SDG COVER PAGE

Lab Name: Alliance Technical Group, LLC   Contract: 68HERH20D0011

Lab Code: ACE   Case No.: 51817   MA No.: 3225.1,3226.1   SDG No.: MYE4B0

SOW No. : SFAM01.1

| EPA Sample No. | Lab Sample Id | Analysis Method | | | |
		ICP-AES	ICP-MS	Mercury	Cyanide
MYE4B0	P4481-01	X	X		
MYE4B1	P4481-02	X	X		
MYE4B2	P4481-03	X	X		
MYE4B3	P4481-04	X	X		
MYE4B4	P4481-05	X	X		
MYE4B5	P4481-06	X	X		
MYE4B6	P4481-07	X	X		
MYE4B7	P4481-08	X	X		
MYE4B8	P4481-09	X	X		
MYE4B9	P4481-10	X	X		
MYE4C0	P4481-11	X	X		
MYE4C1	P4481-12	X	X		
MYE4C1D	P4481-13	X	X		
MYE4C1S	P4481-14	X	X		
MYE4C2	P4481-15	X	X		
MYE4C3	P4481-16	X	X		
MYE4C4	P4481-17	X	X		
MYE4C5	P4481-18	X	X		
MYE4C6	P4481-19	X	X		
MYE4C7	P4481-20	X	X		
MYE4C8	P4481-21	X	X		
MYE4C9	P4481-22	X	X		

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 in the SDG Narrative. All edits and manual integrations have been peer-reviewed. Release of the data contained in this hardcopy Complete SDG File and in the electronic data submitted has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____   Name: _____

Date: _____   Title: _____

USEPA CLP COC (LAB COPY)
DateShipped: 10/21/2024
CarrierName: FedEx
AirbillNo: 7793 0484 1991

CHAIN OF CUSTODY RECORD

Case #: 51817
Cooler #: EPA Cooler 02

68HERH20D0011   SDG # MYE4B0

No: 9-101424-084320-0136
Lab: Alliance Technical Group LLC
Lab Contact: Mohammad Ahmed
Lab Phone: 908-728-3151

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
90028-L-00008-01	MYE4A7	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7955 (None) (1)	90028-L-00008	04/23/2024 14:06	
90028-L-00009-01	MYE4A8	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7956 (None) (1)	90028-L-00009	04/23/2024 14:14	
90028-L-00010-01	MYE4A9	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7957 (None) (1)	90028-L-00010	04/23/2024 14:11	
90028-L-00011-01	MYE4B0	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7958 (None) (1)	90028-L-00011	04/23/2024 14:03	●
90028-G-00011-01	MYE4B1	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7959 (None) (1)	90028-G-00011	04/23/2024 16:19	2
90028-G-00012-01	MYE4B2	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7960 (None) (1)	90028-G-00012	04/23/2024 16:42	3
90028-G-00012-02	MYE4B3	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7961 (None) (1)	90028-G-00012	04/23/2024 16:43	4
90028-F-00004-01	MYE4B4	Soil/ ERT	Grab	ICP-AES and ICP-MS(21)	9-7962 (None) (1)	90028-F-00004	04/23/2024 11:59	8
90028-F-00005-01	MYE4B5	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7963 (None) (1)	90028-F-00005	04/23/2024 12:00	C
90028-F-00006-01	MYE4B6	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7964 (None) (1)	90028-F-00006	04/23/2024 11:52	7
90028-F-00007-01	MYE4B7	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7965 (None) (1)	90028-F-00007	04/23/2024 11:50	8
90028-F-00008-01	MYE4B8	Soil/ ERT	Grab	ICP-AES and ICP-MS(21)	9-7966 (None) (1)	90028-F-00008	04/23/2024 12:09	9
90028-F-00009-01	MYE4B9	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7967 (None) (1)	90028-F-00009	04/23/2024 12:10	9
90028-F-00010-01	MYE4C0	Soil/ ERT	Grab	ICP-AES and ICP-MS(21)	9-7968 (None) (1)	90028-F-00010	04/23/2024 11:51	10
90028-F-00011-03	MYE4C1	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7969 (None) (1)	90028-F-00011	04/23/2024 12:09	11
90028-F-00012-01	MYE4C2	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7970 (None) (1)	90028-F-00012	04/23/2024 12:10	12

Samples(s) to be used for Lab QC: 90028-F-00011-03 Tag 9-7969 - Special Instructions: ICP-AES 11+Metals:Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn ICP-MS 11+ Metals: Ag, As, Ba,Be, Cd, Co, Cr, Cu, Ni, Pb, Sb, Se,Tl, V, Zn

Analysis Key: ICP-AES and ICP-MS=Metals ICP-AES and ICP-MS

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Shipment for Case Complete? N / Samples Transferred From Chain of Custody #
	[signature] R9 ESAT 057869-70	10/18/24 15:58	*[signature]*	10-22-24 1003	Sample Condition Upon Receipt: 18.3°C IM 6WW # custody seals intact No Temp BW.

USEPA CLP COC (LAB COPY)

DateShipped: 10/21/2024
CarrierName: FedEx
AirbillNo: 7793 0484 1991

CHAIN OF CUSTODY RECORD

Case #: 51817
Cooler #: EPA Cooler 02

68HERH20D0011

SDG # MYE4B0

No: 9-101424-084320-0136
Lab: Alliance Technical Group LLC
Lab Contact: Mohammad Ahmed
Lab Phone: 908-728-3151

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
90028-G-00001-01	MYE4C3	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7971 (None) (1)	90028-G-00001	04/23/2024 16:32	14
90028-G-00002-01	MYE4C4	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7972 (None) (1)	90028-G-00002	04/23/2024 16:47	15
90028-G-00003-01	MYE4C5	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7973 (None) (1)	90028-G-00003	04/23/2024 16:16	16
90028-G-00004-01	MYE4C6	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7974 (None) (1)	90028-G-00004	04/23/2024 16:55	17
90028-G-00005-01	MYE4C7	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7975 (None) (1)	90028-G-00005	04/23/2024 16:23	18
90028-G-00006-01	MYE4C8	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7976 (None) (1)	90028-G-00006	04/23/2024 16:38	19
90028-G-00007-01	MYE4C9	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7977 (None) (1)	90028-G-00007	04/23/2024 16:50	20
90028-G-00008-01	MYE4D0	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7978 (None) (1)	90028-G-00008	04/23/2024 16:13	
90028-G-00009-01	MYE4D1	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7979 (None) (1)	90028-G-00009	04/23/2024 17:00	
90028-G-00010-01	MYE4D2	Soil/ REAC	Grab	ICP-AES and ICP-MS(21)	9-7980 (None) (1)	90028-G-00010	04/23/2024 16:28	

Analysis Key: ICP-AES and ICP-MS=Metals ICP-AES and ICP-MS

Special Instructions: ICP-AES 11+Metals:Ag,Al,As,Ba,Be,Ca,Cd,Co,Cr,Cu,Fe,K,Mg,Mn,Na,Ni,Pb,Sb,Se,Tl,V,Zn ICP-MS 11+
Metals: Ag, As, Ba,Be, Cd, Co, Cr, Cu, Ni, Pb, Sb, Se, Tl, V, Zn

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	Langlitzen R9 ESAT	10/18/24 15:58	_[signature]_	10-22-24 1003	18.3°C in cooler custody seals intact No Temp Bl.

Shipment for Case Complete? N
Samples Transferred From Chain of Custody #

05786 9-30

Lab Name : Alliance Technical Group, LLC		Page 1 of 1
Received By (Print Name) George Neguon		Log-in Date **10/22/2024**
Received By (Signature)		

Case Number 51817	SDG No. MYE4B0	MA No. 3225.1,3226.1

Remarks:	
1. Custody Seal (s)	Present, Intact
2. Custody Seal Nos.	057869-70
3. Traffic Reports/Chain Of Custody Records	Present
4. Airbill	Present
5. Airbill No. and Shipping Container ID No.	779304841991
	1
6. Shipping Container Temperature Indicator Bottle	Absent
7. Shipping Container Temperature	18.3 Degree C
8. Sample Condition	Intact
9. Sample Tags Sample Tag Numbers	Absent
	Listed on Traffic Report
10. Does information on Traffic Reports/Chain of Custody Records and Sample Tags agree ?	Yes
11. Date Received at Lab	10/22/2024
12. Time Received	10:03

	EPA Sample #	Aqueous/ Water Sample pH	Corresponding		Remarks: Condition of Sample Shipment, etc.
			Sample Tag #	Assigned Lab #	
1	MYE4B0	N/A	9-7958	P4481-01	Intact
2	MYE4B1	N/A	9-7959	P4481-02	Intact
3	MYE4B2	N/A	9-7960	P4481-03	Intact
4	MYE4B3	N/A	9-7961	P4481-04	Intact
5	MYE4B4	N/A	9-7962	P4481-05	Intact
6	MYE4B5	N/A	9-7963	P4481-06	Intact
7	MYE4B6	N/A	9-7964	P4481-07	Intact
8	MYE4B7	N/A	9-7965	P4481-08	Intact
9	MYE4B8	N/A	9-7966	P4481-09	Intact
10	MYE4B9	N/A	9-7967	P4481-10	Intact
11	MYE4C0	N/A	9-7968	P4481-11	Intact
12	MYE4C1	N/A	9-7969	P4481-12	Intact
13	MYE4C1D	N/A	9-7969	P4481-13	Intact
14	MYE4C1S	N/A	9-7969	P4481-14	Intact
15	MYE4C2	N/A	9-7970	P4481-15	Intact
16	MYE4C3	N/A	9-7971	P4481-16	Intact
17	MYE4C4	N/A	9-7972	P4481-17	Intact
18	MYE4C5	N/A	9-7973	P4481-18	Intact
19	MYE4C6	N/A	9-7974	P4481-19	Intact
20	MYE4C7	N/A	9-7975	P4481-20	Intact
21	MYE4C8	N/A	9-7976	P4481-21	Intact
22	MYE4C9	N/A	9-7977	P4481-22	Intact
23	N/A	N/A	N/A	N/A	N/A

* Contact SMO and attach record of resolution

Reviewed By		Logbook No. N/A
Date	10/22/24	Logbook Page No. N/A

```
                              FORM DC-2
               COMPLETE SDG FILE (CSF) INVENTORY SHEET
```

```
┌─────────────────────────────────────────────────────────────────────────────┐
│                                                                               │
│    LAB NAME     Alliance Technical Group, LLC                                 │
│                                                                               │
│    LAB CODE     ACE                                                           │
│                                                                               │
│    CONTRACT NO.  68HERH20D0011                                                │
│                                                                               │
│    CASE NO.     51817           SDG NO.    MYE4B0                             │
│                                                                               │
│    MA NO.       3225.1,3226.1   SOW NO.    SFAM01.1                           │
│                                                                               │
└─────────────────────────────────────────────────────────────────────────────┘
```

All documents delivered in the Complete SDG File must be original documents where possible.
(Reference - Exhibit B Section 2.4)

		PAGE NOs:		CHECK	
		FROM	TO	LAB	REGION
1.	SDG Cover Page	1	1	✔	
2.	Traffic Report/Chain of Custody Record(s)	2	3	✔	
3.	Sample Log-In Sheet (DC-1)	4	4	✔	
4.	CSF Inventory Sheet (DC-2)	5	7	✔	
5.	SDG Narrative	8	17	✔	
6.	Communication Logs	NA	NA	✔	
7.	Percent Solids Log	18	20	✔	

Analysis Forms and Data (ICP-AES)

8.	Sample Analysis Data Forms (1A-OR, 1B-OR, and 1-IN) for each sample or sample analysis, laboratory QC as applicable	21	40	✔	
9.	Instrument raw data by instrument in analysis order	41	290	✔	

Other Data

10.	Standard and Reagent Preparation Logs	291	468	✔	
11.	Original Preparation and Cleanup forms or copies of Preparation and Cleanup Logbooks	469	470	✔	
12.	Original Analysis or Instrument Run forms or copies of Analysis or Instrument Logbooks	471	483	✔	
13.	Performance Evaluation (PE)/Proficiency Testing (PT) Sample Instructions	NA	NA	✔	
14.	Extraction Logs for TCLP and SPLP	NA	NA	✔	
15.	Raw GPC Data	NA	NA	✔	
16.	Raw Florisil Data	NA	NA	✔	

Analysis Forms and Data (ICP-MS)

17.	Sample Analysis Data Forms (1A-OR, 1B-OR, and 1-IN) for each sample or sample analysis, laboratory QC as applicable	484	503	✔	
18.	Instrument raw data by instrument in analysis order	504	2006	✔	

Other Data

19.	Standard and Reagent Preparation Logs	2007	2146	✔	
20.	Original Preparation and Cleanup forms or copies of Preparation and Cleanup Logbooks	2147	2148	✔	
21.	Original Analysis or Instrument Run forms or copies of Analysis or Instrument Logbooks	2149	2161	✔	
22.	Performance Evaluation (PE)/Proficiency Testing (PT) Sample Instructions	NA	NA	✔	

		FROM	TO	LAB	REGION
23.	Extraction Logs for TCLP and SPLP	NA	NA	✔	
24.	Raw GPC Data	NA	NA	✔	
25.	Raw Florisil Data	NA	NA	✔	

Analysis Forms and Data (Mercury)

		FROM	TO	LAB	REGION
26.	Sample Analysis Data Forms (1A-OR, 1B-OR, and 1-IN) for each sample or sample analysis, laboratory QC as applicable	NA	NA	✔	
27.	Instrument raw data by instrument in analysis order	NA	NA	✔	

Other Data

		FROM	TO	LAB	REGION
28.	Standard and Reagent Preparation Logs	NA	NA	✔	
29.	Original Preparation and Cleanup forms or copies of Preparation and Cleanup Logbooks	NA	NA	✔	
30.	Original Analysis or Instrument Run forms or copies of Analysis or Instrument Logbooks	NA	NA	✔	
31.	Performance Evaluation (PE)/Proficiency Testing (PT) Sample Instructions	NA	NA	✔	
32.	Extraction Logs for TCLP and SPLP	NA	NA	✔	
33.	Raw GPC Data	NA	NA	✔	
34.	Raw Florisil Data	NA	NA	✔	

Analysis Forms and Data (Cyanide)

		FROM	TO	LAB	REGION
35.	Sample Analysis Data Forms (1A-OR, 1B-OR, and 1-IN) for each sample or sample analysis, laboratory QC as applicable	NA	NA	✔	
36.	Instrument raw data by instrument in analysis order	NA	NA	✔	

Other Data

		FROM	TO	LAB	REGION
37.	Standard and Reagent Preparation Logs	NA	NA	✔	
38.	Original Preparation and Cleanup forms or copies of Preparation and Cleanup Logbooks	NA	NA	✔	
39.	Original Analysis or Instrument Run forms or copies of Analysis or Instrument Logbooks	NA	NA	✔	
40.	Performance Evaluation (PE)/Proficiency Testing (PT) Sample Instructions	NA	NA	✔	
41.	Extraction Logs for TCLP and SPLP	NA	NA	✔	
42.	Raw GPC Data	NA	NA	✔	
43.	Raw Florisil Data	NA	NA	✔	

Additional

44. EPA Shipping/Receiving Documents

    Airbill (No. of Shipments ___1___)   2162   2162   ✔

    Sample Tags   NA   NA   ✔

    Sample Log-In Sheet (Lab)   2163   2165   ✔

45. Misc. Shipping/Receiving Records(list all individual records)

    _____   NA   NA   ✔

    _____

    _____

46. Internal Lab Sample Transfer Records and Tracking Sheets
    (describe or list)

    _____   2166   2169   ✔

    _____

47. Other Records and related Communication Logs
    (describe or list)

    _____   NA   NA   ✔

    _____

    _____

48. Comments: _____

    _____

    _____

Completed by:
(CLP Lab)

    _____   Nimisha Pandya, Document Control Officer   _____
        (Signature)   (Print Name & Title)   (Date)

Audited by:
(EPA)

    _____   _____   _____
        (Signature)   (Print Name & Title)   (Date)

SDG NARRATIVE

USEPA
SDG # MYE4B0
CASE # 51817
CONTRACT # 68HERH20D0011
SOW# SFAM01.1
LAB NAME: Alliance Technical Group, LLC
LAB CODE: ACE
LAB ORDER ID # P4481
MODIFIED ANALYSIS #3225.1, 3226.1

A. Number of Samples and Date of Receipt

20 Soil samples were delivered to the laboratory intact on 10/22/2024.

B. Parameters

Test requested for Metals CLP FULL = Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, Zinc.

Test requested for Metals CLP MS FULL = Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc.

C. Cooler Temp

Indicator Bottle**:** Presence**/Absence**

Cooler: 18.3^{o}C

D. Detail Documentation (related to Sample Handling
Shipping, Analytical Problem, Temp of Cooler etc):

Issue 1 : A "P" or "M" prefix was listed at the beginning of a CLP sample ID.

E. Corrective Action taken for above:

Resolution 1 : To maintain COC integrity, ASB requests no changes to the Sample IDs. The laboratory will note the issue in the SDG Narrative and proceed with the analysis of the samples.

F. Analytical Techniques:

All analyses were based on CLP Methodology by method SFAM01.1.

284 Sheffield Street
Mountainside, NJ 07092

Inter Element correction factors (IECs) are determined annually and correction factor are applied during ICP-AES analysis.

G. Calculation:

Calculation for ICP-AES Soil Sample:

Conversion of Results from mg/L or ppm to mg/kg (Dry Weight Basis):

$$\text{Concentration (mg/kg)} = C \times \frac{Vf}{W \times S} \times DF$$

Where,

C = Instrument value in ppm (The average of all replicate exposures)
Vf = Final digestion volume (mL)
W = Initial aliquot amount (g) (Sample amount taken in prep)
S = % Solids / 100 (Fraction of Percent Solids)
DF = Dilution Factor

Example Calculation For Sample MYE4B0 For Antimony:

If C = 0.0065840 ppm
Vf = 100 ml
W = 1.48 g
S = 0.981(98.1/100)
DF = 2

$$\text{Concentration (mg/kg)} = 0.0065840 \times \frac{100}{1.48 \times 0.981} \times 2$$

$$= 0.90696 \text{ mg/kg}$$

$$= 0.91 \text{ mg/kg (Reported Result with Signification)}$$

Calculation for ICP-MS Soil Sample:

Conversion of Results from μg /L or ppb to mg/kg :

$$\text{Concentration (mg/kg)} = C \times \frac{Vf}{W \times S} \times DF / 1000$$

Where,

C = Instrument value in ppb (The average of all replicate integrations)
Vf = Final digestion volume (mL)
W = Initial aliquot amount (g) (Fraction of Sample amount taken in prep)
S = % Solids / 100 (Fraction of Percent Solids)
DF = Dilution Factor

284 Sheffield Street
Mountainside, NJ 07092

Example Calculation For Sample MYE4B0 For Antimony :

If C = 2.06 ppb
Vf = 500 ml
W = 1.48 g
S = 0.981(98.1/100)
DF = 1

Concentration (mg/kg) = 2.06 x $\dfrac{500}{1.48 \text{ x } 0.981}$ x 1 / 1000

= 0.7094 mg/kg

= 0.71 mg/kg (Reported Result with Signification)

H. QA/ QC

Calibrations met requirements. Interference check met requirements. Blank analyses did not indicate any presence of contamination. Laboratory Control sample was within control limits. AES Spike sample (MYE4C1S) did meet requirements except for Arsenic, Copper, Zinc. MS Spike sample (MYE4C1S) did meet requirements except for Antimony, Cadmium, Thallium. Duplicate sample did meet requirements except for Zinc. Serial Dilution did meet requirements.

Collision cell is being used to remove potential interferences. The analytes Na, Mg, Al, K, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, As are being analyzed with collision cell and analytes Be, B, Ca, Ti, Se, Sr, Zr, Mo, Ag, Cd, Sn, Sb, Ba, Tl, Pb, U are being analyzed with Non-Collision Cell. Helium gas is used for the Collision Cell analysis.

Internal Standard Association for ICP-MS analysis.

Target Analyte	Associated Internal Standard
Antimony	159Tb
Arsenic	89Y
Barium	159Tb
Beryllium	6Li
Cadmium	159Tb
Chromium	45Sc

Alliance
TECHNICAL GROUP

284 Sheffield Street
Mountainside, NJ 07092

Cobalt	45Sc
Copper	45Sc
Lead	209Bi
Nickel	45Sc
Selenium	89Y
Silver	159Tb
Thallium	209Bi
Vanadium	45Sc
Zinc	45Sc

I certify that the 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 data contained in this hard copy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature.

Signature_____   Name: Nimisha Pandya

Date _____   Title: Document Control Officer

Date: 09/04/2024	**MA:** 3225.0	**Title:** ICP-MS with Modified Preparation Method and Analysis of Soils with Additional Laboratory QC
Method Source: SFAM01.1	**Method:** ICP-MS	
Matrix: Soil/Sediment		

Summary of Modification
The purpose of this modified analysis is to prepare samples by EPA Draft Method 3050C (see below) with additional modified LCS and Matrix Spikes and analyze for the scheduled target analytes by ICP-MS. Unless specifically modified by this modification, all analyses, Quality Control (QC), and reporting requirements specified in the SOW listed in your current EPA agreement remain unchanged and in full force and effect.

I. Analyte Modifications	**Not applicable** ☒

II. Calibration and QC Requirements	**Not applicable** ☐

The Laboratory shall:
- Use the Method Detection Limits (MDLs) determined for routine soil analyses (i.e., Method 200.8) to report the results for these analyses. The Laboratory is NOT required to perform an MDL study for Draft Method 3050C.
- Prepare and analyze an additional Laboratory Control Sample (LCS) spiked at the CRQL. Percent Recovery limits do NOT apply to this LCS and no corrective actions are required.
- Prepare a Matrix Spike spiked at three times the levels specified in the SOW.
- Prepare and analyze an additional Matrix Spike sample spiked at five times the levels specified for this Modified Analysis (i.e., 15x the levels specified in the SOW).
- Post-Digestion Spike requirements apply to the 5x Matrix Spike only.
- Post-Digestion Spike corrective actions apply to Sb.

III. Preparation and Method Modifications	**Not applicable** ☐

The Laboratory shall:
- Prepare and analyze the sample by EPA Draft Method 3050C as follows:
  - Mix sample thoroughly and transfer 1.00 – 1.50 g to a digestion vessel.
  - Add 10 mL 1:1 HNO_3 and 5 mL 1:1 HCl, heat the sample at 95°C (±3°C) and reflux 10 -15 minutes.
  - Add 5 mL concentrated HNO_3 and reflux for 30 minutes at 95°C (±3°C), repeat until digestion complete.
  - Concentrate sample to 5 mL or reflux without boiling for 2 hours at 95°C (±3°C).
  - Cool sample, add 2mL water and 3 mL 30% H_2O_2. Heat at 95°C (±3°C) and add additional 1 mL aliquots of 30% H_2O_2 until effervescence is minimal.
  - Dilute to 100 mL with water, centrifuge or filter as necessary prior to analysis.
- The same sample extracts can be used for ICP-AES analysis. Separate Matrix Spikes and LCS will need to be prepared for both ICP-AES and ICP-MS analyses.
- Analyze the samples starting at an initial 5x dilution. Subsequently, dilute samples as necessary to bring the analyte concentrations within the calibration range of the instrument per the SOW.
- Method Blanks, both LCSs, and all instrument QC are to be analyzed undiluted.

IV. Special Reporting Requirements	Not applicable ☐

The Laboratory shall:

- Ensure the SDG Narrative is updated as stated in the SOW, including any technical and administrative problems encountered and the resolution or corrective actions taken. These problems may include interference problems encountered during analysis, dilutions, re-analyses and/or re-preparations performed, and problems with the analysis of samples. Also include a discussion of any SOW Modified Analyses, including a copy of the approved modification form with the SDG Narrative.
- Initial analysis data are reported with a dilution factor of 1.0 and a final volume of 500 mL, per the SOW.
- Report the additional LCS as "LCSD" in the raw data and in the EDD with QCType "Laboratory_Control_Sample_Duplicate".
- Report the additional Matrix Spike with an "SRE" suffix in the raw data and EDD.
- Report any Post-Digestion Spike of the additional 5x Matrix Spike with an "ARE" suffix.

Date: 09/04/2024	**MA:** 3226.0	**Title:** ICP-AES with Modified Preparation Method and Analysis of Soils with Additional Laboratory QC
Method Source: SFAM01.1	**Method:** ICP-AES	
Matrix: Soil/Sediment		

Summary of Modification

The purpose of this modified analysis is to prepare samples by EPA Draft Method 3050C (see below) with additional modified LCS and Matrix Spikes and analyze for the scheduled target analytes by ICP-AES. Unless specifically modified by this modification, all analyses, Quality Control (QC), and reporting requirements specified in the SOW listed in your current EPA agreement remain unchanged and in full force and effect.

I. Analyte Modifications	**Not applicable** ☒

II. Calibration and QC Requirements	**Not applicable** ☐

The Laboratory shall:
- Use the Method Detection Limits determined for routine soil analyses (i.e., Method 3050B) to report the results for these analyses. The Laboratory is NOT required to perform an MDL study for Draft Method 3050C.
- Prepare and analyze an additional Laboratory Control Sample (LCS) spiked at the CRQL. Percent Recovery limits do NOT apply to this LCS and no corrective actions are required.
- Prepare a Matrix Spike spiked at two times the levels specified in the SOW.
- Post-Digestion Spike requirements apply to the 2x Matrix Spike.
- Post-Digestion Spike corrective actions apply to Sb.

III. Preparation and Method Modifications	**Not applicable** ☐

The Laboratory shall:
- Prepare and analyze the sample by EPA Draft Method 3050C as follows:
  - Mix sample thoroughly and transfer 1.00 – 1.50 g to a digestion vessel.
  - Add 10 mL 1:1 HNO_3 and 5 mL 1:1 HCl, heat the sample at 95°C (±3°C) and reflux 10 -15 minutes.
  - Add 5 mL concentrated HNO_3 and reflux for 30 minutes at 95°C (±3°C), repeat until digestion complete.
  - Concentrate sample to 5 mL or reflux without boiling for 2 hours at 95°C (±3°C).
  - Cool sample, add 2mL water and 3 mL 30% H_2O_2. Heat at 95°C (±3°C) and add additional 1 mL aliquots of 30% H_2O_2 until effervescence is minimal.
  - Dilute to 100 mL with water, centrifuge or filter as necessary prior to analysis.
- The same sample extracts can also be used for ICP-MS analysis. Separate Matrix Spikes and LCS will need to be prepared for both ICP-AES and ICP-MS analyses.
- Analyze the samples starting at an initial 2x dilution. Subsequently, dilute samples as necessary to bring the analyte concentrations within the calibration range of the instrument per the SOW.
- Verify that the dilution was adequate to reduce interferents to within the method calibration range. This can optionally be verified by visual verification of the spectrogram or by analysis of a serial dilution. There are other acceptable means to provide assurance, e.g. some software may automatically provide guidance to the analyst.
- Method Blanks, both LCS, and all instrument QC are to be analyzed undiluted.

IV. Special Reporting Requirements	**Not applicable** ☐

The Laboratory shall:
- Ensure the SDG Narrative is updated as stated in the SOW, including any technical and administrative problems encountered and the resolution or corrective actions taken. These problems may include interference problems encountered during analysis, dilutions, re-analyses and/or re-preparations performed, and problems with the analysis of samples. Also include a discussion of any SOW Modified Analyses, including a copy of the approved modification form with the SDG Narrative.
- Initial analysis data are reported with a dilution factor of 2.0 and a final volume of 100 mL, per the SOW.
- Report the additional LCS as "LCSD" in the raw data and in the EDD with QCType "Laboratory_Control_Sample_Duplicate".
- Ensure that up-to-date Interelement Correction Factors (IECs) are provided with the data package.

Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-in-fit?
As 189.042 {479}	☒	1	Fe	-0.000064	0.000000	No
Tl 190.856 {477}	☒	5	Mo	-0.002450	0.000000	No
			Co	0.002248	0.000000	No
			Ti	-0.000500	0.000000	No
			Mn	0.000370	0.000000	No
			V	-0.012340	0.000000	No
Pb 220.353 {453}	☒	6	Mo	-0.001480	0.000000	No
			Al	-0.000075	0.000000	No
			Cu	0.001400	0.000000	No
			Fe	0.000030	0.000000	No
			Mn	0.000340	0.000000	No
			Ni	0.000630	0.000000	No
Se 196.090 {472}	☒	3	Fe	-0.000308	0.000000	No
			Mn	0.000470	0.000000	No
			Co	-0.000630	0.000000	No
Sb 206.833 {463}	☒	4	Cr	0.010700	0.000000	No
			V	-0.001168	0.000000	No
			Mo	-0.002850	0.000000	No
			Ni	-0.000440	0.000000	No
Al 396.152 { 85}	☒	1	Mo	0.037230	0.000000	No
Ba 493.409 { 68}	☐	None				
Be 234.861 {144}	☒	3	Mo	-0.000320	0.000000	No
			Fe	0.000010	0.000000	No
			Mn	-0.000047	0.000000	No
Cd 214.438 {457}	☒	1	Fe	0.000040	0.000000	No
Ca 373.690 { 90}	☐	None				
Cr 267.716 {126}	☒	1	Mn	0.000160	0.000000	No
Co 228.616 {448}	☒	2	Ti	0.001840	0.000000	No
			Mo	-0.001230	0.000000	No
Cu 324.754 {104}	☒	4	Co	-0.000796	0.000000	No
			Fe	-0.000100	0.000000	No
			Mn	0.000345	0.000000	No
			Ni	0.000895	0.000000	No
Fe 259.837 {130}	☐	None				
Mn 257.610 {131}	☒	1	Ni	0.000897	0.000000	No
Mg 279.079 {121}	☐	None				
Ni 231.604 {446}	☐	None				
Ag 328.068 {103}	☒	3	Fe	-0.000100	0.000000	No
			Mn	0.000146	0.000000	No
			V	-0.000889	0.000000	No
Na 818.326 { 41}	☐	None				
V 292.402 {115}	☒	2	Mo	-0.008480	0.000000	No
			Cr	-0.002220	0.000000	No
Zn 206.200 {464}	☐	None				
Zn 213.856 {158}	☒	1	Ni	0.007280	0.000000	No
K 769.896 { 44}	☐	None				
P 177.495 {490}	☒	2	Ni	0.001640	0.000000	No
			Cu	-0.012530	0.000000	No
B 249.678 {135}	☒	3	Co	0.002880	0.000000	No
			V	-0.002000	0.000000	No
			Fe	-0.001360	0.000000	No
Mo 202.030 {467}	☐	None				
S 182.034 {485}	☒	2	Mo	-0.008000	0.000000	No
			Mn	0.002700	0.000000	No

Element, Wavelength and Order	Use?	# IECs	IEC	k1	k2	Calc-In-fit?
Si 251.611 {134}	☒	2	Mo	0.010520	0.000000	No
			Ti	0.005650	0.000000	No
Sn 189.989 {478}	☐	None				
Ti 336.121 {100}	☒	1	Ni	-0.001000	0.000000	No
Li 670.784 { 50}	☐	None				
Y 224.306 {450}*	☐	None				
Y 360.073 { 94}*	☐	None				
Y 371.030 { 91}*	☐	None				
Y 224.306 {150}*	☐	None				
In 230.606 {446}*	☐	None				
Sr 407.771 { 83}	☐	None				

ALLIANCE
TECHNICAL GROUP

Supervisor: Iwona
Analyst: jignesh
Date: 10/24/2024

OVENTEMP IN Celsius(°C): 107
Time IN: 13:20
In Date: 10/23/2024
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
OvenID: M OVEN#1

OVENTEMP OUT Celsius(°C): 103
Time OUT: 07:50
Out Date: 10/24/2024
Weight Check 1.0g: 1.00
Weight Check 10g: 10.00
BalanceID: M SC-4
Thermometer ID: % SOLID- OVEN

QC: LB133069

Lab ID	Client SampleID	Dish #	Dish Wt(g) (A)	Sample Wt(g)	Dish + Sample Wt(g)(B)	Dish+Dry Sample Wt(g)(C)	% Solid	Comments
P4435-01	BHK68	1	1.15	8.84	9.99	9.26	91.7	
P4435-02	BHK68MS	2	1.15	8.84	9.99	9.26	91.7	
P4435-03	BHK68MSD	3	1.15	8.84	9.99	9.26	91.7	
P4481-01	MYE4B0	4	1.15	8.72	9.87	9.7	98.1	
P4481-02	MYE4B1	5	1.18	8.43	9.61	9.36	97.0	
P4481-03	MYE4B2	6	1.15	8.67	9.82	9.47	96.0	
P4481-04	MYE4B3	7	1.17	8.58	9.75	9.48	96.9	
P4481-05	MYE4B4	8	1.16	8.46	9.62	9.35	96.8	
P4481-06	MYE4B5	9	1.15	8.72	9.87	9.63	97.2	
P4481-07	MYE4B6	10	1.14	8.63	9.77	9.35	95.1	
P4481-08	MYE4B7	11	1.17	8.69	9.86	9.57	96.7	
P4481-09	MYE4B8	12	1.15	8.56	9.71	9.55	98.1	
P4481-10	MYE4B9	13	1.17	8.38	9.55	9.3	97.0	
P4481-11	MYE4C0	14	1.15	8.71	9.86	9.57	96.7	
P4481-12	MYE4C1	15	1.17	8.53	9.7	9.27	95.0	
P4481-13	MYE4C1D	16	1.17	8.53	9.7	9.27	95.0	
P4481-14	MYE4C1S	17	1.17	8.53	9.7	9.27	95.0	
P4481-15	MYE4C2	18	1.16	8.36	9.52	9.16	95.7	
P4481-16	MYE4C3	19	1.17	8.62	9.79	9.56	97.3	
P4481-17	MYE4C4	20	1.17	8.41	9.58	9.15	94.9	
P4481-18	MYE4C5	21	1.16	8.56	9.72	9.4	96.3	
P4481-19	MYE4C6	22	1.16	8.37	9.53	9.34	97.7	
P4481-20	MYE4C7	23	1.17	8.61	9.78	9.4	95.6	
P4481-21	MYE4C8	24	1.16	8.71	9.87	9.57	96.6	
P4481-22	MYE4C9	25	1.17	8.63	9.8	9.59	97.6	

$$\text{\% Solid} = \frac{(C-A) \ * \ 100}{(B-A)}$$

WORKLIST(Hardcopy Internal Chain)

WorkList Name : %1-p4481 **WorkList ID :** 184699 **Department :** Wet-Chemistry **Date :** 10-23-2024 10:56:47

JY 133069

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P4435-01	BHK68	Solid	Percent Solids	Cool 4 deg C	USEP04	Q22	10/17/2024	Chemtech -SO
P4435-02	BHK68MS	Solid	Percent Solids	Cool 4 deg C	USEP04	Q22	10/17/2024	Chemtech -SO
P4435-03	BHK68MSD	Solid	Percent Solids	Cool 4 deg C	USEP04	Q22	10/17/2024	Chemtech -SO
P4481-01	MYE4B0	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4481-02	MYE4B1	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4481-03	MYE4B2	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4481-04	MYE4B3	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4481-05	MYE4B4	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4481-06	MYE4B5	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4481-07	MYE4B6	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4481-08	MYE4B7	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4481-09	MYE4B8	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4481-10	MYE4B9	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4481-11	MYE4C0	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4481-12	MYE4C1	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4481-13	MYE4C1D	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4481-14	MYE4C1S	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4481-15	MYE4C2	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4481-16	MYE4C3	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4481-17	MYE4C4	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4481-18	MYE4C5	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO

Date/Time 10/23/24 12:50   Date/Time 10/23/24   13:25

Raw Sample Received by: 70 col C   Raw Sample Received by: 10/23/24

Raw Sample Relinquished by: Raw Sample Relinquished by: 70 col C

Page 1 of 2

WORKLIST(Hardcopy Internal Chain)

W733069

WorkList Name : %1-p4481

WorkList ID : 184699

Department : Wet-Chemistry

Date : 10-23-2024 10:56:47

Sample	Customer Sample	Matrix	Test	Preservative	Customer	Raw Sample Storage Location	Collect Date	Method
P4481-19	MYE4C6	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4481-20	MYE4C7	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4481-21	MYE4C8	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO
P4481-22	MYE4C9	Solid	Percent Solids	Cool 4 deg C	USEP01	Q11	04/23/2024	Chemtech -SO

Date/Time 10/23/24 12:50

Raw Sample Received by: _26 wc_

Raw Sample Relinquished by: _QD sm_

Date/Time 10/23/24 13:25

Raw Sample Received by: _QD sm_

Raw Sample Relinquished by: _30 wQC_