USEPA ANALYTICAL SERVICES BRANCH

STATEMENT OF WORK

FOR

ANALYSIS OF
CHLORINATED BIPHENYL CONGENERS (CBCs)

Multi-Media, Multi-Concentration

CBC01.2
DECEMBER 2009

STATEMENT OF WORK

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EXHIBIT A

SUMMARY OF REQUIREMENTS

Exhibit A - Summary of Requirements

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1.0 PURPOSE

The purpose of the multi-media, multi-concentration chlorinated biphenyl congener analytical service is to provide analytical data for use by the U.S. Environmental Protection Agency, hereafter referred to as USEPA, in support of the investigation and clean-up activities under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA). Other USEPA Program Offices, as well as customers outside the Agency, that have similar analytical data needs also use this service.

2.0 DESCRIPTION OF SERVICE

The chlorinated biphenyl congener analytical service provides a contractual framework for laboratories to apply USEPA analytical methods for the isolation, detection, and quantitative measurement of 209 chlorinated biphenyl congeners (CBCs) in water, soil, sediment, sludge, tissue (no human tissue), ash, oil, and oily matrices. The analytical service provides the methods to be used and the specific contractual requirements by which the Government will evaluate the data. This service uses a High Resolution Gas Chromatography/High Resolution Mass Spectrometry (HRGC/HRMS) method to analyze the target compounds.

3.0 DATA USES

This analytical service provides data used for a variety of purposes such as: determining the nature and extent of contamination at a hazardous waste site; assessing priorities for response based on risks to human health and the environment; determining appropriate clean-up actions; and determining when remedial actions are complete. The data may be used in all stages in the investigation of hazardous waste sites, including: site inspections; Hazard Ranking System (HRS) scoring; remedial investigation/feasibility studies; remedial design; treatability studies; and removal actions. In addition, this service provides data that are available for use in Superfund enforcement/litigation activities. The Contractor must be aware of the importance of maintaining the integrity of the data generated under this contract, since it is used to make major decisions regarding public health and environmental welfare.

4.0 SUMMARY OF REQUIREMENTS

4.1 Introduction to the Chlorinated Biphenyl Congener Statement of Work (SOW)

This SOW is designed as part of the documentation for a contract between USEPA and a commercial laboratory performing analyses in support of USEPA Superfund activities. The SOW is comprised of eight exhibits. Exhibit A provides an overview of the SOW and its general requirements. Exhibit B contains a description of the reporting and deliverables requirements, in addition to the data reporting forms and instructions. Exhibit C specifies the chlorinated biphenyl congener (CBC) Target Compound List (TCL) for this SOW with the Contract Required Quantitation Limits (CRQLs) for the sample matrices. Exhibit D details the required analytical procedures to be used with this SOW and resulting contracts. Exhibit E provides descriptions of required Quality Assurance/Quality Control (QA/QC), Standard Operating Procedures (SOPs), QA/QC performance, and the reporting of data.

Exhibit F contains chain-of-custody and sample documentation requirements which the Contractor shall follow. To ensure proper understanding of the terms utilized in this SOW, a glossary can be found in Exhibit G. When a term is used in the text without explanation, the glossary meaning shall be applicable. Specifications for reporting electronic data appear in Exhibit H.

4.2 Overview of Major Task Areas

For each sample, the Contractor shall perform the tasks described in each section. Specific requirements for each task are detailed in the exhibits referenced.

4.2.1 Task I: Sample Receiving, Storage, and Disposal

4.2.1.1 Chain-of-Custody

The Contractor shall receive and maintain samples under proper chain-of-custody procedures. All associated document control and inventory procedures shall be developed and followed. Documentation described herein shall be required to show that all procedures are strictly followed. This documentation shall be reported as the Complete Sample Delivery Group (SDG) File (CSF) (See Exhibit B). The Contractor shall establish and use appropriate procedures to handle confidential information received from the USEPA. See Exhibit F for specific requirements.

4.2.1.2 Sample Scheduling/Shipments

Sample shipments to the Contractor's facility will be scheduled and coordinated by the Contract Laboratory Program (CLP) Sample Management Office (SMO). The Contractor shall communicate with SMO personnel by telephone, fax, or email as necessary, throughout the process of sample scheduling, shipment, analysis, and data reporting, to ensure that samples are properly processed.

4.2.1.2.1 Samples will be shipped routinely to the Contractor through an overnight delivery service. However, as necessary, the Contractor shall be responsible for any handling or processing of the receipt of sample shipments. This includes the pick-up of samples at the nearest servicing airport, bus station, or other carrier within the Contractor's geographical area. The Contractor shall be available to receive sample shipments at any time the delivery service is operating, including weekends.

4.2.1.2.2 If there are problems with the samples (e.g., mixed media, containers broken or leaking) or sample documentation and paperwork [e.g., Traffic Reports/Chain of Custody Records (TR/COC) not with shipment, sample and TR/COC do not correspond], the Contractor shall immediately contact SMO for resolution. The Contractor shall immediately notify SMO regarding any problems and laboratory conditions that affect the timeliness of analyses and data reporting. In particular, the Contractor shall immediately notify SMO personnel in advance regarding sample data that will be delivered late and shall specify the estimated delivery date.

4.2.1.2.3 To monitor the temperature of the sample shipping cooler more effectively, a sample shipping cooler temperature indicator bottle may be included with each cooler shipped. The temperature blank will be clearly labeled: COOLER TEMPERATURE INDICATOR.

4.2.1.2.3.1 When a cooler temperature indicator bottle is included in the sample shipping cooler, the Contractor shall use the supplied cooler temperature indicator bottle to determine the cooler

temperature. The temperature of the cooler shall be measured at the time of sample receipt by the Contractor. The Contractor shall record the presence or absence of the cooler temperature indicator bottle on Form DC-1, Item 9 – Cooler Temperature (Exhibit B).

4.2.1.2.3.2 The temperature of the sample shipping cooler shall be measured and recorded immediately upon opening the cooler, and prior to unpacking the samples or removing the packing material.

4.2.1.2.3.3 To determine the temperature of the cooler, the Contractor shall locate the cooler temperature indicator bottle in the sample shipping cooler, invert it several times, remove the cap, and insert a calibrated thermometer into the cooler temperature indicator bottle. Prior to recording the temperature, the Contractor shall allow a minimum of 3 minutes, but not greater than 5 minutes, for the thermometer to equilibrate with the liquid in the bottle. At a minimum, the calibrated thermometer (±1°C) shall have a measurable range of 0-50°C. Other devices which can measure temperature may be used if they can be calibrated to ±1°C and have a range of 0-50°C. If a temperature indicator bottle is not present in the cooler, an alternative means of determining cooler temperature shall be used. Under no circumstances shall a thermometer or any other device be inserted into a sample bottle for the purpose of determining cooler temperature. The Contractor shall contact SMO and inform them that a temperature indicator bottle was not present in the cooler. The Contractor shall document the alternative technique used to determine cooler temperature in the SDG Narrative.

4.2.1.2.3.4 If the temperature of the sample shipping cooler’s temperature indicator exceeds 10°C, the Contractor shall contact SMO and inform them of the temperature deviation. SMO will contact USEPA for instructions on how to proceed. USEPA will either require that no sample analysis(es) be performed or that the Contractor proceed with the analysis(es). SMO will in turn notify the Contractor of USEPA’s decision. The Contractor shall document USEPA’s decision and the EPA Sample Numbers of all samples for which temperatures exceeded 10°C in the SDG Narrative.

4.2.1.2.3.5 The Contractor shall record the temperature of the cooler on Form DC-1, under Item 9 - Cooler Temperature, and in the SDG Narrative.

4.2.1.2.4 The Contractor shall accept all samples scheduled by SMO, provided that the total number of samples received in any calendar month does not exceed the monthly limitation expressed in the contract. Should the Contractor elect to accept additional samples, the Contractor shall remain bound by all contract requirements for analysis of those samples accepted.

4.2.1.2.5 The Contractor is required to retain unused sample volume in the original sample containers for a period of six (6) months after data submission. From time of receipt until analysis, the Contractor shall maintain all water/aqueous (preserved and unpreserved) and/or soil/sediment samples at 4°C (±2°C), and tissue samples at <-10°C.

4.2.1.2.6 The Contractor shall be required to routinely return sample shipping containers (e.g., coolers) to the appropriate sampling office or as specified in individual task orders.

4.2.2 Task II: Sample Preparation and Analysis

4.2.2.1 Overview

The Contractor is advised that the samples received under this contract are usually from known or suspected hazardous waste sites and may contain high levels of organic and inorganic materials of a potentially hazardous nature and of unknown structure and concentration, and should be handled throughout the analysis with appropriate caution. It is the Contractor's responsibility to take all necessary measures to ensure laboratory safety.

4.2.2.2 Sample analyses will be ordered by groups of samples, each defined as a Case and identified by a unique USEPA Case Number assigned by SMO. A Case signifies a group of samples collected at one site or geographical area over a finite time period, and will include one or more field samples with associated blanks. Samples may be shipped to the Contractor in a single shipment or multiple shipments over a period of time, depending on the size of the Case.

4.2.2.2.1 A Case consists of one or more SDGs. An SDG is defined by the following, whichever is most frequent:

- Each Case of field samples received; or
- Each 20 samples [excluding Performance Evaluation (PE) samples] within a Case; or
- Each 7 calendar day period during which field samples in a Case are received (said period beginning with receipt of the first sample in the SDG).

4.2.2.2.2 If Performance Evaluation (PE) samples are received within a Case, they will be assigned to an SDG containing field samples for that Case. Such assignment shall be made at the time the samples are received and shall <u>not</u> be made retroactively.

4.2.2.2.3 Each sample received by the Contractor will be labeled with an EPA Sample Number and accompanied by a Traffic Report/Chain of Custody Record (TR/COC) bearing the Sample Number and descriptive information regarding the sample. The Contractor shall complete and sign the TR/COC, recording the date of sample receipt and sample condition on receipt for each sample container.

4.2.2.2.4 The Contractor shall submit signed copies of TR/COCs for all samples in an SDG to SMO within **three (3) working days** following receipt of the last sample in the SDG. TR/COCs shall be submitted in SDG sets (e.g., all TR/COCs for an SDG shall be clipped together) with a Traffic Report/Chain of Custody Record Cover Sheet containing information regarding the SDG, as specified in Exhibit B.

4.2.2.2.5 USEPA Case numbers, SDG numbers, and EPA Sample Numbers shall be used by the Contractor in identifying samples received under this contract, both verbally and in reports/correspondence.

4.2.2.3 Preparation Techniques

The Contractor shall prepare samples as described in Exhibit D.

4.2.2.3.1 If insufficient sample volume (less than the required amount) is received to perform the analysis, the Contractor shall contact SMO to apprise them of the problem. SMO will contact USEPA for instructions on how to proceed. USEPA will either approve that no sample analysis be performed, or require that a reduced volume be

used for the sample analysis. SMO will in turn notify the Contractor of USEPA's decision. The Contractor shall document USEPA's decision in the SDG Narrative.

4.2.2.4 Analytical Techniques

The Target Compounds listed in Exhibit C shall be identified, as described in the methodologies given in Exhibit D. Automated computer programs may be used to facilitate the identification of compounds.

4.2.2.5 Qualitative Verification of Compounds

The toxic chlorinated biphenyl compounds identified by High Resolution Gas Chromatography/High Resolution Mass Spectrometry (HRGC/HRMS) techniques shall be verified by an analyst competent in the interpretation of mass spectra. The analyst will compare the HRGC Retention Time (RT) and ion abundance ratio of two exact mass-to-charge (m/z) ratios with the corresponding RT of an authentic standard and the theoretical ion abundance ratio of the two exact m/z ratios.

4.2.2.5.1 If a compound initially identified by HRGC/HRMS techniques cannot be verified, but in the technical judgment of the mass spectral interpretation specialist the identification is correct, the Contractor shall report that identification as an estimated and proceed with quantitation.

4.2.2.6 Quantitation of Verified Compounds

The Contractor shall quantitate components identified by HRGC/HRMS techniques using Selected Ion Current Profile (SICP) areas in one of the methods described in Exhibit D, Section 2.4.

4.2.2.7 QA/QC Procedures

4.2.2.7.1 The Contractor shall strictly adhere to all specific QA/QC procedures prescribed in Exhibits D and E. Records documenting the use of the protocol shall be maintained in accordance with the document control procedures prescribed in Exhibit F, and shall be reported in accordance with Exhibits B and H.

4.2.2.7.2 The Contractor shall maintain a Quality Assurance Plan (QAP) with the objective of providing sound analytical chemical measurements. This program shall incorporate the QC procedures, any necessary corrective action, and all documentation required during data collection, as well as the quality assessment measures performed by management to ensure acceptable data production.

4.2.2.7.3 Additional QC shall be conducted in the form of the analysis of Performance Evaluation (PE) samples submitted to the laboratory by USEPA. Unacceptable results of all such QC or PE samples may be used as the basis for an equitable adjustment to reflect the reduced value of the data to USEPA or rejection of the data for specific analyte(s) within an SDG or the entire SDG. Also, unacceptable results may be used as the basis for contract action. "Compliant performance" is defined as that which yields correct analyte identification and concentration values as determined by USEPA, as well as meeting the contract requirements for analysis (Exhibit D), QA/QC (Exhibit E), data reporting and other deliverables (Exhibits B and H), and sample custody, sample documentation, and SOP documentation (Exhibit F). As an alternative to data rejection, USEPA may require re-analysis of noncompliant samples. Re-analysis will be performed by the Contractor at no additional cost to USEPA, unless it is determined that the laboratory evaluation sample(s) was defective.

4.2.2.8 Modified Analysis

The Contractor may be requested by USEPA to perform modified analyses. These modifications may include, but are not limited to: additional compounds; sample matrices other than those present in the SOW; and lower quantitation limits. These requests will be made in writing, prior to sample scheduling. All contract requirements specified in the SOW/Specifications will remain in effect unless specifically modified.

4.2.3 Task III: Sample Reporting and Resubmission of Data

4.2.3.1 Required formats for the reporting of data are found at Exhibits B and H. The Contractor shall be responsible for completing and submitting analysis data sheets and electronic data as requested in a format specified in this SOW and within the time specified in Exhibit B, Section 1.1 or as specified in individual task orders.

4.2.3.2 Use of formats other than those approved will be deemed as noncompliant. Such data are unacceptable. Resubmission in the specified format will be required, at no additional cost to the Government.

4.2.3.3 Computer-generated forms may be submitted in the hardcopy Sample Data Package(s), provided that the forms provide equivalent information as the USEPA format. This means that the order of data elements is the same as on each USEPA-required form, including form numbers and titles, page numbers, and header information.

4.2.3.4 If the submitted data package does not conform to the specified contractual or technical criteria, the Contractor shall resubmit the data package with all deficiencies corrected at its own expense. The Contractor will respond within 7 days to requests for additional information or explanations that result from inspection activities. If the Contractor is required to submit or resubmit data as a result of a request, the data shall be clearly marked as ADDITIONAL DATA. The Contractor shall include a cover letter that describes which data are being delivered, to which project the data pertain, and who requested the data. Any and all resubmissions must be in accordance with the documentation requirements of this SOW.

4.2.3.5 The data reported by the Contractor on the hardcopy data forms and the associated electronic data submitted by the Contractor shall contain identical information. If discrepancies are found during inspection, the Contractor shall be required to resubmit either the hardcopy forms or the electronic data, or both sets of data, as requested by the Government, at no additional cost to USEPA.

4.2.3.6 In addition, the Contractor must be aware of the importance of maintaining the integrity of data generated under the contract, since it is used to make major decisions regarding public health and environmental welfare. The data may also be used in litigation against Potentially Responsible Parties (PRPs) in the enforcement of Superfund legislation.

EXHIBIT B

REPORTING AND DELIVERABLES REQUIREMENTS

Exhibit B - Reporting and Deliverables Requirements

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1.0 CONTRACT REPORTS/DELIVERABLES DISTRIBUTION

1.1 Report Deliverable Schedule

The following table reiterates the contract reporting and deliverables requirements and specifies the distribution that is required for each deliverable.

NOTE: Specific recipient names and addresses are subject to change during the term of the contract. The Contracting Officer (CO) will notify the Contractor, in writing, of such changes when they occur.

TABLE 1

Item		No. of Copies[A]	Delivery Schedule	Distribution		
				TOPO	SMO	PO
A.	Sample Traffic Reports/Chain of Custody (TR/COC) Records	1	3 working days after receipt of last sample in the Sample Delivery Group (SDG)[2].	X	X	
B.[3]	Complete SDG File (CSF)[B]	1	35 days after the time of sample receipt[1] of last sample in the SDG.	X		
C.	Copy of CSF	1	35 days after the time of sample receipt[1] of last sample in the SDG.		X	
D.[3]	Electronic Data Deliverable (EDD)[3]	1	35 days after the time of sample receipt[1] of last sample in the SDG.		X	
E.[5]	Results of Intercomparison Study/Performance Evaluation (PE) Sample Analysis Study	1	35 days after the time of sample receipt[1] of last sample in the SDG.	As Directed		
F.[5]	Quality Assurance Plan (QAP)	1	Revise within 30 days after contract award. Submit within 7 days of receipt of written request to recipients, as directed. Submit the amended document within 14 days of amended QAP as directed in Exhibit E.	As Directed		
G.[5]	Standard Operating Procedures (SOPs)	1	Revise within 30 days after contract award. Submit within 7 days of receipt of written request to recipients, as directed. Submit within 14 days of amended SOP(s) as directed in Exhibit E.	As Directed		

Item		No. of Copies[A]	Delivery Schedule	Distribution		
				TOPO	SMO	PO
H.	Instrument Electronic Data	Lot	Retain for 3 years after data submission. Submit within 7 days after receipt of written request from the PO.	As Directed		
I.	Extracts	Lot	Retain for one (1) year after data submission. Submit within 7 days after receipt of written request by the PO or SMO at USEPA's direction.	As Directed		
J.	Copy of CSF and Hardcopy Data in PDF Format	1	35 days after the time of sample receipt of last sample in the SDG.		X	

Footnotes:

[A] The number of copies specified is the number of copies required to be delivered to each recipient.

[B] Contractor-concurrent delivery to USEPA designated recipient may be required upon request by the TOPO. Retain for one (1) year after data submission, and submit as directed within 7 days after receipt of written request by the TOPO

[1] The date of sample receipt at the Contractor's facility, as recorded on the shipper's delivery receipt and sample Traffic Report/Chain of Custody Record.

[2]The Sample Delivery Group will be defined in individual task orders if different from the definition in this SOW.

[3] **DELIVERABLES ARE TO BE REPORTED TOTAL AND COMPLETE.** Concurrent delivery is required. This includes resubmission of both the hardcopy and electronic deliverable. The date of delivery of the SDG, or of any sample within the SDG, is the date all samples have been delivered. **If the deliverables are due on a Saturday, Sunday, or Federal holiday, then they shall be delivered on the next business day. Deliverables received after this time shall be considered late.**

[4] A Complete SDG File (CSF) will contain the original Sample Data, plus all the original documents described in Exhibit B, Section 2.6 and Exhibit E.

[5]See Exhibits E and F for more description; time is cited in calendar days.

1.2 Distribution

The following addresses correspond to the "Distribution" column in Exhibit B, Section 1.1, Table 1.

SMO: USEPA Sample Management Office (SMO)[6]
15000 Conference Center Drive
Chantilly, VA 20151-3808

Task Order Project Officer (TOPO): As identified in individual task orders.

QATS: USEPA Contract Laboratory Program (CLP)
Quality Assurance Technical Support (QATS) Laboratory[6]
2700 Chandler Avenue, Building C
Las Vegas, NV 89120
Attn: Data Audit Staff

In addition, the mailing and delivery addresses for the USEPA ASB CBC Program Manager (ASB PM) are:

Mailing Address: USEPA OSRTI Analytical Services Branch
Ariel Rios Building (5203P)
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460
Attn: CLP CBC Program Manager

Fed-Ex/Overnight Delivery: USEPA OSRTI Analytical Services Branch
One Potomac Yard (South Building)
2777 South Crystal Drive 4th Floor, S4838
Arlington, VA 22202
Attn: CLP CBC Program Manager

[6] SMO is a Contractor-operated facility operating under the Sample Management Office (SMO) Contract awarded and administered by USEPA.

2.0 REPORTING REQUIREMENTS AND ORDER OF DATA DELIVERABLES

2.1 Introduction

The Contractor shall provide reports and other deliverables as specified in the Contract Schedule. The required content and form of each deliverable are described in this Exhibit. All reports and documentation must be:

- Legible;
- Clearly labeled and completed in accordance with instructions in this exhibit;
- Arranged in the order specified in this section;
- Paginated sequentially according to the instruction in this Exhibit;
- Double-sided.
- Information reported on the forms listed in the Exhibit [excluding the Sample Log-In Sheet (CD-1) and the Complete SDG File (CSF) Inventory Sheet (DC-2)] must be either typewritten or computer-generated.

2.1.1 Requirements for each deliverable item are specified in Sections 2.3 through 2.10. Prior to submission, the Contractor shall arrange items and the components of each item in the order listed in these sections.

2.1.2 The Contractor shall use EPA Case numbers, SDG numbers, EPA sample numbers, and Task Order numbers (if applicable) to identify samples received under this contract, verbally, electronically, and in reports and correspondence. The Contract number, SOW number, and Task Order number if applicable shall be specified in all correspondence. The Modified Reference Number (Mod. Ref. No.) shall also be included for all Modified Analyses.

2.1.3 Section 4 of this Exhibit contains the required Data Reporting Forms in Agency-specified format. Section 3 of this Exhibit contains instructions to the Contractor for properly completing all data reporting forms to provide USEPA with all required data. Data elements and instructions for reporting data in computer-readable format are contained in Exhibit H.

2.2 Resubmission of Data

2.2.1 If submitted documentation does not conform to the above criteria, the Contractor is required to resubmit such documentation with deficiency(ies) corrected within 6 business days at no additional cost to USEPA.

2.2.2 Whenever the Contractor is required to submit or resubmit data as a result of an onsite laboratory evaluation, or through Project Officer (PO) action or request, the data shall be clearly marked as ADDITIONAL DATA and must be sent to both contractual data recipients as well as designated recipients. A cover letter will be included, by the Contractor describing what data are being delivered, to which USEPA Case(s) the data pertain, and who requested the data.

2.2.3 Whenever the Contractor is required submit or resubmit data as a result of Contractor Compliance Screening (CCS) review by SMO, the data shall be sent to all contractual data recipients as well as the designated recipients when a written request for a copy of the CSF has been made.

In all instances, the Contractor shall include a cover sheet (Laboratory Response to Results of Contract Compliance Screening). Electronic deliverables shall be submitted or resubmitted to SMO only. Revised DC-1 and DC-2 forms shall be submitted to SMO and the TOPO.

2.3 Quality Assurance (QA) Plan and Standard Operating Procedures (SOPs)

The Contractor shall adhere to the requirements in Exhibits E and F.

2.4 Sample Traffic Reports/Chain of Custody Records

2.4.1 Each sample received by the Contractor shall be labeled with an EPA Sample Number and will be accompanied by a Sample Traffic Report/Chain of Custody Record bearing the Sample Number and descriptive information regarding the sample. The CLP Traffic Report/Chain of Custody Record is one form divided into two sections: The Traffic Report section and the Chain of Custody Record section. The Contractor shall complete the Traffic Report/Chain of Custody Record (marked "Lab Copy for return to SMO"), recording the date of sample receipt, verifying the number of samples, and signing the Traffic Report/Chain of Custody Record.

Upon receipt, the Contractor shall sign for receipt of samples in the Chain of Custody Record section. The laboratory sample custodian or designated recipient opening and verifying the contents of the cooler shall then verify receipt of all samples identified within the CLP Traffic Report section and sign and date the signature box located in the CLP Traffic Report section. If a non-CLP Traffic Report/Chain of Custody Record is submitted with the samples, for example a Regional Traffic Report/Chain of Custody Record, then the Contractor shall (1) sign and date receipt of the samples to maintain the chain-of-custody and (2) the sample custodian or designated recipient shall sign and date the Traffic Report/Chain of Custody Record to verify sample information.

The Contractor shall also enter the Sample Delivery Group (SDG) number, Case number, and the laboratory contract number on the CLP Traffic Report/Chain of Custody Record, in the appropriate boxes. The EPA sample number of the first sample received in the SDG is the SDG number. When several samples are received together in the first SDG shipment, the SDG number shall be the lowest sample number (considering both alpha and numeric designations) in the first group of samples received under the SDG. Under no circumstances should any SDG number be replicated within a Case. If necessary, select an alternative sample number for the SDG number. The SDG number is also reported on all data reporting forms (see Exhibit B, Section 3 - Form Instructions). If the laboratory is requested to transfer samples to another facility, the Contractor shall date and enter the name of the facility to where the samples will be transferred on the CLP Traffic Report/Chain of Custody Record.

2.4.2 The Contractor shall submit Traffic Reports/Chain of Custody Records in SDG sets (i.e., Traffic Reports/Chain of Custody Records for all samples in an SDG shall be clipped together), with a cover sheet attached. The SDG Cover Sheet shall contain the following items:

- Laboratory name;
- Contract number;
- Modified Analysis number (if applicable);
- Sample analysis price (full sample price from the contract);
- Case number; and

- List of EPA Sample Numbers of all samples in the SDG, identifying the **first** and **last** samples received, and their Laboratory Receipt Dates (LRDs).

NOTE: When more than one sample is received in the first or last SDG shipment, the "first" sample received would be the sample with the lowest sample number (considering both alpha and numeric designations); the "last" sample received would be the sample with the highest sample number (considering both alpha and numeric designations)

2.4.3 EPA field sample numbers are continuous, without spaces or hyphens. The original Sample Traffic Report/Chain of Custody Record page marked "Lab Copy for Return to SMO", with laboratory receipt information and signed with original Contractor signature shall be submitted for each sample in the SDG.

2.4.4 If samples are received at the laboratory with multi-sample Traffic Reports/Chain of Custody Records, all the samples on one multi-sample Traffic Report/Chain of Custody Record may not necessarily be in the same SDG. In this instance, the Contractor must make the appropriate number of photocopies of the Traffic Report/Chain of Custody Record and submit one copy with each SDG Cover Sheet.

2.5 Sample Data

The Sample Data shall include data for analyses of all samples in one SDG, including field samples, dilutions, re-analyses, blanks, and Laboratory Control Samples (LCSs). The Sample Data shall be complete before submission, and shall be consecutively paginated (starting with page number one and ending with the number of all pages in the package). The sample data shall include the following:

2.5.1 SDG Narrative

2.5.1.1 This document will be clearly labeled "SDG Narrative" and shall contain: Laboratory name; Case number; SDG Number; SOW number; Contract number; Modified Analysis number (if applicable); EPA Sample Numbers, differentiating between initial analyses and re-analyses; Task Order number; and detailed documentation of any quality control, samples, shipment and/or analytical problems encountered in processing the samples reported in the data package.

All Gas Chromatograph (GC) columns used for analysis shall be documented in the SDG Narrative. List the GC Column identification: brand-name, internal diameter in mm, and length in meters, coating material, and film thickness.

NOTE: If a column is used that has different first and last eluting isomers than the SPB-Octyl column, the Contractor shall fully document, in the SDG Narrative, the order of elution of the isomers and identify the first and last eluting isomers for that particular column for the Window Defining Mix (WDM) and the Mid-Point Calibration Standard (CS3) Solution.

2.5.1.2 Whenever data from sample re-preparations and/or re-analyses are submitted, the Contractor shall state the reason in the SDG Narrative for <u>each</u> re-preparation and/or re-analysis. The Contractor must also include any problems encountered, both technical and administrative, the corrective actions taken and the resolutions, and an explanation for all flagged edits (i.e., manual edits) on quantitation lists. This includes documenting the alternative technique used to determine cooler temperature if a temperature indicator bottle is not present in

the cooler. The Contractor shall also provide, in the SDG Narrative, sufficient information including equations or curves to allow the recalculation of sample results from raw instrument output. The Contractor shall also include a discussion of any Statement of Work (SOW) modifications or Modified Analyses. This includes attaching a copy of the approved modification form, either the Task Order or the modification form, to the SDG Narrative.

2.5.1.3 The SDG Narrative shall contain the following statement, verbatim: **"I certify that this 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 hardcopy data package has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature."** This statement shall be directly followed by the original signature of the Laboratory Manager or his/her designee with a typed line below it containing the signer's name and title, and the date of signature. All copies of the SDG Narrative shall be signed in an original signature.

2.5.1.4 Sample Log-In Sheet (Form DC-1)

2.5.1.5 Full CB Congeners Complete SDG File (CSF) Inventory Sheet (Form DC-2)

2.5.2 Traffic Reports/Chain of Custody Records

2.5.2.1 The Contractor shall include a copy of each Traffic Report/Chain of Custody record submitted in Section 2.4 for all of the samples in the SDG. The Traffic Reports/Chain of Custody Records shall be arranged in increasing Sample Number order, considering both letters and numbers in ordering samples. Copies of the SDG Cover Sheet shall be included with the copies of the Traffic Reports/Chain of Custody Records.

2.5.2.2 If samples are received at the laboratory with multi-sample Traffic Reports/Chain of Custody Records, all the samples on one multi-sample Traffic Report/Chain of Custody Record may not necessarily be in the same SDG. In this instance, the Contractor must make the appropriate number of photocopies of the Traffic Report/Chain of Custody Record so that a copy is submitted with each applicable data package.

2.5.2.3 In any instance where samples from more than one multi-sample Traffic Report/Chain of Custody Record are in the same data package, the Contractor must submit a copy of the SDG Cover Sheet with copies of the Traffic Reports/Chain of Custody Records.

2.5.3 CB Congeners Data

2.5.3.1 CB Congeners Sample Data

Sample Data shall be arranged in packets with the CB Congener Sample Data Summary Forms (Forms I CB-1) or Toxic CB Congener Sample Data Summary (Form I CB-2), CB Congener Toxicity Equivalence Summary (Form I CB-3), and CB Total Homologue Data Summary (Form I CB-4) followed by the raw data for CB congener samples. These sample packets should then be placed in order of increasing EPA Sample Number, considering both letters and numbers.

2.5.3.1.1 Congener Results, CB Congener Sample Data Summary (Form I CB-1). Tabulated results (identification and quantitation) of the target compounds (Exhibit C) shall be included if analysis was performed for all 209 congeners. The validation and release of these results is authorized by a specific, signed statement in the SDG Narrative (Section 2.5.1.3). In the event that the Laboratory Manager cannot verify all data reported for each sample, the Laboratory Manager

shall provide a detailed description of the problems associated with the sample in the SDG Narrative.

2.5.3.1.2 Toxic Congener Results, Toxic CB Congener Sample Data Summary (Form I CB-2). Tabulated results (identification and quantitation) of the specified target compounds (Exhibit C) and recoveries of their associated labeled compounds shall be included if analysis was performed for Toxic congeners only. This form shall be included even if no toxic target compounds are positively identified.

2.5.3.1.3 CB Congener Toxicity Equivalence Summary (Form I CB-3). Tabulated adjusted concentrations for the target compounds based on the Toxicity Equivalence Factor (TEF). This form shall be included even if no toxic target compounds are positively identified.

2.5.3.1.4 CB Homologue Data Summary (Form I CB-4). Tabulated results for the Homologues at each level of chlorination.

2.5.3.1.5 Toxics/LOC CB Congener (Labeled) Compound Recovery (Form II CB-1) – In order by EPA Sample Number. This form shall be included for each sample, blank, and LCS.

2.5.3.1.6 Selected Ion Current Profile (SICP) for each sample or sample extract, including dilutions and reanalyses.

SICPs must be presented so the two quantitation ions, and the relevant labeled compounds, are on one page. The internal standards can be presented on another page. The SICPs for the lock mass ions (PFK) may be presented on another page. The SICP must show the full time window scanned for each ion. The SICP for any toxic congener below the Signal-to-Noise (S/N) ratio of 10 or below the CRQL must be enlarged. Each SICP must include the following header information:

- EPA Sample Number;
- Date and time of analysis;
- Absolute RT (and scan number if available) and/or name of identified compounds;
- High Resolution Gas Chromatograph/High Resolution Mass Spectrometer (HRGC/HRMS) Instrument ID;
- Lab File ID; and
- Analyst ID.

2.5.3.1.7 If automated data system procedures are used for preliminary identification and/or quantitation of the target compounds, the complete data system report, including but not limited to quantitation reports and area summaries, shall be provided in all Sample Data Packages, in addition to the SICPs. The complete data system report shall include all of the information listed below. For laboratories which do not use the automated data system procedures, a laboratory "raw data sheet" containing the following information shall be included in the Sample Data Package, in addition to the SICP:

- EPA Sample number;
- Date and time of analysis;
- Absolute RT (and scan number if available) and/or name of identified compounds;

- Ions used for quantitation with measured areas;
- Copy of area table from data system;
- On column concentration/amount including units;
- Signal-to-noise ratio;
- HRGC/HRMS Instrument ID;
- Lab File ID; and
- Analyst ID.

2.5.3.1.8 In all instances where the data system report has been edited, or where manual integration or quantitation has been performed, the HRGC/HRMS Operator shall identify such edits or manual procedures made to the report, by initialing and dating all handwritten changes, and shall include the integration scan range. In addition, a hardcopy printout of the chromatogram displaying the manual integration shall be included in the raw data.

2.5.3.2 Quality Control Data

2.5.3.2.1 Laboratory Control Sample Summary (Form III CB-1, CB-2) – in order by EPA Sample Number assigned to the LCS. Use Form III CB-1 if analysis was performed for all 209 congeners. Use Form III CB-2 if analysis was performed for 12 Toxics congeners only.

2.5.3.2.2 CB Congener Method Blank Summary (Form IV CB-1) - in order by EPA Sample Number assigned to the blanks.

2.5.3.2.3 Instrument Performance Check CB Congener Window Defining Mix (WDM) Summary (Form V CB-1) - in order by EPA Sample Number assigned to the Level of Chlorination (LOC)/window-defining congeners mix.

A WDM Summary must be completed for each 12-hour period. The RT for the first and last eluting congener at each level of chlorination are included on this form.

2.5.3.2.4 Instrument Performance Check CB Congener Chromatographic Resolution Summary (Form V CB-2) - in order by EPA Sample Number assigned to the LOC/window-defining congeners mix.

Chromatographic Resolution Summaries must be completed for each 12-hour period.

2.5.3.3 CB Congeners Standards Data

2.5.3.3.1 Initial Calibration of CB Congeners (Form VI CB-1, CB-2, CB-3, CB-4, CB-5, CB-6, CB-7) - in order by instrument, if more than one instrument is used.

2.5.3.3.1.1 Perfluorokerosene (PFK) mass resolution for initial calibration shall be provided and labeled with EPA Sample Number, date and time, HRGC/HRMS Instrument ID, Lab File ID, and Analyst ID.

2.5.3.3.1.2 Standards, SICPs, and complete data system reports for the initial calibration for the toxic CB congeners will be labeled as stated in Sections 2.5.3.1.6 and 2.5.3.1.7.

2.5.3.3.1.3 Standards, SICPs, and complete data system reports for the single-point calibration of the non-toxic CB congeners shall be present.

2.5.3.3.1.4 When more than one initial calibration is performed, the data must be arranged in chronological order by instrument.

2.5.3.3.2 Continuing Calibration Verification Data (Form VII CB-1, CB-2, CB-3, CB-4, CB-5, CB-6) - in order by instrument, if more than one instrument is used.

2.5.3.3.2.1 PFK mass resolution for CCV shall be provided for each 12-hour period and labeled with EPA Sample Number, date and time, HRGC/HRMS Instrument ID, Lab File ID, and Analyst ID.

2.5.3.3.2.2 Standards, SICPs, and complete data system reports including area summaries for all CCVs will be labeled as specified in Sections 2.5.3.1.6 and 2.5.3.1.7.

2.5.3.3.2.3 When more than one CCV is performed, the data must be arranged in chronological order by instrument.

2.5.3.3.2.4 In all instances where the data system report has been edited, or where manual integration or quantitation has been performed, the HRGC/HRMS operator shall identify the changes made to the report, by initialing and dating all handwritten changes, and shall include the integration scan range. In addition, a hardcopy printout of the chromatogram of the quantitation ion(s) displaying the manual integration shall be included in the raw data. This applies to all target compounds listed in Exhibit C, labeled compounds, and internal standards.

2.5.3.4 CB Congeners Raw Quality Control (QC) Data

2.5.3.4.1 Blank data shall be included in order by EPA Sample Number assigned to the blank.

- Form I CB-1, CB-2, CB-3, and CB-4.
- SICPs and complete data system reports including area summaries shall be submitted for each blank analyzed, and labeled as specified in Sections 2.5.3.1.6 and 2.5.3.1.7.

2.5.3.4.2 LCS data shall be included in order by EPA Sample Number assigned to the LCS.

- Form I CB-1, CB-2, CB-3, and CB-4.
- SICPs and complete data system reports including area summaries shall be submitted for each blank analyzed, and labeled as specified in Sections 2.5.3.1.6 and 2.5.3.1.7.

2.6 Complete Sample Delivery Group (SDG) File (CSF)

As specified in the Delivery Schedule, one CSF (including the original Sample Data) shall be delivered to the TOPO concurrently with the delivery of a copy to SMO. The contents of the CSF shall be numbered according to the specifications described in Section 3.6. The CSF shall contain all original documents specified in Sections 3 and 4, and in Form DC-2. No copies shall be placed in the CSF unless the originals were initially written in a bound notebook maintained by the laboratory, or the originals were previously submitted to USEPA with another SDG in accordance with the requirements described in Exhibit F.

NOTE: All Case-related documentation may be used or admitted as evidence in subsequent legal proceedings. Any other Case-specific documents generated after the CSF is sent to USEPA, as well as copies that are altered in any fashion, are also deliverables to USEPA. Send the original to the Region and a copy to SMO. Send to USEPA's designated recipient (e.g., QATS) only upon written request.

2.6.2 The CSF shall consist of the following original documents, in addition to the documents in the Sample Data:

- Original Sample Data;
- A completed and signed CB Congener CSF Inventory Sheet (Form DC-2);
- All original shipping documents including, but not limited to, the following:
  - Traffic Reports/Chain of Custody Records;
  - Airbills (if an airbill is not received, include a hardcopy receipt from the shipping company or a printout of the shipping company's electronic tracking information); and
  - Sample tags (if present) sealed in plastic bags.
- All original receiving documents including, but not limited to, the following:
  - Form DC-1;
  - Other receiving forms or copies of receiving logbooks, and
  - SDG Cover Sheet.
- All other original laboratory records not already submitted in the Sample Data of sample transfer, preparation, and analysis including, but not limited to, the following documents:
  - Original preparation and analysis forms or copies of preparation and analysis logbook pages;
  - Internal sample and sample extract transfer Chain of Custody Records;
  - Screening records; and
  - All instrument output, including strip charts from screening activities.
- All other original SDG-specific documents in the possession of the Contractor, including, but not limited to, the following documents:
  - Communication logs;
  - Copies of personal logbook pages;
  - All hand-written SDG-specific notes; and
  - Any other SDG-specific documents not covered by the above.

2.6.3 If the Contractor does submit SDG-specific documents to USEPA after submission of the CSF, the documents shall be identified with unique accountable numbers, a revised Form DC-2 shall be submitted, and the unique accountable numbers and locations of the documents in the CSF shall be recorded in the "Other Records" section on the revised Form DC-2. Alternatively, the Contractor may number the newly submitted SDG-specific documents to USEPA as a new CSF and submit a new Form DC-2. The revised Form DC-2 or new Form DC-2 should be submitted to the Region only.

2.7 Data in Electronic Format

The Contractor shall provide an electronic data deliverable for all samples in the SDG, as specified in Exhibit H, and delivered as specified in Section 1 of this Exhibit.

2.8 Instrument Electronic Data

The Contractor shall adhere to the requirements in Exhibit E.

The Contractor shall store all raw and processed HRGC/HRMS data in the appropriate instrument manufacturer's format. This data must include data for samples, LCSs, blanks, initial and continuing calibrations, as well as all laboratory-generated quantitation reports and SICPs required to generate the data package. The Contractor shall maintain a written reference logbook of data files to designate Sample Number, calibration data, standards, and blanks. The logbook shall include EPA Sample Numbers and Standard and Blank IDs, identified by Case, Task Order number, and SDG. The Contractor is required to retain the HRGC/HRMS data for three (3) years after submission of the reconciled complete data package. During that time, the Contractor shall submit instrument data and associated logbook pages within 7 days after receipt of a written request from the TOPO or OSRTI ASB CBC PM.

2.8.1 When submitting HRGC/HRMS data to USEPA, the following materials shall be delivered in response to the request:

- All associated raw data files for samples, blanks, QC samples, LCSs, and initial and continuing calibration standards;
- All processed data files and quantitation output files associated with the raw data files described above;
- All associated identifications and calculation files used to generate the data submitted in the data package; and
- A copy of the Contractor's written reference logbook relating tape files to Sample Number, calibration data, standards, blanks, and LCSs. The logbook shall include Sample Numbers and laboratory file identifiers for all samples, blanks, and standards, identified by Case and SDG.

2.8.2 The laboratory shall also provide a statement attesting to the completeness of the HRGC/HRMS instrument data submission, signed and dated by the Laboratory Manager and/or designee. This statement shall be part of a cover sheet that includes the following information relevant to the submission:

- Laboratory name;
- Date of submission;
- Case number;
- Task Order number;
- SDG number;
- HRGC/HRMS make and model number;
- Software version;
- Names and telephone numbers of two laboratory contacts for further information regarding the submission.

2.9 Extracts

2.9.1 The Contractor shall store sample extracts in the dark at less -10° in bottles/vials with polytetrafluoroethylene (PTFE)-lined septa. Extract bottles/vials shall be labeled with the EPA Sample Number, Case number, SDG number, and Modified Analysis number (if applicable). A logbook of stored extracts, listing EPA Sample Numbers and associated Case and SDG numbers shall be maintained.

2.9.2 The Contractor is required to retain extracts for one (1) year following submission of reconciled complete data package. During that time, the Contractor shall submit extracts and associated logbook pages within 7 days following receipt of a written request from the PO.

2.10 Delivery of Hardcopy Data in PDF Format

In addition to all required deliverables identified in the laboratory's contract and the CBC01.2 SOW, the laboratory shall provide a complete copy of the hardcopy deliverable in PDF on a Compact Disc (CD).

2.10.1 The PDF file shall be organized in accordance with the directions provided in Exhibit B, "Reporting Requirements and Order of Data Deliverables" of the CBC01.2 SOW. The PDF shall be bookmarked as described below for ease of data retrieval and navigation.

2.10.2 Data shall be bookmarked using a hierarchical bookmark structure (i.e., an overview or "parent" bookmark, and a subordinate or "child" bookmark nested underneath the "parent" bookmark). The required hierarchical structure is shown in Table 2.

TABLE 2. Hierarchical Bookmark Structure

Group Bookmark	**Parent Bookmark**	**Child Bookmark**
SDG Narrative, Form DC-1,Form DC-2, and Sample TR/COCs		
Sample Data	QC Summary	Analysis Data Sheets
		Homologues
		LCS
		Method Blanks
		Window Defining Mix
		IPC
	Standard Data	Initial Calibration Summary
		Continuing Calibration Verification
	Raw Data	Congeners
		Extraction Logs
Receiving Documents, Transfer Records, Miscellaneous	Additional Documents	Receiving Logbooks
		Preparation and Analysis Logbooks
		Internal Sample, Extract Transfer Chain-of-Custody Records
		PE Instruction Forms
		Communication Logs

3.0 GENERAL FORM INSTRUCTIONS

3.1 Introduction

This section contains general instructions for completion of all required chlorinated biphenyl (CB) congeners Data Reporting Forms.

3.2 General Information

3.2.1 The data reporting forms presented in Exhibit B, Section 4.0, have been designed in conjunction with the electronic data format specified in Exhibit H. Information entered on these forms shall **not** exceed the size of the field given on the form, including such laboratory generated items as “Lab Name” and “Lab Sample ID”.

3.2.2 All characters which appear on the data reporting forms presented in Section 4 shall be reproduced by the Contractor when submitting data, and the format of the forms submitted shall provide exactly the same information as that shown in the contract. No information may be added, deleted, or moved from its specified position without prior written approval of USEPA. The names of the various fields and compounds (e.g., “Lab Code”, “PCB-77”) must appear as they do on the forms in the contract, including the options specified in the form.

3.3 Header Information

Six pieces of information are common to the header section of each data reporting form. They are Lab Name, Contract, Lab Code, Case No., Mod. Ref. No., and SDG No. Except as noted below for Mod. Ref. No., this information must be entered on every form and must match on every form.

3.3.1 “Lab Name” will be the name chosen by the Contractor to identify the laboratory.

3.3.2 “Lab Code” is an alphanumeric abbreviation of up to six letters and numbers assigned by USEPA to identify the laboratory and aid in data processing. This lab code will be assigned by USEPA at the time a contract is awarded and shall not be modified by the Contractor, except at the direction of the Contracting Officer (CO). If a change of name or ownership occurs at the laboratory, the lab code will remain the same unless and until the Contractor is directed by the CO to use another USEPA-assigned lab code.

3.3.3 “Case No.” is the assigned Case number associated with the sample and reported on the Traffic Report/Chain of Custody Record or sample shipping paperwork.

3.3.4 “Contract” is the number of the contract under which the analyses were performed.

3.3.5 “SDG No.” is the EPA Sample Number of the first sample received in the Sample Delivery Group (SDG). When several samples are received together in the first SDG shipment, the SDG number shall be the lowest Sample Number (considering both alpha and numeric designations) in the first group of samples received under the SDG.

3.3.6 "Mod. Ref. No." is the USEPA assigned number for analyses performed under the modified analysis clause in Exhibit A. If samples are to be analyzed under the modified analysis clause, the Contractor shall list both the Case No. and the modification reference number on all forms. If the analyses have no modified requirements, leave the "Mod. Ref. No." field blank.

3.3.7 “Sample No.” is the EPA Sample Number provided by USEPA and is the other information common to most of the forms. This number appears either in the upper right-hand corner of the form, or as the left column of a table summarizing data from a number of samples.

3.3.7.1 All samples, Laboratory Control Samples (LCSs), blanks, and standards shall be identified with an EPA Sample Number. For field samples, the EPA Sample Number is based on the unique identifying number given in the Traffic Report/Chain of Custody Record or sample shipping records for that sample.

3.3.7.2 In order to facilitate data assessment, the following suffixes must be used:

XXXXX = EPA Sample Number
XXXXXRE = Re-extracted and re-analyzed aliquot of sample “XXXXX”
XXXXXDL = Diluted analysis of sample “XXXXX”
XXXXXS = Filtered solid in aqueous samples containing greater than 1% solid. The aqueous filtrate belonging to this sample will be named “XXXXX”

3.3.7.3 For blanks and standards, the following identification scheme must be used as the “Sample No.”:

- The CB Congener Method blanks shall be identified as CBLK##;
- Calibration standards shall be identified as CS1##, CS2##, CS3##, CS4##, and CS5##, and shall correspond to the calibration solutions identified in Exhibit D;
- The Window Defining Mixture (WDM) shall be identified as WDM##;
- The LCS shall be identified as CLCS##; and
- The perfluorokerosene (PFK) mass resolution check shall be identified as PFK##.

3.3.7.4 “Sample No.” must be unique within an SDG. Therefore, the Contractor must replace the two-character “##” terminator of the identifier with one or two characters or numbers, or a combination of both, to create a unique Sample Number for each blank and standard within the SDG. For example, possible identifiers for method blanks would be CBLK01, CBLK02, CBLKA1, CBLKB2, CBLKAB, etc.

3.3.8 Other Common Fields

Other pieces of information are common to many of the data reporting forms. These include “Matrix", “Lab Sample ID”, “Lab File ID”, “Instrument ID”, and “GC Column”.

3.3.8.1 For “Matrix”, enter “Soil” for a soil/sediment/sludge sample, “Water” for an aqueous sample, “Tissue” for tissue, “Oil” for oil and oil matrix, and “Biosolids” for biosolids samples.

3.3.8.2 "Lab Sample ID" is an optional laboratory generated internal identifier. If the Contractor does not have a Lab Sample ID, this field may be left blank. However, if this identifier is used on any of the forms or accompanying hardcopy data deliverables, it must be reported on all the appropriate forms.

3.3.8.3 "Lab File ID" is the laboratory generated name of the High Resolution Gas Chromatography/High Resolution Mass Spectrometry (HRGC/HRMS) data system file containing information pertaining to a particular analysis

3.3.8.4 "Instrument ID" is common to many of the forms, particularly those containing calibration data. The identifier used by the laboratory must include some indication of the manufacturer and/or model of the instrument, and contain additional characters or numbers that differentiate between all instruments of the same type in the laboratory. The instrument identifier must be consistent on all forms within the SDG.

3.3.8.5 "GC Column" and "ID (mm)" are common to various other forms. These two fields are to be used to identify the stationary phase of the GC column, and the internal diameter of the GC column in millimeters (mm).

3.3.9 Rounding Rule

For rounding off numbers to the appropriate level of precision, observe the following common rules. If the figure following those to be retained is less than 5, drop it (round down). If the figure is greater than or equal to 5, drop it and increase the last digit to be retained by 1 (round up).

3.4 CB Congener Data Reporting Forms

3.4.1 CB Congener Sample Data Summary (Form I CB-1)

3.4.1.1 Purpose

This form is used for tabulating and reporting sample analysis for 209 congeners, including dilutions, re-extraction and/or reanalysis, blank, and LCS results for target compounds.

3.4.1.2 Instructions

Complete the header information according to the instructions in Section 3.3. Complete the remainder of the form using the following instructions.

3.4.1.2 For soil and sediment samples analyzed for CB congeners, enter the values for the Percent Moisture determined during the analysis in the "% Solids/Lipids" field on Form I CB-1. In the "Decanted: (Y/N)" field, enter Y if the sample had standing water above the soil or sediment that was decanted, or N if no water was decanted off the surface of the sample. For tissue samples analyzed for CB congeners, enter the Percent Lipids on Form I CB-1. All tissue results must be reported on a wet weight basis. Report Percent Solids and Percent Lipids (decanted or not decanted) to the nearest whole percentage point (e.g., 5%, not 5.3%). For water samples, method blanks, and instrument blanks, leave these fields blank on Form I.

3.4.1.3 Enter the method of extraction in the "Extraction (Type):" field on Form I CB-1, as SEPF for separatory funnel, CONT for continuous liquid-liquid extraction without hydrophobic membrane, CONH for continuous liquid-liquid extraction with hydrophobic membrane, SPE for Solid Phase Extraction, SOXH for Soxhlet Extraction (soils or

tissues), SDS for Soxhlet-Dean Stark extraction (CB congeners soils only), or PFEX for Pressurized Fluid Extraction (soils only).

3.4.1.4 Enter the cleanup method used [Acid, Base, GPC, Silica, Florisil, HPLC, carbon, or Anthropogenic Isolation Column (AIC)] in the "Cleanup (Type):" field.

3.4.1.5 Enter the date of sample receipt at the laboratory, as noted on the Traffic Report/Chain of Custody Record, in the "Date Received" field. The date shall be entered as MM/DD/YYYY.

3.4.1.6 Complete the "Date Extracted" and "Date Analyzed" fields in the same format (MM/DD/YYYY). When continuous liquid-liquid extraction procedures are used for water samples, enter the date that the procedure was **started** in the "Date Extracted" field. If separatory funnel, SPE, sonication, soxhlet, SDS, or pressurized fluid procedures are used, enter the date that the procedure was **completed** in the "Date Extracted" field. The date of sample receipt will be compared with the extraction and analysis dates of each sample to ensure that contract holding times were not exceeded.

3.4.1.7 Enter the actual volume of the **most** concentrated sample extract, in µL, in the "Concentrated Extract Volume" field on Form I CB-1. If a dilution of the sample extract is made in a subsequent analysis, this volume will remain the same, but the Dilution Factor (DF) will change. For CB congeners, this volume will typically be 20 µL.

3.4.1.8 Enter the volume of the sample extract injected into the GC in the "Injection Volume" field on Form I CB-1. Report this volume in µL to one decimal place (e.g., 1.0 µL).

3.4.1.9 If a sample or sample extract has been diluted for analysis, enter the DF value to one decimal place in the "Dilution Factor" field (i.e., a DF of 1 will be reported as 1.0; DF of 10 will be reported as 10.0).

3.4.1.10 For detected positively identified target congeners or co-eluting congeners, enter the concentration in the appropriate units in the Conc. Found column. Leave this column blank if the target congener is not detected.

3.4.1.11 The listed co-eluting congeners are based on column performance during method development. If the particular co-eluting congeners determined by the laboratory during calibration differ from those listed on the form, the laboratory shall adjust the target analyte names to reflect the co-elutions occurring during laboratory analysis. This includes reporting congeners as single analytes, or reporting different co-elution groups than those listed on the form.

3.4.1.12 For positively identified target compounds, the Contractor shall report the concentrations as **uncorrected** for blank contaminants.

3.4.1.13 Report all analytical results to two significant figures if the value is less than 10.

3.4.1.14 Enter the appropriate concentration units, pg/L or ng/kg in the field from "Concentration Units".

NOTE: Tissue results must be reported on a wet weight basis.

3.4.1.15 For reporting results, the following contract-specific qualifiers are to be used. The eight qualifiers listed below are not subject to modification by the laboratory. Up to five qualifiers may be reported on Form I for each analyte. The eight defined qualifiers to be used are as follows:

3.4.1.15.1 U - Indicates compound was analyzed for, but not detected. The "Concentration" column is left blank in this instance.

3.4.1.15.2 J - Indicates an estimated value. This flag is used when the mass spectral data indicate the presence of an analyte meeting all the identification criteria in Exhibit D, but the result is less than the Contract Required Quantitation Limit (CRQL), as listed in Exhibit C, but greater than the calculated Estimated Detection Limit (EDL).

3.4.1.15.3 B - This flag is used when the analyte is found in the associated blank, as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

3.4.1.15.4 E - This flag identifies analytes whose concentrations exceed the calibration range of the HRGC/HRMS instrument for that specific analysis. If one or more compounds have a response greater than fullscale, except as noted in Exhibit D, a smaller sample size must be extracted and analyzed according to the specifications in Exhibit D. All such compounds with a response greater than full scale should have the concentration flagged "E" on the Form I for the original analysis. If the dilution causes any compounds identified in the first analysis to be below the calibration range in the second analysis, the results of both analyses shall be reported on separate copies of Form I. The Form I for the diluted sample shall have the "DL" suffix appended to the EPA Sample Number.

3.4.1.15.5 D - This flag indicates all compounds identified in an analysis at a secondary dilution factor. If a smaller sample size is analyzed, as in the "E" flag above, the "DL" suffix is appended to the EPA Sample Number on the Form I for the diluted sample, and all concentration values reported on that Form I are flagged with the "D" flag. This flag alerts data users that any discrepancies between the concentrations reported may be due to dilution of the sample extract.

3.4.1.15.6 H - This flag indicates that the analyte in question was quantitated using peak heights rather than peak areas for both the analyte and its internal standard (see Exhibit D, Section 11).

3.4.1.15.7 X - Other specific flags may be required to properly define the results. If used, they must be fully described, and such description must be attached to the Sample Data Package and the SDG Narrative. Begin using "X". If more than one flag is needed, use "Y" and "Z" as needed. The laboratory-defined flags are limited to the letters "X", "Y", and "Z".

3.4.2 Toxic CB Congener Sample Data Summary (Form I CB-2)

3.4.2.1 Purpose

This form is used to report the concentrations of the toxic CB congeners and the labeled compounds. The contractor shall submit a Form I CB-2 if the analysis was performed for 12 Toxic congeners only for each sample, dilution, re-extraction and/or reanalysis.

3.4.2.2 Instructions

Complete the header information according to the instructions in Section 3.3. Complete the remainder of the fields in the header according to the instructions in Section 3.3.8. Complete the remainder of the form using the following instructions:

3.4.2.2.1 For each toxic congener result greater than the CRQL, enter the concentration in the “Concentration” column to two significant figures. Otherwise, leave the field blank.

3.4.2.2.2 Under the column labeled “Q”, flag each result with the specific data reporting qualifiers described in Section 3.4.1.15.

3.4.3 CB Congener Toxicity Equivalence Summary (Form I CB-3)

3.4.3.1 Purpose

This form is used to report the Toxicity Equivalence Factor (TEF)-adjusted concentrations and the Total TEF-adjusted concentration for the toxic congeners for samples. The contractor shall submit a Form I CB-3 for each sample.

3.4.3.2 Instructions

Complete the header information according to the instructions in Section 3.3. Complete the remainder of the fields in the header according to the instructions in Section 3.3.8. Complete the remainder of the form using the following instructions:

3.4.3.2.1 For each toxic congener result greater than the CRQL, enter the concentration in the “Conc. Found” column. Otherwise, leave the field blank.

3.4.3.2.2 For each toxic congener result greater than the CRQL, calculate the TEF-adjusted concentration by multiplying the result by the TEF and enter the calculated value in the “TEF-Adjusted Concentration” column. Otherwise, leave the field blank.

3.4.3.2.3 Calculate the Total TEF-adjusted concentration and enter the calculated total in the “Total TEF” field.

3.4.4 CB Total Homologue Data Summary (Form I CB-4)

3.4.4.1 Purpose

This form is used to report the concentration of the mono- through deca-chloro biphenyl homologues for each sample.

3.4.4.2 Instructions

Complete the header information according to the instructions in Sections 3.3 and 3.3.8. Complete the remainder of the form using the following instructions.

3.4.4.2.1 Under the column labeled “Peaks”, enter the number of congener peaks detected for each homologue. If no peaks are detected leave the field blank.

3.4.4.2.2 Under the column labeled “Conc. Found”, report the total concentration for the homologue to two significant figures. If no concentration is found, leave the field blank.

3.4.4.2.3 Under the column labeled “Q”, flag each total homologue result with the specific data reporting qualifiers described in Section 3.4.1.15.

3.4.5 Toxics/LOC CB Congener (Labeled) Compound Recovery Summary (Form II CB-1)

3.4.5.1 Purpose

This form is used to report the percent recovery, ion abundance ratio, and relative retention time of each of the labeled toxics/LOC compounds added to each sample, blank, and LCS.

3.4.5.2 Instructions

3.4.5.2.1 Complete the header information according to the instructions in Sections 3.3 and 3.3.8. Complete the remainder of the form using the following instructions.

3.4.5.2.2 Under the column labeled “Spike Conc.”, report the amount of spike added in picograms.

3.4.5.2.3 Under the column labeled “Conc. Found”, report the amount, in picograms, of labeled compound found in the sample.

3.4.5.2.4 Under the column labeled “% REC #.”, report the percent recovery of the labeled compound calculated from the amount added and the amount found.

3.4.5.2.5 Under the column labeled “IAR #”, report the Ion Abundance Ratio calculated for each labeled congener.

3.4.5.2.6 Under the column labeled “RT #”, report the retention time calculated for each labeled congener.

3.4.6 Toxics/LOC CB Congener Lab Control Sample Data Summary (Form III CB-1, CB-2)

3.4.6.1 Purpose

This form is used to report the percent recovery of the Laboratory Control Sample (LCS).

3.4.6.2 Instructions

Complete the header information according to the instructions in Section 3.3. Complete the remainder of the form using the following instructions.

3.4.6.2.1 Under the Column labeled “Spike Added”, report the amount of each congener added to the LCS in picograms.

3.4.6.2.2 Under the column labeled “Amount Recovered”, report the amount, in picograms, of each congener found in the LCS.

3.4.6.2.3 Under the column labeled “% REC #”, report the percent recovery calculated for each congener added to the LCS.

3.4.7 CB Congener Method Blank Summary (Form IV CB-1)

3.4.7.1 Purpose

This form summarizes the samples associated with each method blank analysis. The Contractor shall submit the appropriate Form IV for each blank.

3.4.7.2 Instructions

Complete the header information according to the instructions in Section 3.3. The EPA Sample Number entered in the upper right-hand corner shall be the same number entered on Form I for the blank. Complete the remainder of the form using the following instructions.

3.4.7.2.1 Complete the following fields: “Instrument ID” and “Date Analyzed”. Dates shall be entered as MM/DD/YYYY.

3.4.7.2.2 Identify the GC column and internal diameter in the appropriate fields.

3.4.7.2.3 For CB congener blanks, enter the method of extraction as CONH for continuous liquid-liquid extraction with hydrophobic membrane, CONT for continuous liquid-liquid extraction without hydrophobic membrane, SOXH for Soxhlet extraction, or PFEX for pressurized fluid extraction on Form IV CB. For CB congener blanks, separatory funnel extraction shall be entered as SEPF. For CB congener blanks, Solid Phase Extraction shall be entered as SPE and Soxhlet-Dean Stark extraction (tissue only) shall be entered as SDS.

3.4.7.2.4 For CB congener method blanks, enter the date of extraction of the blank on Form IV CB.

3.4.7.2.5 Enter the reference matrix used to prepare the method blank in the “Matrix” field.

3.4.7.2.6 CB Congeners method blanks require the identical cleanup methods as the associated samples. If any cleanup methods are employed, enter them in the “Cleanup: (Type)” field.

3.4.7.2.7 As appropriate, summarize the samples including LCSs associated with a given method blank in the table, entering the EPA Sample Number and Laboratory Sample Identifier. For CB congeners, enter the Laboratory File Identifier and the date of analysis.

3.4.7.2.8 Number all pages as described in Section 2.1.

3.4.8 Instrument Performance Check CB Congener Window Defining Mix (WDM) Summary (Form V CB-1)

3.4.8.1 Purpose

This form is used to report the descriptor switching windows for each level of chlorination for each 12-hour time period and to summarize the date and time of analyses of samples, including dilutions, reanalyses, standards, and blanks, associated with each analysis of the Instrument Performance Check solution.

3.4.8.2 Instructions

Complete the header information according to the instructions in Section 3.3. Complete the remainder of the form using the following instructions.

3.4.8.2.1 Enter the date and time of the analysis (defined at time of injection) of the Level of Chlorination (LOC)/Window-Defining

Mixture (WDM). The date shall be entered as MM/DD/YYYY. The time shall be reported as military time.

3.4.8.2.2 Enter the GC column.

3.4.8.2.3 Enter the RT of the first eluting congener and the last eluting congener for each LOC. Report the RT in minutes. Seconds are to be reported as a decimal value of a whole minute (e.g., 21 min. 20 sec. is reported as 21.33).

3.4.9 Instrument Performance Check CB Congener Chromatographic Resolution Summary (Form V CB-2)

3.4.9.1 Purpose

These forms are used to report the resolution for selected congeners contained in the LOC/WDM for each 12-hour time period and the samples analyzed in that 12-hour time period. At least one form is required for each GC column used for CB analysis.

3.4.9.2 Instructions

Complete the header information according to the instructions in Section 3.3. Complete the remainder of the form using the following instructions.

3.4.9.2.1 Enter the date and time of the analysis of the LOC/WDM. The date shall be entered as MM/DD/YYYY. The time shall be reported as military time.

3.4.9.2.2 Enter the GC column and Instrument ID.

3.4.9.2.3 Enter the calculated percent valley each of the congeners pairs present on the form.

3.4.9.2.4 For the Analytical Sequence, enter the EPA Sample Number and Lab File ID according to the instructions in Section 3.3. Enter the Date Analyzed according to the instructions in Section 3.3. Enter the Time Analyzed as military time in chronological order by date and time of analyses.

3.4.9.2.5 For every analysis associated with a particular analytical sequence starting with the initial calibration, enter the EPA Sample Number, Laboratory File Identifier, and date and time of analysis. Each sample analyzed as part of the sequence shall be reported on Form V CB-2 **even** if it is not associated with the SDG. The Contractor shall use ZZZZZ as the EPA Sample Number to distinguish all samples that are not part of the SDG being reported.

3.4.9.2.6 If more than a single copy of Form V CB-2 is required for CB congeners, enter the same header information on all subsequent pages for that GC column and instrument, and number each page as necessary.

3.4.10 Initial Calibration Data (Form VI CB-1, CB-2, CB-3, CB-4, CB-5, CB-6, CB-7)

3.4.10.1 Purpose

After a High Resolution Gas Chromatograph/High Resolution Mass Spectrometer (HRGC/HRMS) system has undergone an initial five point calibration at the specific concentration levels described in Exhibit D, and after all initial calibration criteria have been met, the Contractor shall complete and submit these forms for each toxic/LOC CB congener initial calibration performed that is relevant to the samples, including dilutions, reanalyses, and blanks, regardless of when that calibration was performed. If a HRGC/HRMS system has undergone a single calibration for all native congeners at the specific concentration levels described in Exhibit D, and after all initial calibration criteria have been met, the Contractor shall complete and submit these forms for each native CB congener initial calibration performed that is relevant to the samples, including dilutions, reanalyses, and blanks, regardless of when the calibration was performed.

3.4.10.2 Instructions

Complete the header information according to the instructions in Section 3.3. Enter the Case Number and the SDG Number for the current data package, regardless of the original Case for which the initial calibration was performed. Complete the remainder of the form using the following instructions.

3.4.10.2.1 Enter the date(s) of the initial calibration in the “Init. Calib. Date(s)” field. If the calendar date changes during the calibration procedure, the inclusive dates shall be recorded. Dates shall be entered as MM/DD/YYYY.

3.4.10.2.2 Enter the injection times of the first and last of the standards analyzed in the “Init. Cailb. Time(s)” field. Times shall be reported in military time.

3.4.10.2.3 Complete the “GC Column” and “Inst. ID” fields.

3.4.10.2.4 Complete the Relative Response (RR) and RRF data and the Ion Abundance Ratio data for the five (or six) calibration points. Calculate and report the Mean RR ($\overline{RR}$) or RRF, RRT, and Percent Relative Standard Deviation (%RSD) for all toxic/LOC congeners, labeled compounds, cleanup standards, and internal standards in the calibration standards. See Exhibit D for equations. Report all RRT QC Limits. For individual congeners, complete the RRF, RRT, and the Ion Abundance Ratio data for the single calibration point.

3.4.11 Continuing Calibration Verification Data (Form VII CB-1, CB-2, CB-3, CB-4, CB-5, CB-6)

3.4.11.1 Purpose

Form VII is used to report the calibration verification of the HRGC/HRMS system by the analysis of specific calibration verification standard(s). Form VII is required for each 12-hour time period. The Contractor shall analyze the calibration verification standards and meet all criteria outlined in Exhibit D for the minimum RR and RRF and maximum Percent Difference between an initial calibration and CCVs.

3.4.11.2 Instructions

Complete the header information according to the instructions in Section 3.3. Complete the remainder of the form using the following instructions.

3.4.11.2.1 Enter the date and time of the CCV in the “Date Analyzed” and in the “Time Analyzed” fields and the date(s) and times of the initial calibration standards in the “Init. Calib. Date(s)” and in the “Init. Calib. Time(s)” fields, (give inclusive dates if the initial calibration is performed over more than one date). Dates shall be entered as MM/DD/YYYY. Times shall be reported in military time.

3.4.11.2.2 Complete the “GC Column” and “Inst. ID” fields.

3.4.11.2.3 Using the appropriate initial calibration, enter the $\overline{RR}$ or $\overline{RRF}$ and Relative Retention Time (RRT) for each toxic congener, labeled compound, cleanup standard, and internal standard.

3.4.11.2.4 For Toxic/LOC CB Congeners, labeled compounds, cleanup standards, and internal standards, use Form VII CB-1 and CB-2 to report the concentration and the IAR data for the CCV standard analysis. Calculate the Percent Difference for all toxic/LOC congeners, labeled compounds, cleanup standards, and internal standards in the calibration standards. For all native congeners analysis, use Form VII CB-3 to CB-6 report the RRF data, the Ion Ratio, and the RRT data for the continuing calibration verification standard analysis. Calculate the Percent Difference for all native congeners in the calibration standard. Report the test (see Exhibit D, Table 5) and found concentration of each toxic, LOC, and labeled congeners. Calculate the Percent Recovery (“Conc Test”/“Conc Found”) for each toxic, LOC and labeled congeners. See Exhibit D for equations. Flag any data outside the QC limits.

3.5 CB Congener Sample Log-in Sheet (Form DC-1)

This form documents the receipt and inspection of sample containers and samples. One original of Form DC-1 is required for each sample shipping container. If the samples in a single sample shipping container must be assigned to more than one SDG, the original Form DC-1 shall be placed with the deliverables for the lowest alpha numeric SDG number, and a copy of Form DC-1 must be placed with the deliverables for the other SDG(s). The copies should be identified as “copy(ies)”, and the location of the original should be noted on the copies.

3.5.1 Sign and date the airbill (if present). Examine the shipping container and record the presence/absence of custody seals and their condition (e.g., intact, broken) in Item 1 of Form DC-1. Record the custody seal numbers in Item 2.

3.5.2 Open the container, remove the enclosed sample documentation, and record the presence/absence of Traffic Reports/Chain of Custody Records, packing lists, and airbills or airbill stickers in Items 3-5. Record the airbill or sticker number in Item 6.

3.5.3 Remove the samples from the shipping container(s), examine the samples and the sample tags (if present), and record the condition of the sample bottles (e.g., intact, broken, leaking) and presence or absence of sample tags in Items 7 and 8.

3.5.4 Review the sample shipping documents and complete the header information as described in Section 3.3. Report the temperature of the cooler under

Item 9. Compare the information recorded on all the documents and samples and circle the appropriate answer in Item 10.

3.5.5 If there are no problems observed during sample receipt, sign and date (include time) Form DC-1, and the Traffic Reports/Chain of Custody Records, and write the Sample Numbers on Form DC-1. Record the appropriate sample tags and assigned laboratory numbers, if applicable. The log-in date should be recorded at the top of Form DC-1 and the date and time of cooler receipt at the laboratory should be recorded in Items 11 and 12. Record the specific area designation (e.g., refrigerator number) in the Sample Transfer block located in the bottom left corner of Form DC-1. Sign and date the Sample Transfer block. Cross out unused columns and spaces.

3.5.6 If there are problems observed during sample receipt or an answer marked with an asterisk (e.g., "absent*") was circled, contact SMO, who will contact USEPA for a resolution. SMO will then provide the resolution to the Contractor. Document the contact and the resolution of the problem on a Communication Log. If the communication is by phone, the Contractor will send an email to the SMO confirming the resolution of the issue. Following resolution, sign and date the forms as specified in the preceding paragraph and note, where appropriate, the resolution of the problem.

3.6 CB Congener Complete SDG File (CSF) Inventory Sheet (Form DC-2)

This form is used to record the inventory of the CSF documents and the count of documents in the original Sample Data Package that is sent to the TOPO.

3.6.1 Organize all CSF documents, as described in Section 2. Assemble the documents in the order specified on Form DC-2 and Section 2, and stamp each page with a consecutive number. (Do not number the DC-2 form.) Inventory the CSF by reviewing the document numbers and recording page number ranges in the columns provided in the Form DC-2. If there are no documents for a specific document type, enter “NA” in the empty space.

3.6.2 Certain laboratory-specific documents related to the CSF may not fit into a clearly-defined category. The laboratory should review Form DC-2 to determine if it is most appropriate to place them under Item 4D.

4.0 DATA REPORTING FORMS

The data reporting forms are shown on the following pages.

1A - FORM I CB-1
CB CONGENER SAMPLE
DATA SUMMARY

EPA Sample No.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

Matrix: (Soil/Water/Biosolids/Tissue/Oil) _____ Lab Sample ID: _____

Sample wt/vol: _____ (g/mL) _____ Lab File ID: _____

Decanted (Y/N): _____ Extraction (Type): _____ Date Received: _____

Concentrated Extract Volume: _____(uL) Date Extracted: _____

Injection Volume: _____(uL) Cleanup (Type): _____ Date Analyzed: _____

GC Column: _____ Inst. ID: _____ Dilution Factor: _____

Concentration Units: (pg/L or ng/kg) _____ % Solids/Lipids: _____

CL No.	Target Analyte*	Conc. Found	Q	CRQL	IAR #	RT #
1	PCB-1					
1	PCB-2					
1	PCB-3					
2	PCB-4					
2	PCB-5					
2	PCB-6					
2	PCB-7					
2	PCB-8					
2	PCB-9					
2	PCB-10					
2	PCB-11					
2	PCB-12/13					
2	PCB-14					
2	PCB-15					
3	PCB-16					
3	PCB-17					
3	PCB-18/30					
3	PCB-19					
3	PCB-20/28					
3	PCB-21/33					
3	PCB-22					
3	PCB-23					
3	PCB-24					
3	PCB-25					
3	PCB-26/29					
3	PCB-27					
3	PCB-31					
3	PCB-32					
3	PCB-34					
3	PCB-35					

1A - FORM I CB-1 (CONTINUED)
CB CONGENER SAMPLE
DATA SUMMARY

EPA Sample No.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

Matrix: (Soil/Water/Biosolids/Tissue/Oil) _____ Lab Sample ID: _____

Sample wt/vol: _____ (g/mL) _____ Lab File ID: _____

Decanted (Y/N): _____ Extraction (Type): _____ Date Received: _____

Concentrated Extract Volume: _____(uL) Date Extracted: _____

Injection Volume: _____(uL) Cleanup (Type): _____ Date Analyzed: _____

GC Column: _____ Inst. ID: _____ Dilution Factor: _____

Concentration Units: (pg/L or ng/kg) _____ % Solids/Lipids: _____

CL No.	Target Analyte*	CONC. FOUND	Q	CRQL	IAR #	RT #
3	PCB-36					
3	PCB-37					
3	PCB-38					
3	PCB-39					
4	PCB-40/41/71					
4	PCB-42					
4	PCB-43					
4	PCB-44/47/65					
4	PCB-45/51					
4	PCB-46					
4	PCB-48					
4	PCB-49/69					
4	PCB-50/53					
4	PCB-52					
4	PCB-54					
4	PCB-55					
4	PCB-56					
4	PCB-57					
4	PCB-58					
4	PCB-59/62/75					
4	PCB-60					
4	PCB-61/70/74/76					
4	PCB-63					
4	PCB-64					
4	PCB-66					
4	PCB-67					
4	PCB-68					
4	PCB-72					
4	PCB-73					
4	PCB-77					

1A - FORM I CB-1 (CONTINUED)
CB CONGENER SAMPLE
DATA SUMMARY

EPA Sample No.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

Matrix: (Soil/Water/Biosolids/Tissue/Oil) _____ Lab Sample ID: _____

Sample wt/vol: _____ (g/mL) _____ Lab File ID: _____

Decanted (Y/N): _____ Extraction (Type): _____ Date Received: _____

Concentrated Extract Volume: _____(uL) Date Extracted: _____

Injection Volume: _____(uL) Cleanup (Type): _____ Date Analyzed: _____

GC Column: _____ Inst. ID: _____ Dilution Factor: _____

Concentration Units: (pg/L or ng/kg) _____ % Solids/Lipids: _____

CL No.	Target Analyte*	Conc. Found	Q	CRQL	IAR #	RT #
4	PCB-78					
4	PCB-79					
4	PCB-80					
4	PCB-81					
5	PCB-82					
5	PCB-83/99					
5	PCB-84					
5	PCB-85/116/117					
5	PCB-86/87/97/108/119/125					
5	PCB-88/91					
5	PCB-89					
5	PCB-90/101/113					
5	PCB-92					
5	PCB-93/95/98/100/102					
5	PCB-94					
5	PCB-96					
5	PCB-103					
5	PCB-104					
5	PCB-105					
5	PCB-106					
5	PCB-107/124					
5	PCB-109					
5	PCB-110/115					
5	PCB-111					
5	PCB-112					
5	PCB-114					
5	PCB-118					
5	PCB-120					
5	PCB-121					
5	PCB-122					

1A - FORM I CB-1 (CONTINUED)
CB CONGENER SAMPLE
DATA SUMMARY

EPA Sample No.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

Matrix: (Soil/Water/Biosolids/Tissue/Oil) _____ Lab Sample ID: _____

Sample wt/vol: _____ (g/mL) _____ Lab File ID: _____

Decanted (Y/N): _____ Extraction (Type): _____ Date Received: _____

Concentrated Extract Volume: _____(uL) Date Extracted: _____

Injection Volume: _____(uL) Cleanup (Type): _____ Date Analyzed: _____

GC Column: _____ Inst. ID: _____ Dilution Factor: _____

Concentration Units: (pg/L or ng/kg) _____ % Solids/Lipids: _____

CL No.	Target Analyte*	Conc. Found	Q	CRQL	IAR #	RT #
5	PCB-123					
5	PCB-126					
5	PCB-127					
6	PCB-128/166					
6	PCB-129/138/160/163					
6	PCB-130					
6	PCB-131					
6	PCB-132					
6	PCB-133					
6	PCB-134/143					
6	PCB-135/151/154					
6	PCB-136					
6	PCB-137					
6	PCB-139/140					
6	PCB-141					
6	PCB-142					
6	PCB-144					
6	PCB-145					
6	PCB-146					
6	PCB-147/149					
6	PCB-148					
6	PCB-150					
6	PCB-152					
6	PCB-153/168					
6	PCB-155					
6	PCB-156/157					
6	PCB-158					
6	PCB-159					
6	PCB-161					
6	PCB-162					

1A - FORM I CB-1 (CONTINUED)
CB CONGENER SAMPLE
DATA SUMMARY

EPA Sample No.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

Matrix: (Soil/Water/Biosolids/Tissue/Oil) _____ Lab Sample ID: _____

Sample wt/vol: _____ (g/mL) _____ Lab File ID: _____

Decanted (Y/N): _____ Extraction (Type): _____ Date Received: _____

Concentrated Extract Volume: _____(uL) Date Extracted: _____

Injection Volume: _____(uL) Cleanup (Type): _____ Date Analyzed: _____

GC Column: _____ Inst. ID: _____ Dilution Factor: _____

Concentration Units: (pg/L or ng/kg) _____ % Solids/Lipids: _____

CL No.	Target Analyte*	Conc. Found	Q	CRQL	IAR #	RT #
6	PCB-164					
6	PCB-165					
6	PCB-167					
6	PCB-169					
7	PCB-170					
7	PCB-171/173					
7	PCB-172					
7	PCB-174					
7	PCB-175					
7	PCB-176					
7	PCB-177					
7	PCB-178					
7	PCB-179					
7	PCB-180/193					
7	PCB-181					
7	PCB-182					
7	PCB-183/185					
7	PCB-184					
7	PCB-186					
7	PCB-187					
7	PCB-188					
7	PCB-189					
7	PCB-190					
7	PCB-191					
7	PCB-192					
8	PCB-194					
8	PCB-195					
8	PCB-196					
8	PCB-197/200					
8	PCB-198/199					

EPA Sample No.

1A - FORM I CB-1 (CONTINUED)
CB CONGENER SAMPLE
DATA SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

Matrix: (Soil/Water/Biosolids/Tissue/Oil) _____ Lab Sample ID: _____

Sample wt/vol: _____ (g/mL) _____ Lab File ID: _____

Decanted (Y/N): _____ Extraction (Type): _____ Date Received: _____

Concentrated Extract Volume: _____(uL) Date Extracted: _____

Injection Volume: _____(uL) Cleanup (Type): _____ Date Analyzed: _____

GC Column: _____ Inst. ID: _____ Dilution Factor: _____

Concentration Units: (pg/L or ng/kg) _____ % Solids/Lipids: _____

CL No.	Target Analyte*	Conc. Found	Q	CRQL	IAR #	RT #
8	PCB-201					
8	PCB-202					
8	PCB-203					
8	PCB-204					
8	PCB-205					
9	PCB-206					
9	PCB-207					
9	PCB-208					
10	PCB-209					

* These coelution combinations are subjected to change base on instrument condition and column type. This Form may be adjusted accordingly.

Flag for QC failure. See Exhibit D, Table 8 for IAR QC limit.

1B - FORM I CB-2
TOXIC CB CONGENER SAMPLE
DATA SUMMARY

EPA Sample No.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

Matrix: (Soil/Water/Biosolids/Tissue/Oil) _____ Lab Sample ID: _____

Sample wt/vol: _____(g/mL) _____ Lab File ID: _____

Decanted (Y/N): _____ Extraction (Type): _____ Date Received: _____

Concentrated Extract Volume: _____(uL) Date Extracted: _____

Injection Volume: _____(uL) Cleanup (Type): _____ Date Analyzed: _____

GC Column: _____ Inst. ID: _____ Dilution Factor: _____

Concentration Units: (pg/L or ng/kg) _____ % Solids/Lipids: _____

CL No.	Target Analyte	Conc. Found	Q	CRQL	IAR #	RT #
4	PCB-77					
4	PCB-81					
5	PCB-105					
5	PCB-114					
5	PCB-118					
5	PCB-123					
5	PCB-126					
6	PCB-156/157					
6	PCB-167					
6	PCB-169					
7	PCB-189					

CL NO.	Labeled Congener	Spike Conc.	Conc. Found	% REC #	IAR #	RT #
4	PCB-77L					
4	PCB-81L					
5	PCB-105L					
5	PCB-114L					
5	PCB-118L					
5	PCB-123L					
5	PCB-126L					
6	PCB-156L/157L					
6	PCB-167L					
6	PCB-169L					
7	PCB-189L					
Labeled Cleanup Standard						
3	PCB-28L					
5	PCB-111L					
7	PCB-178L					

Flag for QC failure. See Exhibit D, Table 6 for recovery QC limit, Table 8 for IAR QC limit.

1C - FORM I CB-3

CB CONGENER TOXICITY EQUIVALENCE SUMMARY

EPA Sample No.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

Matrix: (Soil/Water/Biosolids/Tissue/Oil) _____ Lab Sample ID: _____

Sample wt/vol: _____ (g/mL) _____ Lab File ID: _____

Decanted (Y/N): _____ Extraction (Type): _____ Date Received: _____

Concentrated Extract Volume: _____(uL) Date Extracted: _____

Injection Volume: _____(uL) Cleanup (Type): _____ Date Analyzed: _____

GC Column: _____ Inst. ID: _____ Dilution Factor: _____

Concentration Units: (pg/L or ng/kg) _____ % Solids/Lipids: _____

CL No.	Target Analyte	Conc. Found	TEF*	TEF-Adjusted Concentration
4	PCB-77		x 0.0001 =	
4	PCB-81		x 0.0003 =	
5	PCB-105		x 0.00003 =	
5	PCB-114		x 0.00003 =	
5	PCB-118		x 0.00003 =	
5	PCB-123		x 0.00003 =	
5	PCB-126		x 0.1 =	
6	PCB-156/157		x 0.00003 =	
6	PCB-167		x 0.00003 =	
6	PCB-169		x 0.03 =	
7	PCB-189		x 0.00003 =	
	Total TEF =			

* WHO 2005 TEF value

1D - FORM I CB-4
CB TOTAL HOMOLOGUE DATA SUMMARY

EPA Sample No.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

Matrix: (Soil/Water/Biosolids/Tissue/Oil) _____ Lab Sample ID: _____

Sample wt/vol: _____ (g/mL) _____ Lab File ID: _____

Decanted (Y/N): _____ Extraction (Type): _____ Date Received: _____

Concentrated Extract Volume: _____(uL) Date Extracted: _____

Injection Volume: _____(uL) Cleanup (Type): _____ Date Analyzed: _____

GC Column: _____ Inst. ID: _____ Dilution Factor: _____

Concentration Units: (pg/L or ng/kg) _____ % Solids/Lipids: _____

Homologue Group	Peaks	Conc. Found	Q
Total MoCB			
Total DiCB			
Total TrCB			
Total TeCB			
Total PeCB			
Total HxCB			
Total HpCB			
Total OcCB			
Total NoCB			
DeCB			
Total PCBs			

2A - FORM II CB-1

TOXICS/LOC CB CONGENER (LABELED) COMPOUND RECOVERY

EPA Sample No.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

Matrix: (Soil/Water/Biosolids/Tissue/Oil) _____ Lab Sample ID: _____

SAMPLE wt/vol: _____ (g/mL) _____ Lab File ID: _____

Decanted (Y/N): _____ Extraction (Type): _____ Date Received: _____

Concentrated Extract Volume: _____(uL) Date Extracted: _____

Injection Volume: _____(uL) Cleanup (Type): _____ Date Analyzed: _____

GC Column: _____ Inst. ID: _____ Dilution Factor: _____

Concentration Units: (pg/L or ng/kg) _____ % Solids/Lipids: _____

CL No.	Labeled Congener	Spike Conc.	Conc. Found	% REC #	IAR #	RT #
1	PCB-1L					
1	PCB-3L					
2	PCB-4L					
2	PCB-15L					
3	PCB-19L					
3	PCB-37L					
4	PCB-54L					
4	PCB-77L					
4	PCB-81L					
5	PCB-104L					
5	PCB-105L					
5	PCB-114L					
5	PCB-118L					
5	PCB-123L					
5	PCB-126L					
6	PCB-155L					
6	PCB-156/157L					
6	PCB-167L					
6	PCB-169L					
7	PCB-188L					
7	PCB-189L					
8	PCB-202L					
8	PCB-205L					
9	PCB-206L					
9	PCB-208L					
10	PCB-209L					
Labeled Cleanup Standard						
3	PCB-28L					
5	PCB-111L					
7	PCB-178L					

Flag for QC failure. See Exhibit D, Table 6 for recovery QC limit, Table 8 for IAR QC limit.

EPA Sample No.

3A - FORM III CB-1
TOXICS/LOC CB CONGENER LAB CONTROL SAMPLE
DATA SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

Matrix: (Soil/Water/Biosolids/Tissue/Oil) _____ Lab Sample ID: _____

Sample wt/vol: _____ (g/mL) _____ Lab File ID: _____

Decanted (Y/N): _____ Extraction (Type): _____ Date Received: _____

Concentrated Extract Volume: _____(uL) Date Extracted: _____

Injection Volume: _____(uL) Cleanup (Type): _____ Date Analyzed: _____

GC Column: _____ Inst. ID: _____ Dilution Factor: _____

Concentration Units: (pg/L or ng/kg) _____ % Solids/Lipids: _____

CL No.	Spike Analytes	Spike Added	Amount Recovered	% REC #	QC Limits
1	PCB-1				50 - 150
1	PCB-3				50 - 150
2	PCB-4				50 - 150
2	PCB-15				50 - 150
3	PCB-19				50 - 150
3	PCB-37				50 - 150
4	PCB-54				50 - 150
4	PCB-77				50 - 150
4	PCB-81				50 - 150
5	PCB-104				50 - 150
5	PCB-105				50 - 150
5	PCB-114				50 - 150
5	PCB-118				50 - 150
5	PCB-123				50 - 150
5	PCB-126				50 - 150
6	PCB-155				50 - 150
6	PCB-156/157				50 - 150
6	PCB-167				50 - 150
6	PCB-169				50 - 150
7	PCB-188				50 - 150
7	PCB-189				50 - 150
8	PCB-202				50 - 150
8	PCB-205				50 - 150
9	PCB-206				50 - 150
9	PCB-208				50 - 150
10	PCB-209				50 - 150

Column to be used to flag values outside Quality Control (QC) limits.

EPA Sample No.

3B - FORM III CB-2
TOXIC CB CONGENER LAB CONTROL SAMPLE
DATA SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

Matrix: (Soil/Water/Biosolids/Tissue/Oil) _____ Lab Sample ID: _____

Sample wt/vol: _____ (g/mL) _____ Lab File ID: _____

Decanted (Y/N): _____ Extraction (Type): _____ Date Received: _____

Concentrated Extract Volume: _____(uL) Date Extracted: _____

Injection Volume: _____(uL) Cleanup (Type): _____ Date Analyzed: _____

GC Column: _____ Inst. ID: _____ Dilution Factor: _____

Concentration Units: (pg/L or ng/kg) _____ % Solids/Lipids: _____

CL No.	Spike Analytes	Spike Added	Amount Recovered	% REC #	QC Limits
4	PCB-77				50 - 150
4	PCB-81				50 - 150
5	PCB-105				50 - 150
5	PCB-114				50 - 150
5	PCB-118				50 - 150
5	PCB-123				50 - 150
5	PCB-126				50 - 150
6	PCB-156/157				50 - 150
6	PCB-167				50 - 150
6	PCB-169				50 - 150
7	PCB-189				50 - 150

Column to be used to flag values outside Quality Control (QC) limits.

EPA Sample No.

4A - FORM IV CB-1
CB CONGENER METHOD BLANK SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

Matrix: (Soil/Water/Biosolids/Tissue/Oil) _____ Lab Sample ID: _____

Sample wt/vol: _____ (g/mL) _____ Lab File ID: _____

Decanted (Y/N): _____ Extraction (Type): _____ Date Received: _____

Concentrated Extract Volume: _____(uL) Date Extracted: _____

Injection Volume: _____(uL) Cleanup (Type): _____ Date Analyzed: _____

GC Column: _____ Inst. ID: _____ Dilution Factor: _____

	EPA Sample No.	Lab Sample ID	Lab File ID	Date Analyzed
01				
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

EPA Sample No.

5A - FORM V CB-1
INSTRUMENT PERFORMANCE CHECK
CB CONGENER WINDOW DEFINING MIX (WDM) SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

GC Column: _____ Inst. ID: _____ Lab File ID: _____

Date Analyzed: _____ Time Analyzed: _____

	Level of Chlorination	RT First Eluting	RT Last Eluting
01	MoCB		
02	DiCB		
03	TrCB		
04	TeCB		
05	PeCB		
06	HxCB		
07	HpCB		
08	OcCB		
09	NoCB		

Note: CS1 can be use as WDM before any ICAL, or CS3 before any CCV.

EPA Sample No.

5B - FORM V CB-2
INSTRUMENT PERFORMANCE CHECK
CB CONGENER CHROMATOGRAPHIC RESOLUTION SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

GC Column: _____ Inst. ID: _____ Lab File ID: _____

Date Analyzed: _____ Time Analyzed: _____

Resolution percent (≥60%) determination for SBP-Octyl or equivalent column

PCB-34 from PCB-23: _____

PCB-187 from PCB-182: _____

PCB-156/157 coeluted within 2 sec(√): _____

The Analytical Sequence of blanks, samples, standards, methods, and LCSs is given below:

	EPA Sample No.	Lab File ID	Date Analyzed	Time Analyzed
01				
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

6A - FORM VI CB-1
TOXICS/LOC CB CONGENER INITIAL CALIBRATION DATA SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

GC Column: _____ Inst. ID: _____ Lab File ID: _____

Init. Calib. Date(s): _____ _____ _____

Init. Calib. Time(s): _____ _____ _____

CL No.	Target Analyte	Relative Response (RR)					Mean RR	%RSD (≤20)	Mean RRT	RRT QC Limits
		CS 1	CS 2	CS 3	CS 4	CS 5				
1	PCB-1									
1	PCB-3									
2	PCB-4									
2	PCB-15									
3	PCB-19									
3	PCB-37									
4	PCB-54									
4	PCB-77									
4	PCB-81									
5	PCB-104									
5	PCB-105									
5	PCB-114									
5	PCB-118									
5	PCB-123									
5	PCB-126									
6	PCB-155									
6	PCB-156/157									
6	PCB-167									
6	PCB-169									
7	PCB-188									
7	PCB-189									
8	PCB-202									
8	PCB-205									
9	PCB-206									
9	PCB-208									
10	PCB-209									

Signal-to-noise ratio ≥ 10

6B - FORM VI CB-2
TOXICS/LOC CB CONGENER INITIAL CALIBRATION DATA SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

GC Column: _____ Inst. ID: _____ Lab File ID: _____

Init. Calib. Date(s): _____ _____ _____

Init. Calib. Time(s): _____ _____ _____

CL No.	Target Analyte	Ion Abundance Ratio (IAR)					Q	IAR QC Limits *
		CS 1	CS 2	CS 3	CS 4	CS 5		
1	PCB-1							2.66 - 3.60
1	PCB-3							2.66 - 3.60
2	PCB-4							1.33 - 1.79
2	PCB-15							1.33 - 1.79
3	PCB-19							0.88 - 1.20
3	PCB-37							0.88 - 1.20
4	PCB-54							0.65 - 0.89
4	PCB-77							0.65 - 0.89
4	PCB-81							0.65 - 0.89
5	PCB-104							1.32 - 1.78
5	PCB-105							1.32 - 1.78
5	PCB-114							1.32 - 1.78
5	PCB-118							1.32 - 1.78
5	PCB-123							1.32 - 1.78
5	PCB-126							1.32 - 1.78
6	PCB-155							1.05 - 1.43
6	PCB-156/157							1.05 - 1.43
6	PCB-167							1.05 - 1.43
6	PCB-169							1.05 - 1.43
7	PCB-188							0.89 - 1.21
7	PCB-189							0.89 - 1.21
8	PCB-202							0.76 - 1.02
8	PCB-205							0.76 - 1.02
9	PCB-206							0.65 - 0.89
9	PCB-208							0.65 - 0.89
10	PCB-209							0.99 - 1.33

*See Table 7 for m/z information and Table 8 for QC limits

6C - FORM VI CB-3

TOXICS/LOC CB CONGENER (LABELED) INITIAL CALIBRATION RESPONSE DATA SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

GC Column: _____ Inst. ID: _____ Lab File ID: _____

Init. Calib. Date(s): _____ _____ _____

Init. Calib. Time(s): _____ _____ _____

CL No.	Labeled Congener	Relative Response (RR)					Mean RR	%RSD (≤20)	Mean RRT	RRT QC Limits
		CS 1	CS 2	CS 3	CS 4	CS 5				
1	PCB-1L									
1	PCB-3L									
2	PCB-4L									
2	PCB-15L									
3	PCB-19L									
3	PCB-37L									
4	PCB-54L									
4	PCB-77L									
4	PCB-81L									
5	PCB-104L									
5	PCB-105L									
5	PCB-114L									
5	PCB-118L									
5	PCB-123L									
5	PCB-126L									
6	PCB-155L									
6	PCB-156/157L									
6	PCB-167L									
6	PCB-169L									
7	PCB-188L									
7	PCB-189L									
8	PCB-202L									
8	PCB-205L									
9	PCB-206L									
9	PCB-208L									
10	PCB-209L									

6D - FORM VI CB-4
TOXICS/LOC CB CONGENER (LABELED) INITIAL CALIBRATION SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

GC Column: _____ Inst. ID: _____ Lab File ID: _____

Init. Calib. Date(s): _____ _____ _____

Init. Calib. Time(s): _____ _____ _____

CL No.	Labeled Congener	Ion Abundance Ratio (IAR)					Q	IAR QC Limits
		CS 1	CS 2	CS 3	CS 4	CS 5		
1	PCB-1L							2.66 - 3.60
1	PCB-3L							2.66 - 3.60
2	PCB-4L							1.33 - 1.79
2	PCB-15L							1.33 - 1.79
3	PCB-19L							0.88 - 1.20
3	PCB-37L							0.88 - 1.20
4	PCB-54L							0.65 - 0.89
4	PCB-77L							0.65 - 0.89
4	PCB-81L							0.65 - 0.89
5	PCB-104L							1.32 - 1.78
5	PCB-105L							1.32 - 1.78
5	PCB-114L							1.32 - 1.78
5	PCB-118L							1.32 - 1.78
5	PCB-123L							1.32 - 1.78
5	PCB-126L							1.32 - 1.78
6	PCB-155L							1.05 - 1.43
6	PCB-156/157L							1.05 - 1.43
6	PCB-167L							1.05 - 1.43
6	PCB-169L							1.05 - 1.43
7	PCB-188L							0.89 - 1.21
7	PCB-189L							0.89 - 1.21
8	PCB-202L							0.76 - 1.02
8	PCB-205L							0.76 - 1.02
9	PCB-206L							0.65 - 0.89
9	PCB-208L							0.65 - 0.89
10	PCB-209L							0.99 - 1.33
Labeled Cleanup Standard								
3	PCB-28L							0.88 - 1.20
5	PCB-111L							1.32 - 1.78
7	PCB-178L							0.89 - 1.21
INTERNAL STANDARD								
2	PCB-9L							1.33 - 1.79
4	PCB-52L							0.65 - 0.89
5	PCB-101L							1.32 - 1.78
6	PCB-138L							1.05 - 1.43
8	PCB-194L							0.76 - 1.02

*See Table 7 for m/z information and Table 8 for QC limits

6E - FORM VI CB-5
INDIVIDUAL CONGENER INITIAL CALIBRATION DATA SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

GC Column: _____ Inst. ID: _____ Lab File ID: _____

Init. Calib. Date(s): _____ _____ _____

Init. Calib. Time(s): _____ _____ _____

CL No.	Target Analyte	Lab Flag	RRF	IAR	Ion Ratio Limits	RRT	RRT QC Limit
1	PCB-2				2.66 - 3.60		
2	PCB-5				1.33 - 1.79		
2	PCB-6				1.33 - 1.79		
2	PCB-7				1.33 - 1.79		
2	PCB-8				1.33 - 1.79		
2	PCB-9				1.33 - 1.79		
2	PCB-10				1.33 - 1.79		
2	PCB-11				1.33 - 1.79		
2	PCB-12				1.33 - 1.79		
2	PCB-13				1.33 - 1.79		
2	PCB-14				1.33 - 1.79		
3	PCB-16				0.88 - 1.20		
3	PCB-17				0.88 - 1.20		
3	PCB-18				0.88 - 1.20		
3	PCB-20				0.88 - 1.20		
3	PCB-21				0.88 - 1.20		
3	PCB-22				0.88 - 1.20		
3	PCB-23				0.88 - 1.20		
3	PCB-24				0.88 - 1.20		
3	PCB-25				0.88 - 1.20		
3	PCB-26				0.88 - 1.20		
3	PCB-27				0.88 - 1.20		
3	PCB-28				0.88 - 1.20		
3	PCB-29				0.88 - 1.20		
3	PCB-30				0.88 - 1.20		
3	PCB-31				0.88 - 1.20		
3	PCB-32				0.88 - 1.20		
3	PCB-33				0.88 - 1.20		
3	PCB-34				0.88 - 1.20		
3	PCB-35				0.88 - 1.20		
3	PCB-36				0.88 - 1.20		
3	PCB-38				0.88 - 1.20		
3	PCB-39				0.88 - 1.20		
4	PCB-40				0.65 - 0.89		
4	PCB-41				0.65 - 0.89		

6E - FORM VI CB-5 (CONTINUED)
INDIVIDUAL CONGENER INITIAL CALIBRATION DATA SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

GC Column: _____ Inst. ID: _____ Lab File ID: _____

Init. Calib. Date(s): _____ _____ _____

Init. Calib. Time(s): _____ _____ _____

CL No.	Target Analyte	Lab Flag	RRF	IAR	Ion Ratio Limits	RRT	RRT QC Limit
4	PCB-42				0.65 – 0.89		
4	PCB-43				0.65 – 0.89		
4	PCB-44				0.65 – 0.89		
4	PCB-45				0.65 – 0.89		
4	PCB-46				0.65 – 0.89		
4	PCB-47				0.65 – 0.89		
4	PCB-48				0.65 – 0.89		
4	PCB-49				0.65 – 0.89		
4	PCB-50				0.65 – 0.89		
4	PCB-51				0.65 – 0.89		
4	PCB-52				0.65 – 0.89		
4	PCB-53				0.65 – 0.89		
4	PCB-55				0.65 – 0.89		
4	PCB-56				0.65 – 0.89		
4	PCB-57				0.65 – 0.89		
4	PCB-58				0.65 – 0.89		
4	PCB-59				0.65 – 0.89		
4	PCB-60				0.65 – 0.89		
4	PCB-61				0.65 – 0.89		
4	PCB-62				0.65 – 0.89		
4	PCB-63				0.65 – 0.89		
4	PCB-64				0.65 – 0.89		
4	PCB-65				0.65 – 0.89		
4	PCB-66				0.65 – 0.89		
4	PCB-67				0.65 – 0.89		
4	PCB-68				0.65 – 0.89		
4	PCB-69				0.65 – 0.89		
4	PCB-70				0.65 – 0.89		
4	PCB-71				0.65 – 0.89		
4	PCB-72				0.65 – 0.89		
4	PCB-73				0.65 – 0.89		
4	PCB-74				0.65 – 0.89		
4	PCB-75				0.65 – 0.89		
4	PCB-76				0.65 – 0.89		
4	PCB-78				0.65 – 0.89		
4	PCB-79				0.65 – 0.89		

6E - FORM VI CB-5 (CONTINUED)
INDIVIDUAL CONGENER INITIAL CALIBRATION DATA SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

GC Column: _____ Inst. ID: _____ Lab File ID: _____

Init. Calib. Date(s): _____ _____ _____

Init. Calib. Time(s): _____ _____ _____

CL No.	Target Analyte	Lab Flag	RRF	IAR	Ion Ratio Limits	RRT	RRT QC Limit
4	PCB-80				1.32 - 1.78		
5	PCB-82				1.32 - 1.78		
5	PCB-83				1.32 - 1.78		
5	PCB-84				1.32 - 1.78		
5	PCB-85				1.32 - 1.78		
5	PCB-86				1.32 - 1.78		
5	PCB-87				1.32 - 1.78		
5	PCB-88				1.32 - 1.78		
5	PCB-89				1.32 - 1.78		
5	PCB-90				1.32 - 1.78		
5	PCB-91				1.32 - 1.78		
5	PCB-92				1.32 - 1.78		
5	PCB-93				1.32 - 1.78		
5	PCB-94				1.32 - 1.78		
5	PCB-95				1.32 - 1.78		
5	PCB-96				1.32 - 1.78		
5	PCB-97				1.32 - 1.78		
5	PCB-98				1.32 - 1.78		
5	PCB-99				1.32 - 1.78		
5	PCB-100				1.32 - 1.78		
5	PCB-101				1.32 - 1.78		
5	PCB-102				1.32 - 1.78		
5	PCB-103				1.32 - 1.78		
5	PCB-106				1.32 - 1.78		
5	PCB-107				1.32 - 1.78		
5	PCB-108				1.32 - 1.78		
5	PCB-109				1.32 - 1.78		
5	PCB-110				1.32 - 1.78		
5	PCB-111				1.32 - 1.78		
5	PCB-112				1.32 - 1.78		
5	PCB-113				1.32 - 1.78		
5	PCB-115				1.32 - 1.78		
5	PCB-116				1.32 - 1.78		
5	PCB-117				1.32 - 1.78		
5	PCB-119				1.32 - 1.78		
5	PCB-120				1.32 - 1.78		

6E - FORM VI CB-5 (CONTINUED)
INDIVIDUAL CONGENER INITIAL CALIBRATION DATA SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

GC Column: _____ Inst. ID: _____ Lab File ID: _____

Init. Calib. Date(s): _____ _____ _____

Init. Calib. Time(s): _____ _____ _____

CL No.	Target Analyte	Lab Flag	RRF	IAR	Ion Ratio Limits	RRT	RRT QC Limit
5	PCB-121				1.32 - 1.78		
5	PCB-122				1.32 - 1.78		
5	PCB-124				1.32 - 1.78		
5	PCB-125				1.32 - 1.78		
5	PCB-127				1.32 - 1.78		
6	PCB-128				1.05 - 1.43		
6	PCB-129				1.05 - 1.43		
6	PCB-130				1.05 - 1.43		
6	PCB-131				1.05 - 1.43		
6	PCB-132				1.05 - 1.43		
6	PCB-133				1.05 - 1.43		
6	PCB-134				1.05 - 1.43		
6	PCB-135				1.05 - 1.43		
6	PCB-136				1.05 - 1.43		
6	PCB-137				1.05 - 1.43		
6	PCB-138				1.05 - 1.43		
6	PCB-139				1.05 - 1.43		
6	PCB-140				1.05 - 1.43		
6	PCB-141				1.05 - 1.43		
6	PCB-142				1.05 - 1.43		
6	PCB-143				1.05 - 1.43		
6	PCB-144				1.05 - 1.43		
6	PCB-145				1.05 - 1.43		
6	PCB-146				1.05 - 1.43		
6	PCB-147				1.05 - 1.43		
6	PCB-148				1.05 - 1.43		
6	PCB-149				1.05 - 1.43		
6	PCB-150				1.05 - 1.43		
6	PCB-151				1.05 - 1.43		
6	PCB-152				1.05 - 1.43		
6	PCB-153				1.05 - 1.43		
6	PCB-154				1.05 - 1.43		
6	PCB-158				1.05 - 1.43		
6	PCB-159				1.05 - 1.43		
6	PCB-160				1.05 - 1.43		
6	PCB-161				1.05 - 1.43		
6	PCB-162				1.05 - 1.43		

6E - FORM VI CB-5 (CONTINUED)
INDIVIDUAL CONGENER INITIAL CALIBRATION DATA SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

GC Column: _____ Inst. ID: _____ Lab File ID: _____

Init. Calib. Date(s): _____ _____ _____

Init. Calib. Time(s): _____ _____ _____

CL No.	Target Analyte	Lab Flag	RRF	IAR	Ion Ratio Limits	RRT	RRT QC Limit
6	PCB-163				1.05 - 1.43		
6	PCB-164				1.05 - 1.43		
6	PCB-165				1.05 - 1.43		
6	PCB-166				1.05 - 1.43		
6	PCB-168				1.05 - 1.43		
7	PCB-170				0.89 - 1.21		
7	PCB-171				0.89 - 1.21		
7	PCB-172				0.89 - 1.21		
7	PCB-173				0.89 - 1.21		
7	PCB-174				0.89 - 1.21		
7	PCB-175				0.89 - 1.21		
7	PCB-176				0.89 - 1.21		
7	PCB-177				0.89 - 1.21		
7	PCB-178				0.89 - 1.21		
7	PCB-179				0.89 - 1.21		
7	PCB-180				0.89 - 1.21		
7	PCB-181				0.89 - 1.21		
7	PCB-182				0.89 - 1.21		
7	PCB-183				0.89 - 1.21		
7	PCB-184				0.89 - 1.21		
7	PCB-185				0.89 - 1.21		
7	PCB-186				0.89 - 1.21		
7	PCB-187				0.89 - 1.21		
7	PCB-190				0.89 - 1.21		
7	PCB-191				0.89 - 1.21		
7	PCB-192				0.89 - 1.21		
7	PCB-193				0.89 - 1.21		
8	PCB-194				0.76 - 1.02		
8	PCB-195				0.76 - 1.02		
8	PCB-196				0.76 - 1.02		
8	PCB-197				0.76 - 1.02		
8	PCB-198				0.76 - 1.02		
8	PCB-199				0.76 - 1.02		
8	PCB-200				0.76 - 1.02		
8	PCB-201				0.76 - 1.02		
8	PCB-203				0.76 - 1.02		
8	PCB-204				0.76 - 1.02		
9	PCB-207				0.65 - 0.89		

6F - FORM VI CB-6
TOXIC CONGENER INITIAL CALIBRATION DATA

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

GC Column: _____ Inst. ID: _____ Lab File ID: _____

Init. Calib. Date(s): _____ _____ _____

Init. Calib. Time(s): _____ _____ _____

CL No.	Target Analyte	Relative Response					Mean RR	%RSD (≤20)	Mean RRT	RRT QC Limits
		CS 1	CS 2	CS 3	CS 4	CS 5				
4	PCB-77									
4	PCB-81									
5	PCB-105									
5	PCB-114									
5	PCB-118									
5	PCB-123									
5	PCB-126									
6	PCB-156/157									
6	PCB-167									
6	PCB-169									
7	PCB-189									

	Labeled Congener	Relative Response					Mean RR	%RSD (≤20)	Mean RRT	RRT QC Limits*
		CS 1	CS 2	CS 3	CS 4	CS 5				
4	PCB-77L									
4	PCB-81L									
5	PCB-105L									
5	PCB-114L									
5	PCB-118L									
5	PCB-123L									
5	PCB-126L									
6	PCB-156L/157L									
6	PCB-167L									
6	PCB-169L									
7	PCB-189L									
Labeled Cleanup Standard										
3	PCB-28L									
5	PCB-111L									
7	PCB-178L									

6G - FORM VI CB-7
TOXICS CB CONGENER INITIAL CALIBRATION DATA SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

GC Column: _____ Inst. ID: _____ Lab File ID: _____

Init. Calib. Date(s): _____ _____ _____

Init. Calib. Time(s): _____ _____ _____

CL No.	Target Analyte	Ion Abundance Ratio (IAR)					M/Z Spec	Q	IAR QC Limits
		CS 1	CS 2	CS 3	CS 4	CS 5			
4	PCB-77								0.65 - 0.89
4	PCB-81								0.65 - 0.89
5	PCB-105								1.32 - 1.78
5	PCB-114								1.32 - 1.78
5	PCB-118								1.32 - 1.78
5	PCB-123								1.32 - 1.78
5	PCB-126								1.32 - 1.78
6	PCB-156/157								1.05 - 1.43
6	PCB-167								1.05 - 1.43
6	PCB-169								1.05 - 1.43
7	PCB-189								0.89 - 1.21

CL No.	Labeled Congener	Ion Abundance Ratio (IAR)					Ions	Q	Ion Ratio Limits
		CS 1	CS 2	CS 3	CS 4	CS 5			
4	PCB-77L						302/304		0.65 - 0.89
4	PCB-81L						302/304		0.65 - 0.89
5	PCB-105L						338/340		1.32 - 1.78
5	PCB-114L						338/340		1.32 - 1.78
5	PCB-118L						338/340		1.32 - 1.78
5	PCB-123L						338/340		1.32 - 1.78
5	PCB-126L						338/340		1.32 - 1.78
6	PCB-156L/157L						372/374		1.05 - 1.43
6	PCB-167L						372/374		1.05 - 1.43
6	PCB-169L						372/374		1.05 - 1.43
7	PCB-189L						406/408		0.89 - 1.21
Labeled Cleanup Standard									
3	PCB-28L						268/270		0.88 - 1.20
5	PCB-111L						338/340		1.32 - 1.78
7	PCB-178L						406/408		0.89 - 1.21
Internal Standards									
2	PCB-9L						234/236		1.33 - 1.79
4	PCB-52L						302/304		0.65 - 0.89
5	PCB-101L						338/340		1.32 - 1.78
6	PCB-138L						372/374		1.05 - 1.43
8	PCB-194L						440/442		0.76 - 1.02

7A - FORM VII CB-1
TOXICS/LOC CB CONGENER CONTINUING CALIBRATION SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

GC Column: _____ Inst. ID: _____ Date Analyzed: _____

Lab File ID: _____ Time Analyzed: _____

Init. Calib. Date(s): _____ _____

Init. Calib. Time(s): _____ _____

CL No.	Target Analyte	Mean RRT	RRT (CS3)	Q	RRT QC Limit
1	PCB-1				
1	PCB-3				
2	PCB-4				
2	PCB-15				
3	PCB-19				
3	PCB-37				
4	PCB-54				
4	PCB-77				
4	PCB-81				
5	PCB-104				
5	PCB-105				
5	PCB-114				
5	PCB-118				
5	PCB-123				
5	PCB-126				
6	PCB-155				
6	PCB-156/157				
6	PCB-167				
6	PCB-169				
7	PCB-188				
7	PCB-189				
8	PCB-202				
8	PCB-205				
9	PCB-206				
9	PCB-208				
10	PCB-209				

7B - FORM VII CB-2
TOXICS/LOC CB CONGENER CONTINUING CALIBRATION SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

GC Column: _____ Inst. ID: _____ Date Analyzed: _____

Lab File ID: _____ Time Analyzed: _____

Init. Calib. Date(s): _____ _____

Init. Calib. Time(s): _____ _____

CL No.	Target Analyte	IAR (CS3)	Q	IAR QC Limits	Conc. Found	Q	Conc. QC Limit
1	PCB-1						
1	PCB-3						
2	PCB-4						
2	PCB-15						
3	PCB-19						
3	PCB-37						
4	PCB-54						
4	PCB-77						
4	PCB-81						
5	PCB-104						
5	PCB-105						
5	PCB-114						
5	PCB-118						
5	PCB-123						
5	PCB-126						
6	PCB-155						
6	PCB-156/157						
6	PCB-167						
6	PCB-169						
7	PCB-188						
7	PCB-189						
8	PCB-202						
8	PCB-205						
9	PCB-206						
9	PCB-208						
10	PCB-209						

7C - FORM VII CB-3
TOXICS/LOC CB CONGENER (LABELED) CONTINUING CALIBRATION SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

GC Column: _____ Inst. ID: _____ Date Analyzed: _____

Lab File ID: _____ Time Analyzed: _____

Init. Calib. Date(s): _____ _____

Init. Calib. Time(s): _____ _____

CL No.	Labeled Congener	Mean RRT	RRT (CS3)	Q	RRT QC Limit
1	PCB-1L				
1	PCB-3L				
2	PCB-4L				
2	PCB-15L				
3	PCB-19L				
3	PCB-37L				
4	PCB-54L				
4	PCB-77L				
4	PCB-81L				
5	PCB-104L				
5	PCB-105L				
5	PCB-114L				
5	PCB-118L				
5	PCB-123L				
5	PCB-126L				
6	PCB-155L				
6	PCB-156/157L				
6	PCB-167L				
6	PCB-169L				
7	PCB-188L				
7	PCB-189L				
8	PCB-202L				
8	PCB-205L				
9	PCB-206L				
9	PCB-208L				
10	PCB-209L				
Labeled Cleanup Standard					
3	PCB-28L				
5	PCB-111L				
7	PCB-178L				

7D - FORM VII CB-4
TOXICS/LOC CB CONGENER (LABELED) CONTINUING CALIBRATION SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

GC Column: _____ Inst. ID: _____ Date Analyzed: _____

Lab File ID: _____ Time Analyzed: _____

Init. Calib. Date(s): _____ _____

Init. Calib. Time(s): _____ _____

CL No.	Labeled Congener	IAR (CS3)	Q	IAR QC Limits	Conc. Found (%)	Q	Conc. QC Limit (%)
1	PCB-1L						
1	PCB-3L						
2	PCB-4L						
2	PCB-15L						
3	PCB-19L						
3	PCB-37L						
4	PCB-54L						
4	PCB-77L						
4	PCB-81L						
5	PCB-104L						
5	PCB-105L						
5	PCB-114L						
5	PCB-118L						
5	PCB-123L						
5	PCB-126L						
6	PCB-155L						
6	PCB-156/157L						
6	PCB-167L						
6	PCB-169L						
7	PCB-188L						
7	PCB-189L						
8	PCB-202L						
8	PCB-205L						
9	PCB-206L						
9	PCB-208L						
10	PCB-209L						
Labeled Cleanup Standard							
3	PCB-28L						
5	PCB-111L						
7	PCB-178L						

* See QC acceptance criteria in Exhibit D, Table 6 and Table 8.

7F - FORM VII CB-5
TOXICS CB CONGENER CONTINUING CALIBRATION SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

GC Column: _____ Inst. ID: _____ Date Analyzed: _____

Lab File ID: _____ Time Analyzed: _____

Init. Calib. Date(s): _____ _____

Init. Calib. Time(s): _____ _____

CL No.	Target Analyte	Mean RRT	RRT (CS3)	Lab Flag	RRT QC Limit
4	PCB-77				
4	PCB-81				
5	PCB-105				
5	PCB-114				
5	PCB-118				
5	PCB-123				
5	PCB-126				
6	PCB-156/157				
6	PCB-167				
6	PCB-169				
7	PCB-189				

CL No.	Labeled Congener	Mean RRT	RRT (CS3)	Q	RRT QC Limit
4	PCB-77L				
4	PCB-81L				
5	PCB-105L				
5	PCB-114L				
5	PCB-118L				
5	PCB-123L				
5	PCB-126L				
6	PCB-156L/157L				
6	PCB-167L				
6	PCB-169L				
7	PCB-189L				
Labeled Cleanup Standard					
3	PCB-28L				
5	PCB-111L				
7	PCB-178L				

7G - FORM VII CB-6
TOXICS CB CONGENER CONTINUING CALIBRATION SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ TO No.: _____ SDG No.: _____

GC Column: _____ Inst. ID: _____ Date Analyzed: _____

Lab File ID: _____ Time Analyzed: _____

Init. Calib. Date(s): _____ _____

Init. Calib. Time(s): _____ _____

CL No.	Target Analyte	IAR (CS3)	Q	IAR QC Limits	Conc. Found (%)	Q	Conc. QC Limit (%)
4	PCB-77						
4	PCB-81						
5	PCB-105						
5	PCB-114						
5	PCB-118						
5	PCB-123						
5	PCB-126						
6	PCB-156/157						
6	PCB-167						
6	PCB-169						
7	PCB-189						

CL No.	Labeled Congener	IAR (CS3)	Q	IAR QC Limits	Conc. Found (%)	Q	Conc. QC Limit (%)
4	PCB-77L			0.65 - 0.89			50 - 150
4	PCB-81L			0.65 - 0.89			50 - 150
5	PCB-105L			1.32 - 1.78			50 - 150
5	PCB-114L			1.32 - 1.78			50 - 150
5	PCB-118L			1.32 - 1.78			50 - 150
5	PCB-123L			1.32 - 1.78			50 - 150
5	PCB-126L			1.32 - 1.78			50 - 150
6	PCB-156L/157L			1.05 - 1.43			100 - 300
6	PCB-167L			1.05 - 1.43			50 - 150
6	PCB-169L			1.05 - 1.43			50 - 150
7	PCB-189L			0.89 - 1.21			50 - 150
Labeled Cleanup Standard							
3	PCB-28L			0.88 - 1.20			60 - 130
5	PCB-111L			1.32 - 1.78			60 - 130
7	PCB-178L			0.89 - 1.21			60 - 130

CB CONGENER SAMPLE LOG-IN SHEET
(FORM DC-1)

Lab Name					Page ___ of ___
Received By (Print Name)					Log-in Date
Received By (Signature)					
Contract No.					TO No.
Case No.		Sample Delivery Group No.			
Remarks:		EPA Sample #	Corresponding Sample Tag #	Corresponding Assigned Lab #	Remarks: Condition of Sample Shipment, etc.
1. Custody Seal(s)	Present/Absent* Intact/Broken				
2. Custody Seal Nos.	_____ _____				
3. Traffic Reports/Chain of Custody Records or Packing Lists	Present/Absent*				
4. Airbill	Airbill/Sticker Present/Absent*				
5. Airbill No.	_____ _____				
6. Sample Tags	Present/Absent*				
Sample Tag Numbers	Listed/Not Listed on Chain of Custody Record				
7. Sample Condition	Intact/Broken*/Leaking				
8. Cooler Temperature	_____				
9. Does information on custody records and sample tags agree?	Yes/No*				
10. Date Received at Laboratory	_____				
11. Time Received	_____				
Sample Transfer					
Fraction	Fraction				
Area #	Area #				
By	By				
On	On				

* Contact SMO and attach record of resolution.

Reviewed By	Logbook No.
Date	Logbook Page No.

CB CONGENER COMPLETE SDG FILE (CSF) INVENTORY SHEET
(FORM DC-2)

LABORATORY NAME _____
CITY/STATE _____
CASE NO. _____ SDG NO. _____ SDG NOS. TO FOLLOW _____ _____ _____
TASK ORDER NO. _____
CONTRACT NO. _____
SOW NO. _____

All documents delivered in the Complete SDG File must be original documents where possible. (Reference - Exhibit B Section 2.6)

	PAGE NOs. FROM	TO	CHECK LAB	EPA
1. **Inventory Sheet** (DC-2) (Do not number)				
2. **SDG Narrative**				
3. **Traffic Report**				
4. **CB Congener Data**				
a. Sample Data including method blank and LCS				
TCL Results -CBC Data Summary (FORM I CB-1 or CB-2)				
CB Congener Toxicity Equivalence Summary (FORM I CB-3)				
Total Homologue Concentration Summary (Form I CB-4)				
Toxics/LOC (Labeled) Compound Recovery (FORM II CB-1)				
For each sample:				
Quantitation Reports and Area Summaries				
Chromatogram				
Selected Ion Current Profile (SICP)				
b. Quality Control Data				
Lab Control Sample Data Summary (Form III CB-1 or CB-2)				
Method Blank Summary (FORM IV CB-1)				
CB Congener Window Defining Mix Summary (FORM V CB-1)				
Chromatographic Resolution Summary (FORM V CB-2)				
Analytical Sequence Summary (FORM V CB-2)				
Raw QC data and PFK Tune Data				
c. Calibration Data				
Toxics/LOC CB Congener Initial Calibration Data Summary (FORM VI CB-1, CB-2, CB-3, CB-4)				
Individual Congener Initial Calibration Data (Form VI CB-5)				
Toxic Congener Initial Calibration Summary (FORM VI CB-6, CB-7)				
Raw data for all initial calibration standards				
Toxics/LOC CB Congener Continuing Calibration Data Summary (FORM VII CB-1, CB-2, CB-3, CB-4)				
Toxics Congener Continuing Calibration Summary (FORM VII CB-5, CB-6)				
Raw data for all continuing calibration standards				

CB CONGENER COMPLETE SDG FILE (CSF) INVENTORY SHEET
(FORM DC-2)

CASE NO. _____ SDG NO. _____ SDG NOS. TO FOLLOW _____
_____ _____ MOD. REF. NO. _____

	PAGE NOs.		CHECK	
	FROM	TO	LAB	EPA
d. Miscellaneous Data				
EPA/Shipping/Receiving documents				
Sample preparation and analysis logbook pages				
Cleanup, % solid, misc. information				
Internal sample and chain-of-custody records or record of communication				

5. **Comments:** _____

Completed by:
(CLP Lab) _____ (Signature) _____ (Print Name and Title) _____ (Date)

Completed by:
(USEPA) _____ (Signature) _____ (Print Name and Title) _____ (Date)

EXHIBIT C

TARGET COMPOUND LIST (TCL)
AND CONTRACT REQUIRED QUANTITATION LIMITS (CRQLs)
FOR CHLORINATED BIPHENYL (CB) CONGENERS

Exhibit C - Target Compound List and Contract Required Quantitation Limits for Chlorinated Biphenyl (CBs) Congeners

Table of Contents

1.0 CHLORINATED BIPHENYL CONGENERS TARGET COMPOUND LIST (TCL) AND CONTRACT REQUIRED QUANTITATION LIMITS (CRQLS)

CB Congener[1]	Congener Number	CAS Number	CRQL[4]		
			Water (pg/L)	Other (ng/kg)	Extract (pg/uL)
2-MoCB	PCB-1	2051-60-7	20	2.0	1.0
3-MoCB	PCB-2	2051-61-8	20	2.0	1.0
4-MoCB	PCB-3	2051-62-9	20	2.0	1.0
2,2'-DiCB	PCB-4	13029-08-8	20	2.0	1.0
2,3-DiCB	PCB-5	16605-91-7	20	2.0	1.0
2,3'-DiCB	PCB-6	25569-80-6	20	2.0	1.0
2,4-DiCB	PCB-7	33284-50-3	20	2.0	1.0
2,4'-DiCB[2]	PCB-8	34883-43-7	20	2.0	1.0
2,5-DiCB	PCB-9	34883-39-1	20	2.0	1.0
2,6-DiCB	PCB-10	33146-45-1	20	2.0	1.0
3,3'-DiCB	PCB-11	2050-67-1	20	2.0	1.0
3,4-DiCB	PCB-12	2974-92-7	20	2.0	1.0
3,4'-DiCB	PCB-13	2974-90-5	20	2.0	1.0
3,5-DiCB	PCB-14	34883-41-5	20	2.0	1.0
4,4'-DiCB	PCB-15	2050-68-2	20	2.0	1.0
2,2',3-TrCB	PCB-16	38444-78-9	20	2.0	1.0
2,2',4-TrCB	PCB-17	37680-66-3	20	2.0	1.0
2,2',5-TrCB[2]	PCB-18	37680-65-2	20	2.0	1.0
2,2',6-TrCB	PCB-19	38444-73-4	20	2.0	1.0
2,3,3'-TrCB	PCB-20	38444-84-7	20	2.0	1.0
2,3,4-TrCB	PCB-21	55702-46-0	20	2.0	1.0
2,3,4'-TrCB	PCB-22	38444-85-8	20	2.0	1.0
2,3,5-TrCB	PCB-23	55720-44-0	20	2.0	1.0
2,3,6-TrCB	PCB-24	55702-45-9	20	2.0	1.0
2,3',4-TrCB	PCB-25	55712-37-3	20	2.0	1.0
2,3',5-TrCB	PCB-26	38444-81-4	20	2.0	1.0
2,3',6-TrCB	PCB-27	38444-76-7	20	2.0	1.0
2,4,4'-TrCB[2]	PCB-28	7012-37-5	20	2.0	1.0
2,4,5-TrCB	PCB-29	15862-07-4	20	2.0	1.0
2,4,6-TrCB	PCB-30	35693-92-6	20	2.0	1.0
2,4',5-TrCB	PCB-31	16606-02-3	20	2.0	1.0
2,4',6-TrCB	PCB-32	38444-77-8	20	2.0	1.0
2',3,4-TrCB	PCB-33	38444-86-9	20	2.0	1.0
2',3,5-TrCB	PCB-34	37680-68-5	20	2.0	1.0
3,3',4-TrCB	PCB-35	37680-69-6	20	2.0	1.0
3,3',5-TrCB	PCB-36	38444-87-0	20	2.0	1.0
3,4,4'-TrCB	PCB-37	38444-90-5	20	2.0	1.0
3,4,5-TrCB	PCB-38	53555-66-1	20	2.0	1.0
3,4',5-TrCB	PCB-39	38444-88-1	20	2.0	1.0
2,2',3,3'-TeCB	PCB-40	38444-93-8	20	2.0	1.0
2,2',3,4-TeCB	PCB-41	52663-59-9	20	2.0	1.0
2,2',3,4'-TeCB	PCB-42	36559-22-5	20	2.0	1.0
2,2',3,5-TeCB	PCB-43	70362-46-8	20	2.0	1.0
2,2',3,5'-TeCB[2]	PCB-44	41464-39-5	20	2.0	1.0
2,2',3,6-TeCB	PCB-45	70362-45-7	20	2.0	1.0

Table 1. Target Compound List and CRQLs (Con't)

CB Congener[1]	Congener Number	CAS Number	CRQL[4]		
			Water (pg/L)	Other (ng/kg)	Extract (pg/uL)
2,2',3,6'-TeCB	PCB-46	41464-47-5	20	2.0	1.0
2,2',4,4'-TeCB	PCB-47	2437-79-8	20	2.0	1.0
2,2',4,5-TeCB	PCB-48	70362-47-9	20	2.0	1.0
2,2',4,5'-TeCB	PCB-49	41464-40-8	20	2.0	1.0
2,2',4,6-TeCB	PCB-50	62796-65-0	20	2.0	1.0
2,2',4,6'-TeCB	PCB-51	68194-04-7	20	2.0	1.0
2,2',5,5'-TeCB[2]	PCB-52	35693-99-3	20	2.0	1.0
2,2',5,6'-TeCB	PCB-53	41464-41-9	20	2.0	1.0
2,2',6,6'-TeCB	PCB-54	15968-05-5	20	2.0	1.0
2,3,3',4'-TeCB	PCB-55	74338-24-2	20	2.0	1.0
2,3,3',4'-TeCB	PCB-56	41464-43-1	20	2.0	1.0
2,3,3',5-TeCB	PCB-57	70424-67-8	20	2.0	1.0
2,3,3',5'-TeCB	PCB-58	41464-49-7	20	2.0	1.0
2,3,3',6-TeCB	PCB-59	74472-33-6	20	2.0	1.0
2,3,4,4'-TeCB	PCB-60	33025-41-1	20	2.0	1.0
2,3,4,5-TeCB	PCB-61	33284-53-6	20	2.0	1.0
2,3,4,6-TeCB	PCB-62	54230-22-7	20	2.0	1.0
2,3,4',5-TeCB	PCB-63	74472-34-7	20	2.0	1.0
2,3,4',6-TeCB	PCB-64	52663-58-8	20	2.0	1.0
2,3,5,6-TeCB	PCB-65	33284-54-7	20	2.0	1.0
2,3',4,4'-TeCB[2]	PCB-66	32598-10-0	20	2.0	1.0
2,3',4,5-TeCB	PCB-67	73575-53-8	20	2.0	1.0
2,3',4,5'-TeCB	PCB-68	73575-52-7	20	2.0	1.0
2,3',4,6-TeCB	PCB-69	60233-24-1	20	2.0	1.0
2,3',4',5-TeCB	PCB-70	32598-11-1	20	2.0	1.0
2,3',4',6-TeCB	PCB-71	41464-46-4	20	2.0	1.0
2,3',5,5'-TeCB	PCB-72	41464-42-0	20	2.0	1.0
2,3',5',6-TeCB	PCB-73	74338-23-1	20	2.0	1.0
2,4,4',5-TeCB	PCB-74	32690-93-0	20	2.0	1.0
2,4,4',6-TeCB	PCB-75	32598-12-2	20	2.0	1.0
2',3,4,5-TeCB	PCB-76	70362-48-0	20	2.0	1.0
3,3',4,4'-TeCB[2,3]	PCB-77	32598-13-3	20	2.0	1.0
3,3',4,5-TeCB	PCB-78	70362-49-1	20	2.0	1.0
3,3',4,5'-TeCB	PCB-79	41464-48-6	20	2.0	1.0
3,3',5,5'-TeCB	PCB-80	33284-52-5	20	2.0	1.0
3,4,4',5-TeCB[3]	PCB-81	70362-50-4	20	2.0	1.0
2,2',3,3',4-PeCB	PCB-82	52663-62-4	20	2.0	1.0
2,2',3,3',5-PeCB	PCB-83	60145-20-2	20	2.0	1.0
2,2',3,3',6-PeCB	PCB-84	52663-60-2	20	2.0	1.0
2,2',3,4,4'-PeCB	PCB-85	65510-45-4	20	2.0	1.0
2,2',3,4,5-PeCB	PCB-86	55312-69-1	20	2.0	1.0
2,2',3,4,5'-PeCB	PCB-87	38380-02-8	20	2.0	1.0
2,2',3,4,6-PeCB	PCB-88	55215-17-3	20	2.0	1.0
2,2',3,4,6'-PeCB	PCB-89	73575-57-2	20	2.0	1.0
2,2',3,4',5-PeCB	PCB-90	68194-07-0	20	2.0	1.0
2,2',3,4',6-PeCB	PCB-91	68194-05-8	20	2.0	1.0
2,2',3,5,5'-PeCB	PCB-92	52663-61-3	20	2.0	1.0
2,2',3,5,6-PeCB	PCB-93	73575-56-1	20	2.0	1.0
2,2',3,5,6'-PeCB	PCB-94	73575-55-0	20	2.0	1.0
2,2',3,5',6-PeCB	PCB-95	38379-99-6	20	2.0	1.0

Table 1. Target Compound List and CRQLs (Con't)

CB Congener[1]	Congener Number	CAS Number	CRQL[4]		
			Water (pg/L)	Other (ng/kg)	Extract (pg/uL)
2,2',3,6,6'-PeCB	PCB-96	73575-54-9	20	2.0	1.0
2,2',3',4,5-PeCB	PCB-97	41464-51-1	20	2.0	1.0
2,2',3',4,6-PeCB	PCB-98	60233-25-2	20	2.0	1.0
2,2',4,4',5-PeCB	PCB-99	38380-01-7	20	2.0	1.0
2,2',4,4',6-PeCB	PCB-100	39485-83-1	20	2.0	1.0
2,2',4,5,5'-PeCB[2]	PCB-101	37680-73-2	20	2.0	1.0
2,2',4,5,6'-PeCB	PCB-102	68194-06-9	20	2.0	1.0
2,2',4,5',6-PeCB	PCB-103	60145-21-3	20	2.0	1.0
2,2',4,6,6'-PeCB	PCB-104	56558-16-8	20	2.0	1.0
2,3,3',4,4'-PeCB[2,3]	PCB-105	32598-14-4	20	2.0	1.0
2,3,3',4,5-PeCB	PCB-106	70424-69-0	20	2.0	1.0
2,3,3',4',5-PeCB	PCB-107	70424-68-9	20	2.0	1.0
2,3,3',4,5'-PeCB	PCB-108	70362-41-3	20	2.0	1.0
2,3,3',4,6-PeCB	PCB-109	74472-35-8	20	2.0	1.0
2,3,3',4',6-PeCB	PCB-110	38380-03-9	20	2.0	1.0
2,3,3',5,5'-PeCB	PCB-111	39635-32-0	20	2.0	1.0
2,3,3',5,6-PeCB	PCB-112	74472-36-9	20	2.0	1.0
2,3,3',5',6-PeCB	PCB-113	68194-10-5	20	2.0	1.0
2,3,4,4',5-PeCB[3]	PCB-114	74472-37-0	20	2.0	1.0
2,3,4,4',6-PeCB	PCB-115	74472-38-1	20	2.0	1.0
2,3,4,5,6-PeCB	PCB-116	18259-05-7	20	2.0	1.0
2,3,4',5,6-PeCB	PCB-117	68194-11-6	20	2.0	1.0
2,3',4,4',5-PeCB[2,3]	PCB-118	31508-00-6	20	2.0	1.0
2,3',4,4',6-PeCB	PCB-119	56558-17-9	20	2.0	1.0
2,3',4,5,5'-PeCB	PCB-120	68194-12-7	20	2.0	1.0
2,3',4,5,'6-PeCB	PCB-121	56558-18-0	20	2.0	1.0
2',3,3',4,5-PeCB	PCB-122	76842-07-4	20	2.0	1.0
2',3,4,4',5-PeCB[3]	PCB-123	65510-44-3	20	2.0	1.0
2',3,4,5,5'-PeCB	PCB-124	70424-70-3	20	2.0	1.0
2',3,4,5,6'-PeCB	PCB-125	74472-39-2	20	2.0	1.0
3,3',4,4',5-PeCB[2,3]	PCB-126	57465-28-8	20	2.0	1.0
3,3',4,5,5'-PeCB	PCB-127	39635-33-1	20	2.0	1.0
2,2',3,3',4,4'-HxCB[2]	PCB-128	38380-07-3	20	2.0	1.0
2,2',3,3',4,5-HxCB	PCB-129	55215-18-4	20	2.0	1.0
2,2',3,3',4,5'-HxCB	PCB-130	52663-66-8	20	2.0	1.0
2,2',3,3',4,6-HxCB	PCB-131	61798-70-7	20	2.0	1.0
2,2',3,3',4,6'-HxCB	PCB-132	38380-05-1	20	2.0	1.0
2,2',3,3',5,5'-HxCB	PCB-133	35694-04-3	20	2.0	1.0
2,2',3,3',5,6-HxCB	PCB-134	52704-70-8	20	2.0	1.0
2,2',3,3',5,6'-HxCB	PCB-135	52744-13-5	20	2.0	1.0
2,2',3,3',6,6'-HxCB	PCB-136	38411-22-2	20	2.0	1.0
2,2',3,4,4',5-HxCB	PCB-137	35694-06-5	20	2.0	1.0
2,2',3,4,4',5'-HxCB[2]	PCB-138	35065-28-2	20	2.0	1.0
2,2',3,4,4',6-HxCB	PCB-139	56030-56-9	20	2.0	1.0
2,2',3,4,4',6'-HxCB	PCB-140	59291-64-4	20	2.0	1.0
2,2',3,4,5,5'-HxCB	PCB-141	52712-04-6	20	2.0	1.0
2,2',3,4,5,6-HxCB	PCB-142	41411-61-4	20	2.0	1.0
2,2',3,4,5,6'-HxCB	PCB-143	68194-15-0	20	2.0	1.0
2,2',3,4,5',6-HxCB	PCB-144	68194-14-9	20	2.0	1.0
2,2',3,4,6,6'-HxCB	PCB-145	74472-40-5	20	2.0	1.0

Table 1. Target Compound List and CRQLs (Con't)

CB Congener[1]	Congener Number	CAS Number	CRQL[4]		
			Water (pg/L)	Other (ng/kg)	Extract (pg/uL)
2,2',3,4',5,5'-HxCB	PCB-146	51908-16-8	20	2.0	1.0
2,2',3,4',5,6-HxCB	PCB-147	68194-13-8	20	2.0	1.0
2,2',3,4',5,6'-HxCB	PCB-148	74472-41-6	20	2.0	1.0
2,2',3,4',5',6-HxCB	PCB-149	38380-04-0	20	2.0	1.0
2,2',3,4',6,6'-HxCB	PCB-150	68194-08-1	20	2.0	1.0
2,2',3,5,5',6-HxCB	PCB-151	52663-63-5	20	2.0	1.0
2,2',3,5,6,6'-HxCB	PCB-152	68194-09-2	20	2.0	1.0
2,2',4,4',5,5'-HxCB[2]	PCB-153	35065-27-1	20	2.0	1.0
2,2',4,4',5',6-HxCB	PCB-154	60145-22-4	20	2.0	1.0
2,2',4,4',6,6'-HxCB	PCB-155	33979-03-2	20	2.0	1.0
2,3,3',4,4',5-HxCB[3]	PCB-156	38380-08-4	20	2.0	1.0
2,3,3',4,4',5'-HxCB[3]	PCB-157	69782-90-7	20	2.0	1.0
2,3,3',4,4',6-HxCB	PCB-158	74472-42-7	20	2.0	1.0
2,3,3',4,5,5'-HxCB	PCB-159	39635-35-3	20	2.0	1.0
2,3,3',4,5,6-HxCB	PCB-160	41411-62-5	20	2.0	1.0
2,3,3',4,5',6-HxCB	PCB-161	74472-43-8	20	2.0	1.0
2,3,3',4',5,5'-HxCB	PCB-162	39635-34-2	20	2.0	1.0
2,3,3',4',5,6-HxCB	PCB-163	74472-44-9	20	2.0	1.0
2,3,3',4',5',6-HxCB	PCB-164	74472-45-0	20	2.0	1.0
2,3,3',5,5',6-HxCB	PCB-165	74472-46-1	20	2.0	1.0
2,3,4,4',5,6-HxCB	PCB-166	41411-63-6	20	2.0	1.0
2,3',4,4',5,5'-HxCB[3]	PCB-167	52663-72-6	20	2.0	1.0
2,3',4,4',5',6-HxCB	PCB-168	59291-65-5	20	2.0	1.0
3,3',4,4',5,5'-HxCB[2,3]	PCB-169	32774-16-6	20	2.0	1.0
2,2',3,3',4,4',5-HpCB[2]	PCB-170	35065-30-6	20	2.0	1.0
2,2'3,3',4,4',6-HpCB	PCB-171	52663-71-5	20	2.0	1.0
2,2',3,3',4,5,5'-HpCB	PCB-172	52663-74-8	20	2.0	1.0
2,2',3,3',4,5,6-HpCB	PCB-173	68194-16-1	20	2.0	1.0
2,2',3,3',4,5,6'-HpCB	PCB-174	38411-25-5	20	2.0	1.0
2,2',3,3',4,5',6-HpCB	PCB-175	40186-70-7	20	2.0	1.0
2,2',3,3',4,6,6'-HpCB	PCB-176	52663-65-7	20	2.0	1.0
2,2',3,3',4',5,6-HpCB	PCB-177	52663-70-4	20	2.0	1.0
2,2',3,3',5,5',6-HpCB	PCB-178	52663-67-9	20	2.0	1.0
2,2',3,3',5,6,6'-HpCB	PCB-179	52663-64-6	20	2.0	1.0
2,2',3,4,4',5,5'-HpCB[2]	PCB-180	35065-29-3	20	2.0	1.0
2,2',3,4,4',5,6-HpCB	PCB-181	74472-47-2	20	2.0	1.0
2,2',3,4,4',5,6'-HpCB	PCB-182	60145-23-5	20	2.0	1.0
2,2',3,4,4',5',6-HpCB	PCB-183	52663-69-1	20	2.0	1.0
2,2',3,4,4',6,6'-HpCB	PCB-184	74472-48-3	20	2.0	1.0
2,2',3,4,5,5',6-HpCB	PCB-185	52712-05-7	20	2.0	1.0
2,2',3,4,5,6,6'-HpCB	PCB-186	74472-49-4	20	2.0	1.0
2,2',3,4',5,5',6-HpCB2	PCB-187	52663-68-0	20	2.0	1.0
2,2',3,4',5,6,6'-HpCB	PCB-188	74487-85-7	20	2.0	1.0
2,3,3',4,4',5,5'-HpCB3	PCB-189	39635-31-9	20	2.0	1.0
2,3,3',4,4',5,6-HpCB	PCB-190	41411-64-7	20	2.0	1.0
2,3,3',4,4',5',6-HpCB	PCB-191	74472-50-7	20	2.0	1.0
2,3,3',4,5,5',6-HpCB	PCB-192	74472-51-8	20	2.0	1.0
2,3,3',4',5,5',6-HpCB	PCB-193	69782-91-8	20	2.0	1.0
2,2',3,3',4,4',5,5'-OcCB	PCB-194	35694-08-7	20	2.0	1.0
2,2',3,3',4,4',5,6-OcCB2	PCB-195	52663-78-2	20	2.0	1.0
2,2',3,3',4,4',5,6'-OcCB	PCB-196	42740-50-1	20	2.0	1.0

Table 1. Target Compound List and CRQLs (Con't)

CB Congener[1]	Congener Number	CAS Number	CRQL[4]		
			Water (pg/L)	Other (ng/kg)	Extract (pg/uL)
2,2',3,3',4,4',6,6'-OcCB	PCB-197	33091-17-7	20	2.0	1.0
2,2',3,3',4,5,5',6-OcCB	PCB-198	68194-17-2	20	2.0	1.0
2,2',3,3',4,5,5',6'-OcCB	PCB-199	52663-75-9	20	2.0	1.0
2,2',3,3',4,5,6,6'-OcCB	PCB-200	52663-73-7	20	2.0	1.0
2,2',3,3',4,5',6,6'-OcCB	PCB-201	40186-71-8	20	2.0	1.0
2,2',3,3',5,5',6,6'-OcCB	PCB-202	2136-99-4	20	2.0	1.0
2,2',3,4,4',5,5',6-OcCB	PCB-203	52663-76-0	20	2.0	1.0
2,2',3,4,4',5,6,6'-OcCB	PCB-204	74472-52-9	20	2.0	1.0
2,3,3',4,4',5,5',6-OcCB	PCB-205	74472-53-0	20	2.0	1.0
2,2',3,3',4,4',5,5',6-NoCB[2]	PCB-206	40186-72-9	20	2.0	1.0
2,2',3,3',4,4',5,6,6'-NoCB	PCB-207	52663-79-3	20	2.0	1.0
2,2',3,3',4,5,5',6,6'-NoCB	PCB-208	52663-77-1	20	2.0	1.0
DeCB[2]	PCB-209	2051-24-3	20	2.0	1.0

1. Abbreviations for chlorination levels:

   MoCB = monochlorobiphenyl
   DiCB = dichlorobiphenyl
   TrCB = trichlorobiphenyl
   TeCB = tetrachlorbiphenyl
   PeCB = pentachlorobiphenyl
   HxCB = hexachlorobiphenyl
   HpCB = heptachlorobiphenyl
   OcCB = octachlorobiphenyl
   NoCB = nonachlorobiphenyl
   DeCB = decachlorobiphenyl

2. National Oceanic and Atmospheric Administration (NOAA) Congener of Interest.

3. World Health Organization (WHO) Toxic Congener.

4. The CRQLs in this table are equivalent to the concentration of the low calibration (CS1) standard, assuming that all sample weight, volumes, and cleanup procedures are performed according to Exhibit D of this SOW.

   Specific quantitation limits are highly matrix-dependent. The quantitation limit listed herein is provided for guidance and may not always be achievable.

   These CRQL values are based on the analysis of samples according to the specifications given in Exhibit D. Sample data are reported on a dry weight basis for all non-aqueous samples [except tissues, which are reported on a wet weight basis, along with their Percent Lipid (% Lipid) content].

2.0 TOTAL HOMOLOGUES

Data are reported for the total concentration of all detected chlorinated biphenyl congeners in the following homologues. However, because the calculation of the total homologue concentrations is a mathematical computation, it is not possible to assign Contract Required Quantitation Limits (CRQLs) values to these values with the exception of DeCB.

Homologue	CAS No.
Total MoCB	27323-18-8
Total DiCB	25512-42-9
Total TrCB	25323-68-6
Total TeCB	26914-33-0
Total PeCB	25429-29-2
Total HxCB	26601-64-9
Total HpCB	28655-71-2
Total OcCB	55722-26-4
Total NoCB	53742-07-7
DeCB	2051-24-3