Alliance
TECHNICAL GROUP

284 Sheffield Street
Mountainside, NJ 07092

SDG NARRATIVE

USEPA
SDG # ME28R5
CASE # 51847
CONTRACT # 68HERH20D0011
SOW# SFAM01.1
LAB NAME: Alliance Technical Group, LLC
LAB CODE: ACE
LAB ORDER ID # P5233

A. Number of Samples and Date of Receipt

19 Soil samples were delivered to the laboratory intact on 12/10/2024.

B. Parameters

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

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**: <u>Presence/</u>**Absence

Cooler: 2.3°C, 2.1°C, 2.0°C

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

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

E. Corrective Action taken for above:

Resolution: 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.

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 ME28R5 For Aluminum :

If C = 106.8684 ppm
Vf = 100 ml
W = 1.27g
S = 0.787 (78.7/100)
DF = 1

$$\text{Concentration (mg/kg)} = 106.8684 \times \frac{100}{1.27 \times 0.787} \times 1$$

$$= 10692.29 \text{ mg/kg}$$

$$= 11000 \text{ mg/kg (Reported Result with Signification)}$$

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

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Example Calculation For Sample ME28R5 For Arsenic:

If C = 27.93 ppb
  Vf = 500 ml
  W = 1.20 g
  S = 0.787 (78.7/100)
  DF = 1

Concentration (mg/kg) = $27.93 \times \dfrac{500}{1.20 \times 0.787} \times 1 / 1000$

$$= 14.7871 \text{ mg/kg}$$

$$= 15 \text{ mg/kg (Reported Result with Signification)}$$

Calculation for Hg Soil Sample:

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

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

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 ME28R5:

If C = 0.3887 ppb
  Vf = 100 mL
  W = 0.54g
  S = 0.787(78.7/100)
  DF = 1

Concentration (mg/kg) = $0.3887 \times \dfrac{100}{0.54 \times 0.787} \times 1 / 1000$

$$= 0.09146 \text{ mg/kg}$$

$$= 0.091 \text{ mg/kg (Reported Result with Signification)}$$

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Calculation for CN 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 CN 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 ME28R5:

      If C   = 9.2269 ppb
        Vf = 50 ml
        W = 1.05 g
        S   = 0.787(78.7/100)
        DF = 1

$$\text{Concentration (mg/kg)} = 9.2269 \times \frac{50}{1.05 \times 0.787} \times 1 / 1000$$

$$= 0.5582 \text{ mg/kg}$$

$$= 0.56 \text{ mg/kg (Reported Result with Signification)}$$

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 requirements except for Calcium, Mercury. Serial Dilution did meet requirements except for Calcium.

Chemical or physical interference effect was suspected and the data for all affected analytes in the sample received and associated with this serial dilution were flagged.

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