

**SDG NARRATIVE****LAB NAME: CHEMTECH CONSULTING GROUP****CASE: 49836****SDG: BGYZ4****CONTRACT: 68HERH20D0011****LAB CODE: CHM****CHEMTECH PROJECT: N1294****MODIFICATION REF. NUMBER: NA**

Sample ID	EPA Sample ID	pH
N1294-01	BGYZ4	
N1294-02	BGYZ5	
N1294-03	BGYZ6	
N1294-04	BGYZ7	
N1294-04DL	BGYZ7DL	
N1294-05	BGYZ8	
N1294-06	BGYZ9	
N1294-06DL	BGYZ9DL	
N1294-07	BGZ00	
N1294-08	BGZ01	
N1294-09	BGZ02	
N1294-09DL	BGZ02DL	
N1294-10	BGZ03	
N1294-11	BGZ04	
N1294-11DL	BGZ04DL	
N1294-12	BGZ05	
N1294-13	BGZ06	
N1294-14	BGZ07	
N1294-15	BGZ08	
N1294-16	BGZ09	
N1294-17	BGZ10	
N1294-18	BGZ11	
N1294-19	BGZ12	
N1294-20	BGZ22	
N1294-21MS	BGZ22MS	
N1294-22MSD	BGZ22MSD	

3 Water samples were delivered to the laboratory intact on 01/26/2022.

19 Soil samples were delivered to the laboratory intact on 01/26/2022.

Test requested on the Chain of Custody was Aroclor Organic by Method SFAM01.1.

Sample Tags were not received with the samples.

The temperature of the samples was measured using an I R Gun. The samples temperature was 2.3 degree Celsius for the samples received on 01/26/2022.

**Shipping Discrepancies and/or QC issues:**

**Issue 1:** Sample tags were not received with samples at the laboratory. Sample tag numbers may or may not be listed on the TR/COC.

**Resolutions 1:** The laboratory will note the samples with the missing tags in the SDG Narrative and proceed with the analysis of the samples. The resolution will be applied to all samples received for this Case.

**Aroclors:**

The analyses were performed on instrument GCECD\_R. The front column is ZB-MR1 which is 30 meters, 0.32 mm ID, 0.5 um df, Catalogue # 7HM-G016-17. The rear column is ZB-MR2 which is 30 meters, 0.32 mm ID, 0.25 µm; Catalogue # 7HM-G017-11.

The sample was analyzed on a single injection dual column system. To distinguish the second column analysis from the first column a -2 suffix was added to the file id on the form 1. These refer to forms where both columns are reported. Form 1s for the IBLK and ALCS are referenced as IBLK(1)/IBLK(2), MS(1)/MS(2), MSD(1)/MSD(2) and ALCS01(1)/ALCS01(2) respectively.

Aroclor sample was extracted by Method SFAM01.1 on 01/27/2022 and analyzed on 01/27, 01/28/2022. All the samples were subjected to a Sulfuric acid cleanup. The sample was extracted and analyzed within contractual holding time.

The Surrogate recoveries met the acceptable criteria.

BGZ22MS met the requirements.

BGZ22MSD met the requirements.

The RPD met the requirements.

The Laboratory Control Sample met requirements.

The Blank analysis did not indicate the presence of lab contamination.

The Initial Calibration met the requirements.

The Continuing Calibrations met the requirements.

The Retention Times were acceptable for all samples.

Samples BGYZ7, BGYZ9, BGZ02 and BGZ04 were diluted due to high concentrations.

Samples BGZ05, BGZ07, BGZ08, BGZ10, BGZ22MS and BGZ22MSD failed to meet the %D for the results between the two columns Criteria.

See **Manual Integration report** for the manual integration information at the end of the Case narrative.

**Calculation for Concentration in Water Samples:**

$$\text{Concentration ug/L} = \frac{(A_x) (V_t) (DF) (GPC)}{(CF) (V_o) (V_i)}$$

Where,

Ax = Response (peak area or height) of the compound to be measured.

CF = Mean Calibration Factor from the initial calibration (area/ng).

Vo = Volume of water extracted in mL.

Vi = Volume of extract injected in uL.

Vt = Volume of the concentrated extract in uL

GPC =  $\frac{V_{in}}{V_{out}}$  = GPC factor (If no GPC is performed, GPC=1)

Vin = Volume of extract loaded onto GPC column.

Vout = Volume of extract collected after GPC cleanup.

DF = Dilution Factor.

### Calculation for Concentration in Soil samples:

$$\text{Concentration ug/Kg (Dry weight basis)} = \frac{(Ax) (Vt) (DF) (GPC)}{(CF) (Vi) (Ws) (D)}$$

Where,

Ax = Response (peak area or height) of the compound to be measured.

CF = Mean Calibration Factor from the initial calibration (area/ng).

Vt = Volume of the concentrated extract in uL

Vi = Volume of extract injected (uL). (If a single injection is made onto two columns, use ½ the volume in the syringe as the volume injected onto each column).

Ws = Weight of sample extracted (g).

D = % dry weight or  $\frac{100 - \% \text{Moisture}}{100}$

GPC =  $\frac{V_{in}}{V_{out}}$  = GPC factor (If no GPC is performed, GPC=1)

DF = Dilution Factor

### Example of AR1254 calculation for Peak 1

Calibration factor Peak 1 100ppb ISTD=  $\frac{\text{peak area}}{\text{Mass injected ng}}$   
Column2

$$= \frac{20323640}{0.100}$$

$$= 203236400 \text{ calibration factor for Peak 1 100ppb}$$

$$\text{Average of 5 peaks} = 173282514$$

**Sample BGYZ8** $A_x = 152628422$  $CF = 173282514$  $V_t = 10000$  $V_i = 1.0$  $W_s = 30.1$  $D = 1.0$  $GPC = 1.0$  $DF = 0.866$ 

$$\begin{aligned}\text{Concentration ug/Kg (Dry weight basis)} &= \frac{(A_x) (V_t) (DF) (GPC)}{(CF) (V_i) (W_s) (D)} \\ &= \frac{(152628422) (10000) (1.0) (1.0)}{(173282514) (1.0) (30.1) (0.866)}\end{aligned}$$

Peak 1 = 337.91

Average of 5 peaks = 371.24

Reported results = 370 ug/kg

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. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature \_\_\_\_\_ Name: Nimisha Pandya.

Date: \_\_\_\_\_ Title: Document Control Officer.