284 Sheffield Street
Mountainside, NJ 07092

SDG NARRATIVE

USEPA
SDG # MH2GN9
CASE # 51822
CONTRACT # 68HERH20D0011
SOW# SFAM01.1
LAB NAME: Alliance Technical Group, LLC
LAB CODE: ACE
LAB ORDER ID # P4805
MODIFIED ANALYSIS #3105.0

A. Number of Samples and Date of Receipt

13 Soil samples was delivered to the laboratory intact on 11/11/2024

B. Parameters

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

C. Cooler Temp

Indicator Bottle**: Presence/**Absence

Cooler: 3.4^{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.

Issue 2: The routine analyses in this Case are scheduled with a 21-day TAT, but the received COC indicates a 14-day TAT. Please advise on how the laboratory may proceed.

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.

Resolution 2: Per Region 8, the laboratory should proceed and have all soil samples analyzed as a 14-day TAT. The laboratory should note the issue in the SDG Narrative and proceed with the analysis of the samples.

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F. Analytical Techniques:

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

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

G. Calculation:

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

Example Calculation For Sample MH2GN9 For Antimony:

If C = 0.85 ppb
Vf = 500 ml
W = 2.10 g
S = 1.0(100/100)
DF = 1

$$\text{Concentration (mg/kg)} = 0.85 \times \frac{500}{2.10 \times 1.0} \times 1 / 1000$$

$$= 0.202380 \text{ mg/kg}$$

$$= 0.20 \text{ mg/kg (Reported Result with Signification)}$$

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. Spike sample did meet requirements. Duplicate sample did meet. Serial Dilution did meet requirements except for Zinc.

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.

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Internal Standard Association for ICP-MS analysis.

Target Analyte	Associated Internal Standard
Antimony	159Tb
Arsenic	89Y
Barium	159Tb
Beryllium	6Li
Cadmium	159Tb
Chromium	45Sc
Cobalt	45Sc
Copper	45Sc
Lead	209Bi
Manganese	45Sc
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: 06/25/2021	**MA:** 3105.0	**Title:** ICP-MS Analysis with Increased Sample Mass
Method Source: SFAM01.1	**Method:** ICP-MS	
Matrix: Soil/Sediment		

Summary of Modification

The purpose of this modified analysis is to analyze dried, composited, and sieved soil/sediment samples by ICP-MS (processed by Incremental Sampling Methodology). 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** ☒

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

The Laboratory shall:

- Calculate and report results for the samples on the basis of 100% solids. The Laboratory is not required to determine the Percent (%) Solids for the samples.
- Receive the composited samples dried and sieved prior to shipment to the Laboratory. The samples will be received in plastic baggies as individual aliquots with approximately 2 grams each. The aliquots shall not be re-combined and/or subsampled at the Laboratory.
- Not increase the amount of acid reagents added to the sample to account for the increase in mass.
- Store the samples at ambient temperature from the time of receipt until preparation. Do not refrigerate.
- Remove and weigh the entire content within each baggie followed by digesting the entire sample per the SOW.
- Prepare and analyze Matrix Spikes and Duplicates if additional aliquots were provided for these analyses.

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

- Report 100.0 on Form 1 for % Solids.
- Ensure that the SDG Narrative is updated as stated in the SOW, including any technical and administrative problems encountered and the corrective action taken. These problems may include interference problems encountered during analysis, dilutions, re-analyses or re-preparations performed, and problems with the analysis of samples. Also include a discussion of any SOW Modified Analysis including a copy of the approved modification with the SDG Narrative.