

Data Validation Report

Third Quarter 1996

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Data Validation Package
Third Quarter 1996

Cover Letter

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Volatiles	K9605056
	K9605099
	K9605170
Sernivolatiles	K9605056
	K9605099
	K9605170
Chlorinated Pesticides & PCBs	K9605056
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	K9605170
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	K9605021
	K9605056
	K9605099
	K9605170
	K9605225
	K9605260
	K9605307
Total Dissolved Solids & pH	K9605021
	K9605056
	K9605099
	K9605170
	K9605225
	K9605260
TPH as Gasoline	K9605307
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	K9605225
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	K9605099
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Aromatic Volatile Organics

K9605170

K9605225

K9605307

**Sample Delivery Group Cross Reference
Third Quarter 1996**

Well ID	Sample ID	Sample Delivery Group	Sample ID ~ Well ID	Sample Delivery Group
Groundwaters			Groundwaters (continued)	
01MWI	097G201	60633	23AMWI	097G224 K9605170
01Mwi	097G201	K9605099	25MWI	097G225 60633
01MW2	097G202	60633	25MW1	097G225 K9605056
OIMW2	097G202	K9605099	25MW2	097G226 60633
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01MW3	097G203	K9605099	25MW3	097G227 60633
01MW4	097G204	60633	25MW3	097G227 K9605056
01MW4	097G204	K9605099	BMW2	097G228 60633
02GMW I	097G235	K9605225	BMW2	097G228 K9605170
02NMW I	097G236	K9605307	BMW3	097G229 K9605099
02NMW2	097G237	K9605307	BMW4	097G230 60633
02NNM3	097G238	K9605307	BMW4	097G230 K9605056
02QMW I	097G239	K9605307	BMW5	097G231 60633
02QMW2	097G240	K9605307	BMW5	097G231 K9605056
02QMW3	097G241	K9605307	BMW6	097G232 K9605260
08MW 1	097G205	60633	BMW7	097G233 K9605307
08MW 1	097G205	K9605225	BMW8	097G234 K9605260
10LAMW2	097G206	K9605260	Field Duplicates	
IOLAMW3	097G207	K9605260	01MW4	097DO 7 K9605099
12DMW I	097G208	60633	02NMW1	097DWO K9605307
12DMW1	097G208	K9605099	18MWI	097DO28 K9605225
12DMW2	097G209	60633	25MW2	097DO26 K9605056
12DMW2	097G209	K9605099	BMW7	097DO29 K9605307
13MW I	097G210	60633	Rinsate Blanks	
.13MW1	097G210	K9605170	01MWI	097RI26 K9605099
14MW I	097G212	K9605021	02NMW1	097RI33 K9605307
14MW2	097G211	K9605021	08MW1	097RI30 K9605225
15MW I	097G213	60633	12DMW2	097RI27 K9605099
15MW1	097G213	K9605099	13MWI	097R129 K9605170
15MW2	097G214	60633	14MW1	097R128 K96056-2-1
15MW2	097G214	K9605099	25MW1	097R125 K0605056
16MW1	097G215	K9605021	BMW7	097R132 K9605260
16MW2	097G216	K9605021	BMW7	097R134 K9
17MW1	097G217	K9605170	Source Blanks	
17MW2	097G218	K9605021	FFQC	097BO12 K9605170
17MW3	097G219	K9605170	IFQC	097BO13 K9605170
18MW1	097G220	K9605225	Trip Blanks	
18MW2	097G221	K9605225	FQC	097TO50 K9605056
18MW3	097G222	60633	FQC	097TO51 K9605099
18MW3	097G222	K9605225	FQC	097TO53 K9605099

19Mwi	097G223	60633	FQC	097TO54	K9605225
19MW I	097G223	K9605225	FQC	097TO55	K9605307
I 123AMW1	097G224	60633			

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LABORATORY DATA CONSULTANTS, INC.

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Bechtel National, Inc.
401 West "A" Street, Suite 1000
San Diego, CA 92101-7905
Attn: Dr. Randy Jordan

October 3, 1996

Project Name Salton Sea Test Base
Project # CTO 097

On September 20, 1996 the following data packages were received by Laboratory Data Consultants, Inc. from Bechtel National, Inc.. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Prooect # 1960

<u>SDG</u>	<u>Fraction</u>
K9604650, K9605021, K9605056, K9605099, K9605170, K9605225	Volatiles, Semivolatiles, Chlorinated Pesticides & PCBs, Metals, TPH as Gasoline, TPH as Diesel, Aromatic Volatile Organics, Total Recoverable Petroleum Hydrocarbons, Total Dissolved Solids & pH

The above SDGs were reviewed using NFESC Level "C" and "D" guidelines. The analyses were validated using the following documents, as applicable to each method:

Navy Installation Restoration Laboratory Quality Assurance Guide, Interim Guidance Document, Naval Facilities Engineering Service Center, February 1996

USEPA, Contract Laboratory Program National Functional Guidelines for Organic Data Review, February 1994

USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, February 1994

- 0- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update 11, September 1994; update 1113, January 1995

The data validators did utilize their professional judgement when evaluating the data to achieve the most complete and accurate assessment of the data. The data packages were reviewed according to the above stated validation procedures.

For GC/MS volatile analyses, the primary findings consisted of:

- a) Cooler temperatures exceeded acceptance criteria in SDGs K9605056, K9605099 and K9605170.

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- b) Analysis holding times were exceeded for sample 097R12732RE in SDG K9605099. Since the laboratory met the protocol requirement, this finding should be considered advisory.
- c) Several volatile contaminants were detected in the method blanks. Since the laboratory met the protocol requirement, this finding should be considered advisory.
- d) Surrogate percent recoveries exceeded acceptance criteria for sample 097R12732 in SDG K9605099. Since the laboratory met the protocol requirement, this finding should be considered advisory.
- e) Laboratory control sample analyses were not performed for all batches in SDGs K9605099.

For GC/MS semivolatile analyses, the primary findings consisted of:

- a) Cooler temperatures exceeded acceptance criteria in SDGs K9605056, K9605099 and K9605170.
- b) Continuing calibration factors exceeded acceptance criteria in SDGs K9605056, K9605099 and K9605170. Since the laboratory met the protocol requirement, this finding should be considered advisory.
- c) Several semivolatile contaminants were detected in the method blanks. Since the laboratory met the protocol requirement, this finding should be considered advisory.
- d) Matrix spike/matrix spike duplicate percent recoveries exceeded acceptance criteria for 4-nitrophenol in SDG K9605099. Since the laboratory met the protocol requirement, this finding should be considered advisory.
- e) Internal standard areas exceeded acceptance criteria for sample 097G22682 in SDG K9605056. Since the laboratory met the protocol requirement, this finding should be considered advisory.

For pesticides and PCBs analyses, the primary findings consisted of:

- a) Cooler temperatures exceeded acceptance criteria in SDGs K9605056, K9605099 and K9605170.
- b) Heptachlor was detected in the method blanks. Since the laboratory met the protocol requirement, this finding should be considered advisory.

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- c) Surrogate percent recoveries exceeded acceptance criteria for sample 097R 12686 in SDG K9605099, samples 097G22886 and 097G21085 in SDG K9605170 and sample 097G22285 in SDG K9605225. Since the laboratory met the protocol requirement, this finding should be considered advisory.
- d) The percent difference between the two columns exceeded acceptance criteria for heptachlor in several samples, heptachlor and gamma chlordane in sample 0971301386, heptachlor and aldrin in sample 097G22886 and gamma-BHC in sample 097G22486 in SDG K9605170. Since the laboratory met the protocol requirement, this finding should be considered advisory.

For metals analyses, the primary findings consisted of:

- a) Continuing calibration verification percent recoveries exceeded acceptance criteria for selenium in SDGs K9605021 and K9605056.
- b) Linear range analyses was not performed at the required frequency in SDGs K9605021, K9605056, K9605099, K9605170 and K9605225.
- c) CRDL standard was not performed at the required frequency for molybdenum in SDGs K9605021, K9605056, K9605099, K9605170 and K9652250.
- d) Several metals were detected in the blanks. Since the laboratory met the protocol requirement, this finding should be considered advisory,
- e) Matrix spike percent recoveries exceeded acceptance criteria for thallium in SDG K9604650, arsenic, selenium, lead and silver in SDG K9605021, selenium, lead and silver in SDGs K9605056 and K9605099, beryllium, chromium, cobalt, nickel, vanadium, thallium, selenium and lead in SDG K9605225. The associated non-detect results for selenium in SDG K9605225 were qualified as unusable. Since the laboratory met the protocol requirement, this finding should be considered advisory.
- f) Furnace atomic absorption QC percent recoveries for several analytes exceeded acceptance criteria in SDG K9605170.

For total dissolved solids and pH analyses, the primary finding consisted of:

- a) Holding times were exceeded for total dissolved solids in sample 097BO1265 in SDG K9605170. Since the laboratory met the protocol requirement, this finding should be considered advisory.

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For TPH as gasoline analyses, the primary finding consisted of:

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- a) Cooler temperatures exceeded acceptance criteria in SDG K9605170,

For TPH as diesel analyses, the primary findings consisted of:

- a) Cooler temperatures exceeded acceptance criteria in SDG K9605170,
- b) Matrix spike/matrix spike duplicate percent recoveries exceeded acceptance criteria in SDGs K9605170 and K9605225. Since the laboratory met the protocol requirement, this finding should be considered advisory,

For total recoverable petroleum hydrocarbons, the primary finding consisted of:

- a) Initial calibration was not performed at the required frequency in SDG K9605170.

For aromatic volatile organics(BTEX) analyses, the primary finding consisted of:

- a) Cooler temperatures exceeded acceptance criteria in SDG K9605170.

In general, the data for all analyses appear usable with the limitations noted in the Data Validation Reports. Data validation flags were noted on the Laboratory Form Is and included with each validation report.

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Richard M. Amano
President/Principal Chemist

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In general, the data for all analyses appear usable with the limitations noted in the Data Validation Reports. Data validation flags were noted on the Laboratory Form IIs and included with each validation report.

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Richard M. Amano
President/Principal Chemist



Bechtel National, Inc.
401 West "A" Street, Suite 1000
San Diego, CA 92101-7905
Attn: Dr. Randy Jordan

October 14, 1996

Project Name Salton Sea Test Base
Project # CTO 097

On October 1, 1996 the following data packages were received by Laboratory Data Consultants, Inc. from Bechtel National, Inc.. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 1976

<u>SDG</u>	<u>Fraction</u>
K9605307	Metals, TPH as Gasoline, TPH as Diesel, Total Dissolved Solids & pH

The above SDGs were reviewed using NFESC Level "C" guidelines. The analyses were validated using the following documents, as applicable to each method:

Navy Installation Restoration Laboratory Quality Assurance Guide, Interim Guidance Document, Naval Facilities Engineering Service Center, February 1996

USEPA, Contract Laboratory Program National Functional Guidelines for Organic Data Review, February 1994

USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, February 1994

EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update 11, September 1994; update IIB, January 1995

Completion of the following sample delivery group fraction is pending the arrival of additional data which has been requested from Columbia Analytical Services. The completed validation report for this fraction will be sent following receipt and review of this data.

LDC Project # 1654:

<u>SDG #</u>	<u>Fraction</u>
K9605307	Aromatic Volatile Organics

The data validators did utilize their professional judgement when evaluating the data to achieve the most complete and accurate assessment of the data. The data packages were reviewed according to the above stated validation procedures. For TPH as diesel analyses, the primary finding consisted of:

- a) Cooler temperatures exceeded acceptance criteria in SDG K9605307.

For TPH as gasoline analyses, the primary finding consisted of:

- a) Cooler temperatures exceeded acceptance criteria in SDG K9605307.

For aromatic volatile organics (BTEX) analyses, the primary finding consisted of:

- a) Cooler temperatures exceeded acceptance criteria in SDG K9605307.

For metals analyses, the primary findings consisted of:

- a) Linear range analyses was not performed at the required frequency for barium, beryllium, cadmium, chromium, cobalt, copper, nickel, silver, vanadium, zinc and molybdenum in SDG K9605307.
- b) CRDL standard analyses were not performed at the required frequency for molybdenum in SDG K9605307.
- c) Several metals were detected in the blanks. Since the laboratory met the protocol requirement, this finding should be considered advisory.

For pH and total dissolved solids analyses, the primary finding consisted of:

- a) Holding times were exceeded for pH in SDG K9605307. Since the laboratory met the protocol requirement, this finding should be considered advisory.

In general, the data for all analyses appear usable with the limitations noted in the Data Validation Reports. Data validation flags were noted on the Laboratory Form Is and included with each validation report.

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Richard M. Amano
President/Principal Chemist

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Salton Sea Test Base, CTO 097
Data Validation Reports
LDC# 1960

Volatiles

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Salton Sea Test Base, CTO 097
Collection Date: August 14, 1996
LDC Report Date: September 27, 1996
Matrix: Water

Parameters: Volatiles
Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9605056

Sample Identification'

097G22531
097TO5033
097R12533
097G22731
097G22631
097DO2631
097DO2631 IVIS
097DO2631 IVISD

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260A for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or element was analyzed for but not detected at or above the stated limit.

i Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or element was analyzed for but not detected. The sample detection limit is an estimated value.

A indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

1. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
All samples in SDG K9605056	All TCL compounds	Cooler temperature was reported at 11.6°C upon receipt by the laboratory.	Cooler temperature must be :s 1 OoC	i	A

11. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

111. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all volatile target compounds and system monitoring compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% .

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT In minutes)	Concentration	Associated Samp71.,
VBLK01	8/28/96	Acetone	3 ug/L	097G22531 097TO5033 097R12533 097G22731 W7G22631 097DO2631

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (> 1 OX for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (FIT In minutes)	Reported Concentration	Modified Final Concentration
097TO5033	Acetone	1 ug/L	20U ug/L
097R12533	Acetone	10 ug/L	20U ug/L

VII. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (IVIS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
VBLK02	All TCL compounds	No LCS analyzed.	LCS analysis required.		None

Percent recoveries (%R) were within QC limits.

IX Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

X1. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples 097G22631 and 097DO2631 were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	097G22631	097DO2631	
Toluene	0.1	0.09	11
Xylene (total)	0.2	0.5U	Not calculable

XVII. Field Blanks

Sample 097TO5033 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Compound	Concentration (ug/L)
097TO5033	Acetone	i
	Methylene chloride	0.2
	Toluene	0.09

Sample 097R12533 was identified as a rinsate. No volatile contaminants were found in this blank with the following exceptions:

Rinsate ID	Compound	Concentration (ug/
097RI2533	Acetone	10
	Methylene chloride	0.4
	Chloroform	3.5
	Bromodichloromethane	1.4
	Toluene	0.1
	Dibromochloromethane	0.09
1960CI.BC3	6	

Salton Sea Test Base, CTO 097

Volatiles - Data Qualification Summary - SDG K9605056

SDG	Sample	Compound	Flag	AorP	Reason
K9605056	097G22531 097TO5033 097R12533 097G22731 097G22631 097DO2631	All TCL compounds		A	Cooler temperature

Salton Sea Test Base, CTO 097

Volatiles - Laboratory Blank Data Qualification Summary - SDG K9605056

SDG	Sample	Compound	Compound TIC (RT In minutes)	Modified Final Concentration 20U ug/L	A or P
K9605056	097TO5033	Acetone			A
K9605056	097R12533	Acetone		20U ug/L	A
1960CI.BC3			7		

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Salton Sea Test Base, CTO 097
Collection Date: August 15 through August 16, 1996
LDC Report Date: September 27, 1996
Matrix: Water
Parameters: Volatiles
Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9605099

Sample Identification

097G20133 097G21432 097R12633 097TO5132 097G20233 097G21332 097G20433 097DO2731 097G20331
097G20835 097TO5331 097G20933 097R12732 097R12732RE 097G20835MS 097G20835MSD

Introduction

This data review covers 16 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260A for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or element was analyzed for but not detected at or above the stated limit.

Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or element was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

1. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Total Days From Sample Collection Until Extraction	Required Holding Time (in Days) From Sample Collection Until Extraction	Flag	A or P
097R12732RE	F 15	14		A

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria with the following exceptions:

Sample	Compound	Finding--F Criteria	Flag	A or P
All samples in SDG K9605099	All TCL compounds	Cooler temperatures were reported at 120C and 16.1 °C upon receipt by the laboratory.	i	A

11. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all volatile target compounds and system monitoring compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
8130/96	Bromomethane	33.3	097G20835MS		A
	Acetone	29.1	097G20835MSD		

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VBLK03

All of the continuing calibration RRF values were within validation criteria.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT In minutes)	Concentration	Associated Samples
VBLK02	8/29/96	Methylene chloride	0.3 ug/L	097DO2731
		Acetone	0.9 ug/L	0971320331
VBLK04	8/31/96	Acetone	5 ug/L	097G20835
				M7R12732RE

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (> 1 OX for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT In minutes)	Reported Concentration	Modified Final Concentration
097G20835	Acetone	0.9 ug/L	20U ug/L
097TO5331	Methylene chloride	0.3 ug/L	1U ug/L
	Acetone	3 ug/L	20U ug/L
097RI2732	Methylene chloride	0.6 ug/L	1 U ug/L
	Acetone	8 ug/L	20U ug/L
0971112732RE	Acetone	8 ug/L	20U ug/L

VII. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

1960DI.BC3

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
	4-Brarofluorobenzene	79 (85-115 ±,f)	TCL compounds		A

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	AorP
097G20133	All TCL compounds	No LCS analyzed.	LCS analysis required.	None	P
097G21432					
097R12633					
097TO5132					
097G20233					
097G21332					
097G20433					
097002731					
097G20331					
097G20835					
097TO5331					
097G20933					
097R12732					
097R12732RE					
VBLK01					
VBLK02					
VBLX04					

Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

X1. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment of Data

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples 097G20433 and 097DO2731 were identified as field duplicates. No volatiles were detected in any of the samples.

XVII. Field Blanks

Samples 097TO5132 and 097TO5331 were identified as trip blanks. No volatile contaminants were found in these blanks with the following exceptions:

Trip Blank ID	Compound	Concentration (ug/L)
097TO51132	Acetone	2
	Methylene chloride	0.4
	Toluene	0.2
097TO5331	Acetone	3
	Methylene chloride	0.3
	Toluene	0.2

Samples 097R12633, 0971312732, and 097R12732RE were identified as rinsates. No volatile contaminants were found in these blanks with the following exceptions:

Rinsate ID	Compound	Concentration (ug/L)
097RI2633	Acetone	10
	Methylene chloride	0.9
	Chloroform	4.3
	Bromodichloromethane	1.8
	Dibromochloromethane	0.3
1960DI.BC3	6	

Rinsate ID	Compound	Concentration (ug/L)
097RI2732	Acetone	a
	Methylene chloride	0.6
	Chloroform	4.3
	Benzene	0.07
	Bro m odichloro methane	1A
097RI2732RE	Toluene	0.2
	Acetone	8
	Methylene chloride	0.6
	Chloroform	4.1
	Bro modichlo ro methane	1.6
1960DI.BC3	Toluene	0.2

Salton Sea Test Base, CTO 097
 Volatiles - Data Qualification Summary - SDG K9605099

SDG	Sample	Compound	Flag	A or P	Reason
K9605099	097R12732RE	All TCL compounds			Technical holding times
K9605099	097G20133	All TCL compounds		A	Cooler temperature
	097G21432				
	097R12633				
	097T05132				
	097G20233				
	097G21332				
	097G20433				
	097DO2731				
	097G20331				
	097G20835				
	097TO5331				
	097G20933				
	0971112732				
	097R12732RE				
					I
K9605099	097R12732	All TCL compounds		A	Surrogate spikes (%R)
K9605099	097G20133	All TCL compounds	None	p	Laboratory control samples
	097G21432				
	0971412633				
	097T05132				
	097G20233				
	097G21332				
	097G20433				
	097DO2731				
	097G20331				
	097G20835				
	097TO5331				
	097G20933				
	097R12732				
	097R12732RE				

Salton Sea Test Base, CTO 097
 Volatiles - Laboratory Blank Data Qualification Summary

SDG K9605099

SDG	Sample	Compound	Modified Final	A or P
K9505099	097G20835	Acetone	Concentration	A
K9505099	097TO5331	Methylene chloride	20U ug/L	A
		Acetone	1 U ug/L	A
K9505099	097R12732	Methylene chloride	20U ug/L	A
		Acetone	1 U ug/L	A
		Acetone	20U ug/L	

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
K9505099 1960DI.BC3	097R12732RE	Acetone	20U ug/L	A

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Salton Sea Test Base, CTO 097
Collection Date: August 19, 1996
LDC Report Date: October 1, 1996
Matrix: Water
Parameters: Volatiles

Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9605170**

Sample Identification

097BO1233
097BO1333
097BO1233MS
097BO1233MSD

** Indicates SDG underwent NFESC Level D review.

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260A for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

U Indicates the compound or element was analyzed for but not detected at or above the stated limit.

i Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or element was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

1. Technical Holding Times

All technical holding time requirements were met,

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria with the following exceptions:

	Compound	Finding	Criteria	Flag	
All samples in SDG K9605170	All TCL compounds	Cooler temperatures were reported at 11.3°C and 13.0°C upon receipt by the laboratory.	Cooler temperature must be :s 1 WC .	i	A

11. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all volatile target compounds and system monitoring compounds were within validation criteria.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
9/2196	Acetone	27.8	097BOI 233MS 097BO1233MSD VBLK02	i	A

All of the continuing calibration RRF values were within validation criteria,

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT In minutes)	Concentration	Associated Sa
VBLK01	8/31/196	Acetone	5 ug/L	097BO1333 097BO1233

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (> 1 OX for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (FIT In minutes)	Reported Concentration	Modified Final Concentration
097BO1233	Acetone	10 ug/L	20U ug/L
097BO1333	Acetone	2 ug/L	20U ug/L

V1. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag
VBLK02	All TCL compounds	7 of 7 LCS analyzed. TLCS analysis required. TNone		P

Percent recoveries (%R) were within QC limits.

1960E1.BC4 4

IX Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

All tentatively identified compounds were within validation criteria.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

Samples 097BO1233 and 097BO1333 were identified as source blanks. No volatile contaminants were found in these blanks with the following exceptions:

Source Blank 10	Compound	Concentration (ug/L)
097BO1233	Acetone	10
	Methylene chloride	0.5
	Chloroform	4.6
	Bromodichloromethane	1.7
	Toluene	0.07
1960EI.BC4	5	

Source Blank ID	Compound	Concentration (ug/L)
097BO1333	Acetone	2
	Chloroform	0.9
	Bromodichlorom ethane	1.1
	Dibromochloromethane	3.2
	Bromoform	12
1960EI.BC4		

Salton Sea Test Base, CTO 097

Volatiles - Data Qualification Summary - SDG K9605170**

SDG	Sample	Compound	Flag	A or P	Reason
K9605170	097BO1233 097601333	All TCL compounds			Cooler temperature

SaltonSea Test Base, CTO 097

Volatiles - Laboratory Blank Data Qualification Summary - SDG K9605170**

SDG	Sample	Compound	Modified Final	A or P
		TIC (RT In minutes)	Concentration	
K9605170	097BO1233	Acetone	20U ug/L	A
K9605170	097BO1333	Acetone	20U ug/L	A

1960EI.BC4

Salton Sea Test Base, CTO 097
Data Validation Reports
LDC# 1960

Semivolatiles

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LDC

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Salton Sea Test Base, CTO 097
Collection Date: August 14, 1996

LDC Report Date: September 27, 1996
Matrix: Water

Parameters: Semivolatiles

Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9605056

Sample Identification

097G22581
097R12581
097G22782
097G22682
097G22682R
097DO2682

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Contract Laboratory Program Statement of Work (SOW) OLM02.0 for Semivolatiles.

This review follows USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994); the following subsections correlate to the above guidelines.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or element was analyzed for but not detected at or above the stated limit. -

i Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or element was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

1. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	AorP
All samples in SDG K9605056	All TCL compounds	Cooler temperature was reported at 11.6C upon receipt by the laboratory.	Cooler temperature must be :51 O'C .		A

11. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all semivolatile target compounds and system monitoring compounds were greater than or equal to 0.05 as required.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRIF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	Aorp~
9/9/96	2,2'-Oxybis(1-chloropropane)	27.4	097G22682R	i	A
	Pentachlorophenol	32.2			
	3,3'-Dichlorobenzidine	36.5			
	Di-n-octylphthalate	28.2		1	
	Benzo(b)fluoranthene	27.2		1	
L-1	Indeno(1,2,3-cd)pyrene	27.8			

All of the continuing calibration RRF values were greater than or equal to 0.05 .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks with the following exceptions:

[M-,lhodl3l,nk	ID	Extraction Date	Compound TIC (RT in minutes)	Concentration t	Associated Samples
SBLK01	8/19196	4-Chloroaniline	9 ug/L	All Samples in SDG	
		2-Methy1 naphthalene	10 ug/L	K9605056	
		2-Nitroaniline	8 ug/L		
		3-Nitroaniline	8 ug/L		
		Dibenzofuran	10 ug/L		
		4-Nitroaniline	8 ug/L		
		Carbazole	11 ug/L		

Sample concentrations were compared to concentrations detected in the method blanks, The sample concentrations were either not detected or were significantly greater (> 1 OX for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT In minutes)	Reported Concentration	Modified Final Concentration
097G22581	4-Chloroaniline	7 ug/L	IOU ug/L
	2-Methylnaphthalene	10 ug/L	IOU ug/L
	2-Nitroaniline	9 ug/L	25U ug/L
	3-Ndroaniline	6 ug/L	25U ug/L
	Dibenzofuran	10 ug/L	IOU ug/L
	4-Nitroaniline	7 ug/L	25U ug/L
	Carbazole	10 ug/L	IOU ug/L
097R12581	4-Chloroaniline	10 ug/L	IOU ug/L
	2-Meth-Inaphthalene	11 ug/L	11U ug/L
	2-Nitroaniline	9 ug/L	25U ug/L
	3-Nitroaniline	8 ug/L	25U ug/L
	Dibenzofuran	10 ug/L	IOU ug/L
	4-Ndroanifine	7 ug/L	25U ug/L
	Carbazole	11 ug/L	11U ug/L
097G22782	4-Chloroaniline	7 ug/L	IOU ug/L
	2-Methonaphthalene	10 ug/L	IOU ug/L
	2-Nitroaniline	8 ug/L	25U ug/L
	3-Nitroaniline	6 ug/L	25U ug/L
	Dibenzoturan	10 ug/L	1 OU ug/L
	4-Nitroaniline	7 ug/L	25U ug/L
	Carbazole	11 ug/L	11 U ug/L
097G22682	4-Chloroaniline	7 ug/L	1 OU ug/L
	2-Methylnaphthalene	10 ug/L	1 OU ug/L
	2-Nitroaniline	9 ug/L	25U ug/L
	3-Nitroaniline	7 ug/L	25U ug/L
	Dibenzofuran	10 ugtL	1 OU ug/L
	4-Nitroaniline	7 ug/L	25U ug/L
	Carbazole	12 ug/L	12U ug/L

	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration	
7S.1pi o 097G22682R	--Chloroaniline	7 ug/L	IOU ug/L	
	2-NAroaniline	11 ug/L	11U ug/L	
	--Ndroaniline	11 ug/L	25U ug/L	
	-benzofuran	10 ug/L	25U ug/L	
	4-Nitroaniline	11 ug/L	11U ug/L	
	Carbazole	10 ug/L	25U ug/L	
	097DO2682	4-Chloroaniline	14 ug/L	14U ug/L
		2-Methylnaphthalene	9 ug/L	IOU ug/L
		2-Ndroaniline	11 ug/L	11U ug/L
		3-Nitroaniline	10 ug/L	25U ug/L
Dibenzoturan		8 ug/L	25U ug/L	
4-Nitroaniline		10 ug/L	IOU ug/L	
Carbazole		8 ug/L	25U ug/L	
		11 ug/L	11 U ug/L	

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the SOW. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there was insufficient sample volume for analysis of the matrix spike and matrix spike duplicate.

VIII. Laboratory Control Samples (LCS)

Although laboratory control samples were not required by the method, laboratory control samples were reported by the laboratory. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits with the following exceptions:

Sample	Internal Standards	Area (Limits)	Compound	Flag	AorP
097G22682	Acenaphthene-d1 0 Phenanthrene-d 10	352909 (357017-1428068) 495895 (534717-2138868)	Hexachlorocyclopentadiene 2,4,6-Trichlorophenol 2,4,5-Trichlorophenol 2-Chloronaphthalene 2-Wroaniline Dimethylphthalate Acenaphthylene 2,6-Dinitrotoluene 3-Nitroaniline Acenaphthene 2,4-Dinitrophenol 4-Nitrophenol Dibenzofuran 2,4-Dinitrotoluene Diethylphthalate 4-Chlorophenylphenyl ether Fluorene 4-Nitroaniline 4,6-Dinitro-2-methylphenol N-Nitrosodiphenylamine 4-Bromophenyl-phenylether Hexachlorobenzene PerTachlorophenol Phenanthrene Anthracene Carbazole Di-n-butylphthalate Fluoranthene	i	A

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples 097G22682 and 097DO2682 were identified as field duplicates. No semivolatiles

were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	097G22682	097DO2682	
4-Chloroaniline	7	9	25
2-Methylnaphthalene	10	11	10
2-Ndroaniline	9	10	10
3-Nftroaniline	7	8	13
Dibenzofuran	10	10	0
4-Nftroaniline	7	8	13
Carbazole	12	11	9
Butylbenzylphthalate	1	1	0
Bis(2-ethylhexyl)phthalate	35	8	126

XVIII. Field Blanks

Sample 097R 12581 was identified as a rinsate. No semivolatile contaminants were found in this blank with the following exceptions:

Rinsate ID	Compound	Concentration (ug/L)
097RI2581	Phenol	8
	4-Chloroaniline	10
	2-Mothylnaphthalene	11
	2-Nitroaniline	9
	3-Nitroaniline	8
	Dibenzofuran	10
	4-Nitroaniline	7
	Carbazole	11
	Bis(2-ethyihexyQphthalate	1

Salton Sea Test Base, CTO 097
 Sernivolatiles - Data Qualification Summary - SDG K9605056

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SD	Sample	Compound	Flag	A or P	Reason
K9605056	097G22581 097RI2581 097G22782 097G22682 097G22682R 097DO2682	All TCL compounds		A	Cooler temperature
K9605056	097G226828	2,2'-Oxybis (1 -chloropropane) Pentachlorophenol 3,3'-Dichlorobenzidine Di-n-actylphthalate Benzo(b)fluoranthene Indeno(1,2,3-cd)pyrene		A	Continuing calibration (%D)
K9605056	097G22682	Hexachlorocyclopentadiene 2,4,6-Trichlorophenol 2,4,5-Trichlorophenol 2-Chloronaphthalene 2-Nitroaniline Dimethylphthalate Acenaphthylene 2,6-Dinitrotoluene 3-Nitroaniline Acenaphthene 2,4-Dinitrophenol 4-Nitrophenol Dibenzofuran 2,4-Dinitrotoluene Diethylphthalate 4-Chlorophenylphenyl ether Fluorene 4-Nitroaniline 4,5-Dinitro-2-methylphenol N-Nitrosodiphenylamine 4-Bromophenyl-phenylether Hexachlorobenzene Pentachlorophenol Phenanthrene Anthracene Carbazole Di-n-butylphthalate Fluoranthene		A	Internal standards (area)

196OC2.BC3

Salton Sea Test Base, CTO 097

Sernivolatiles - Laboratory Blank Data Qualification Summary - SDG K9605056

SDG	Sample	Compound TIC (RT In minutes)	Modified Final Concentration	A or P
K9605056	097G22581	4-Chloroaniline	1 0U ug/L	A
		2-Methylnaphthalene	IOU ug/L	
		2-Nhroaniline	25U ug/L	
		3-Niftroanifine	25U ug/L	
		Dibenzofuran	IOU ug/L	
		4-Wroanflne	25U ug/L	
		Carbazole	IOU ug/L	
K9605056	097RI2581	4-Chloroaniline	IOU ug/L	A
		2-Methylnaphthalene	11U ug/L	
		2-Nftroaniline	25U ug/L	
		3-Nitroanifine	25U ug/L	
		Dibenzofuran	IOU ug/L	
		4-Nftroaniline	25U ug/L	
		Carbazole	IIU ug/L	
K9605056	097G22782	4-Chloroanifine	IOU ug/L	A
		2-Methylnaphthalene	IOU ug/L	
		2-Nitroaniline	25U ug/L	
		3-Nitroanifine	25U ug/L	
		Dibenzoturan	IOU ug/L	
		4-Nitroanifine	25U ug/L	
		Carbazole	11 U ug/L	
K9605056	097GZ2682	4-Chloroaniline	1 0U ug/L	A
		2-Methylnaphthalene	1 0U ug/L	
		2-Nftroaniline	25U ug/L	
		3-Nitroaniline	25U ug/L	
		Dibenzofuran	IOU ug/L	
		4-Ndroaniline	25U ug/L	
		Carbazole	12U ug/L	
K9605056	097G22682R	4-Chloroaniline	IOU ug/L	A
		2-Methylnaphthalene	11U ug/L	
		2-Nitroaniline	25U ug/L	
		3-Ndroaniline	25U ug/L	
		Dibenzofuran	111.1 ug/L	
		4-Nitroaniline	25U ug/L	
		Carbazole	14U ug/L	
K9605056	097DO2682	4-Chloroaniline	IOU ug/L	A
		2-Methylnaphthalene	11 U ug/L	
		2-Nitroaniline	25U ug/L	
		3-Nitroaniline	25U ug/L	
		Dibenzofuran	1 0U ug/L	
		4-Nftroaniline	25U ug/L	
		Carbazole	11 U ug/L	

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Salton Sea Test Base, CTO 097
Collection Date: August 15 through August 16, 1996
LDC Report Date: September 27, 1996
Matrix: Water
Parameters: Semivolatiles
Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9605099

Sample Identification

097G20182 097G21481 097R12682 097G20281 097G21382 097G20481 097DO2782 097G20381 097G20881
097G20982 097R12782 097G20884MS 097G20883MSD

Introduction

This data review covers 13 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Contract Laboratory Program Statement of Work (SOW) OLM02.0 for Semivolatiles.

This review follows USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994); the following subsections correlate to the above guidelines.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XV1.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or element was analyzed for but not detected at or above the stated limit.
- i Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or element was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

1. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria with the following exceptions:

r	Compound	Finding	Criteria	Flag
-S11p,, All samples in SDG K9605099	All TCL compounds	Cooler temperatures were reported at 12.6 and 16.1oC upon receipt by the laboratory.	Cooler temperature must be :51 O'C .	A

11. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all semivolatile target compounds and system monitoring compounds were greater than or equal to 0.05 as required.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	P
8/26/96	Nitrobenzene	30.7	All samples in SDG K9605099		P
	4-Chloroaniline	33.0			
	2-Nitroaniline	26.7			
	2,4-Dinitrophenol	43.5			
	4,6-Dinitro-2-methylphenol	60.5			
	N-Nitrosodiphenylamine	26.8			
	Anthracene	26.5			
	3,3'-Dichlorobenzidine	47.8			
	Indeno(1.2.3-cd)pyrene	27.0			
	Dibenz(a,h)anthracene	28.6			

E;=

L Benzo(g,h,i)perylene 29.2

All of the continuing calibration RRF values were greater than or equal to 0.05 .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks with the following exceptions:

FM,,th,d Blank ID	Extraction Date	TIC Compound (RT In minutes)	Concentration	Associated S
	8/20196	Unknown cyclic hydrocarbon (6.27)	2 ug/L	All samples in SDG K9605099

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (> 1 OX for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
097G21481	Unknown cyclic hydrocarbon (6.28)	2 ug/L	2U ug/L
097DO2782	Unknown cyclic hydrocarbon (6.28)	3 ug/L	3U ug/L

V1. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the SOW. All surrogate recoveries (%R) were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

196OD2.BC3

Sample (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
17620884MS/MSD 1 sample, E(An SOG K9605099)	4-Nitrophenol	92 (10-80)			J (all detects)	A

VIII. Laboratory Control Samples (LCS)

Although laboratory control samples were not required by the method, laboratory control samples were reported by the laboratory. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

XIV. System Performance

Raw data were not reviewed for this SDG.

XV. Overall Assessment

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples 097G20481 and 097DO2782 were identified as field duplicates. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	097G20481	097DO2782	
Butylbenzylphthalate	1	1	0
Bis(2-ethylhexyl)phthalate	4	3	29

XVII. Field Blanks

Samples 097R12682 and 097R12782 were identified as rinsates. No semivolatile contaminants were found in these blanks with the following exceptions:

Rinsate ID	Compound	Concentration (ug/L)
097R12682	Bis(2-ethylhexyl)phthalate	13
097R12782	Fluoranthene	1
	Pyrene	1
	Chrysene	1
	Phenol	9
196002.BC3		6

Salton Sea Test Base, CTO 097
Semivolatiles - Data Qualification Summary - SDG K9605099

LSSDG	Sample	Compound	Flag	AorP	Reason				
K9605099	097G20182	All TCL compounds		A	Cooler temperature				
	097G21481								
	097R12682								
	097G20281								
	097G21382								
	097G20481								
	097DO2782								
	097G20381								
	097G20881								
	097G20982								
	097R12782								
	K9605099		097G201182			Nitrobenzene	i	P	Continuing calibration (%D)
			097G21481			4-Chloroaniline	i		
			097R12682			2-Nitroaniline	i		
097G20281		2,4-Dinitrophenol	i						
097G21382		4,6-Dindro-2-methylphenol	i						
097G20481		N-Nitrosodiphenylamine	i						
097DO2782		Anthracene							
097G20381		3,3'-Dichlorobenzidine	i						
097G20881		Indeno(1.2.3-cd)pyrene	i						
097G20982		Dibenz(a,h)anthracene	i						
K9605099	097R12782	Benzo(g,hJ)perylene		A	Matrix spike/Matrix spike duplicates (%R)				
	097G20182	4-Nitrophenol	J (all detects)						
	097G21481								
	097R12682								
	097G20281								
	097G21382								
	097G20481								
	097DO2782								
	097G20381								
	097G20881								
	097G20982								
	097R12782								

Salton Sea Test Base, CTO 097
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG K9605099

SDG	Sample	Compound	Modified Final Concentration	A or P
K9605099	097G21481	TIC (RT In minutes) Unknown cyclic hydrocarbon (6.28)	2U ugtL	A
K9605099	097DO2782	Unknown cyclic hydrocarbon (6.28)	3U ug/L	A

19SOD2.BC3

LD

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Salton Sea Test Base, CTO 097
Collection Date: August 19, 1996
LDC Report Date: September 27, 1996
Matrix: Water
Parameters: Semivolatiles
Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9605170**

Sample Identification

097BO1281
097BO1382

** Indicates SDG underwent NFESC Level D review.

Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Contract Laboratory Program Statement of Work (SOW) OLM02.0 for Sernivolatiles.

This review follows USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994); the following subsections correlate to the above guidelines.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

U Indicates the compound or element was analyzed for but not detected at or above the stated limit.

Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or element was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

1960E2.BC4

1. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
All samples in SDG K9605170	All TCL compounds	Cooler temperatures were reported at 11.3°C and 13.1°C upon receipt by the laboratory.	Cooler temperature must be $\pm 1.0^{\circ}\text{C}$.		A

H

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

Average relative response factors (RRF) for all semivolatile target compounds and system monitoring compounds were greater than or equal to 0.05 as required.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A -P
9/6/96	4,6-Dinitro-2-methylphenol	28.6	097BO1382	i	A
	N-Nitrosodiphenylamine	28.6	K0822WBR		
	3,3'-Dichlorobenzidine	26.4			

All of the continuing calibration RRF values were greater than or equal to 0.05 .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks with the following exceptions:

Fm	Extraction	Compound	TIC (RT in minutes)	concentration	Associated Samples
	thd Blank ID	Date			
K0822WBI	8/22/96	Bis(2-ethylhexyl)phthalate	1 ug/L	All samples in SDG K9605170	
		4-Chloroaniline	10 ug/L		
		2-Methylnaphthalene	11 ug/L		
		2-Ndroaniline	10 ug/L		
		3-Nitroaniline	10 ug/L		
		Dibenzofuran	11 ug/L		
		4-Nitroaniline	9 ug/L		
		Carbazole	14 ug/L		
		Phenol	1 ug/L		
	8/22/96	Bis(2-ethylhexyl)phthalate	1 ug/L		
		4-Chloroaniline	9 ug/L		
		2-Methylnaphthalene	11 ug/L		
		2-Nitroaniline	12 ug/L		
		3-Nitroaniline	12 ug/L		
		Dibenzofuran	12 ug/L		
		4-Nitroaniline	10 ug/L		
		Carbazole	13 ug/L		
K0822WBR				All samples in SDG K9605170	

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (> 1 OX for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT In minutes)	Reported Concentration	Modified Final Concentration	
097BO1281	4-Chloroaniline	8 ug/L	10U ug/L	
	2-Methylnaphthalene	12 ug/L	12U ug/L	
	2-Nitroaniline	10 ug/L	25U ug/L	
	3-Nitroaniline	7 ug/L	25U ug/L	
	Dibenzofuran	11 ug/L	11U ug/L	
	4-Nitroaniline	7 ug/L	25U ug/L	
	Carbazole	12 ug/L	12U ug/L	
	097BO1382	Bis(2-ethylhexyl)phthalate	1 ug/L	10U ug/L
		4-Chloroaniline	8 ug/L	11 U ug/L
2-Methylnaphthalene		11 ug/L	11 U ug/L	
2-Nitroaniline		11 ug/L	25U ug/L	
3-Nitroaniline		10 ug/L	25U ug/L	
Dibenzofuran		12 ug/L	12U ug/L	
4-Nitroaniline		9 ug/L	25U ug/L	
Carbazole		12 ug/L	12U ug/L	

V1. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the SOW. All surrogate

recoveries (%R) were within QC limits.

Vii. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there was insufficient sample volume for analysis of the matrix spike and matrix spike duplicate.

Viii. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

X11. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

X111111. Tentatively Identified Compounds (TICs)

All tentatively identified compounds were within validation criteria.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

Samples 097BO1281 and 097BO1382 were identified as source blanks. No semivolatile contaminants were found in these blanks with the following exceptions:

Source Blank ID	Compound	Concentration (ug/L)
097BO1281	4-Chloroaniline	8
	2-Methylnaphthalene	12
	2-Nitroaniline	10
	3-Nitroaniline	7
	Dibenzofuran	11
	4-Nitroaniline	7
	Carbazole	12
097BO1382	4-Chloroaniline	8
	2-Methylnaphthalene	11
	2-Nitroaniline	11

:E

19r--OE2.BC4	3-Nitroaniline	10
	Dibenzofuran	12
	4-Nitroaniline	9
	Carbazole	12
	Bis(2-ethylhexyl)phthalate	1

Salton Sea Test Base, CTO 097

Sernivolatiles - Data Qualification Summary - SDG K9605170**

LsSDG	t	Sample	Compound	Flag	AorP	Reason
K9605170		097BO1281	All TCL compounds			Cooler temperature
605170		097BO1382	4,6-Dinitro-2-methylphenol	J	A	Continuing calibration (%D)
			N-Nitrosodiphenylamine			
			3,3'-Dichlorobenzidine			

Salton Sea Test Base, CTO 097

Sernivolatiles - Laboratory Blank Data Qualification Summary - SDG K9605170**

SDG	Sample	Compound TIC (RT In minutes)	Modified Final Concentration	A or P
K9605170	097801281	4-Chloroaniline	1 OU ug/L	A
		2-Methylnaphthalene	12U ug/L	
		2-Nitroaniline	25U ug/L	
		3-Nitroaniline	25U ug/L	
		Dibenzofuran	11U ug/L	
		4-Nitroaniline	25U ug/L	
		Carbazole	12U ug/L	
K9605170	097801382	Bis(2-ethylhexyl)phthalate	IOU ug/L	A
		4-Chloroaniline	1 OU ug/L	
		2-Methylnaphthalene	1111U ug/L	
		2-Nitroaniline	25U ug/L	
		3-Nitroaniline	25U ug/L	
		Dibenzofuran	12U ug/L	
		4-Nitroaniline	25U ug/L	
		Carbazole	12U ug/L	

Salton Sea Test Base, CTO 097
Data Validation Reports
LDC# 1960

Chlorinated Pesticides & PCBs

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LDC Report# 1960C3

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Salton Sea Test Base, CTO 097

Collection Date: August 14, 1996

LDC Report Date: September 23, 1996

Matrix: Water

Parameters: Chlorinated Pesticides & PCBs

Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9605056

Sample Identification

097G22582
097R12586
097G23085
097G22785
097G22681
097DO2686
097G23185
097R12586MS
097R12586MSD

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Contract Laboratory Program Statement of Work (SOW) OLM02.0 for Chlorinated Pesticides and PCBs.

This review follows the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994); the following subsections correlate to the above guidelines.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or element was analyzed for but not detected at or above the stated limit.
- i Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or element was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.

- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

1. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P]
All samples in SDG K9605056	All TCL compounds	Cooler temperature was reported at 11.6C upon receipt by the laboratory.	Cooler temperature must be :51 O'C	J	A

11. GC/ECD Instrument Performance Check

A Resolution check mixture was analyzed at the beginning of the initial calibration sequence on each GC column. The analyte resolution between adjacent peaks of required compounds was greater than or equal to 60% .

The absolute retention times for the initial and continuing PEMs were within the calculated retention time windows based on the three-point initial calibration.

The individual 4,4'-DDT and Endrin breakdowns were less than 20.0% and the combined breakdowns were less than 30.0% .

The relative percent difference (RPID) of amount in PEMs were within 25.0% QC limits.

III. Initial Calibration

Initial calibration sequence was followed as required.

Initial -calibration of single and multicomponent compounds was performed for both columns at proper frequencies.

The retention time windows were established according to the method.

The percent relative standard deviations (%RSD) of calibration factors for single component compounds were within the 20.0% QC limits.

All required peaks for multicomponent compounds were present.

IV. Continuing Calibration

Continuing calibration sequence was followed as required. No more than 12 hours elapsed between continuing calibration analyses in an analytical sequence.

The retention times (RT) of all compounds in Individual Mix and multicomponent

standards were within QC limits.

The relative percent differences (RPD) of amount in Individual Mix standards were within the 25.0% QC limits.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No chlorinated pesticide or PCB contaminants were found in the method blanks.

Instrument blank analyses were performed at the required frequencies. No chlorinated pesticide or PCB contaminants were found in the instrument blanks above one-half the CRQL.

VI. Surrogate Spikes

Surrogates were added to all samples, standards and blanks as required by the SOW. All surrogate recoveries (%R) were within QC limits of 30-150% .

V11. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

V111. Laboratory Control Samples (LCS)

Although laboratory control samples were not required by the method, laboratory control samples were reported by the laboratory. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cartridge checks were performed at the required frequency and all compounds were within the 80-120% recovery QC criteria.

b. GPC Calibration

GPC cleanup is not required for water samples and was not performed.

X1. Target Compound Identification

Raw data were not reviewed for this SDG.

X11. Compound Quantitation and Reported CRQLs

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

XIV. Field Duplicates

Samples 097G22681 and 097DO2686 were identified as field duplicates. No chlorinated pesticides or PCBs were detected in any of the samples with the following exceptions:

Compound	<u>Concentration (ug/L)</u>		RPD
	097G22681	097DO2686	
Heptachlor	0.0039	0.0022	56
Endrin	0.0014	ND	Not calculable

XV. Field Blanks

Sample 097R12586 was identified as a rinsate. No chlorinated pesticide or PCB contaminants were found in this blank.

Salton Sea Test Base, CTO 097

Chlorinated Pesticides & PCBs - Data Qualification Summary - SDG K9605056

SDG	Sample	Compound	Flag	A or P	-Reason
K9605055	097G22582 097R12586 097G23085 097G22785 097G22681 097DO2686 097G23185	All TCL compounds		A	Cooler temperature

Salton Sea Test Base, CTO 097

Chlorinated Pesticides & PCBs - Laboratory Blank Data Qualification Summary -
SDG K9605056

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Salton Sea Test Base, CTO 097
Collection Date: August 15 through August 16, 1996
LDC Report Date: September 24, 1996
Matrix: Water
Parameters: Chlorinated Pesticides & PCBs
Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9605099

Sample Identification

097G20186
097G21486
097R12686
097G20285
097G21385
097G20486
097DO2785
097G20385
097G20886
097G20986
097R12785
097G20886MS
097G20886MSD

Introduction

This data review covers 13 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Contract Laboratory Program Statement of Work (SOW) OLM02.0 for Chlorinated Pesticides and PCBs,

This review follows the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994); the following subsections correlate to the above guidelines.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or element was analyzed for but not detected at or above the stated limit.

Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

Indicates the compound or element was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore **qualification was** not required.

1. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria with the following exceptions:

Sample	Compound	Finding_	Criteria	Flag	
097G20886	All TCL compounds	Cooler temperature was reported at 16.1°C upon receipt by the laboratory.	Cooler temperature must be :s 1 TC	J	A
097G20986					
097RI2785					
097G20886MS					
097G20886MSD					
097G20186	All TCL compounds	Cooler temperature was reported at 12.6°C upon receipt by the laboratory.	Cooler temperature must be :s 1 O'C .		A
097G21486					
0971112686					
097G20285					
097G21385					
097G20486					
097DO2785					
097G20385					

11. GC/ECD Instrument Performance Check

A Resolution check mixture was analyzed at the beginning of the initial calibration sequence on each GC column. The analyte resolution between adjacent peaks of required compounds was greater than or equal to 60% .

The absolute retention times for the initial and continuing PEMs were within the calculated retention time windows based on the three-point initial calibration.

The individual 4,4'-DDT and Endrin breakdowns were less than 20.0% and the combined breakdowns were less than 30.0% .

The relative percent difference (RPD) of amount in PEMs were within 25.0% QC limits.

III. Initial Calibration

Initial calibration sequence was followed as required.

Initial calibration of single and multicomponent compounds was performed for both columns at proper frequencies.

The retention time windows were established according to the method.

The percent relative standard deviations (%RSD) of calibration factors for single component compounds were within the 20.0% QC limits.

19SOD3.BC3

All required peaks for multicomponent compounds were present.

IV. Continuing Calibration

Continuing calibration sequence was followed as required. No more than 12 hours elapsed between continuing calibration analyses in an analytical sequence.

The retention times (RT) of all compounds in Individual Mix and multicomponent standards were within QC limits.

The relative percent differences (RPD) of amount in Individual Mix standards were within the 25.0% QC limits.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No chlorinated pesticide or PCB contaminants were found in the method blanks.

Instrument blank analyses were performed at the required frequencies. No chlorinated pesticide or PCB contaminants were found in the instrument blanks above one-half the CRQL.

VI. Surrogate Spikes

Surrogates were added to all samples, standards and blanks as required by the SOW. All surrogate recoveries (%R) were within QC limits of 30-150% with the following exceptions:

Sample	C-LI-111	Surrogate	%R	Compound	Flag	A or P
0971312686	RTX-5	Decachlorobiphenyl	26	All TCL compounds		
	RTX-1 701	Decachlorobiphenyl	20			

VII. Matrix Spike/Matrix Spike Duplicates

Matdx spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Although laboratory control samples were not required by the method, laboratory control samples were reported by the laboratory. Percent recoveries (%R) were within QC limits.

IX Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cartridge checks were performed at the required frequency and all compounds were within the 80-120% recovery QC criteria.

b. GPC Calibration

GPC cleanup is not required for water samples and was not performed.

XI. Target Compound Identification

Raw data were not reviewed for this SDG.

XII. Compound Quantitation and Reported CRQLs

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

XIV. Field Duplicates

Samples 097G20486 and 097DO2785 were identified as field duplicates. No chlorinated pesticides or PCBs were detected in any of the samples.

XV. Field Blanks

Samples 097R12686 and 097R12785 were identified as rinsates. No chlorinated pesticide or PCB contaminants were found in these blanks.

a -

Salton Sea Test Base, CTO 097

Chlorinated Pesticides & PCBs - Data Qualification Summary - SDG K9605099

SDG	Sample	compound	Flag	A or P	Reason
K9605099	097G20186	All TCL compounds		A	Cooler temperature
	097G21486				
	097R12686				
	097G20285				
	097G21385				
	097G20486				
	097DO2785				
	097G20385				
	097G20886				
	097G20986				
	097R12785				
	097R12686				
K9605099			All TCL compounds	i	



Salton Sea Test Base, CTO 097

Chlorinated Pesticides & PCBs - Laboratory Blank Data Qualification Summary - SDG K9605099

No Sample Data Qualified in this SDG

LD

**Laboratory Data Consultants, Inc.
Data Validation Report**

Project/Site Name: Salton Sea Test Base, CTO 097
Collection Date: August 19, 1996
LDC Report Date: September 24, 1996
Matrix: Water
Parameters: Chlorinated Pesticides & PCBs
Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9605170**

Sample Identification

097BO1286
097BO1386
097G22886
097R12985
097G21085
097G22486

** Indicates SDG underwent NFESC Level D review.

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Contract Laboratory Program Statement of Work (SOW) OLM02.0 for Chlorinated Pesticides and PCBs.

This review follows the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994); the following subsections correlate to the above guidelines.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

The following are definitions of the data qualifiers:

U Indicates the compound or element was analyzed for but not detected at or above the stated limit.

Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or element was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required,

1. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria with the following exceptions:

E	7S.MP-1,	Compound	Finding	Criteria Criteria==	Flag	A or -P
	All samples in SDG K9605170	All TCL compounds	Cooler temperature was reported at 11.3°C upon receipt by the laboratory.	Cooler temperature must be ~10-C .	J	A

11. GC/ECD Instrument Performance Check

A Resolution check mixture was analyzed at the beginning of the initial calibration sequence on each GC column. The compound resolution between adjacent peaks of required compounds was greater than or equal to 60% .

Performance evaluation mixtures (PEM) were analyzed at the proper frequency. The resolution between adjacent peaks was 90% on both GC columns. The absolute retention times for the initial and continuing PEMs were within the calculated retention time windows based on the three-point initial calibration.

The individual 4,4'-DDT and Endrin breakdowns were less than 20.0% and the combined breakdowns were less than 30.0% .

The relative percent difference (RPD) of amount in PEMs were within 25.0% QC limits.

III. Initial Calibration

Initial calibration sequence was followed as required.

Initial calibration of single and multicomponent compounds was performed for both columns at proper frequencies.

The retention time windows were established according to the method.

The percent relative standard deviations (%RSD) of calibration factors for single component compounds were within the 20.0% QC limits.

All required peaks for multicomponent compounds were present.

IV. Continuing Calibration

Continuing calibration sequence was followed as required. No more than 12 hours elapsed between continuing calibration analyses in an analytical sequence.

The retention times (RT) of all compounds in Individual Mix and multicomponent standards were within CC limits.

The relative percent differences (RPD) of amount in individual Mix standards were within the 25.0% CC limits.

V. Blanks

Method blanks were reviewed for each matrix as applicable, No chlorinated pesticide or PCB contaminants were found in the method blanks with the following exceptions:

1

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
097BO1286	Heptachlor	0.0025 ug/L	0.048U ug/L
097BO1386	Heptachlor	0.0036 ug/L	0.048U ug/L
097G22886	Heptachlor	0.0033 ug/L	0.049U ug/L
097R129a5	Heptachlor	0.0024 ug/L	0.048U ug/L
097G21 Oa5	Heptachlor	0.0027 ug/L	0.049U ug/L

Instrument blank analyses were performed at the required frequencies. No chlorinated pesticide or PCB contaminants were found in the instrument blanks above one-half the CRQL.

VI. Surrogate Spikes

Surrogates were added to all samples, standards and blanks as required by the SOW. All surrogate recoveries (%R) were within CC limits of 30-150% with the following exceptions:

Sample	Column	Surrogate	%R	Compound	Flag	A or P
097G22886	RTX-5	Decachlorobiphenyl	26	All TCL compounds		A
	8TX-1 701	Decachlorobiphenyl	25			
097G21085	RTX-5	Decachlorobiphenyl	28	All TCL compounds		A
	RTX-1 701	Decachlorobiphenyl	29			

The retention times for surrogates were within QC limits.

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Although laboratory control samples were not required by the method, laboratory control samples were reported by the laboratory. Percent recoveries (%R) were within QC limits.

IX Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cartridge checks were performed at the required frequency and all compounds were within the 80-120% recovery QC criteria.

b. GPC Calibration

GPC cleanup is not required for water samples and was not performed.

X1. Target Compound Identification

All target compound identifications were within validation criteria.

XII. Compound Quantitation and Reported CROs

All compound quantitation and reported CRQLs were within validation criteria with the following exceptions:

Sample	Compound	%D (Limit :525)	Flag	A or P
097BO1286	Heptachlor	820.0		A
097BO1386	Heptachlor	205.6		A
	gamma-Chlordane	90.0		
097G22886	Heptachlor	293.9		A
	Aldrin	545.2		
097R12985	Heptachlor	70.8		A
097G21085	Heptachlor	825.9		A
097G22486	gamma-BHC	66.7		A

X111. Overall Assessment of Data

Data flags are summarized at the end of this report.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

Samples 097BO1286 and 097BO1386 were identified as source blanks. No chlorinated pesticide or PCB contaminants were found in these blanks with the following exceptions:

Source Blank ID	Compound	Concentration (ug/L)
097BO1286	Heptachlor	0.0025
097BO1386	Heptachlor	0.0036
	gamma-Chlordans	0.0010

Sample 097R12985 was identified as a rinsate. No chlorinated pesticide or PCB contaminants were found in this blank with the following exceptions:

Rinsate ID	Compound	Concentration (ug/L)
097R12985	Heptachlor	0.0004

196OE3.BC4

Salton Sea Test Base, CTO 097

Chlorinated Pesticides & PCBs - Data Qualification Summary - SDG K9605170**

SUG	Sample	Compound	Flag	AorP	Rea
K9605170	097601286 097BO1386 097G22886 097RI2985 097G21085 097G22486	All TCL compounds	i	A	Cooler temperature
K9605170	097G22886 097G21085	All TCL compounds	i	A	Surrogate spikes (%R)
K9605170	097BO1286 097RI2985 097G21085	Heptachlor		A	Compound quantitation and CROLS
K9605170	097BO1386	Heptachlor gamma-Chlordane		A	Compound quantitation and CROLS
K9605170	097G22886	Heptachlor Aldrin	j i	A	Compound quantitation and CROLS
K9605170	097G22486	gamma-BHC		A	Compound quantitation

Salton Sea Test Base, CTO 097

Chlorinated Pesticides & PCBs - Laboratory Blank Data Qualification Summary - SDG K9605170**

SDG	sample	Compound	Concentration	7A, 7rP
K9605170	097BO1286	Heptachlor	0.048U ug/L	A
K9605170	097BO1386	Heptachlor	0.048U ug/L	A
K9605170	097G22886	Heptachlor	0.0491.1 ug/L	A
K9605170	097RI2985	Heptachlor	0.048U ug/L	A
K9605170	097G21085	Heptachlor	0.049U ug/L	-A

196OE3.BC4

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Salton Sea Test Base, CTO 097
Collection Date: August 20, 1996
LDC Report Date: September 24, 1996
Matrix: Water
Parameters: Chlorinated Pesticides & PCBs
Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9605225

Sample Identification

097G22285
097G20586
097R13086
097G22386
097G20586MS
097G20586MSD

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Contract Laboratory Program Statement of Work (SOW) OLM02.0 for Chlorinated Pesticides and PCBs,

This review follows the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994); the following subsections correlate to the above guidelines.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or element was analyzed for but not detected at or above the stated limit.
- i Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or element was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

1. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

11. GC/ECD Instrument Performance Check

A Resolution check mixture was analyzed at the beginning of the initial calibration sequence on each GC column. The analyte resolution between adjacent peaks of required compounds was greater than or equal to 60% .

The absolute retention times for the initial and continuing PEMs were within the calculated retention time windows based on the three-point initial calibration.

The individual 4,4'-DDT and Endrin breakdowns were less than 20.0% and the combined breakdowns were less than 30.0% .

The relative percent difference (RPD) of amount in PEMs were within 25.0% QC limits.

III. Initial Calibration

Initial calibration sequence was followed as required.

Initial calibration of single and multicomponent compounds was performed for both columns at proper frequencies.

The retention time windows were established according to the method.

The percent relative standard deviations (%RSD) of calibration factors for single component compounds were within the 20.0% QC limits.

All required peaks for multicomponent compounds were present.

IV. Continuing Calibration

Continuing calibration sequence was followed as required. No more than 12 hours elapsed between continuing calibration analyses in an analytical sequence.

The retention times (RT) of all compounds in Individual Mix and multicomponent standards were within QC limits.

The relative percent differences (RPD) of amount in Individual Mix standards were within the 25.0% QC limits.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No chlorinated pesticide or PC6 contaminants were found in the method blanks.

Instrument blank analyses were performed at the required frequencies. No chlorinated pesticide or PCB contaminants were found in the instrument blanks above one-half the CRQL.

VI. Surrogate Spikes

Surrogates were added to all samples, standards and blanks as required by the SOW. All surrogate recoveries (%R) were within QC limits of 30-150% with the following exceptions:

Sample	Column	Surrogate	%R	Compound	Flag	AorP
097G22285	RTX-5	Decachlorobiphenyl	28	All TCL compounds		A
	RTX-1 701	Decachlorobiphenyl	23			

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Although laboratory control samples were not required by the method, laboratory control samples were reported by the laboratory. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cartridge checks were performed at the required frequency and all compounds were within the 80-120% recovery QC criteria.

b. GPC Calibration

GPC cleanup is not required for water samples and was not performed.

X1. Target Compound Identification

Raw data were not reviewed for this SDG.

X11. Compound Quantitation and Reported CRQLs

Raw data were not reviewed for this SDG.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

Sample 097R13086 was identified as a rinsate. No chlorinated pesticide or PCB contaminants were found in this blank with the following exceptions:

Rinsate ID	Compound	Concentration (ug/L)
097R13086	Heptachlor	0.0017
1960F3.BC3	5	

Salton Sea Test Base, CTO 097

Chlorinated Pesticides & PCBs - Data Qualification Summary - SDG K9605225

SDG	Sample	Compound	Flag	AorP	Reason
F~	097G22285	All TCL compounds	i	A	Surrogate spikes (%R)

Salton Sea Test Base, CTO 097

Chlorinated Pesticides & PCBs - Laboratory Blank Data Qualification Summary -

SDG K9605225

No Sample Data Qualified in this SDG

1960F3.BC3

6

Salton Sea Test Base, CTO 097
Data Validation Reports
LDC# 1967

Chlorinated Pesticides & PCBs

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Salton Sea Test Base, CTO 097
Collection Date: August 14 through August 20, 1996
LDC Report Date: October 1, 1996
Matrix: Water
Parameters: Chlorinated Pesticides & PCBs
Laboratory: Inchcape Testing Services

Sample Delivery Group (SDG): 60633

Sample Identification

097G22591	097G20894MSD
097G23091	097G20593MS
097G22791	097G20S94MSD
097G22691	
097G23191	
097G20191	
097G21491	
097G20291	
097G21391	
097G20491	
097G20391	
097G20891	
097G20991	
097G22891	
097G21091	
097G22491	
097G22291	
097G20591	
097G22391	
097G20893MS	

Introduction

This data review covers 23 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Contract Laboratory Program Statement of Work (SOW) OLM01.8 for Chlorinated Pesticides and PCBs.

This review follows the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994); the following subsections correlate to the above guidelines.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or element was analyzed for but not detected at or above the stated limit.
- i Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or element was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

1. Technical Holding Times

All technical holding time requirements were met.

No cooler temperature was noted on the chain-of-custody for all samples.

11. GC/ECD Instrument Performance Check

A Resolution check mixture was analyzed at the beginning of the initial calibration sequence on each GC column. The analyte resolution between adjacent peaks of required compounds was greater than or equal to 600X0 .

The absolute retention times for the initial and continuing PEMs were within the calculated retention time windows based on the three-point initial calibration.

The individual 4,4'-DDT and Endrin breakdowns were less than 20.0% and the combined breakdowns were less than 30.0% .

The relative percent difference (RPD) of amount in PEMs were within 25.0% QC limits.

III. Initial Calibration

Initial calibration sequence was followed as required.

Initial calibration of single and multicomponent compounds was performed for both columns at proper frequencies.

The retention time windows were established according to the method.

The percent relative standard deviations (%RSD) of calibration factors for single component compounds were within the 20.0% QC limits.

All required peaks for multicomponent compounds were present.

IV. Continuing Calibration

Continuing calibration sequence was followed as required. No more than 12 hours elapsed between continuing calibration analyses in an analytical sequence.

The retention times (RT) of all compounds in Individual Mix and multicomponent standards were within OC limits.

The relative percent differences (RPD) of amount in Individual Mix standards were within the 25.0% QC limits.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No chlorinated pesticide or PCB contaminants were found in the method blanks.

Instrument blank analyses were performed at the required frequencies. No chlorinated pesticide or PCB contaminants were found in the instrument blanks above one-half the CRQL.

VI. Surrogate Spikes

Surrogates were added to all samples, standards and blanks as required by the SOW. All surrogate recoveries (%R) were within QC limits of 60-150% .

Samples 097G20591 t 097G20891, and 097G21091 exhibited an interference peak on the RTX-1701 column at the same retention time as Tetrachloro-m-xylene, therefore Tetrachloro-m-xylene percent recovery could not be calculated.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Although laboratory control samples were not required by the method, laboratory control samples were reported by the laboratory. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cartridge checks were performed at the required frequency and all compounds were within the 80-120% recovery QC criteria.

b. GPC Calibration

GPC cleanup is not required for water samples and was not performed.

XI. Target Compound Identification

Raw data were not reviewed for this SDG.

X11. Compound Quantitation and Reported CRQLs Raw data were not reviewed for this SDG. X111. Overall Assessment of Data Data flags are summarized at the end of this report. XIV. Field Duplicates No field duplicates were identified in this SDG. XV. Field Blanks No field blanks were identified in this SDG.

Salton Sea Test Base ' CTO 097
Chlorinated Pesticides & PCBs - Data Qualification Summary - SDG 60633

No Sample Data Qualified in this SDG

Salton Sea Test Base, CTO 097
Chlorinated Pesticides & PCBs - Laboratory Blank Data Qualification Summary -
SDG 60633

No Sample Data Qualified in this SDG

Salton Sea Test Base, CTO 097
Data Validation Reports
LDC# 1960

Metals

LDC Report# 1960A4

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Salton Sea Test Base, CTO 097
Collection Date: May 13, 1996
LDC Report Date: September 26, 1996
Matrix: Water
Parameters: Thallium
Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9604650

Sample Identification

097G1 1561
097G1 1561 S
097G1 1561 D

19WA4.BC3

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Contract Laboratory Program Statement of Work (SOW) for Inorganic Analysis, Multi-media, Multiconcentration, D.N. ILM04.0 for Thallium. Data validation review was based on EPA Contract Laboratory Program Statement of Work (SOW) ILM03.0 for Thallium.

This review follows USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) and incorporates updates per EPA SOW (D.N. ILM03.0); the following subsections correlate to the guidelines.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from specified protocols or is of technical advisory nature.

Blanks are summarized in Section 111.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or element was analyzed for but not detected at or above the stated limit.

Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or element was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

1. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

11. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

CRDL standards for ICP and AA were analyzed and reported as required.

Instrument detection limits, interelement corrections and linear range analysis were performed at the required frequency.

111. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each element. No contaminant concentrations were found above the IDL in the initial, continuing and preparation blanks.

IV. ICP Interference Check Sample (ICS) Analysis

Not required by the method.

V. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V11. Duplicate Sample Analysis

Duplicate sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

V1111. Matrix Spike Analysis

Matdx spike analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits of 75-125% with the following exceptions:

Sample (Associated Samples)	Analyte	%R	Flag	A or P
097G 11561 S (All samples in SDG K9504650)	Thallium	68.0		A

VIII. Internal Standards (ICP-MS)

Not required by the method.

IX. Furnace Atomic Absorption QC

All reported MSAs were reviewed and found acceptable.

Raw data were not reviewed for this SDG.

X. ICP Serial Dilution

Not required by the method.

XI. Sample Result Verification

Raw data were not reviewed for this SDG.

XII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

XIII. Field Duplicates

No field duplicates were identified in this SDG.

XIV. Field Blanks

No field blanks were identified in this SDG.

Salton Sea Test Base, CTO 097 -
Thallium - Data Qualification Summary - SDG K9604650

SDG	Sample	Analyte	Flag	A or P	Reason
F650	097G 11561	Thallium		A	Matrix spike analysis (%R)

Salton Sea Test Base, CTO 097
Thallium - Laboratory Blank Data Qualification Summary - SDG K9604650

No Sample Data Qualified in this SDG

LDC Report# 1960134

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Salton Sea Test Base, CTO 097
Collection Date: August 13, 1996
LDC Report Date: September 26, 1996
Matrix: Water

Parameters: Metals
Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9605021

Sample Identification

097G21161
097R12861
097G21261
097G21661
097G21561
097G21861
097G21161 S
097G21161 D

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Contract Laboratory Program Statement of Work (SOW) for Inorganic Analysis, Multi-media, Multiconcentration, D.N. ILM04.0 for Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc, and per EPA Method 200.8 for Antimony. Data validation review was based on EPA Contract Laboratory Program Statement of Work (SOW), ILM03.0 and EPA Method 200.8.

This review follows USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) and incorporates updates per EPA SOW (D.N. ILM03.0); the following subsections correlate to the guidelines.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from specified protocols or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section X111.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or element was analyzed for but not detected at or above the stated limit.

Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or element was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

1. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

11. Calibration

An initial calibration was performed.

A curve fit, based on the initial calibration, was established for quantitation. The correlation coefficient (r) was greater than or equal to 0.995 with the following exceptions:

Date	Anal	r	Associated Samples	Flag	A or P
9/10/96	Selenium	0.992	All samples in SDG		p
					K9605021

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

CRDL standards for ICP and AA were analyzed and reported as required with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag
All samples in SDG K9605021	Molybdenum	CRDL standard was not analyzed.	All CRDL standards for [CP and AA must be analyzed and reported.	None

Instrument detection limits, interelement corrections and linear range analysis were performed at the required frequency with the following exceptions:

Analyte	Calibration	Date of Last Report	Frequency Requirement Report	Date Analysis	of	Associated Samples	Flag	Aorp
Barium	ICP linear range analysis.	4/19/96	Quarterly	9/6/96		All samples in SDG K9605021	None	P
Beryllium							None	
Cadmium							None	
Chromium							None	
Cobalt							None	
Copper							None	
Nickel							None	
Silver							None	
Vanadium							None	
Zinc							None	
Molybdenum							None	

The time elapsed since the last quarterly report was not significant, thus the data are not flagged. However, this is still considered a protocol violation.

IIII. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each element. No contaminant concentrations were found above the IDL in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
ICB	Selenium	1.6 ug/L	All samples in SDG K9605021
	Zinc	2.4 ug/L	
CCB1	Chromium	2.7 ug/L	All samples in SDG K9605021
	Vanadium	1.6 ug/L	
	Zinc	1.8 ug/L	
	Molybdenum	3.9 ug/L	
CCB2	Zinc	3.0 ug/L	All samples in SDG K9605021
CCB3	Thallium	-1.4 ug/L	All samples in SDG K9605021
PB (prep blank)	Zinc	3.0 ug/L	All samples in SDG K9605021
	Zinc	-2.980 ug/L	
CCB1	Selenium	2.3 ug/L	All samples in SDG K9605021
	Zinc	2.4 ug/L	
CC82	Selenium	1.7 ug/L	All samples in SDG K9605021
E1--	Antimony	0.01 ug/L	All samples in SOG K9605021

No contaminant concentrations were found above the CRDL in the initial, continuing and preparation blanks.

Sample concentrations were compared to concentrations detected in the ICB/CCB/PBs. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
097G21161	Vanadium	6.9 ug/L	6.9u ug/L
	Zinc	2.4 ug/L	2AU ug/L
097G21261	Selenium	1.6 ug/L	1.6U ug/L
	Vanadium	6.6 ug/L	6.6U ug/L
097G21661	Zinc	3.6 ug/L	3.6U ug/L
097G21561	Selenium	1.8 ug/L	1.8U ug/L
	Vanadium	6.0 ug/L	6.01-1 ug/L
LOG7G21 861	Zinc	6.2 ug/L	6.21-1 ug/L
11 .- --			

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicate Sample Analysis

Duplicate sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Matrix Spike Analysis

Matrix spike analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits of 75-125% with the following exceptions:

Sample (Associated Samples)	Analyte	%R	Flag	A or P
097G21161 S	Arsenic	67.8	1	A
(All samples in SDG K9605021)	Selenium	53.0	1	
	Lead	65.5	1	
	Silver	65.6	1	

VIII. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

IX. Furnace Atomic Absorption QC

All reported MSAs were reviewed and found acceptable.

Raw data were not reviewed for this SDG.

X. ICP Serial Dilution

The frequency of analysis was met.

The criteria for analysis were met.

XI. Sample Result Verification

Raw data were not reviewed for this SDG.

X11. Overall Assessment of Data

Data flags have been summarized at the end of this report.

XIII. Field Duplicates

No field duplicates were identified in this SDG.

XIV. Field Blanks

Sample 097R1 2861 was identified as a rinsate. No metal contaminants were found in this blank.

Salton Sea Test Base, CTO 097
 Metals - Data Qualification Summary - SDG K9605021

SDG	Sample	Analyte	Flag	A or P	Reas
K9605021	097G21161	Selenium		p	Calibration (r)
	097R12861				
	097G21261				
	097G21661				
	097G21561				
K9605021	097G21 161	Molybdenum	None	P	Calibration
	097R12861				
	097G21261				
	097G21661				
	097G21561				
K9605021	097G21161	Barium	None	p	ICP linear range analysis
	097R12861	Beryllium	None		
	097G21261	Cadmium	None		
	097G21661	Chromium	None		
	097G21561	Cobalt	None		
	097G21861	Copper	None		
		Nickel	None		
		Silver	None		
		Vanadium	None		
		Zinc	None		
		Molybdenum	None		
K9605021	097G21161	Arsenic	i	A	Matrix spike analysis (%R)
	097R12851	Selenium	i		
	097G21261	Lead	i		
	097G21661	Silver	i		
	097G21561				
	097G21861				

Salton Sea Test Base, CTO 097
 Metals - Laboratory Blank Data Qualification Summary - SDG K9605021

SDG	Sample	Analyte	Modified Final Concentration	A or P
K9605021	097G21161	Vanadium	6.9U ug/L	A
		Zinc	2.4U ug/L	
K9605021	097G21261	Selenium	1.6U ug/L	A
		Vanadium	6.611-1 ug/L	
K9605021	097G21661	Zinc	3.6U ug/L	A

196OB4.BC3

SDG	Sample	Analyte	Modified Final Concentration	A or P
K9605021	097G21561	Selenium	1.8U ug/L	A
		Vanadium	6.0U ug/L	
K9605021	097G21861	Zinc	6.2U ug/L	A
1960134.1303				

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Salton Sea Test Base. CTO 097
Collection Date: August 14, 1996
LDC Report Date: September 26, 1996
Matrix: Water

Parameters: Metals

Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9605056

Sample Identification

097G22561
097R12561
097G23061
097G22761
097G22661
097DO2661
097G23161
097G22561S
097G22561D

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per ~PA Contract Laboratory Program Statement of Work (SOW) for Inorganic Analysis, Multi-media, Multiconcentration, D.N. ILM04.0 for Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc, and per EPA Method 200.8 for Antimony. Data validation review was based on EPA Contract Laboratory Program Statement of Work (SOW), ILM03.0 and EPA Method 200.8.

This review follows USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) and incorporates updates per EPA SOW (D.N. ILM03.0); the following subsections correlate to the guidelines.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from specified protocols or is of technical advisory nature.

Blanks are summarized in Section 111.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or element was analyzed for but not detected at or above the stated limit.
- i Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or element was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- p Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

1. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

11. Calibration

An initial calibration was performed.

A curve fit, based on the initial calibration, was established for quantitation. The correlation coefficient (r) was greater than or equal to 0.995 with the following exceptions:

Date	Analyte	r-	Samples Associate	Flag	Aar P-
9/10/96	Selenium	0.992	All samples in SDG	i	p
		-1	1		
				K9605056	

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

CRDL standards for ICP and AA were analyzed and reported as required with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A, P
All samples in SDG K9605056	Molybdenum	CRDL standard was not analyzed.	All CRDL standards for ICP and AA must be analyzed and reported.	None	7, P
					-1

Instrument detection limits, interelement corrections and linear range analysis were performed at the required frequency with the following exceptions:

Analyte	Calibration	Date of Last Report	Report Frequency Requirement	Date of Analysis	Associated Samples	Flag	AorP
Barium Beryllium Cadmium Chromium Cobalt Copper Nickel Silver Vanadium Zinc Molybdenum	ICP linear range analysis.	4/19/96	Quarterly	9/6/96	All samples in SDG K9605056	None None None None None None None None None None	p
					None	None	

The time elapsed since the last quarterly report was not significant, thus the data are not flagged. However, this is still considered a protocol violation,

111. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each element. No contaminant concentrations were found above the IDL in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
ICB	Barium	1.0 ug/L	All samples in SDG K9605056
	Beryllium	0.4 ug/L	
	Zinc	1.8 ug/L	
	Molybdenum	7.9 ug/L	
CCB1	Beryllium	0.4 ug/L	All samples in SDG K9605056
	Chromium	3.5 ug/L	
	Vanadium	1.9 ug/L	
	Molybdenum	2.8 ug/L	
CCB2	Beryllium	0.4 ug/L	All samples in SOG K9605056
CCB3	Beryllium	0.4 ug/L	All samples in SDG K9605056
PB (prep blank)	Beryllium	0.430 ug/L,	All samples in SDG K9605056
	Zinc	1.800 ug/L	
CCB1	Beryllium	0.4 ug/L	All samples in SDG K9605056
ICB	Antimony	0.01 ug/L	ples in SOG "605056

No contaminant concentrations were found above the CRDL in the initial, continuing and preparation blanks.

Sample concentrations were compared to concentrations detected in the ICB/CCB/PBs. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
097G22561	Beryllium	0.40 ug/L	0AOU ug/L
	Vanadium	5.2 ug/L	5.2U ug/L
	Molybdenum	17.5 ug/L	17.6U ug/L
0971112561	Beryllium	0.42 ug/L	0.42U ug/L
	Vanadium	1.6 ug/L	1.6U ug/L
	Zinc	1.8 ug/L	1.8U ug/L
097G23061	Beryllium	0.42 ug/L	0.42U ug/L
	Vanadium	2.2 ug/L	2.21.1 ug/L
	Zinc	2.2 ug/L	2.21.1 ug/L
097G22761	Molybdenum	25.8 ug/L	25.8U ug/L
	Beryllium	0.41 ug/L	0.41 U ug/L
	Vanadium	3.2 ug/L	3.21.1 ug/L
097G22661	Zinc	9.0 ug/L	9.0U ug/L
	Molybdenum	28.4 ug/L	28AU ug/L
	Beryllium	0.40 ug/L	0AOU ug/L
097DO2661	Vanadium	5.4 ug/L	5AU ug/L
	Molybdenum	20.4 ug/L	20.41.1 ug/L
	Beryllium	0.40 ug/L	0AOU ug/L
23161	Vanadium	5.1 ug/L	5.1 U ug/L
	Molybdenum	17.6 ug/L	17.6U ug/L
	Beryllium	0.84 ug/L	0.84U ug/L
	Vanadium	4.7 ug/L	4JU ug/L
	Zinc	7.2 ug/L	7.21.1 ug/L

IV. ICP Interference Check Sample (OCS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

VI. Duplicate Sample Analysis

Duplicate sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Matrix Spike Analysis

Matrix spike analyses were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits of 75-125% with the following exceptions:

Sample (Associated Samples)	Analyte	%R	Flag	A or P A
097G22561 S (All samples in SDG K9605056)	Lead	71.5		
	Selenium	56.0		
	Silver	66.3		

VIII. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

IX. Furnace Atomic Absorption QC

All reported MSAs were reviewed and found acceptable.

Raw data were not reviewed for this SDG.

X. ICP Serial Dilution

The frequency of analysis was met.

The criteria for analysis were met.

XI. Sample Result Verification

Raw data were not reviewed for this SDG.

XII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

XIII. Field Duplicates

Samples 097G22661 and 097DO2661 were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Ana"	Concentration (ug/L)	RPD
097G22661	30.5	
097002661	31.2	2

196004.BC3 - 6

Analyte	Concentration (ug/L)		RPD
	0971322661	097DO2661	
Beryllium	0.40	0.40	0
Cobalt	4.3	5.3	21
Copper	ND	4.6	Not calculable
Vanadium	5.4	5.1	6
Zinc	15.0	13.8	8
	20.4		15
Molybdenum		17.6	

XIV. Field Blanks

Sample 097R 12561 was identified as a rinsate. No metal contaminants were found in this blank with the following exceptions:

Rinsate ID	Analyte	Concentration (ug/L)
097R12561	Beryllium	0.42
	Vanadium	1.5
	Zinc	1.8
196OC4.BC3	7	

Salton Sea Test Base, CTO 097
 Metals - Data Qualification Summary - SDG K9605056

SDG	sample	Analyte	Flag	A or P	Reason
K9605056	097G22561	Selenium		P	Calibration (r)
	097A12561				
	097G23061				
	097G22761				
	097G22661				
	097DO2661				
K9605056	097G23161	Molybdenum	None	P	Calibration
	097G22561				
	0971112561				
	097G23061				
	097G22761				
	097G22661				
K9605056	097DO2661	Barium Beryllium Cadmium Chromium Cobalt Copper Nickel Silver Vanadium Zinc Molybdenum	None None None None None None None None None None None	p	ICP linear range analysis
	097G23161				
	097G22561				
	097R12561				
	097G23061				
	097G22761				
	097G22661				
	097DO2661				
	097G23161				
	K9605056				
097R12561					
097G23061					
097G22761					
097G22661					
097DO2661					
097G23161					

Salton Sea Test Base, CTO 097
 Metals - Laboratory Blank Data Qualification Summary - SDG K9605056

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SDG	Sample	Analyte	Modified Final Concentration	A or P
K,9605056	097G22561	Beryllium Vanadium	0.42U ug/L 5.21.1 ug/L	A
605056	097R12561	Molybdenum Beryllium Vanadium Zinc	17.61.1 ug/L 0.42U ug/L 1.6U ug/L 1.8U ug/L	A

SDG	sample	T	Analyto	TCConcentration	AorP
K9605056	097G23061		Beryllium	0.42U ug/L	A
			Vanadium	2.2U ug/L	
			Zinc	2.2U ug/L	
K9605056	097G22761		Molybdenum	25.8U ug/L	
			Beryllium	0.41 U ug/L	A
			Vanadium	3.2U ug/L	
			Zinc	9.0U ug/L	
K9605056	097G22661		Molybdenum	28AU ug/L	
			Beryllium	0AOU ug/L	A
			Vanadium	5AU ug/L	
K9605056	097DO2661		Molybdenum	20AU ug/L	
			Beryllium	0AOU ug/L	A
			Vanadium	5.1 U ug/L	
	7G23161		Molybdenum	17.6U ug/L	
			Beryllium	0.841.1 ug/L	A
			Vanadium	4.7U ug/L	
			Zinc	7.2U ug/L	
196OC4.BC3					

LDC Report# 196OD4

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Salton Sea Test Base, CTO 097
Collection Date: August 16, 1996
LDC Report Date: September 26, 1996
Matrix: Water
Parameters: Metals
Laboratory: Columbia Analytical Services, Inc,

Sample Delivery Group (SDG): K9605099

Sample Identification

097G20161 097G21461 097R12661 097G20261 097G21361 097G20461 097DO2761 097G20361 097G20861
097G20961 097R12761 097G22961 097G20861 S 097G20861 D

Introduction

This data review covers 14 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Contract Laboratory Program Statement of Work (SOW) for Inorganic Analysis, Multi-media, Multiconcentration, D.N. ILM04.0 for Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc, and per EPA Method 200.8 for Antimony. Data validation review was based on EPA Contract Laboratory Program Statement of Work (SOW), ILM03.0 and EPA Method 200.8.

This review follows USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) and incorporates updates per EPA SOW (D.N. ILM03.0); the following subsections correlate to the guidelines.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from specified protocols or is of technical advisory nature.

Blanks are summarized in Section 111.

Field duplicates are summarized in Section X111.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

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i Indicates an estimated value,

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or element was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

1. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

11. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

CRDL standards for ICP and AA were analyzed and reported as required with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	ArP
All samples in SDG K9605099	Molybdenum	CRDL standard was not analyzed.	All CROL standards for ICP and AA must be analyzed and reported.	None	p

Instrument detection limits, interelement corrections and linear range analysis were performed at the required frequency with the following exceptions:

Analyte	Calibration	Date of Last Report	Report Frequency Requirement	Date of Analysis	Associated Samples	Flag	p
Barium	ICP linear range analysis.	4/19/96	Quarterly	9/11/96	All samples in SDG K9605099	None	p
Beryllium						None	
Cadmium						None	
Chromium						None	
Cobalt						None	
Copper						None	
Nickel						None	
Silver						None	
Vanadium						None	
Zinc						None	
Molybdenum						None	

The time elapsed since the last quarterly report was not significant, thus the data are not flagged. However, this is still considered a protocol violation.

111. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was