Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result MW-6-D 01-03296-5	MW-10-D 01-03296-6	MW-16-D 01-03296-7	Trip Blank 01-03296-8
Chromium (VI)	7196	mg/L	0.01	<0.01	<0.01	<0.01	-
Dilution Factor				1	1	50	1
Perchlorate	314	µg/L	4	<4	39	1,300	-
Volatile Organic Compounds							
Dilution Factor				1	1	1	1
Benzene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Bromobenzene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Bromochloromethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Bromomethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
n-Butylbenzene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
sec-Butylbenzene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
2-Butanone (MEK)	524.2	µg/L	5	<5	<5	<5	<5
tert-Butylbenzene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	524.2	µg/L	0.5	<0.5	0.5	18.4	<0.5
Chlorobenzene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Chlorodibromomethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Chloroform	524.2	µg/L	0.5	0.6	1.8	13.7	<0.5
Chloromethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorotoluene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
4-Chlorotoluene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dibromo-3-chloropropane (DB	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dibromoethane (EDB)	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichlorobenzene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,4-Dichlorobenzene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethane	524.2	µg/L	0.5	1	0.4J	<0.5	<0.5
1,2-Dichloroethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	524.2	µg/L	0.5	<0.5	<0.5	1.7	<0.5
cis-1,2-Dichloroethene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethene (Total)	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloropropane	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichloropropane	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
2,2-Dichloropropane	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloropropene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result MW-6-D 01-03296-5	MW-10-D 01-03296-6	MW-16-D 01-03296-7	Trip Blank 01-03296-8
trans-1,3-Dichloropropene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobutadiene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Isopropylbenzene (Cumene)	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
p-Isopropyltoluene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Methylene chloride	524.2	µg/L	0.5	<0.5	0.4J	0.4J	2.1
Methyl-t-Butyl ether (MTBE)	524.2	µg/L	1	<1	<1	<1	<1
4-Methyl-2-Pentanone	524.2	µg/L	5	<5	<5	<5	<5
Naphthalene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
n-Propylbenzene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Styrene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1,1,2-Tetrachloroethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	524.2	µg/L	0.5	1.8	<0.5	<0.5	<0.5
Toluene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-Trichlorobenzene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trichlorobenzene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	524.2	µg/L	0.5	<0.5	19.1	3.3	<0.5
Trichlorofluoromethane	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-Trichloropropane	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-Trimethylbenzene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,3,5-Trimethylbenzene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
o-Xylene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
m/p-Xylene	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit

N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.

J: Reported between PQL and MDL.

Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

Applied P & Ch Laboratory

APCL

13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Chain of Custody

Please Print in pen Page 1 of 1

Client: SOTA ENVIRONMENTAL Contact: PAUL JEFFERS Tel #: 858 485-8100 Fax #: 858 485-0812

Address: 16835 N. BERNARDO #212 City: SAN DIEGO State: CA Zip code: 92127

Bill to: SAME

Project Name/Code JPL Job #00HW019 P.O. #

Project Address APCL Quotation #

Due Date: X regular ☐ rush: ___ days ___ hours Sampled by:

Field Sample ID No.	Sample Description	Date Collected	Time Collected	Sample Matrix	Preservation	# of Containers	Analysis Items: VOC 524.2	Total Cr 200.8	Cr VI 7196	Perchlorate EPA 314	MS/MSD	Remarks
	MW-6	4/30	1230	H_2O	PEER LAB	5	X	X	X	X		
	MW-6-D	4/30	1230	H_2O	PEER LAB	5	X	X	X	X		QA/QC
	MW-16	4/30	1700	H_2O	PEER LAB	5	X	X	X	X		REQUIREMENT
	MW-16-D	4/30	1700	H_2O	PEER LAB	5	X	X	X	X		EPA LEVEL
	MW-5	4/30	1545	H_2O	PEER LAB	10	X	X	X	X	X	IV (A)
	MW-10	4/30	1430	H_2O	PEER LAB	5	X	X	X	X		
	MW-10-D	4/30	1430	H_2O	PEER LAB	5	X	X	X	X		
	TRIP BLANK	4/30	—	H_2O	HCl	2	X					

3296

White – With report
Yellow – Lab copy
Pink – Originator

QC Requirement: ☐Regular; ☐QA/QC Report; ☐WIP; ☐Raw Data; ☐Extended Raw Data ☐CLP; ☐ACE ☐AFCEE ☐NEESA ___(E, C or D); ☐Other _____(Please specify)

Sample Disposal: ☐Return ☐Disposal by APCL ☐Hold for _____ days after receiving date. **If not specified, samples will be discarded 45 days after samples are received.**

Sample Conditions: ☐Intact; ☐Broken. Cooler Seal: ☐Intact; ☐Broken; ☐None. Tag # _____ Temperature: ☐Room ☐Cold (_____ °C).

Relinquished by [signature] Date/Time 4/30/01 1815 Received by [signature] Date/Time 4/30/01 1815

Relinquished by Date/Time / Received by Date/Time /

APCL USE ONLY Service # Note:

Clients und[illegible]d that all terms described in the proposals, quotations for this project, and/or th[illegible]eral terms provided in the current APCL price schedules will be followed. APCL [illegible]es the right to terminate [illegible] service or withhold delivery of any reports, if in APCL's sole discretion the terms o[illegible] project have been broken.

Root-file:[CUST.DATA.LAB]CHAIN-ROOT.TEX File:[CUST.DATA.LAB]CHAIN4.TEX

May 16, 2001

Jim Lin
Applied P & Ch Laboratories
13760 E. Magnolia Ave.
Chino, CA 91710
TEL: (909) 590-1828
FAX (909) 590-1498

ELAP No: 1838

RE: Work Order No.: 051017

Attention: Jim Lin

Enclosed are the results for sample(s) received on May 07, 2001 by Advanced Technology Laboratories and tested for the parameters indicated in the enclosed chain of custody.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

Edgar Caballero
Laboratory Director

This cover letter and a case narrative are an integral part of this analytical report.

CLIENT: Applied P & Ch Laboratories
Project:
Lab Order: 051017

CASE NARRATIVE

ATL samples 051017-001A / 027A did not require digestion. The Prep Date on the report is the analytical date of the turbidity check.

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-4-5
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/4/01 11:50:00 AM
Lab ID:	050813-001A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501A** BatchID: **4043**				PrepDate: **5/1/01**		Analyst: **EFR**
Chromium	11	5.0		µg/L	1.0	5/1/01

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

DO - Surrogate Diluted Out

S - Spike/Surrogate outside of limits due to matrix interference.

H - Samples exceeding analytical holding time

E - Value above quantitation range

M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories

3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-4-4
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/4/01 12:30:00 PM
Lab ID:	050813-002A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501A** BatchID: **4043**				PrepDate: **5/1/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/1/01

Qualifiers:

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- DO - Surrogate Diluted Out
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Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-4-3
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/4/01 1:10:00 PM
Lab ID:	050813-003A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501A**	BatchID: **4043**			PrepDate: **5/1/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/1/01

Qualifiers:

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Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-4-2
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/4/01 1:30:00 PM
Lab ID:	050813-004A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501A** BatchID: **4043**				PrepDate: **5/1/01**		Analyst: **EFR**
Chromium	19	5.0		µg/L	1.0	5/1/01

Qualifiers:

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E - Value above quantitation range

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Advanced Technology Laboratories

3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-4-1
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/4/01 2:15:00 PM
Lab ID:	050813-005A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501A**	BatchID: **4043**			PrepDate: **5/1/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/1/01

Qualifiers:

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- M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	ER-4
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/4/01 1:00:00 PM
Lab ID:	050813-006A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501A** BatchID: **4043**			PrepDate: **5/1/01**			Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/1/01

Qualifiers:

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- J - Analyte detected below quantitation limits
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Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-17-4
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/5/01 11:35:00 AM
Lab ID:	050813-007A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501A**	BatchID: **4043**			PrepDate: **5/1/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/1/01

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Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-17-3
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/5/01 12:25:00 PM
Lab ID:	050813-008A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501A** BatchID: **4043**				PrepDate: **5/1/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/1/01

Qualifiers:

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J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
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H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-17-2
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/5/01 3:00:00 PM
Lab ID:	050813-009A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501A** BatchID: **4043**			PrepDate: **5/1/01**			Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/1/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
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E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-17-2D
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/5/01 3:15:00 PM
Lab ID:	050813-010A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501A** BatchID: **4043**				PrepDate: **5/1/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/1/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	ER-17
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/5/01 12:10:00 PM
Lab ID:	050813-011A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501A**	BatchID: **4043**			PrepDate: **5/1/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/1/01

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- DO - Surrogate Diluted Out
- S - Spike/Surrogate outside of limits due to matrix interference.
- H - Samples exceeding analytical holding time
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Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-3-4
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/6/01 11:00:00 AM
Lab ID:	050813-012A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS		**EPA 200.8**				
RunID: **ICP4_010501A** BatchID: **4043**				PrepDate: **5/1/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/1/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-3-3
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/6/01 11:45:00 AM
Lab ID:	050813-013A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501A** BatchID: **4043**				PrepDate: **5/1/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/1/01

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- DO - Surrogate Diluted Out
- S - Spike/Surrogate outside of limits due to matrix interference.
- H - Samples exceeding analytical holding time
- E - Value above quantitation range
- M - Not Monitored. Highly Reactive

Initials: RA

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3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-3-2
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/6/01 12:10:00 PM
Lab ID:	050813-014A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501A** BatchID: **4043**			PrepDate: **5/1/01**			Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/1/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	ER-3
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/6/01 12:30:00 PM
Lab ID:	050813-015A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501A** BatchID: **4043**				PrepDate: **5/1/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/1/01

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- DO - Surrogate Diluted Out
- S - Spike/Surrogate outside of limits due to matrix interference.
- H - Samples exceeding analytical holding time
- E - Value above quantitation range
- M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-18-4
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/13/01 11:20:00 AM
Lab ID:	050813-016A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501A** BatchID: **4043**				PrepDate: **5/1/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/1/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
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Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-18-3
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/13/01 11:55:00 AM
Lab ID:	050813-017A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501A**	BatchID: **4043**			PrepDate: **5/1/01**		Analyst: **EFR**
Chromium	6.9	5.0		µg/L	1.0	5/1/01

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

DO - Surrogate Diluted Out

S - Spike/Surrogate outside of limits due to matrix interference.

H - Samples exceeding analytical holding time

E - Value above quantitation range

M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories

3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-18-2
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/13/01
Lab ID:	050813-018A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501A** BatchID: **4043**				PrepDate: **5/1/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/1/01

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

DO - Surrogate Diluted Out

S - Spike/Surrogate outside of limits due to matrix interference.

H - Samples exceeding analytical holding time

E - Value above quantitation range

M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories

3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	ER-18
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/13/01 11:30:00 AM
Lab ID:	050813-019A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501A** BatchID: **4043**				PrepDate: **5/1/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/1/01

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- DO - Surrogate Diluted Out
- S - Spike/Surrogate outside of limits due to matrix interference.
- H - Samples exceeding analytical holding time
- E - Value above quantitation range
- M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-14-4
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/17/01 2:20:00 PM
Lab ID:	050813-020A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501A** BatchID: **4043**				PrepDate: **5/1/01**		Analyst: **EFR**
Chromium	5.1	5.0		µg/L	1.0	5/1/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-14-3
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/17/01 2:55:00 PM
Lab ID:	050813-021A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501B** BatchID: **4044**				PrepDate: **5/1/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/1/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-14-2
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/17/01 3:20:00 PM
Lab ID:	050813-022A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501B** BatchID: **4044**				PrepDate: **5/1/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/1/01

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- DO - Surrogate Diluted Out
- S - Spike/Surrogate outside of limits due to matrix interference.
- H - Samples exceeding analytical holding time
- E - Value above quantitation range
- M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-14-1
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/17/01 4:30:00 PM
Lab ID:	050813-023A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501B**	BatchID: **4044**			PrepDate: **5/1/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/1/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: RA

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Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-14-1D
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/17/01 4:45:00 PM
Lab ID:	050813-024A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501B** BatchID: **4044**			PrepDate: **5/1/01**			Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/1/01

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- DO - Surrogate Diluted Out
- S - Spike/Surrogate outside of limits due to matrix interference.
- H - Samples exceeding analytical holding time
- E - Value above quantitation range
- M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	ER-14
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/17/01 3:30:00 PM
Lab ID:	050813-025A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501B** BatchID: **4044**				PrepDate: **5/1/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/1/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories *3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040*

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-22-2
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/18/01 3:50:00 PM
Lab ID:	050813-026A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501B** BatchID: **4044**				PrepDate: **5/1/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/1/01

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

DO - Surrogate Diluted Out

S - Spike/Surrogate outside of limits due to matrix interference.

H - Samples exceeding analytical holding time

E - Value above quantitation range

M - Not Monitored. Highly Reactive

Initials: DA

Advanced Technology Laboratories

3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-22-1
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/18/01 4:30:00 PM
Lab ID:	050813-027A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501B**	BatchID: **4044**			PrepDate: **5/1/01**		Analyst: **EFR**
Chromium	5.8	5.0		µg/L	1.0	5/1/01

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- DO - Surrogate Diluted Out
- S - Spike/Surrogate outside of limits due to matrix interference.
- H - Samples exceeding analytical holding time
- E - Value above quantitation range
- M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories *3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040*

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-22-1D
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/18/01 4:45:00 PM
Lab ID:	050813-028A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501B**	BatchID: **4044**			PrepDate: **5/1/01**		Analyst: **EFR**
Chromium	6.9	5.0		µg/L	1.0	5/1/01

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

DO - Surrogate Diluted Out

S - Spike/Surrogate outside of limits due to matrix interference.

H - Samples exceeding analytical holding time

E - Value above quantitation range

M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories

3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	ER-22
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/18/01 2:30:00 PM
Lab ID:	050813-029A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501B** BatchID: **4044**				PrepDate: **5/1/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/1/01

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- DO - Surrogate Diluted Out
- S - Spike/Surrogate outside of limits due to matrix interference.
- H - Samples exceeding analytical holding time
- E - Value above quantitation range
- M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories *3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040*

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-20-5
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/19/01 11:30:00 AM
Lab ID:	050813-030A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501B** BatchID: **4044**				PrepDate: **5/1/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/1/01

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

DO - Surrogate Diluted Out

S - Spike/Surrogate outside of limits due to matrix interference.

H - Samples exceeding analytical holding time

E - Value above quantitation range

M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories

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Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-20-4
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/19/01 12:15:00 PM
Lab ID:	050813-031A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501B** BatchID: **4044**			PrepDate: **5/1/01**			Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/1/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-20-3
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/19/01 1:00:00 PM
Lab ID:	050813-032A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501B**	BatchID: **4044**			PrepDate: **5/1/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/1/01

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- DO - Surrogate Diluted Out
- S - Spike/Surrogate outside of limits due to matrix interference.
- H - Samples exceeding analytical holding time
- E - Value above quantitation range
- M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-20-2
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/19/01 2:25:00 PM
Lab ID:	050813-033A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501B** BatchID: **4044**			PrepDate: **5/1/01**			Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/1/01

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- DO - Surrogate Diluted Out
- S - Spike/Surrogate outside of limits due to matrix interference.
- H - Samples exceeding analytical holding time
- E - Value above quantitation range
- M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-20-1
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/19/01 3:00:00 PM
Lab ID:	050813-034A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501B** BatchID: **4044**				PrepDate: **5/1/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/1/01

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- DO - Surrogate Diluted Out
- S - Spike/Surrogate outside of limits due to matrix interference.
- H - Samples exceeding analytical holding time
- E - Value above quantitation range
- M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/4/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	ER-20
Lab Order:	050813		
Project:	JPL	**Collection Date:**	4/19/01 12:00:00 PM
Lab ID:	050813-035A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010501B** BatchID: **4044**				PrepDate: **5/1/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/1/01

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- DO - Surrogate Diluted Out
- S - Spike/Surrogate outside of limits due to matrix interference.
- H - Samples exceeding analytical holding time
- E - Value above quantitation range
- M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
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Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *16-May-01*

CLIENT: Applied P & Ch Laboratories
Work Order: 051017
Project:

QC SUMMARY REPORT
Method Blank

Sample ID **MB-4218** Batch ID: **4218** Test Name **ICPMS METALS** Units **µg/L** Analysis Date: **5/10/01** Prep Date: **5/10/01**
MBLK SeqNo: **134371**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	5.0		0				0			

Sample ID **MB-4219** Batch ID: **4219** Test Name **ICPMS METALS** Units **µg/L** Analysis Date: **5/10/01** Prep Date: **5/10/01**
MBLK SeqNo: **134445**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	5.0		0				0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
M - Not Monitored. Highly Reactive
S - Spike/Surrogate outside of limits due to matrix interference
DO - Surrogate Diluted Out

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *16-May-01*

CLIENT: Applied P & Ch Laboratories
Work Order: 051017
Project:

QC SUMMARY REPORT
Sample Duplicate

Sample ID **051017-010ADU** Batch ID: **4218** Test Name **ICPMS METALS** Units **µg/L** Analysis Date: **5/10/01** Prep Date: **5/10/01**
DUP SeqNo: **134400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	5.0	0	0	0	0	0	0	0	30	

Sample ID **051017-019ADU** Batch ID: **4218** Test Name **ICPMS METALS** Units **µg/L** Analysis Date: **5/10/01** Prep Date: **5/10/01**
DUP SeqNo: **134401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	3	5.0	0	0	0	0	0	3.4	3	30	J

Sample ID **051017-025ADU** Batch ID: **4219** Test Name **ICPMS METALS** Units **µg/L** Analysis Date: **5/10/01** Prep Date: **5/10/01**
DUP SeqNo: **134456**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	4	5.0	0	0	0	0	0	4.7	6	30	J

Qualifiers:
ND - Not Detected at the Reporting Limit
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B - Analyte detected in the associated Method Blank
M - Not Monitored. Highly Reactive
S - Spike/Surrogate outside of limits due to matrix interference
DO - Surrogate Diluted Out

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *16-May-01*

CLIENT: Applied P & Ch Laboratories
Work Order: 051017
Project:

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID **051017-019AMS** Batch ID: **4218** Test Name **ICPMS METALS** Units **µg/L** Analysis Date: **5/10/01** Prep Date: **5/10/01**
MS SeqNo: **134392**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	13	5.0	10	3.4	96	80	120	0			

Sample ID **051017-019AMS** Batch ID: **4218** Test Name **ICPMS METALS** Units **µg/L** Analysis Date: **5/10/01** Prep Date: **5/10/01**
MSD SeqNo: **134393**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	13	5.0	10	3.4	96	80	120	13	2	20	

Sample ID **051017-025AMS** Batch ID: **4219** Test Name **ICPMS METALS** Units **µg/L** Analysis Date: **5/10/01** Prep Date: **5/10/01**
MS SeqNo: **134452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	14	5.0	10	4.7	93	80	120	0			

Sample ID **051017-025AMS** Batch ID: **4219** Test Name **ICPMS METALS** Units **µg/L** Analysis Date: **5/10/01** Prep Date: **5/10/01**
MSD SeqNo: **134453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	14	5.0	10	4.7	93	80	120	14	0	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
M - Not Monitored. Highly Reactive
S - Spike/Surrogate outside of limits due to matrix interference
DO - Surrogate Diluted Out

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *16-May-01*

CLIENT: Applied P & Ch Laboratories
Work Order: 051017
Project:

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID **LCS-4218** Batch ID: **4218** Test Name **ICPMS METALS** Units **µg/L** Analysis Date: **5/10/01** Prep Date: **5/10/01**
LCS SeqNo: **134372**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.9	5.0	10	0	99	80	120	0			

Sample ID **LCS-4219** Batch ID: **4219** Test Name **ICPMS METALS** Units **µg/L** Analysis Date: **5/10/01** Prep Date: **5/10/01**
LCS SeqNo: **134446**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10	5.0	10	0	100	80	120	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
M - Not Monitored. Highly Reactive
S - Spike/Surrogate outside of limits due to matrix interference
DO - Surrogate Diluted Out

Initials: RA

May 07, 2001

Jim Lin
Applied P & Ch Laboratories
13760 E. Magnolia Ave.
Chino, CA 91710
TEL: (909) 590-1828
FAX (909) 590-1498

ELAP No: 1838

RE: JPL

Work Order No.: 050813

Attention: Jim Lin

Enclosed are the results for sample(s) received on April 26, 2001 by Advanced Technology Laboratories and tested for the parameters indicated in the enclosed chain of custody.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

Edgar Caballero
Laboratory Director

This cover letter and a case narrative are an integral part of this analytical report.

CLIENT: Applied P & Ch Laboratories
Project: JPL
Lab Order: 050813

CASE NARRATIVE

ATL samples 050813-001A / 035A did not require digestion. The Prep Date on the report is the analytical date of the turbidity check.

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/16/01*

CLIENT: Applied P & Ch Laboratories
Lab Order: 051017
Project:
Lab ID: 051017-001A

Client Sample ID: MW-24-4
Collection Date: 4/23/01 1:15:00 PM
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010510B** BatchID: **4218**				PrepDate: **5/10/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/10/01

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories *3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040*

Advanced Technology Laboratories

Print Date: *5/16/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-24-3
Lab Order:	051017		
Project:		**Collection Date:**	4/23/01 2:00:00 PM
Lab ID:	051017-002A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010510B** BatchID: **4218**				PrepDate: **5/10/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/10/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories *3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040*

Advanced Technology Laboratories

Print Date: *5/16/01*

CLIENT: Applied P & Ch Laboratories
Client Sample ID: MW-24-2
Lab Order: 051017
Project:
Collection Date: 4/23/01 2:45:00 PM
Lab ID: 051017-003A
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010510B** BatchID: **4218**				PrepDate: **5/10/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/10/01

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/16/01*

CLIENT: Applied P & Ch Laboratories
Client Sample ID: MW-24-1
Lab Order: 051017
Project:
Collection Date: 4/23/01 3:30:00 PM
Lab ID: 051017-004A
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010510B** BatchID: **4218**				PrepDate: **5/10/01**		Analyst: **EFR**
Chromium	5.7	5.0		µg/L	1.0	5/10/01

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: RA

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Advanced Technology Laboratories

Print Date: *5/16/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	ER-24
Lab Order:	051017		
Project:		**Collection Date:**	4/23/01 2:25:00 PM
Lab ID:	051017-005A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010510B**	BatchID: **4218**			PrepDate: **5/10/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/10/01

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- DO - Surrogate Diluted Out
- S - Spike/Surrogate outside of limits due to matrix interference.
- H - Samples exceeding analytical holding time
- E - Value above quantitation range
- M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/16/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-23-4
Lab Order:	051017		
Project:		**Collection Date:**	4/24/01 12:25:00 PM
Lab ID:	051017-006A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010510B**	BatchID: **4218**			PrepDate: **5/10/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/10/01

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- DO - Surrogate Diluted Out
- S - Spike/Surrogate outside of limits due to matrix interference.
- H - Samples exceeding analytical holding time
- E - Value above quantitation range
- M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/16/01*

CLIENT: Applied P & Ch Laboratories
Client Sample ID: MW-23-3
Lab Order: 051017
Project:
Collection Date: 4/24/01 1:05:00 PM
Lab ID: 051017-007A
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010510B** BatchID: **4218**				PrepDate: **5/10/01**		Analyst: **EFR**
Chromium	5.5	5.0		µg/L	1.0	5/10/01

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
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DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories *3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040*

Advanced Technology Laboratories

Print Date: *5/16/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-23-2
Lab Order:	051017		
Project:		**Collection Date:**	4/24/01 1:55:00 PM
Lab ID:	051017-008A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010510B**	BatchID: **4218**			PrepDate: **5/10/01**		Analyst: **EFR**
Chromium	5.7	5.0		µg/L	1.0	5/10/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/16/01*

CLIENT: Applied P & Ch Laboratories
Client Sample ID: MW-23-1
Lab Order: 051017
Project:
Collection Date: 4/24/01 2:15:00 PM
Lab ID: 051017-009A
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010510B** BatchID: **4218**				PrepDate: **5/10/01**		Analyst: **EFR**
Chromium	7.2	5.0		µg/L	1.0	5/10/01

Qualifiers:
ND - Not Detected at the Reporting Limit
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DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
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E - Value above quantitation range
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Initials: RA

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Advanced Technology Laboratories

Print Date: *5/16/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	ER-23
Lab Order:	051017		
Project:		**Collection Date:**	4/24/01 1:30:00 PM
Lab ID:	051017-010A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010510B** BatchID: **4218**				PrepDate: **5/10/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/10/01

Qualifiers:

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- B - Analyte detected in the associated Method Blank
- DO - Surrogate Diluted Out
- S - Spike/Surrogate outside of limits due to matrix interference.
- H - Samples exceeding analytical holding time
- E - Value above quantitation range
- M - Not Monitored. Highly Reactive

Initials: RA

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Advanced Technology Laboratories

Print Date: *5/16/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-11-3
Lab Order:	051017		
Project:		**Collection Date:**	4/25/01 11:45:00 AM
Lab ID:	051017-011A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010510B** BatchID: **4218**				PrepDate: **5/10/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/10/01

Qualifiers:

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- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- DO - Surrogate Diluted Out
- S - Spike/Surrogate outside of limits due to matrix interference.
- H - Samples exceeding analytical holding time
- E - Value above quantitation range
- M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
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Advanced Technology Laboratories

Print Date: *5/16/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-11-2
Lab Order:	051017		
Project:		**Collection Date:**	4/25/01 1:00:00 PM
Lab ID:	051017-012A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010510B** BatchID: **4218**				PrepDate: **5/10/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/10/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/16/01*

CLIENT: Applied P & Ch Laboratories
Lab Order: 051017
Project:
Lab ID: 051017-013A

Client Sample ID: MW-11-1
Collection Date: 4/25/01 12:30:00 PM
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010510B** BatchID: **4218**				PrepDate: **5/10/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/10/01

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
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Initials: RA

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Advanced Technology Laboratories

Print Date: *5/16/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	ER-11
Lab Order:	051017		
Project:		**Collection Date:**	4/25/01 12:00:00 PM
Lab ID:	051017-014A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010510B**	BatchID: **4218**			PrepDate: **5/10/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/10/01

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- DO - Surrogate Diluted Out
- S - Spike/Surrogate outside of limits due to matrix interference.
- H - Samples exceeding analytical holding time
- E - Value above quantitation range
- M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories

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Advanced Technology Laboratories

Print Date: *5/16/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-12-3
Lab Order:	051017		
Project:		**Collection Date:**	4/26/01 12:20:00 PM
Lab ID:	051017-015A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS		**EPA 200.8**				
RunID: **ICP4_010510B**	BatchID: **4218**			PrepDate: **5/10/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/10/01

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- DO - Surrogate Diluted Out
- S - Spike/Surrogate outside of limits due to matrix interference.
- H - Samples exceeding analytical holding time
- E - Value above quantitation range
- M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/16/01*

CLIENT: Applied P & Ch Laboratories
Client Sample ID: MW-12-2
Lab Order: 051017
Project:
Collection Date: 4/26/01 12:50:00 PM
Lab ID: 051017-016A
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS				**EPA 200.8**		
RunID: **ICP4_010510B** BatchID: **4218**				PrepDate: **5/10/01**		Analyst: **EFR**
Chromium	6.2	5.0		µg/L	1.0	5/10/01

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/16/01*

CLIENT: Applied P & Ch Laboratories
Client Sample ID: MW-12-1
Lab Order: 051017
Project:
Collection Date: 4/26/01 1:10:00 PM
Lab ID: 051017-017A
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010510B** BatchID: **4218**			PrepDate: **5/10/01**			Analyst: **EFR**
Chromium	8.1	5.0		µg/L	1.0	5/10/01

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/16/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	ER-12
Lab Order:	051017		
Project:		**Collection Date:**	4/26/01 1:05:00 PM
Lab ID:	051017-018A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010510B**	BatchID: **4218**			PrepDate: **5/10/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/10/01

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- DO - Surrogate Diluted Out
- S - Spike/Surrogate outside of limits due to matrix interference.
- H - Samples exceeding analytical holding time
- E - Value above quantitation range
- M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/16/01*

CLIENT: Applied P & Ch Laboratories
Client Sample ID: MW-8
Lab Order: 051017
Project:
Collection Date: 4/27/01 11:20:00 AM
Lab ID: 051017-019A
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010510B** BatchID: **4218**				PrepDate: **5/10/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/10/01

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/16/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-13
Lab Order:	051017		
Project:		**Collection Date:**	4/27/01 1:00:00 PM
Lab ID:	051017-020A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010510B**	BatchID: **4218**			PrepDate: **5/10/01**		Analyst: **EFR**
Chromium	19	5.0		µg/L	1.0	5/10/01

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

DO - Surrogate Diluted Out

S - Spike/Surrogate outside of limits due to matrix interference.

H - Samples exceeding analytical holding time

E - Value above quantitation range

M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories

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Advanced Technology Laboratories

Print Date: *5/16/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-6
Lab Order:	051017		
Project:		**Collection Date:**	4/30/01 12:30:00 PM
Lab ID:	051017-021A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010510C**	BatchID: **4219**			PrepDate: **5/10/01**		Analyst: **EFR**
Chromium	10	5.0		µg/L	1.0	5/10/01

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- DO - Surrogate Diluted Out
- S - Spike/Surrogate outside of limits due to matrix interference.
- H - Samples exceeding analytical holding time
- E - Value above quantitation range
- M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/16/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-6-D
Lab Order:	051017		
Project:		**Collection Date:**	4/30/01 12:30:00 PM
Lab ID:	051017-022A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010510C** BatchID: **4219**				PrepDate: **5/10/01**		Analyst: **EFR**
Chromium	10	5.0		µg/L	1.0	5/10/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/16/01*

CLIENT: Applied P & Ch Laboratories
Client Sample ID: MW-16
Lab Order: 051017
Project:
Collection Date: 4/30/01 5:00:00 PM
Lab ID: 051017-023A
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010510C** BatchID: **4219**				PrepDate: **5/10/01**		Analyst: **EFR**
Chromium	11	5.0		µg/L	1.0	5/10/01

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/16/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-16-D
Lab Order:	051017		
Project:		**Collection Date:**	4/30/01 5:00:00 PM
Lab ID:	051017-024A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010510C** BatchID: **4219**				PrepDate: **5/10/01**		Analyst: **EFR**
Chromium	11	5.0		µg/L	1.0	5/10/01

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- DO - Surrogate Diluted Out
- S - Spike/Surrogate outside of limits due to matrix interference.
- H - Samples exceeding analytical holding time
- E - Value above quantitation range
- M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/16/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-5
Lab Order:	051017		
Project:		**Collection Date:**	4/30/01 3:45:00 PM
Lab ID:	051017-025A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010510C**	BatchID: **4219**			PrepDate: **5/10/01**		Analyst: **EFR**
Chromium	ND	5.0		µg/L	1.0	5/10/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: QA

Advanced Technology Laboratories
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Advanced Technology Laboratories

Print Date: *5/16/01*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-10
Lab Order:	051017		
Project:		**Collection Date:**	4/30/01 2:30:00 PM
Lab ID:	051017-026A	**Matrix:**	Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010510C** BatchID: **4219**				PrepDate: **5/10/01**		Analyst: **EFR**
Chromium	13	5.0		µg/L	1.0	5/10/01

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Print Date: *5/16/01*

CLIENT: Applied P & Ch Laboratories
Client Sample ID: MW-10-D
Lab Order: 051017
Project:
Collection Date: 4/30/01 2:30:00 PM
Lab ID: 051017-027A
Matrix: Water

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS			**EPA 200.8**			
RunID: **ICP4_010510C** BatchID: **4219**				PrepDate: **5/10/01**		Analyst: **EFR**
Chromium	11	5.0		µg/L	1.0	5/10/01

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DO - Surrogate Diluted Out
S - Spike/Surrogate outside of limits due to matrix interference.
H - Samples exceeding analytical holding time
E - Value above quantitation range
M - Not Monitored. Highly Reactive

Initials: PA

Advanced Technology Laboratories *3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040*

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *04-May-01*

CLIENT: Applied P & Ch Laboratories
Work Order: 050813
Project: JPL

QC SUMMARY REPORT
Sample Duplicate

Sample ID **050813-020ADU** Batch ID: **4043** Test Name **ICPMS METALS** Units **µg/L** Analysis Date: **5/1/01** Prep Date: **5/1/01**
DUP SeqNo: **128439**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	5.1	5.0	0	0	0	0	0	5.1	0	30	

Sample ID **050813-008ADU** Batch ID: **4043** Test Name **ICPMS METALS** Units **µg/L** Analysis Date: **5/1/01** Prep Date: **5/1/01**
DUP SeqNo: **128440**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	4	5.0	0	0	0	0	0	4.2	1	30	J

Sample ID **050813-026ADU** Batch ID: **4044** Test Name **ICPMS METALS** Units **µg/L** Analysis Date: **5/1/01** Prep Date: **5/1/01**
DUP SeqNo: **128460**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	4	5.0	0	0	0	0	0	3.7	2	30	J

Sample ID **050813-035ADU** Batch ID: **4044** Test Name **ICPMS METALS** Units **µg/L** Analysis Date: **5/1/01** Prep Date: **5/1/01**
DUP SeqNo: **128461**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.3	5.0	0	0	0	0	0	0.29	6	30	J

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
M - Not Monitored. Highly Reactive
S - Spike/Surrogate outside of limits due to matrix interference
DO - Surrogate Diluted Out

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *04-May-01*

CLIENT: Applied P & Ch Laboratories
Work Order: 050813
Project: JPL

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID **LCS-4043** Batch ID: **4043** Test Name **ICPMS METALS** Units **µg/L** Analysis Date: **5/1/01** Prep Date: **5/1/01**
LCS SeqNo: **128416**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10	5.0	10	0	100	80	120	0			

Sample ID **LCS-4044** Batch ID: **4044** Test Name **ICPMS METALS** Units **µg/L** Analysis Date: **5/1/01** Prep Date: **5/1/01**
LCS SeqNo: **128442**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10	5.0	10	0	100	80	120	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
M - Not Monitored. Highly Reactive
S - Spike/Surrogate outside of limits due to matrix interference
DO - Surrogate Diluted Out

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *04-May-01*

CLIENT: Applied P & Ch Laboratories
Work Order: 050813
Project: JPL

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID **050813-008AMS** Batch ID: **4043** Test Name **ICPMS METALS** Units **µg/L** Analysis Date: **5/1/01** Prep Date: **5/1/01**
MS SeqNo: **128425**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	13	5.0	10	4.2	88	80	120	0			

Sample ID **050813-008AMS** Batch ID: **4043** Test Name **ICPMS METALS** Units **µg/L** Analysis Date: **5/1/01** Prep Date: **5/1/01**
MSD SeqNo: **128426**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	13	5.0	10	4.2	88	80	120	13	1	20	

Sample ID **050813-026AMS** Batch ID: **4044** Test Name **ICPMS METALS** Units **µg/L** Analysis Date: **5/1/01** Prep Date: **5/1/01**
MS SeqNo: **128449**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12	5.0	10	3.7	83	80	120	0			

Sample ID **050813-026AMS** Batch ID: **4044** Test Name **ICPMS METALS** Units **µg/L** Analysis Date: **5/1/01** Prep Date: **5/1/01**
MSD SeqNo: **128450**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	12	5.0	10	3.7	83	80	120	12	1	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
M - Not Monitored. Highly Reactive
S - Spike/Surrogate outside of limits due to matrix interference
DO - Surrogate Diluted Out

Initials: RA

Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Advanced Technology Laboratories

Date: *04-May-01*

CLIENT: Applied P & Ch Laboratories
Work Order: 050813
Project: JPL

QC SUMMARY REPORT
Method Blank

Sample ID **MB-4043** Batch ID: **4043** Test Name **ICPMS METALS** Units **µg/L** Analysis Date: **5/1/01** Prep Date: **5/1/01**
MBLK SeqNo: **128415**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	5.0		0				0			

Sample ID **MB-4044** Batch ID: **4044** Test Name **ICPMS METALS** Units **µg/L** Analysis Date: **5/1/01** Prep Date: **5/1/01**
MBLK SeqNo: **128441**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	5.0		0				0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
M - Not Monitored. Highly Reactive
S - Spike/Surrogate outside of limits due to matrix interference
DO - Surrogate Diluted Out

Initials: RA

Data Validation

VOC

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 30, 2001

LDC Report Date: May 31, 2001

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-3296

Sample Identification

MW-5
MW-6
MW-10
MW-16
MW-6-D
MW-10-D
MW-16-D
TRIP BLANK
MW-5MS
MW-5MSD

Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

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

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 30.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
5/5/01	4-Methyl-2-pentanone	36.26	MW-5 MW-6 MW-10 MW-16 MW-6-D MW-5MS MW-5MSD 01G2624MB01	J (all detects) UJ (all non-detects)	P
5/7/01	2,2-Dichloropropane	34.25	MW-10-D MW-16-D TRIP BLANK 01G2639MB01	J (all detects) UJ (all non-detects)	P

V. Blanks

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

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
01G2624MB01	5/5/01	Methylene chloride	1.5 ug/L	MW-5 MW-6 MW-10 MW-16 MW-6-D
01G2638MB01	5/8/01	Methylene chloride 2-Butanone	1.8 ug/L 4 ug/L	MW-10-D MW-16-D TRIP BLANK

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

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
MW-10-D	Methylene chloride	0.4 ug/L	0.5U ug/L
MW-16-D	Methylene chloride	0.4 ug/L	0.5U ug/L
TRIP BLANK	Methylene chloride 2-Butanone	2.1 ug/L 4.4 ug/L	2.1U ug/L 5U ug/L

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

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TRIP BLANK	4/30/01	Methylene chloride 2-Butanone	2.1 ug/L 4.4 ug/L	MW-5 MW-6 MW-10 MW-16 MW-6-D MW-10-D MW-16-D

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

Sample	Compound	Reported Concentration	Modified Final Concentration
MW-10-D	Methylene chloride	0.4 ug/L	0.5U ug/L
MW-16-D	Methylene chloride	0.4 ug/L	0.5U ug/L

VI. Surrogate Spikes

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

VII. Matrix Spike/Matrix Spike Duplicates

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

VIII. Laboratory Control Samples (LCS)

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

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

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

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
MW-5	1,4-Dichlorobenzene-d4	386003 (397963-739073)	Bromobenzene n-Butylbenzene sec-Butylbenzene tert-Butylbenzene 2-Chlorotoluene 4-Chlorotoluene 1,2-Dibromo-3-chloropropane 1,2-Dichlorobenzene 1,2-Dichlorobenzene 1,4-Dichlorobenzene Hexachlorobutadiene Isopropylbenzene p-Isopropyltoluene Naphthalene n-Propylbenzene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,2,3-Trichloropropane 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene	J (all detects) UJ (all non-detects)	A
01G2638MB01	Chlorobenzene-d5 1,4-Dichlorobenzene-d4	398668 (408484-758612) 357744 (435425-808646)	Bromoform Chlorobenzene 1,3-Dichloropropane Ethylbenzene 4-Methyl-2-pentanone Styrene 1,1,1,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane Tetrachloroethene o-Xylene m,p-Xylene Bromobenzene n-Butylbenzene sec-Butylbenzene tert-Butylbenzene 2-Chlorotoluene 4-Chlorotoluene 1,2-Dibromo-3-chloropropane 1,2-Dichlorobenzene 1,2-Dichlorobenzene 1,4-Dichlorobenzene Hexachlorobutadiene Isopropylbenzene p-Isopropyltoluene Naphthalene n-Propylbenzene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,2,3-Trichloropropane 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene	J (all detects) UJ (all non-detects)	P

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
TRIP BLANK	1,4-Dichlorobenzene-d4	373219 (435425-808646)	Bromobenzene n-Butylbenzene sec-Butylbenzene tert-Butylbenzene 2-Chlorotoluene 4-Chlorotoluene 1,2-Dibromo-3-chloropropane 1,2-Dichlorobenzene 1,2-Dichlorobenzene 1,4-Dichlorobenzene Hexachlorobutadiene Isopropylbenzene p-Isopropyltoluene Naphthalene n-Propylbenzene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,2,3-Trichloropropane 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene	J (all detects) UJ (all non-detects)	P

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

Samples MW-6 and MW-6-D, samples MW-10 and MW-10-D, and samples MW-16 and MW-16-D were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	MW-6	MW-6-D	
Chloroform	0.5	0.6	18
1,1-Dichloroethane	1.0	1	0
Tetrachloroethene	2.1	1.8	15
Trichloroethene	0.3	0.5U	200

Compound	Concentration (ug/L)		RPD
	MW-10	MW-10-D	
Carbon tetrachloride	0.6	0.5	18
Chloroform	1.9	1.8	5
1,1-Dichloroethane	0.4	0.4	0
Trichloroethene	20.4	19.1	7
Methylene chloride	0.5U	0.4	200

Compound	Concentration (ug/L)		RPD
	MW-16	MW-16-D	
Carbon tetrachloride	21.0	18.4	13
Chloroform	15.3	13.7	11
1,1-Dichloroethene	1.6	1.7	6
Trichloroethene	3.6	3.3	9
Methylene chloride	0.5U	0.4	200

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 01-3296

SDG	Sample	Compound	Flag	A or P	Reason
01-3296	MW-5 MW-6 MW-10 MW-16 MW-6-D	4-Methyl-2-pentanone	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)
01-3296	MW-10-D MW-16-D TRIP BLANK	2,2-Dichloropropane	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)
01-3296	MW-5	Bromobenzene n-Butylbenzene sec-Butylbenzene tert-Butylbenzene 2-Chlorotoluene 4-Chlorotoluene 1,2-Dibromo-3-chloropropane 1,2-Dichlorobenzene 1,2-Dichlorobenzene 1,4-Dichlorobenzene Hexachlorobutadiene Isopropylbenzene p-Isopropyltoluene Naphthalene n-Propylbenzene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,2,3-Trichloropropane 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene	J (all detects) UJ (all non-detects)	A	Internal standards (area)
01-3296	TRIP BLANK	Bromobenzene n-Butylbenzene sec-Butylbenzene tert-Butylbenzene 2-Chlorotoluene 4-Chlorotoluene 1,2-Dibromo-3-chloropropane 1,2-Dichlorobenzene 1,2-Dichlorobenzene 1,4-Dichlorobenzene Hexachlorobutadiene Isopropylbenzene p-Isopropyltoluene Naphthalene n-Propylbenzene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,2,3-Trichloropropane 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene	J (all detects) UJ (all non-detects)	P	Internal standards (area)

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-3296

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
01-3296	MW-10-D	Methylene chloride	0.5U ug/L	A
01-3296	MW-16-D	Methylene chloride	0.5U ug/L	A
01-3296	TRIP BLANK	Methylene chloride 2-Butanone	2.1U ug/L 5U ug/L	A

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 01-3296

SDG	Sample	Compound	Modified Final Concentration	A or P
01-3296	MW-10-D	Methylene chloride	0.5U ug/L	A
01-3296	MW-16-D	Methylene chloride	0.5U ug/L	A

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 12, 2001

LDC Report Date: May 2, 2001

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-3000

Sample Identification

ER-19
MW-19-1
MW-19-2
MW-19-3
MW-19-4
MW-19-5
Trip Blank
MW-19-1MS
MW-19-1MSD

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

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

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 30.0% .

V. Blanks

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

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
01G2345MB01	4/13/01	Methylene chloride	0.5 ug/L	All samples in SDG 01-3000

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

Sample ER-19 was identified as an equipment rinsate. No volatile contaminants were found in this blank.

Sample "Trip Blank" was identified as a trip blank. No volatile contaminants were found in this blank.

VI. Surrogate Spikes

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

VII. Matrix Spike/Matrix Spike Duplicates

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

VIII. Laboratory Control Samples (LCS)

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

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

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

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 01-3000

No Sample Data Qualified in this SDG

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-3000

No Sample Data Qualified in this SDG

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 01-3000

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 13, 2001

LDC Report Date: May 2, 2001

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-3025

Sample Identification

ER-18
MW-18-2
MW-18-3
MW-18-4
MW-18-5
Trip Blank

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

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

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 30.0% .

V. Blanks

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

Sample ER-18 was identified as an equipment rinsate. No volatile contaminants were found in this blank.

Sample "Trip Blank" was identified as a trip blank. No volatile contaminants were found in this blank.

VI. Surrogate Spikes

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

VII. Matrix Spike/Matrix Spike Duplicates

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

VIII. Laboratory Control Samples (LCS)

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

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

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

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 01-3025

No Sample Data Qualified in this SDG

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-3025

No Sample Data Qualified in this SDG

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 01-3025

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 4, 2001

LDC Report Date: May 2, 2001

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-2877

Sample Identification

ER-4
MW-4-1
MW-4-2
MW-4-3
Trip blank

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

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

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 30.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
4/9/01	Naphthalene	33.09	ER-4 MW-4-1 MW-4-2 MW-4-3 01G2297MB01	J (all detects) UJ (all non-detects)	P

V. Blanks

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

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
01G2297MB01	4/10/01	Methylene chloride	0.8 ug/L	ER-4 MW-4-1 MW-4-2 MW-4-3

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

Sample ER-4 was identified as an equipment rinsate. No volatile contaminants were found in this blank with the following exceptions:

Equipment Rinsate ID	Sampling Date	Compound	Concentration	Associated Samples
ER-4	4/4/01	Chloroform	3 ug/L	MW-4-1 MW-4-2 MW-4-3

Sample "Trip blank" was identified as a trip blank. No volatile contaminants were found in this blank.

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

Sample	Compound	Reported Concentration	Modified Final Concentration
MW-4-2	Chloroform	0.6 ug/L	0.6U ug/L

VI. Surrogate Spikes

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

VII. Matrix Spike/Matrix Spike Duplicates

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

VIII. Laboratory Control Samples (LCS)

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

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

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

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
Trip blank	1,4-Dichlorobenzene-d4	145766 (149449-277549)	1,2,3-Trichloropropane Isopropylbenzene Bromobenzene n-Propylbenzene 2-Chlorotoluene 4-Chlorotoluene 1,3,5-Trimethylbenzene tert-Butylbenzene 1,2,4-Trimethylbenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene sec-Butylbenzene p-Isopropyltoluene 1,2-Dichlorobenzene n-Butylbenzene 1,2-Dibromo-3-chloropropane 1,2,4-Trichlorobenzene Naphthalene 1,2,3-Trichlorobenzene Hexachlorobutadiene	J (all detects) UJ (all non-detects)	P

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 01-2877

SDG	Sample	Compound	Flag	A or P	Reason
01-2877	ER-4 MW-4-1 MW-4-2 MW-4-3	Naphthalene	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)
01-2877	Trip blank	1,2,3-Trichloropropane Isopropylbenzene Bromobenzene n-Propylbenzene 2-Chlorotoluene 4-Chlorotoluene 1,3,5-Trimethylbenzene tert-Butylbenzene 1,2,4-Trimethylbenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene sec-Butylbenzene p-Isopropyltoluene 1,2-Dichlorobenzene n-Butylbenzene 1,2-Dibromo-3-chloropropane 1,2,4-Trichlorobenzene Naphthalene 1,2,3-Trichlorobenzene Hexachlorobutadiene	J (all detects) UJ (all non-detects)	P	Internal standards (area)

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-2877

No Sample Data Qualified in this SDG

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 01-2877

SDG	Sample	Compound	Modified Final Concentration	A or P
01-2877	MW-4-2	Chloroform	0.6U ug/L	A

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 5, 2001

LDC Report Date: May 2, 2001

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-2883

Sample Identification

ER-17
MW-17-2
MW-17-3
MW-17-4
MW-17-5
MW-17-2D
Trip Blank
MW-17-3MS
MW-17-3MSD

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

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

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 30.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
4/9/01	Naphthalene	33.09	All samples in SDG 01-2883	J (all detects) UJ (all non-detects)	P

V. Blanks

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

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
01G2297MB01	4/10/01	Methylene chloride	0.8 ug/L	All samples in SDG 01-2883

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

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
MW-17-4	Methylene chloride	0.4 ug/L	0.5U ug/L
MW-17-5	Methylene chloride	0.4 ug/L	0.5U ug/L
Trip Blank	Methylene chloride	0.8 ug/L	0.8U ug/L

Sample ER-17 was identified as an equipment rinsate. No volatile contaminants were found in this blank.

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

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
Trip Blank	4/5/01	Methylene chloride	0.8 ug/L	ER-17 MW-17-2 MW-17-3 MW-17-4 MW-17-5 MW-17-2D

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

Sample	Compound	Reported Concentration	Modified Final Concentration
MW-17-4	Methylene chloride	0.4 ug/L	0.5U ug/L
MW-17-5	Methylene chloride	0.4 ug/L	0.5U ug/L

VI. Surrogate Spikes

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

VII. Matrix Spike/Matrix Spike Duplicates

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

VIII. Laboratory Control Samples (LCS)

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

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

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

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
MW-17-3	1,4-Dichlorobenzene-d4	139745 (144562-268472)	1,2,3-Trichloropropane Isopropylbenzene Bromobenzene n-Propylbenzene 2-Chlorotoluene 4-Chlorotoluene 1,3,5-Trimethylbenzene tert-Butylbenzene 1,2,4-Trimethylbenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene sec-Butylbenzene p-Isopropyltoluene 1,2-Dichlorobenzene n-Butylbenzene 1,2-Dibromo-3-chloropropane 1,2,4-Trichlorobenzene Naphthalene 1,2,3-Trichlorobenzene Hexachlorobutadiene	J (all detects) UJ (all non-detects)	P

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

Samples MW-17-2 and MW-17-2D were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	MW-17-2	MW-17-2D	
Chloroform	0.4	0.4	0

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 01-2883

SDG	Sample	Compound	Flag	A or P	Reason
01-2883	ER-17 MW-17-2 MW-17-3 MW-17-4 MW-17-5 MW-17-2D Trip Blank	Naphthalene	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)
01-2883	MW-17-3	1,2,3-Trichloropropane Isopropylbenzene Bromobenzene n-Propylbenzene 2-Chlorotoluene 4-Chlorotoluene 1,3,5-Trimethylbenzene tert-Butylbenzene 1,2,4-Trimethylbenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene sec-Butylbenzene p-Isopropyltoluene 1,2-Dichlorobenzene n-Butylbenzene 1,2-Dibromo-3-chloropropane 1,2,4-Trichlorobenzene Naphthalene 1,2,3-Trichlorobenzene Hexachlorobutadiene	J (all detects) UJ (all non-detects)	P	Internal standards (area)

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-2883

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
01-2883	MW-17-4	Methylene chloride	0.5U ug/L	A
01-2883	MW-17-5	Methylene chloride	0.5U ug/L	A
01-2883	Trip Blank	Methylene chloride	0.8U ug/L	A

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 01-2883

SDG	Sample	Compound	Modified Final Concentration	A or P
01-2883	MW-17-4	Methylene chloride	0.5U ug/L	A
01-2883	MW-17-5	Methylene chloride	0.5U ug/L	A

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 6, 2001

LDC Report Date: May 2, 2001

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-2898

Sample Identification

ER-3
MW-3-2
MW-3-3
MW-3-4
Trip Blank
MW-3-2MS
MW-3-2MSD

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

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

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 30.0% .

V. Blanks

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

Sample ER-3 was identified as an equipment rinsate. No volatile contaminants were found in this blank with the following exceptions:

Equipment Rinsate ID	Sampling Date	Compound	Concentration	Associated Samples
ER-3	4/6/01	Methylene chloride	0.5 ug/L	MW-3-2 MW-3-3 MW-3-4

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

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
Trip Blank	4/6/01	Methylene chloride	1.5 ug/L	ER-3 MW-3-2 MW-3-3 MW-3-4

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

Sample	Compound	Reported Concentration	Modified Final Concentration
ER-3	Methylene chloride	0.5 ug/L	0.5U ug/L
MW-3-2	Methylene chloride	0.5 ug/L	0.5U ug/L
MW-3-3	Methylene chloride	0.4 ug/L	0.5U ug/L

VI. Surrogate Spikes

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

VII. Matrix Spike/Matrix Spike Duplicates

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

VIII. Laboratory Control Samples (LCS)

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

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

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

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 01-2898

No Sample Data Qualified in this SDG

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-2898

No Sample Data Qualified in this SDG

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 01-2898

SDG	Sample	Compound	Modified Final Concentration	A or P
01-2898	ER-3	Methylene chloride	0.5U ug/L	A
01-2898	MW-3-2	Methylene chloride	0.5U ug/L	A
01-2898	MW-3-3	Methylene chloride	0.5U ug/L	A

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 7, 2001

LDC Report Date: May 15, 2001

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-3059

Sample Identification

ER-14
MW-14-1
MW-14-2
MW-14-3
MW-14-4
MW-14-5
MW-14-1D
TRIP BLANK
MW-14-2MS
MW-14-2MSD

Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

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

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 30.0% .

V. Blanks

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

Sample ER-14 was identified as an equipment rinsate. No volatile contaminants were found in this blank.

Sample "Trip Blank" was identified as a trip blank. No volatile contaminants were found in this blank.

VI. Surrogate Spikes

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

VII. Matrix Spike/Matrix Spike Duplicates

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

VIII. Laboratory Control Samples (LCS)

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

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

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

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

Samples MW-14-1 and MW-14-1D were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	MW-14-1	MW-14-1D	
Chloroform	0.4	0.4	1
1,1-Dichloroethane	0.7	0.6	15
Tetrachloroethene	0.7	0.6	15

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 01-3059

No Sample Data Qualified in this SDG

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-3059

No Sample Data Qualified in this SDG

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 01-3059

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 18, 2001

LDC Report Date: May 15, 2001

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-3086

Sample Identification

ER-22
MW-22-1
MW-22-2
MW-22-3
MW-22-1D
TRIP BLANK
MW-22-2MS
MW-22-2MSD

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

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

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 30.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
4/19/01	Methyl-tert-butyl ether	34.21	All samples in SDG 01-3086	J (all detects) UJ (all non-detects)	P

V. Blanks

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

Sample ER-22 was identified as an equipment rinsate. No volatile contaminants were found in this blank.

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

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TRIP BLANK	4/18/01	Methylene chloride	0.7 ug/L	ER-22 MW-22-1 MW-22-2 MW-22-3 MW-22-1D

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

VI. Surrogate Spikes

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

VII. Matrix Spike/Matrix Spike Duplicates

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

VIII. Laboratory Control Samples (LCS)

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

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

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

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

Samples MW-22-1 and MW-22-1D were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	MW-22-1	MW-22-1D	
Chloroform	0.4	0.5U	200
1,1-Dichloroethane	1.5	0.3	50
Tetrachloroethene	4.0	1.8	76

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 01-3086

SDG	Sample	Compound	Flag	A or P	Reason
01-3086	ER-22 MW-22-1 MW-22-2 MW-22-3 MW-22-1D TRIP BLANK	Methyl-tert-butyl ether	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-3086

No Sample Data Qualified in this SDG

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 01-3086

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 24, 2001

LDC Report Date: May 15, 2001

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-3176

Sample Identification

ER-23
MW-23-1
MW-23-2
MW-23-3
Trip Blank

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

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

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 30.0% .

V. Blanks

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

Sample ER-14 was identified as an equipment rinsate. No volatile contaminants were found in this blank.

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

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
Trip Blank	4/24/01	Methylene chloride	1.9 ug/L	ER-23 MW-23-1 MW-23-2 MW-23-3

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

VI. Surrogate Spikes

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

VII. Matrix Spike/Matrix Spike Duplicates

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

VIII. Laboratory Control Samples (LCS)

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

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

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

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
G2482MB	1,4-Dichlorobenzene-d4	383994 (>421576)	1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	P

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
Trip Blank	1,4-Dichlorobenzene-d4	349248 (>421576)	1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	P
MW-23-1	1,4-Dichlorobenzene-d4	339918 (>421576)	1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	P

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
MW-23-2	1,4-Dichlorobenzene-d4	416895 (>421576)	1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	P
MW-23-3	1,4-Dichlorobenzene-d4	373351 (>421576)	1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	P

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 01-3176

SDG	Sample	Compound	Flag	A or P	Reason
01-3176	MW-23-1 MW-23-2 MW-23-3 Trip Blank	1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	P	Internal standards (area)

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-3176

No Sample Data Qualified in this SDG

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 01-3176

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 20, 2001

LDC Report Date: May 15, 2001

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-3129

Sample Identification

ER-21
MW-21-1
MW-21-2
MW-21-3
MW-21-4
MW-21-5
Trip Blank

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

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

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 30.0% .

V. Blanks

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

Sample ER-21 was identified as an equipment rinsate. No volatile contaminants were found in this blank with the following exceptions:

Equipment Rinsate ID	Sampling Date	Compound	Concentration	Associated Samples
ER-21	4/20/01	Methylene chloride	0.3 ug/L	MW-21-1 MW-21-2 MW-21-3 MW-21-4 MW-21-5

Sample "Trip Blank" was identified as trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
Trip Blank	4/20/01	Methylene chloride	0.8 ug/L	ER-21 MW-21-1 MW-21-2 MW-21-3 MW-21-4 MW-21-5

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

Sample	Compound	Reported Concentration	Modified Final Concentration
ER-21	Methylene chloride	0.3 ug/L	0.5U ug/L
MW-21-4	Methylene chloride	0.6 ug/L	0.6U ug/L
MW-21-5	Methylene chloride	0.4 ug/L	0.5U ug/L

VI. Surrogate Spikes

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

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VIII. Laboratory Control Samples (LCS)

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

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

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

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 01-3129

No Sample Data Qualified in this SDG

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-3129

No Sample Data Qualified in this SDG

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 01-3129

SDG	Sample	Compound	Modified Final Concentration	A or P
01-3129	ER-21	Methylene chloride	0.5U ug/L	A
01-3129	MW-21-4	Methylene chloride	0.6U ug/L	A
01-3129	MW-21-5	Methylene chloride	0.5U ug/L	A

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 23, 2001

LDC Report Date: May 15, 2001

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-3150

Sample Identification

ER-24
MW-24-1
MW-24-2
MW-24-3
Trip Blank
ER-24MS
ER-24MSD

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

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

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 30.0% .

V. Blanks

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

Sample ER-24 was identified as an equipment rinsate. No volatile contaminants were found in this blank.

Sample "Trip Blank" was identified as trip blank. No volatile contaminants were found in this blank.

VI. Surrogate Spikes

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

VII. Matrix Spike/Matrix Spike Duplicates

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

VIII. Laboratory Control Samples (LCS)

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

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

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

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
G2482MB	1,4-Dichlorobenzene-d4	383994 (>421576)	1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	P

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
MW-24-1	1,4-Dichlorobenzene-d4	337954 (>421576)	1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	P
MW-24-3	1,4-Dichlorobenzene-d4	379355 (>421576)	1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	P

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 01-3150

SDG	Sample	Compound	Flag	A or P	Reason
01-3150	MW-24-1 MW-24-3	1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	P	Internal standards (area)

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-3150

No Sample Data Qualified in this SDG

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 01-3150

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 19, 2001

LDC Report Date: May 15, 2001

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-3111

Sample Identification

ER-20
MW-20-1
MW-20-2
MW-20-3
MW-20-4
MW-20-5
Trip Blank

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

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

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for selected compounds.

A curve fit, based on the initial calibration, was established for quantitation for selected compounds. The coefficient of determination (r^2) was greater than or equal to 0.990 .

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 30.0% .

V. Blanks

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

Sample ER-20 was identified as an equipment rinsate. No volatile contaminants were found in this blank.

Sample "Trip Blank" was identified as trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
Trip Blank	4/19/01	Methylene chloride	0.9 ug/L	ER-20 MW-20-1 MW-20-2 MW-20-3 MW-20-4 MW-20-5

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

VI. Surrogate Spikes

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

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

VIII. Laboratory Control Samples (LCS)

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

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

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

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 01-3111

No Sample Data Qualified in this SDG

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-3111

No Sample Data Qualified in this SDG

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 01-3111

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 25, 2001

LDC Report Date: May 25, 2001

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-3206

Sample Identification

ER-11
MW-11-1
MW-11-2
MW-11-3
MW-11-4
Trip Blank
ER-11MS
ER-11MSD

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

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

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 30.0% .

V. Blanks

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

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
01G2583MB01	5/3/01	Methylene chloride	3.8 ug/L	MW-11-1 MW-11-2 MW-11-3 MW-11-4 Trip Blank

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

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
MW-11-1	Methylene chloride	2.7 ug/L	2.7U ug/L
MW-11-2	Methylene chloride	1.2 ug/L	1.2U ug/L
MW-11-3	Methylene chloride	1.3 ug/L	1.3U ug/L
MW-11-4	Methylene chloride	1.2 ug/L	1.2U ug/L
Trip Blank	Methylene chloride	2.8 ug/L	2.8U ug/L

Sample ER-11 was identified as an equipment rinsate. No volatile contaminants were found in this blank with the following exceptions:

Equipment Rinsate ID	Sampling Date	Compound	Concentration	Associated Samples
ER-11	4/25/01	2-Butanone	3 ug/L	MW-11-1 MW-11-2 MW-11-3 MW-11-4

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

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
Trip Blank	4/25/01	Methylene chloride	2.8 ug/L	ER-11 MW-11-1 MW-11-2 MW-11-3 MW-11-4

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

Sample	Compound	Reported Concentration	Modified Final Concentration
MW-11-1	Methylene chloride	2.7 ug/L	2.7U ug/L
MW-11-2	Methylene chloride	1.2 ug/L	1.2U ug/L
MW-11-3	Methylene chloride	1.3 ug/L	1.3U ug/L
MW-11-4	Methylene chloride	1.2 ug/L	1.2U ug/L

VI. Surrogate Spikes

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

VII. Matrix Spike/Matrix Spike Duplicates

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

VIII. Laboratory Control Samples (LCS)

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

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

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

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
MW-11-1	1,4-Dichlorobenzene-d4	354389 (449677-835115)	1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	P
MW-11-2	1,4-Dichlorobenzene-d4	410707 (449677-835115)	1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	P

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
MW-11-4	1,4-Dichlorobenzene-d4	416010 (449677-835115)	1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	P
Trip Blank	1,4-Dichlorobenzene-d4	402342 (449677-835115)	1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	P

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 01-3206

SDG	Sample	Compound	Flag	A or P	Reason
01-3206	MW-11-1 MW-11-2 MW-11-4 Trip Blank	1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	P	Internal standards (area)

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-3206

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
01-3206	MW-11-1	Methylene chloride	2.7Uug/L	A
01-3206	MW-11-2	Methylene chloride	1.2Uug/L	A
01-3206	MW-11-3	Methylene chloride	1.3Uug/L	A
01-3206	MW-11-4	Methylene chloride	1.2Uug/L	A
01-3206	Trip Blank	Methylene chloride	2.8Uug/L	A

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 01-3206

SDG	Sample	Compound	Modified Final Concentration	A or P
01-3206	MW-11-1	Methylene chloride	2.7U g/L	A
01-3206	MW-11-2	Methylene chloride	1.2Uug/L	A
01-3206	MW-11-3	Methylene chloride	1.3Uug/L	A
01-3206	MW-11-4	Methylene chloride	1.2Uug/L	A

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 26, 2001

LDC Report Date: May 24, 2001

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-3252

Sample Identification

ER-12
Field Blank
Field BlankRE
MW-12-1
MW-12-2
MW-12-2RE
MW-12-3
MW-12-4
MW-12-5
Trip Blank

Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

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

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 30.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
5/3/01	2,2-Dichloropropane	32.54	Field BlankRE MW-12-2RE Trip Blank 01G2597MB01	J (all detects) UJ (all non-detects)	P

V. Blanks

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

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
01G2583MB01	5/3/01	Methylene chloride	3.8 ug/L	ER-12 Field Blank MW-12-1 MW-12-2 MW-12-3 MW-12-4 MW-12-5
01G2597MB01	5/4/01	Methylene chloride	7.6 ug/L	Field BlankRE MW-12-2RE Trip Blank

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

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
Field Blank	Methylene chloride	3.6 ug/L	3.6U ug/L
MW-12-1	Methylene chloride	4.0 ug/L	4.0U ug/L
MW-12-2	Methylene chloride	3.8 ug/L	3.8U ug/L
MW-12-3	Methylene chloride	3.6 ug/L	3.6U ug/L
MW-12-4	Methylene chloride	3.1 ug/L	3.1U ug/L
MW-12-5	Methylene chloride	3.0 ug/L	3.0U ug/L
Field BlankRE	Methylene chloride	4.0 ug/L	4.0U ug/L
MW-12-2RE	Methylene chloride	4.6 ug/L	4.6U ug/L
Trip Blank	Methylene chloride	6.2 ug/L	6.2U ug/L

Sample ER-12 was identified as an equipment rinsate. No volatile contaminants were found in this blank with the following exceptions:

Equipment Rinsate ID	Sampling Date	Compound	Concentration	Associated Samples
ER-12	4/26/01	2-Butanone	4 ug/L	MW-12-1 MW-12-2 MW-12-2RE MW-12-3 MW-12-4 MW-12-5

Samples "Field Blank" and "Field BlankRE" were identified as field blanks. No volatile contaminants were found in these blanks with the following exceptions:

Field Blank ID	Sampling Date	Compound	Concentration	Associated Samples
Field Blank	4/26/01	Methylene chloride	3.6 ug/L	MW-12-1 MW-12-2 MW-12-2RE MW-12-3 MW-12-4 MW-12-5
Field BlankRE	4/26/01	Methylene chloride	4.0 ug/L	MW-12-1 MW-12-2 MW-12-2RE MW-12-3 MW-12-4 MW-12-5

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

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
Trip Blank	4/26/01	Methylene chloride 2-Butanone	6.2 ug/L 6 ug/L	ER-12 Field Blank Field BlankRE MW-12-1 MW-12-2 MW-12-2RE MW-12-3 MW-12-4 MW-12-5

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

Sample	Compound	Reported Concentration	Modified Final Concentration
ER-12	2-Butanone	4 ug/L	5U ug/L
Field Blank	Methylene chloride	3.6 ug/L	3.6U ug/L
Field BlankRE	Methylene chloride	4.0 ug/L	4.0U ug/L
MW-12-1	Methylene chloride	4.0 ug/L	4.0U ug/L
MW-12-2	Methylene chloride	3.8 ug/L	3.8U ug/L
MW-12-2RE	Methylene chloride	4.6 ug/L	4.6U ug/L
MW-12-3	Methylene chloride	3.6 ug/L	3.6U ug/L
MW-12-4	Methylene chloride	3.1 ug/L	3.1U ug/L
MW-12-5	Methylene chloride	3.0 ug/L	3.0U ug/L

VI. Surrogate Spikes

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

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
Field Blank	Bromofluorobenzene	128 (75-121)	All TCL compounds	J (all detects)	A
MW-12-2	Bromofluorobenzene	128 (75-121)	All TCL compounds	J (all detects)	A
Field BlankRE	Toluene-d8	75 (77-122)	All TCL compounds	J (all detects) UJ (all non-detects)	A
MW-12-2RE	Toluene-d8	72 (77-122)	All TCL compounds	J (all detects) UJ (all non-detects)	A

VII. Matrix Spike/Matrix Spike Duplicates

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

VIII. Laboratory Control Samples (LCS)

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

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

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

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
Field Blank	Chlorobenzene-d5 1,4-Dichlorobenzene-d4	431845 (438098-813610) 319854 (449677-835115)	Bromoform 4-Methyl-2-pentanone Tetrachloroethene 1,1,2,2-Tetrachloroethane Chlorobenzene Ethylbenzene Styrene 1,3-Dichloropropane 1,1,1,2-Tetrachloroethane m,p-Xylenes o-Xylene 1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	A

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
MW-12-1	1,4-Dichlorobenzene-d4	354408 (449677-835115)	1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	P
MW-12-2	Chlorobenzene-d5 1,4-Dichlorobenzene-d4	405836 (438098-813610) 311227 (449677-835115)	Bromoform 4-Methyl-2-pentanone Tetrachloroethene 1,1,2,2-Tetrachloroethane Chlorobenzene Ethylbenzene Styrene 1,3-Dichloropropane 1,1,1,2-Tetrachloroethane m,p-Xylenes o-Xylene 1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	A

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
MW-12-3	1,4-Dichlorobenzene-d4	400554 (449677-835115)	1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	P
MW-12-4	Chlorobenzene-d5 1,4-Dichlorobenzene-d4	433834 (438098-813610) 350028 (449677-835115)	Bromoform 4-Methyl-2-pentanone Tetrachloroethene 1,1,2,2-Tetrachloroethane Chlorobenzene Ethylbenzene Styrene 1,3-Dichloropropane 1,1,1,2-Tetrachloroethane m,p-Xylenes o-Xylene 1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	P

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
MW-12-5	Chlorobenzene-d5 1,4-Dichlorobenzene-d4	435625 (438098-813610) 350562 (449677-835115)	Bromoform 4-Methyl-2-pentanone Tetrachloroethene 1,1,2,2-Tetrachloroethane Chlorobenzene Ethylbenzene Styrene 1,3-Dichloropropane 1,1,1,2-Tetrachloroethane m,p-Xylenes o-Xylene 1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	P
ER-12	1,4-Dichlorobenzene-d4	445255 (449677-835115)	1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	P

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
Field BlankRE	1,4-Dichlorobenzene-d4	333871 (416333-773189)	1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	A
MW-12-2RE	Chlorobenzene-d5 1,4-Dichlorobenzene-d4	401058 (406926-755720) 303304 (416333-773189)	Bromoform 4-Methyl-2-pentanone Tetrachloroethene 1,1,2,2-Tetrachloroethane Chlorobenzene Ethylbenzene Styrene 1,3-Dichloropropane 1,1,1,2-Tetrachloroethane m,p-Xylenes o-Xylene 1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	A

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 01-3252

SDG	Sample	Compound	Flag	A or P	Reason
01-3252	Field BlankRE MW-12-2RE Trip Blank	2,2-Dichloropropane	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)
01-3252	Field Blank MW-12-2	All TCL compounds	J (all detects)	A	Surrogate recovery (%R)
01-3252	Field BlankRE MW-12-2RE	All TCL compounds	J (all detects) UJ (all non-detects)	A	Surrogate recovery (%R)
01-3252	Field Blank MW-12-2 MW-12-2RE	Bromoform 4-Methyl-2-pentanone Tetrachloroethene 1,1,2,2-Tetrachloroethane Chlorobenzene Ethylbenzene Styrene 1,3-Dichloropropane 1,1,1,2-Tetrachloroethane m,p-Xylenes o-Xylene 1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	A	Internal standards (area)

SDG	Sample	Compound	Flag	A or P	Reason
01-3252	MW-12-1 MW-12-3 ER-12	1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	P	Internal standards (area)
01-3252	MW-12-4 MW-12-5	Bromoform 4-Methyl-2-pentanone Tetrachloroethene 1,1,2,2-Tetrachloroethane Chlorobenzene Ethylbenzene Styrene 1,3-Dichloropropane 1,1,1,2-Tetrachloroethane m,p-Xylenes o-Xylene 1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	P	Internal standards (area)

SDG	Sample	Compound	Flag	A or P	Reason
01-3252	Field BlankRE	1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	A	Internal standards (area)

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-3252

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
01-3252	Field Blank	Methylene chloride	3.6U ug/L	A
01-3252	MW-12-1	Methylene chloride	4.0U ug/L	A
01-3252	MW-12-2	Methylene chloride	3.8U ug/L	A
01-3252	MW-12-3	Methylene chloride	3.6U ug/L	A
01-3252	MW-12-4	Methylene chloride	3.1U ug/L	A
01-3252	MW-12-5	Methylene chloride	3.0U ug/L	A
01-3252	Field BlankRE	Methylene chloride	4.0U ug/L	A
01-3252	MW-12-2RE	Methylene chloride	4.6U ug/L	A
01-3252	Trip Blank	Methylene chloride	6.2U ug/L	A

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 01-3252

SDG	Sample	Compound	Modified Final Concentration	A or P
01-3252	ER-12	2-Butanone	5U ug/L	A
01-3252	Field Blank	Methylene chloride	3.6U ug/L	A
01-3252	Field BlankRE	Methylene chloride	4.0U ug/L	A
01-3252	MW-12-1	Methylene chloride	4.0U ug/L	A
01-3252	MW-12-2	Methylene chloride	3.8U ug/L	A
01-3252	MW-12-2RE	Methylene chloride	4.6U ug/L	A
01-3252	MW-12-3	Methylene chloride	3.6U ug/L	A
01-3252	MW-12-4	Methylene chloride	3.1U ug/L	A
01-3252	MW-12-5	Methylene chloride	3.0U ug/L	A

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 27, 2001

LDC Report Date: May 24, 2001

Matrix: Water

Parameters: Volatiles

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-3268

Sample Identification

MW-8
MW-13
Trip Blank

Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 524.2 for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

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

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 30.0% with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
5/3/01	2,2-Dichloropropane	32.54	All samples in SDG 01-3268	J (all detects) UJ (all non-detects)	P

V. Blanks

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

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
01G2597MB01	5/4/01	Methylene chloride	7.6 ug/L	All samples in SDG 01-3268

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

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
MW-8	Methylene chloride	5.2 ug/L	5.2U ug/L
MW-13	Methylene chloride	3.8 ug/L	3.8U ug/L

Sample "Trip Blank" was identified as a trip blank. No volatile contaminants were found in this blank.

VI. Surrogate Spikes

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

VII. Matrix Spike/Matrix Spike Duplicates

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

VIII. Laboratory Control Samples (LCS)

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

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

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

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
MW-13	1,4-Dichlorobenzene-d4	374343 (416333-773189)	1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	P

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

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

XVI. Field Duplicates

No field duplicates were identified in this SDG.

JPL, 00HW019
Volatiles - Data Qualification Summary - SDG 01-3268

SDG	Sample	Compound	Flag	A or P	Reason
01-3268	MW-8 MW-13 Trip Blank	2,2-Dichloropropane	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)
01-3268	MW-13	1,2-Dibromo-3-chloropropane Isopropylbenzene Bromobenzene 1,2,3-Trichloropropane n-Propylbenzene 2-Chlorotoluene 1,3,5-Trimethylbenzene 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbenzene sec-Butylbenzene 1,3-Dichlorobenzene p-Isopropyltoluene 1,4-Dichlorobenzene n-Butylbenzene 1,2-Dichlorobenzene 1,2,4-Trichlorobenzene Hexachlorobutadiene Naphthalene 1,2,3-Trichlorobenzene	J (all detects) UJ (all non-detects)	P	Internal standards (area)

JPL, 00HW019
Volatiles - Laboratory Blank Data Qualification Summary - SDG 01-3268

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
01-3268	MW-8	Methylene chloride	5.2U ug/L	A
01-3268	MW-13	Methylene chloride	3.8U ug/L	A

JPL, 00HW019
Volatiles - Field Blank Data Qualification Summary - SDG 01-3268

No Sample Data Qualified in this SDG

Metals

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 4 through April 19, 2001

LDC Report Date: June 18, 2001

Matrix: Water

Parameters: Chromium

Validation Level: EPA Level IV

Laboratory: Advanced Technology Laboratories

Sample Delivery Group (SDG): 050813

Sample Identification

MW-4-5
MW-4-4
MW-4-3
MW-4-2
MW-4-1
ER-4
MW-17-4
MW-17-3
MW-17-2
MW-17-2D
ER-17
MW-3-4
MW-3-3
MW-3-2
ER-3
MW-18-4
MW-18-3
MW-18-2
ER-18
MW-14-4
MW-14-3
MW-14-2
MW-14-1
MW-14-1D
ER-14
MW-22-2
MW-22-1
MW-22-1D
ER-22
MW-20-5
MW-20-4
MW-20-3
MW-20-2
MW-20-1
ER-20
MW-17-3MS
MW-17-3MSD
MW-17-3DUP
MW-14-4DUP
MW-22-2MS
MW-22-2MSD
MW-22-2DUP
ER-20DUP

Introduction

This data review covers 43 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 200.8 for Chromium.

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

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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.

III. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial and continuing blanks (ICB/CCBs) was based on the maximum contaminant concentration in the ICB/CCBs in the analysis of each analyte. No contaminant concentrations were found above the reporting limit in the initial and continuing blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
ICB/CCB	Chromium	0.952 ug/L	All samples in SDG 050813

Sample concentrations were compared to the maximum contaminant concentrations detected in the ICB/CCBs. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

Samples ER-4, ER-17, ER-3, ER-18, ER-14, ER-22 and ER-20 were identified as equipment rinsates. No chromium contaminants were found in these blanks.

IV. ICP Interference Check Sample (ICS) Analysis

ICP interference check was not required by the method.

V. Matrix Spike Analysis

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

VI. Duplicate Sample Analysis

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

VII. Laboratory Control Samples (LCS)

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

VIII. Internal Standard (ICP-MS)

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

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

ICP serial dilution was not required by the method.

XI. Sample Result Verification

All sample result verifications met validation criteria.

XII. Overall Assessment of Data

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

XIII. Field Duplicates

Samples MW-17-2 and MW-17-2D, samples MW-14-1 and MW-14-1D and samples MW-22-1 and MW-22-1D were identified as field duplicates. No chromium was detected in any of the samples with the following exceptions:

Analyte	Concentration (ug/L)		RPD
	MW-22-1	MW-22-1D	
Chromium	5.8	6.9	17

JPL, 00HW019
Chromium - Data Qualification Summary - SDG 050813

No Sample Data Qualified in this SDG

JPL, 00HW019
Chromium - Laboratory Blank Data Qualification Summary - SDG 050813

No Sample Data Qualified in this SDG

JPL, 00HW019
Chromium - Field Blank Data Qualification Summary - SDG 050813

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 23 through April 30, 2001

LDC Report Date: June 18, 2001

Matrix: Water

Parameters: Chromium

Validation Level: EPA Level IV

Laboratory: Advanced Technology Laboratories

Sample Delivery Group (SDG): 051017

Sample Identification

MW-24-4	MW-6
MW-24-3	MW-6-D
MW-24-2	MW-16
MW-24-1	MW-16-D
ER-24	MW-5
MW-23-4	MW-10
MW-23-3	MW-10-D
MW-23-2	ER-23DUP
MW-23-1	MW-8MS
ER-23	MW-8MSD
MW-11-3	MW-8DUP
MW-11-2	MW-5MS
MW-11-1	MW-5MSD
ER-11	MW-5DUP
MW-12-3	
MW-12-2	
MW-12-1	
ER-12	
MW-8	
MW-13	

Introduction

This data review covers 34 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 200.8 for Chromium.

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

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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.

III. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial and continuing blanks (ICB/CCBs) was based on the maximum contaminant concentration in the ICB/CCBs in the analysis of each analyte. No contaminant concentrations were found above the reporting limit in the initial and continuing blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
ICB/CCB	Chromium	0.363 ug/L	All samples in SDG 051017

Sample concentrations were compared to the maximum contaminant concentrations detected in the ICB/CCBs. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

Samples ER-24, ER-23, ER-11 and ER-12 were identified as equipment rinsates. No chromium contaminants were found in these blanks.

IV. ICP Interference Check Sample (ICS) Analysis

ICP interference check was not required by the method.

V. Matrix Spike Analysis

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

VI. Duplicate Sample Analysis

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

VII. Laboratory Control Samples (LCS)

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

VIII. Internal Standard (ICP-MS)

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

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

ICP serial dilution was not required by the method.

XI. Sample Result Verification

All sample result verifications met validation criteria.

XII. Overall Assessment of Data

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

XIII. Field Duplicates

Samples MW-6 and MW-6-D, samples MW-16 and MW-16-D, and samples MW-10 and MW-10-D were identified as field duplicates. No chromium was detected in any of the samples with the following exceptions:

Analyte	Concentration (ug/L)		RPD
	MW-6	MW-6-D	
Chromium	10	10	0

Analyte	Concentration (ug/L)		RPD
	MW-16	MW-16-D	
Chromium	11	11	0

Analyte	Concentration (ug/L)		RPD
	MW-10	MW-10-D	
Chromium	13	11	17

JPL, 00HW019
Chromium - Data Qualification Summary - SDG 051017

No Sample Data Qualified in this SDG

JPL, 00HW019
Chromium - Laboratory Blank Data Qualification Summary - SDG 051017

No Sample Data Qualified in this SDG

JPL, 00HW019
Chromium - Field Blank Data Qualification Summary - SDG 051017

No Sample Data Qualified in this SDG

Wet Chemistry

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 30, 2001

LDC Report Date: May 31, 2001

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-3296

Sample Identification

MW-5
MW-6
MW-10
MW-16
MW-6-D
MW-10-D
MW-16-D
MW-5MS
MW-5MSD

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 7196 for Hexavalent Chromium and Method E314 for Perchlorate.

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 III.

Field duplicates are summarized in Section VII.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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 with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG 01-3296	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

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.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

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

b. Laboratory Control Samples

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

V. Sample Result Verification

All sample result verifications were within validation criteria.

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

Samples MW-6 and MW-6-D, samples MW-10 and MW-10-D, and samples MW-16 and MW-16-D were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

Analyte	Concentration (ug/L)		RPD
	MW-10	MW-10-D	
Perchlorate	36	39	8

Analyte	Concentration (ug/L)		RPD
	MW-16	MW-16-D	
Perchlorate	1300	1300	0

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 01-3296

SDG	Sample	Analyte	Flag	A or P	Reason
01-3296	MW-5 MW-6 MW-10 MW-16 MW-6-D MW-10-D MW-16-D	Perchlorate	None	P	Initial calibration

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 01-3296

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 01-3296

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 12, 2001

LDC Report Date: May 2, 2001

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-3000

Sample Identification

ER-19
MW-19-1
MW-19-2
MW-19-3
MW-19-4
ER-19MS
ER-19MSD

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 314.0 for Perchlorate.

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 III.

Field duplicates are summarized in Section VII.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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 with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG 01-3000	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

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.

Sample ER-19 was identified as an equipment rinsate. No contaminant concentrations were found in this blank.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

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

b. Laboratory Control Samples

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

V. Sample Result Verification

All sample result verifications were within validation criteria.

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.

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 01-3000

SDG	Sample	Analyte	Flag	A or P	Reason
01-3000	ER-19 MW-19-1 MW-19-2 MW-19-3 MW-19-4	Perchlorate	None	P	Initial calibration

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 01-3000

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 01-3000

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 13, 2001

LDC Report Date: May 2, 2001

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-3025

Sample Identification

ER-18
MW-18-2
MW-18-3
MW-18-4
MW-18-5
ER-18MS
ER-18MSD

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 314.0 for Perchlorate and EPA SW 846 Method 7196 for Hexavalent Chromium.

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 III.

Field duplicates are summarized in Section VII.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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 with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
ER-18 MW-18-2 MW-18-3 MW-18-4 MW-18-5	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

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.

Sample ER-18 was identified as an equipment rinsate. No contaminant concentrations were found in this blank.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

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

b. Laboratory Control Samples

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

V. Sample Result Verification

All sample result verifications were within validation criteria.

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.

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 01-3025

SDG	Sample	Analyte	Flag	A or P	Reason
01-3025	ER-18 MW-18-2 MW-18-3 MW-18-4 MW-18-5	Perchlorate	None	P	Initial calibration

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 01-3025

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 01-3025

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 4, 2001

LDC Report Date: May 2, 2001

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-2877

Sample Identification

ER-4
MW-4-1
MW-4-2
MW-4-3
MW-4-4
MW-4-5
MW-4-5MS
MW-4-5MSD

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 314.0 for Perchlorate and EPA SW 846 Method 7196 for Hexavalent Chromium.

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 III.

Field duplicates are summarized in Section VII.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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 with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
ER-4 MW-4-1 MW-4-2 MW-4-3	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

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.

Sample ER-4 was identified as an equipment rinsate. No contaminant concentrations were found in this blank.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

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

b. Laboratory Control Samples

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

V. Sample Result Verification

All sample result verifications were within validation criteria.

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.

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 01-2877

SDG	Sample	Analyte	Flag	A or P	Reason
01-2877	ER-4 MW-4-1 MW-4-2 MW-4-3	Perchlorate	None	P	Initial calibration

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 01-2877

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 01-2877

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 5, 2001

LDC Report Date: May 2, 2001

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-2883

Sample Identification

ER-17
MW-17-2
MW-17-3
MW-17-4
MW-17-5
MW-17-2D
MW-17-3MS
MW-17-3MSD

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 314.0 for Perchlorate and EPA SW 846 Method 7196 for Hexavalent Chromium.

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 III.

Field duplicates are summarized in Section VII.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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 with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
ER-17 MW-17-2 MW-17-3 MW-17-4 MW-17-5 MW-17-2D	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

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.

Sample ER-17 was identified as an equipment rinsate. No contaminant concentrations were found in this blank.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

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

b. Laboratory Control Samples

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

V. Sample Result Verification

All sample result verifications were within validation criteria.

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

Samples MW-17-2 and MW-17-2D were identified as field duplicates. No contaminant concentrations were detected in any of the samples.

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 01-2883

SDG	Sample	Analyte	Flag	A or P	Reason
01-2883	ER-17 MW-17-2 MW-17-3 MW-17-4 MW-17-5 MW-17-2D	Perchlorate	None	P	Initial calibration

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 01-2883

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 01-2883

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 6, 2001

LDC Report Date: May 2, 2001

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-2898

Sample Identification

ER-3
MW-3-2
MW-3-3
MW-3-4
MW-3-5
ER-3MS
ER-3MSD
MW-3-4MS
MW-3-4MSD

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 314.0 for Perchlorate and EPA SW 846 Method 7196 for Hexavalent Chromium.

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 III.

Field duplicates are summarized in Section VII.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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 with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
ER-3 MW-3-2 MW-3-3 MW-3-4 MW-3-5 ER-3MS ER-3MSD	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

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.

Sample ER-3 was identified as an equipment rinsate. No contaminant concentrations were found in this blank.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

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

b. Laboratory Control Samples

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

V. Sample Result Verification

All sample result verifications were within validation criteria.

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.

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 01-2898

SDG	Sample	Analyte	Flag	A or P	Reason
01-2898	ER-3 MW-3-2 MW-3-3 MW-3-4 MW-3-5	Perchlorate	None	P	Initial calibration

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 01-2898

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 01-2898

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 18, 2001

LDC Report Date: May 16, 2001

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-3059

Sample Identification

ER-14
MW-14-1
MW-14-2
MW-14-3
MW-14-4
MW-14-5
MW-14-1D
MW-14-2MS
MW-14-2MSD

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method E314 for Perchlorate and EPA SW 846 Method 7196 for Hexavalent Chromium.

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 III.

Field duplicates are summarized in Section VII.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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 with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG 01-3059	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

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.

Sample ER-14 was identified as an equipment rinsate. No contaminant concentrations were found in this blank.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

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

b. Laboratory Control Samples

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

V. Sample Result Verification

All sample result verifications were within validation criteria.

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

Samples MW-14-1 and MW-14-1D were identified as field duplicates. No contaminant concentrations were detected in any of the samples.

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 01-3059

SDG	Sample	Analyte	Flag	A or P	Reason
01-3059	ER-14 MW-14-1 MW-14-2 MW-14-3 MW-14-4 MW-14-5 MW-14-1D	Perchlorate	None	P	Initial calibration

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 01-3059

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 01-3059

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 18, 2001

LDC Report Date: May 16, 2001

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-3086

Sample Identification

ER-22
MW-22-1
MW-22-2
MW-22-3
MW-22-4
MW-22-1D
MW-22-2MS
MW-22-2MSD

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method E314 for Perchlorate and EPA SW 846 Method 7196 for Hexavalent Chromium.

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 III.

Field duplicates are summarized in Section VII.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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 with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG 01-3086	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

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.

Sample ER-22 was identified as an equipment rinsate. No contaminant concentrations were found in this blank.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

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

b. Laboratory Control Samples

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

V. Sample Result Verification

All sample result verifications were within validation criteria.

VI. Overall Assessment of Data

Data flags are summarized at the end of this report.

VII. Field Duplicates

Samples MW-22-1 and MW-22-1D were identified as field duplicates. No contaminant concentrations were detected in any of the samples.

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 01-3086

SDG	Sample	Analyte	Flag	A or P	Reason
01-3086	ER-22 MW-22-1 MW-22-2 MW-22-3 MW-22-4 MW-22-1D	Perchlorate	None	P	Initial calibration

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 01-3086

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 01-3086

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 24, 2001

LDC Report Date: May 16, 2001

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-3176

Sample Identification

ER-23
MW-23-1
MW-23-2
MW-23-3
MW-23-4
MW-23-5
MW-23-4MS
MW-23-4MSD

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method E314 for Perchlorate and EPA SW 846 Method 7196 for Hexavalent Chromium.

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 III.

Field duplicates are summarized in Section VII.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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 with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
ER-23 MW-23-1 MW-23-2 MW-23-3 MW-23-4 MW-23-5	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

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.

Sample ER-23 was identified as an equipment rinsate. No contaminant concentrations were found in this blank.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

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

b. Laboratory Control Samples

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

V. Sample Result Verification

All sample result verifications were within validation criteria.

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.

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 01-3176

SDG	Sample	Analyte	Flag	A or P	Reason
01-3176	ER-23 MW-23-1 MW-23-2 MW-23-3 MW-23-4 MW-23-5	Perchlorate	None	P	Initial calibration

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 01-3176

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 01-3176

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 20, 2001

LDC Report Date: May 16, 2001

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-3129

Sample Identification

ER-21
MW-21-1
MW-21-2
MW-21-3
MW-21-4
MW-21-5

Introduction

This data review covers 6 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method E314 for Perchlorate.

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 method stated above.

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

Blank results are summarized in Section III.

Field duplicates are summarized in Section VII.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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 were met with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG 01-3129	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

b. Calibration Verification

Calibration verification frequency and analysis criteria were met.

III. Blanks

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

Sample ER-21 was identified as an equipment rinsate. No contaminant concentrations were found in this blank.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

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

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.

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.

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 01-3129

SDG	Sample	Analyte	Flag	A or P	Reason
01-3129	ER-21 MW-21-1 MW-21-2 MW-21-3 MW-21-4 MW-21-5	Perchlorate	None	P	Initial calibration

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 01-3129

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 01-3129

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 23, 2001

LDC Report Date: May 16, 2001

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-3150

Sample Identification

ER-24
MW-24-1
MW-24-2
MW-24-3
MW-24-4
ER-24MS
ER-24MSD
MW-24-4MS
MW-24-4MSD

Introduction

This data review covers 9 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method E314 for Perchlorate and EPA SW 846 Method 7196 for Hexavalent Chromium.

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 III.

Field duplicates are summarized in Section VII.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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 with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
ER-24 MW-24-1 MW-24-2 MW-24-3 MW-24-4 ER-24MS ER-24MSD	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

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.

Sample ER-24 was identified as an equipment rinsate. No contaminant concentrations were found in this blank.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

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

b. Laboratory Control Samples

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

V. Sample Result Verification

All sample result verifications were within validation criteria.

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.

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 01-3150

SDG	Sample	Analyte	Flag	A or P	Reason
01-3150	ER-24 MW-24-1 MW-24-2 MW-24-3 MW-24-4	Perchlorate	None	P	Initial calibration

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 01-3150

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 01-3150

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 19, 2001

LDC Report Date: May 16, 2001

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-3111

Sample Identification

ER-20
MW-20-1
MW-20-2
MW-20-3
MW-20-4
MW-20-5
MW-20-5MS
MW-20-5MSD

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method E314 for Perchlorate and EPA SW 846 Method 7196 for Hexavalent Chromium.

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 III.

Field duplicates are summarized in Section VII.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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 with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
ER-20 MW-20-1 MW-20-2 MW-20-3 MW-20-4 MW-20-5	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

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.

Sample ER-20 was identified as an equipment rinsate. No contaminant concentrations were found in this blank.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

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

b. Laboratory Control Samples

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

V. Sample Result Verification

All sample result verifications were within validation criteria.

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.

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 01-3111

SDG	Sample	Analyte	Flag	A or P	Reason
01-3111	ER-20 MW-20-1 MW-20-2 MW-20-3 MW-20-4 MW-20-5	Perchlorate	None	P	Initial calibration

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 01-3111

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 01-3111

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 25, 2001

LDC Report Date: May 25, 2001

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-3206

Sample Identification

ER-11
MW-11-1
MW-11-2
MW-11-3
MW-11-4
MW-11-3MS
MW-11-3MSD

Introduction

This data review covers 7 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method E314 for Perchlorate, and EPA SW 846 Method 7196 for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 3824) 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 III.

Field duplicates are summarized in Section VII.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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 with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
ER-11 MW-11-1 MW-11-2 MW-11-3 MW-11-4	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

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.

Sample ER-11 was identified as an equipment rinsate. No contaminant concentrations were found in this blank.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

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

b. Laboratory Control Samples

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

V. Sample Result Verification

All sample result verifications were within validation criteria.

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.

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 01-3206

SDG	Sample	Analyte	Flag	A or P	Reason
01-3206	ER-11 MW-11-1 MW-11-2 MW-11-3 MW-11-4	Perchlorate	None	P	Initial calibration

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 01-3206

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 01-3206

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 26, 2001

LDC Report Date: May 25, 2001

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-3252

Sample Identification

ER-12
MW-12-1
MW-12-2
MW-12-3
MW-12-4
MW-12-5
MW-12-3MS
MW-12-3MSD

Introduction

This data review covers 8 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method E314 for Perchlorate, and EPA SW 846 Method 7196 for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 3824) 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 III.

Field duplicates are summarized in Section VII.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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 with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
ER-12 MW-12-1 MW-12-2 MW-12-3 MW-12-4 MW-12-5	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

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.

Sample ER-12 was identified as an equipment rinsate. No contaminant concentrations were found in this blank.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

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

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.

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.

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 01-3252

SDG	Sample	Analyte	Flag	A or P	Reason
01-3252	ER-12 MW-12-1 MW-12-2 MW-12-3 MW-12-4 MW-12-5	Perchlorate	None	P	Initial calibration

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 01-3252

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 01-3252

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: JPL, 00HW019

Collection Date: April 27, 2001

LDC Report Date: May 25, 2001

Matrix: Water

Parameters: Wet Chemistry

Validation Level: EPA Level IV

Laboratory: Applied P & Ch Laboratory

Sample Delivery Group (SDG): 01-3268

Sample Identification

MW-8
MW-13
MW-13MS
MW-13MSD

Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per Method E314 for Perchlorate, and EPA SW 846 Method 7196 for Hexavalent Chromium.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 3824) 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 III.

Field duplicates are summarized in Section VII.

The following are definitions of the data qualifiers:

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

J 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 analyte 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.

I. 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 with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
MW-8 MW-13	Perchlorate	A blank was not used to establish the calibration curve.	A blank must be used to establish the calibration curve.	None	P

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.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Matrix Spike/(Matrix Spike) Duplicates

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

b. Laboratory Control Samples

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

V. Sample Result Verification

All sample result verifications were within validation criteria.

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.

JPL, 00HW019
Wet Chemistry - Data Qualification Summary - SDG 01-3268

SDG	Sample	Analyte	Flag	A or P	Reason
01-3268	MW-8 MW-13	Perchlorate	None	P	Initial calibration

JPL, 00HW019
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 01-3268

No Sample Data Qualified in this SDG

JPL, 00HW019
Wet Chemistry - Field Blank Data Qualification Summary - SDG 01-3268

No Sample Data Qualified in this SDG