284 Sheffield Street
Mountainside, NJ 07092

SDG NARRATIVE

USEPA
SDG # A6313
CASE # 51952
CONTRACT # 68HERH20D0011
SOW# SFAM01.1
LAB NAME: Alliance Technical Group, LLC
LAB CODE: ACE
LAB ORDER ID # Q1246

A. Number of Samples and Date of Receipt

14 Soil samples were delivered to the laboratory intact on 01/31/2025.

B. Parameter

Test requested for Metals CLP12= Aluminum, Calcium , Iron, Magnesium , Potassium , Sodium & Mercury.

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: 2.0^{o}C, 1.9^{o}C

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

Issue 1: The laboratory is missing instructions for all PT samples for this Case; the laboratory would also like confirmation if the PT samples require PRs.

E. Corrective Action taken for above:

Resolution 1: Per Region 1, the PT samples do not require preliminary results (PRs). The PT instructions are attached. Please note the issue in the SDG narrative and proceed with 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-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 A6313 For Aluminum:

If C = 52.67088 ppm
Vf = 100 ml
W = 1.27 g
S = 1.0 (100/100)
DF = 1

$$\text{Concentration (mg/kg)} = 52.67088 \times \frac{100}{1.27 \times 1.0} \times 1$$

$$= 4147.3133 \text{ mg/kg}$$

$$= 4200 \text{ mg/kg (Reported Result with Signification)}$$

Calculation for ICP-MS Soil Sample:

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

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

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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 A6313 For Antimony:

If C = 62.03 ppb
Vf = 500 ml
W = 1.23 g
S = 1.0 (100/100)
DF = 1

$$\text{Concentration (mg/kg)} = 62.03 \times \frac{500}{1.23 \times 1.0} \times 1 / 1000$$

$$= 25.2154 \text{ mg/kg}$$

$$= 25 \text{ mg/kg (Reported Result with Signification)}$$

Calculation for Hg 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 response in µg/L from the calibration curve.
Vf = Final prepared (absorbing solution) 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 A6347:

If C = 0.2007 ppb
Vf = 100 mL
W = 0.58g
S = 0.524 (52.4/100)
DF = 1

$$\text{Concentration (mg/kg)} = 0.2007 \times \frac{100}{0.58 \times 0.524} \times 1 / 1000$$

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= 0.06603 mg/kg

= 0.066 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 except for Selenium. Duplicate sample did meet requirements. Serial Dilution did meet requirements.

Some samples have % solids results less than 50% but more than 30%. Some samples have % solids results less than 30%. Please see below table for detail. Laboratory has processed these samples according to the SFAM01.1 SOW, Exhibit D, sections 10.1.1.8., 10.1.1.7 and 10.1.1.7.1.

EPA Sample ID	% Solid
A6325	28.7
A6326	37.5
A6331	15.5
A6332	35.9
A6333	23.3
A6334	21.3
A6344	38.1
A6345	33.4

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

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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