conclusions

All sample results are below Category I and II Screening Criteria; no further action is required under the SMP. Sample results will be maintained within UC Berkeley files for future reference. SMP Form B is included as an attachment.

If you have any questions or comments regarding this submittal, please call me at (415) 497-9060.

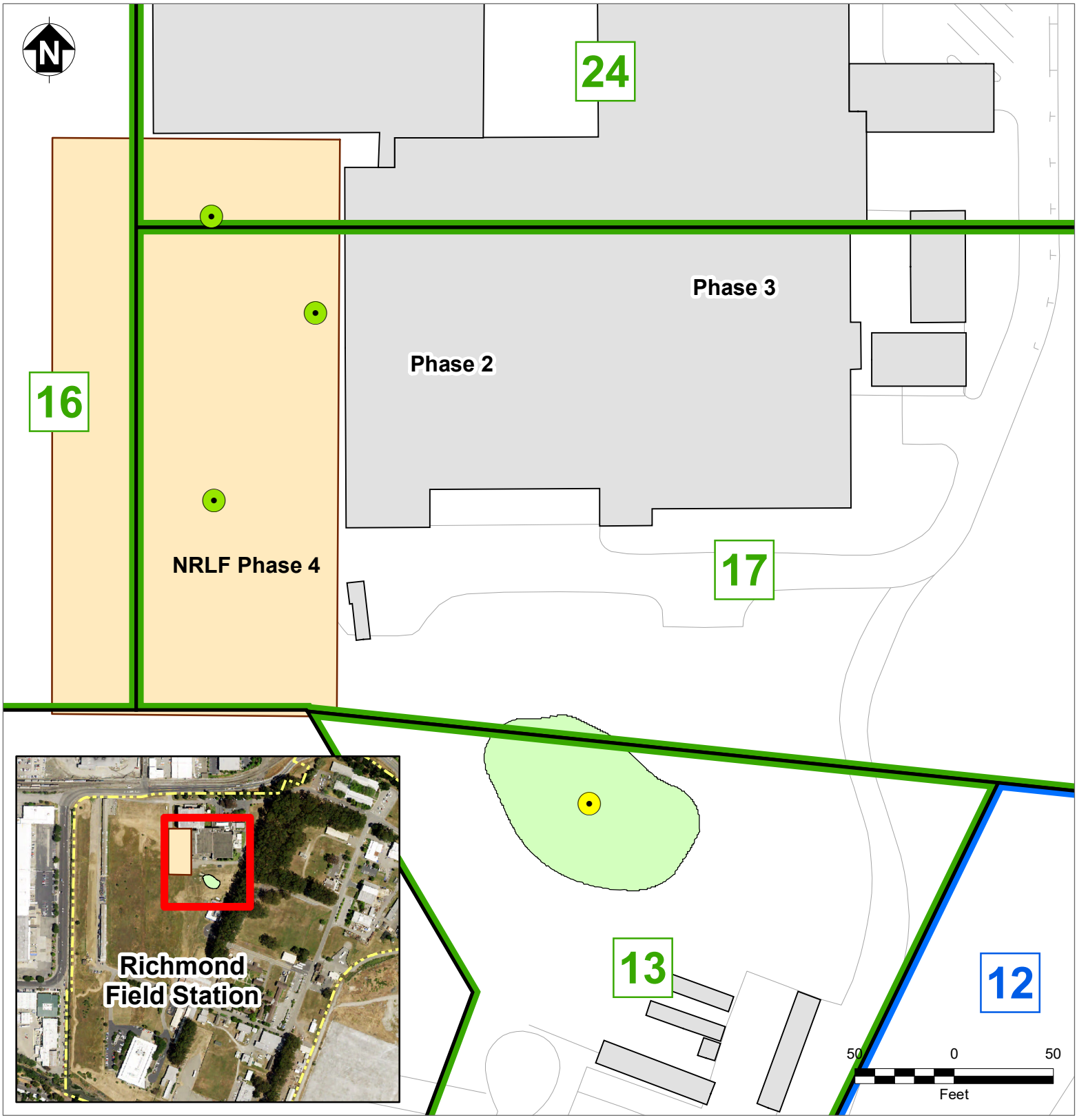
Sincerely,

Jason Brodersen, PG
Project Manager

Attachments: Sample Location Figure
SMP Form B
Analytical Results

cc: Alicia Bihler, UC Berkeley EH&S

Tetra Tech, Inc.
1999 Harrison Street, Suite 500, Oakland, CA 94612
Tel 510.302.6300 Fax 510.433.0830
www.tetratech.com



- Sample Location
- Sampled on Aug 10, 2018
- RFS Property Boundary
- Bio-retention Area
- NRLF Phase 4
- Buildings

SMP Area Boundaries and Identifiers with Density Protocol

- High Density Sampling Area
- Low Density Sampling Area

Berkeley EH&S

University of California, Berkeley
Richmond Field Station

NRLF Bio-Retention Pond Sampling Location

Richmond, CA Southeast Shoreline

Note:
NRLF Northern Regional Library Facility

SMP FORM B: SAMPLING, DATA EVALUATION, SOIL MANAGEMENT ACTION

Project Name:

Tracking Number: SMP Project 201910NRLFP4-Retention Revision Number: NA

SMP Form B Initiation Date: October 25, 2019

EH&S Point of Contact: Alicia Bihler

If this form has not been approved or no activities have occurred for 1 year, the information contained herein must be reviewed and updated as necessary prior to work occurring in the project area.

1. Sampling Design (attach Sampling Strategy Memorandum)	
a. SMP Areas Affected	SMP Areas 13 and 17 *Consult SMP Figure 6*
b. Sampling Density and Planned Number of Sample Locations	Low (1 sample per 15,625 feet or 125 foot grid spacing) Area of retention basin = 6,220 sq ft, 1 Sample Location
c. Chemicals of Concern and Summary of Existing Data	As, Hg, Pb, PCBs, PAHs *Consult SMP Tables 1 and 2, and the most current groundwater report* *Include data summary in sampling strategy memorandum*
d. Sampling Depths and Intervals	**0-0.5 ft, and 2-2.5 ft bgs** *Consult SMP Section 4.1*
e. Project is within area of GW above screening criteria	Yes ☐ No ☒ If Yes, consult RAW, notify DTSC *Consult SMP Table C-2*
f. Sampling design meets all SMP prescriptive requirements	Yes ☒ No ☐ If No, DTSC concurrence received? Yes ☐ No ☐
2. Data Evaluation (Post-Sampling) (attach Data Summary Report)	
a. Sampling Design Implemented	Yes ☒ No ☐
b. Sample Results Meet Category I	Yes ☒ No ☐ *Consult SMP Table 3* If Yes, submit summary report with SMP Form B If sample results indicate unanticipated contamination or discovery, notify DTSC
c. Soil Exceeding Category I is Defined Vertically and Laterally	Yes ☐ No ☐ NA ☒ If No, consult sampling requirements or defer to excavation confirmation sampling
d. Soil Meets Category II Criteria	Yes ☐ No ☐ NA ☒ Soil proposed for on-site management requires plan Soil above Category II criteria requires excavation plan
3. Soil Management Action (attach On-Site Management or Soil Excavation Plan)	
a. On-Site Management Plan Meets SMP Requirements	Yes ☐ No ☐ *Consult SMP Section 4.3* If No, provide explanation or contact DTSC:
b. Excavation Plan Meets SMP Requirements	Yes ☐ No ☐ *Consult SMP Section 4.3* If No, provide explanation or contact DTSC:
4. SMP Form B Approval a. Greg Haet, Project Coordinator, EH&S	09/02/2020 (Signature, Date)
b. Scott Shackleton, Facilities Management, UCB, College of Engineering	S. E. Shackleton 9/2/2020 (Signature, Date)
c. Professional Civil Engineer or Geologist	Jason Brodersen, CA PG No.6262 (Name, Signature, Date, Stamp) 09/02/2020
5. References Used to Complete Form	

REGISTERED GEOLOGIST
JASON D. BRODERSEN
No. 6262
STATE OF CALIFORNIA

908 North Temperance Ave. ∇ Clovis, CA 93611 ∇ Phone 559-275-2175 ∇ Fax 559-275-4422

Certification Number: CA1312
NELAP Certification number: CA00046
DoD-ELAP Certificate number: 4064.01

Data Validation Package

July 2, 2020

Tetra Tech, Inc.
1999 Harrison St., Suite 500
Oakland, California 94612
Attn: Jason Brodersen

Title: Report of Data: Case 92362

Project: 1035582307.02 NRLF-Phase 4

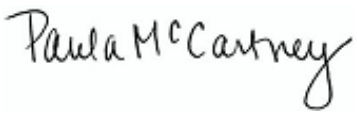
Dear Mr. Brodersen:

Two soil samples were received June 3, 2020. Written results for the requested analysis are being provided on this July 2, 2020.

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.

If you have any questions or require further information, please contact your APPL Project Manager, Gregory Salata, gsalata@applinc.com, at your convenience. Thank you for choosing APPL, Inc.

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. These test results meet all requirements of NELAC and DoD QSM. Release of the hard copy has been authorized by the Laboratory Manager or her designee, as verified by the following signature.



Paula McCartney, Laboratory Director
APPL, Inc.

PM/gs
Enclosure
cc: File

Data Validation Package
for
1035582307.02 NRLF-Phase 4
ARF 92362

TABLE OF CONTENTS

LABORATORY NAME: *APPL, Inc.*

CASE NARRATIVE

Case Narrative

ARF: 92362

Project: 1035582307.02 NRLF-Phase 4

Sample Receipt Information:

Two soil samples were received June 3, 2020, at 23.4°C. The samples were assigned Analytical Request Form (ARF) 92362. The sample numbers and requested analyses were compared to the chain of custody and e-mail correspondence. No exceptions were encountered.

Sample Preparation and Analysis:

For the EPA 8082A and EPA 8270D SIM analysis, the samples were extracted by EPA method 3540C.

For the EPA 6020A analysis, the sample was digested according to EPA method 3050B.

For the EPA 7471A analysis, the sample was digested according to the method.

Only the portion of the injection log relative to these samples is included. A full sequence log is available upon request. Measurement uncertainty can be reported upon request.

Exceptions, Abnormalities and Deviations:

EPA 8070D: The surrogates recovered below the lower control limits in both samples. The Samples were re-extracted with similar results. The original analysis was reported.

SDG	Received	Client ID	APPL ID	Collected DateTime	Matrix	Method	Method Description	Prep DateTime	Analysis DateTime
92362	06/03/20	NRLF-BIO-0-0.5	BA12291	06/02/20 8:30:00 AM	SOIL	6020A/3050B	EPA 6020A SOIL	07/01/20 9:25:00 AM	07/01/20 3:45:03 PM
92362	06/03/20	NRLF-BIO-0-0.5	BA12291	06/02/20 8:30:00 AM	SOIL	EPA 8082A	EPA 8082A SOIL	06/05/20 1:10:00 PM	06/08/20 5:05:00 PM
92362	06/03/20	NRLF-BIO-0-0.5	BA12291	06/02/20 8:30:00 AM	SOIL	EPA 7471B	MERCURY BY EPA 7471B	06/10/20 6:20:00 PM	06/11/20 11:36:08 AM
92362	06/03/20	NRLF-BIO-0-0.5	BA12291	06/02/20 8:30:00 AM	SOIL	8270D-SIM	EPA 8270D SIM	06/10/20 2:30:00 PM	06/11/20 7:16:00 PM
92362	06/03/20	NRLF-BIO-0-0.5	BA12291	06/02/20 8:30:00 AM	SOIL	CLP MOIST	Moisture	06/05/20 5:48:00 PM	06/05/20 11:44:00 PM
92362	06/03/20	NRLF-BIO-2-2.5	BA12292	06/02/20 8:35:00 AM	SOIL	6020A/3050B	EPA 6020A SOIL	07/01/20 9:25:00 AM	07/01/20 3:51:33 PM
92362	06/03/20	NRLF-BIO-2-2.5	BA12292	06/02/20 8:35:00 AM	SOIL	EPA 8082A	EPA 8082A SOIL	06/05/20 1:10:00 PM	06/08/20 5:22:00 PM
92362	06/03/20	NRLF-BIO-2-2.5	BA12292	06/02/20 8:35:00 AM	SOIL	EPA 7471B	MERCURY BY EPA 7471B	06/10/20 6:20:00 PM	06/11/20 11:37:49 AM
92362	06/03/20	NRLF-BIO-2-2.5	BA12292	06/02/20 8:35:00 AM	SOIL	8270D-SIM	EPA 8270D SIM	06/10/20 2:30:00 PM	06/12/20 12:22:00 PM
92362	06/03/20	NRLF-BIO-2-2.5	BA12292	06/02/20 8:35:00 AM	SOIL	CLP MOIST	Moisture	06/05/20 5:48:00 PM	06/05/20 11:44:00 PM

APPL Inc.
Abbreviations and Flags

FLAG	DESCRIPTION
#	Recovery or RPD outside control limits
*	Recovery or RPD outside control limits
B	Analyte detected in associated method blank
C1	Reason for correction: wrote incorrect response
C2	Reason for correction: calculated incorrectly
C3	Reason for correction: needs to be rechecked
C4	Reason for correction: data not usable
DO	Diluted out
E	Exceeds linear range
F	Estimated value
G1	Includes a wide range of hydrocarbons which does not match our gasoline standard
G10	Includes a match to hydrocarbon profiles within the range of mineral spirits
G11	Includes a match to hydrocarbon profiles within the range of JP-4
G12	Pattern does not match the gasoline standard; the carbon range for this sample is consistent with JP8
G13	Closely resembles the hydrocarbon profile of aviation gasoline
G14	Analyte concentration may be biased due to carry over
G2	Closely resembles the boiling point hydrocarbon profile consistent with weathered gasoline
G3	Includes higher boiling hydrocarbons
G4	Includes dominant peak(s) not indicative of petroleum hydrocarbons
G5	Is mainly dominant peak(s) not indicative of petroleum hydrocarbons
G6	Contains recognizable contaminant peak(s) which has been removed from quantitation
G7	Is mainly a match to hydrocarbons within the range of gasoline
G8	Closely resembles the boiling point hydrocarbon profile consistent with weathered gasoline
G9	Includes hydrocarbons within the range of kerosene
J	Estimated value
M	Matrix effect
MI1	Manual integration: integration does not follow baseline
MI2	Manual integration: non-target peak interference
MI3	Manual integration: to split a peak that was integrated as one peak by the computer.
MI4	Manual integration: to integrate a split peak
MI5	Manual integration: the whole peak or part of the peak was not integrated
MI6	Manual integration: computer integrated wrong peak
MI7	Manual integration: other – (See case narrative)
MDL	Method detection limit
ND	Not detected
NT	Non-target
Q	Acceptance criteria not met
T1 I	Includes wide range of hydrocarbons not indicative of diesel
T1 M	Is mainly wide range of hydrocarbons not necessarily indicative of diesel
T2 I	Includes lower boiling hydrocarbons, e.g. mineral spirits, kerosene, stoddard solvent, white gas
T2 M	Is mainly lower boiling hydrocarbons, e.g. mineral spirits, kerosene, stoddard solvent, white gas
T3 I	Includes higher boiling hydrocarbons, e.g. asphaltene, waste oil, motor oil, or weathered diesel fuel
T3 M	Is mainly higher boiling hydrocarbons, e.g. asphaltene, waste oil, motor oil, or weathered diesel fuel
T4 I	Includes dominant peak(s) not indicative of hydrocarbons
T4 M	Is mainly dominant peak(s) not indicative of hydrocarbons
T5	Contains recognizable contaminant peak(s) which has been removed from quantitation
T6	Is mainly a match to hydrocarbons within range of diesel fuel
T7	Closely resembles the boiling point hydrocarbon profile consistent with diesel fuel
T8	Includes a match to hydrocarbon profiles within range of diesel and kerosene fuel
T9 I	Includes non-diesel hydrocarbons within boiling point range of diesel fuel
T9 M	Is mainly non-diesel hydrocarbons within boiling point range of diesel fuel
U	Not detected
Y	Percent difference between primary and confirmation column > 40%

SAMPLE MANAGEMENT RECORDS

CHAIN OF CUSTODY,

ARF, CRF, AND

CLIENT COMMUNICATION

APPL - Analysis Request Form 92362

Client: **Tetra Tech, Inc.**
Address: **1999 Harrison St., Suite 500**
Oakland, CA 94612
Attn: **Jason Brodersen**
Phone: **415-974-9060** Fax:
Job: **1035582307.02 NRLF Phase 4**
PO #: **NA**
Chain of Custody (Y/N): **Y** # **20061**
RAD Screen (Y/N): **Y** pH (Y/N): **N**
Turn Around Type: **STD**

Received by: **RBR**
Date Received: **06/03/20** Time: **10:30**
Delivered by: **FEDEX**
Shuttle Custody Seals (Y/N): **N** Time Zone: **NA**
Chest Temp(s): **23.4°C**
Color: **B-Red**
Samples Chilled until Placed in Refrig/Freezer: **Y**
Project Manager: **Greg Salata**
QC Report Type: **DVP3/EDD/CA**
Due Date: **06/24/20**

Comments:
AN: 'U' Prints MDL report, DVP3.
Login to Jason.Brodersen@tetratech.com
PCB extract by Soxhlet, PAH by Sonication, NO MIS required.

FR: PDF to Jason.Broderen@tetratech.com
EDD: Excel to Jason.Brodersen@tetratech.com

Sample Distribution:
GC: 2-$82ADOD5S, 2-$PCBS, 2-$SIMDOD51S
Extractions: 2-_SON009S, 2-_SOX005
Metals: 2-$62ADOD5S(As,Pb), 2-$HGDOD5S
Wetlab: 2-MOIST
Other: 2-_M3050, 2-_M7471

Charges:

Invoice To:

	Client ID	APPL ID	Sampled		Analyses Requested
1.	NRLF-BIO-0-0.5	BA12291S	06/02/20	08:30	$62ADOD5S(As,Pb), $82ADOD5S, $HGDOD5S, $PCBS, $SIMDOD51S, MOIST
2.	NRLF-BIO-2-2.5	BA12292S	06/02/20	08:35	$62ADOD5S(As,Pb), $82ADOD5S, $HGDOD5S, $PCBS, $SIMDOD51S, MOIST

APPL Sample Receipt Form

ARF# **92362**

Sample	Container Type	Count	p
BA12291	[22] 16oz Jar	1	NA
BA12292	[22] 16oz Jar	1	NA

Sample	Container Type	Count	p

92362

TETRA TECH
Oakland Office

1999 Harrison Street, Suite 500
Oakland, CA 94612-3599
Phone: 510-302-6302
Fax: 510-433-0830

Chain of Custody Record No. 20061

Lab PO#:

Lab: APPL

IR@23.0/23.4

Project Name: NRLF Phase 4

Tt technical contact: Jason Brodersen

Field samplers: Mike Ferrit

Project number: 1035582307.02

Tt project manager: Jason Brodersen

Field samplers' signatures:

Sample ID	Sample Location (Pt. ID)	Date	Time	Matrix	MS / MSD	No./Container Types: 40 ml VOA	1 liter Amber	500 ml Poly	Sleeve	Glass Jar	Preservative Added	Analysis Required: VOA	SVOA	Pest/PCBs	Metals	TPH Purgeables	TPH Extractables	PLS 8082A	PAH 8270 SIM	As, Pb, Hg (6020A/7471A)
NRLF-Bio-0-0.5	NRLF	6/2/20	830	Soil						X								X	X	X
NRLF-Bio-2-2.5	NRLF	6/2/20	835	Soil						X								X	X	X

	Name (print)	Company Name	Date	Time
Relinquished by: Mike Ferrit	Mike Ferrit	Tetra Tech	6/2/20	1000
Received by:	Fed Ex			
Relinquished by:	Fed Ex			
Received by:				
Relinquished by:				
Received by:	Amanda Arnett	Appl	6-3-20	1030

Turnaround time/remarks:

Standard TAT

Fed Ex #:

WHITE-Laboratory Copy YELLOW-Sample Tracker PINK-File Copy

COOLER RECEIPT FORM **ARF: 92362**

1) Project: 1035582307.02 NRLF Phase 4 Date Received: 06/03/20

2) Coolers: Number of Coolers: 1

3) No Were custody seals present and intact?
How many? 0 Name/Date on seal?

4) YES Was there a shipping slip? Carrier name: FEDEX

5) Type of packing in cooler: X bubble wrap __ popcorn __ foam __ plastic bags __ other
__ wet ice __ dry ice __ no ice __ gel ice

6) No Were cooler temperatures acceptable?

7) Serial number of certified NIST thermometer use IR @ +0.4°C

8) Cooler temp(s): In °C. Thermometer Temp / Corrected Temp
1: 23.0/23.4 2: 3: 4: 5: 6:
7: 8: 9: 10: 11: 12:

Chain of custody:

9) YES Was a chain of custody received?

10) YES Were the custody papers complete/signed in the appropriate places?

Sample Labels:

11) YES Were all sample labels complete (sample ID, date/time of sampling, etc.)?

12) YES Did all container labels agree with custody papers?

Sample Containers:

13) YES Were all containers sealed in separate bags?

14) YES Did all containers arrive in good condition:(unbroken, no leakage, no cracked/broken lids)?

15) YES Were correct containers and preservatives used for the tests indicated?

16) YES Was a sufficient amount of sample sent for tests indicated?

17) NA Were bubbles present in volatile samples?
If yes, the following were received with air bubbles:
Larger than a pea:
Smaller than a pea:

Preservation Hold time:

18) Yes Was a sufficient amount of holding time remaining to analyze the samples?

19) NA Was the pH taken of all non-VOA preserved samples and written on the sample container?

20) NA Was the pH of acid preserved non-VOA samples < 2?

21) NA Was the pH of the "basic" preserved samples for Cyanide > 12, Sulfide >9, Hexchrom >9?

22) NO Were unpreserved VOA Vials received?

23) NA Are unpreserved VOA vials noted in the ADD TEST FIELD on the ARF?
pH strip lot number:
Lab notified if pH was not adequate:

Notes/Deficiencies:
Received out of temp @ 23.4°C. In a box, no ice.

Personnel receiving samples: AA Second reviewer: MD
Personnel labeling samples: RB
Project manager notified: RB Date/Time of notification 06/04/20 11:06:00 AM
Name of client notified: Date/Time of notification

SAMPLE RESULTS

EPA 8082A SOIL

Tetra Tech, Inc.
1999 Harrison St., Suite 500
Oakland, CA 94612

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Jason Brodersen

Project: 1035582307.02 NRLF Phase 4

ARF: 92362

Sample ID: NRLF-BIO-0-0.5

APPL ID: BA12291

Sample Collection Date: 06/02/20

QCG: #82ADO-200605A-253363

Method	Analyte	Result	RL	MDL	Units	Extraction Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 19.9 Percent Moisture.)							
EPA 8082A	AROCLOR 1016	12.00 U	62.0	12.00	ug/kg	06/05/20	06/08/20
EPA 8082A	AROCLOR 1221	7.50 U	62.0	7.50	ug/kg	06/05/20	06/08/20
EPA 8082A	AROCLOR 1232	4.50 U	62.0	4.50	ug/kg	06/05/20	06/08/20
EPA 8082A	AROCLOR 1242	4.50 U	62.0	4.50	ug/kg	06/05/20	06/08/20
EPA 8082A	AROCLOR 1248	4.50 U	62.0	4.50	ug/kg	06/05/20	06/08/20
EPA 8082A	AROCLOR 1254	4.50 U	62.0	4.50	ug/kg	06/05/20	06/08/20
EPA 8082A	AROCLOR 1260	4.50 U	62.0	4.50	ug/kg	06/05/20	06/08/20
EPA 8082A	AROCLOR 1262	7.50 U	62.0	7.50	ug/kg	06/05/20	06/08/20
EPA 8082A	AROCLOR 1268	7.50 U	62.0	7.50	ug/kg	06/05/20	06/08/20
EPA 8082A	TOTAL PCBS	4.50 U	62.0	4.50	ug/kg	06/05/20	06/08/20
EPA 8082A	SURROGATE: DECACHLOROBIPHEN	98.9	60-125		%	06/05/20	06/08/20

Quant Method: PCB0312.M
Run #: 0528209
Instrument: Lucy
Sequence: 200528
Dilution Factor: 1
Initials: SSE

Printed: 06/09/20 2:56:49 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

EPA 8082A SOIL

Tetra Tech, Inc.
1999 Harrison St., Suite 500
Oakland, CA 94612

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Jason Brodersen

Project: 1035582307.02 NRLF Phase 4

ARF: 92362

Sample ID: NRLF-BIO-2-2.5

APPL ID: BA12292

Sample Collection Date: 06/02/20

QCG: #82ADO-200605A-253363

Method	Analyte	Result	RL	MDL	Units	Extraction Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 17.0 Percent Moisture.)							
EPA 8082A	AROCLOR 1016	12.00 U	60.0	12.00	ug/kg	06/05/20	06/08/20
EPA 8082A	AROCLOR 1221	7.20 U	60.0	7.20	ug/kg	06/05/20	06/08/20
EPA 8082A	AROCLOR 1232	4.30 U	60.0	4.30	ug/kg	06/05/20	06/08/20
EPA 8082A	AROCLOR 1242	4.30 U	60.0	4.30	ug/kg	06/05/20	06/08/20
EPA 8082A	AROCLOR 1248	4.30 U	60.0	4.30	ug/kg	06/05/20	06/08/20
EPA 8082A	AROCLOR 1254	4.30 U	60.0	4.30	ug/kg	06/05/20	06/08/20
EPA 8082A	AROCLOR 1260	4.30 U	60.0	4.30	ug/kg	06/05/20	06/08/20
EPA 8082A	AROCLOR 1262	7.20 U	60.0	7.20	ug/kg	06/05/20	06/08/20
EPA 8082A	AROCLOR 1268	7.20 U	60.0	7.20	ug/kg	06/05/20	06/08/20
EPA 8082A	TOTAL PCBS	4.30 U	60.0	4.30	ug/kg	06/05/20	06/08/20
EPA 8082A	SURROGATE: DECACHLOROBIPHEN	104	60-125		%	06/05/20	06/08/20

Quant Method: PCB0312.M
Run #: 0528210
Instrument: Lucy
Sequence: 200528
Dilution Factor: 1
Initials: SSE

Printed: 06/09/20 2:56:49 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

EPA 8270D SIM

Tetra Tech, Inc.
1999 Harrison St., Suite 500
Oakland, CA 94612

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Jason Brodersen
Project: 1035582307.02 NRLF Phase 4
ARF: 92362
Sample ID: NRLF-BIO-0-0.5
APPL ID: BA12291
Sample Collection Date: 06/02/20
QCG: #SIMDO-200610A-253495

Method	Analyte	Result	RL	MDL	Units	Extraction Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 19.9 Percent Moisture.)							
8270D-SIM	1-METHYLNAPHTHALENE	1.20 U	6.2	1.20	ug/kg	06/10/20	06/11/20
8270D-SIM	2-METHYLNAPHTHALENE	1.20 U	6.2	1.20	ug/kg	06/10/20	06/11/20
8270D-SIM	ACENAPHTHENE	1.20 U	6.2	1.20	ug/kg	06/10/20	06/11/20
8270D-SIM	ACENAPHTHYLENE	1.10 U	6.2	1.10	ug/kg	06/10/20	06/11/20
8270D-SIM	ANTHRACENE	1.00 U	6.2	1.00	ug/kg	06/10/20	06/11/20
8270D-SIM	BENZO(A)ANTHRACENE	1.10 U	6.2	1.10	ug/kg	06/10/20	06/11/20
8270D-SIM	BENZO(A)PYRENE	1.20 U	6.2	1.20	ug/kg	06/10/20	06/11/20
8270D-SIM	BENZO(B)FLUORANTHENE	1.40 U	6.2	1.40	ug/kg	06/10/20	06/11/20
8270D-SIM	BENZO(G,H,I)PERYLENE	1.70 U	6.2	1.70	ug/kg	06/10/20	06/11/20
8270D-SIM	BENZO(K)FLUORANTHENE	1.30 U	6.2	1.30	ug/kg	06/10/20	06/11/20
8270D-SIM	CHRYSENE	1.10 U	6.2	1.10	ug/kg	06/10/20	06/11/20
8270D-SIM	DIBENZ (A,H) ANTHRACENE	1.10 U	6.2	1.10	ug/kg	06/10/20	06/11/20
8270D-SIM	FLUORANTHENE	1.50 U	6.2	1.50	ug/kg	06/10/20	06/11/20
8270D-SIM	FLUORENE	1.20 U	6.2	1.20	ug/kg	06/10/20	06/11/20
8270D-SIM	INDENO(1,2,3-CD)PYRENE	1.10 U	6.2	1.10	ug/kg	06/10/20	06/11/20
8270D-SIM	NAPHTHALENE	1.10 U	6.2	1.10	ug/kg	06/10/20	06/11/20
8270D-SIM	PHENANTHRENE	1.40 U	6.2	1.40	ug/kg	06/10/20	06/11/20
8270D-SIM	PYRENE	1.50 U	6.2	1.50	ug/kg	06/10/20	06/11/20
8270D-SIM	SURROGATE: 2-METHYLNAPHTHALE	25.9 #	39-114		%	06/10/20	06/11/20
8270D-SIM	SURROGATE: FLUORANTHENE-D10	33.0 #	55-119		%	06/10/20	06/11/20

= Recovery (or RPD) is outside QC limits.

Quant Method: L0204.M
Run #: 0520L248
Instrument: Linus
Sequence: L200520
Dilution Factor: 1
Initials: MA

Printed: 06/12/20 2:21:26 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

EPA 8270D SIM

Tetra Tech, Inc.
1999 Harrison St., Suite 500
Oakland, CA 94612

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Jason Brodersen
Project: 1035582307.02 NRLF Phase 4
ARF: 92362
Sample ID: NRLF-BIO-2-2.5
APPL ID: BA12292
Sample Collection Date: 06/02/20
QCG: #SIMDO-200610A-253495

Method	Analyte	Result	RL	MDL	Units	Extraction Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 17.0 Percent Moisture.)							
8270D-SIM	1-METHYLNAPHTHALENE	1.20 U	6.0	1.20	ug/kg	06/10/20	06/12/20
8270D-SIM	2-METHYLNAPHTHALENE	1.10 U	6.0	1.10	ug/kg	06/10/20	06/12/20
8270D-SIM	ACENAPHTHENE	1.20 U	6.0	1.20	ug/kg	06/10/20	06/12/20
8270D-SIM	ACENAPHTHYLENE	1.10 U	6.0	1.10	ug/kg	06/10/20	06/12/20
8270D-SIM	ANTHRACENE	1.00 U	6.0	1.00	ug/kg	06/10/20	06/12/20
8270D-SIM	BENZO(A)ANTHRACENE	1.10 U	6.0	1.10	ug/kg	06/10/20	06/12/20
8270D-SIM	BENZO(A)PYRENE	1.10 U	6.0	1.10	ug/kg	06/10/20	06/12/20
8270D-SIM	BENZO(B)FLUORANTHENE	1.30 U	6.0	1.30	ug/kg	06/10/20	06/12/20
8270D-SIM	BENZO(G,H,I)PERYLENE	1.60 U	6.0	1.60	ug/kg	06/10/20	06/12/20
8270D-SIM	BENZO(K)FLUORANTHENE	1.30 U	6.0	1.30	ug/kg	06/10/20	06/12/20
8270D-SIM	CHRYSENE	1.00 U	6.0	1.00	ug/kg	06/10/20	06/12/20
8270D-SIM	DIBENZ (A,H) ANTHRACENE	1.10 U	6.0	1.10	ug/kg	06/10/20	06/12/20
8270D-SIM	FLUORANTHENE	1.40 U	6.0	1.40	ug/kg	06/10/20	06/12/20
8270D-SIM	FLUORENE	1.20 U	6.0	1.20	ug/kg	06/10/20	06/12/20
8270D-SIM	INDENO(1,2,3-CD)PYRENE	1.10 U	6.0	1.10	ug/kg	06/10/20	06/12/20
8270D-SIM	NAPHTHALENE	1.10 U	6.0	1.10	ug/kg	06/10/20	06/12/20
8270D-SIM	PHENANTHRENE	1.30 U	6.0	1.30	ug/kg	06/10/20	06/12/20
8270D-SIM	PYRENE	1.50 U	6.0	1.50	ug/kg	06/10/20	06/12/20
8270D-SIM	SURROGATE: 2-METHYLNAPHTHALE	32.7 #	39-114		%	06/10/20	06/12/20
8270D-SIM	SURROGATE: FLUORANTHENE-D10	43.3 #	55-119		%	06/10/20	06/12/20

= Recovery (or RPD) is outside QC limits.

Quant Method: L0204.M
Run #: 0520L261
Instrument: Linus
Sequence: L200520
Dilution Factor: 1
Initials: MA

Printed: 06/12/20 2:21:26 PM
APPL-F1-SC-MCRes/MCPQL-REG MDLs

Metals Analysis

Tetra Tech, Inc.
1999 Harrison St., Suite 500
Oakland, CA 94612

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Jason Brodersen

Project: 1035582307.02 NRLF Phase 4

ARF: 92362

Sample ID: NRLF-BIO-0-0.5

APPL ID: BA12291

Sample Collection Date: 06/02/20

Method	Analyte	Result	RL	MDL	Units	DF	Prep Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 19.9 Percent Moisture.)								
6020A/3050B	ARSENIC (AS)	6.0	0.6	0.09	mg/Kg	1	07/01/20	07/01/20
6020A/3050B	LEAD (PB)	6.9	0.1	0.03	mg/Kg	1	07/01/20	07/01/20
EPA 7471B	MERCURY (HG)	0.062 J	0.12	0.012	mg/Kg	1	06/10/20	06/11/20

J = Estimated value.

Printed: 07/02/20 3:37:31 PM

PL-F1-SC-MCRes/MCPQL-REG MDLs

Metals Analysis

Tetra Tech, Inc.
1999 Harrison St., Suite 500
Oakland, CA 94612

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Attn: Jason Brodersen

Project: 1035582307.02 NRLF Phase 4

ARF: 92362

Sample ID: NRLF-BIO-2-2.5

APPL ID: BA12292

Sample Collection Date: 06/02/20

Method	Analyte	Result	RL	MDL	Units	DF	Prep Date	Analysis Date
(Solid Concentrations and Limits have been adjusted to reflect 17.0 Percent Moisture.)								
6020A/3050B	ARSENIC (AS)	9.0	0.6	0.08	mg/Kg	1	07/01/20	07/01/20
6020A/3050B	LEAD (PB)	6.5	0.1	0.02	mg/Kg	1	07/01/20	07/01/20
EPA 7471B	MERCURY (HG)	0.13	0.12	0.012	mg/Kg	1	06/10/20	06/11/20

Printed: 07/02/20 3:37:31 PM

PL-F1-SC-MCRes/MCPQL-REG MDLs

Wetlab Results

ARF: 92362

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Tetra Tech, Inc.
1999 Harrison St., Suite 500
Oakland, CA 94612

Attn: Jason Brodersen

Method	Analyte	Result	RL	MDL	Units	Prep Date	Analysis Date
APPL ID: BA12291	-Client Sample ID: NRLF-BIO-0-0.5		-Sample Collection Date: 06/02/20			Project: 1035582307.02 NRLF P	
CLP MOIST	MOISTURE	19.9	2.0		%	06/05/20	06/05/20
APPL ID: BA12292	-Client Sample ID: NRLF-BIO-2-2.5		-Sample Collection Date: 06/02/20			Project: 1035582307.02 NRLF P	
CLP MOIST	MOISTURE	17.0	2.0		%	06/05/20	06/05/20

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QC FORMS

Method Blank
EPA 8082A SOIL

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **200605S-12291 - 253363**
Batch ID: #82ADO-200605A

Sample Type	Analyte	Result	RL	MDL	Units	Extraction Date	Analysis Date
BLANK	AROCLOR 1016	10.00 U	50.0	10.00	ug/kg	06/05/20	06/08/20
BLANK	AROCLOR 1221	6.00 U	50.0	6.00	ug/kg	06/05/20	06/08/20
BLANK	AROCLOR 1232	3.60 U	50.0	3.60	ug/kg	06/05/20	06/08/20
BLANK	AROCLOR 1242	3.60 U	50.0	3.60	ug/kg	06/05/20	06/08/20
BLANK	AROCLOR 1248	3.60 U	50.0	3.60	ug/kg	06/05/20	06/08/20
BLANK	AROCLOR 1254	3.60 U	50.0	3.60	ug/kg	06/05/20	06/08/20
BLANK	AROCLOR 1260	3.60 U	50.0	3.60	ug/kg	06/05/20	06/08/20
BLANK	AROCLOR 1262	6.00 U	50.0	6.00	ug/kg	06/05/20	06/08/20
BLANK	AROCLOR 1268	6.00 U	50.0	6.00	ug/kg	06/05/20	06/08/20
BLANK	TOTAL PCBS	3.60 U	50.0	3.60	ug/kg	06/05/20	06/08/20
BLANK	SURROGATE: DECACHLOROBIPHEN	104	60-125		%	06/05/20	06/08/20

Quant Method: PCB0312.M
Run #: 0528206
Instrument: Lucy
Sequence: 200528
Initials: SSE

GC SC-Blank-REG MDLs
Printed: 06/09/20 2:56:48 PM

Laboratory Control Spike Recovery
EPA 8082A SOIL

APPL ID: **200605S-12291 LCS - 253363**
Batch ID: #82ADO-200605A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/kg	SPK Result ug/kg	SPK % Recovery	Recovery Limits
AROCLOR 1016	1250	1140	91.2	47-134
AROCLOR 1260	1250	1310	105	53-140
SURROGATE: DECACHLOROBIPHENYL	500	527	105	60-125

Comments:

Primary	SPK
Quant Method :	PCB0312.M
Extraction Date :	06/05/20
Analysis Date :	06/08/20
Instrument :	Lucy
Run :	0528207
Initials :	SSE

Printed: 06/09/20 2:56:50 PM
APPL Standard LCS

8270D-SIM

Form 2 & 8

Surrogate Recovery

Lab Name: APPL, Inc. SDG No: 92362

Case No: 92362 Date Analyzed: 06/11/20

Matrix: SOIL Instrument: Linus

APPL ID.	Client Sample No.	SURROGATE: 2-METHYLNAPHTHALENE-D10 (S)			SURROGATE: FLUORANTHENE-D10 (S)		
		Limits	Result	Qualifier	Limits	Result	Qualifier
200610A-BLK	Blank	39-114	63.1		55-119	75.4	
200610A-LCS	Lab Control Spike	39-114	73.2		55-119	78.0	
BA12291	NRLF-BIO-0-0.5	39-114	25.9	#	55-119	33.0	#
BA12292	NRLF-BIO-2-2.5	39-114	32.7	#	55-119	43.3	#

Comments: Batch: #SIMDO-200610A

= Recovery outside of Control Limits on Sample.

8270D-SIM

Form 4

Blank Summary

Lab Name:	APPL, Inc.	SDG No:	92362
Case No:	92362	Date Analyzed:	06/11/20
Matrix:	SOIL	Instrument:	Linus
Blank ID:	200610A-BLK	Time Analyzed:	1810

APPL ID.	Client Sample No.	File ID.	Date Analyzed
200610A-BLK	Blank	0520L245	06/11/20 1810
200610A-LCS	Lab Control Spike	0520L246	06/11/20 1832
BA12291	NRLF-BIO-0-0.5	0520L248	06/11/20 1916
BA12292	NRLF-BIO-2-2.5	0520L261	06/12/20 1222

Comments: Batch: #SIMDO-200610A

Method Blank
EPA 8270D SIM

APPL Inc.
908 North Temperance Avenu
Clovis, CA 93611

Blank Name/QCG: **200610S-12291 - 253495**
Batch ID: #SIMDO-200610A

Sample Type	Analyte	Result	RL	MDL	Units	Extraction Date	Analysis Date
BLANK	1-METHYLNAPHTHALENE	0.96 U	5.0	0.96	ug/kg	06/10/20	06/11/20
BLANK	2-METHYLNAPHTHALENE	0.94 U	5.0	0.94	ug/kg	06/10/20	06/11/20
BLANK	ACENAPHTHENE	0.97 U	5.0	0.97	ug/kg	06/10/20	06/11/20
BLANK	ACENAPHTHYLENE	0.89 U	5.0	0.89	ug/kg	06/10/20	06/11/20
BLANK	ANTHRACENE	0.83 U	5.0	0.83	ug/kg	06/10/20	06/11/20
BLANK	BENZO(A)ANTHRACENE	0.91 U	5.0	0.91	ug/kg	06/10/20	06/11/20
BLANK	BENZO(A)PYRENE	0.93 U	5.0	0.93	ug/kg	06/10/20	06/11/20
BLANK	BENZO(B)FLUORANTHENE	1.11 U	5.0	1.11	ug/kg	06/10/20	06/11/20
BLANK	BENZO(G,H,I)PERYLENE	1.34 U	5.0	1.34	ug/kg	06/10/20	06/11/20
BLANK	BENZO(K)FLUORANTHENE	1.04 U	5.0	1.04	ug/kg	06/10/20	06/11/20
BLANK	CHRYSENE	0.85 U	5.0	0.85	ug/kg	06/10/20	06/11/20
BLANK	DIBENZ (A,H) ANTHRACENE	0.92 U	5.0	0.92	ug/kg	06/10/20	06/11/20
BLANK	FLUORANTHENE	1.20 U	5.0	1.20	ug/kg	06/10/20	06/11/20
BLANK	FLUORENE	1.00 U	5.0	1.00	ug/kg	06/10/20	06/11/20
BLANK	INDENO(1,2,3-CD)PYRENE	0.90 U	5.0	0.90	ug/kg	06/10/20	06/11/20
BLANK	NAPHTHALENE	0.89 U	5.0	0.89	ug/kg	06/10/20	06/11/20
BLANK	PHENANTHRENE	1.10 U	5.0	1.10	ug/kg	06/10/20	06/11/20
BLANK	PYRENE	1.24 U	5.0	1.24	ug/kg	06/10/20	06/11/20
BLANK	SURROGATE: 2-METHYLNAPHTHALE	63.1	39-114		%	06/10/20	06/11/20
BLANK	SURROGATE: FLUORANTHENE-D10	75.4	55-119		%	06/10/20	06/11/20

Quant Method:L0204.M
Run #:0520L245
Instrument:Linus
Sequence:L200520
Initials:MA

GC SC-Blank-REG MDLs
Printed: 06/12/20 2:12:38 PM

8270D-SIM

Form 4

LCS Summary

Lab Name:	APPL, Inc.	SDG No:	92362
Case No:	92362	Date Analyzed:	06/11/20
Matrix:	SOIL	Instrument:	Linus
LCS ID:	200610A-LCS	Time Analyzed:	1832

APPL ID.	Client Sample No.	File ID.	Date Analyzed
200610A-BLK	Blank	0520L245	06/11/20 1810
200610A-LCS	Lab Control Spike	0520L246	06/11/20 1832
BA12291	NRLF-BIO-0-0.5	0520L248	06/11/20 1916
BA12292	NRLF-BIO-2-2.5	0520L261	06/12/20 1222

Comments: Batch: #SIMDO-200610A

Laboratory Control Spike Recovery
EPA 8270D SIM

APPL ID: **200610S-12291 LCS - 253495**
Batch ID: #SIMDO-200610A

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Compound Name	Spike Level ug/kg	SPK Result ug/kg	SPK % Recovery	Recovery Limits
1-METHYLNAPHTHALENE	250	177	70.8	43-111
2-METHYLNAPHTHALENE	250	180	72.0	39-114
ACENAPHTHENE	250	176	70.4	44-111
ACENAPHTHYLENE	250	188	75.2	39-116
ANTHRACENE	250	190	76.0	50-114
BENZO(A)ANTHRACENE	250	215	86.0	54-122
BENZO(A)PYRENE	250	198	79.2	50-125
BENZO(B)FLUORANTHENE	250	212	84.8	53-128
BENZO(G,H,I)PERYLENE	250	194	77.6	49-127
BENZO(K)FLUORANTHENE	250	184	73.6	56-123
CHRYSENE	250	179	71.6	57-118
DIBENZ (A,H) ANTHRACENE	250	208	83.2	50-129
FLUORANTHENE	250	192	76.8	55-119
FLUORENE	250	193	77.2	47-114
INDENO(1,2,3-CD)PYRENE	250	214	85.6	49-130
NAPHTHALENE	250	161	64.4	38-111
PHENANTHRENE	250	184	73.6	49-113
PYRENE	250	193	77.2	55-117
SURROGATE: 2-METHYLNAPHTHALEN	250	183	73.2	39-114
SURROGATE: FLUORANTHENE-D10 (S	250	195	78.0	55-119

Comments:

Primary	SPK
Quant Method :	L0204.M
Extraction Date :	06/10/20
Analysis Date :	06/11/20
Instrument :	Linus
Run :	0520L246
Initials :	MA

Printed: 06/12/20 2:12:24 PM
APPL Standard LCS

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No:
Matrix: Water
ID: 0204L002.D

SDG No:
Date Analyzed: 02/04/20
Instrument: Linus
Time Analyzed: 9:32

	Client Sample No.	APPL ID.	File ID.	Date Analyzed
1		0.1 SIM 02/03/20	0204L003.D	02/04/20 9:48
2		0.2 SIM 02/03/20	0204L004.D	02/04/20 10:09
3		0.5 SIM 02/03/20	0204L005.D	02/04/20 10:31
4		1 SIM 02/03/20	0204L006.D	02/04/20 10:53
5		5 SIM 02/03/20	0204L007.D	02/04/20 11:15
6		10 SIM 02/03/20	0204L008.D	02/04/20 11:37
7		50 SIM 02/03/20	0204L009.D	02/04/20 11:59
8		100 SIM 02/03/20	0204L010.D	02/04/20 12:21
9		SS SIM 02/03/20	0204L011.D	02/04/20 13:21
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

m/e		
51	9.95 - 80.1% of mass 198	18.6
68	0 - 2.05% of mass 69	0.0
70	0 - 2% of mass 69	0.4
127	10 - 80% of mass 198	40.9
197	0 - 2% of mass 198	0.0
198	100 - 100% of mass 198	100.0
199	5 - 9% of mass 198	6.3
275	10 - 60% of mass 198	30.0
365	1 - 100% of mass 198	4.7
441	0.01 - 24% of mass 442	15.8
442	50 - 500% of mass 198	200.3
443	15 - 24% of mass 442	19.3

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No:
Matrix: Soil
ID: 0520L218.D

SDG No:
Date Analyzed: 06/11/20
Instrument: Linus
Time Analyzed: 7:23

	Client Sample No.	APPL ID.	File ID.	Date Analyzed
1		5 SIM CCV 2/3/20 (1)	0520L219.D	06/11/20 7:39
2	Blank	200610A BLK 1/20.07G	0520L245.D	06/11/20 18:10
3	Lab Control Spike	200610A LCS-1 1/20.0	0520L246.D	06/11/20 18:32
4		BA12291S01 1/20.26G	0520L248.D	06/11/20 19:16
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

m/e		
51	9.95 - 80.1% of mass 198	15.7
68	0 - 2.05% of mass 69	0.0
70	0 - 2% of mass 69	0.3
127	10 - 80% of mass 198	36.5
197	0 - 2% of mass 198	0.0
198	100 - 100% of mass 198	100.0
199	5 - 9% of mass 198	6.9
275	10 - 60% of mass 198	33.4
365	1 - 100% of mass 198	4.6
441	0.01 - 24% of mass 442	15.5
442	50 - 500% of mass 198	241.6
443	15 - 24% of mass 442	19.2

Form 5
Tune Summary

Lab Name: APPL Inc.
Case No:
Matrix: Soil
ID: 0520L252.D

SDG No:
Date Analyzed: 06/12/20
Instrument: Linus
Time Analyzed: 7:33

	Client Sample No.	APPL ID.	File ID.	Date Analyzed
1		5 SIM CCV 5/22/20 (1	0520L253.D	06/12/20 7:49
2		BA12292S01 1/20.15G	0520L261.D	06/12/20 12:22
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				

m/e		
51	9.95 - 80.1% of mass 198	15.9
68	0 - 2.05% of mass 69	0.0
70	0 - 2% of mass 69	0.3
127	10 - 80% of mass 198	37.2
197	0 - 2% of mass 198	0.0
198	100 - 100% of mass 198	100.0
199	5 - 9% of mass 198	6.4
275	10 - 60% of mass 198	34.8
365	1 - 100% of mass 198	4.7
441	0.01 - 24% of mass 442	15.6
442	50 - 500% of mass 198	246.0
443	15 - 24% of mass 442	19.2

8A
INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: APPL Inc. Contract:

Lab Code: SDG No.:

Lab File ID (Standard): 0520L219.D Date Analyzed: 06/11/20

Instrument ID: Linus Time Analyzed: 7:39

GC Column: ID: Heated Purge: (Y/N)

		Napthalene-D8(IS)		Acenaphthene-D10(IS)		Phenanthrene-D10(IS)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	62051	4.07	33439	6.06	65666	7.79
	UPPER LIMIT	124102	4.24	66878	6.23	131332	7.96
	LOWER LIMIT	31026	3.90	16720	5.89	32833	7.62
	SAMPLE NO.						
01	200610A BLK 1/20.07G	71030	4.08	38336	6.07	74959	7.80
02	200610A LCS-1 1/20.07	72496	4.07	39832	6.07	79217	7.79
03	BA12291S01 1/20.26G	74967	4.08	41403	6.07	79021	7.79
04							
05							
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22							

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = -50% of internal standard area.
RT UPPER LIMIT = +0.17 minutes of internal standard RT
RT LOWER LIMIT = -0.17 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:

Lab Code: SDG No.:

Lab File ID (Standard): 0520L219.D Date Analyzed: 06/11/20

Instrument ID: Linus Time Analyzed: 7:39

GC Column: ID: Heated Purge: (Y/N)

		Chrysene-D12(IS)		Perylene-D12(IS)			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	84870	10.89	102173	13.29		
	UPPER LIMIT	169740	11.06	204346	13.46		
	LOWER LIMIT	42435	10.72	51087	13.12		
	SAMPLE NO.						
01	200610A BLK 1/20.07G	98351	10.89	118568	13.29		
02	200610A LCS-1 1/20.07	100609	10.89	121487	13.28		
03	BA12291S01 1/20.26G	104653	10.89	121179	13.28		
04							
05							
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22							

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = -50% of internal standard area.
RT UPPER LIMIT = +0.17 minutes of internal standard RT
RT LOWER LIMIT = -0.17 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:

Lab Code: SDG No.:

Lab File ID (Standard): 0520L253.D Date Analyzed: 06/12/20

Instrument ID: Linus Time Analyzed: 7:49

GC Column: ID: Heated Purge: (Y/N)

		Napthalene-D8(IS)		Acenaphthene-D10(IS)		Phenanthrene-D10(IS)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	64665	4.06	35611	6.06	71648	7.79
	UPPER LIMIT	129330	4.23	71222	6.23	143296	7.96
	LOWER LIMIT	32333	3.89	17806	5.89	35824	7.62
	SAMPLE NO.						
01	BA12292S01 1/20.15G	102103	4.06	55758	6.06	113369	7.79
02							
03							
04							
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AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = -50% of internal standard area.
RT UPPER LIMIT = +0.17 minutes of internal standard RT
RT LOWER LIMIT = -0.17 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:

Lab Code: SDG No.:

Lab File ID (Standard): 0520L253.D Date Analyzed: 06/12/20

Instrument ID: Linus Time Analyzed: 7:49

GC Column: ID: Heated Purge: (Y/N)

		Chrysene-D12(IS)		Perylene-D12(IS)			
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	12 HOUR STD	90810	10.88	107508	13.28		
	UPPER LIMIT	181620	11.05	215016	13.45		
	LOWER LIMIT	45405	10.71	53754	13.11		
	SAMPLE NO.						
01	BA12292S01 1/20.15G	146116	10.89	174600	13.28		
02							
03							
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22							

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = -50% of internal standard area.
RT UPPER LIMIT = +0.17 minutes of internal standard RT
RT LOWER LIMIT = -0.17 minutes of internal standard RT

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

6020A/3050B

Form 4

Blank Summary

Lab Name:	APPL, Inc.	SDG No:	92362
Case No:	92362	Date Analyzed:	07/01/20
Matrix:	SOIL	Instrument:	Megatron
Blank ID:	200701A-BLK	Time Analyzed:	1505

APPL ID.	Client Sample No.	File ID.	Date Analyzed
200701A-MSD	Matrix SpikeD	200701A	07/01/20 1604
200701A-MS	Matrix Spike	200701A	07/01/20 1558
200701A-LCSD	Lab Control SpikeD	200701A	07/01/20 1518
200701A-LCS	Lab Control Spike	200701A	07/01/20 1512
200701A-BLK	Blank	200701A	07/01/20 1505
BA12292	NRLF-BIO-2-2.5	200701A	07/01/20 1551
BA12291	NRLF-BIO-0-0.5	200701A	07/01/20 1545

Comments: Batch: #62ADO-200701A

EPA 7471B

Form 4

Blank Summary

Lab Name: APPL, Inc. SDG No: 92362

Case No: 92362 Date Analyzed: 06/11/20

Matrix: SOIL Instrument: Freddie

Blank ID: 200610A2-BLK Time Analyzed: 1127

APPL ID.	Client Sample No.	File ID.	Date Analyzed
200610A2-LCSD	Lab Control SpikeD	200611S	06/11/20 1131
200610A2-LCS	Lab Control Spike	200611S	06/11/20 1129
BA12292	NRLF-BIO-2-2.5	200611S	06/11/20 1137
BA12291	NRLF-BIO-0-0.5	200611S	06/11/20 1136
200610A2-BLK	Blank	200611S	06/11/20 1127

Comments: Batch: #HGDOD-200610A

METALS BLANK

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Analyte	Result	RL	MDL	Units	Prep Date	Analysis Date	QC Group
6020A	ARSENIC (AS)	0.07 U	0.5	0.07	mg/Kg	07/01/20	07/01/20	#62ADO-200701A-BA12292
6020A	LEAD (PB)	0.02 U	0.1	0.02	mg/Kg	07/01/20	07/01/20	#62ADO-200701A-BA12292
EPA 7471	MERCURY (HG)	0.010 U	0.10	0.010	mg/Kg	06/10/20	06/11/20	HGDOD-200610A2-BA12292

6020A/3050B

Form 4

LCS Summary

Lab Name: APPL, Inc. SDG No: 92362

Case No: 92362 Date Analyzed: 07/01/20

Matrix: SOIL Instrument: Megatron

LCS ID: 200701A-LCS Time Analyzed: 1512

APPL ID.	Client Sample No.	File ID.	Date Analyzed
200701A-MSD	Matrix SpikeD	200701A	07/01/20 1604
200701A-MS	Matrix Spike	200701A	07/01/20 1558
200701A-LCSD	Lab Control SpikeD	200701A	07/01/20 1518
200701A-LCS	Lab Control Spike	200701A	07/01/20 1512
200701A-BLK	Blank	200701A	07/01/20 1505
BA12292	NRLF-BIO-2-2.5	200701A	07/01/20 1551
BA12291	NRLF-BIO-0-0.5	200701A	07/01/20 1545

Comments: Batch: #62ADO-200701A

EPA 7471B

Form 4

LCS Summary

Lab Name:	APPL, Inc.	SDG No:	92362
Case No:	92362	Date Analyzed:	06/11/20
Matrix:	SOIL	Instrument:	Freddie
LCS ID:	200610A2-LCS	Time Analyzed:	1129

APPL ID.	Client Sample No.	File ID.	Date Analyzed
200610A2-LCSD	Lab Control SpikeD	200611S	06/11/20 1131
200610A2-LCS	Lab Control Spike	200611S	06/11/20 1129
BA12292	NRLF-BIO-2-2.5	200611S	06/11/20 1137
BA12291	NRLF-BIO-0-0.5	200611S	06/11/20 1136
200610A2-BLK	Blank	200611S	06/11/20 1127

Comments: Batch: #HGDOD-200610A

Laboratory Control Spike Recoveries

METALS

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Compound Name	Spike Lvl mg/Kg	SPK Res mg/Kg	DUP Res mg/Kg	SPK % Recov	DUP % Recov	RPD	RPD Max	QC Limits	Extract Date-Spk	Analysis Date-Spk	Extract Date-Dup	Analysis Date-Dup	QC Group
EPA 6020A	ARSENIC (AS)	25.0	25.0	24.5	100	98.0	2.0	20	82-118	07/01/20	07/01/20	07/01/20	07/01/20	#62ADO-200701A-BA1229
EPA 6020A	LEAD (PB)	25.0	24.9	24.9	99.6	99.6	0.0	20	84-118	07/01/20	07/01/20	07/01/20	07/01/20	#62ADO-200701A-BA1229
EPA 7471B	MERCURY (HG)	0.667	0.78	0.76	117	114	2.6	20	80-124	06/10/20	06/11/20	06/10/20	06/11/20	#HGDOD-200610A2-BA12

Comments:

Matrix Spike Recoveries

METALS

APPL ID: **200701S-12292 MS - 254103**

Sample ID: BA12292

Client ID: NRLF-BIO-2-2.5

APPL Inc.
908 North Temperance Avenue
Clovis, CA 93611

Method	Compound Name	Spike Lvl mg/Kg	Matrix Res mg/Kg	SPK Res mg/Kg	DUP Res mg/Kg	SPK % Recovery	DUP % Recovery	RPD	RPD Max	Recovery Limits	Extract Date-Spk	Analysis Date-Spk	Extract Date-Dup	Analysis Date-Dup	QC Group	QC Sample
EPA 6020A	ARSENIC (AS)	50.0	7.5	53.2	56.4	91.4	97.8	5.8	20	82-118	07/01/20	07/01/20	07/01/20	07/01/20	254103	BA12292
EPA 6020A	LEAD (PB)	50.0	5.4	52.5	52.7	94.2	94.6	0.4	20	84-118	07/01/20	07/01/20	07/01/20	07/01/20	254103	BA12292

Comments:

ORGANICS
Calibration Data

EPA 8082
PCB0312

Form 6
Initial Calibration

Lab Name: APPL, Inc. SDG No:
Case No: Initial Cal. Date: 03/12/20
Matrix: Water Instrument: Lucy
Initials:

			0312003.D	0312004.D	0312005.D	0312006.D	0312007.D	0312002.D									
		Compound	1	2	3	4	5	1A					Avg	%RSD	Type	r^2	Q
1	SAL	TCmX	405202166	348728275	366060465	366537720	367196427	165465875					336531821	26	SA	1.000	
2	SAL	DBC	270974081	255360080	248246237	259518883	263064613	121360381					236420713	24	SA	1.000	
3	SAL	DECA	273069150	222362541	213435726	212974620	198283642	119656519					206630366	24	SA	0.999	
4	BNMCL	Total AR1016	50037282	40850964	40937392	38172612	37656539	77510196					47527498	32	BNMC	1.000	
5	L3BKCL	AR 1016	6611108	5831378	5879578	5457961	5264628	25384917					9071595	88	L3BKC	1.000	
6	L3BKCL	AR 1016 {2}	12493316	10268867	10241543	9645523	9373900	16428059					11408535	24	L3BKC	1.000	
7	L3BKC	AR 1016 {3}	11090798	9879288	10199978	9368868	9453090	10595335					10097893	6.6	L3BKC		
8	L3BKCL	AR 1016 {4}	9985267	6862303	6558654	6061619	5997082	13204920					8111641	36	L3BKC	1.000	
9	L3BKC	AR 1016 {5}	9856793	8009129	8057639	7638640	7567838	11896965					8837834	19	L3BKC		
10	BNMC	Total AR1260	70757697	58597825	59269559	56426394	55543470	84711761					64217784	18	BNMC		
11	L9BKCL	AR 1260	15596720	12580492	12912800	11750653	11468887	19629493					13989841	22	L9BKC	1.000	
12	L9BKC	AR 1260 {2}	11705619	9420897	9261101	9157310	8905849	13711775					10360425	19	L9BKC		
13	L9BKC	AR 1260 {3}	12032880	9155433	9505248	8718594	8988433	11448244					9974805	14	L9BKC		
14	L9BKC	AR 1260 {4}	22966905	19709583	20116698	19256590	19018186	28102896					21528476	16	L9BKC		
15	L9BKCL	AR 1260 {5}	8455572	7731420	7473713	7543247	7162114	11819354					8364237	21	L9BKC	0.999	
16		Signal #2											0	0			
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11.13686

EPA 8082
PCB0312

Form 6
Initial Calibration

Lab Name: APPL, Inc. SDG No:
Case No: Initial Cal. Date: 03/12/20
Matrix: Water Instrument: Lucy
Initials:

			0312003.D	0312004.D	0312005.D	0312006.D	0312007.D	0312002.D					Avg	%RSD	Type	r^2	Q
		Compound	1	2	3	4	5	1A									
36	SAL	TCmX #2	498791383	446778156	502058351	511250158	511844744	200351291					445179014	27	SA	1.000	
37	SAL	DBC #2	267127992	225186983	240798978	246220710	261996984	127717322					228174828	23	SA	0.999	
38	SAL	DECA #2	266279931	202846850	210454041	198911923	201384624	119012368					199814956	24	SA	1.000	
39	BNMC	Total AR1016 #2	49548583	39775407	41218962	38426162	38258886	60736141					44660690	20	BNMC		
40	L3BKCL	AR 1016 #2	9676266	7023266	7463907	6956012	6722223	13931629					8628884	33	L3BKC	1.000	
41	L3BKCL	AR 1016 (2) #2	10901192	8836452	8567584	7785545	7964540	13019838					9512525	22	L3BKC	1.000	
42	L3BKC	AR 1016 (3) #2	9273994	7794009	8271338	8297535	8495721	10485309					8769651	11	L3BKC		
43	L3BKC	AR 1016 (4) #2	9555080	8001874	8358886	7609596	7263622	11165103					8659027	17	L3BKC		
44	L3BKC	AR 1016 (5) #2	10142052	8119806	8557247	7777475	7812779	12134261					9090603	19	L3BKC		
45	BNMC	Total AR1260 #2	56719856	47276567	49009187	46358832	46348407	71181804					52815775	19	BNMC		
46	L9BKCL	AR 1260 #2	7632868	6337676	6721897	6177512	6049130	9818046					7122855	20	L9BKC	1.000	
47	L9BKC	AR 1260 (2) #2	15901467	13352208	13504217	13093376	12895435	20287231					14838989	19	L9BKC		
48	L9BKCL	AR 1260 (3) #2	6200309	5165031	5483826	5051585	4914948	8524765					5890077	23	L9BKC	1.000	
49	L9BKC	AR 1260 (4) #2	18685630	15395202	16162399	15223666	15746938	23145531					17393228	18	L9BKC		
50	L9BKC	AR 1260 (5) #2	8299582	7026451	7136847	6812694	6741955	9406230					7570627	14	L9BKC		
51																	
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8.797085

EPA 8082
PCB0312

Form 7

Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No:
Date Analyzed: 03/12/20
Instrument: Lucy
Initial Cal. Date: 03/12/20
Data File: 0312008.D

		Compound	MEAN	CCRF	%D		%Drift
1	BNMC	Total AR1016	47527500	46341600	2.5	BNMCL	19
2	L3BKC	AR 1016	9071600	6780330	25	L3BKCL	22
3	L3BKC	AR 1016 {2}	11408500	11596500	1.6	L3BKCL	19
4	L3BKC	AR 1016 {3}	10097900	11549500	14	L3BKC	
5	L3BKC	AR 1016 {4}	8111640	7339190	9.5	L3BKCL	17
6	L3BKC	AR 1016 {5}	8837830	9076100	2.7	L3BKC	
7	BNMC	Total AR1260	64217800	62604100	2.5	BNMC	
8	L9BKC	AR 1260	13989800	13986600	0.02	L9BKCL	17
9	L9BKC	AR 1260 {2}	10360400	13167500	27	L9BKC	
10	L9BKC	AR 1260 {3}	9974810	8127880	19	L9BKC	
11	L9BKC	AR 1260 {4}	21528500	20694300	3.9	L9BKC	
12	L9BKC	AR 1260 {5}	8364240	6627860	21	L9BKCL	12
13							
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		Average			10.7		

EPA 8082
PCB0312

Form 7

Second Source Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No:
Date Analyzed: 03/12/20
Instrument: Lucy
Cal. Date: 03/12/20
Data File: 0312008.D

		Compound	MEAN	CCRF	%D		%Drift
41	BNMC	Total AR1016	44660700	45802300	2.6	BNMC	
42	L3BKC	AR 1016	8628880	8553830	0.87	L3BKCL	22
43	L3BKC	AR 1016 {2}	9512530	9779690	2.8	L3BKCL	20
44	L3BKC	AR 1016 {3}	8769650	9234600	5.3	L3BKC	
45	L3BKC	AR 1016 {4}	8659030	8536420	1.4	L3BKC	
46	L3BKC	AR 1016 {5}	9090600	9697790	6.7	L3BKC	
47	BNMC	Total AR1260	52815800	51901000	1.7	BNMC	
48	L9BKC	AR 1260	7122850	6884230	3.4	L9BKCL	9.8
49	L9BKC	AR 1260 {2}	14839000	14645000	1.3	L9BKC	
50	L9BKC	AR 1260 {3}	5890080	6206610	5.4	L9BKCL	22
51	L9BKC	AR 1260 {4}	17393200	17643700	1.4	L9BKC	
52	L9BKC	AR 1260 {5}	7570630	6521430	14	L9BKC	
53							
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80							
		Average			3.9		

EPA 8082
PCB0312

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No:
Date Analyzed: 06/08/20
Instrument: Lucy
Initial Cal. Date: 03/12/20
Data File: 0528204.D

		Compound	MEAN	CCRF	%D		%Drift
1	SAL	TCmX	336532000	301286000	10	SAL	16
2	SAL	DBC	236421000	235718000	0.30	SAL	5.6
3	SAL	DECA	206630000	203285000	1.6	SAL	8.2
4	BNMC	Total AR1016	47527500	35104000	26	BNMCL	16
5	L3BKC	AR 1016	9071600	4877110	46	L3BKCL	22
6	L3BKC	AR 1016 {2}	11408500	8620740	24	L3BKCL	18
7	L3BKC	AR 1016 {3}	10097900	8515870	16	L3BKC	
8	L3BKC	AR 1016 {4}	8111640	6305620	22	L3BKCL	6.9
9	L3BKC	AR 1016 {5}	8837830	6784680	23	L3BKC	
10	BNMC	Total AR1260	64217800	61109700	4.8	BNMC	
11	L9BKC	AR 1260	13989800	12127200	13	L9BKCL	5.2
12	L9BKC	AR 1260 {2}	10360400	9201600	11	L9BKC	
13	L9BKC	AR 1260 {3}	9974810	10235000	2.6	L9BKC	
14	L9BKC	AR 1260 {4}	21528500	20994200	2.5	L9BKC	
15	L9BKC	AR 1260 {5}	8364240	8551630	2.2	L9BKCL	11
16							
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		Average			13.7		

EPA 8082
PCB0312

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No:
Date Analyzed: 06/08/20
Instrument: Lucy
Cal. Date: 03/12/20
Data File: 0528204.D

		Compound	MEAN	CCRF	%D		%Drift
41	SAL	TCmX	445179000	411449000	7.6	SAL	14
42	SAL	DBC	228175000	254189000	11	SAL	7.9
43	SAL	DECA	199815000	225940000	13	SAL	10
44	BNMC	Total AR1016	44660700	37863800	15	BNMC	
45	L3BKC	AR 1016	8628880	6470710	25	L3BKCL	14
46	L3BKC	AR 1016 {2}	9512530	7562580	20	L3BKCL	12
47	L3BKC	AR 1016 {3}	8769650	7599740	13	L3BKC	
48	L3BKC	AR 1016 {4}	8659030	7769080	10	L3BKC	
49	L3BKC	AR 1016 {5}	9090600	8461730	6.9	L3BKC	
50	BNMC	Total AR1260	52815800	55405900	4.9	BNMC	
51	L9BKC	AR 1260	7122850	6829890	4.1	L9BKCL	4.4
52	L9BKC	AR 1260 {2}	14839000	19757000	33	L9BKC	
53	L9BKC	AR 1260 {3}	5890080	5467090	7.2	L9BKCL	2.0
54	L9BKC	AR 1260 {4}	17393200	15875200	8.7	L9BKC	
55	L9BKC	AR 1260 {5}	7570630	7476710	1.2	L9BKC	
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		Average			12.0		

EPA 8082
PCB0312

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No:
Date Analyzed: 06/08/20
Instrument: Lucy
Initial Cal. Date: 03/12/20
Data File: 0528225.D

		Compound	MEAN	CCRF	%D		%Drift
1	SAL	TCmX	336532000	340590000	1.2	SAL	5.0
2	SAL	DBC	236421000	242490000	2.6	SAL	3.0
3	SAL	DECA	206630000	231262000	12	SAL	5.9
4	BNMC	Total AR1016	47527500	40280100	15	BNMCL	1.8
5	L3BKC	AR 1016	9071600	5356630	41	L3BKCL	12
6	L3BKC	AR 1016 {2}	11408500	9755280	14	L3BKCL	5.7
7	L3BKC	AR 1016 {3}	10097900	9961180	1.4	L3BKC	
8	L3BKC	AR 1016 {4}	8111640	7415630	8.6	L3BKCL	12
9	L3BKC	AR 1016 {5}	8837830	7791370	12	L3BKC	
10	BNMC	Total AR1260	64217800	66710000	3.9	BNMC	
11	L9BKC	AR 1260	13989800	13601100	2.8	L9BKCL	7.7
12	L9BKC	AR 1260 {2}	10360400	10619100	2.5	L9BKC	
13	L9BKC	AR 1260 {3}	9974810	11454700	15	L9BKC	
14	L9BKC	AR 1260 {4}	21528500	22599100	5.0	L9BKC	
15	L9BKC	AR 1260 {5}	8364240	8436070	0.86	L9BKCL	9.8
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		Average			9.2		

EPA 8082
PCB0312

Form 7

Continuing Calibration

Lab Name: APPL, Inc.
Case No:
Matrix: Water

SDG No:
Date Analyzed: 06/08/20
Instrument: Lucy
Cal. Date: 03/12/20
Data File: 0528225.D

		Compound	MEAN	CCRF	%D		%Drift
41	SAL	TCmX	445179000	484017000	8.7	SAL	0.15
42	SAL	DBC	228175000	260415000	14	SAL	10
43	SAL	DECA	199815000	239904000	20	SAL	17
44	BNMC	Total AR1016	44660700	44006600	1.5	BNMC	
45	L3BKC	AR 1016	8628880	7811610	9.5	L3BKCL	5.8
46	L3BKC	AR 1016 {2}	9512530	9421700	0.95	L3BKCL	12
47	L3BKC	AR 1016 {3}	8769650	8552860	2.5	L3BKC	
48	L3BKC	AR 1016 {4}	8659030	8840130	2.1	L3BKC	
49	L3BKC	AR 1016 {5}	9090600	9380300	3.2	L3BKC	
50	BNMC	Total AR1260	52815800	62895200	19	BNMC	
51	L9BKC	AR 1260	7122850	7560940	6.2	L9BKCL	17
52	L9BKC	AR 1260 {2}	14839000	22188900	50	L9BKC	
53	L9BKC	AR 1260 {3}	5890080	6035710	2.5	L9BKCL	14
54	L9BKC	AR 1260 {4}	17393200	18305500	5.2	L9BKC	
55	L9BKC	AR 1260 {5}	7570630	8804170	16	L9BKC	
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		Average			10.8		

ORGANICS
Raw Data

_SOX005

Organic Extraction Worksheet

Method	OCL/OP/Triaz Sox Extra 3540C	Extraction Set	200605A	Extraction Method	SOX005	Units	mL

Spiked ID 1	PCB SPIKE 4-22-20 4-22-21		Surrogate ID 1	OCL/OP Soil Surrogate 5-20-20 4-6-21	
Spiked ID 2			Surrogate ID 2		
Spiked ID 3			Surrogate ID 3		
Spiked ID 4			Surrogate ID 4		
Spiked ID 5			Surrogate ID 5		
Spiked ID 6			Sufficient Vol for Matrix QC:	NO	
Spiked ID 7			Ext. Start Time:	06/05/20 13:15	
Spiked ID 8			Ext. End Time:	06/06/20 8:35	
			GC Requires Extract By:		

pH1			Water Bath Temp 1 °C	35/38.5 °C
pH2			Water Bath Temp 2 °C	35/34.5
pH3			Water Bath Temp 3 °C	35/34.4 °C

Spiked By: DL **Date** 06/05/20 **Witnessed By:** CFM **Date** 06/05/20

	Sample	Sample Container	Spike Amount	Spike ID	Surrogate Amount	Surrogate ID	Extract Amount	Final Volume	pH	Extract Date/Time	Comments
1	200605A Blk				0.250	1	10.04	5	NA	06/05/20 13:10	
						equip	E-HP51 E-WB1				
2	200605A LCS-1		1	1	0.250	1	10.09	5	NA	06/05/20 13:10	
						equip	E-HP50 E-WB2				
3	200605A LCSD-1		1	1	0.250	1	10.08	5	NA	06/05/20 13:10	
						equip	E-HP49 E-WB3				
4	BA12291	BA12291S01			0.250	1	10.13	5	NA	06/05/20 13:10	92362
						equip	E-HP48 E-WB1				
5	BA12292	BA12292S01			0.250	1	10.22	5	NA	06/05/20 13:10	92362
						equip	E-HP47 E-WB2				

Solvent and Lot#	
SCALE BALANCE ID	EB1
DCM:Acetone MIX	5-20-20
THIMBLE	1697760601
SAND	19H025201
FILTER PAPER	400178
B.Na2SO4	2019070279

Extraction COC Transfer	
Extraction lab employee Initials	KY
GC analyst's initials	SS
Date	6/8/20
Time	12:30
Refrigerator	HOBART

	Technician's Initials
Scanned By	DL
Sample Preparation	DL
Extraction	DL
Concentration	DL

Modified	06/08/20 9:54:57 AM

Reviewed By: KY **Date** 06/08/20

Injection Log

Directory: G:\LUCY\DATA\200312\

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	2	0312002.D	1	PCB - 1A 3/12/20	water	3-12-20 11:46:55
2	3	0312003.D	1	PCB - 1 3/12/20	water	3-12-20 12:03:49
3	4	0312004.D	1	PCB - 2 3/12/20	water	3-12-20 12:20:41
4	5	0312005.D	1	PCB - 3 3/12/20	water	3-12-20 12:37:41
5	6	0312006.D	1	PCB - 4 3/12/20	water	3-12-20 12:54:35
6	7	0312007.D	1	PCB - 5 3/12/20	water	3-12-20 13:11:28
7	8	0312008.D	1	PCB Second Source 5/20/19	water	3-12-20 13:28:20
8	9	0312009.D	1	AR1221 2/22/19	water	3-12-20 13:45:18
9	10	0312010.D	1	AR1232 2/14/19	water	3-12-20 14:02:13
10	11	0312011.D	1	AR1242 2/14/19	water	3-12-20 14:19:06
11	12	0312012.D	1	AR1248 2/14/19	water	3-12-20 14:35:57
12	13	0312013.D	1	AR1254 2/14/19	water	3-12-20 14:52:57
13	14	0312014.D	1	AR1262 2/14/19	water	3-12-20 15:09:51
14	15	0312015.D	1	AR1268 2/14/19	water	3-12-20 15:26:45
15	4	0528204.D	1	PCB - 2 3/12/20	water	6-8-20 15:03:34
16	6	0528206.D	4807.69	200605A BLK 5/10.04 DF10	soil	6-8-20 16:14:27
17	7	0528207.D	4955.4	200605A LCS-1 5/10.09 DF10	soil	6-8-20 16:31:20
18	9	0528209.D	4935.83	BA12291S01 5/10.13 DF10	soil	6-8-20 17:05:02
19	10	0528210.D	4892.37	BA12292S01 5/10.22 DF10	soil	6-8-20 17:22:01
20	25	0528225.D	1	PCB - 2 3/12/20	water	6-8-20 21:35:03

ORGANICS
Calibration Data

PAH by GCMS SIM
EPA 8270 SIM

Form 6
Initial Calibration

Lab Name: APPL, Inc. SDG No:
Case No: Initial Cal. Date: 02/04/20
Matrix: Instrument: Linus Initials: MA

			0204L003.D	0204L004.D	0204L005.D	0204L006.D	0204L007.D	0204L008.D	0204L009.D	0204L010.D								
		Compound	0.1	0.2	0.5	1	5	10	50	100			Avg	%RSD	Type	r^2	Q	MRF
1	I	Napthalene-D8(IS)																
2	TM	Naphthalene	1.120	1.131	1.072	1.083	1.129	1.047	0.9772	0.9334			1.1	6.9	TM			0.700
3	S	2-Methylnaphthalene-D10 (2M	1.257	1.211	1.175	1.198	1.255	1.218	1.180	1.133			1.2	3.5	S			
4	TM	2-Methylnaphthalene	0.6849	0.6892	0.6742	0.6957	0.7468	0.6960	0.6554	0.6145			0.68	5.5	TM			0.400
5	TM	1-Methylnaphthalene	0.7412	0.7479	0.7192	0.7336	0.7676	0.7029	0.6628	0.6175			0.71	7.0	TM			
6	I	Acenaphthene-D10(IS)																
7	TM	Acenaphthylene	3.869	3.855	3.806	3.892	4.393	4.113	3.818	3.434			3.9	7.0	TM			0.900
8	*TM	Acenaphthene	1.372	1.277	1.234	1.238	1.309	1.218	1.155	1.036			1.2	8.3	*TM			0.900
9	TM	Fluorene	1.476	1.471	1.412	1.485	1.636	1.549	1.427	1.385			1.5	5.5	TM			0.900
10	I	Phenanthrene-D10(IS)																
11	TM	Phenanthrene	1.231	1.222	1.179	1.198	1.290	1.205	1.041	0.9371			1.2	9.9	TM			0.700
12	TM	Anthracene	1.002	1.028	0.9886	1.045	1.160	1.099	0.9848	0.8800			1.0	8.1	TM			0.700
13	S	Fluoranthene-D10 (FRT)	1.457	1.470	1.320	1.355	1.491	1.476	1.437	1.389			1.4	4.4	S			
14	*TM	Fluoranthene	1.604	1.635	1.531	1.601	1.817	1.668	1.480	1.357			1.6	8.6	*TM			0.600
15	I	Chrysene-D12(IS)																
16	TM	Pyrene	1.291	1.315	1.240	1.301	1.386	1.308	1.220	1.113			1.3	6.4	TM			0.600
17	TM	Benz (a) anthracene	1.177	1.123	1.047	1.077	1.191	1.159	1.141	1.081			1.1	4.6	TM			0.800
18	TM	Chrysene	1.461	1.411	1.370	1.360	1.367	1.267	1.174	1.065			1.3	10	TM			0.700
19	TM	Indeno (1,2,3-cd) pyrene	1.438	1.382	1.382	1.402	1.574	1.526	1.551	1.517			1.5	5.4	TM			0.500
20	I	Perylene-D12(IS)																
21	TM	Benzo (b) fluoranthene	0.8206	0.8277	0.8502	0.9180	1.141	1.084	1.118	1.129			0.99	15	TM			0.700
22	TM	Benzo (k) fluoranthene	1.252	1.341	1.294	1.323	1.396	1.330	1.094	1.089			1.3	9.1	TM			0.700
23	*TM	Benzo (a) pyrene	0.8229	0.8399	0.9301	0.9711	1.126	1.087	1.069	1.029			0.98	12	*TM			0.700
24	TM	Dibenz (a,h) anthracene	0.9746	0.9893	0.9980	1.034	1.209	1.157	1.169	1.136			1.1	8.7	TM			0.400
25	TM	Benzo (g,h,i) perylene	1.063	1.069	1.094	1.118	1.274	1.216	1.188	1.145			1.1	6.5	TM			0.500
26																		
27																		
28																		
29																		
30																		
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32																		
33																		
34																		
35																		

PAH by GCMS SIM
EPA 8270 SIM

Form 7

Second Source Calibration

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

SDG No:
Date Analyzed: 4 Feb 20 13:21
Instrument: Linus
Initial Cal. Date: 02/04/20
Data File: 0204L011.D

		Compound	MEAN	CCRF	%D		%Drift
1	TM	Naphthalene	1.062	1.033	2.7	TM	
2	TM	2-Methylnaphthalene	0.6821	0.6822	0.02	TM	
3	TM	1-Methylnaphthalene	0.7116	0.6901	3.0	TM	
4	TM	Acenaphthylene	3.897	3.871	0.68	TM	
5	*TM	Acenaphthene	1.230	1.178	4.2	*TM	
6	TM	Fluorene	1.480	1.459	1.5	TM	
7	TM	Phenanthrene	1.163	1.148	1.3	TM	
8	TM	Anthracene	1.023	1.104	7.8	TM	
9	*TM	Fluoranthene	1.587	1.568	1.2	*TM	
10	TM	Pyrene	1.272	1.242	2.3	TM	
11	TM	Benz (a) anthracene	1.125	1.066	5.2	TM	
12	TM	Chrysene	1.309	1.222	6.7	TM	
13	TM	Indeno (1,2,3-cd) pyrene	1.471	1.421	3.4	TM	
14	TM	Benzo (b) fluoranthene	0.9861	0.9690	1.7	TM	
15	TM	Benzo (k) fluoranthene	1.265	1.329	5.1	TM	
16	*TM	Benzo (a) pyrene	0.9845	1.048	6.4	*TM	
17	TM	Dibenz (a,h) anthracene	1.083	1.080	0.29	TM	
18	TM	Benzo (g,h,i) perylene	1.146	1.138	0.70	TM	
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		Average			3.0		

PAH by GCMS SIM
EPA 8270 SIM

Form 7

Continuing Calibration

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

SDG No:
Date Analyzed: 06/11/20
Instrument: Linus
Initial Cal. Date: 02/04/20
Data File: 0520L219.D

		Compound	MEAN	CCRF	%D	%Drift	
1	I	Napthalene-D8(IS)	ISTD			I	
2	TM	Naphthalene	1.062	1.120	5.5	TM	
3	S	2-Methylnaphthalene-D10 (2MN)	1.203	1.238	2.9	S	
4	TM	2-Methylnaphthalene	0.6821	0.7431	8.9	TM	
5	TM	1-Methylnaphthalene	0.7116	0.7606	6.9	TM	
6	I	Acenaphthene-D10(IS)	ISTD			I	
7	TM	Acenaphthylene	3.897	4.215	8.1	TM	
8	*TM	Acenaphthene	1.230	1.233	0.22	*TM	
9	TM	Fluorene	1.480	1.555	5.0	TM	
10	I	Phenanthrene-D10(IS)	ISTD			I	
11	TM	Phenanthrene	1.163	1.157	0.51	TM	
12	TM	Anthracene	1.023	1.069	4.4	TM	
13	S	Fluoranthene-D10 (FRT)	1.424	1.410	1.0	S	
14	*TM	Fluoranthene	1.587	1.601	0.90	*TM	
15	I	Chrysene-D12(IS)	ISTD			I	
16	TM	Pyrene	1.272	1.250	1.7	TM	
17	TM	Benz (a) anthracene	1.125	1.277	14	TM	
18	TM	Chrysene	1.309	1.214	7.2	TM	
19	TM	Indeno (1,2,3-cd) pyrene	1.471	1.691	15	TM	
20	I	Perylene-D12(IS)	ISTD			I	
21	TM	Benzo (b) fluoranthene	0.9861	1.114	13	TM	
22	TM	Benzo (k) fluoranthene	1.265	1.208	4.5	TM	
23	*TM	Benzo (a) pyrene	0.9845	1.070	8.7	*TM	
24	TM	Dibenz (a,h) anthracene	1.083	1.213	12	TM	
25	TM	Benzo (g,h,i) perylene	1.146	1.205	5.2	TM	
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40							
		Average			6.3		

PAH by GCMS SIM
EPA 8270 SIM

Form 7

Continuing Calibration

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

SDG No:
Date Analyzed: 06/12/20
Instrument: Linus
Initial Cal. Date: 02/04/20
Data File: 0520L253.D

		Compound	MEAN	CCRF	%D		%Drift
1	I	Napthalene-D8(IS)	ISTD			I	
2	TM	Naphthalene	1.062	1.118	5.3	TM	
3	S	2-Methylnaphthalene-D10 (2MN)	1.203	1.259	4.6	S	
4	TM	2-Methylnaphthalene	0.6821	0.7606	12	TM	
5	TM	1-Methylnaphthalene	0.7116	0.7625	7.2	TM	
6	I	Acenaphthene-D10(IS)	ISTD			I	
7	TM	Acenaphthylene	3.897	4.234	8.6	TM	
8	*TM	Acenaphthene	1.230	1.245	1.3	*TM	
9	TM	Fluorene	1.480	1.581	6.8	TM	
10	I	Phenanthrene-D10(IS)	ISTD			I	
11	TM	Phenanthrene	1.163	1.132	2.7	TM	
12	TM	Anthracene	1.023	1.059	3.5	TM	
13	S	Fluoranthene-D10 (FRT)	1.424	1.346	5.5	S	
14	*TM	Fluoranthene	1.587	1.557	1.9	*TM	
15	I	Chrysene-D12(IS)	ISTD			I	
16	TM	Pyrene	1.272	1.224	3.8	TM	
17	TM	Benz (a) anthracene	1.125	1.209	7.6	TM	
18	TM	Chrysene	1.309	1.237	5.5	TM	
19	TM	Indeno (1,2,3-cd) pyrene	1.471	1.671	14	TM	
20	I	Perylene-D12(IS)	ISTD			I	
21	TM	Benzo (b) fluoranthene	0.9861	1.179	20	TM	
22	TM	Benzo (k) fluoranthene	1.265	1.153	8.8	TM	
23	*TM	Benzo (a) pyrene	0.9845	1.062	7.9	*TM	
24	TM	Dibenz (a,h) anthracene	1.083	1.205	11	TM	
25	TM	Benzo (g,h,i) perylene	1.146	1.203	5.0	TM	
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		Average			7.2		

ORGANICS
Raw Data

Organic Extraction Worksheet

Method	SIM Sonicat Ext. Methylene c 3550	Extraction Set	200610A	Extraction Method	SON009S	Units	mL

Spiked ID 1	PAH Sim Spike 4-1-20 4-1-21		Surrogate ID 1	Sim Surrogate 4-1-20 4-1-21	
Spiked ID 2			Surrogate ID 2		
Spiked ID 3			Surrogate ID 3		
Spiked ID 4			Surrogate ID 4		
Spiked ID 5			Surrogate ID 5		
Spiked ID 6			Sufficient Vol for Matrix QC:	NO	
Spiked ID 7			Ext. Start Time:	06/10/20 14:30	
Spiked ID 8			Ext. End Time:	06/11/20 11:00	
			GC Requires Extract By:		

pH1			Water Bath Temp 1 °C	77/76.9 E-WB6 °
pH2			Water Bath Temp 2 °C	
pH3			Water Bath Temp 3 °C	

Spiked By: YL **Date** 06/10/20 **Witnessed By:** ERR **Date** 06/10/20

	Sample	Sample Container	Spike Amount	Spike ID	Surrogate Amount	Surrogate ID	Extract Amount	Final Volume	pH	Extract Date/Time	Comments
1	200610A Blk				0.050	1	20.07	1	NA	06/10/20 14:30	re-extract
						equip	E-S2 E-WB6				
2	200610A LCS-1		0.125	1	0.050	1	20.11	1	NA	06/10/20 14:30	
						equip	E-S6 E-WB6				
3	200610A LCSD-1		0.125	1	0.050	1	20.18	1	NA	06/10/20 14:30	
						equip	E-S7 E-WB6				
4	BA12291	BA12291S01			0.050	1	20.20	1	NA	06/10/20 14:30	92362
						equip	e-s8 E-WB6				
5	BA12292	BA12292S01			0.050	1	20.15	1	NA	06/10/20 14:30	92362
						equip	E-S2 E-WB6				

Solvent and Lot#	
BALANCE	WB2
Sand	19H025201
Dichloromethane (DCM)	59239
Filter Paper	17047886
Na2SO4	2019070279

Extraction COC Transfer	
Extraction lab employee Initials	KY
GC analyst's initials	MA
Date	6/11/20
Time	11:30
Refrigerator	GC-C

	Technician's Initials
Scanned By	YL
Sample Preparation	YL
Extraction	ERR
Concentration	ERR

Modified	06/12/20 8:33:01 AM

Reviewed By: KY **Date** 06/12/20

Injection Log

Directory: M:\LINUS\DATA\L200520\

Vial	FileName	Multiplier	SampleName	Misc Info	Injected
2	0204L002.D	1	SV Tune 10/01/19		4 Feb 20 9:32
3	0204L003.D	1	0.1 SIM 02/03/20		4 Feb 20 9:48
4	0204L004.D	1	0.2 SIM 02/03/20		4 Feb 20 10:09
5	0204L005.D	1	0.5 SIM 02/03/20		4 Feb 20 10:31
6	0204L006.D	1	1 SIM 02/03/20		4 Feb 20 10:53
7	0204L007.D	1	5 SIM 02/03/20		4 Feb 20 11:15
8	0204L008.D	1	10 SIM 02/03/20		4 Feb 20 11:37
9	0204L009.D	1	50 SIM 02/03/20		4 Feb 20 11:59
10	0204L010.D	1	100 SIM 02/03/20		4 Feb 20 12:21
11	0204L011.D	1	SS SIM 02/03/20		4 Feb 20 13:21
18	0520L218.D	1	SV TUNE 10/1/19		11 Jun 20 7:23
19	0520L219.D	1	5 SIM CCV 2/3/20 (1)		11 Jun 20 7:39
45	0520L245.D	49.8256	200610A BLK 1/20.07G		11 Jun 20 18:10
46	0520L246.D	49.8256	200610A LCS-1 1/20.07G		11 Jun 20 18:32
48	0520L248.D	49.3583	BA12291S01 1/20.26G		11 Jun 20 19:16
18	0520L252.D	1	SV TUNE 10/1/19		12 Jun 20 7:33
19	0520L253.D	1	5 SIM CCV 5/22/20 (1)		12 Jun 20 7:49
61	0520L261.D	49.6278	BA12292S01 1/20.15G		12 Jun 20 12:22

METALS

Calibration Data

A.P.P.L. INC.

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: Tetra Tech, Inc.

ARF No: 92362 SDG: 92362

Analysis Date: 07/01/20 Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration						M
	True	Found 12:01	%R(1)	True CCV1	Found 15:31	%R(1)	True CCV1	Found 16:36	%R(1)	
Arsenic (As)	50	49.4042	98.8	50	49.8614	99.7	50	50.0163	100	P
Lead (Pb)	50	49.1563	98.3	50	50.3950	101	50	49.7253	99.5	P

(1) Control Limits: Metals 90-110

ILM02.0

A.P.P.L. INC.
4
ICP INTERFERENCE CHECK SAMPLE

Lab Name:	A.P.P.L. INC.	Contract:	Tetra Tech, Inc.
ARF No.:	92362	SDG:	92362
ICP ID Number:	Megatron	ICS Source:	Environmental Express

Analysis Date: 07/01/20 Concentration Units: ug/L

Analyte	True		Initial Found		
	Sol A	Sol AB	Sol A 12:48	Sol AB 12:54	%R(1)
Arsenic (As)		50	0.053872	50.530562	101
Lead (Pb)		100	0.074122	88.634793	88.6

(1) Control Limits: Metals 80-120

A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract: Tetra Tech, Inc.

ARF No.: 92362 SDG: 92362

Preparation Blank Matrix (soil/water): soil

Preparation Blank Concentration Units (ug/L or mg/kg): mg/Kg

Analysis Date: 07/01/20

Analyte	Initial Calibration Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank		M
		C	1	C	2	C	3	C		C	
	12:08		15:38		16:43				15:05		
Arsenic (As)	2.50	U	2.50	U	2.50	U			.50	U	P
Lead (Pb)	.50	U	.50	U	.50	U			.10	U	P

A.P.P.L. INC.
2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: A.P.P.L. INC. Contract: Tetra Tech, Inc.

ARF No: 92362 SDG: 92362

Analysis Date: 06/11/20 Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration						M
	True	Found 11:22	%R(1)	True CCV1	Found 11:49	%R(1)	True	Found	%R(1)	
Mercury (Hg)	4.17	4.175	100	5.208	5.355	103				P

(1) Control Limits: Metals 90-110

ILM02.0

A.P.P.L. INC.
3
BLANKS

Lab Name: A.P.P.L. INC. Contract: Tetra Tech, Inc.

ARF No.: 92362 SDG: 92362

Preparation Blank Matrix (soil/water): soil

Preparation Blank Concentration Units (ug/L or mg/kg): mg/Kg

Analysis Date: 06/11/20

Analyte	Initial Calibration Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
	11:24		11:51						11:27		
Mercury (Hg)	.63	U	.63	U					.10	U	P

A.P.P.L. INC.

LLQC Check

Lab Name: A.P.P.L. INC. Contract: Tetra Tech, Inc.

ARF No: 92362 SDG: 92362

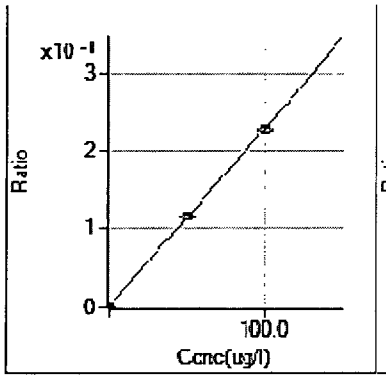
Concentration Units: ug/L

Analysis Date: 06/11/20

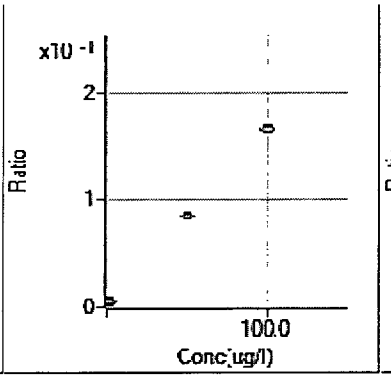
Analyte	LLQC								
	True	Found	%R(1)	True	Found	%R(1)	True	Found	%R(1)
	LLQC	11:26							
Mercury (Hg)	0.208	0.2051	98.6						

METALS

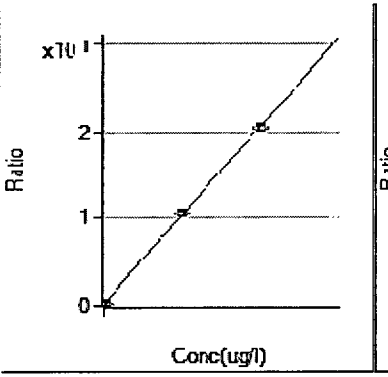
Raw Data



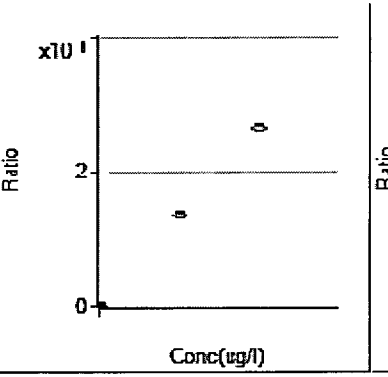
9 Be [NoGas]
ISTD: 45 Sc
y = 2.302E-3 x + 1.704E-5
R 1.0000
DL 0.01677
BEC 0.007402



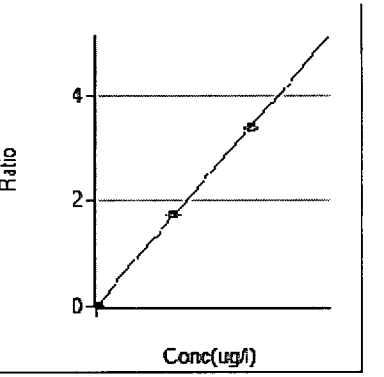
11 B [NoGas]
ISTD: 45 Sc
Excluded
R



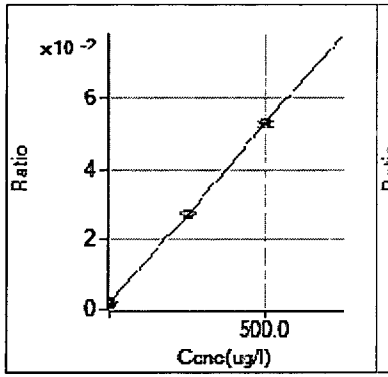
23 Na [He]
ISTD: 45 Sc
y = 8.269E-3 x + 1.700E-1
R 0.9999
DL 0.8135
BEC 20.55



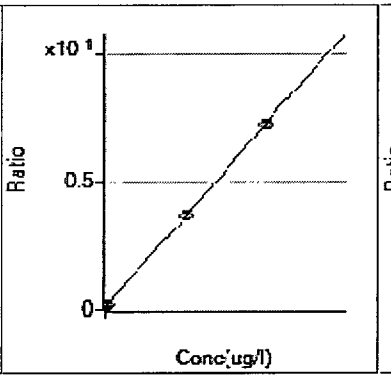
24 Mg [He]
ISTD: 72 Ge
Excluded
R



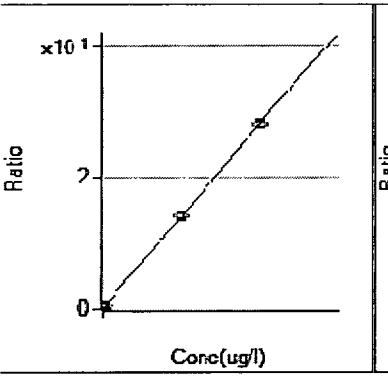
27 Al [He]
ISTD: 45 Sc
y = 1.706E-3 x + 1.400E-3
R 1.0000
DL 0.2904
BEC 0.8207



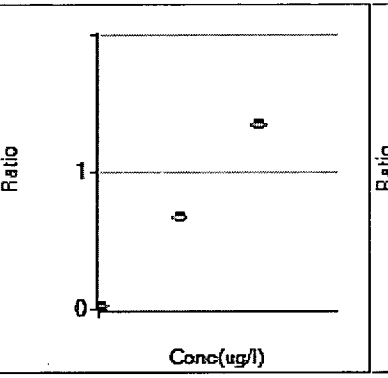
31 P [He]
ISTD: 45 Sc
y = 1.038E-4 x + 1.400E-3
R 1.0000
DL 8.655
BEC 13.48



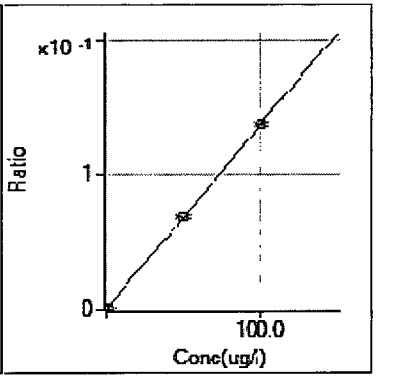
39 K [He]
ISTD: 45 Sc
y = 3.567E-3 x + 1.238E-1
R 1.0000
DL 3.42
BEC 34.72



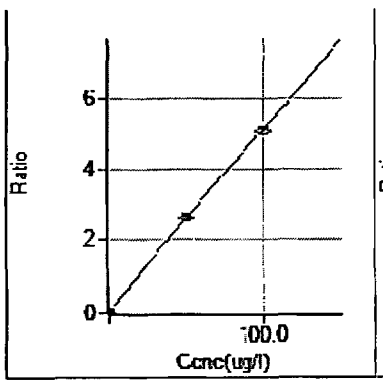
40 Ca [H2]
ISTD: 45 Sc
y = 5.607E-3 x + 2.548E-2
R 1.0000
DL 0.7919
BEC 4.544



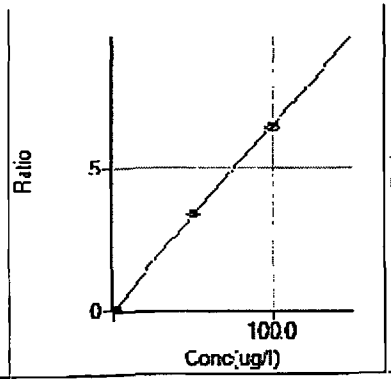
44 Ca [He]
ISTD: 72 Ge
Excluded
R



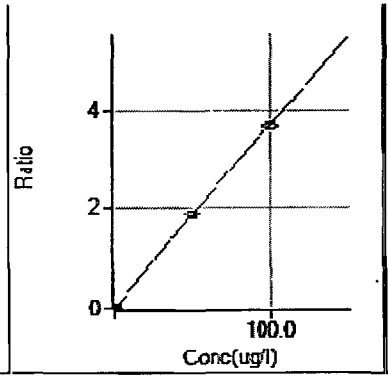
47 Ti [He]
ISTD: 45 Sc
y = 1.371E-3 x
R 1.0000
DL 0
BEC 0



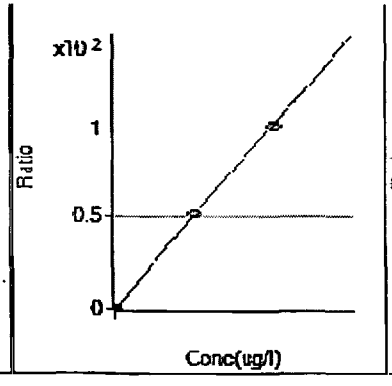
51 V [He]
ISTD: 45 Sc
y = 5.126E-2 x + 1.139E-2
R 1.0000
DL 0.02817
BEC 0.2222



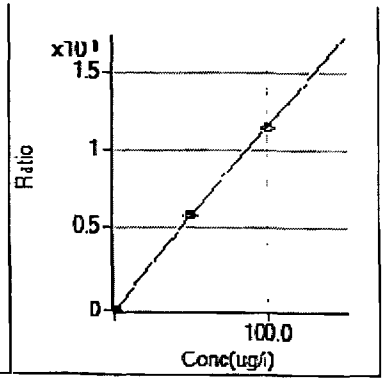
52 Cr [He]
ISTD: 45 Sc
y = 6.561E-2 x + 2.679E-3
R 1.0000
DL 0.007411
BEC 0.04083



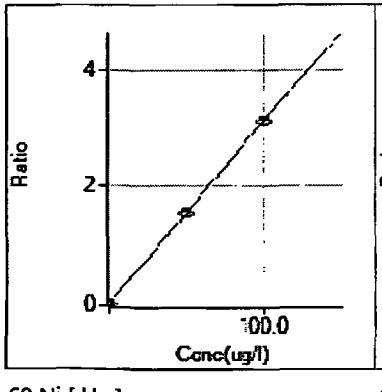
55 Mn [He]
ISTD: 45 Sc
y = 3.702E-2 x + 6.530E-4
R 1.0000
DL 0.00982
BEC 0.01764



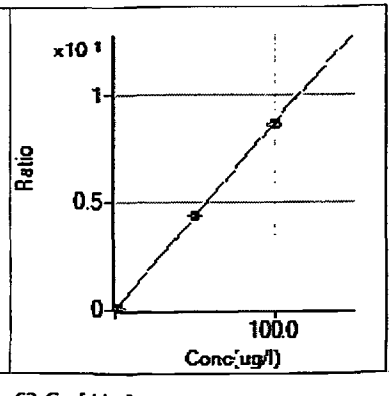
56 Fe [He]
ISTD: 45 Sc
y = 5.157E-2 x + 2.560E-2
R 1.0000
DL 0.03481
BEC 0.4963



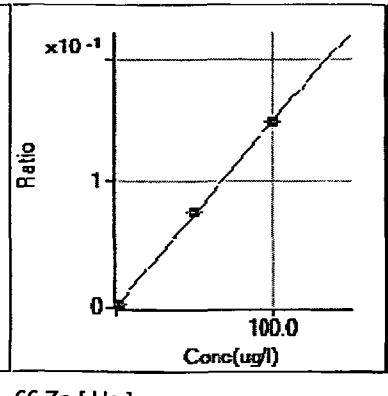
59 Co [He]
ISTD: 45 Sc
y = 1.158E-1 x + 2.466E-3
R 1.0000
DL 0.1014
BEC 0.02129



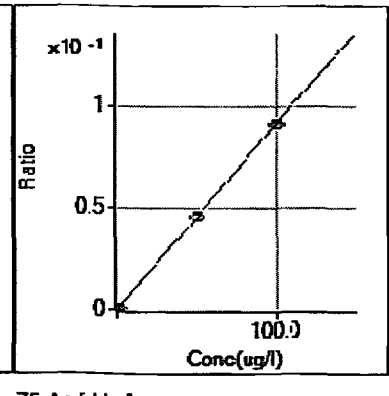
60 Ni [He]
ISTD: 45 Sc
y = 3.125E-2 x + 6.414E-4
R 1.0000
DL 0.002582
BEC 0.02052



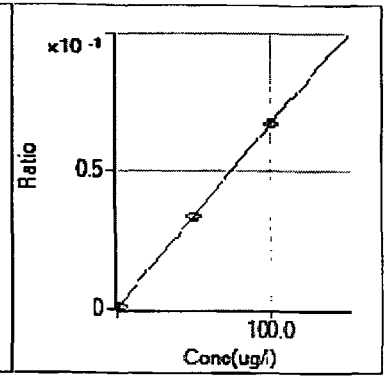
63 Cu [He]
ISTD: 45 Sc
y = 8.658E-2 x + 1.483E-2
R 1.0000
DL 0.01302
BEC 0.1713



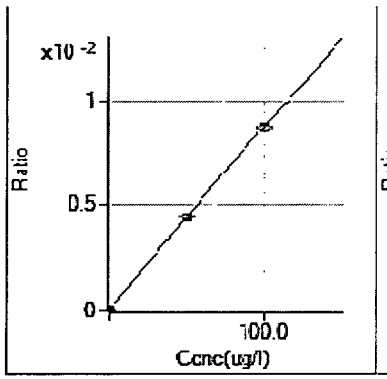
66 Zn [He]
ISTD: 115 In
y = 1.490E-3 x + 3.989E-4
R 0.9999
DL 0.03654
BEC 0.2677



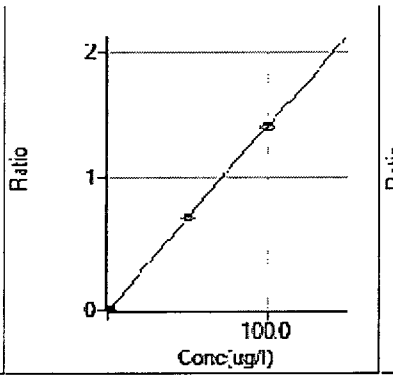
75 As [He]
ISTD: 115 In
y = 9.173E-4 x + 3.016E-5
R 1.0000
DL 0.01522
BEC 0.03288



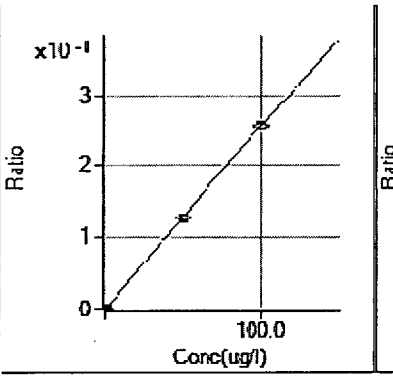
78 Se [He]
ISTD: 45 Sc
y = 6.639E-4 x + 2.647E-4
R 1.0000
DL 0.08834
BEC 0.3987



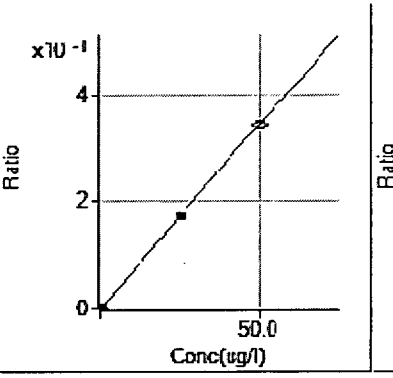
78 Se [H2]
ISTD: 115 In
y = 8.759E-5 x + 2.330E-5
R 1.0000
DL 0.1295
BEC 0.266



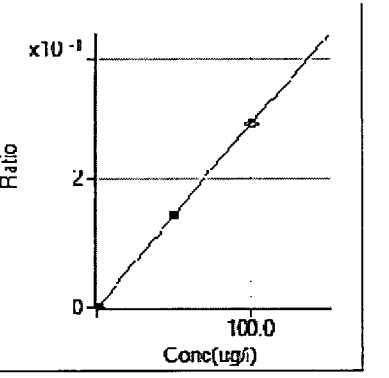
88 Sr [NoGas]
ISTD: 115 In
y = 1.414E-2 x + 8.204E-5
R 1.0000
DL 0.001971
BEC 0.005803



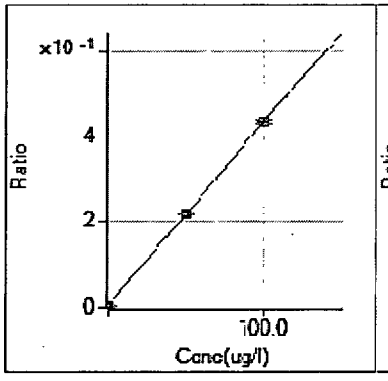
95 Mo [NoGas]
ISTD: 115 In
y = 2.570E-3 x + 3.329E-6
R 1.0000
DL 0.004881
BEC 0.001295



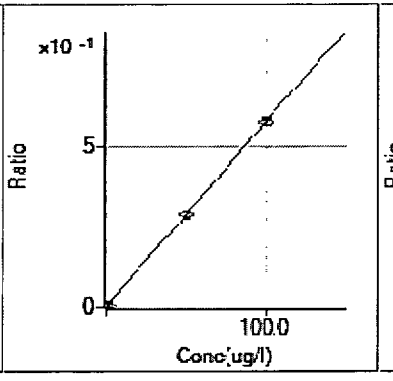
107 Ag [NoGas]
ISTD: 115 In
y = 6.892E-3 x + 3.265E-6
R 1.0000
DL 0.000965
BEC 0.0004737



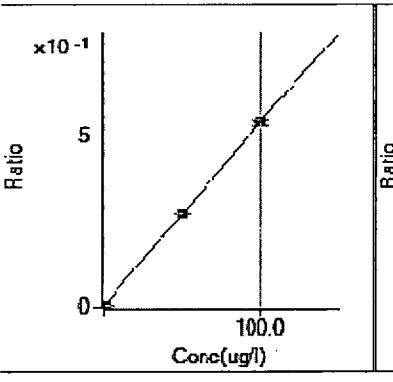
111 Cd [He]
ISTD: 115 In
y = 2.929E-3 x
R 1.0000
DL 0
BEC 0



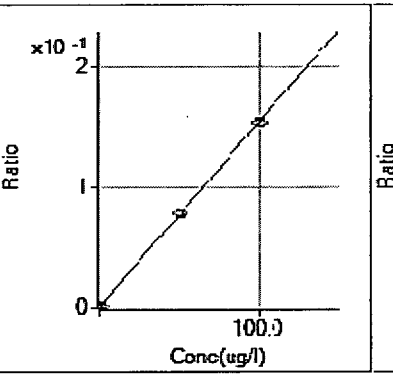
118 Sn [NoGas]
ISTD: 115 In
y = 4.321E-3 x + 1.962E-4
R 1.0000
DL 0.00902
BEC 0.04541



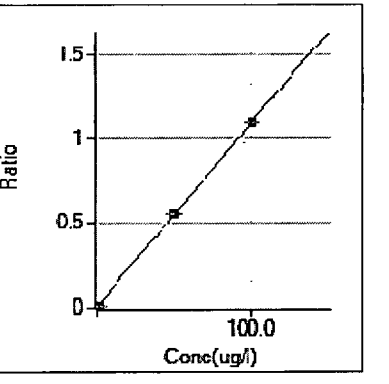
118 Sn [He]
ISTD: 115 In
y = 5.806E-3 x + 2.664E-4
R 1.0000
DL 0.01218
BEC 0.04588



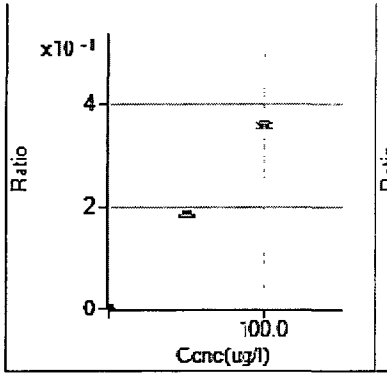
121 Sb [NoGas]
ISTD: 115 In
y = 5.398E-3 x + 2.004E-3
R 1.0000
DL 0.03032
BEC 0.3713



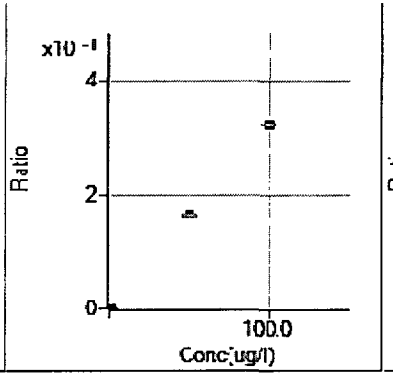
137 Ba [NoGas]
ISTD: 165 Ho
y = 1.549E-3 x + 1.211E-5
R 1.0000
DL 0.01035
BEC 0.007817



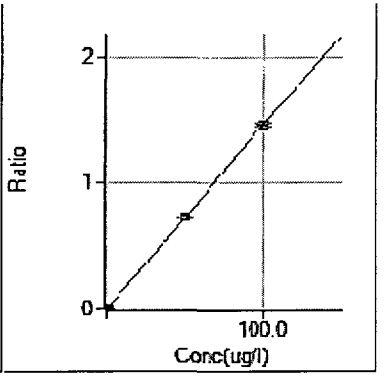
205 Tl [NoGas]
ISTD: 165 Ho
y = 1.098E-2 x + 2.383E-5
R 1.0000
DL 0.002579
BEC 0.002171



206 [Pb] [NoGas]
ISTD: 165 Ho
Excluded
R



207 [Pb] [NoGas]
ISTD: 165 Ho
Excluded
R



208 Pb [NoGas]
ISTD: 165 Ho
y = 1.464E-2 x + 2.518E-4

R	1.0000
DL	0.002368
BEC	0.0172

Metals Digestion Worksheet

Method Name 3050B Digestion **Prep Method** M3050 **Set** 200701A **Units** mL

Spikes	
Spiked ID 1	LCSW LOT# 10064561-15-49937 Pipette AP-21
Spiked ID 2	LCSW LOT# 10064561-14-49904
Spiked ID 3	Balance WB2
Spiked ID 4	
Spiked By	NM Date: 07/01/20 9:25:00 AM
Witnessed By	PW Date: 07/01/20 9:25:00 AM

Starting Temp:	SLOT 7 THERM:9104 97C/93C
Ending Temp:	SLOT 7 94C/90C
Temperature Type:	Mod Block
Sufficient Vol for Matrix QC:	YES
End Date/Time	07/01/20 13:50

	Sample	Sample Container	Spike Amount	Spike ID	Digested Amount	Final Volume	Start Date/Time	Comments
1	200701A Blk				1.00g	100mL	07/01/20 9:25	equip: Modblock4
2	200701A LCS		1mL	1+2	1.00g	100mL	07/01/20 9:25	equip: Modblock4
3	200701A LCSD		1mL	1+2	0.99g	100mL	07/01/20 9:25	equip: Modblock4
4	BA12291	BA12291S01			1.06g	100mL	07/01/20 9:25	equip: Modblock4 92362
5	BA12292	BA12292S01			0.99g	100mL	07/01/20 9:25	equip: Modblock4 92362
6	BA12292 MS	BA12292S01	2mL	1+2	0.99g	100mL	07/01/20 9:25	equip: Modblock4
7	BA12292 MSD	BA12292S01	2mL	1+2	0.99g	100mL	07/01/20 9:25	equip: Modblock4
8	BA13639	BA13639S04			1.03g	100mL	07/01/20 9:25	equip: Modblock4
9	BA14058	BA14058S01			1.00g	100mL	07/01/20 9:25	equip: Modblock4 92657
10	BA14059	BA14059S01			1.01g	100mL	07/01/20 9:25	equip: Modblock4 92657
11	BA14060	BA14060S01			1.00g	100mL	07/01/20 9:25	equip: Modblock4 92657
12	BA14061	BA14061S01			1.02g	100mL	07/01/20 9:25	equip: Modblock4 92657
13	BA14062	BA14062S01			1.00g	100mL	07/01/20 9:25	equip: Modblock4 92657
14	BA14063	BA14063S01			1.01g	100mL	07/01/20 9:25	equip: Modblock4 92657
15	BA14064	BA14064S01			1.05g	100mL	07/01/20 9:25	equip: Modblock4 92657
16	BA14065	BA14065S01			0.99g	100mL	07/01/20 9:25	equip: Modblock4 92657
17	BA14066	BA14066S01			0.96g	100mL	07/01/20 9:25	equip: Modblock4 92657
18	BA14067	BA14067S01			1.05g	100mL	07/01/20 9:25	equip: Modblock4 92657
19	BA14068	BA14068S01			0.98g	100mL	07/01/20 9:25	equip: Modblock4 92657

Solvent and Lot#
1:1 HNO3 6-4-20
HNO3 BDH 1119110 17841
H202 242999
HCL BDH 4119060 16858
100mL vessel 3000000021

Sample COC Transfer	
Sample prep employee Initials	nm
Analyst's initials	
Date	
Time	
Moved to	

Technician's Initials	
Scanned By	nm
Sample Preparation	nm
Digestion	nm
Bring up to volume	
Modified	07/01/20 12:42:39 PM

Reviewed By: **Date:**

_M7471

Mercury Digestion Worksheet

Method Name 7471A Mercury Digestion **Prep Method** M7471 **Set** 200610A **Units** mL

Spikes	
Spiked ID 1	Hg WORKING STANDARD PREP 6-10-20 Pipette M12
Spiked ID 2	Hg WORKING ICV PREP 6-10-20
Spiked ID 3	BALANCE WB2
Spiked ID 4	
Spiked By	TH Date: 06/10/20 6:20:00 PM
Witnessed By	N/A Date:

Starting Temp:	SLOT 32 THERM:Unbreakable 97/93c
Ending Temp:	SLOT 32 97/93c
Temp Type:	Modblock4
End Date/Time	06/10/20 7:05:00 PM

Mercury Calibration

Sample	Spike Amount	Spike ID	Final Volume
0 ppb		1	96 ml
0.2083 ppb	0.4 ml	1	96 ml
0.5208 ppb	1 ml	1	96 ml
1.0417 ppb	2 ml	1	96 ml
2.083 ppb	4ml	1	96 ml
5.208 ppb	10 ml	1	96 ml
5.208 ppb	10 ml	1	96 ml
10.417 ppb	20 ml	1	96 ml
ICV	8 ml	2	96 ml

Start Date/Time of Calibration 06/10/20 18:20

Sufficient Vol for Matrix QC: Yes

	Sample	Sample Container	Spike Amount	Spike ID	Digested Amount	Final Volume	Start Date/Time	Comments
1	200610A Blk					96mL	06/10/20 18:20	equip: Modblock4
2	200610A LCS		8mL	2		96mL	06/10/20 18:20	equip: Modblock4
3	200610A LCSD		8mL	2		96mL	06/10/20 18:20	equip: Modblock4
4	BA12257	BA12257S01			0.61g	96mL	06/10/20 18:20	equip: Modblock4 92360
5	BA12258	BA12258S01			0.60g	96mL	06/10/20 18:20	equip: Modblock4 92360
6	BA12291	BA12291S01			0.56g	96mL	06/10/20 18:20	equip: Modblock4 92362
7	BA12292	BA12292S01			0.62g	96mL	06/10/20 18:20	equip: Modblock4 92362
8	BA12364	BA12364S04			0.58g	96mL	06/10/20 18:20	equip: Modblock4 92373
9	BA12365	BA12365S04			0.62g	96mL	06/10/20 18:20	equip: Modblock4 92373
10	BA12366	BA12366S04			0.57g	96mL	06/10/20 18:20	equip: Modblock4 92373
11	BA12367	BA12367S04			0.65g	96mL	06/10/20 18:20	equip: Modblock4 92373
12	BA12467	BA12467M01			0.57g	96mL	06/10/20 18:20	equip: Modblock4 92397
13	BA12471	BA12471S04			0.63g	96mL	06/10/20 18:20	equip: Modblock4 92399
14	BA12472	BA12472S04			0.65g	96mL	06/10/20 18:20	equip: Modblock4 92399
15	BA12473	BA12473S04			0.61g	96mL	06/10/20 18:20	equip: Modblock4 92399
16	BA12474	BA12474S04			0.63g	96mL	06/10/20 18:20	equip: Modblock4 92399
17	BA12475	BA12475S04			0.62g	96mL	06/10/20 18:20	equip: Modblock4 92399
18	BA12491	BA12491S02			0.57g	96mL	06/10/20 18:20	equip: Modblock4 92402
19	BA12534	BA12534S04			0.65g	96mL	06/10/20 18:20	equip: Modblock4 92411
20	BA12535	BA12535S04			0.65g	96mL	06/10/20 18:20	equip: Modblock4 92411
21	BA12536	BA12536S04			0.65g	96mL	06/10/20 18:20	equip: Modblock4 92411

Solvent and Lot#
AQUAREGIA 6-10-20
KMnO4 6-4-20
DECOLORIZER 5-5-20
100mL vessels 200204

Sample COC Transfer	
Sample prep employee Initials	TH
Analyst's initials	
Date	
Time	
Moved to	

Technician's Initials	
Scanned By	TH
Sample Preparation	TH
Digestion	TH
Bring up to volume	TH
Modified	06/10/20 7:27:58 PM

Reviewed By: **Date:**

Mercury Digestion Worksheet

Method Name 7471A Mercury Digestion **Prep Method** M7471 **Set** 200610A **Units** mL

Spikes	
Spiked ID 1	Hg WORKING STANDARD PREP 6-10-20 Pipette M12
Spiked ID 2	Hg WORKING ICV PREP 6-10-20
Spiked ID 3	BALANCE WB2
Spiked ID 4	
Spiked By	TH Date: 06/10/20 6:20:00 PM
Witnessed By	N/A Date:

Starting Temp:	SLOT 32 THERM:Unbreakable 97/93c
Ending Temp:	SLOT 32 97/93c
Temp Type:	Modblock4
End Date/Time	06/10/20 7:05:00 PM

Mercury Calibration

Sample	Spike Amount	Spike ID	Final Volume
0 ppb		1	96 ml
0.2083 ppb	0.4 ml	1	96 ml
0.5208 ppb	1 ml	1	96 ml
1.0417 ppb	2 ml	1	96 ml
2.083 ppb	4ml	1	96 ml
5.208 ppb	10 ml	1	96 ml
5.208 ppb	10 ml	1	96 ml
10.417 ppb	20 ml	1	96 ml
ICV	8 ml	2	96 ml

Start Date/Time of Calibration 06/10/20 18:20

Sufficient Vol for Matrix QC: Yes

	Sample	Sample Container	Spike Amount	Spike ID	Digested Amount	Final Volume	Start Date/Time	Comments
22	BA12536 MS	BA12536S04	8mL	2	0.65g	96mL	06/10/20 18:20	equip: Modblock4
23	BA12536 MSD	BA12536S04	8mL	2	0.65g	96mL	06/10/20 18:20	equip: Modblock4

Solvent and Lot#
AQUAREGIA 6-10-20
KMnO4 6-4-20
DECOLORIZER 5-5-20
100mL vessels 200204

Sample COC Transfer	
Sample prep employee Initials	TH
Analyst's initials	
Date	
Time	
Moved to	

Technician's Initials	
Scanned By	TH
Sample Preparation	TH
Digestion	TH
Bring up to volume	TH
Modified	06/10/20 7:27:58 PM

Reviewed By: **Date:**

6020A/3050B Injection Log

Directory: K:\ICP-MS Megatron\raw data output csv\

RunID	Injected		Sample Name	Misc Info	FileName	Multiplier
1	01 Jul 2020	10:56	Calibration Blank 07/01/2020		200701A Tetr	2020.
2	01 Jul 2020	11:03	Standard 1 07/01/2020		200701A Tetr	2020.
3	01 Jul 2020	11:10	Standard 2 07/01/2020		200701A Tetr	2020.
4	01 Jul 2020	11:17	Standard 3 07/01/2020		200701A Tetr	2020.
5	01 Jul 2020	11:23	Standard 4 07/01/2020		200701A Tetr	2020.
6	01 Jul 2020	12:01	ICV 200701		200701A Tetr	1.
7	01 Jul 2020	12:08	ICB		200701A Tetr	1.
8	01 Jul 2020	12:15	0.5ppb LLICV 07/01/2020		200701A Tetr	2020.
9	01 Jul 2020	12:22	1.0ppb LLICV 07/01/2020		200701A Tetr	2020.
10	01 Jul 2020	12:28	2.0ppb LLICV 07/01/2020		200701A Tetr	2020.
11	01 Jul 2020	12:35	4.0ppb LLICV 07/01/2020		200701A Tetr	2020.
12	01 Jul 2020	12:41	20ppb LLICV 07/01/2020		200701A Tetr	2020.
13	01 Jul 2020	12:48	ICSA 06/17/20		200701A Tetr	1.
14	01 Jul 2020	12:54	ICSAB 06/17/20		200701A Tetr	1.
15	01 Jul 2020	15:05	200701A BLK DF10		200701A Tetr	10.
16	01 Jul 2020	15:12	200701A LCS DF10		200701A Tetr	10.
17	01 Jul 2020	15:18	200701A LCSD DF10		200701A Tetr	10.
18	01 Jul 2020	15:31	CCV 200701		200701A Tetr	1.
19	01 Jul 2020	15:38	CCB 200701		200701A Tetr	1.
20	01 Jul 2020	15:45	BA12291S01 DF10		200701A Tetr	10.
21	01 Jul 2020	15:51	BA12292S01 DF10		200701A Tetr	10.
22	01 Jul 2020	15:58	BA12292S01 MS DF10		200701A Tetr	10.
23	01 Jul 2020	16:04	BA12292S01 MSD DF10		200701A Tetr	10.
24	01 Jul 2020	16:10	BA12292S01-A DF10		200701A Tetr	10.
25	01 Jul 2020	16:17	BA12292S01 DT DF50		200701A Tetr	50.
26	01 Jul 2020	16:36	CCV 200701		200701A Tetr	1.
27	01 Jul 2020	16:43	CCB 200701		200701A Tetr	1.

EPA 7471B Injection Log

Directory: K:\FIMS Freddie\Backup Excel\

RunID	Injected		Sample Name	Misc Info	FileName	Multiplier
1	11 Jun 2020	11:10	Calib. Blank		200611S	1.
2	11 Jun 2020	11:11	ICAL 0.208ppb 6/11/20 TH		200611S	20.
3	11 Jun 2020	11:13	ICAL 0.521ppb 6/11/20 TH		200611S	20.
4	11 Jun 2020	11:15	ICAL 1.042ppb 6/11/20 TH		200611S	20.
5	11 Jun 2020	11:16	ICAL 2.083ppb 6/11/20 TH		200611S	20.
6	11 Jun 2020	11:18	ICAL 5.21ppb 6/11/20 TH		200611S	20.
7	11 Jun 2020	11:20	ICAL 10.42ppb 6/11/20 TH		200611S	20.
8	11 Jun 2020	11:22	ICV 6/11/20 TH		200611S	20.
9	11 Jun 2020	11:24	ICB 6/11/20 TH		200611S	20.
10	11 Jun 2020	11:26	LLQC 6/11/20 TH		200611S	20.
11	11 Jun 2020	11:27	200610A BLK		200611S	1.
12	11 Jun 2020	11:29	200610A LCS		200611S	1.
13	11 Jun 2020	11:31	200610A LCSD		200611S	1.
16	11 Jun 2020	11:36	BA12291S01		200611S	1.
17	11 Jun 2020	11:37	BA12292S01		200611S	1.
24	11 Jun 2020	11:49	CCV 6/11/20 TH		200611S	20.
25	11 Jun 2020	11:51	CCB 6/11/20 TH		200611S	20.

% Moisture

Batch: QCG 200605-M008188

Method: CLP 4.0

Date: 06/05/20 17:47

Sample	Container	Pan (g)	Pan+Wet (g)	Pan+Dry 1 (g)	Pan+Dry 2 (g)	Moisture (%)	Comments
BA12370		0.8346 06/05/20 17:47	8.8091 06/05/20 17:48	7.6577 06/05/20 23:47	7.6578	14.437	
BA12369		0.8360 06/05/20 17:46	6.3826 06/05/20 17:47	5.5905 06/05/20 23:46	5.5904	14.283	
BA12368		0.8282 06/05/20 17:45	8.3694 06/05/20 17:46	7.2435 06/05/20 23:46	7.2435	14.930	
BA12367D		0.8356 06/05/20 17:38	8.2359 06/05/20 17:39	7.6588 06/05/20 23:46	7.6588	7.798	
BA12367		0.8306 06/05/20 17:37	8.2169 06/05/20 17:38	7.6099	7.6105 06/05/20 23:46	8.210	
BA12366		0.8379 06/05/20 17:36	8.7598 06/05/20 17:37	8.1204 06/05/20 23:45	8.1203 06/05/20 23:45	8.073	
BA12365		0.8347 06/05/20 17:33	9.5769 06/05/20 17:33	8.8652 06/05/20 23:45	8.8651	8.142	
BA12364		0.8311 06/05/20 17:32	7.3730 06/05/20 17:32	6.8258 06/05/20 23:45	6.8259	8.363	
BA12292		0.8301 06/05/20 17:31	8.8971 06/05/20 17:32	7.5273	7.5277 06/05/20 23:44	16.975	
BA12291		0.8331 06/05/20 17:30	8.6321 06/05/20 17:31	7.0816 06/05/20 23:44	7.0816 06/05/20 23:44	19.881	

Date/Time InOven@104ºC	Date/Time OutOven@104ºC	Date/Time InOven@104ºC	Date/Time OutOven@104ºC
06/05/20 5:48:00 PM			06/05/20 11:44:00 PM