SDG NARRATIVE

LAB NAME: CHEMTECH CONSULTING GROUP
CASE: 49119
SDG: C0AD4
CONTRACT: EPW14030
LAB CODE: CHM
CHEMTECH PROJECT: L4449
MODIFICATION REF. NUMBER: NA

Sample ID	EPA Sample ID	pH
L4449-01	C0AD4	
L4449-01DL	C0AD4DL	
L4449-01DL2	C0AD4DL2	
L4449-02	C0AD5	
L4449-02DL	C0AD5DL	
L4449-02DL2	C0AD5DL2	
L4449-03	C0AD6	
L4449-03DL	C0AD6DL	
L4449-03DL2	C0AD6DL2	
L4449-04	C0AD7	
L4449-04DL	C0AD7DL	
L4449-04DL2	C0AD7DL2	
L4449-05	C0AD8	
L4449-05DL	C0AD8DL	
L4449-05DL2	C0AD8DL2	
L4449-06	C0AE4	
L4449-06DL	C0AE4DL	
L4449-06DL2	C0AE4DL2	
L4449-07	C0AE5	
L4449-07DL	C0AE5DL	
L4449-08	C0AE6	
L4449-08DL	C0AE6DL	
L4449-09	C0AE7	
L4449-09DL	C0AE7DL	
L4449-10	C0AE8	
L4449-10DL	C0AE8DL	
L4449-10DL2	C0AE8DL2	
L4449-11	C0AE9	
L4449-11DL	C0AE9DL	

L4449-11DL2	C0AE9DL2	
L4449-12	C0AF0	
L4449-13	C0AF1	
L4449-13DL	C0AF1DL	
L4449-13DL2	C0AF1DL2	
L4449-14	C0AF2	
L4449-14DL	C0AF2DL	
L4449-15MS	C0AF2MS	
L4449-16MSD	C0AF2MSD	
L4449-17	C0AF3	
L4449-18	C0AF4	
L4449-18DL	C0AF4DL	
L4449-19	C0AF5	
L4449-20	C0AF6	
L4449-21	C0AF7	
L4449-21DL	C0AF7DL	
L4449-21DL2	C0AF7DL2	
L4449-22	C0AF8	
L4449-22DL	C0AF8DL	
L4449-22DL2	C0AF8DL2	

22 Soil samples were delivered to the laboratory intact on 10/16/2020.

Test requested on the Chain of Custody was Aroclor by Method SOM02.4

The temperature of the samples was measured using an I R Gun. The samples temperature was 2.9 degree Celsius for the samples received on 10/16/2020.

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.

Resolution 1: In accordance with previous direction from Region 2, the laboratory will note the issue in the SDG Narrative, and proceed with the analysis of the sample. 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.

Samples were 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 8 and form 1. This referrers to forms were both columns are reported. Form 1s for the IBLK, MS, MSD and ALCS have the -2 on the form as per the method section 3.3.7.1 foot notes.

Aroclor samples were extracted by Method SOM02.4 on 10/19/2020 and analyzed on 10/22, 10/23, 10/24/2020. All the samples were subjected to a Sulfuric acid cleanup. The samples were extracted and analyzed within contractual holding time.

The Surrogate recoveries met the acceptable criteria except for
C0AD4DL2 [Decachlorobiphenyl(1) - 0%, Decachlorobiphenyl(2) - 0%, Tetrachloro-m-xylene(1) - 0%, Tetrachloro-m-xylene(2) - 0%],
C0AD5DL [Decachlorobiphenyl(1) - 0%, Decachlorobiphenyl(2) - 0%, Tetrachloro-m-xylene(1) - 0%, Tetrachloro-m-xylene(2) - 0%],
C0AD5DL2 [Decachlorobiphenyl(1) - 0%, Decachlorobiphenyl(2) - 0%, Tetrachloro-m-xylene(1) - 0%, Tetrachloro-m-xylene(2) - 0%],
C0AD6DL [Tetrachloro-m-xylene(1) - 0%, Tetrachloro-m-xylene(2) - 0%],
C0AD6DL2 [Decachlorobiphenyl(1) - 0%, Decachlorobiphenyl(2) - 0%, Tetrachloro-m-xylene(1) - 0%, Tetrachloro-m-xylene(2) - 0%],
C0AD7DL2 [Decachlorobiphenyl(1) - 0%, Decachlorobiphenyl(2) - 0%, Tetrachloro-m-xylene(1) - 0%, Tetrachloro-m-xylene(2) - 0%],
C0AD8DL [Decachlorobiphenyl(1) - 155%, Decachlorobiphenyl(2) - 154%, Tetrachloro-m-xylene(1) - 0%, Tetrachloro-m-xylene(2) - 0%],
C0AD8DL2 [Decachlorobiphenyl(1) - 0%, Decachlorobiphenyl(2) - 0%, Tetrachloro-m-xylene(1) - 0%, Tetrachloro-m-xylene(2) - 0%],
C0AE4DL [Decachlorobiphenyl(1) - 191%, Decachlorobiphenyl(2) - 184%, Tetrachloro-m-xylene(1) - 0%, Tetrachloro-m-xylene(2) - 0%],
C0AE4DL2 [Decachlorobiphenyl(1) - 0%, Decachlorobiphenyl(2) - 0%, Tetrachloro-m-xylene(1) - 0%, Tetrachloro-m-xylene(2) - 0%],
C0AE6DL [Tetrachloro-m-xylene(2) - 161%],
C0AE8DL2 [Decachlorobiphenyl(1) - 0%, Decachlorobiphenyl(2) - 0%, Tetrachloro-m-xylene(1) - 0%, Tetrachloro-m-xylene(2) - 0%],
C0AE9 [Decachlorobiphenyl(2) - 161%],
C0AE9DL [Decachlorobiphenyl(1) - 0%, Decachlorobiphenyl(2) - 0%, Tetrachloro-m-xylene(1) - 0%, Tetrachloro-m-xylene(2) - 0%],
C0AE9DL2 [Decachlorobiphenyl(1) - 0%, Decachlorobiphenyl(2) - 0%, Tetrachloro-m-xylene(1) - 0%, Tetrachloro-m-xylene(2) - 0%],
C0AF1DL [Decachlorobiphenyl(2) - 159%, Tetrachloro-m-xylene(1) - 0%, Tetrachloro-m-xylene(2) - 0%],
C0AF1DL2 [Decachlorobiphenyl(1) - 0%, Decachlorobiphenyl(2) - 0%, Tetrachloro-m-xylene(1) - 0%, Tetrachloro-m-xylene(2) - 0%],
C0AF7 [Decachlorobiphenyl(1) - 162%, Decachlorobiphenyl(2) - 179%],
C0AF7DL [Decachlorobiphenyl(1) - 0%, Decachlorobiphenyl(2) - 0%, Tetrachloro-m-xylene(1) - 0%, Tetrachloro-m-xylene(2) - 0%],
C0AF7DL2 [Decachlorobiphenyl(1) - 0%, Decachlorobiphenyl(2) - 0%, Tetrachloro-m-xylene(1) - 0%, Tetrachloro-m-xylene(2) - 0%],
C0AF8 [Decachlorobiphenyl(1) - 177%, Decachlorobiphenyl(2) - 201%],

C0AF8DL [Decachlorobiphenyl(1) - 0%, Decachlorobiphenyl(2) - 0%, Tetrachloro-m-xylene(1) - 0%, Tetrachloro-m-xylene(2) - 0%] and
C0AF8DL2 [Decachlorobiphenyl(1) - 0%, Decachlorobiphenyl(2) - 0%, Tetrachloro-m-xylene(1) - 0%, Tetrachloro-m-xylene(2) - 0%].The SOW allows one surrogate to fail to meet the criteria per column. ((Please See Section 11.3.6 of Exhibit D Aroclor Analysis) and Surrogates were diluted out due to the high dilution. No further corrective action was taken.

C0AF2MS met the requirements except for AR1016 on both columns due to sample matrix interference. No corrective action is required for failure to meet the MS/MSD criteria by the SOW. (Section 12.2.5.5 of Exhibit D Aroclor Analysis).

C0AF2MSD met the requirements except for AR1016 on both columns and AR1260 on the second column due to sample matrix interference. No corrective action is required for failure to meet the MS/MSD criteria by the SOW. (Section 12.2.5.5 of Exhibit D Aroclor Analysis).
The RPD met the requirements except for AR1260 on both columns. No corrective action is required for failure to meet the MS/MSD criteria by the SOW.

The Retention Times were acceptable for all samples except for C0AD4DL2, C0AD5DL, C0AD5DL2, C0AD6DL, C0AD6DL2, C0AD7DL2, C0AD8DL, C0AD8DL2, C0AE4DL, C0AE4DL2, C0AE8DL2, C0AE9DL, C0AE9DL2, C0AF1DL, C0AF1DL2, C0AF7DL, C0AF7DL2, C0AF8DL and C0AF8DL2.
The Blank analysis did not indicate the presence of lab contamination.

The Initial Calibration met the requirements.
The Continuing Calibrations met the requirements.

Samples C0AF7 and C0AF8 were diluted due to bad matrices. These samples were analyzed with straight 10x dilution Based on other samples analysis. Both of these samples have high concentration and required further dilution. Therefore lab will not provide undiluted analysis.

Samples C0AD4, C0AD4DL, C0AD5, C0AD5DL, C0AD6, C0AD6DL, C0AD7, C0AD7DL, C0AD8, C0AD8DL, C0AE4, C0AE4DL, C0AE5, C0AE6, C0AE7, C0AE8, C0AE8DL, C0AE9, C0AE9DL, C0AF1, C0AF1DL, C0AF2, C0AF4, C0AF7, C0AF7DL, C0AF8 and C0AF8DL were diluted due to high concentrations.

Samples C0AD5, C0AF8DL, C0AF2MSD and C0AF4DL 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 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 $\frac{100 - \%Moisture}{100}$
GPC = $\frac{Vin}{Vout}$ = GPC factor (If no GPC is performed, GPC=1)
DF = Dilution Factor

Example of AR1260 calculation for Peak 1

Calibration factor Peak 1 100ppb ISTD= $\frac{\text{peak area}}{\text{Mass injected ng}}$
Column1

$$= \frac{11489060}{0.100}$$

= 114890600 calibration factor for Peak 1 100ppb

Average of 5 peaks = 102599356

Sample C0AD4
Ax = 2036175282
CF = 102599356
Vt = 10000
Vi = 1.0
Ws = 30.0
D = 0.884
GPC = 1.0
DF = 1.0
Concentration ug/Kg (Dry weight basis) = $\frac{(Ax)\ (Vt)\ (DF)\ (GPC)}{(CF)\ (Vi)\ (Ws)\ (D)}$

$$= \frac{(2036175282)\ (10000)\ (1.0)\ (1.0)}{(102599356)\ (1.0)\ (30.0)\ (0.884)}$$

Peak 1 = 7483.37

Average of 5 peaks = 7109
Reported results = 7100 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