

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-7	Associated Samples
CCB11	Antimony	0.01 ug/L	All samples in SDG K9605099
ICB	Barium	1.2 ug/L	All samples in SDG K9605099
	Beryllium	0.4 ug/L	
	Selenium	-2.0 ug/L	
	Zinc	4.8 ug/L	
	Molybdenum	5.0 ug/L	
CCBI	Selenium	-1.5 ug/L	All samples in SOG K9605099
	Molybdenum	3.4 ug/L	
CCB2	Beryllium	0.4 ug/L	All samples in SDG K9605099
	Selenium	-1.3 ug/L	
	Molybdenum	3.4 ug/L	
CCB3	Zinc	1.2 ug/L	All samples in SDG K9605099
PS (prop blank)	Copper	0.700 ug/L	All samples in SDG K9605099
	Vanadium	1.550 ug/L	
	Zinc	3.630 ug/L	
	Chromium	2.2 ug/L	
CC31	Silver	2.2 ug/L	All samples in SDG K9605099
	Zinc	1.2 ug/L	
	Molybdenum	3.4 ug/L	
	Selenium	-1.0 ug/L	
CCB2	Selenium	1.6 ug/L	All samples in SOG K-9605099
CCBI	Selenium	1.6 ug/L	All samples in SDG K9605099
CCB2	Selenium	1.6 ug/L	All samples in SOG K9605099

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
097G201 61	Vanadium	3.7 ug/L	3.71.1 ug/L
	Zinc	14.5 ug/L	14.51.1 ug/L
097G21461	Copper	3.3 ug/L	3.3U ug/L
	Vanadium	5.7 ug/L	5.7U ug/L
	Zinc	6.6 ug/L	5.6U ug/L
097R12661	Chromium	2.5 ug/L	2.5U ug/L
	Copper	0.70 ug/L	0.70U ug/L
	Zinc	4.8 ug/L	4.80 ug/L
097G20261	Copper	1.2 ug/L	1.2U ug/L
	Vanadium	1.6 ug/L	1.61-1 ug/L
	Zinc	4.8 ug/L	4.8U ug/L
097G21361	Copper	0.97 ug/L	0.97U ug/L
	Selenium	8.5 ug/L	8.5U ug/L
	Vanadium	4.7 ug/L	4.7U ug/L
	Zinc	7.8 ug/L	7.8U ug/L
097G20461	Copper	2.1 ug/L	2.1 U ug/L
	Selenium	6.5 ug/L	5.51.) ug/L
	Vanadium	2.0 ug/L	2.0U ug/L
	Zinc	8.5 ug/L	8.5U ug/L
097DO2761	Copper	1.2 ug/L	1.21.1 ug/L
	Selenium	5.0 ug/L	5.01.1 ug/L
	Zinc	8.4 ug/L	8.41.1 ug/L
097G20361	Copper	2.1 ug/L	2.1 U ug/L
	Vanadium	4.5 ug/L	4.51.) ug/L
	Zinc	6.0 ug/L	6.0U ug/L
097G20861	Copper	1.2 ug/L	1.2U ug/L
	Vanadium	3.2 ug/L	3.2U ug/L
	Zinc	6.0 ug/L	6.0U ug/L
097G20961	Copper	2.6 ug/L	2.61.1 ug/L
	Vanadium	2.2 ug/L	2.21.1 ug/L
	Zinc	6.0 ug/L	6.01.1 ug/L
0971112761	Zinc	2.4 ug/L	2.41.) ug/L
097G22961	Beryllium	0.79 ug/L	0.791.1 ug/L
	Selenium	11.8 ug/L	1.8U ug/L
	Zinc	13.7 ug/L	13.71.) ug/L
196OD4.BC3			

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 OC 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
097G20861 S	Lead	61.5		A
(All samples in SDG K9605099)	Selenium	45.0		
	Thallium	63.2		

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.

X111. Field Duplicates

Samples 097G20461 and 097DO2761 were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Analyte	Concentration (ug/L)			RPD
	0971320461	097DO2761		
Barium	23.6	24.3		3
Copper	2.1	1.2		54
Selenium	6.5	5.0		26
Vanadium	2.0	ND		Not calculable
Zinc	8.5	8.4		1
Molybdenum	34.1	35.2		3

XIV. Field Blanks

Samples 097R12661 and 097R12761 were identified as rinsates. No metal contaminants were found in these blanks with the following exceptions:

Rinsate ID	Analyte	Concentration (ug/L)
097R12661	Chromium	2.5
	Copper	0.7
	Zinc	4.8
097R12761	Zinc	2.4

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

SDG	Sample	Analyte	Flag	A or P	Reason	
K9605099	097G201 61	Molybdenum	P	Calibration		
	097G21461	None				
	0971112661					
	097G20261					
	097G21361					
	097G20461					
	097DO2761					
	097G20361					
	097G20861					
	097G20961					
	097R12761					
	097G22961					
	K9605099	097G20161	Barium	None	p	ICP linear range analysis
		097G21461	Beryllium	None		
097R12661		Cadmium	None			
097G20261		Chromium	None			
097G21361		Cobalt	None			
097G20461		Copper	None			
097DO2761		Nickel	None			
097G20361		Silver	None			
097G20861		Vanadium	None			
097G20961		Zinc	None			
097R12761		Molybdenum	None			
097G22961						
K9605099		097G20161	Lead		A	Matrix spike analysis (%R)
		097G21461	Selenium	i		
	097R12661	Thallium	i			
	097G20261					
	097G21361					
	097G20461					
	097002761					
	097G20361					
	097G20861					
	097G20961					
	097R12761					
	097G22961					

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

SDG	Sample	Analyte	Modified Final Concentration	A or
K9605099	097G20161	Vanadium	3.71.1 ug/L	A
		Zinc	14.51.1 ug/L	
K9605099	097G21461	Copper	3.3U ug/L	A
		Vanadium	5.71-1 ug/L	
		Zinc	6.6U ug/L	

SDG	Sample	Analyte	Modified Final Concentration	A or P
K9605099	097R12661	Chromium	2.5U ug/L	A
		Copper	0.701-1 ug/L	
		Zinc	4.8U ug/L	
K9605099	097G20261	Copper	1.2U ug/L	A
		Vanadium	1.6U ug/L	
		Zinc	4.8U ug/L	
K9605099	097G21361	Copper	0.97U ug/L	A
		Selenium	8.5U ug/L	
		Vanadium	4.7U ug/L	
		Zinc	7.8U ug/L	
K9605099	097G20461	Copper	2.1 U ug/L	A
		Selenium	6.5U ug/L	
		Vanadium	2.0U ug/L	
		Zinc	8.5U ug/L	
K9605099	097002761	Copper	1.2U ug/L	A
		Selenium	5.010 ug/L	
		Zinc	8.4U ug/L	
K9605099	097G20361	Copper	2.1 U ug/L	A
		Vanadium	4.51.1 ug/L	
		Zinc	6.0U ug/L	
K9605099	097G20861	Copper	1.2U ug/L	A
		Vanadium	3.21.1 ug/L	
		Zinc	6.01.1 ug/L	
K9605099	097G20961	Copper	2.61.1 ug/L	A
		Vanadium	2.2U ug/L	
		Zinc	6.0U ug/L	
K9605099	097R12761	Zinc	2AU ug/L	A
K9605099	097G22961	Beryllium	0.79U ug/L	A
		Selenium	11.81.1 ug/L	
		Zinc	13.7U ug/L	

196OD4.BC3

LDC Report# 196OE4

**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 26, 1996
Matrix: Water
Parameters: Metals
Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9605170**

Sample Identification

097BO1261
097BO1361
)97G22861
097R12961
097G2-2461
097G21961
097G21761
097BO1261S
097BO1261D

** Indicates SDG underwent NFESC Level D review.

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) 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.

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

All criteria for the initial calibration were met.

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-ID	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG K9605170	Molybdenum	CRDL standard was not analyzed.	All CRDL 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	A or P
Barium	ICP linear range analysis.	4/19/96	Quarterly	9/11/96	All samples in SDG K9605170	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

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
ICB	Antimony	0.01 ug/L	All samples in SDG K9605170
ICB	Zinc	6.5 ug/L	All samples in SDG K9605170
CCB1	Copper	0.7 ug/L	All samples in SOG K9605170
	Zinc	4.8 ug/L	
CCB2	Copper	2.1 ug/L	All samples in SIDG K9605170
	Mercury	-0.1 ug/L	
	Zinc	2.4 ug/L	
CCB3	Lead	1.9 ug/L	All samples in SOG K9605170
	Mercury	0.1 ug/L	
	Zinc	1.8 ug/L	
P8 (prep blank)	Beryllium	-0.410 ug/L	All samples in SDG K9605170
	Copper	1.630 ug/L	
	Mercury	-0.120 ug/L	
	Zinc	3.560 ug/L	
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CCB1	Copper	0.9 ug/L	All samples in SOG K9605170
	Zinc	2.4 ug/L	

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
097BO1261	Copper	0.93 ug/L	0.93U ug/L
	Zinc	7.1 ug/L	7.1 U ug/L
097BO1361	Copper	2.3 ug/L	2.3U ug/L
	Zinc	7.1 ug/L	7.1 U ug/L
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Sample	Analyte	Reported Concentration	Modified Final Concentration
097G22851	Copper	7.5 ug/L	7.5U ug/L
	Lead	1 .0 ugiL	1 OU ug/L
	Zinc	22.5 ug/L	22.5U ug/L
097RI2961	Zinc	5.3 ug.,L	5.3U ug/L
097G22461	Zinc	6.5 ug/L	6-5U ug/L
097G21961	Copper	1.6 ug/L	1.6U ug/L
	Zinc	5.3 ug/L	5.3U ug/L
097G21761	Copper	0.70 ug/L	0.70U ug/L
	Zinc	2.4 ug/L	2AU ug/L

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

4. 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% .

VIII. Internal Standards (ICP-MS)

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

IX Furnace Atomic Absorption QC

All graphite furnace atomic absorption QC were within validation criteria with the following)ceptions:

Analytical Spike	Analyte	%R (Limits)	Associated Sample	Flag	A or P
097G22861 A	Arsenic	84.0 (85-115)	097G22861		A
	Lead	66.5 (85-115)			
	Selenium	55.0 (85-115)			
	Thallium	83.5 (85-115)			
097BO1361A	Selenium	82.0 (85-115)	097BO1361		A
097R12961A	Selenium	45.0 (85-115)	097R12961		A
0971322461A	Arsenic	81.0 (85-115)	097G22461		A
	Lead	54.5 (85-115)			
	Selenium	50.0 (85-115)			
	Thallium	51.5 (85-115)			
097G21961A	Lead	65.0 (85-115)	097G21961		A
097G21761 A	Selenium	45.0 (85-115)	097G21761		A
	Lead	64.5 (85-115)			
	Selenium	44.0 (85-115)			

X. ICP Serial Dilution

The frequency of analysis was met.

The criteria for analysis were met.

X1. Sample Result Verification

All sample result verifications met validation criteria.

X11. Overall Assessment of Data

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

X111. Field Duplicates

No field duplicates were identified in this SDG.

XIV. Field Blanks

Samples 097801261 and 097BO1361 were identified as source blanks. No metal contaminants were found in these blanks with the following exceptions:

Source Blank ID	Analyte	Concentration (ug/L)
097BO1261	Copper	0.93
	Zinc	7.1
	Molybdenum	2.7
097BO1361	Arsenic	1.0
	Barium	56.0
	Copper	2.3
	Selenium	1.1
	Vanadium	10.4
	Zinc	7.1
	Molybdenum	6.0

Sample 097R12961 was identified as a rinsate. No metal contaminants were found in this blank with the following exceptions:

Rinsate ID	Analyte	concentration (ug/L)
F1 2961	Zinc	T- 5.3
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Salton Sea Test Base, CTO 097

Metals - Data Qualification Summary - SDG K9605170**

SDG	Sample ID	Analyte	Flag	A or P Calibration	Reason
K9605170	097G22261	Molybdenum	P		
	097G22061	None			
	097DO2561				
	097G22161				
	097G20561				
	097R13061				
	097G22361				
	097G235'si				
K9605170	097G22261	Barium	None	p	ICP linear range analysis
	097G22061	Beryllium	None		
	097DO2861	Cadmium	None		
	097G22161	Chromium	None		
	097G20561	Cobalt	None		
	097R13061	Copper	None		
	097G22361	Nickel	None		
	097G23561	Silver	None		
		Vanadium	None		
		Zinc	None		
K9605170	097G22861	Molybdenum	None		
	097G22461	Arsenic	i	A	Furnace atomic absorption
		Lead	i		OC (%R)
		Selenium	i		
		Thallium			
K9605170	097801361	Selenium	i	A	Furnace atomic absorption
	097R12961				QC (%R)
605170	097G21961	Lead	i	A	Furnace atomic absorption
	097G21761	Selenium			GC (%R)

Salton Sea Test Base, CTO 097

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

SDG7	Sample	Analyte	Concentration	Final
K9605170	097BO1261	Copper	0.93U ug/L	A
		Zinc	7.1 U ug/L	
K9605170	097BO1351	Copper	2.3U ug/L	A
		Zinc	7.1 U ug/L	
K9605170	097G22861	Copper	7.5U ug/L	A
		Lead	1.0U ugtL	
		Zinc	22.5U ugVL	

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a

FA or 7P

Modified Final

A, 7P

SDG	Sample	Analyte	Concentration	
K9605170	097R12961	Zinc	5.3U ug/L	A
K9605170	097G22461	Zinc	6.5U ug/L	A
K9605170	097G21961	Copper	1.6U ug/L	A
		Zinc	5.3U ug/L	
K9605170	097G21761	Copper-	0.70U ug/L	A
		zinc	2AU ug/L	

196OE4.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 26, 1996
Matrix: Water
Parameters: Metals
Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9605225

Sample Identification

097G22261 097G22061 097DO2861 097G22161 097G20561 097R13061 097G22361 097G23561 097G22261 S
097G22261 D 097G20561S 097G20561 D

Introduction

This data review covers 12 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 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.

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 or P
097G22261	Molybdenum	CRDL standard was not analyzed.	All CRDL standards for ICP and AA must be analyzed and reported.	None	P
097G22061					
097002861					
097G22161					
097G20561					
0971113061					
097G22361					
097G22261 S					
097G22261 D					
PBW					

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	A or P			
Barium	ICP linear range analysis.	4/19/96	Quarterly	9/11/96	097(322261	None	P			
Beryllium					097G22061	None				
Cadmium					097D02861	None				
Chromium					097G22161	None				
Cobalt					097G20561	None				
Copper					0971113061	None				
Nickel					097G22361	None				
Silver					097G22261 S	None				
Vanadium					097G22261D	None				
Zinc					PBW	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 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
ICS	Barium	0.9 ug/L	All samples in SDG K9605225
	Copper	0.9 ug/L	
	Mercury	0.1 ug/L	
	Nickel	9.7 ug/L	
	Selenium	1.0 ug/L	
	Zinc	5.5 ug/L	
CCBI	Molybdenum	2.8 ug/L	All samples in SDG K9605225
	Mercury	0.1 ug/L	
	Selenium	1.1 ug/L	
CCB2	Zinc	3.7 ug/L	All samples in SDG K9605225
	Mercury	0.1 ug/L	
	Thallium	3.8 ug/L	
CCB3	Zinc	2.4 ug/L	All samples in SOG K9605225
	Molybdenum	3.4 ug/L	
	Mercury	0.1 ug/L	
	Selenium	1.2 ug/L	
PS (prep blank)	Thallium	1.2 ug/L	All samples in SDG K96M225
	Thallium	3.200 ug/L	
CCB1	Zinc	2.440 ug/L	All samples in SDG K96M225
	Selenium	1.5 ug/L	
CCB2	Zinc	2.4 ug/L	All samples in SDG K9605225
	Thallium	-1.5 ugtL	
CCB3	Thallium	-1.8 ug/L	All samples in SDG K96M225
CCB2	Antimony	0.02 ug/L	All samples in SDG K.9505225
CCB3	Antimony	0.009 ug/L	All samples in SDG K9605225

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
097G22261	Zinc	11.0 ug/L	11.01-1 ug/L
097G222061	Copper	0.91 ug/L	0.91 U ug/L
	Selenium	1.1 ug/L	1.1 U ugtL
	Thallium	4.7 ug/L	4.71.1 ug(L
	Zinc	6.1 ug/L	6.1 U ug/L
097DO2861	Thallium	5.1 ug/L	5.1 U ug/L
	Zinc	3.7 ug/L	3.7U ug/L
097G22161	Zinc	7.3 ug/L	7.3U ug/L
097G20561	Zinc	4.3 ug/L	4.3U ugtL
097R13061	Zinc	1.8 ugtL	1.81.) ug/L
097G22361	Selenium	1.5 ug/L	1.5u ugtL
	Zinc	3.7 ugVL	3JU ug/L

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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.

V1. Duplicate Sample Analysis

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

VIII. Matrix Spike Analysis

Matrix spike analyses were reviewed for each matdx 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
097G22261 S (097G22261 097G22061 097DO2861 097G22161 097G20561 097R13061 097G22361)	Beryllium	67.9		A
	Chromium	72.6		
	Cobalt	69.3		
	Nickel	69.7		
	Vanadium	73.8		
	Thallium	64.0		
097G22261 S (097G22261 097G22061 097DO2861 097G22161 097G20561 097R13061 097G22361)	Selenium	0.0	J (all detects) R (all non-detects)	A
097G22261S (097G22261 097G22061 097DO2861 097G22161 097G20561 097R13061 097G22361 097G23561)	Lead	73.0		A

VIII. Internal Standards (ICP-MS) All internal standard percent recoveries (%R) were within QC limits. **IX. Furnace Atomic Absorption OC**

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.

X111. Field Duplicates

Samples 097G22061 and 097DO2861 were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Analyte	Concentration (ug/L)		RPD
	097G22061	097DO2861	
Arsenic	1.2	ND	Not calculable
Barium	12.2	11.9	2
Copper	0.91	ND	Not calculable
Selenium	1.1	ND	Not calculable
Thallium	4.7	5.1	8
Zinc	6.1	3.7	49
Molybdenum	59.2	57.6	3

XIV. Field Blanks

Sample 097R13061 was identified as a rinsate. No metal contaminants were found in this blank with the following exceptions:

Rinsate ID	Analyte	Concentration (ug/L)
097R13061	Zinc	1.8
1960F4.BC3		7

Salton Sea Test Base, CTO 097
 Metals - Data Qualification Summary - SDG K9605225

SDG	Sample	Analyte	Flag	A or P	Reason
K9605225	097G22261	Molybdenum	None	P	Calibration
	097G22061				
	097DO2861				
	097G22161				
	097G20561				
	097R13061				
	097G22361				
K9605225	097G22261	Barium	None	p	ICP linear range analysis
	097G22061	Beryllium	None		
	097DO2861	Cadmium	None		
	097G22161	Chromium	None		
	097G20561	Cobalt	None		
	097R113061	Copper	None		
	097G22361	Nickel	None		
		Silver	None		
		Vanadium	None		
		Zinc	None		
K9605225	097G22261	Molybdenum	None	A	Matrix spike analysis (%R)
	097G22061	Beryllium	i		
	097DO2861	Chromium	i		
	097G22161	Cobalt	i		
	097G20561	Nickel	i		
	0971113061	Vanadium	i		
	097G22361	Thallium	i		
K9605225	097G22261	Selenium	J (all detects) R (all non-detects)	A	Matrix spike analysis (%R)
	097G22061				
	097DO2861				
	097G22161				
	097G20561				
K9605225	097R130611	Lead	i	A	Matrix spike analysis (%R)
	097G22061				
	097DO2861				
	097G22161				
	097G20561				
	097R13061				
	097G22361				
097G23561					

Salton Sea Test Base, CTO 097

Metals - Laboratory Blank Data Qualification Summary - SDG K9605225

SDG	Sample	Analyte	Modifie'd Final Concentration	A or P
K9605225	097G22261	Zinc	1 I.OU ug/L	A
K9605225	097G22061	Copper	0.91 U ug/L	A
		Selenium	1.1U ug/L	
		Thallium	4.7U ug/L	
		Zinc	6.1 U ug/L	
K9605225	097DO2861	Thallium	5.1 U ug/L	A
		Zinc	3.7U ug/L	
K9605225	097G22161	Zinc	7.31.1 ug/L	A
K9605225	097G20561	Zinc	4.3U ug/L	A
K9605225	097RI3061	Zinc	1.81.1 ug/L	A
	097G22361	Selenium	1.51-1 ugtL	A
		Zinc	3.71.1 ug/L	

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Salton Sea Test Base, CTO 097
Data Validation Reports
LDC# 1963

Metals

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Salton Sea Test Base, CTO 097
Collection Date: August 21, 1996
LDC Report Date: September 30, 1996
Matrix: Water
Parameters: Metals

Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9605260

Sample Identification

097G20661
097G20761
097G23461
097R13261
097G23261
097G23461 S
097G23461D

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 (SOW) for Inorganic Analysis, Multi-media, Multiconcentration, D.N. ILM04.0 for TAL Metals, EPA SW 846 Method 6010 for Cadmium, Lead, and Nickel, and EPA Method 200.8 for Antimony, Cadmium, Lead, Nickel, and Uranium. Data validation review was based on EPA Contract Laboratory Program Statement of Work (SOW) D.N. ILM03.0 for TAL Metals.

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:

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.

LIJ 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.

III. 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	Zinc	3.5 ug/L	All samples in SDG K9605260
CCB1	Chromium	2.2 ug/L	All samples in SDG K9605260
CC132	Antimony	0.02 ug/L	All samples in SDG K9605260
	Zinc	1.8 ug/L	
CC83	Antimony	0.009 ug/L	All samples in SOG K9605260
PB (prep blank)	Selenium	1.1 ug/L	All samples in SOG K9605260
	Zinc	1.740 ug/L	
CCB1	Chromium	2.4 ug/L	All samples in SDG K9605260
	Selenium	1.0 ug/L	
	Zinc	1.1 ug/L	

Method Blank ID	Analyte	Concentration ~entr.~fion~	Associated Sample-7 Associate,
	Selenium	1.0 ug/L	All samples in SDG K9605260

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
097G23461	Chromium	5.1 ug/L	5.1 U ug/L
097R13261	Zinc	4.7 ug/L	4.7U ug/L
097G23261	Chromium	6.2 ug/L	6.2U ug/L

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
097G23461 S (097G23461 097R13261 097G23261)	Selenium	0.0	J (all detects) R (all non-detects)	A

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

No field duplicates were identified in this SDG.

XIV. Field Blanks

Sample 097R13261 was identified as rinsate. No metal contaminants were found in this blank with the following exceptions:

Rinsate ID	Analyte	Concentration (ug/L)
0971113261	Cadmium Zinc	I 4.7
1963A4.BC3	5	

Salton Sea Test Base, CTO 097
 Metals - Data Qualification Summary - SDG K9605260

SDG	F Sample	I	Analyte	Flag	-1	A or P	I	Reason	7
K9605260	097G23461 097R13261 097G23261	Selenium	J (all detects) R (all non-detects)	A				Matrix spike analysis (%R)	

Salton Sea Test Base, CTO 097
 Metals - Laboratory Blank Data Qualification Summary - SDG K9605260

F	SDG	Sample	Analyte	Concentration	Ao P	Modified Final
	K9605260	097G23461	Chromium	5.1 U ug/L	A	
	K9605260	097R13261	Zinc	4.7U ug/L	A	
	K9605260	097G23261	Chromium	6.2U ug/L	A	
1963A4.BC3						6

Salton Sea Test Base, CTO 097
Data Validation Reports
LDC# 1976

Metals

LDC Report# 1976A4

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: Salton Sea Test Base, CTO 097
Collection Date: August 23, 1996
LDC Report Date: October 7, 1996
Matrix: Water
Parameters: Metals
Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9605307

Sample Identification

097R13461
097G23361
097DO2961
097R13461S
097R13461D

Introduction

This data review covers 5 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 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.

II. 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	A-or P
All samples in SOG K9605307	Molybdenum	CRDL standard was not analyzed.	All CADL 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 Frequency Requirement	Date of Analysis	Associated Samples	Flag	A or P
Barium	ICP linear range analysis.	4/19/96	Quarterly	9/12/96	All samples in SDG K9605307	None	P
Beryllium						None	
Cadmium						None	
Chromium						None	
Cobalt						None	
Copper						None	
Nickel						None	
Silver						None	
Vanadium						None	
Zinc						None	
Molybdenum						None	

JP

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.

III. Blanks

Method blanks were reviewed for each matdx 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
CCBII	Antimony	0.02 ug/L	All samples in SDG K9605307
CCB2	Antimony	0.009 ug/L	All samples in SDG K9605307
ICB	Barium	1.3 ug/L	All samples in SOG K9605307
	Copper	1.2 ug/L	
	Zinc	9.9 ug/L	
	Molybdenum	3.8 ug/L	
	Zinc	2.9 ug/L	
CCB1	Zinc	2.9 ug/L	All samples in SOG K9605307
CC82	Copper	1.2 ug/L	All samples in SDG K9605307
	Zinc	2.9 ug/L	
CCB3	Zinc	1.2 ug/L	All samples in SDG K9605307
PB (prep blank)	Chromium	2.170 ug/L	All samples in SDG K9605307
	Zinc	3.520 ug/L	
CC81	Zinc	2.9 ug/L	All samples in SDG K,9605307
CCB2	Selenium	1.2 ug/L	-EAll samples in SDG K9605307

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
097R13461	Barium	1.3 ug/L	1.31.1 ug/L
	Zinc	5.9 ug/L	5.9U ug/L
	Molybdenum	5.4 ug/L	SAU ug/L

1976A4.BC3

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 (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

VII. Matrix Spike Analysis

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

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 097G23361 and 097DO2961 were identified as field duplicates. No metals were

detected in any of the samples with the following exceptions:

Analyte	Concentration (Ug/L)		RPD
	097G23361	097DO2961	
Antimony	0.4	NO	Not calculable
Arsenic	4.3	4.5	7
Barium	55.1	54.8	1
Chromium	371	420	12
Cobalt	9.9	7.9	22
Copper	29.2	30.0	3
Lead	4.9	4.0	20
Nickel	193	224	is
Vanadium	14.1	14.2	1
Zinc	167	117	35
Molybdenum	20.2	18.6	

XIV. Field Blanks

Sample 097R13461 was identified as a rinsate. No metal contaminants were found in this blank with the following exceptions:

Rinsate ID	Analyte	Concentration (ug/L)
097R13461	Barium	1.3
	Zinc	5.9
	Molybdenum	5.4
1976A4.BC3	6	

Salton Sea Test Base, CTO 097
 Metals - Data Qualification Summary - SDG K9605307

SDG	Sample	Analyte	Flag	A or P	Reason
K9605307	097RI3461 097G23361 097DO2961	Molybdenum	None	P	Calibration
K9605307	0971113461 097G23361 097DO2961	Barium Beryllium Cadmium Chromium Cobalt Copper Nickel Silver Vanadium	None None None None None None None None None	P	ICP linear range analysis

LA--rP **E**

Zinc
Molybdenum

None
None

Salton Sea Test Base, CTO 097
 Metals - Laboratory Blank Data Qualification Summary - SDG K9605307

SDG	Sample	yt Anal Concentration	Modfled Final A or P	
K9605307	097RI3461	Barium Zinc Molybdenum	1.31.1 ug/L 5.91.1 ug/L 5.41.1 ug/L	A

1976A4.BC3

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

Total Dissolved Solids & pH

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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 27, 1996

Matrix: Water

Parameters: pH & Total Dissolved Solids

Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9605021

Sample Identification

-097G21165
097R12865
097G21265
097G21665
097G21565
097G21865
097G21165DUP
097G21665DUP

Introduction

This data review covers 8 water samples listed on the cover sheet. The analyses were per EPA Method 150.1 for pH and EPA Method 160.1 for Total Dissolved Solids.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods 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 111.

Field duplicates are summarized in Section VII.

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

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the method blanks.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Duplicate sample analyses were reviewed for each matrix as applicable. The relative percent differences (RPD) were within QC limits. Matrix spike analyses are not applicable to these methods.

b. Laboratory Control Samples

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

V-. Sample Result Verification

Raw data were not reviewed for this SDG

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

No field duplicates were identified in this SDG.

Vill. Field Blanks

Sample 097R12865 was identified as a rinsate. No contaminant concentrations were found in this blank with the following exceptions:

Rinsate ID	Analyte	Concentration (ng/L)
097R12865	Total dissolved solids	7
196OB6.BC3	4	

Salton Sea Test Base, CTO 097
pH & Total Dissolved Solids - Data Qualification Summary - SDG K9605021

No Sample Data Qualified in this SDG

Salton Sea Test Base, CTO 097
pH & Total Dissolved Solids - Laboratory Blank Data Qualification Summary - SDG
K9605021

No Sample Data Qualified in this SDG

1960C6.BC3

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: pH & Total Dissolved Solids
Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9605056

Sample Identification

097G22565
0971912565
097G23065
097G22765
097G22665
097DO2665
097G23165
097G22565DUP

Introduction

This data review covers 8 water samples listed on the cover sheet. The analyses were per EPA Method 150.1 for pH and EPA Method 160.1 for Total Dissolved Solids.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods 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 111.

Field duplicates are summarized in Section VII.

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

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the method blanks.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Duplicate sample analyses were reviewed for each matrix as applicable. The relative percent differences (RPD) were within QC limits. Matrix spike analyses are not applicable to these methods.

b. Laboratory Control Samples

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

V. Sample Result Verification

Raw data were not reviewed for this SDG

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

Samples 097G22665 and 097DO2665 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	<u>Concentration</u>		RPD
	097G22665	097DO2665	
Total dissolved solids	13100 mg/L	13100 Mg/L	0
pH	6.54 units	6.57 units	0.5

VIII. Field Blanks

Sample 097R12565 was identified as a rinsate. No contaminant concentrations were found in this blank with the following exceptions:

Rinsate ID	Analyte	concentration (mg/L)
097R12565	Total dissolved solids	53
196OC6.BC3		

Salton Sea Test Base, CTO 097
pH & Total Dissolved Solids - Data Qualification Summary - SDG K9605056

No Sample Data Qualified in this SDG

Salton Sea Test Base, CTO 097
pH & Total Dissolved Solids - 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 27, 1996

Matrix: Water

Parameters: pH & Total Dissolved Solids
Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9605099

Sample Identification

097G20165 097G21465 097R12665 097G20265 097G21365 097G20465 097DO2765 097G20365 097G20865
097G20965 097R12765 097G22965 097G20165DUP

Introduction

This data review covers 13 water samples listed on the cover sheet. The analyses were per EPA Method 150.1 for pH and EPA Method 160.1 for Total Dissolved Solids.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods 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 111.

Field duplicates are summarized in Section VII.

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

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the method blanks.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Duplicate sample analyses were reviewed for each matrix as applicable. The relative percent differences (RPD) were within QC limits, Matrix spike analyses are not applicable to these methods.

b. Laboratory Control Samples

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

V. Sample Result Verification

Raw data were not reviewed for this SDG

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

Samples 097G20465 and 097DO2765 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	<u>Concentration</u>		RPD
	097G20465	097DO2765	
Total dissolved solids	10200 mg/L	10300 mg/L	10
pH	7.03 units	7.01 units	0.3

VIII. Field Blanks

Samples 097R12665 and 097R12765 were identified as rinsates. No contaminant concentrations were found in these blanks with the following exceptions:

F	Rinsate ID	Analyte	Concentration
I	097R12765	Total dissolved solids	5
	19WD6.BC3		4

Salton Sea Test Base, CTO 097
pH & Total Dissolved Solids - Data Qualification Summary - SDG K9605099

No Sample Data Qualified in this SDG

Salton Sea Test Base, CTO 097
pH & Total Dissolved Solids - Laboratory Blank Data Qualification Summary - SDG
K9605099

No Sample Data Qualified in this SDG

LDC Report# 1960E6

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:	pH & Total Dissolved Solids
Laboratory:	Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9605170**

Sample Identification

097BO1265
097BO1365
097G22865
097R12965
097G22465
097G21965
097G21765
097BOI 265DUP

** Indicates SDG underwent NFESC Level D review.

Introduction

This data review covers 8 water samples listed on the cover sheet. The analyses were per EPA Method 150.1 for pH and EPA Method 160.1 for Total Dissolved Solids.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods 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 111.

Field duplicates are summarized in Section VII.

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.

1960E6.BC4

1. Technical Holding Times

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

Sample	Analyte	Total Days From Sample Collection Until Analysis	Required Holding Time (in Days) From Sample Collection Until Analysis	Flag A or P
L097BOI	255	Total dissolved solids	F	8 7

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

11. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the method blanks.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Duplicate sample analyses were reviewed for each matrix as applicable. The relative percent differences (RPD) were within QC limits. Matrix spike analyses are not applicable to these methods.

b. Laboratory Control Samples

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

V. Sample Result Verification

All sample result verifications were within validation criteria.

V1. Overall Assessment of Data

Data flags are summarized at the end of this report.

Vii. Field Duplicates

No field duplicates were identified in this SDG.

Viii. Field Blanks

Samples 097BO1265 and 097BO1365 were identified as source blanks. No contaminant concentrations were found in these blanks with the following exceptions:

Source Blank ID	Analyte	Concentration (mg/L)
097BO1365	Total dissolved solids	418

Sample 097R12965 was identified as a rinsate. No contaminant concentrations were found in this blank with the following exceptions:

Rinsate ID	Analyte	Concentration (mg/L)
097R12965	Total dissolved solids	6
196OE6.BC4	4	

Salton Sea Test Base, CTO 097

pH & Total Dissolved Solids - Data Qualification Summary - SDG K9605170**

SDG	Sample	Compound	Flag	A or P	Reason
K9605170	097601265	Total dissolved solids		A	Technical holding times

Salton Sea Test Base, CTO 097

pH & Total Dissolved Solids - Laboratory Blank Data Qualification Summary - SDG K9605170**

No Sample Data Qualified in this SDG

196OE6.Br-4

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 27, 1996
Matrix: Water
Parameters: pH & Total Dissolved Solids
Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9605225

Sample Identification

097G22265
097G22065
097DO2865
097G22165
097G20565
097R13065
097G22365
097G22265DUP
097G20565DUP

Introduction

This data review covers 9 water samples listed on the cover sheet. The analyses were per EPA Method 150.1 for pH and EPA Method 160.1 for Total Dissolved Solids.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods 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 111.

Field duplicates are summarized in Section VII.

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

II. Calibration

a. Initial Calibration

All criteria for the initial calibration of each method were met.

b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the method blanks.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

Duplicate sample analyses were reviewed for each matrix as applicable. The relative percent differences (RPD) were within QC limits. Matrix spike analyses are not applicable to these methods.

b. Laboratory Control Samples

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

V. Sample Result Verification

Raw data were not reviewed for this SDG

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VIII. Field Duplicates

~amples 097G22065 and 097DO2865 were identified as field duplicates, No contaminant concentrations were detected in any of the samples with the following exceptions:

196OF6.BC3

		<u>Concentration</u>		
pH	Analyte	097G22065	097DO2865	RPO
		7.37 unft	7.28 units	
Total dissolved solids		3890 mg/L	3930 mg/L	

VIII. Field Blanks

Sample 097R13065 was identified as a rinsate. No contaminant concentrations were found in this blank.

Salton Sea Test Base, CTO 097
pH & Total Dissolved Solids - Data Qualification Summary - SDG K9605225

No Sample Data Qualified in this SDG

Salton Sea Test Base, CTO 097
pH & Total Dissolved Solids - Laboratory Blank Data Qualification Summary - SDG
K9605225

No Sample Data Qualified in this SDG

Salton Sea Test Base, CTO 097
Data Validation Reports
LDC# 1963

Total Dissolved Solids & pH

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Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Salton Sea Test Base, CTO 097
Collection Date: August 21, 1996
LDC Report Date: September 30, 1996
Matrix: Water
Parameters: pH & Total Dissolved Solids
Laboratory: Columbia Analytical Services, Inc.

Sample Delivery Group (SDG): K9605260

Sample Identification

097G20665
097G20765
097G23465
097R13265
097G23265
097G20665DUP