TRUESDAIL LABORATORIES, INC.

CHEMISTS · MICROBIOLOGISTS · ENGINEERS
RESEARCH · DEVELOPMENT · TESTING
ESTABLISHED 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIFORNIA 92780
(714) 730-6239
FAX (714) 730-6462

LA County Dept. of Agricultural Commissioners
3400 La Madera Ave.
El Monte, CA 91732
Attn: Richard Wightman

Date: June 16, 1997
Recv'd: May 14, 1997
Lab. No: 600141
P.O. No: Verbal

Sample: Three (3) water samples labelled:

MW 1	5/14/97
MW 2	5/14/97
MW 3	5/14/97

Investigation: Analyze for strychnine in water by high performance liquid chromatography (HPLC)-ultra violet (UV) spectroscopic detection; analyze for general minerals by methods designated below.

RESULTS

The results are tabulated on the following page.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Joe Bramblett

Joe Bramblett, Manager
Instrumental Methods

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising of publicity matter without prior written authorization from these Laboratories.

General Minerals

	Milligrams per Liter (ppm)		
	MW-1	MW-2	MW-3
Cations			
Ammonium	ND	0.17	ND
Sodium	69.1	68.1	71.2
Potassium	5.0	5.1	5.6
Calcium	100.5	109.0	120.6
Magnesium	20.6	23.1	23.8
Anions			
Bicarbonate	233	262	283
Carbonate	ND	ND	ND
Chloride	88.0	69.9	90.0
Sulfate	169	161	216
Nitrate	17.8	30.0	13.8
Fluoride	0.28	0.28	0.48
Iron	0.04	0.08	0.16
Manganese	ND	ND	ND
Alkalinity	191	215	232
Hardness	277.6	350.7	400.1
Total Dissolved Solids	548	590	665
pH	6.6	6.7	6.7

ND-Not detected.

The HPLC-UV analysis was adapted from NIOSH Method 5016. The sample was analyzed by direct injection of the sample.

HPLC-UV	Milligrams per Liter (ppm) Strychnine	Detection Limit
MW-1	ND	0.04
MW-2	ND	0.04
MW-3	ND	0.04

ND-Not detected.

RECORD REQUEST FOR ANALYSIS

COMPANY NAME:

STREET:

CITY: STATE: ZIP:

PHONE ( ) FAX: ( )

PROJECT NAME:

PROJECT ADDRESS:

PROJECT NUMBER:

SAMPLER NAME AND SIGNATURE:

CONTACT PERSON REPORTS TO BE SENT TO:

CARRIER:

SHIPMENT DATE:

SHIPPING NUMBER:

NUMBER OF SAMPLES:

PAGE 1 OF 2

QUOTE #/P.O. #

TASK NUMBER:

TURNAROUND TIME REQUIRED

- ☐ NORMAL
- ☐ 5-DAY
- ☐ 3-DAY
- ☐ 24-HOUR
- ☐ IMMEDIATE ATTENTION

SAMPLE ID NUMBER	SAMPLE DESCRIPTION	SAMPLE MATRIX	SAMPLE PRESERVATIVE(S)	CONTAINER SIZE/TYPE	DATE/TIME COLLECTED	FIELD TEMP.	FIELD pH	FIELD EC	SPECIAL PROGRAM REQUIREMENTS OR EPA - SOP & QAM REF	ANALYSES REQUIRED										LAB ONLY: SAMPLE CONDITION UPON RECEIPT

SPECIAL INSTRUCTIONS / COMMENTS:

RELINQUISHED BY: (Signature)	DATE	RECEIVED BY: (Signature)	DATE:	RELINQUISHED BY: (Signature)	DATE:	RECEIVED BY: (Signature)	DATE
COMPANY:	TIME:	COMPANY:	TIME:	COMPANY:	TIME:	K Chapman COMPANY: TLI	5/14 TIME: 3:35pm

STERLING ANALYTICAL LABORATORY 2860 Walnut Avenue • Long Beach, California 90806-1834 • (800) 366-9324 • (310) 595-9324 • FAX (310) 595-6709

CHAIN OF CUSTODY RECORD REQUEST FOR ANALYSIS

COMPANY NAME:

STREET:

CITY: STATE: ZIP:

PHONE: ( ) FAX: ( )

PROJECT NAME:

PROJECT ADDRESS:

PROJECT NUMBER:

SAMPLER NAME AND SIGNATURE:

CONTACT PERSON REPORTS TO BE SENT TO:

CARRIER:

SHIPMENT DATE:

SHIPPING NUMBER:

NUMBER OF SAMPLES: PAGE 2 OF 2

QUOTE #/P.O. #

TASK NUMBER:

TURNAROUND TIME REQUIRED:
- ☐ NORMAL
- ☐ 5-DAY
- ☐ 3-DAY
- ☐ 24-HOUR
- ☐ IMMEDIATE ATTENTION

ANALYSES REQUIRED

SAMPLE I.D. NUMBER	SAMPLE DESCRIPTION	SAMPLE MATRIX	SAMPLE PRESERVATIVE(S)	CONTAINER SIZE/TYPE	DATE/TIME COLLECTED	FIELD TEMP.	FIELD pH	FIELD EC	SPECIAL PROGRAM REQUIREMENTS OR EPA - SOP & QAM REF	Strychnine	Dissolved Oxygen	[illegible]	LAB ONLY: SAMPLE CONDITION UPON RECEIPT
[illegible]	[illegible]	[illegible]			5/14/97					✓			
[illegible]	[illegible]	[illegible]			[illegible]							✓	

SPECIAL INSTRUCTIONS / COMMENTS: * General Minerals → See Pg 1

RELINQUISHED BY: (Signature)	DATE:	RECEIVED BY: (Signature)	DATE:	RELINQUISHED BY: (Signature)	DATE:	RECEIVED BY: (Signature)	DATE:
[illegible]	5/14/97					K. Clapper	5/14
COMPANY:	TIME:	COMPANY:	TIME:	COMPANY:	TIME:	COMPANY: TLI	TIME: 3:35 pm

Quanterra
Environmental Services

Quanterra Incorporated
1721 South Grand Avenue
Santa Ana, California 92705

714 258-8610 Telephone
714 258-0921 Fax

November 17, 1997

QUANTERRA INCORPORATED PROJECT NUMBER: 129089
PO/CONTRACT: LA County Agriculture Commission

Steve Clements
SCS Engineers
3711 Long Beach Blvd.
Long Beach, CA 90807

Dear Mr. Clements,

This report contains the analytical results for the three samples received under chain of custody by Quanterra Incorporated on October 30, 1997. These samples are associated with your LACDAC project.

The case narrative is an integral part of this report.

If you have any questions, please feel free to call me at (714) 258-8610.

Sincerely,

Jan Clark

Jan Clark
Project Manager

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QUANTERRA INCORPORATED PROJECT NUMBER 129089

Case Narrative

Quanterra's Quality Assurance Program

Chain of Custody Documentation

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- Sample Data Sheets
- Method Blank Reports
- Laboratory QC Reports

8260
Sample(s): 3
- Sample Data Sheets
- Method Blank Reports
- Laboratory QC Reports

8140 **
Sample(s): 3
- Sample Data Sheets
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8150 **
Sample(s): 3
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QUANTERRA INCORPORATED PROJECT NUMBER 129089

Metals
Sample(s): 1
- Sample Data Sheets
- Method Blank Reports
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** Analysis performed at Quanterra Inc. West Sacramento

CASE NARRATIVE

QUANTERRA INCORPORATED PROJECT NUMBER 129089

All applicable internal quality control analyses including calibrations and calibration verifications, calibration (instrument) and method blanks, laboratory control samples (LCS), matrix spikes (MS) and matrix spike duplicates (MSD), and other QC met project and/or method -specified acceptance criteria. Any matrix-related anomalies are indicated using footnotes within the report. Any other anomalies are reported within the narrative. There are no anomalies to report within this narrative.

Method 8150

The LCS recovery for 2,4-D was below acceptance criteria in QC Run 03 NOV 97-11A. This condition is due to a spiking error. Re-analysis confirmed low recovery. Since the MS/MSD recoveries and the RPD were all within acceptance limits, no further action was taken. All associated samples were non-detect.

Quanterra Environmental Services - Western Region

Quality Control Definitions

QC Parameter	Definition
QC Batch	A set of up to 20 field samples plus associated laboratory QC samples that are similar in composition (matrix) and that are processed within the same time period with the same reagent and standard lots.
Duplicate Control Sample (DCS)	Consist of a pair of LCSs analyzed within the same QC batch to monitor precision and accuracy independent of sample matrix effects. This QC is performed only if required by client or when insufficient sample is available to perform MS/MSD.
Duplicate Sample (DU)	A second aliquot of an environmental sample, taken from the same sample container when possible, that is processed independently with the first sample aliquot. The results are used to assess the effect of the sample matrix on the precision of the analytical process. The precision estimated using this sample is not necessarily representative of the precision for other samples in the batch.
Laboratory Control Sample (LCS)	A volume of reagent water for aqueous samples or a contaminant-free solid matrix (Ottawa sand) for soil and sediment samples which is spiked with known amounts of representative target analytes and required surrogates. An LCS is carried through the entire analytical process and is used to monitor the accuracy of the analytical process independent of potential matrix effects.
Matrix Spike and Matrix Spike Duplicate (MS/MSD)	A field sample fortified with known quantities of target analytes that are also added to the LCS. Matrix spike duplicate is a second matrix spike sample. MSs/MSDs are carried through the entire analytical process and are used to determine sample matrix effect on accuracy of the measurement system. The accuracy and precision estimated using MS/MSD is only representative of the precision of the sample that was spiked.
Method Blank (MB)	A sample composed of all the reagents (in the same quantities) in reagent water carried through the entire analytical process. The method blank is used to monitor the level of contamination introduced during sample preparation steps.
Surrogate Spike	Organic constituents not expected to be detected in environmental media and are added to every sample and QC at a known concentration. Surrogates are used to determine the efficiency of the sample preparation and the analytical process.

Source: Quanterra® Quality Control Program, Policy QA-003, Rev. 0, 8/19/96.

Quanterra
Environmental Services

SAMPLE DESCRIPTION INFORMATION
for
SCS Engineers

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
129089-0001-SA	MW-1	AQUEOUS	29 OCT 97		30 OCT 97
129089-0001-MS	MW-1MS	AQUEOUS	29 OCT 97		30 OCT 97
129089-0001-SD	MW-1MSD	AQUEOUS	29 OCT 97		30 OCT 97
129089-0002-SA	MW-2	AQUEOUS	29 OCT 97		30 OCT 97
129089-0002-MS	MW-2MS	AQUEOUS	29 OCT 97		30 OCT 97
129089-0002-SD	MW-2MSD	AQUEOUS	29 OCT 97		30 OCT 97
129089-0003-SA	MW-3	AQUEOUS	29 OCT 97		30 OCT 97

8080

Quanterra Environmental Services

Organochlorine Pesticides and Polychlorinated Biphenyls
Method 8080

Client Name:	SCS Engineers		
Client ID:	MW-1		
LAB ID:	129089-0001-SA		
Matrix:	AQUEOUS	Sampled: 29 OCT 97	Received: 30 OCT 97
Authorized:	30 OCT 97	Prepared: 31 OCT 97	Analyzed: 04 NOV 97
Instrument:	GC/ECD-PTA	Dilution: 1.0	

Parameter	Result	Qualifier	RL	Units
alpha-BHC	ND		0.050	ug/L
beta-BHC	ND		0.050	ug/L
delta-BHC	ND		0.050	ug/L
gamma-BHC (Lindane)	ND		0.050	ug/L
Aldrin	ND		0.050	ug/L
Heptachlor	ND		0.050	ug/L
Heptachlor epoxide	ND		0.050	ug/L
Endosulfan I	ND		0.050	ug/L
Dieldrin	ND		0.10	ug/L
4,4'-DDE	ND		0.10	ug/L
Endrin	ND		0.10	ug/L
Endosulfan II	ND		0.10	ug/L
4,4'-DDD	ND		0.10	ug/L
Endosulfan sulfate	ND		0.10	ug/L
4,4'-DDT	ND		0.10	ug/L
Endrin aldehyde	ND		0.10	ug/L
Methoxychlor	ND		0.50	ug/L
alpha-Chlordane	ND		0.050	ug/L
gamma-Chlordane	ND		0.050	ug/L
Toxaphene	ND		5.0	ug/L

Surrogate	Recovery		Acceptable Range
2,4,5,6-Tetrachloro-m-xylene	100	%	60 - 150
Decachlorobiphenyl	124	%	60 - 150

ND = Not Detected

Quanterra
Environmental Services

Organochlorine Pesticides and Polychlorinated Biphenyls
Method 8080

Client Name:	SCS Engineers		
Client ID:	MW-2		
LAB ID:	129089-0002-SA		
Matrix:	AQUEOUS	Sampled: 29 OCT 97	Received: 30 OCT 97
Authorized:	30 OCT 97	Prepared: 31 OCT 97	Analyzed: 04 NOV 97
Instrument:	GC/ECD-PTA	Dilution: 1.0	

Parameter	Result	Qualifier	RL	Units
alpha-BHC	ND		0.050	ug/L
beta-BHC	ND		0.050	ug/L
delta-BHC	ND		0.050	ug/L
gamma-BHC (Lindane)	ND		0.050	ug/L
Aldrin	ND		0.050	ug/L
Heptachlor	ND		0.050	ug/L
Heptachlor epoxide	ND		0.050	ug/L
Endosulfan I	ND		0.050	ug/L
Dieldrin	ND		0.10	ug/L
4,4'-DDE	ND		0.10	ug/L
Endrin	ND		0.10	ug/L
Endosulfan II	ND		0.10	ug/L
4,4'-DDD	ND		0.10	ug/L
Endosulfan sulfate	ND		0.10	ug/L
4,4'-DDT	ND		0.10	ug/L
Endrin aldehyde	ND		0.10	ug/L
Methoxychlor	ND		0.50	ug/L
alpha-Chlordane	ND		0.050	ug/L
gamma-Chlordane	ND		0.050	ug/L
Toxaphene	ND		5.0	ug/L

Surrogate	Recovery		Acceptable Range
2,4,5,6-Tetrachloro-m-xylene	95	%	60 - 150
Decachlorobiphenyl	115	%	60 - 150

ND = Not Detected

Quanterra Environmental Services

Organochlorine Pesticides and Polychlorinated Biphenyls
Method 8080

Client Name:	SCS Engineers		
Client ID:	MW-3		
LAB ID:	129089-0003-SA		
Matrix:	AQUEOUS	Sampled: 29 OCT 97	Received: 30 OCT 97
Authorized:	30 OCT 97	Prepared: 31 OCT 97	Analyzed: 04 NOV 97
Instrument:	GC/ECD-PTA	Dilution: 1.0	

Parameter	Result	Qualifier	RL	Units
alpha-BHC	ND		0.050	ug/L
beta-BHC	ND		0.050	ug/L
delta-BHC	ND		0.050	ug/L
gamma-BHC (Lindane)	ND		0.050	ug/L
Aldrin	ND		0.050	ug/L
Heptachlor	ND		0.050	ug/L
Heptachlor epoxide	ND		0.050	ug/L
Endosulfan I	ND		0.050	ug/L
Dieldrin	ND		0.10	ug/L
4,4'-DDE	ND		0.10	ug/L
Endrin	ND		0.10	ug/L
Endosulfan II	ND		0.10	ug/L
4,4'-DDD	ND		0.10	ug/L
Endosulfan sulfate	ND		0.10	ug/L
4,4'-DDT	ND		0.10	ug/L
Endrin aldehyde	ND		0.10	ug/L
Methoxychlor	ND		0.50	ug/L
alpha-Chlordane	ND		0.050	ug/L
gamma-Chlordane	ND		0.050	ug/L
Toxaphene	ND		5.0	ug/L

Surrogate	Recovery		Acceptable Range
2,4,5,6-Tetrachloro-m-xylene	98	%	60 - 150
Decachlorobiphenyl	120	%	60 - 150

ND = Not Detected

Quanterra
Environmental Services

QC LOT ASSIGNMENT REPORT - MS QC
Semivolatile Organics by GC

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK/LCS)	MS QC Run Number (SA,MS,SD,DU)
129089-0001-SA	AQUEOUS	8080-A		31 OCT 97-AX	31 OCT 97-AA
129089-0002-SA	AQUEOUS	8080-A		31 OCT 97-AX	31 OCT 97-AA
129089-0002-SD	AQUEOUS	8080-A		31 OCT 97-AX	31 OCT 97-AA
129089-0002-MS	AQUEOUS	8080-A		31 OCT 97-AX	31 OCT 97-AA
129089-0003-SA	AQUEOUS	8080-A		31 OCT 97-AX	31 OCT 97-AA

Quanterra Environmental Services

METHOD BLANK REPORT
Semivolatile Organics by GC
Project: 129089

Test: 8080-A Method 8080 - TCL Organochlorine Pesticides/PCBs
Matrix: AQUEOUS
QC Run: 31 OCT 97-AX Date Analyzed: 04 NOV 97

Analyte	Result	Units	Reporting Limit
alpha-BHC	ND	ug/L	0.050
beta-BHC	ND	ug/L	0.050
delta-BHC	ND	ug/L	0.050
gamma-BHC (Lindane)	ND	ug/L	0.050
Aldrin	ND	ug/L	0.050
Heptachlor	ND	ug/L	0.050
Heptachlor epoxide	ND	ug/L	0.050
Endosulfan I	ND	ug/L	0.050
Dieldrin	ND	ug/L	0.10
4,4'-DDE	ND	ug/L	0.10
Endrin	ND	ug/L	0.10
Endosulfan II	ND	ug/L	0.10
4,4'-DDD	ND	ug/L	0.10
Endosulfan sulfate	ND	ug/L	0.10
4,4'-DDT	ND	ug/L	0.10
Endrin aldehyde	ND	ug/L	0.10
Methoxychlor	ND	ug/L	0.50
alpha-Chlordane	ND	ug/L	0.050
gamma-Chlordane	ND	ug/L	0.050
Toxaphene	ND	ug/L	5.0

Surrogate	Recovery	Acceptable Range
2,4,5,6-Tetrachloro-m-xylene	94	60 -150
Decachlorobiphenyl	117	60 -150

ND = Not Detected

Quanterra
Environmental Services

LABORATORY CONTROL SAMPLE REPORT
Semivolatile Organics by GC
Project: 129089

Category: 8080-A Pesticides
Matrix: AQUEOUS
QC Run: 31 OCT 97-AX
Concentration Units: ug/L

Date Analyzed: 04 NOV 97

Analyte	Concentration Spiked	Concentration Measured	Accuracy(%) LCS	Accuracy(%) Limits
gamma-BHC (Lindane)	1.00	0.942	94	22-140
Heptachlor	1.00	0.872	87	36-119
Aldrin	1.00	0.935	94	40-112
Dieldrin	1.00	0.876	88	51-130
Endrin	1.00	0.976	98	56-122
4,4'-DDT	1.00	0.811	81	40-111

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra Environmental Services

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC REPORT
Semivolatile Organics by GC
Project: 129089

Category: 8080-A Pesticides
Matrix: AQUEOUS
Sample: 129089-0002
MS Run: 31 OCT 97-AA
Units: ug/L

Analyte	Sample Result	Concentration MS Result	Concentration MSD Result	Amount Spiked MS/MSD	%Recovery MS	%Recovery MSD	%RPD	Acceptance Limit Recov.	Acceptance Limit RPD
gamma-BHC (Lindane)	ND	0.963	1.01	1.00	96	101	4.5	10-159	18
Heptachlor	ND	0.950	1.00	1.00	95	100	5.5	10-142	21
Aldrin	ND	0.945	0.995	1.00	94	100	5.2	15-130	40
Dieldrin	ND	0.903	0.939	1.00	90	94	3.9	23-147	50
Endrin	ND	1.02	1.06	1.00	102	106	3.3	49-130	50
4,4'-DDT	ND	0.885	0.925	1.00	88	92	4.4	10-125	50

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

8260

Quanterra
Environmental Services

Volatile Organic Compounds
Method 8260

Client Name:	SCS Engineers		
Client ID:	MW-1		
LAB ID:	129089-0001-SA		
Matrix:	AQUEOUS	Sampled: 29 OCT 97	Received: 30 OCT 97
Authorized:	30 OCT 97	Prepared: 08 NOV 97	Analyzed: 08 NOV 97
Instrument:	GC/MS-MD	Dilution: 1.0	

Parameter	Result	Qualifier	RL	Units
Chloromethane	ND		10	ug/L
Bromomethane	ND		10	ug/L
Vinyl chloride	ND		10	ug/L
Chloroethane	ND		10	ug/L
Methylene chloride	ND		5.0	ug/L
Acetone	ND		10	ug/L
Carbon disulfide	ND		5.0	ug/L
Trichlorofluoromethane	ND		5.0	ug/L
1,1-Dichloroethene	ND		5.0	ug/L
1,1-Dichloroethane	ND		5.0	ug/L
1,2-Dichloroethene (cis/trans)	ND		5.0	ug/L
Chloroform	ND		5.0	ug/L
1,2-Dichloroethane	ND		5.0	ug/L
2-Butanone	ND		10	ug/L
1,1,1-Trichloroethane	ND		5.0	ug/L
Carbon tetrachloride	ND		5.0	ug/L
Vinyl acetate	ND		10	ug/L
Bromodichloromethane	ND		5.0	ug/L
1,2-Dichloropropane	ND		5.0	ug/L
cis-1,3-Dichloropropene	ND		5.0	ug/L
Trichloroethene	ND		5.0	ug/L
Dibromochloromethane	ND		5.0	ug/L
1,1,2-Trichloroethane	ND		5.0	ug/L
Benzene	ND		5.0	ug/L
trans-1,3-Dichloropropene	ND		5.0	ug/L
2-Chloroethyl vinyl ether	ND		10	ug/L
Bromoform	ND		5.0	ug/L
4-Methyl-2-pentanone	ND		10	ug/L
2-Hexanone	ND		10	ug/L
Tetrachloroethene	ND		5.0	ug/L
1,1,2,2-Tetrachloroethane	ND		5.0	ug/L
Toluene	ND		5.0	ug/L
Chlorobenzene	ND		5.0	ug/L
Ethylbenzene	ND		5.0	ug/L
Styrene	ND		5.0	ug/L
Xylenes (total)	ND		5.0	ug/L

Surrogate	Recovery		Acceptable Range
1,2-Dichloroethane-d4	87	%	80 - 120
Toluene-d8	101	%	80 - 120
Bromofluorobenzene	103	%	80 - 120

ND = Not Detected

Quanterra
Environmental Services

Volatile Organic Compounds
Method 8260

Client Name:	SCS Engineers		
Client ID:	MW-2		
LAB ID:	129089-0002-SA		
Matrix:	AQUEOUS	Sampled: 29 OCT 97	Received: 30 OCT 97
Authorized:	30 OCT 97	Prepared: 08 NOV 97	Analyzed: 08 NOV 97
Instrument:	GC/MS-MD	Dilution: 1.0	

Parameter	Result	Qualifier	RL	Units
Chloromethane	ND		10	ug/L
Bromomethane	ND		10	ug/L
Vinyl chloride	ND		10	ug/L
Chloroethane	ND		10	ug/L
Methylene chloride	ND		5.0	ug/L
Acetone	ND		10	ug/L
Carbon disulfide	ND		5.0	ug/L
Trichlorofluoromethane	ND		5.0	ug/L
1,1-Dichloroethene	ND		5.0	ug/L
1,1-Dichloroethane	ND		5.0	ug/L
1,2-Dichloroethene (cis/trans)	ND		5.0	ug/L
Chloroform	ND		5.0	ug/L
1,2-Dichloroethane	ND		5.0	ug/L
2-Butanone	ND		10	ug/L
1,1,1-Trichloroethane	ND		5.0	ug/L
Carbon tetrachloride	ND		5.0	ug/L
Vinyl acetate	ND		10	ug/L
Bromodichloromethane	ND		5.0	ug/L
1,2-Dichloropropane	ND		5.0	ug/L
cis-1,3-Dichloropropene	ND		5.0	ug/L
Trichloroethene	ND		5.0	ug/L
Dibromochloromethane	ND		5.0	ug/L
1,1,2-Trichloroethane	ND		5.0	ug/L
Benzene	ND		5.0	ug/L
trans-1,3-Dichloropropene	ND		5.0	ug/L
2-Chloroethyl vinyl ether	ND		10	ug/L
Bromoform	ND		5.0	ug/L
4-Methyl-2-pentanone	ND		10	ug/L
2-Hexanone	ND		10	ug/L
Tetrachloroethene	ND		5.0	ug/L
1,1,2,2-Tetrachloroethane	ND		5.0	ug/L
Toluene	ND		5.0	ug/L
Chlorobenzene	ND		5.0	ug/L
Ethylbenzene	ND		5.0	ug/L
Styrene	ND		5.0	ug/L
Xylenes (total)	ND		5.0	ug/L

Surrogate	Recovery		Acceptable Range
1,2-Dichloroethane-d4	87	%	80 - 120
Toluene-d8	100	%	80 - 120
Bromofluorobenzene	102	%	80 - 120

ND = Not Detected

Quanterra
Environmental Services

Volatile Organic Compounds
Method 8260

Client Name:	SCS Engineers		
Client ID:	MW-3		
LAB ID:	129089-0003-SA		
Matrix:	AQUEOUS	Sampled: 29 OCT 97	Received: 30 OCT 97
Authorized:	30 OCT 97	Prepared: 08 NOV 97	Analyzed: 08 NOV 97
Instrument:	GC/MS-MD	Dilution: 1.0	

Parameter	Result	Qualifier	RL	Units
Chloromethane	ND		10	ug/L
Bromomethane	ND		10	ug/L
Vinyl chloride	ND		10	ug/L
Chloroethane	ND		10	ug/L
Methylene chloride	ND		5.0	ug/L
Acetone	ND		10	ug/L
Carbon disulfide	ND		5.0	ug/L
Trichlorofluoromethane	ND		5.0	ug/L
1,1-Dichloroethene	ND		5.0	ug/L
1,1-Dichloroethane	ND		5.0	ug/L
1,2-Dichloroethene (cis/trans)	ND		5.0	ug/L
Chloroform	ND		5.0	ug/L
1,2-Dichloroethane	ND		5.0	ug/L
2-Butanone	ND		10	ug/L
1,1,1-Trichloroethane	ND		5.0	ug/L
Carbon tetrachloride	ND		5.0	ug/L
Vinyl acetate	ND		10	ug/L
Bromodichloromethane	ND		5.0	ug/L
1,2-Dichloropropane	ND		5.0	ug/L
cis-1,3-Dichloropropene	ND		5.0	ug/L
Trichloroethene	ND		5.0	ug/L
Dibromochloromethane	ND		5.0	ug/L
1,1,2-Trichloroethane	ND		5.0	ug/L
Benzene	ND		5.0	ug/L
trans-1,3-Dichloropropene	ND		5.0	ug/L
2-Chloroethyl vinyl ether	ND		10	ug/L
Bromoform	ND		5.0	ug/L
4-Methyl-2-pentanone	ND		10	ug/L
2-Hexanone	ND		10	ug/L
Tetrachloroethene	ND		5.0	ug/L
1,1,2,2-Tetrachloroethane	ND		5.0	ug/L
Toluene	ND		5.0	ug/L
Chlorobenzene	ND		5.0	ug/L
Ethylbenzene	ND		5.0	ug/L
Styrene	ND		5.0	ug/L
Xylenes (total)	ND		5.0	ug/L

Surrogate	Recovery		Acceptable Range
1,2-Dichloroethane-d4	87	%	80 - 120
Toluene-d8	99	%	80 - 120
Bromofluorobenzene	101	%	80 - 120

ND = Not Detected

Quanterra
Environmental Services

QC LOT ASSIGNMENT REPORT - MS QC
Volatile Organics by GC/MS

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK/LCS)	MS QC Run Number (SA,MS,SD,DU)
129089-0001-SA	AQUEOUS	Q8260-A		07 NOV 97-BDX	08 NOV 97-AD
129089-0001-SD	AQUEOUS	Q8260-A		08 NOV 97-ADX	08 NOV 97-AD
129089-0001-MS	AQUEOUS	Q8260-A		08 NOV 97-ADX	08 NOV 97-AD
129089-0002-SA	AQUEOUS	Q8260-A		07 NOV 97-BDX	08 NOV 97-AD
129089-0003-SA	AQUEOUS	Q8260-A		07 NOV 97-BDX	08 NOV 97-AD

Quanterra Environmental Services

METHOD BLANK REPORT
Volatile Organics by GC/MS
Project: 129089

Test: 8260-SL-A Method 8260 - Volatile Organics
Matrix: AQUEOUS
QC Run: 07 NOV 97-BDX Date Analyzed: 08 NOV 97

Analyte	Result	Units	Reporting Limit
Chloromethane	ND	ug/L	10
Bromomethane	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Chloroethane	ND	ug/L	10
Methylene chloride	ND	ug/L	5.0
Acetone	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
Trichlorofluoromethane	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethene (cis/trans)	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
2-Butanone	ND	ug/L	10
1,1,1-Trichloroethane	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Bromodichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Dibromochloromethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
2-Chloroethyl vinyl ether	ND	ug/L	10
Bromoform	ND	ug/L	5.0
4-Methyl-2-pentanone	ND	ug/L	10
2-Hexanone	ND	ug/L	10
Tetrachloroethene	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Ethylbenzene	ND	ug/L	5.0
Styrene	ND	ug/L	5.0
Xylenes (total)	ND	ug/L	5.0

Surrogate	Recovery	Acceptable Range
1,2-Dichloroethane-d4	80	80 -120
Toluene-d8	98	80 -120
Bromofluorobenzene	99	80 -120

ND = Not Detected

Quanterra
Environmental Services

METHOD BLANK REPORT (cont.)
Volatile Organics by GC/MS
Project: 129089

Test: 8260-SL-A
Matrix: AQUEOUS

Method 8260 - Volatile Organics (cont.)

QC Run: 08 NOV 97-ADX

Date Analyzed: 08 NOV 97

Analyte	Result	Units	Reporting Limit
1,1-Dichloroethene	ND	ug/L	5.00
Trichloroethene	ND	ug/L	5.00
Benzene	ND	ug/L	5.00
Toluene	ND	ug/L	5.00
Chlorobenzene	ND	ug/L	5.00

Surrogate	Recovery	Acceptable Range
1,2-Dichloroethane-d4	84	80 -120
Toluene-d8	94	80 -120
Bromofluorobenzene	96	80 -120

ND = Not Detected

Quanterra
Environmental Services

LABORATORY CONTROL SAMPLE REPORT
Volatile Organics by GC/MS
Project: 129089

Category: Q8260-A Method SW8260A - Volatile Organics
Matrix: AQUEOUS Date Analyzed: 08 NOV 97
QC Run: 08 NOV 97-ADX
Concentration Units: ug/L

Analyte	Concentration Spiked	Concentration Measured	Accuracy(%) LCS	Accuracy(%) Limits
1,1-Dichloroethene	10.0	9.04	90	70-120
Trichloroethene	10.0	10.2	102	80-120
Benzene	10.0	9.55	96	80-120
Toluene	10.0	10.1	101	80-120
Chlorobenzene	10.0	10.4	104	80-120

Surrogates	Concentration Spiked	Concentration Measured	Accuracy(%) LCS	Accuracy(%) Limits
1,2-Dichloroethane-d4	10.0	8.84	88	80-120
Bromofluorobenzene	10.0	10.2	102	80-120
Toluene-d8	10.0	9.48	95	80-120

Category: Q8260-A Method SW8260A - Volatile Organics
Matrix: AQUEOUS Date Analyzed: 07 NOV 97
QC Run: 07 NOV 97-BDX
Concentration Units: ug/L

Analyte	Concentration Spiked	Concentration Measured	Accuracy(%) LCS	Accuracy(%) Limits
1,1-Dichloroethene	10.0	8.28	83	70-120
Trichloroethene	10.0	10.6	106	80-120
Benzene	10.0	9.77	98	80-120
Toluene	10.0	10.3	103	80-120
Chlorobenzene	10.0	10.2	102	80-120

Surrogates	Concentration Spiked	Concentration Measured	Accuracy(%) LCS	Accuracy(%) Limits
1,2-Dichloroethane-d4	10.0	8.05	80	80-120
Bromofluorobenzene	10.0	9.76	98	80-120
Toluene-d8	10.0	9.66	97	80-120

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra
Environmental Services

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC REPORT
Volatile Organics by GC/MS
Project: 129089

Category: Q8260-A Method SW8260A - Volatile Organics
Matrix: AQUEOUS
Sample: 129089-0001
MS Run: 08 NOV 97-AD
Units: ug/L

Analyte	Sample Result	Concentration MS Result	Concentration MSD Result	Amount Spiked MS/MSD	%Recovery MS	%Recovery MSD	%RPD	Acceptance Limit Recov.	Acceptance Limit RPD
1,1-Dichloroethene	ND	8.99	8.38	10.0	90	84	7.0	70-120	25
Trichloroethene	ND	10.3	9.99	10.0	103	100	2.8	80-120	25
Benzene	ND	9.60	9.63	10.0	96	96	0.3	80-120	25
Toluene	ND	9.73	9.55	10.0	97	96	1.9	80-120	25
Chlorobenzene	ND	10.0	9.64	10.0	100	96	4.0	80-120	25

Surrogates	Sample %Recovery	%Recovery MS	%Recovery MSD	Acceptance Limit Recovery
1,2-Dichloroethane-d4	87	91	86	80-120
Bromofluorobenzene	103	101	100	80-120
Toluene-d8	101	100	98	80-120

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

8140

Quanterra
Environmental Services

Organophosphorus Pesticides (export to WSAC)
Method 8140

Client Name:	SCS Engineers		
Client ID:	MW-1		
LAB ID:	129089-0001-SA		
Matrix:	AQUEOUS	Sampled: 29 OCT 97	Received: 30 OCT 97
Authorized:	30 OCT 97	Prepared: 05 NOV 97	Analyzed: 08 NOV 97
Instrument:	PHOS-PEST	Dilution: 1.0	

Parameter	Result	Qualifier	RL	Units
Azinphos-methyl (Guthion)	ND		1.0	ug/L
Bolstar	ND		1.0	ug/L
Dursban (Chlorpyrifos)	ND		1.0	ug/L
Coumaphos	ND		1.0	ug/L
Demeton	ND		1.0	ug/L
Diazinon	ND		1.0	ug/L
Dichlorvos	ND		2.0	ug/L
Disyston (Disulfoton)	ND		1.0	ug/L
Ethoprop	ND		1.0	ug/L
Fensulfothion	ND		1.0	ug/L
Baytex (Fenthion)	ND		1.0	ug/L
Merphos	ND		1.0	ug/L
Phosdrin (Mevinphos)	ND		1.0	ug/L
Naled	ND		2.0	ug/L
Methyl parathion	ND		1.0	ug/L
Phorate (Thimet)	ND		1.0	ug/L
Ronnel	ND		1.0	ug/L
Tetrachlorvinphos	ND		1.0	ug/L
Tokuthion (Prothiophos)	ND		1.0	ug/L
Trichloronate	ND		1.0	ug/L

Surrogate	Recovery		Acceptable Range
Ethion	84	%	67 - 117

ND = Not Detected

Quanterra Environmental Services

Organophosphorus Pesticides (export to WSAC)
Method 8140

Client Name:	SCS Engineers		
Client ID:	MW-2		
LAB ID:	129089-0002-SA		
Matrix:	AQUEOUS	Sampled: 29 OCT 97	Received: 30 OCT 97
Authorized:	30 OCT 97	Prepared: 05 NOV 97	Analyzed: 08 NOV 97
Instrument:	PHOS-PEST	Dilution: 1.0	

Parameter	Result	Qualifier	RL	Units
Azinphos-methyl (Guthion)	ND		1.0	ug/L
Bolstar	ND		1.0	ug/L
Dursban (Chlorpyrifos)	ND		1.0	ug/L
Coumaphos	ND		1.0	ug/L
Demeton	ND		1.0	ug/L
Diazinon	ND		1.0	ug/L
Dichlorvos	ND		2.0	ug/L
Disyston (Disulfoton)	ND		1.0	ug/L
Ethoprop	ND		1.0	ug/L
Fensulfothion	ND		1.0	ug/L
Baytex (Fenthion)	ND		1.0	ug/L
Merphos	ND		1.0	ug/L
Phosdrin (Mevinphos)	ND		1.0	ug/L
Naled	ND		2.0	ug/L
Methyl parathion	ND		1.0	ug/L
Phorate (Thimet)	ND		1.0	ug/L
Ronnel	ND		1.0	ug/L
Tetrachlorvinphos	ND		1.0	ug/L
Tokuthion (Prothiophos)	ND		1.0	ug/L
Trichloronate	ND		1.0	ug/L

Surrogate	Recovery		Acceptable Range
Ethion	90	%	67 - 117

ND = Not Detected

Quanterra
Environmental Services

Organophosphorus Pesticides (export to WSAC)
Method 8140

Client Name:	SCS Engineers		
Client ID:	MW-3		
LAB ID:	129089-0003-SA		
Matrix:	AQUEOUS	Sampled: 29 OCT 97	Received: 30 OCT 97
Authorized:	30 OCT 97	Prepared: 05 NOV 97	Analyzed: 08 NOV 97
Instrument:	PHOS-PEST	Dilution: 1.0	

Parameter	Result	Qualifier	RL	Units
Azinphos-methyl (Guthion)	ND		1.0	ug/L
Bolstar	ND		1.0	ug/L
Dursban (Chlorpyrifos)	ND		1.0	ug/L
Coumaphos	ND		1.0	ug/L
Demeton	ND		1.0	ug/L
Diazinon	ND		1.0	ug/L
Dichlorvos	ND		2.0	ug/L
Disyston (Disulfoton)	ND		1.0	ug/L
Ethoprop	ND		1.0	ug/L
Fensulfothion	ND		1.0	ug/L
Baytex (Fenthion)	ND		1.0	ug/L
Merphos	ND		1.0	ug/L
Phosdrin (Mevinphos)	ND		1.0	ug/L
Naled	ND		2.0	ug/L
Methyl parathion	ND		1.0	ug/L
Phorate (Thimet)	ND		1.0	ug/L
Ronnel	ND		1.0	ug/L
Tetrachlorvinphos	ND		1.0	ug/L
Tokuthion (Prothiophos)	ND		1.0	ug/L
Trichloronate	ND		1.0	ug/L

Surrogate	Recovery		Acceptable Range
Ethion	91	%	67 - 117

ND = Not Detected

8150

Quanterra
Environmental Services

Client Name:	SCS Engineers		
Client ID:	MW-1		
LAB ID:	129089-0001-SA		
Matrix:	AQUEOUS	Sampled: 29 OCT 97	Received: 30 OCT 97
Authorized:	30 OCT 97	Prepared: 03 NOV 97	Analyzed: 07 NOV 97
Instrument:	ACID	Dilution: 1.0	

Parameter	Result	Qualifier	RL	Units
2,4-D	ND		0.25	ug/L
2,4-DB	ND		1.0	ug/L
2,4,5-TP (Silvex)	ND		0.050	ug/L
2,4,5-T	ND		0.050	ug/L
MCPA	ND		50	ug/L
MCPP	ND		50	ug/L
Dinoseb	ND		0.25	ug/L
Dalapon	ND		5.0	ug/L
Dichlorprop	ND		0.25	ug/L
Dicamba	ND		0.10	ug/L

Surrogate	Recovery		Acceptable Range
2,4-DCAA	73	%	26 - 132

ND = Not Detected

Quanterra
Environmental Services

Client Name:	SCS Engineers		
Client ID:	MW-2		
LAB ID:	129089-0002-SA		
Matrix:	AQUEOUS	Sampled: 29 OCT 97	Received: 30 OCT 97
Authorized:	30 OCT 97	Prepared: 03 NOV 97	Analyzed: 07 NOV 97
Instrument:	ACID	Dilution: 1.0	

Parameter	Result	Qualifier	RL	Units
2,4-D	ND		0.25	ug/L
2,4-DB	ND		1.0	ug/L
2,4,5-TP (Silvex)	ND		0.050	ug/L
2,4,5-T	ND		0.050	ug/L
MCPA	ND		50	ug/L
MCPP	ND		50	ug/L
Dinoseb	ND		0.25	ug/L
Dalapon	ND		5.0	ug/L
Dichlorprop	ND		0.25	ug/L
Dicamba	ND		0.10	ug/L

Surrogate	Recovery		Acceptable Range
2,4-DCAA	69	%	26 - 132

ND = Not Detected

Quanterra
Environmental Services

Client Name:	SCS Engineers		
Client ID:	MW-3		
LAB ID:	129089-0003-SA		
Matrix:	AQUEOUS	Sampled: 29 OCT 97	Received: 30 OCT 97
Authorized:	30 OCT 97	Prepared: 03 NOV 97	Analyzed: 07 NOV 97
Instrument:	ACID	Dilution: 1.0	

Parameter	Result	Qualifier	RL	Units
2,4-D	ND		0.25	ug/L
2,4-DB	ND		1.0	ug/L
2,4,5-TP (Silvex)	ND		0.050	ug/L
2,4,5-T	ND		0.050	ug/L
MCPA	ND		50	ug/L
MCPP	ND		50	ug/L
Dinoseb	ND		0.25	ug/L
Dalapon	ND		5.0	ug/L
Dichlorprop	ND		0.25	ug/L
Dicamba	ND		0.10	ug/L

Surrogate	Recovery		Acceptable Range
2,4-DCAA	70	%	26 - 132

ND = Not Detected

Quanterra
Environmental Services

QC LOT ASSIGNMENT REPORT - MS QC
Subcontracted to Quanterra Lab

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK/LCS)	MS QC Run Number (SA,MS,SD,DU)
129089-0001-SA	AQUEOUS	615-A		03 NOV 97-11A	03 NOV 97-11A
129089-0001-SD	AQUEOUS	615-A		03 NOV 97-11A	03 NOV 97-11A
129089-0001-MS	AQUEOUS	615-A		03 NOV 97-11A	03 NOV 97-11A
129089-0002-SA	AQUEOUS	615-A		03 NOV 97-11A	03 NOV 97-11A
129089-0003-SA	AQUEOUS	615-A		03 NOV 97-11A	03 NOV 97-11A
129089-0001-SA	AQUEOUS	8140-SW-A		05 NOV 97-11A	05 NOV 97-11A
129089-0001-SD	AQUEOUS	8140-SW-A		05 NOV 97-11A	05 NOV 97-11A
129089-0001-MS	AQUEOUS	8140-SW-A		05 NOV 97-11A	05 NOV 97-11A
129089-0002-SA	AQUEOUS	8140-SW-A		05 NOV 97-11A	05 NOV 97-11A
129089-0003-SA	AQUEOUS	8140-SW-A		05 NOV 97-11A	05 NOV 97-11A

Quanterra
Environmental Services

METHOD BLANK REPORT
Subcontracted to Quanterra Lab
Project: 129089

Test: 8150-SW-A Method 8150 - HSL Chlorinated Phenoxyacid Herbicides
Matrix: AQUEOUS
QC Run: 03 NOV 97-11A Date Analyzed: 07 NOV 97

Analyte	Result	Units	Reporting Limit
2,4-D	ND	ug/L	0.25
2,4-DB	ND	ug/L	1.0
2,4,5-TP (Silvex)	ND	ug/L	0.050
2,4,5-T	ND	ug/L	0.050
MCPA	ND	ug/L	50
MCPP	ND	ug/L	50
Dinoseb	ND	ug/L	0.25
Dalapon	ND	ug/L	5.0
Dichlorprop	ND	ug/L	0.25
Dicamba	ND	ug/L	0.10

Surrogate	Recovery	Acceptable Range
2,4-DCAA	69	52 -92

Test: 8140-SW-A Method 8140 - Organophosphorus Pesticides
Matrix: AQUEOUS
QC Run: 05 NOV 97-11A Date Analyzed: 08 NOV 97

Analyte	Result	Units	Reporting Limit
Azinphos-methyl (Guthion)	ND	ug/L	1.0
Bolstar	ND	ug/L	1.0
Dursban (Chlorpyrifos)	ND	ug/L	1.0
Coumaphos	ND	ug/L	1.0
Demeton	ND	ug/L	1.0
Diazinon	ND	ug/L	1.0
Dichlorvos	ND	ug/L	2.0
Disyston (Disulfoton)	ND	ug/L	1.0
Ethoprop	ND	ug/L	1.0
Fensulfothion	ND	ug/L	1.0
Baytex (Fenthion)	ND	ug/L	1.0
Merphos	ND	ug/L	1.0
Phosdrin (Mevinphos)	ND	ug/L	1.0
Naled	ND	ug/L	2.0
Methyl parathion	ND	ug/L	1.0
Phorate (Thimet)	ND	ug/L	1.0
Ronnel	ND	ug/L	1.0
Tetrachlorvinphos	ND	ug/L	1.0
Tokuthion (Prothiophos)	ND	ug/L	1.0
Trichloronate	ND	ug/L	1.0

ND = Not Detected

Quanterra Environmental Services

METHOD BLANK REPORT (cont.)
Subcontracted to Quanterra Lab
Project: 129089

Test: 8140-SW-A Method 8140 - Organophosphorus Pesticides (cont.)
Matrix: AQUEOUS

Surrogate	Recovery	Acceptable Range
Ethion	90	67 -117

Quanterra
Environmental Services

LABORATORY CONTROL SAMPLE REPORT
Subcontracted to Quanterra Lab
Project: 129089

Category: 615-A Herbicides
Matrix: AQUEOUS
Date Analyzed: 07 NOV 97
QC Run: 03 NOV 97-11A
Concentration Units: ug/L

Analyte	Concentration Spiked	Concentration Measured	Accuracy(%) LCS	Accuracy(%) Limits
2,4-D	1.00	0.535	53	54-104
2,4,5-TP (Silvex)	0.200	0.129	64	58-106
2,4,5-T	0.200	0.112	56	51-123
Dinoseb	1.00	0.472	47	24-84

Surrogates	Concentration Spiked	Concentration Measured	Accuracy(%) LCS	Accuracy(%) Limits
2,4-DCAA	1.00	0.688	69	52-92

Category: 8140-SW-A Organophosphate Pesticides
Matrix: AQUEOUS
Date Analyzed: 08 NOV 97
QC Run: 05 NOV 97-11A
Concentration Units: ug/L

Analyte	Concentration Spiked	Concentration Measured	Accuracy(%) LCS	Accuracy(%) Limits
Dursban (Chlorpyrifos)	2.5	2.0	79	60-140
Diazinon	2.5	2.2	87	53-115
Phosdrin (Mevinphos)	2.5	1.8	70	60-140
Phorate (Thimet)	2.5	2.0	80	46-107
Tetrachlorvinphos	2.5	2.1	84	60-140

Surrogates	Concentration Spiked	Concentration Measured	Accuracy(%) LCS	Accuracy(%) Limits
Ethion	2.50	2.24	90	67-117

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra
Environmental Services

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC REPORT
Subcontracted to Quanterra Lab
Project: 129089

Category: 615-A Herbicides
Matrix: AQUEOUS
Sample: 129089-0001
MS Run: 03 NOV 97-11A
Units: ug/L

Analyte	Sample Result	Concentration MS Result	Concentration MSD Result	Amount Spiked MS/MSD	%Recovery MS	%Recovery MSD	%RPD	Acceptance Limit Recov.	Acceptance Limit RPD
2,4-D	ND	0.630	0.658	0.951	66	69	4.2	54-104	36
2,4,5-TP (Silvex)	ND	0.139	0.140	0.190	73	74	0.3	58-106	36
2,4,5-T	ND	0.127	0.130	0.190	67	68	2.4	51-123	33
Dinoseb	ND	0.453	0.461	0.951	48	48	1.7	24-84	0

Surrogates	Sample %Recovery	%Recovery MS	%Recovery MSD	Acceptance Limit Recovery
2,4-DCAA	73.0	75.0	69.0	52-92

Category: 8140-SW-A Organophosphate Pesticides
Matrix: AQUEOUS
Sample: 129089-0001
MS Run: 05 NOV 97-11A
Units: ug/L

Analyte	Sample Result	Concentration MS Result	Concentration MSD Result	Amount Spiked MS/MSD	%Recovery MS	%Recovery MSD	%RPD	Acceptance Limit Recov.	Acceptance Limit RPD
Dursban (Chlorpyrifos)	ND	1.9	1.9	2.4	82	80	2.8	60-140	40
Diazinon	ND	2.0	2.0	2.4	85	84	1.6	53-115	18
Phosdrin (Mevinphos)	ND	1.7	1.7	2.4	70	70	0.1	60-140	40
Phorate (Thimet)	ND	1.9	1.9	2.4	79	79	0.0	46-107	25
Tetrachlorvinphos	ND	2.0	2.0	2.4	86	83	2.6	53-156	40

Surrogates	Sample %Recovery	%Recovery MS	%Recovery MSD	Acceptance Limit Recovery
Ethion	84.0	100	89.0	67-117

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

Metals

Quanterra
Environmental Services

METALS
(Water - Total)

Client Name: SCS Engineers
Client ID: MW-1
LAB ID: 129089-0001-SA
Matrix: AQUEOUS
Authorized: 30 OCT 97

Sampled: 29 OCT 97
Prepared: See Below

Received: 30 OCT 97
Analyzed: See Below

Parameter	Result	Qual	DIL	RL	Units	Method	Prep Date	Analyzed Date
Arsenic	ND		1.0	0.030	mg/L	6010A	05 NOV 97	07 NOV 97
Cadmium	ND		1.0	0.0050	mg/L	6010A	05 NOV 97	07 NOV 97
Copper	ND		1.0	0.025	mg/L	6010A	05 NOV 97	07 NOV 97
Lead	ND		1.0	0.10	mg/L	6010A	05 NOV 97	07 NOV 97
Mercury	ND		1.0	0.00020	mg/L	SW7470	31 OCT 97	31 OCT 97
Thallium	ND		1.0	2.0	mg/L	6010A	05 NOV 97	07 NOV 97
Zinc	0.034		1.0	0.020	mg/L	6010A	05 NOV 97	07 NOV 97

ND = Not Detected

Quanterra
Environmental Services

METALS
(Water - Total)

Client Name: SCS Engineers
Client ID: MW-2
LAB ID: 129089-0002-SA
Matrix: AQUEOUS
Authorized: 30 OCT 97

Sampled: 29 OCT 97
Prepared: See Below

Received: 30 OCT 97
Analyzed: See Below

Parameter	Result	Qual	DIL	RL	Units	Method	Prep Date	Analyzed Date
Arsenic	ND		1.0	0.030	mg/L	6010A	05 NOV 97	07 NOV 97
Cadmium	ND		1.0	0.0050	mg/L	6010A	05 NOV 97	07 NOV 97
Copper	ND		1.0	0.025	mg/L	6010A	05 NOV 97	07 NOV 97
Lead	ND		1.0	0.10	mg/L	6010A	05 NOV 97	07 NOV 97
Mercury	ND		1.0	0.00020	mg/L	SW7470	31 OCT 97	31 OCT 97
Thallium	ND		1.0	2.0	mg/L	6010A	05 NOV 97	07 NOV 97
Zinc	ND		1.0	0.020	mg/L	6010A	05 NOV 97	07 NOV 97

ND = Not Detected

Quanterra
Environmental Services

METALS
(Water - Total)

Client Name: SCS Engineers
Client ID: MW-3
LAB ID: 129089-0003-SA
Matrix: AQUEOUS
Authorized: 30 OCT 97

Sampled: 29 OCT 97
Prepared: See Below

Received: 30 OCT 97
Analyzed: See Below

Parameter	Result	Qual	DIL	RL	Units	Method	Prep Date	Analyzed Date
Arsenic	ND		1.0	0.030	mg/L	6010A	05 NOV 97	07 NOV 97
Cadmium	ND		1.0	0.0050	mg/L	6010A	05 NOV 97	07 NOV 97
Copper	ND		1.0	0.025	mg/L	6010A	05 NOV 97	07 NOV 97
Lead	ND		1.0	0.10	mg/L	6010A	05 NOV 97	07 NOV 97
Mercury	ND		1.0	0.00020	mg/L	SW7470	31 OCT 97	31 OCT 97
Thallium	ND		1.0	2.0	mg/L	6010A	05 NOV 97	07 NOV 97
Zinc	0.022		1.0	0.020	mg/L	6010A	05 NOV 97	07 NOV 97

ND = Not Detected

Quanterra
Environmental Services

QC LOT ASSIGNMENT REPORT - MS QC
Metals Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK/LCS)	MS QC Run Number (SA,MS,SD,DU)
129089-0001-SA	AQUEOUS	ICP-AT		05 NOV 97-BX	05 NOV 97-BA
129089-0001-SD	AQUEOUS	ICP-AT		05 NOV 97-BX	05 NOV 97-BA
129089-0001-MS	AQUEOUS	ICP-AT		05 NOV 97-BX	05 NOV 97-BA
129089-0002-SA	AQUEOUS	ICP-AT		05 NOV 97-BX	05 NOV 97-BA
129089-0003-SA	AQUEOUS	ICP-AT		05 NOV 97-BX	05 NOV 97-BA
129089-0001-SA	AQUEOUS	HG-CVAA-A		31 OCT 97-HX	31 OCT 97-HA
129089-0001-SD	AQUEOUS	HG-CVAA-A		31 OCT 97-HX	31 OCT 97-HA
129089-0001-MS	AQUEOUS	HG-CVAA-A		31 OCT 97-HX	31 OCT 97-HA
129089-0002-SA	AQUEOUS	HG-CVAA-A		31 OCT 97-HX	31 OCT 97-HA
129089-0003-SA	AQUEOUS	HG-CVAA-A		31 OCT 97-HX	31 OCT 97-HA

Quanterra Environmental Services

METHOD BLANK REPORT
Metals Analysis and Preparation
Project: 129089

Test: ICPT-AT Method 6010A - ICP Metals (Total)
Matrix: AQUEOUS
QC Run: 05 NOV 97-BX Date Analyzed: 07 NOV 97

Analyte	Result	Units	Reporting Limit
Arsenic	ND	mg/L	0.030
Cadmium	ND	mg/L	0.0050
Copper	ND	mg/L	0.025
Lead	ND	mg/L	0.10
Thallium	ND	mg/L	2.0
Zinc	ND	mg/L	0.020

Test: HG-CVAA-AT Method SW7470 - Mercury, Cold Vapor AA (Total)
Matrix: AQUEOUS
QC Run: 31 OCT 97-HX Date Analyzed: 31 OCT 97

Analyte	Result	Units	Reporting Limit
Mercury	ND	mg/L	0.00020

ND = Not Detected

Quanterra
Environmental Services

LABORATORY CONTROL SAMPLE REPORT
Metals Analysis and Preparation
Project: 129089

Category: ICP-AT ICP Metals
Matrix: AQUEOUS
Date Analyzed: 07 NOV 97
QC Run: 05 NOV 97-BX
Concentration Units: mg/L

Analyte	Concentration Spiked	Concentration Measured	Accuracy(%) LCS	Accuracy(%) Limits
Arsenic	2.00	1.99	100	85-115
Cadmium	0.0500	0.0519	104	80-115
Copper	0.250	0.247	99	85-115
Lead	0.500	0.518	104	80-115
Thallium	2.00	2.04	102	85-115
Zinc	0.500	0.538	108	85-115

Category: HG-CVAA-A Mercury by CVAA
Matrix: AQUEOUS
Date Analyzed: 31 OCT 97
QC Run: 31 OCT 97-HX
Concentration Units: mg/L

Analyte	Concentration Spiked	Concentration Measured	Accuracy(%) LCS	Accuracy(%) Limits
Mercury	0.00500	0.00531	106	80-120

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra Environmental Services

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC REPORT
Metals Analysis and Preparation
Project: 129089

Category: ICP-AT ICP Metals
Matrix: AQUEOUS
Sample: 129089-0001
MS Run: 05 NOV 97-BA
Units: mg/L

Analyte	Sample Result	Concentration MS Result	Concentration MSD Result	Amount Spiked MS/MSD	%Recovery MS	%Recovery MSD	%RPD	Acceptance Limit Recov.	Acceptance Limit RPD
Arsenic	ND	2.03	2.02	2.00	101	101	0.1	85-115	20
Cadmium	ND	0.0515	0.0517	0.0500	103	103	0.2	80-115	20
Copper	ND	0.257	0.258	0.250	103	103	0.3	85-115	20
Lead	ND	0.516	0.518	0.500	103	104	0.3	80-115	20
Thallium	ND	2.07	2.07	2.00	104	104	0.1	80-115	20
Zinc	0.0337	0.568	0.564	0.500	107	106	0.6	85-115	20

Category: HG-CVAA-A Mercury by CVAA
Matrix: AQUEOUS
Sample: 129089-0001
MS Run: 31 OCT 97-HA
Units: mg/L

Analyte	Sample Result	Concentration MS Result	Concentration MSD Result	Amount Spiked MS/MSD	%Recovery MS	%Recovery MSD	%RPD	Acceptance Limit Recov.	Acceptance Limit RPD
Mercury	ND	0.000785 n	0.000774 n	0.00100	78	77	1.4	80-120	20

n = Spiked analyte out of matrix spike acceptance limits; refer to lab control sample results.
ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

Chain of Custody Record

QUA-4124-1

Quanterra Environmental Services

Client: SCS Engineers
Address: 3711 Long Beach Bl
City: L.B. State: CA Zip Code: 92487
Project Name: LACDAC
Contract/Purchase Order/Quote No.:

Project Manager: Steve Clements
Telephone Number (Area Code)/Fax Number: (562) 424-9544
Site Contact:
Lab Contact:
Carrier/Waybill Number:

Date: 10/30/97
Chain Of Custody Number: 71281
Lab Number: 129089
Page 1 of 3

Analysis (Attach list if more space is needed): 8010 + LAB QA/QC; 8080 (no PCBs); Metals*; 8240

Special Instructions/ Conditions of Receipt: Selected Metals: ~~[illegible]~~ Arsenic, Cadmium, Copper, Lead, Mercury, Thallium, Zinc

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	8010	8080 (no PCBs)	Metals*	8240
#01 MW-1	10/24/97		X									X	X	X	X
2												X	X		
3												X	X		
4												X	X		
5												X	X		
6												X	X		
7												X	X		
8												X	X		
9												X	X		
10												X	X		
11												X	X		
12												X	X		

Case 27

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify):

		Date	Time
1. Relinquished By	Cheryl McDonnell	10/30/97	0935
2. Relinquished By			
3. Relinquished By			

		Date	Time
1. Received By	[signature]	10/30/97	0930
2. Received By			
3. Received By			

Comments:

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

Chain of Custody Record

QUA-4124-1

Quanterra Environmental Services

Client: SCS Engineers	Project Manager	Date	Chain Of Custody Number: 71282
Address: See pg 1	Telephone Number (Area Code)/Fax Number	Lab Number: 129089	Page 2 of 3
City / State / Zip Code	Site Contact / Lab Contact		
Project Name	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.			

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Aqueous	Sed.	Soil		Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	8080 (No PCB's)	8140, 8150	8240	Metals *	Special Instructions/ Conditions of Receipt
#16 MW-2	10/29/97		X										X				*Metals: Arsenic, Cadmium, Copper, Lead, Mercury, Thallium, Zinc
17													X				
18													X				
19													X				
20													X				
21													X				
22														X			
23														X			
24														X			
25															X		

Page 2

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: [signature]	10/30/97	0935	1. Received By: [signature]	10/30/97	0935
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

Chain of Custody Record

QUA-4124-1

Quanterra Environmental Services

Client: SCS Engineers

Address: See pg 1

City | State | Zip Code

Project Name

Contract/Purchase Order/Quote No.

Project Manager

Telephone Number (Area Code)/Fax Number

Site Contact | Lab Contact

Carrier/Waybill Number

Date

Chain Of Custody Number: 71283

Lab Number: 129089

Page 3 of 3

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Aqueous	Sed.	Soil		Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	8140/8150	8080 (incl PCBs)	8260	Metals	Special Instructions/ Conditions of Receipt
#29 MW-3	10/30/97		X											X		X	
30														X			
31														X			
32														X			
33														X			
34														X			
35														X			
36															X		
37															X		
38															X		

Page 28

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	10/30/97	0935	1. Received By	10/30/97	0935
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

TRUESDAIL LABORATORIES, INC.

CHEMISTS · MICROBIOLOGISTS · ENGINEERS
RESEARCH · DEVELOPMENT · TESTING
ESTABLISHED 1931

14201 FRANKLIN AVENUE
TUSTIN, CALIF. 92780
(714) 730-6239
FAX (714) 730-6462

SCS Engineers
3711 Long Beach Blvd., Suite 131
Long Beach, CA 90807
Attn: Steve Clements

Date: November 12, 1997
Recv'd: October 30, 1997
Lab. No: 600511
P.O. No: Verbal

Sample: Three (3) water samples labelled:

MW 1	10/29/97
MW 2	10/29/97
MW 3	10/29/97

Investigation: Analyze for strychnine in water by high performance liquid chromatography (HPLC)-ultra violet (UV) spectroscopic detection; analyze for general minerals by methods designated below.

RESULTS

The results are tabulated on the following page.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Joe Bramblett

Joe Bramblett, Manager
Instrumental Methods

SCS Engineers
Lab. No. 600511
Page 2

General Minerals

Milligrams per Liter (ppm)

	MW-1	MW-2	MW-3
Cations			
Ammonium	ND	ND	ND
Sodium	67.9	61.9	70.3
Potassium	4.77	4.81	5.26
Calcium	120.7	95.1	117.9
Magnesium	24.6	21.9	24.0
Anions			
Bicarbonate	298	254	266
Carbonate	ND	ND	ND
Chloride	67.5	50.0	72.5
Sulfate	179	139	200
Nitrate	18.4	15.1	24.1
Fluoride	0.34	0.35	0.34
Iron	0.01	0.02	0.03
Manganese	ND	ND	ND
Alkalinity	244	208	218
Hardness	385	360	400
Total Dissolved Solids	660	540	640
pH	6.95	6.952	7.010

ND-Not detected.

The HPLC-UV analysis was adapted from NIOSH Method 5016. The sample was analyzed by direct injection of the sample.

	Milligrams per Liter (ppm)	
HPLC-UV	**Strychnine**	Detection Limit
MW-1	ND	0.04
MW-2	ND	0.04
MW-3	ND	0.04

ND-Not detected.

Matrix Spike, MW-1

	Milligrams per Liter (ppm)		
HPLC-UV	Amount Spiked	Amount Found	Percent Recovered
Strychnine	0.50	0.48	96.1

CHAIN OF CUSTODY RECORD

Pg 1 of 1

Advanced Technology Laboratories
1510 E. 33rd Street
Signal Hill, CA 90807
(562) 989-4045 • FAX (562) 989-4040

FOR LABORATORY USE ONLY:

Batch #: _____ D.O. #: _____
P.O.#: _____
Logged By: _____ Date: _____ Time: _____

Method of Transport: Walk-in ☐ Courier ☐ UPS ☐ FED. EXP. ☐ ATL ☐

Sample Condition Upon Receipt
1. COOLER TEMP °C _____ (2-6)
2. CHILLED Y☐ N☐
3. HEADSPACE (VOA) Y☐ N☐
4. CONTAINER INTACT Y☐ N☐
5. SEALED Y☐ N
6. # OF SPLS MATCH COC Y☐ N
7. PRESERVED Y☐ N
8. CONTR. LOT # _____

Client: SCE
Attn: Steve Clement
Address: 3711 Long Beach Blvd
City: LB State: Ca Zip Code: 90807
TEL: (562) 426-9
FAX: ( )

Project Name: LIFE DBC
Project #:
Sampler: (Printed Name) (Signature)

Relinquished by: (Signature and Printed Name) Date: 10/20/97 Time: Received by: (Signature and Printed Name) Date: 12/30/97 Time: 10 0
Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:
Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

SHIP TO LAB: (SUB CONTRACT) _____
TEST: _____
ATL #: _____
DATE: _____
CLIENT I.D. _____

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter:
_____ Date: / /
Print Name
_____
Signature

Send Report To:
Attn: _____
Co: _____
Address _____
City _____ State _____ Zip _____

Special Instructions/Comments:

Unless otherwise requested, all samples will be disposed 45 days after receipt.

Sample Archive/Disposal:
☐ Laboratory Standard
☐ Other _____
☐ Return To: _____

* $10.00 FEE PER HAZARDOUS SAMPLE DISPOSAL.

Circle or Add Analysis(es) Requested:

CIRCLE APPROPRIATE MATRIX

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D.	Date	Time	601/8010 (Halogenated Volatiles-GC)	602/8020/BTEX (Aromatic Volatiles-GC)	608/8080 (Pesticides/PCB-GC)	624/8240 (Volatiles-GC/MS)	8260 (Volatiles-GC/MS)	625/8270 (BNA-GC/MS)	8015M TPH/G/BTEX(COMBINATION)	418.1 (TPH-IR)	Metals-Total (CAC 6010/7000)	Metals-Soluble (TCLP)	TDS	SOLID • SOIL • SLUDGE	OIL • SOLVENT • LIQUID	WATER • WASTEWATER	DRINKING WATER	AIR	WIPE • FILTER	OTHER	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
		H 13	10/20/97										X					X									
		14											X					X									
		15											X	X	X			X									
		26											X					X									
		27											X					X									
		28												X	X			X									
		40											X					X									
		41											X					X									
		39												X	X												

QA/QC: RTNE ☐ RWQCB ☐ WIP ☐ NAVY ☐ CT ☐ OTHER _____

• TAT starts [illegible]m. following day if samples received after 5 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= [illegible]tical [illegible] Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Preservatives: H=HCl N=HNO3 S=H2SO4 C=4°C

Quanterra
Environmental Services

Quanterra Incorporated
1721 South Grand Avenue
Santa Ana, California 92705

714 258-8610 Telephone
714 258-0921 Fax

February 13, 1998

QUANTERRA INCORPORATED PROJECT NUMBER: 130106
PO/CONTRACT: LA County Agriculture Commission / 0193171.01

Steve Clements
SCS Engineers
3711 Long Beach Blvd.
Long Beach, CA 90807

Dear Mr. Clements,

This report contains the analytical results for the three samples received under chain of custody by Quanterra Incorporated on January 7, 1998. These samples are associated with your LACDAC project.

The case narrative is an integral part of this report.

Preliminary results were sent via facsimile for SW8080, VOC's, and metals on January 20, 1998.

If you have any questions, please feel free to call me at (714) 258-8610.

Sincerely,

Diane Suzuki
Project Manager

TABLE OF CONTENTS

QUANTERRA INCORPORATED PROJECT NUMBER 130106

Case Narrative

Quanterra's Quality Assurance Program

Chain of Custody Documentation

Sample Description Information

SW8080
Sample Data Sheets
Method Blank Reports
Laboratory QC Reports

SW8140/8150
Sample Data Sheets
Method Blank Reports
Laboratory QC Reports

VOC's
Sample Data Sheets
Method Blank Reports
Laboratory QC Reports

Metals
Sample Data Sheets
Method Blank Reports
Laboratory QC Reports

CASE NARRATIVE

QUANTERRA INCORPORATED PROJECT NUMBER 130106

All applicable internal quality control analyses including calibrations and calibration verifications, calibration (instrument) and method blanks, laboratory control samples (LCS), matrix spikes (MS) and matrix spike duplicates (MSD), and other QC met project and/or method-specified acceptance criteria. Any matrix-related anomalies are indicated using footnotes within the report. Any other anomalies are reported within the narrative.

There were no anomalies associated with this project.

Quanterra Environmental Services - Western Region

Quality Control Definitions

QC Parameter	Definition
QC Batch	A set of up to 20 field samples plus associated laboratory QC samples that are similar in composition (matrix) and that are processed within the same time period with the same reagent and standard lots.
Duplicate Control Sample (DCS)	Consist of a pair of LCSs analyzed within the same QC batch to monitor precision and accuracy independent of sample matrix effects. This QC is performed only if required by client or when insufficient sample is available to perform MS/MSD.
Duplicate Sample (DU)	A second aliquot of an environmental sample, taken from the same sample container when possible, that is processed independently with the first sample aliquot. The results are used to assess the effect of the sample matrix on the precision of the analytical process. The precision estimated using this sample is not necessarily representative of the precision for other samples in the batch.
Laboratory Control Sample (LCS)	A volume of reagent water for aqueous samples or a contaminant-free solid matrix (Ottawa sand) for soil and sediment samples which is spiked with known amounts of representative target analytes and required surrogates. An LCS is carried through the entire analytical process and is used to monitor the accuracy of the analytical process independent of potential matrix effects.
Matrix Spike and Matrix Spike Duplicate (MS/MSD)	A field sample fortified with known quantities of target analytes that are also added to the LCS. Matrix spike duplicate is a second matrix spike sample. MSs/MSDs are carried through the entire analytical process and are used to determine sample matrix effect on accuracy of the measurement system. The accuracy and precision estimated using MS/MSD is only representative of the precision of the sample that was spiked.
Method Blank (MB)	A sample composed of all the reagents (in the same quantities) in reagent water carried through the entire analytical process. The method blank is used to monitor the level of contamination introduced during sample preparation steps.
Surrogate Spike	Organic constituents not expected to be detected in environmental media and are added to every sample and QC at a known concentration. Surrogates are used to determine the efficiency of the sample preparation and the analytical process.

Source: Quanterra® Quality Control Program, Policy QA-003, Rev. 0, 8/19/96.

Chain of Custody Record

QUA-4124-1

Quanterra Environmental Services

Client: SCS Engineers	Project Manager: Steve Clements	Date: 1/4/98	Chain Of Custody Number: 69141
Address: 3711 Long Beach Bl	Telephone Number (Area Code)/Fax Number: (562) 424-9544	Lab Number:	Page 1 of 3
City: L.B. State: CA Zip Code: 90807	Site Contact:	Lab Contact:	
Project Name: LACDAC #0193171.01	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.:			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Metals *	8080 8140 8250	PCBs (no PCBs)	8240	Lab QA/QC
MW 3 - A	1/4/98		X									X				
- B														X		
- C														X		
- D														X		
- E													X			
- F													X			
- G													X			
- H													X			
- I													X			
- J													X			

Analysis (Attach list if more space is needed)

Special Instructions/ Conditions of Receipt

*

Metals:

arsenic
cadmium
copper
lead
mercury
thallium
zinc

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☒ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify):

	Date	Time		Date	Time
1. Relinquished By: [signature]	1/4/98		1. Received By: [signature]	1/6/98	1510
2. Relinquished By:			2. Received By:		
3. Relinquished By:			3. Received By:		

Comments:

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

Chain of Custody Record

QUA-4124-1

Quanterra Environmental Services

Client: SCS Engineers	Project Manager: Steve Clements	Date: 1/6/98	Chain Of Custody Number: 69142
Address: See Pg 1	Telephone Number (Area Code)/Fax Number: (562) 426-9544	Lab Number	Page 2 of 3
City / State / Zip Code	Site Contact / Lab Contact		
Project Name	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.			

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Metals *	8260	8080	8270 (no PCBs)	QA/QC
MW1 - A	1/6/98		X									X				
B													X			
C													X			
D													X			
E														X		
F														X		
G														X		
H														X		
I														X		
J														X		
K																X
L																X

Special Instructions/ Conditions of Receipt

Metals *
arsenic
cadmium
copper
lead
mercury
thallium
zinc

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: [signature]	1/6/98	3:10	1. Received By: [signature]	1/6/98	1510
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

Chain of Custody Record

Quanterra Environmental Services

QUA-4124-1

Client: SCS Engineers	Project Manager: Steve Clementi	Date: 1/6/98	Chain Of Custody Number: 69143
Address: see fig 1	Telephone Number (Area Code)/Fax Number	Lab Number	Page 3 of 3
City / State / Zip Code	Site Contact	Lab Contact	
Project Name	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.			

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Metals (X)	8270	8080 PHC	(PCBs)	Special Instructions/ Conditions of Receipt
MW 2 - A	1/6/98		X									X				X Metals:
B													X			arsenic
C													X			cadmium
D													X			copper
E														X		lead
F														X		mercury
G														X		thallium
H														X		zinc
I														X		
J														X		

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Steve McDonnell	1/6/98	3:10 pm	1. Received By: [signature]	1/6/98	1510
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

CHAIN-OF-CUSTODY

PROJECT NAME: SCS ENGINEERRS
PO NUMBER: 130106
PROJECT MANAGER: Jan Clark

QUANTERRA ENVIRONMENTAL SERVICES
1721 South Grand Avenue
Santa Ana, CA 92705
Phone #: (714) 258-8610

DUE: 18 JAN 98
TO: QES, SACRAMENTO
880 Riverside Parkway
West Sacramento, CA 95606

SAMPLE DESCRIPTION	LAB ID	DATE	TIME	MATRIX	CONTAINERS	ANALYSES 8140	8150								REMARKS/ SPCL INSTR
MW3A-J	130106-0001 SA	06 JAN 98		AQUEOUS		X	X								
MW1A-L	130106-0002 SA	06 JAN 98		AQUEOUS		X	X								
MW1A-L	130106-0002 MS	06 JAN 98		AQUEOUS		X	X								
MW1A-L	130106-0002 SD	06 JAN 98		AQUEOUS		X	X								
MW2A-J	130106-0003 SA	06 JAN 98		AQUEOUS		X	X								

	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
Relinquished by:	K Freitag	K FREITAG	QUANTERRA	1/12/98	1700
Received by:	Manuela E. Garcia	Manuela E. Garcia	QES/WSACTO	011398	11:35
Relinquished by:					
Received by:					

Comments: Samples arrived in good condition.

011398

QA573 4/96 CMD

Quanterra
Environmental Services

SAMPLE DESCRIPTION INFORMATION
for
SCS Engineers

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
130106-0001-SA	MW3A-J	AQUEOUS	06 JAN 98		06 JAN 98
130106-0001-MS	MW3A-J	AQUEOUS	06 JAN 98		06 JAN 98
130106-0001-SD	MW3A-J	AQUEOUS	06 JAN 98		06 JAN 98
130106-0002-SA	MW1A-L	AQUEOUS	06 JAN 98		06 JAN 98
130106-0002-MS	MW1A-L	AQUEOUS	06 JAN 98		06 JAN 98
130106-0002-SD	MW1A-L	AQUEOUS	06 JAN 98		06 JAN 98
130106-0003-SA	MW2A-J	AQUEOUS	06 JAN 98		06 JAN 98

SW8080

Quanterra Environmental Services

Organochlorine Pesticides and Polychlorinated Biphenyls
Method 8080

Client Name:	SCS Engineers		
Client ID:	MW3A-J		
LAB ID:	130106-0001-SA		
Matrix:	AQUEOUS	Sampled: 06 JAN 98	Received: 06 JAN 98
Authorized:	08 JAN 98	Prepared: 12 JAN 98	Analyzed: 13 JAN 98
Instrument:	GC/ECD-PTB	Dilution: 1.0	

Parameter	Result	Qualifier	RL	Units
alpha-BHC	ND		0.050	ug/L
beta-BHC	ND		0.050	ug/L
delta-BHC	ND		0.050	ug/L
gamma-BHC (Lindane)	ND		0.050	ug/L
Aldrin	ND		0.050	ug/L
Heptachlor	ND		0.050	ug/L
Heptachlor epoxide	ND		0.050	ug/L
Endosulfan I	ND		0.050	ug/L
Dieldrin	ND		0.10	ug/L
4,4'-DDE	ND		0.10	ug/L
Endrin	ND		0.10	ug/L
Endosulfan II	ND		0.10	ug/L
4,4'-DDD	ND		0.10	ug/L
Endosulfan sulfate	ND		0.10	ug/L
4,4'-DDT	ND		0.10	ug/L
Endrin aldehyde	ND		0.10	ug/L
Methoxychlor	ND		0.50	ug/L
alpha-Chlordane	ND		0.050	ug/L
gamma-Chlordane	ND		0.050	ug/L
Toxaphene	ND		5.0	ug/L

Surrogate	Recovery		Acceptable Range
2,4,5,6-Tetrachloro-m-xylene	92	%	60 - 150
Decachlorobiphenyl	96	%	60 - 150

ND = Not Detected

Quanterra
Environmental Services

Organochlorine Pesticides and Polychlorinated Biphenyls
Method 8080

Client Name:	SCS Engineers		
Client ID:	MW1A-L		
LAB ID:	130106-0002-SA		
Matrix:	AQUEOUS	Sampled: 06 JAN 98	Received: 06 JAN 98
Authorized:	08 JAN 98	Prepared: 12 JAN 98	Analyzed: 13 JAN 98
Instrument:	GC/ECD-PTB	Dilution: 1.0	

Parameter	Result	Qualifier	RL	Units
alpha-BHC	ND		0.050	ug/L
beta-BHC	ND		0.050	ug/L
delta-BHC	ND		0.050	ug/L
gamma-BHC (Lindane)	ND		0.050	ug/L
Aldrin	ND		0.050	ug/L
Heptachlor	ND		0.050	ug/L
Heptachlor epoxide	ND		0.050	ug/L
Endosulfan I	ND		0.050	ug/L
Dieldrin	ND		0.10	ug/L
4,4'-DDE	ND		0.10	ug/L
Endrin	ND		0.10	ug/L
Endosulfan II	ND		0.10	ug/L
4,4'-DDD	ND		0.10	ug/L
Endosulfan sulfate	ND		0.10	ug/L
4,4'-DDT	ND		0.10	ug/L
Endrin aldehyde	ND		0.10	ug/L
Methoxychlor	ND		0.50	ug/L
alpha-Chlordane	ND		0.050	ug/L
gamma-Chlordane	ND		0.050	ug/L
Toxaphene	ND		5.0	ug/L

Surrogate	Recovery		Acceptable Range
2,4,5,6-Tetrachloro-m-xylene	92	%	60 - 150
Decachlorobiphenyl	92	%	60 - 150

ND = Not Detected

Quanterra Environmental Services

Organochlorine Pesticides and Polychlorinated Biphenyls
Method 8080

Client Name:	SCS Engineers		
Client ID:	MW2A-J		
LAB ID:	130106-0003-SA		
Matrix:	AQUEOUS	Sampled: 06 JAN 98	Received: 06 JAN 98
Authorized:	08 JAN 98	Prepared: 12 JAN 98	Analyzed: 13 JAN 98
Instrument:	GC/ECD-PTB	Dilution: 1.0	

Parameter	Result	Qualifier	RL	Units
alpha-BHC	ND		0.050	ug/L
beta-BHC	ND		0.050	ug/L
delta-BHC	ND		0.050	ug/L
gamma-BHC (Lindane)	ND		0.050	ug/L
Aldrin	ND		0.050	ug/L
Heptachlor	ND		0.050	ug/L
Heptachlor epoxide	ND		0.050	ug/L
Endosulfan I	ND		0.050	ug/L
Dieldrin	ND		0.10	ug/L
4,4'-DDE	ND		0.10	ug/L
Endrin	ND		0.10	ug/L
Endosulfan II	ND		0.10	ug/L
4,4'-DDD	ND		0.10	ug/L
Endosulfan sulfate	ND		0.10	ug/L
4,4'-DDT	ND		0.10	ug/L
Endrin aldehyde	ND		0.10	ug/L
Methoxychlor	ND		0.50	ug/L
alpha-Chlordane	ND		0.050	ug/L
gamma-Chlordane	ND		0.050	ug/L
Toxaphene	ND		5.0	ug/L

Surrogate	Recovery		Acceptable Range
2,4,5,6-Tetrachloro-m-xylene	93	%	60 - 150
Decachlorobiphenyl	95	%	60 - 150

ND = Not Detected

Quanterra
Environmental Services

QC LOT ASSIGNMENT REPORT - MS QC
Semivolatile Organics by GC

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK/LCS)	MS QC Run Number (SA,MS,SD,DU)
130106-0001-SA	AQUEOUS	8080-A		12 JAN 98-AX	12 JAN 98-AA
130106-0001-MS	AQUEOUS	8080-A		12 JAN 98-AX	12 JAN 98-AA
130106-0001-SD	AQUEOUS	8080-A		12 JAN 98-AX	12 JAN 98-AA
130106-0002-SA	AQUEOUS	8080-A		12 JAN 98-AX	12 JAN 98-AA
130106-0003-SA	AQUEOUS	8080-A		12 JAN 98-AX	12 JAN 98-AA

Quanterra Environmental Services

METHOD BLANK REPORT
Semivolatile Organics by GC
Project: 130106

Test: 8080-A
Matrix: AQUEOUS
QC Run: 12 JAN 98-AX

Method 8080 - TCL Organochlorine Pesticides/PCBs

Date Analyzed: 13 JAN 98

Analyte	Result	Units	Reporting Limit
alpha-BHC	ND	ug/L	0.050
beta-BHC	ND	ug/L	0.050
delta-BHC	ND	ug/L	0.050
gamma-BHC (Lindane)	ND	ug/L	0.050
Aldrin	ND	ug/L	0.050
Heptachlor	ND	ug/L	0.050
Heptachlor epoxide	ND	ug/L	0.050
Endosulfan I	ND	ug/L	0.050
Dieldrin	ND	ug/L	0.10
4,4'-DDE	ND	ug/L	0.10
Endrin	ND	ug/L	0.10
Endosulfan II	ND	ug/L	0.10
4,4'-DDD	ND	ug/L	0.10
Endosulfan sulfate	ND	ug/L	0.10
4,4'-DDT	ND	ug/L	0.10
Endrin aldehyde	ND	ug/L	0.10
Methoxychlor	ND	ug/L	0.50
alpha-Chlordane	ND	ug/L	0.050
gamma-Chlordane	ND	ug/L	0.050
Toxaphene	ND	ug/L	5.0

Surrogate	Recovery	Acceptable Range
2,4,5,6-Tetrachloro-m-xylene	96	60 -150
Decachlorobiphenyl	99	60 -150

ND = Not Detected

Quanterra
Environmental Services

LABORATORY CONTROL SAMPLE REPORT
Semivolatile Organics by GC
Project: 130106

Category: 8080-A Pesticides
Matrix: AQUEOUS
Date Analyzed: 13 JAN 98
QC Run: 12 JAN 98-AX
Concentration Units: ug/L

Analyte	Concentration Spiked	Concentration Measured	Accuracy(%) LCS	Accuracy(%) Limits
gamma-BHC (Lindane)	1.00	0.902	90	22-140
Heptachlor	1.00	0.920	92	36-119
Aldrin	1.00	0.950	95	40-112
Dieldrin	1.00	0.843	84	51-130
Endrin	1.00	0.904	90	56-122
4,4'-DDT	1.00	0.834	83	40-111

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra
Environmental Services

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC REPORT
Semivolatile Organics by GC
Project: 130106

Category: 8080-A Pesticides
Matrix: AQUEOUS
Sample: 130106-0001
MS Run: 12 JAN 98-AA
Units: ug/L

Analyte	Sample Result	Concentration MS Result	Concentration MSD Result	Amount Spiked MS/MSD	%Recovery MS	%Recovery MSD	%RPD	Acceptance Limit Recov.	Acceptance Limit RPD
gamma-BHC (Lindane)	ND	0.902	0.927	1.00	90	93	2.7	10-159	18
Heptachlor	ND	0.907	0.943	1.00	91	94	3.9	10-142	21
Aldrin	ND	0.918	0.953	1.00	92	95	3.7	15-130	40
Dieldrin	ND	0.837	0.866	1.00	84	87	3.4	23-147	50
Endrin	ND	0.955	0.990	1.00	96	99	3.6	49-130	50
4,4'-DDT	ND	0.850	0.865	1.00	85	86	1.7	10-125	50

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

VOC'S

Quanterra
Environmental Services

Volatile Organic Compounds
Method 8260

Client Name:	SCS Engineers		
Client ID:	MW3A-J		
LAB ID:	130106-0001-SA		
Matrix:	AQUEOUS	Sampled: 06 JAN 98	Received: 06 JAN 98
Authorized:	08 JAN 98	Prepared: 16 JAN 98	Analyzed: 16 JAN 98
Instrument:	GC/MS-MD	Dilution: 1.0	

Parameter	Result	Qualifier	RL	Units
Chloromethane	ND		10	ug/L
Bromomethane	ND		10	ug/L
Vinyl chloride	ND		10	ug/L
Chloroethane	ND		10	ug/L
Methylene chloride	ND		5.0	ug/L
Acetone	ND		10	ug/L
Carbon disulfide	ND		5.0	ug/L
Trichlorofluoromethane	ND		5.0	ug/L
1,1-Dichloroethene	ND		5.0	ug/L
1,1-Dichloroethane	ND		5.0	ug/L
1,2-Dichloroethene (cis/trans)	ND		5.0	ug/L
Chloroform	ND		5.0	ug/L
1,2-Dichloroethane	ND		5.0	ug/L
2-Butanone	ND		10	ug/L
1,1,1-Trichloroethane	ND		5.0	ug/L
Carbon tetrachloride	ND		5.0	ug/L
Vinyl acetate	ND		10	ug/L
Bromodichloromethane	ND		5.0	ug/L
1,2-Dichloropropane	ND		5.0	ug/L
cis-1,3-Dichloropropene	ND		5.0	ug/L
Trichloroethene	ND		5.0	ug/L
Dibromochloromethane	ND		5.0	ug/L
1,1,2-Trichloroethane	ND		5.0	ug/L
Benzene	ND		5.0	ug/L
trans-1,3-Dichloropropene	ND		5.0	ug/L
2-Chloroethyl vinyl ether	ND		10	ug/L
Bromoform	ND		5.0	ug/L
4-Methyl-2-pentanone	ND		10	ug/L
2-Hexanone	ND		10	ug/L
Tetrachloroethene	ND		5.0	ug/L
1,1,2,2-Tetrachloroethane	ND		5.0	ug/L
Toluene	ND		5.0	ug/L
Chlorobenzene	ND		5.0	ug/L
Ethylbenzene	ND		5.0	ug/L
Styrene	ND		5.0	ug/L
Xylenes (total)	ND		5.0	ug/L

Surrogate	Recovery		Acceptable Range
1,2-Dichloroethane-d4	98	%	80 - 120
Toluene-d8	91	%	80 - 120
Bromofluorobenzene	91	%	80 - 120

ND = Not Detected

Quanterra
Environmental Services

Volatile Organic Compounds
Method 8260

Client Name:	SCS Engineers		
Client ID:	MW1A-L		
LAB ID:	130106-0002-SA		
Matrix:	AQUEOUS	Sampled: 06 JAN 98	Received: 06 JAN 98
Authorized:	08 JAN 98	Prepared: 16 JAN 98	Analyzed: 16 JAN 98
Instrument:	GC/MS-MD	Dilution: 1.0	

Parameter	Result	Qualifier	RL	Units
Chloromethane	ND		10	ug/L
Bromomethane	ND		10	ug/L
Vinyl chloride	ND		10	ug/L
Chloroethane	ND		10	ug/L
Methylene chloride	ND		5.0	ug/L
Acetone	ND		10	ug/L
Carbon disulfide	ND		5.0	ug/L
Trichlorofluoromethane	ND		5.0	ug/L
1,1-Dichloroethene	ND		5.0	ug/L
1,1-Dichloroethane	ND		5.0	ug/L
1,2-Dichloroethene (cis/trans)	ND		5.0	ug/L
Chloroform	ND		5.0	ug/L
1,2-Dichloroethane	ND		5.0	ug/L
2-Butanone	ND		10	ug/L
1,1,1-Trichloroethane	ND		5.0	ug/L
Carbon tetrachloride	ND		5.0	ug/L
Vinyl acetate	ND		10	ug/L
Bromodichloromethane	ND		5.0	ug/L
1,2-Dichloropropane	ND		5.0	ug/L
cis-1,3-Dichloropropene	ND		5.0	ug/L
Trichloroethene	ND		5.0	ug/L
Dibromochloromethane	ND		5.0	ug/L
1,1,2-Trichloroethane	ND		5.0	ug/L
Benzene	ND		5.0	ug/L
trans-1,3-Dichloropropene	ND		5.0	ug/L
2-Chloroethyl vinyl ether	ND		10	ug/L
Bromoform	ND		5.0	ug/L
4-Methyl-2-pentanone	ND		10	ug/L
2-Hexanone	ND		10	ug/L
Tetrachloroethene	ND		5.0	ug/L
1,1,2,2-Tetrachloroethane	ND		5.0	ug/L
Toluene	ND		5.0	ug/L
Chlorobenzene	ND		5.0	ug/L
Ethylbenzene	ND		5.0	ug/L
Styrene	ND		5.0	ug/L
Xylenes (total)	ND		5.0	ug/L

Surrogate	Recovery		Acceptable Range
1,2-Dichloroethane-d4	98	%	80 - 120
Toluene-d8	92	%	80 - 120
Bromofluorobenzene	89	%	80 - 120

ND = Not Detected

Quanterra
Environmental Services

Volatile Organic Compounds
Method 8260

Client Name:	SCS Engineers		
Client ID:	MW2A-J		
LAB ID:	130106-0003-SA		
Matrix:	AQUEOUS	Sampled: 06 JAN 98	Received: 06 JAN 98
Authorized:	08 JAN 98	Prepared: 16 JAN 98	Analyzed: 16 JAN 98
Instrument:	GC/MS-MD	Dilution: 1.0	

Parameter	Result	Qualifier	RL	Units
Chloromethane	ND		10	ug/L
Bromomethane	ND		10	ug/L
Vinyl chloride	ND		10	ug/L
Chloroethane	ND		10	ug/L
Methylene chloride	ND		5.0	ug/L
Acetone	ND		10	ug/L
Carbon disulfide	ND		5.0	ug/L
Trichlorofluoromethane	ND		5.0	ug/L
1,1-Dichloroethene	ND		5.0	ug/L
1,1-Dichloroethane	ND		5.0	ug/L
1,2-Dichloroethene (cis/trans)	ND		5.0	ug/L
Chloroform	ND		5.0	ug/L
1,2-Dichloroethane	ND		5.0	ug/L
2-Butanone	ND		10	ug/L
1,1,1-Trichloroethane	ND		5.0	ug/L
Carbon tetrachloride	ND		5.0	ug/L
Vinyl acetate	ND		10	ug/L
Bromodichloromethane	ND		5.0	ug/L
1,2-Dichloropropane	ND		5.0	ug/L
cis-1,3-Dichloropropene	ND		5.0	ug/L
Trichloroethene	ND		5.0	ug/L
Dibromochloromethane	ND		5.0	ug/L
1,1,2-Trichloroethane	ND		5.0	ug/L
Benzene	ND		5.0	ug/L
trans-1,3-Dichloropropene	ND		5.0	ug/L
2-Chloroethyl vinyl ether	ND		10	ug/L
Bromoform	ND		5.0	ug/L
4-Methyl-2-pentanone	ND		10	ug/L
2-Hexanone	ND		10	ug/L
Tetrachloroethene	ND		5.0	ug/L
1,1,2,2-Tetrachloroethane	ND		5.0	ug/L
Toluene	ND		5.0	ug/L
Chlorobenzene	ND		5.0	ug/L
Ethylbenzene	ND		5.0	ug/L
Styrene	ND		5.0	ug/L
Xylenes (total)	ND		5.0	ug/L

Surrogate	Recovery		Acceptable Range
1,2-Dichloroethane-d4	102	%	80 - 120
Toluene-d8	93	%	80 - 120
Bromofluorobenzene	93	%	80 - 120

ND = Not Detected

Quanterra
Environmental Services

QC LOT ASSIGNMENT REPORT - MS QC
Volatile Organics by GC/MS

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK/LCS)	MS QC Run Number (SA,MS,SD,DU)
130106-0001-SA	AQUEOUS	Q8260-A		15 JAN 98-BDX	15 JAN 98-BD
130106-0002-SA	AQUEOUS	Q8260-A		15 JAN 98-BDX	15 JAN 98-BD
130106-0003-SA	AQUEOUS	Q8260-A		15 JAN 98-BDX	15 JAN 98-BD

Quanterra
Environmental Services

METHOD BLANK REPORT
Volatile Organics by GC/MS
Project: 130106

Test: 8260-SL-A Method 8260 - Volatile Organics
Matrix: AQUEOUS
QC Run: 15 JAN 98-BDX

Date Analyzed: 15 JAN 98

Analyte	Result	Units	Reporting Limit
Chloromethane	ND	ug/L	10
Bromomethane	ND	ug/L	10
Vinyl chloride	ND	ug/L	10
Chloroethane	ND	ug/L	10
Methylene chloride	ND	ug/L	5.0
Acetone	ND	ug/L	10
Carbon disulfide	ND	ug/L	5.0
Trichlorofluoromethane	ND	ug/L	5.0
1,1-Dichloroethene	ND	ug/L	5.0
1,1-Dichloroethane	ND	ug/L	5.0
1,2-Dichloroethene (cis/trans)	ND	ug/L	5.0
Chloroform	ND	ug/L	5.0
1,2-Dichloroethane	ND	ug/L	5.0
2-Butanone	ND	ug/L	10
1,1,1-Trichloroethane	ND	ug/L	5.0
Carbon tetrachloride	ND	ug/L	5.0
Vinyl acetate	ND	ug/L	10
Bromodichloromethane	ND	ug/L	5.0
1,2-Dichloropropane	ND	ug/L	5.0
cis-1,3-Dichloropropene	ND	ug/L	5.0
Trichloroethene	ND	ug/L	5.0
Dibromochloromethane	ND	ug/L	5.0
1,1,2-Trichloroethane	ND	ug/L	5.0
Benzene	ND	ug/L	5.0
trans-1,3-Dichloropropene	ND	ug/L	5.0
2-Chloroethyl vinyl ether	ND	ug/L	10
Bromoform	ND	ug/L	5.0
4-Methyl-2-pentanone	ND	ug/L	10
2-Hexanone	ND	ug/L	10
Tetrachloroethene	ND	ug/L	5.0
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0
Toluene	ND	ug/L	5.0
Chlorobenzene	ND	ug/L	5.0
Ethylbenzene	ND	ug/L	5.0
Styrene	ND	ug/L	5.0
Xylenes (total)	ND	ug/L	5.0

Surrogate	Recovery	Acceptable Range
1,2-Dichloroethane-d4	95	80 -120
Toluene-d8	92	80 -120
Bromofluorobenzene	91	80 -120

ND = Not Detected

Quanterra
Environmental Services

LABORATORY CONTROL SAMPLE REPORT
Volatile Organics by GC/MS
Project: 130106

Category: Q8260-A Method SW8260A - Volatile Organics
Matrix: AQUEOUS Date Analyzed: 15 JAN 98
QC Run: 15 JAN 98-BDX
Concentration Units: ug/L

Analyte	Concentration Spiked	Concentration Measured	Accuracy(%) LCS	Accuracy(%) Limits
1,1-Dichloroethene	10.0	10.2	102	70-120
Trichloroethene	10.0	11.3	113	80-120
Benzene	10.0	10.5	105	80-120
Toluene	10.0	10.3	103	80-120
Chlorobenzene	10.0	9.92	99	80-120

Surrogates	Concentration Spiked	Concentration Measured	Accuracy(%) LCS	Accuracy(%) Limits
1,2-Dichloroethane-d4	10.0	10.1	101	80-120
Bromofluorobenzene	10.0	9.41	94	80-120
Toluene-d8	10.0	9.91	99	80-120

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra
Environmental Services

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC REPORT
Volatile Organics by GC/MS
Project: 130106

Category: Q8260-A Method SW8260A - Volatile Organics
Matrix: AQUEOUS
Sample: 130142-0017
MS Run: 15 JAN 98-BD
Units: ug/L

Analyte	Sample Result	Concentration MS Result	Concentration MSD Result	Amount Spiked MS/MSD	%Recovery MS	%Recovery MSD	%RPD	Acceptance Limit Recov.	Acceptance Limit RPD
1,1-Dichloroethene	ND	9.58	9.59	10.0	96	96	0.1	70-120	25
Trichloroethene	ND	10.8	10.7	10.0	108	107	1.6	80-120	25
Benzene	ND	10.2	9.99	10.0	102	100	2.1	80-120	25
Toluene	ND	9.55	9.45	10.0	96	94	1.1	80-120	25
Chlorobenzene	ND	9.59	9.56	10.0	96	96	0.3	80-120	25

Surrogates	Sample %Recovery	%Recovery MS	%Recovery MSD	Acceptance Limit Recovery
1,2-Dichloroethane-d4	101	112	102	80-120
Bromofluorobenzene	91	107	99	80-120
Toluene-d8	92	102	94	80-120

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

Metals

Quanterra
Environmental Services

METALS
(Water - Total)

Client Name: SCS Engineers
Client ID: MW3A-J
LAB ID: 130106-0001-SA
Matrix: AQUEOUS
Authorized: 08 JAN 98

Sampled: 06 JAN 98
Prepared: See Below

Received: 06 JAN 98
Analyzed: See Below

Parameter	Result	Qual	DIL	RL	Units	Method	Prep Date	Analyzed Date
Arsenic	ND		1.0	0.030	mg/L	6010A	15 JAN 98	16 JAN 98
Cadmium	ND		1.0	0.0050	mg/L	6010A	15 JAN 98	16 JAN 98
Copper	ND		1.0	0.025	mg/L	6010A	15 JAN 98	16 JAN 98
Lead	ND		1.0	0.10	mg/L	6010A	15 JAN 98	16 JAN 98
Mercury	ND		1.0	0.00020	mg/L	SW7470	09 JAN 98	09 JAN 98
Thallium	ND		1.0	2.0	mg/L	6010A	15 JAN 98	16 JAN 98
Zinc	ND		1.0	0.020	mg/L	6010A	15 JAN 98	16 JAN 98

ND = Not Detected

Quanterra
Environmental Services

METALS
(Water - Total)

Client Name: SCS Engineers
Client ID: MW1A-L
LAB ID: 130106-0002-SA
Matrix: AQUEOUS
Authorized: 08 JAN 98

Sampled: 06 JAN 98
Prepared: See Below

Received: 06 JAN 98
Analyzed: See Below

Parameter	Result	Qual	DIL	RL	Units	Method	Prep Date	Analyzed Date
Arsenic	ND		1.0	0.030	mg/L	6010A	15 JAN 98	16 JAN 98
Cadmium	ND		1.0	0.0050	mg/L	6010A	15 JAN 98	16 JAN 98
Copper	ND		1.0	0.025	mg/L	6010A	15 JAN 98	16 JAN 98
Lead	ND		1.0	0.10	mg/L	6010A	15 JAN 98	16 JAN 98
Mercury	ND		1.0	0.00020	mg/L	SW7470	09 JAN 98	09 JAN 98
Thallium	ND		1.0	2.0	mg/L	6010A	15 JAN 98	16 JAN 98
Zinc	ND		1.0	0.020	mg/L	6010A	15 JAN 98	16 JAN 98

ND = Not Detected

Quanterra
Environmental Services

METALS
(Water - Total)

Client Name: SCS Engineers
Client ID: MW2A-J
LAB ID: 130106-0003-SA
Matrix: AQUEOUS
Authorized: 08 JAN 98

Sampled: 06 JAN 98
Prepared: See Below

Received: 06 JAN 98
Analyzed: See Below

Parameter	Result	Qual	DIL	RL	Units	Method	Prep Date	Analyzed Date
Arsenic	ND		1.0	0.030	mg/L	6010A	15 JAN 98	16 JAN 98
Cadmium	ND		1.0	0.0050	mg/L	6010A	15 JAN 98	16 JAN 98
Copper	ND		1.0	0.025	mg/L	6010A	15 JAN 98	16 JAN 98
Lead	ND		1.0	0.10	mg/L	6010A	15 JAN 98	16 JAN 98
Mercury	ND		1.0	0.00020	mg/L	SW7470	09 JAN 98	09 JAN 98
Thallium	ND		1.0	2.0	mg/L	6010A	15 JAN 98	16 JAN 98
Zinc	ND		1.0	0.020	mg/L	6010A	15 JAN 98	16 JAN 98

ND = Not Detected

Quanterra
Environmental Services

METALS
(Water - Total)

Client Name: SCS Engineers
Client ID: MW3A-J
LAB ID: 130106-0001-MS
Matrix: AQUEOUS Sampled: 06 JAN 98 Received: 06 JAN 98
Authorized: 08 JAN 98 Prepared: See Below Analyzed: See Below

Parameter	Result	Qual	DIL	Amount Spiked	Units	Method	Prep Date	Analyzed Date
Arsenic	1.96		1.0	2.00	mg/L	6010A	15 JAN 98	16 JAN 98
Cadmium	0.0489		1.0	0.0500	mg/L	6010A	15 JAN 98	16 JAN 98
Copper	0.266		1.0	0.250	mg/L	6010A	15 JAN 98	16 JAN 98
Lead	0.489		1.0	0.500	mg/L	6010A	15 JAN 98	16 JAN 98
Mercury	0.000964		1.0	0.00100	mg/L	SW7470	09 JAN 98	09 JAN 98
Thallium	2.00		1.0	2.00	mg/L	6010A	15 JAN 98	16 JAN 98
Zinc	0.529		1.0	0.500	mg/L	6010A	15 JAN 98	16 JAN 98

Quanterra
Environmental Services

METALS
(Water - Total)

Client Name: SCS Engineers
Client ID: MW3A-J
LAB ID: 130106-0001-SD
Matrix: AQUEOUS
Authorized: 08 JAN 98

Sampled: 06 JAN 98
Prepared: See Below

Received: 06 JAN 98
Analyzed: See Below

Parameter	Result	Qual	DIL	Amount Spiked	Units	Method	Prep Date	Analyzed Date
Arsenic	1.97		1.0	2.00	mg/L	6010A	15 JAN 98	16 JAN 98
Cadmium	0.0489		1.0	0.0500	mg/L	6010A	15 JAN 98	16 JAN 98
Copper	0.267		1.0	0.250	mg/L	6010A	15 JAN 98	16 JAN 98
Lead	0.492		1.0	0.500	mg/L	6010A	15 JAN 98	16 JAN 98
Mercury	0.000957		1.0	0.00100	mg/L	SW7470	09 JAN 98	09 JAN 98
Thallium	2.00		1.0	2.00	mg/L	6010A	15 JAN 98	16 JAN 98
Zinc	0.529		1.0	0.500	mg/L	6010A	15 JAN 98	16 JAN 98

Quanterra
Environmental Services

METALS
(Water - Total)

Client Name: SCS Engineers
Client ID: MW1A-L
LAB ID: 130106-0002-MS
Matrix: AQUEOUS
Authorized: 08 JAN 98

Sampled: 06 JAN 98
Prepared: See Below

Received: 06 JAN 98
Analyzed: See Below

Parameter	Result	Qual	DIL	Amount Spiked	Units	Method	Prep Date	Analyzed Date
Arsenic	1.94		1.0	2.00	mg/L	6010A	15 JAN 98	16 JAN 98
Cadmium	0.0484		1.0	0.0500	mg/L	6010A	15 JAN 98	16 JAN 98
Copper	0.262		1.0	0.250	mg/L	6010A	15 JAN 98	16 JAN 98
Lead	0.482		1.0	0.500	mg/L	6010A	15 JAN 98	16 JAN 98
Mercury	0.000960		1.0	0.00100	mg/L	SW7470	09 JAN 98	09 JAN 98
Thallium	1.97		1.0	2.00	mg/L	6010A	15 JAN 98	16 JAN 98
Zinc	0.519		1.0	0.500	mg/L	6010A	15 JAN 98	16 JAN 98

Quanterra
Environmental Services

METALS
(Water - Total)

Client Name: SCS Engineers
Client ID: MW1A-L
LAB ID: 130106-0002-SD
Matrix: AQUEOUS
Authorized: 08 JAN 98

Sampled: 06 JAN 98
Prepared: See Below

Received: 06 JAN 98
Analyzed: See Below

Parameter	Result	Qual	DIL	Amount Spiked	Units	Method	Prep Date	Analyzed Date
Arsenic	1.95		1.0	2.00	mg/L	6010A	15 JAN 98	16 JAN 98
Cadmium	0.0485		1.0	0.0500	mg/L	6010A	15 JAN 98	16 JAN 98
Copper	0.261		1.0	0.250	mg/L	6010A	15 JAN 98	16 JAN 98
Lead	0.486		1.0	0.500	mg/L	6010A	15 JAN 98	16 JAN 98
Mercury	0.000956		1.0	0.00100	mg/L	SW7470	09 JAN 98	09 JAN 98
Thallium	1.97		1.0	2.00	mg/L	6010A	15 JAN 98	16 JAN 98
Zinc	0.523		1.0	0.500	mg/L	6010A	15 JAN 98	16 JAN 98

Quanterra
Environmental Services

Quanterra Incorporated
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Santa Ana, California 92705

714 258-8610 Telephone
714 258-0921 Fax

February 19, 1998

QUANTERRA INCORPORATED PROJECT NUMBER: 130390
PO/CONTRACT: LACDAC/0193171.01

Steve Clements
SCS Engineers
3711 Long Beach Blvd.,
Long Beach, CA 90807

Dear Mr. Clements,

This report contains the analytical results for the three samples received under chain of custody by Quanterra Incorporated on January 23, 1998. These samples are associated with your LACDAC project.

The case narrative is an integral part of this report.

If you have any questions, please feel free to call me at (714) 258-8610.

Sincerely,

Diane Suzuki
Project Manager

TABLE OF CONTENTS

QUANTERRA INCORPORATED PROJECT NUMBER 130503

Case Narrative

Quanterra's Quality Assurance Program

Chain of Custody Documentation

Sample Description Information

8150/8140
Organophosphorus Pesticides/Herbicides
Sample Data Sheets
Method Blank Reports
Laboratory QC Reports