

## APPENDIX E

### DATA VALIDATION REPORTS

# Data Validation Report

First Quarter 1996

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**Data Validation Package**  
**First Quarter 1996**

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

WeR ED	Sample ED	Sample Delivery Group	Sample ID	Sample Delivery Group	
<b>Groundwaters</b>			<b>Groundwaters (continued)</b>		
OINMI	097GO51	K9600753	BMW3	097GO75	K9601003
01MW2	097GO52	K9601039	BMW4	097GO76	K9600837
OIMW3	097GO53	K9600765	BMW5	097GO77	K9600837
OIMW4	097GO54	K9601039	BMW6	097GO78	K9600872
02CMWI	097GO83	K9600964	BMW7	097GO79	K9600872
02CMW2	097GO84	K9600964	BMW8	097GO80	K9600872
02CMW3	097GO85	K9600964	NRMWI	097GO81	K9600872
02CMW4	097GO86	K9600964	RPMWI	097GO82	K9601039
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02EMW2A	097GO91	K9600923	02QMW3	097DO16	K9601003
02EMW2B	097GO92	K9600923	IOLAMW2	097DO17	K9601039
02EMW3	097GO93	K9600923	10LAMW2	097DO17	K9601568
102EMW4	097GO94	K9600923	16MW2	097DO10	K9600786
02FMW1A	097GO95	K9600927	BMW7	097DO 11	K9600872
02FMW1B	097GO96	K9600927	<b>Rinsate Blanks</b>		
02GMWI	097GO97	K9601003	OIMW4	097RO54	K9601039
02J1MW1A	097GO98	K9600964	02DMW2	097RO89	K9600927
02J1MW1B	097GO99	K9600927	02EMW2A	097RO91	K9600923
02J7MW I	097GIO0	K9600927	02JIMW1A	097RO98	K9600964
02NMWI	097GIO1	K9600898	02J7MWI	097RI00	K9600927
02NMW2	097GIO2	K9600898	02QMW2	097RI04	K9601003
02NMW3	097GIO3	K9600898	08MW1	097RO55	K9600898
02QMW1	097G104	K9601003	15MW2	097RO60	K9600753
02QMW2	097GIO5	K9601003	16MW1	097RO61	K9600786
02QMW3	097GIO6	K9601003	17MWI	097RO62	K9600786
08MWI	097GO55	K9600898	25MWI	097RO63	K9600837
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IOLAMW3	097GIO9	K9601568	15MW1	097BOO7	K9600765
13MWI	097GO56	K9600765	RPMWI	097BOO8	K9601039
14MWI	097GO57	K9600786	RPMWI	097BOO9	K9601039
14MW2	097GO58	K9600786	RPMWI	097BOO9	K9601568
15MWI	097GO59	K9600765	Trip Blanks		
15MW2	097GO60	K9600753	01MWI	097TO21	K9600753
16MWI	097GO61	K9600786	OIMW3	097TO22	K9600765
16MW2	097GO62	K9600786	OIMW4	097TO29	K9601039
117MWI	097GO63	K9600786	02DMWI	097TO32	K9600927
17MW2	097GO64	K9600786	02EMWI	097TO33	K9600923
17MW3	097GO65	K9600786	02GN4WI	097TO35	K9601003
18MWI	097GO66	K9600786	0211MW1A	097TO34	K9600964
18MW2	097GO67	K9600898	08MWI	097TO27	K9600898
18MW3	097GO68	K9600786	08MWI	097TO31	K9600898
19Mwi	097GO69	K9600786	16MWI	097TO23	K9600786
23AMWI	097GO70	K9600786	17MWI	097TO24	K9600786
25MWI	097GO71	K9600837	BMW3	097TO28	K9601003
25MW2	097GO72	K9600837	BMW5	097TO25	K9600837
25MW3	097GO73	K9600837	BMW6	097TO26	K9600872
BMW2	097GO74	K9600753			

LABORATORY DATA CONSULTANTS, INC.

T750 El Camino Real, Suite 2C, Carlsbad, CA 92009 Phone: 619.634-0437 Fax: 619 634-0439

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

April 15,1996

Project Name            Salton Sea Test Base  
Project #                CTO 097

On April 2, 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 # 1804:**

<b><u>SDG #</u></b>	<b><u>Fraction</u></b>
K9600753, K9600765, K9600786, K9600837, K9600872, K9600898, K9600923, K9600927, K9600964, K9601003, K9601039	Volatiles, Semivolatiles, Chlorinated Pesticides & PCBs, Metals, TPH as Gasoline, TPH as Diesel, Aromatic Volatile Organics, Total Recoverable Petroleum Hydrocarbons, Wet Chemistry

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

NEESA document 20.2-047B, Sampling and Chemical Analysis Quality Assurance Requirements for the Navy Installation Restoration Program, June 1988.

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, November 1986; Revision 1, July 1992; Revision 2, November 1992; and update 1, August 1993

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) Initial and continuing calibration factors exceeded acceptance criteria in SDGs K9600765, K9600786, K9600837, K9600872, K9600898, K9601003 and K9601039. Although this finding was identified as a technical deficiency, the laboratory performed the analysis within method protocol.
- b) Initial and continuing calibration factors exceeded acceptance criteria for bromoform in SIDGs K9600753, K9600765, K9600786, K9600837, K9600872, K9600898, K9601003 and K9601039.
- c) Methylene chloride, toluene and acetone were detected in the method blanks. Although this finding was identified as a technical deficiency, the laboratory performed the analysis within method protocol.
- d) Laboratory control sample analyses were not performed for all batches in SIDGs K9600765, K9600786, K9600837, K9600872 and K9600898.

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

- a) Continuing calibration factors exceeded acceptance criteria in SIDGs K9600753, K9600765, K9600837, K9600872, K9600898, K9601003 and K9601039. Although this finding was identified as a technical deficiency, the laboratory performed the analysis within method protocol.
- b) Bis(2-ethylhexyl)phthalate and several TIC contaminants were detected in the method blanks. Although this finding was identified as a technical deficiency, the laboratory performed the analysis within method protocol.
- c) Matrix spike/matrix spike duplicate RPDs exceeded acceptance criteria in SDGs K9600753, K9600765 and K9600786. Although this finding was identified as a technical deficiency, the laboratory performed the analysis within method protocol.

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

- a) Surrogate percent recoveries exceeded acceptance criteria in several samples in SDGs K9600786, K9600837, K9600898 and K9601039. Although this finding was identified as a technical deficiency, the laboratory performed the analysis within method protocol.
- b) The percent difference between columns exceeded acceptance criteria for heptachlor in sample 097GO7485 in SDG K9600753. Although this finding was identified as a technical deficiency, the laboratory performed the analysis within method protocol.

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- c) Matrix spike/matrix spike duplicate RPDs exceeded acceptance criteria in SDGs K9600837, K9600872 and K9600898. Although this finding was identified as a technical deficiency, the laboratory performed the analysis within method protocol.

For trace metals analyses, the primary findings consisted of:

- a) Matrix spike percent recovery limits for several analytes exceeded acceptance criteria in SDGs K9600753, K9600765, K9600837 and K9601003. The associated non-detect results were qualified as unusable for selenium in SDGs K9600765, K9600837 and selenium and barium in SDG K9601003. Although this finding was identified as a technical deficiency, the laboratory performed the analysis within method protocol.
- b) Several metal contaminants were detected in the blanks. Although this finding was identified as a technical deficiency, the laboratory performed the analysis within method protocol.
- c) The furnace atomic absorption percent recoveries exceeded acceptance criteria in SDG K9600753. Although this finding was identified as a technical deficiency, the laboratory performed the analysis within method protocol.
- d) The ICIP interference check sample analysis exceeded acceptance criteria for molybdenum in SDGs K9600786, K9600837, K9600872, K9601003 and K9601039. Although this finding was identified as a technical deficiency, the laboratory performed the analysis within method protocol.
- e) The ICIP serial dilution percent difference exceeded acceptance criteria for several analytes in SDGs K9600786 and K9601003. Although this finding was identified as a technical deficiency, the laboratory performed the analysis within method protocol.

For lead (only) analyses, no significant findings were observed.

For wet chemistry analyses, the primary finding consisted of:

- a) Analysis holding times for total dissolved solids were exceeded for sample 097BOO665 in SDG K9600753, sample 097RO6165 in SDG K9600786 and sample 097RO5465 in SDG K9601039.

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

- a) Analysis holding times were exceeded for sample 097GO9143 and 097GO9341 in SDG K9600923 and sample 097GO9841 in SDG K9600964.



For TPH as diesel analyses, no significant findings were observed.

For TRPH analyses, no significant findings were observed.

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

- a) Analysis holding times were exceeded for sample 097GO9143 and 097GO9341 in SDG K9600923 and sample 097GO9841 in SDG K9600964.

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 1 s and included with each validation report.

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***ML---***

Richard M. Amano  
President/Principal Chemist

Salton Sea Test Base, CTO 097  
Data Validation Reports  
LDC# 1804

Volatiles

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Revision 1

LDC Report# 1804A1

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

Project/Site Name: Salton Sea Test Base, CTO 097  
Collection Date: February 6, 1996  
LDC Report Date: April 18, 1996  
Matrix: Water  
Parameters: Volatiles  
Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9600753\*\*

Sample Identification

097BOO631  
097TO2132  
097GO5133  
097GO7431  
097RO6032  
097GO6033  
097GO7431 IVIS  
097GO7431 MSD

\*\* Indicates SDG underwent NEESA Level D review.  
An asterisk (\*) will be placed in the margin to the left of any revised dem in the te)d.

Revision 1

## 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 8260 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 EPA SW 846 Method 8260. The modifications were based on EPA SW 846 Method 8260.

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.

Revision 1

## 1. Technical Holding Times

All technical holding time requirements were met.

## 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% .

\*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	Date Analysis	TIC (RT In minutes) Compound	Concentration	Associated Samples
	2115/96	Methylene chloride	0.5 ug/L	All samples in SDG K9600753

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:

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3 -Indicates change as the result of report review. SDG K9600753

Sample	Compound TIC (RT In minutes)	Reported Concentration	Modified Final Concentration
097BOO631	Methylene chloride	0.2 ug/L	1 U ug/L
097T02132	Methylene chloride	0.4 ug/L	1 U ug/L
097GO5133	Methylene chloride	0.1 ug/L	1 U ug/L
097GO7431	Methylene chloride	0.1 Ug/L	1 U ug/L
097RO6032	Methylene chloride	0.2 ug/L	1 U ug/L

## VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the Method. All surrogate recoveries were within validation criteria.

## 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. Percent recoveries 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

All target compound identifications were within validation criteria.

## XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

Revision 1

### X111. 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

Sample 097BOO631 was identified as a source blank. No volatile contaminants were found in this blank with the following exceptions:

Source Blank ID	COMPOUF4	Concentration (ug/
097BOO631	Acetone	10
	Methylene chloride	0.2
	Toluene	0.08

Sample 097TO2132 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)
097TO2132	Methylene chloride	0.4
	Toluene	0.05

Sample 097RO6032 was identified as a rinsate. No volatile contaminants were found in this blank with the following exceptions:

Rinsate ID	Compound	Concentration (ug/L)
097RO6032	Acetone	20
	Methylene chloride	0.2
	Toluene	0.06

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5 Indicates change as the result of report review. SDG K9600753

Revision 1

Salton Sea Test Base, CTO 097

Volatiles - Data Qualification Summary - SDG K9600753\*\*

\*No Sample Data Qualified in this SDG

Salton Sea Test Base, CTO 097

Volatiles - Laboratory Blank Data Qualification Summary - SDG K9600753\*\*

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
K9600753	097BOO631	Methylene chloride	1 U ug/L	A
K9600753	097T02132	Methylene chloride	1 U ug/L	A
K9600753	097GO5133	Methylene chloride	1 U ug/L	A
K9600753	097GO7431	Methylene chloride	1 U ug/L	A
K9600753	097RO6032	Methylene chloride	1 U ug/L	A

1804A1.4R1

6 -indicates change as the result of report review. SDG K9600753



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## Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Salton Sea Test Base, CTO 097  
Collection Date: February 7, 1996  
LDC Report Date: April 18, 1996  
Matrix: Water  
Parameters: Volatiles

Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9600765

### Sample Identification

097TO2932  
097GO5332  
097GO5632  
097GO5933  
097BOO732  
097BOO732MS  
097BOO732MSD

An asterisk (\*) will be placed in the margin to the left of any revised item in the text.

Revision 1

## Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260 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 EPA SW 846 Method 8260. The modifications were based on EPA SW 846 Method 8260.

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 XA.

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.

i

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.

Revision 1

## 1. Technical Holding Times

All technical holding time requirements were met.

## 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	FA, r P]
2/13/96	Acetone	38.5	097T02232 097GO5332 097GOSM2 VBLX01		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 'nC (RT In minutes)	Concentration	Associated Samples
VBLK01	W1 3/96	Methylene chloride	0.6 ug/L	097TO2232
		1,2-Dichloroethene (total)	0.5 ug/L	097GO5332
		Unknown (30.40)	1 ug/L	097GO5632

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**3** -indicates changes as the result of report review. SDG K9600765

Method Blank ID	Analysis Data	Compound TIC (RT In minutes)	Concentration	Associated Samples
VBLK02	2/14/96	Methylene chloride	0.6 ug/L	097GO5933
		1,2-Dichloroethene (total)	0.4 ug/L	097BOO732
		Toluene	0.04 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 (FIT In minutes)	Reported Concentration	Modified Final Concentration
097T02232	Methylene chloride	0.4 ug/L	1 U ug/L
097BOO732	Methyiene chloride	0.1 ug/L	1 U ug/L
	Toluene	0.1 ug/L	0.5U ug/L

## VII. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries were within validation criteria..

## 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	Criti-ria	Flag	A or P
097T02232	All TCL compounds	No LCS analyzed.	LCS analysis required.	None	p
097GO5332					
097GO5632					
VBLX01					

Percent recoveries were within QC limits.

Revision 1

## 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 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

Sample 097BOO732 was identified as a source blank. No volatile contaminants were found in this blank with the following exceptions:

Source Blank ID	Compound	Concentration (ug/
097BOO732	Acetone	7
	Methylene chloride	0.1
	Chloroform	5.5
	Bromodichloromethane	7.4
	Toluene	0.1
	Dibromochloromethane	7.7
	Xylene (total)	0.3
	Bromoform	1.9

1804B1.3111

**5** -Indicates change as the result of report review. SDG K9600765

Sample 097TO2232 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)
097T02232		Methylene chloride Toluene	0.4 0.05
1804131.3111		6 -indicates change as the result of report review. SDG K9600765	

Salton Sea Test Base, CTO 097  
Volatiles - Data Qualification Summary - SDG K9600765

SIDG	Sample	Compound	Flag	AorP	Reason
K9600765	097TO2232 097GO5332 097GO5632	Acetone		A	Continuing calibration (%D)
K9600765	097TO2232 097GO5332 097GO5632	All TCL compounds	None	p	Laboratory control samples

Salton Sea Test Base, CTO 097  
Volatiles - Laboratory Blank Data Qualification Summary - SDG K9600765

SDG	Sample	Compound TIC (RT In minutes)	Modified Final Concentration	A or P
K9600765	097TO2232	Methylene chloride	1 U ug/L	A
K9600765	097BO0732	Methylene chloride	1 U ug/L	A
		Toluene	0.5U ug/L	

1804131.3R1

7 \*Indicates change as the result of report review. SI)G K9500765

Revision 1

LDC Report# 1804C1

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

Project/Site Name: Salton Sea Test Base, CTO 097  
Collection Date: February 9, 1996  
LDC Report Date: April 18, 1996  
Matrix: Water  
Parameters: Volatiles  
Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9600786

Sample Identification

097RO6233 097TO2432 097GO6333 097GO6933 097GO6633 097GO6532 097GO6833 097RO6133 097TO2331  
097GO6131 097GO6231 097DO1031 097GO5732 097GO5831 097GO7032 097GO6433 097GO6933MS  
097GO6933MSD

An asterisk (\*) will be placed in the margin to the left of any revised item in the text.



Revision 1

## Introduction

This data review covers 18 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses, were per EPA SW 846 Method 8260 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 EPA SW 846 Method 8260. The modifications were based on EPA SW 846 Method 8260.

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.

Revision 1

## 1. Technical Holding Times

I A

All technical holding time requirements were met.

### 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% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	
2/16/196	1,2-Dichloroethene (total)	26.6	097ROS233 097GO6633 097GO6833 097GO8933MS 097GM33MSD VBLX02		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:

Revision 1

Method Blank ID	Analysis Date	Compound TIC (RT In minutes)	on	Associated Samples
VBLK01	2/16/96	Methylene chloride	0.5 ug/L	097T02432 097GO6333 097GO6933 097GO6532 097RO6133 097T02331 097GO61 31 097GO6231 097DOI 031 097GO5732 097GO5831 097GO7032 097GO6433
VBLK02	2/17/96	Methylene chloride	0.6 ug/L	097RO6233 097GO6W-3 097GO61333

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
097T02432	Methylene chloride	0.5 ug/L	1 U ug/L
097GO6333	Methylene chloride	0.2 ug/L	1 U ug/L
097GO6933	Methylene chloride	0.1 ug/L	1 U ug/L
097GO6532	Methylene chloride	0.1 ug/L	1 U ug/L
097RO6133	Methylene chloride	0.2 ug/L	1 U ug/L
097T02331	Methylene chloride	0.4 ug/L	1 U ug/L
097GO6231	Methylene chloride	0.1 ug/L	1 U ug/L
097DOI 031	Methylene chloride	0.1 ug/L	1 U ug/L
097GO5732	Methylene chloride	0.1 ug/L	1 U ug/L
097GO5831	Methylene chloride	0.1 ug/L	1 U ug/L

1804CI.3R1

4\*1 indicates change as the result of report review. SDG K9600786

## Revision 1

Sample	Compound TIC (FIT In minutes)	Reported Concentration	Modified Final Concentration
097GO7032	Methylene chloride	0.1 ug/L	1 U ug/L
097GO6433	Methylene chloride	0.1 ug/L	1 U. ug/L
097ROB233	Methylene chloride	0.2 ug/L	1 U ug/L
097GO6833	Methylene chloride	0.1 ug/L	1 U ug/L

### V11. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries were within validation criteria.

#### V11111. 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.

#### V111111. Laboratory Control Samples (LCS)

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

Sample	Compound	Finding	Criteria	Flag	AorP
097T02432	All TCL compounds	No LCS analyzed.	LCS analysis required.	None	p
097GO6333					
097GO6933					
097GO6532					
097RO6133					
097T02331					
097GO6131					
097GO6231					
097DO1 031					
097GO5732					
097GO5831					
097GO7032					
097GO6433					
VBLK01					

Percent recoveries were within QC limits.

### IX Regional Quality Assurance and Quality Control

Not applicable.

Revision 1

## 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 of Data

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

## XVI. Field Duplicates

Samples 097GO6231 and 097DO1 031 were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration ( <u>ug/L</u> )		
	097GO6231	097DO1031	RPD
Acetone	4	6	40
Methylene chloride	0.1	0.1	0

## XVII. Field Blanks

Samples 097TO2432 and 097TO2331 were identified as, trip blanks. No volatile contaminants were found in these blanks with the following exceptions:

## Revision 1

Trip Blank ID	Compound	Concentration (ug/L)
097T02331	Acetone	4
	Methylene chloride	0.4
	Toluene	0.6
097T02432	Acetone	3
	Methylene chloride	0.5
	Toluene	0.06

Samples 097RO6233 and 097RO6133 were identified as rinsates. No volatile contaminants were found in these blanks with the following exceptions:

Rinsate ID	Compound	Concentration (ug/L)
097806233	Acetone	7
	Methylene chloride	0.2
	Toluene	0.05
097RO6133	Acetone	10
	Methylene chloride	0.2
	Toluene	0.08

1804C1.3R1

7 \*Indicates change as the result of report review. SDG K9600786

Revision 1

Salton Sea Test Base, CTO 097

A. Volatiles - Data Qualification Summary - SDG K9600786

SDG	Sample	Compound	Flag	A or P	Reason
K9600786	097RO6233	1,2-Dichloroethene (total)		A	Continuing calibration (%D)
K9600786	097GO6633				
K9600786	097GO6833				
K9600786	097T02432	All TCL compounds	None	P	Laboratory control samples
	097GO6333				
	097GO6933				
	097GO6532				
	097RO6133				
	097TO2331				
	097GO6131				
	097GO8231				
	097001031				
	097GO5732				
	097GO5831				
	097GO7032				
	097GO6433				

Salton Sea Test Base, CTO 097

Volatiles - Laboratory Blank Data Qualification Summary - SDG K9600786

SDG	Sample	Compound	TIC (FIT in minutes)	Concentration	Modified Final
K9600786	097T02432	Methylene chloride		1 U ug/L	A
K9600786	097GO6333	Methylene chloride		1 U ug/L	A
K9600786	097GO6933	Methylene chloride		1 U ug/L	A
K9600786	097GO6532	Methylene chloride		1 U ug/L	A
K9600786	097RO6133	Methylene chloride		1 U ug/L	A
K9600786	097TO2331	Methylene chloride		1 U ug/L	A
K9600786	097GO6231	Methylene chloride		1 U ug/L	A
K9600786	097DO1031	Methylene chloride		1 U ug/L	A
K9600786	097GO5732	Methylene chloride		1 U ug/L	A
K9600786	097GO5831	Methylene chloride		1 U ug/L	A

1804C1.3111

8 \*Indicates change as the result of report review. SDG K9600786

# Revision 1

SDG	Sample	Compound TIC (RT In minutes)	Modified Final Concentration	A or P
K9600786	097GO7032	Methylene chloride	1 U ug/L	A
K9600786	097GO6433	Methylene chloride	1 U ug/L	A
K9600786	097RO6233	Methylene chloride	1 U ug/L	A
K9600786	097GO6833	Methylene chloride	1 U ug/L	A

-1

1804CI.3RI

9 -indicates change as the result of report review. SDG K9600786



Revision 1

LDC Report# 1804D1

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

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

Collection Date: February 12, 1996

LDC Report Date: April 18, 1996

Matrix: Water

Parameters: Volatiles

Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9600837

Sample Identification

097TO2531

097GO7734

097RO6331

097GO7132

097GO7632

097GO7331

097GO7231

097GO7331 IVIS

097GO7331 IVISD

An asterisk (\*) will be placed in the margin to the left of any revised Rem in the text

## Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260 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 EPA SW 846 Method 8260. The modifications were based on EPA SW 846 Method 8260.

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.

Revision 1

## 1. Technical Holding Times

All technical holding time requirements were met.

## 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 with the following exceptions:

Date	Compound	%RSD	Associated Samples	Flag	A or P
	Acetone	35.6	All samples in SDG		A

\*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 RRIF 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 (FIT In minutes)	Concentration	Associated Samples
VBLK01	2/22/96	Methylene chloride	0.8 ug/L	097T02531 097GO7734 097GO7331

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**3** \*Indicates change as the result of report review. SDG K9600837

Blank ID	Analysis Date	Compound TIC (RT In minutes)	Concentration	Associated Samples
VBLK02	2/25/96	Methylene chloride	0.5 ug/L	097RO6331
		1,1-Dichloroethane	0.08 ug/L	097GO7132
		Toluene	0.05 ug/L	097GO7632 097GO7231

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (> 10X 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
097T02531	Methylene chloride	0.6 ug/L	1 U ug/L
097GO7734	Methylene chloride	0.2 ug/L	1 U ug/L
097GO7331	Methylene chloride	0.2 ug/L	1 U ug/L
097ROB331	Methylene chloride	0.1 ug/L	1 U ug/L
097GO7132	Toluene	0.07 ug/L	0.5U ug/L
097GO7231	Toluene	0.1 ug/L	0.5U ug/L
IL-	-	-	-

#### V1. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries were within validation criteria.

#### 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)

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

Sample	Compound	Finding	Criteria	Flag	
097RO6331 097GO7132 097GO7632 097GO7231 VBLK02	All TCL compounds	No LCS analyzed.	LCS analysis required.	None	P

Percent recoveries 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 of Data**

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

### **XVI. Field Duplicates**

No field duplicates were identified in this SDG.

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### **XVII. Field Blanks**

Sample 097TO2531 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

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5 \*Indicates change as the result of report review. SDG K9600837

## Revision 1

Trip Blank ID	Compound	Concentration (ug/L)
097T02531	Methylene chloride	0.6
	Toluene	0.07
	Xylene (total)	0.09
	Styrene	0.09

Sample 097RO6331 was identified as a rinsate. No volatile contaminants were found in this blank with the following exceptions:

Rinsate ID	Compound	-T-Concentration (ug/L)
097ROS331	Acetone	5
	Methylene chloride	0.1
	Benzene	0.08
	Trichloroethene	0.2

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**6** -indicates change as the result of report review. SDG K9600837

Salton Sea Test Base, CTO 097  
Volatiles - Data Qualification Summary - SDG K9600837

SDG	Sample	Compound	Flag	AorP	Reason
K9600837	097T02531 097GO7734 097RO6331 097GO7132 097GO7632 097GO7331 097GO7231	Acetone	j	A	Initial calibration (%RSD)
K9600837	097RO6331 097GO7132 097GO7632 097GO7231	All TCL compounds	None	p	Laboratory control samples

Salton Sea Test Base, CTO 097  
Volatiles - Laboratory Blank Data Qualification Summary - SDG K9600837

SIDG	Sample	Compound TIC (RT In minutes)	Modified Final Concentration	A or P
K9600837	097T02531	Methylene chloride	1 U ug/L	A
K9600837	097GO7734	Methylene chloride	1 U ug/L	A
K9600a37	097GO7331	Methylene chloride	1 U ug/L	A
K9600837	097RO6331	Methylene chloride	1 U ug/L	A
K9600837	097GO7132	Toluene	0.5U ug/L	A
K9600837	097GO7231	Toluene	0.5U ug/L	A

180401.3RI

7 \*Indicates change as the result of report review. SIDG K9600837

Revision 1

LDC Report# 1804E1

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

Project/Site Name: Salton Sea Test Base, CTO 097  
Collection Date: February 13, 1996  
LDC Report Date: April 18, 1996  
Matrix: Water

Parameters: Volatiles

Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9600872

Sample Identification

097TO2631  
097RO7832  
097GO7832  
097GO8032  
097GO7933  
097DO1133  
097GO8132  
097GO8132DL  
097GO7832MS  
097GO7832MSD

An asterisk (\*) will be placed in the margin to the left of any revised item in the text.



## Revision 1

### Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260 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 EPA SW 846 Method 8260. The modifications were based on EPA SW 846 Method 8260.

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.

Revision 1

## 1. Technical Holding Times

All technical holding time requirements were met.

## 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 with the following exceptions:

Date	Compound	%RSD	Associated Samples	Flag	A or P
W20/96	Acetone	35.6	097T02631 097RO7832 097GO7832 097GO8032 097GO7933 097DO1133 097GO8132 097GOSI 32DL 097GO7832MS 097GO7832MSO VBLX01		A

\*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:

nk ID	Analysis Date	Compound 71C (RT In minutes)	Concentration	Associated Sample,
VBLK01	Z125/96	Methylene chloride	0.5 ug/L	097RO7832
		Toluene	0.05 ug/L	097GO7832 097GO8032 097GO7933 097001133 097GO8132
VBLK02	Z126/96	Methylene chloride	0.4 ug/L	097TO2631
		Acetone	3 ug/L	097GO8132DL

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (> 10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

## EAs-riatd

Sample	Compound 71C (RT In minutes)	Reported Concentration	Modified Final Concentration
097RO7832	Methylene chloride	0.2 ug/L	1 U ug/L
	Toluene	0.05 ug/L	0.5U ug/L
097GO7a32	Toluene	0.04 ug/L	0.5U ug/L
097GO8032	Toluene	0.06 ug/L	0.5U ug/L
097GO7933	Toluene	0.1 ug/L	0.5U ug/L
097DO1133	Toluene	0.2 ug/L	0.5U ug/L
097GO8132	Methylene chloride	0.2 ug/L	1 U ug/L
097TO2631	Methylene chloride	0.4 ug/L	1 U ug/L
	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 were within validation criteria.

## 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	AarP
097RO7832	All TCL compounds	No LCS analyzed.	LCS analysis required.	None	p
097GO7832					
097GO8032					
097GO7933					
097 01133					
097GO8132					
VB1X01					

Percent recoveries 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 of Data**

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

**XVI. Field Duplicates**

Samples 097DO1 133 and 097GO7933 were identified as field duplicates. No volatiles were

detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	097DO1133	097GO7933	
Toluene	0.2	0.1	67

XVIL Field Blanks

Sample 097TO2631 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

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Trip Blank ID	Compound	Concentration (ug/L)
097T02631	Acetone	2
	Methylene chloride	0.4
	Toluene	0.05

Sample 097RO7832 was identified as a rinsate. No volatile contaminants were found in this blank with the following exceptions:

Rinsate ID	Compound	Concentration (ug/L)
097RO7a32	Acetone	6
	Methylene chloride	0.2
	Chloroform	3.6
	Trichloroethene	0.3
	Bromodichloromethane	0.4
	Toluene	0.05

1804E1.3111

6 \*Indicates change as the result of report review. SDG K9600872

Salton Sea Test Base, CTO 097  
Volatiles - Data Qualification Summary - SDG K9600872

SDG	Sample	Compound	Flag	A or P	Reason
K9600872	097T02631 097RO7832 097GO7832 097GO8032 097GO7933 097DO1133 097GOSI 32 097GO8132DL	Acetone	i	A	Initial calibration (%RSD)
K9600872	097RO7832 097GO7832 097GO8032 097GO7933 097001133 097GO8132	All TCL compounds	None	P	Laboratory' control samples

Salton Sea Test Base, CTO 097  
Volatiles - Laboratory Blank Data Qualification Summary - SDG K9600872

SDG	Sample	Compound TIC (RT In minutes)	Modified Final Concentration	A or P
K9600872	097RO7832	Methylene chloride	1 U ug/L	A
		Toluene	0.5U ug/L	
K9600872	097GO7832	Toluene	0.5U ug/L	A
K9600872	097GO8032	Toluene	0.5U ug/L	A
K9600872	097GO7933	Toluene	0.5U ug/L	A
K9600872	097DO1133	Toluene	0.5U ug/L	A
K9600872	097GO8132	Methylene chloride	W ug/L	A
K9600872	097T02631	Methylene chloride	1 U ug/L	A
		Acetone	2OU ug/L	

1804E1.3R1

7\*Indicates change as the result of report review. SDG K9600872

LD

## Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Salton Sea Test Base, CTO b97  
Collection Date: February 14, 1996  
LDC Report Date: April 18, 1996  
Matrix: Water

Parameters: Volatiles

Laboratory: Columbia Analytical Service

Sample Delivery Group (SDG): K9600898

### Sample Identification

097TO2732  
097RO5533  
097GO5532  
097GO6733  
097RO5533MS  
097RO5533MSD

An asterisk (\*) will be placed in the margin to the left of any revised item in the te)d.

Revision 1

## Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260 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 EPA SW 846 Method 8260. The modifications were based on EPA SW 846 Method 8260.

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.



Revision 1

### 1. Technical Holding Times

All technical holding time requirements were met.

### III. 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 with the following exceptions:

Date	Compound	%RSD	T-A,ociated SampleT.-Flag	A
	Acetone	35.6	All samples in SDG	A
		1		K9600898

\*Average relative response factors (RRF) for 6EI 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 Samples
VBLK01	2125/96	Methylene, chloride	0.5 ug/L	097RO5533

||

		Toluene	0.05 ug/L	097GO5532
VBLK02	Z126196	Methylene chloride	0.4 ug/L	097GO6733
		Acetone	3 ug/L	

1804FI.3RI

**3** -indicates change as the result of report review. SDG K9600898

Method Blank ID	Analysis Date	Compound TIC (RT In minutes)	Concentration	Associated Samples
LEK03	2/27/96	Methylene chloride	0.5 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)	Concentration	Modified Final Concentration
097RO5533	Methylene chloride	0.2 ug/L	1 U ug/L
	Toluene	0.07 ug/L	0.5U ug/L
097GO6733	Acetone	2 ug/L	20U ug/L
097T02732	Methylene chloride	0.4 ug/L	1 U ug/L

## VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries were within validation criteria.

## 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)

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

Sample	Compound	Finding	Criteria	Flag	AorP
097RO5533	All TCL compounds	No LCS analyzed.	LOS analysis required.	None	P
097GO5532					
097T02732					
VBLX01					
VBLX03					

Percent recoveries were within QC limits.

Revision 1

**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 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**

Sample 097TO2732 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)
097TO2732	Acetone	4
	Methylene chloride	0.4
	Toluene	0.07

Sample 097RO5533 was identified as a rinsate. No volatile contaminants were found in this blank with the following exceptions:

## Revision 1

Rinsate ID	Compound	Concentration (ug/L)
097RO5533	Acetone	6
	Methylene chloride	0.2
	Chloroform	3.1
	Bromodichlorom ethane	0.3
	Toluene	0.07

1804FI.3RI

**6** \*Indicates change as the result of report review. SDG K9600898

Salton Sea Test Base, CTO 097  
Volatiles - Data Qualification Summary - SDG K9600898

SDG	Sample	Compound	Flag	AorP	Reason
K9600898	097T02732	Acetone A	Initial calibration (%RSD)		
	097RO5533				
	097GO5532				
	097GO6733				
K9600898	097RO5533	All TCL compounds	None P	Laboratory control samples	
	097GO5532				
	097T02732				

Salton Sea Test Base, CTO 097  
Volatiles - Laboratory Blank Data Qualification Summary - SDG K9600898

SDG	Sample	Compound 71C (FIT In minutes)	Modified Final Concentration	A or P
K9600898	097RO5533	Methylene chloride	1 U ug/L	A
		Toluene	0.5Uug/L	
K9600898	097GO6733	Acetone 20U	ug/L	A
LK9600898	097T02732	Methylene chloride	1 U ug/L	A

1 WXF1.3R1

7 \*Indicates change as the result of report review. SDG K960089a

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Laboratory Data Consultants, Inc.  
Data Validation Report

Project/Site Name: Salton Sea Test Base, CTO  
Collection Date: February 20, 1996  
LDC Report Date: April 18, 1996  
Matrix: Water  
Parameters: Volatiles  
Laboratory: Columbia Analytical Service

Sample Delivery Group (SDG): K9601003

Sample Identification

097TO2833  
097GO7531  
097GO7531 MS  
097GO7531 IVISD

An asterisk (\*) will be placed in the margin to the left of any revised Rem in the text.

Revision 1

## 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 8260 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 EPA SW 846 Method 8260. The modifications were based on EPA SW 846 Method 8260.

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 qualifications:

- 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.



Revision 1

## 1. Technical Holding Times

All technical holding time requirements were met.

## 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 with the following exceptions:

Date	Compound	%RSD	Associated Samples	Flag	:A ~rP
2/23/96	Acetone	56.6	All samples in SOG Ka601003	i	A

\*Average relative response factors (RRF) for ~\_tf 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 RRIF 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 Samples
VBLX01	2/23/96	Methylene chloride	0.4 ug/L	All samples in SDG
				K9601 OW

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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
097T02833	Methylene chloride	0.3 ug/L	1 U ug/L

## VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries were within validation criteria.

## 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. Percent recoveries 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.

Revision 1

## 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

Sample 097TO2833 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)
097T02833	Methylene chloride	0.3
	Toluene	0.06

18G4J1.3R1 **5** -indicates change as the result of report review. SDG K9601003

Salton Sea Test Base, CTO 097  
Volatiles - Data Qualification Summary - SDG K9601003

SDG	Sample	Compound	Flog	A or P	Reason
K9601003	097T02833 097GO7531	Acetone	i	A	Initial calibration (%RSD)

Salton Sea Test Base, CTO 097  
Volatiles - Laboratory Blank Data Qualification Summary - SDG K9601003

SDG	Sample	Compound	TIC (RT In minutes)_	Concentra0on	Modified Final	A or P
[Z;01 003	097T02833	Methylene chloride		U ug/L		A

1804J1.3R1

6 \*Indicates change as the result of report review. SDG K9601003

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## Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Salton Sea Test Base, CTO 097  
Collection Date: February 21, 1996  
LDC Report Date: April 18, 1996  
Matrix: Water

Parameters: Volatiles

Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9601039

### Sample Identification

097RO5432 097TO2932 097GO5433 097GO5233 097DO1232 097GO8231 097BOO832 097BOO932  
097GO5433MS 097GO5433MSD

An asterisk (\*) will be placed in the margin to the left of any revised Rem in the te)d.

1 WXXI.3RI

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Revision 1

## Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260 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 EPA SW 846 Method 8260. The modifications were based on EPA SW 846 Method 8260.

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 qualifications:

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.

Revision 1

## 1. Technical Holding Times

All technical holding time requirements were met.

## 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 with the following exceptions:

Date	Compound	%RSD	Associated Samples	Flag	A or P
2/20/96	Acetone	35.6	All samples in SDG		A
					K9601039

\*Average relative response factors (RRF) for **ad** 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)	FCon,,ntaUon	Associated Samples
VBLK01	2/26196	Methylene chloride Acetone	0.4 ug/L 3 ug/L	097RO5432 09TT02932 097GO5433 097GO5233 097DO1232

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**3** -indicates change as the result of report review. SDG K9601039

## Revision 1

Method Blank ID	Analysis Date	71C (RT In minutes) Compound	Concentration	-Associated Samples
VBLK02	2/27/96	Methylene chloride	0.5 ug/L	097GO8231 097BOOS32 097BOO932

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
097RO5432	Methylene chloride	0.4 ug/L	1 U ug/L
	Acetone	2 ug/L	20U ug/L
097T02932	Methylene chloride	0.2 ug/L	1 U ug/L
	Acetone	9 ug/L	20U ug/L
097GO5233	Acetone	2 ug/L	20U ug/L
097DO1232	Acetone	2 ug/L	20U ug/L
097BOO832	Methyfe chloride	0.2 ug/L	1 U u;VL

## VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries were within validation criteria.

## 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)

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

## IX. Regional Quality Assurance and Quality Control

Not applicable.



Revision 1

## 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 Qf the report.

### XVI. Field Duplicates

Samples 097DO1 232 and 097GO5233 were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	097DO1232	097GO5233	
Acetone	2	2	0

### XVII Field Blanks

Sample 097RO5432 was identified as a rinsate. No volatile contaminants were found in this blank with the following exceptions:

Rinsate, ID	Compound	Concentration (ug/L)
097RO5432	Acetone	9
	Methylene chloride	0.2
	Chloroform	3.2
	Bromodichloromethane	0.3
	Toluene	0.1

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**5** \*Indicates change as the result of report review. SDG K9601039

## Revision 1

Sample 097T02932 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)
097T02932	Acetone	2
	Methylene chloride	0.4
	Toluene	0.06

Samples 097B00832 and 097B00932 were identified as source blanks. No volatile contaminants were found in these blanks with the following exceptions:

Source Blank 10	Compound	Concentration (,;g/L)
097B00832	Acetone	9
	Methylene chloride	0.2
	Chloroform	2.7
	Toluene	0.04
097B00932	Acetone	6
	Chloroform	2.9
	Bromodichloro methane	5.1
	Dibromochloromethane	7.8
	Bromoform	2.5

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**6** -Indicates change as the result of report review. SDG K9601039

Salton Sea Test Base, CTO 097  
Volatiles - Data Qualification Summary - SDG K9601039

SDG	Sample	Compound	Flag	A or P	Reason
K9601039	097RO5432	Acetone	i	A	Initial calibration (%RSD)
	097T02932				
	097GO5433				
	097GO5233				
	097DO1232				
	097GO8231				
	0971300832				
	097BOO932				

Salton Sea Test Base, CTO 097  
Volatiles - Laboratory Blank Data Qualification Summary - SDG K9601039

SDG	Sample	Compound TIC (RT In minutes)	Modified Final Concentration	A or P
K9601039	097RO5432	Methylene chloride	1 U ug/L	A
		Acetone	20U ug/L	
K9601039	097T02932	Methylene chloride	1 U ug/L	A
		Acetone	20U ug/L	
K9601039	097GO5233	Acetone	20U ug/L	A
K9601039	097DO1232	Acetone	20U ug/L	A
K9601039	097BOO832	Methylene chloride	1 U ug/L	A

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1804KI.3RI

7 \*Indicates change as the result of report review. SDG K9601039

Salton Sea Test Base, CTO 097  
Data Validation Reports  
LDC# 1804

Semivolatiles

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

Project/Site Name: Salton Sea Test Base, CTO 097  
Collection Date: February 6, 1996  
LDC Report Date: April 9, 1996  
Matrix: Water

Parameters: Semivolatiles

Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9600753\*\*

Sample Identification

097BOO681  
097GO51 81  
097GO7481  
097RO6081  
097GO6085  
097GO7481 MS  
097GO7481 MSD

\*\* Indicates SDG underwent NEESA Level D review.

## Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Contract Laboratory Program Statement of Work OLM02.1 for S6mivolatiles. The data validation review was based on EPA Contract Laboratory Program Statement of Work 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 X\A.

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.

## 1. Technical Holding Times

All technical holding time requirements were met.

## 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 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 or P~
2/21/96	Hexachlorocyclopentadiene	33.5	All samples in SDG K9600753		A
	2,4-Dinitrophenol	46.4			
	Benzo(k)fluoranthene	31.2			
	Benzo(g,h,operylene)	25.1			

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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:

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Extraction	TIC (RT In minutes)	-Fconcentration	Associated Samples
Method Blank 10	Compound		
SBLK01	Date		
	Z111 2/96		
	Bis(2-ethylhexyl)phthalate	1 ug/L	097BO0681
	Unknown (5.99)	2 ug/L	097GO5181
	Unknown (6.45)	4 ug/L	097GO7481
	isomer of trimethylbenzene (6.21)	2 ug/L	097RO5081
			097GO6085

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
097BO0681	Bis(2-ethylhexyl)phthalate	1 ug/L	1 OU ug/L
	Unknown (5.99)	3 ug/L	3U ug/L
	Unknown (6.45)	3 ug/L	3U ug/L
097GO5181	Bis(2-ethylhexyl)phthalate	3 ug/L	10U ug/L
	Unknown (6.45)	39 ug/L	39U ug/L
097GO7481	Bis(2-ethylhexyl)phthalate	2 ug/L	1 OU ug/L
	Unknown (5.98)	3 ug/L	3U ug/L
097RO6081	Unknown (5.99)	3 ug/L	3U ug/L
097GO6085	Bis(2-ethylhexyl)phthalate	5 ug/L	1 OU ug/L
	Unknown (5.98)	3 ug/L	3U ug/L
	Unknown (6.45)	3 ug/L	3U ug/L

#### V11. Surrogate Spikes

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

#### 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 with the following exceptions:



Sample (Associated Samples)	Compound	MS (%R) (umits)	MSD (%R) (Umits)	RPD (umits) <b>34(s31)</b>	Flag	A or P]
097GO7481 MS/MSD (097BOD681 097GO51 81 097GO7481 097RO6081 097GO6085)	Pyrene				i	A

### VIII. Laboratory Control Samples (LCS)

Not applicable to multi-media samples. Laboratory control samples were reported by the laboratory. Percent recoveries were within laboratory control 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

All target compound identifications were within validation criteria.

### XII. Compound Quantitation and CROLS

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.

## XVIL Field Blanks

Sample 097RO6081 was identified as a rinsate. No semivolatile contaminants were found in this blank.

Sample 097600681 was identified as a source blank. No semivolatile contaminants were found in this blank with the following exceptions:

Source Blank ID	Compound	Concentration (ug/L)
097BO0681	Bis (2-ethylhe*) phthalate	1

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Salton Sea Test Base, CTO 097

Semivolatiles - Data Qualification Summary - SDG K9600753\*\*

SDG	Sample	Compound	Flag	AorP	Reason
K9600753	097BOO681	Hexachlorocyclopentadiene		A	Continuing calibration (%D)
	097GO51 81	2,4-Dinitrophenol			
	097GO7481	Benzo(k)fluoranthene			
	097RO6081	Benzo(g,N)perylene			
K9600753	097GO6085				Matrix spike/Matrix spike duplicates (RPO)
	097BOO681	Pyrene	i	A	
	097GO5181				
	097GO7481				
	097RO6081				
	097GOSOBS				

Salton Sea Test Base, CTO 097

Semivolatiles - Laboratory Blank Data Qualification Summary - SDG K9600753\*\*

SDG	Sample	Compound	TIC (RT In minutes)	Final concentration Mo	AcrP
K9600753	097BOO681	Bis (2-ethylhexyl) phthalate		IOU ug/L	A
		Unknown (5.99)		3U ug/L	
		Unknown (6.45)		3U ug/L	
K9600753	097GO5181	Bis(2-ethylhexyl)phthalate		1 OU ug/L	A
		Unknown (6.45)		39U ug/L	
K9600753	097GO7481	Bis(2-ethylhexyl)phthalate		IOU ug/L	A
		Unknown (5.98)		3U ug/L	
K9600753	097RO6081	Unknown (5.99)		3U ug/L	A
		Bis(2-ethylhexyl)phthalate		1 OU ug/L	A
		Unknown (5.98)		3U ug/L	
3	097GO6085	Unknown (6.45)		3U ug/L	

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## Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Salton Sea Test Base, CTO 097  
Collection Date: February 7, 1996  
LDC Report Date: April 9, 1996  
Matrix: Water  
Parameters: Semivolatiles

Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9600765

### Sample Identification

097GO5361  
097GO5682  
097GO5982  
097BOO782

## Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Contract Laboratory Program Statement of Work OLM02.1 for Semivolatiles. The data validation review was based on EPA Contract Laboratory Program Statement of Work 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 X\A.

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.

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

## 1. Technical Holding Times

All technical holding time requirements were met.

## 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	AorP
2/21/96	Hexachlorocyclopentadiene	33.5	All samples in SOG		A
	2,4-Dinitrophenol	46.4	K9600765		
	Benzo(k)fluoranthene	31.2		1	
	Benzo(g,h,q)perylene	25.1			

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:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
<u>IM</u> SBLK01	2/12/96	Bis(2-ethylhexyl)phthalate Unknown (5.99) Isomer of trimethylbenzenes (6.21) Unknown (5.45)	1 ug/L 2 ug/L 2 ug/L 4 ug/L	All samples in SDG K9600765

18D4B2.BC3

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
097GO5381	Bis(2-ethylhexyl)phthalate Unknown (6.45)	1 ug/L 4 ug/L	11U ug/L 4U ug/L
097GO5682	Bis(2-ethylhexyl)phthalate	2 ug/L	1 OU ug/L
097GO5982	Bis(2-ethylhexyl)phthalate Unknown (5.98)	2 ug/L 1 OU ug/L	2U ug/L
097BO0782	Bis(2-ethylhexyl)phthalate Unknown (5.98)	1 ug/L 2 ug/L	1 OU ug/L 2U ug/L

## VI. Surrogate Spikes

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

## 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:

Sample (Associated Samples)	Compound	MS (%R) (Umts)	MSO (%R) (Umft)	RPD (urnits)	Flag	AorP
097GO748MS/MSD (097GO5381 097GO5682 097GO5982 097800782)	Pyrene			34 (:531)	1	A

     -     

## VIII. Laboratory Control Samples (LCS)

Not applicable to multi-media samples. Laboratory control samples were reported by the laboratory. Percent recoveries were within laboratory control 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**

No field duplicates were identified in this SDG.

## **XVII. Field Blanks**

Sample 097BOO782 was identified as a source blank. No semivolatile contaminants were found in this blank with the following exceptions:

Source Blank ID	Compound	Concentration (ug/L)
097BOO782	Bis(2-ethy1h9xyQphtha1a1e	1
1804B2.BC3	5	



Salton Sea Test Base, CTO 097

Semivolatiles - Data Qualification Summary - SDG K9600765

SDG	Sample	Compound	Flag	AorP	Reason
K9600765	097GO5381	Hexachlorocyclopentadiene		A	Continuing calibration (%D)
	097GO5682	2,4-Dinitro phenol			
	097GO5982	Benzo(k)fluoranthene			
K9600765	097BOO782	Benzo(g,h,operylene			Matrix spike/Matrix spike duplicates (RPD)
	097GO5381	Pyrene	i	A	
	097GO5682				
	097GO5982				
	097BOO782				

Salton Sea Test Base, CTO 097

Semivolatiles - Laboratory Blank Data Qualification Summary - SDG K9600765

SDG	Sample	compound TIC (RT In minutes)	Modified Final Concentration	Aorp]
K9600765	097GO5381	Bis(2-ethylhexyl)phthalate Unknown (6.45)	11U ug/L 4U ug/L	A
K9600765	097GO5682	Bis(2-ethylhexyl)phthalate	1 OU ug/L	A
K9600765	097GO5982	Bis(2-ethylhexyl)phthalate Unknown (5.98)	1 OU ug/L 2U ug/L	A
K9600765	097BOO782	Bis(2-ethylhexyl)phthalate Unknown (5.98)	1OU ug/L 2U ug/L	A

1804BZ.BC3

LDC Report# 1804C2

## Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Salton Sea Test Base, CTO 097  
Collection Date: February 9, 1996  
LDC Report Date: April 10, 1996  
Matrix: Water  
Parameters: Semivolatiles  
Laboratory: Columbia Analytical Services

Sample Delivery Group (SDG): K9600786

### Sample Identification

097RO6281  
097GO6381  
097GO6981  
097GO6681  
097GO6582  
097GO6882  
097RO6182  
097GO6282  
097DO1082  
097GO5782  
097GO5881  
097GO7081  
097GO6481  
097GO6981 IVIS  
097GO6981 MSD  
097GO6181

## Introduction

This data review covers 16 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Contract Laboratory Program Statement of Work OLM02.1 for Sernivolatiles. The data validation review was based on EPA Contract Laboratory Program Statement of Work 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.

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.

## 1. Technical Holding Times

All technical holding time requirements were met.

## 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% .

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:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
S8LKO1	2/13/96	Unknown hydrocarbon (5.77)	4 ug/L	All samples in SDG
		Unknown hydrocarbon (5.81)	8 ug/L	K9600786
		Unknown hydrocarbon (5.86)	14 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
097RO6281	Unknown hydrocarbon (5.82)	2 ug/L	2U ug/L
097GO6981	Unknown hydrocarbon (5.82)	2 ug/L	2U ug/L
097GO6582	unknown hydrocarbon (5.82)	2 ug/L	2U ug/L
097GO6882	Unknown hydrocarbon (5.83)	2 ug/L	2U ug/L
097RO6182	Unknown hydrocarbon (5.83)	2 ug/L	2U ug/L
097GO5782	Unknown hydrocarbon (5.83)	2 ug/L	2U ug/L
097GO7081	Unknown hydrocarbon (5.83)	2 ug/L	2U ug/L
097GO6481	Unknown hydrocarbon (5.83)	8 ug/L	BU ug/L
	Unknown hydrocarbon (5.88)	12 ug/L	12U ug/L

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## V1. Surrogate Spikes

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

## 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 with the following exceptions:

Sample (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag J (all detects)	A or P A
097GO6981 MSIMSD 4-Nftrophenol (All samples in SDG K9600786)		83 (10-80)				

## VIII. Laboratory Control Samples (LCS)

Not applicable to multi-media samples. Laboratory control samples were reported by the laboratory. Percent recoveries were within laboratory control limits.

## IX. Regional Quality Assurance and Quality Control

Not applicable.