APCL Project: JPL

ATL #: 059557-001A/021A

APCL #:5612-1/21

100

Advanced Technology Laboratories

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

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APCL #: **5612-1/21**

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

Case Narrative

Client: Applied P & Ch Laboratory
Attn: Kenny Chan
Client's Project: JPL

ATL Number: 059557-001A/021A
Date Received: 10/29/02

Advanced Technology Laboratories received 1 water sample(s) for sample analysis. All receiving information is located on the Chain-of-Custody, which has been included in the data package.

Table's 1 describe in detail the individual sample information. Table 2 describes some important information associated with the sample batch.

Table 1: Sample Description

Lab Sample ID	Client Sample ID	Sample Description	Matrix
059557-001A	MW-12-3	5612-9	Water
059557-002A	MW-12-2	5612-8	Water
059557-003A	MW-12-1	5612-7	Water
059557-004A	ER-12	5612-1	Water
059557-005A	MW-11-3	5612-5	Water
059557-006A	MW-11-2	5612-4	Water
059557-007A	MW-11-1	5612-3	Water
059557-008A	MW-20-5	5612-14	Water
059557-009A	MW-20-4	5612-13	Water
059557-010A	MW-20-3	5612-12	Water
059557-011A	MW-20-2	5612-11	Water
059557-012A	MW-20-1	5612-10	Water
059557-013A	ER-20	5612-2	Water
059557-014A	ER-11	5612-16	Water
059557-015A	MW-23-4	5612-21	Water
059557-016A	MW-23-3	5612-20	Water
059557-017A	MW-23-3D	5612-22	Water
059557-018A	MW-23-2	5612-19	Water
059557-019A	MW-23-1	5612-18	Water
059557-020A	ER-23	5612-17	Water
059557-021A	MW-11-3D	5612-6	Water

Table 2: Sample Batch Information

Test Name	Analysis Method	QC Batch Number	Associated Samples	Analysis Date
ICP_MS Metals	EPA 200.8	R22268	059557-001A /020A	10/29/02
ICP_MS Metals	EPA 200.8	R22269	055580-021A	02/29/02

ATL samples 059557-001A/021A did not require digestion. The Prep Date on the report is the analytical date of the turbidity check.

003

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Table 3: QC Anomalies

Item	Cause/Reason
059557-015A MSD	Percent recovery for matrix spike duplicated was outside the recovery limits. All other QC parameters are within acceptance limits, LCS validates the batch.

The client requested a Level "D" data package requirement. The QC anomalies, which are listed in Table 3, appear to not have any significant impact on the analytical results. See cause and reasons for each anomaly that is listed in the table.

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,

Eddie F. Rodriguez
Laboratory Director

Advanced Technology Laboratories
Case Narrative (Page 2)
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Data Qualifiers

Data Qualifiers are used in conjunction with the results in order to explain certain anomalies which may have occurred during sample analysis. If a result data qualifier is reported, then an explanation of the occurrence and the effects it has on the results must accompany the report.

The following table describes each data qualifier:

Symbol	Definition
B	This flag is used when the analyte is found in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user to take appropriate action. This flag shall be used for a tentatively identified compound as well as for a positively identified target compounds.
D	Duplicate injection precision not met.
E	The reported value is estimated because of interference.
J	This indicates an estimated value. This flag is used (1) when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, (2) when the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the CRQL but greater than zero, (3) when the retention time data indicate the presence of a compound that meets the pesticide/Aroclor identification criteria, and the result is less than the CRQL but greater than zero.
N	This flag indicated presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N flag is not used.
S	Spike sample recovery not within control limits.
SA	The reported value was determined by the Method of Standard Additions (MSA).
U	This flag indicates the compound was analyzed for but not detected. The CRQL shall be adjusted accordingly.
W	Post Digestion Spike for Furnace AA analysis is out of control limits (85% - 115%), while sample absorbance is less than 50% of spike absorbance.
X	This flag is used for a pesticide/Aroclor target analyte when there is grater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported and flagged with an X.
Y	This flag applies to pesticide results where the identification has been confirmed by GC/MS. If GC/MS confirmation was attempted but was unsuccessful, do not apply this flag.
P	Samples analyzed by ICP
PM	Samples analyzed by ICP_MS
CV	Samples analyzed by Manual Cold Vapor AA
CA	Samples analyzed by Midi-Distillation Spectrophotometer
SP	Samples analyzed by Spectrophotometer
TR	Samples analyzed by Infrared (TRPH)
AA	Samples analyzed by Flame, Atomic Absorption
M	Method Qualifier: Indicates the method by which each analyte is analyzed.
Q	Data Qualifier: Indicates any anomalies occurred during the QC sample analysis.
C	Concentration Qualifier: Indicates any effect on the reported value.
DLR	The DLR takes into account the dilution or concentration of the sample and is numerically defined as the MDL times the dilution or concentration factor. The dilution and concentration factors vary according to aliquot normally taken by the individual laboratory.
NC	Not calculated; at or near detection limit.

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Sample Receiving Items

Advanced Technology Laboratories

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

APCL

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

Subcontract Chain of Custody

Please Print in pen

Page _____ of _____

TO: Advanced Technology Laboratories Contact Puri Romualdo Tel: (562) 989 4045 Fax: (562) 989 4040

Address 3275 Walnut Avenue City Signal Hill State CA Zip code 90807

APCL Project Title/Code JPL Sampler Sample disposition: Date ☐client; ☐APCL

Bill to (if different from above) APCL Quotation # P.O.#

Due date ☒regular ☐rush ~~Client signature~~ Lab Contact: Kenny Chan Date 10/29/02

Sample Description	Date Collected	Time	Matrix	Pres. Y/N	Filtered Y/N	Analysis items	Unit Price*	APCL Lab-ID
MW-12-3	10/15/02	1104	W	HNO3	N			5612-9
MW-12-2		1132						-8
MW-12-1		1200				Total Cr by 200.8		-7
ER-12		1105						-1
MW-11-3	10/16/02	1019				With EDD Level		-5
MW-11-2		1118				4 Package		-4
MW-11-1		1143						-3
MW-20-5	10/17/02	0917						-14
MW-20-4		0959						-13
MW-20-3		1037						-12
MW-20-2		1106						-11
MW-20-1		1132						-10
ER-20		1038						-2
ER-11	10/16/02	1044						-16
MW-23-4	10/22/02	0745						-21
MW-23-3		0838						-20
MW-23-3D		0838						-22
MW-23-2		1026						-19

Sample Conditions: Seal ☒ Intact ☐ Broken ☐ None; Temperature ☒ Cold ☐ Room; Other 2-2°C

Relinquished by	[signature]	Date/Time 10/29/02 1000A	Received by [illegible]	Date/Time 10/29/02	11:52
Relinquished by		Date/Time	Received by	Date/Time	
Relinquished by		Date/Time	Received by	Date/Time	
Relinquished by		Date/Time	Received by	Date/Time	

* APCL must be notified if unit price is incorrect.

007

APCL **Applied Physics and Chemistry Laboratory**

13760 Magnolia Avenue. Chino, CA 91710 TEL: (909)590-1828 FAX: (909)590-1498

FAX COVER

Date: 10/29/02 Service ID:

To: Ruri Romualdo

Company: ATL

Fax #: (562) 989 4040

From: Kenny Chan

Number of Pages in this transmittal including this cover page: 2

Subject: MS/MSD

Description:

Can you please add MS/MSD to sample # MW-23-4. Thank you.

This facsimile communication may contain information that is privileged and/or confidential. It is intended for the sole use of the individual or entity to which it is addressed. If you have received this communication in error, please notify us immediately by telephone and return the original to us at the address listed above by U.S. mail. If you are not the intended recipient, or the employee or agent responsible for delivering this message to the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication is strictly prohibited.

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

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TO: Advanced Technology Laboratories | Contact Puri Romualdo | Tel: (562) 989 4045 | Fax: (562) 989 4040

Address 3275 Walnut Avenue | City Signal Hill | State CA | Zip code 90807

APCL Project Title/Code JPL | Sampler | Sample disposition: Date ☐client; ☐APCL

Bill to (if different from above) APCL | Quotation # | P.O.#

Due date ☒regular ☐rush | ~~Client signature~~ Lab Contact: Kenny Chan | Date 10/29/02

Sample Description	Date Collected	Time Collected	Matrix	Pres. Y/N	Filtered Y/N	Analysis items	Unit Price*	APCL Lab-ID
MW-12-3	10/15/02	1104	W	HNO_3	N			5612-9
MW-12-2		1132						-8
MW-12-1		1200				Total Cr by 200.8		-7
ER-12		1105						-1
MW-11-3	10/16/02	1019				With EDD Level		-5
MW-11-2		1118				4 Package		-4
MW-11-1		1143						-3
MW-20-5	10/17/02	0917						-14
MW-20-4		0959						-13
MW-20-3		1037						-12
MW-20-2		1106						-11
MW-20-1		1132						-10
ER-20		1038						-2
ER-11	10/16/02	1044						-16
MW-23-4	10/22/02	0745					← MS/MSD	-21
MW-23-3		0838						-20
MW-23-3D		0838						-22
MW-23-2		1026						-19

Sample Conditions: Seal ☒ Intact ☐ Broken ☐ None; Temperature ☒ Cold ☐ Room; Other 2.2°C

Relinquished by	Date/Time	Received by	Date/Time
[signature]	10/29/02 1000A	[signature]	10/29/02 11:52

* APCL must be notified if unit price is incorrect.

APCL

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

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TO: Advanced Technology Laboratories Contact Puri Romualdo Tel: (562) 989 4045 Fax: (562) 989 4040
Address 3275 Walnut Avenue City Signal Hill State CA Zip code 90807
APCL Project Title/Code JPL Sampler Sample disposition: Date ☐client; ☐APCL
Bill to (if different from above) APCL Quotation # P.O.#
Due date ☒regular ☐rush ~~Client signature~~ Lab Contact: Kreming Chan Date 10/29/02

059657 Sample Description	Date Collected	Time	Matrix	Pres. Y/N	Filtered Y/N	Analysis items	Unit Price*	APCL Lab-ID
1 MW-12-3	10/15/02	1104	W	HNO_3	N			5612-9
2 MW-12-2		1132						-8
3 MW-12-1		1200				Total Cr by 200.8		-7
4 ER-12		1105						-1
5 MW-11-3	10/16/02	1019				With EDD Level		-5
6 MW-11-2		1118				4 Package		-4
7 MW-11-1		1143						-3
8 MW-20-5	10/17/02	0917						-14
9 MW-20-4		0959						-13
10 MW-20-3		1037						-12
11 MW-20-2		1106						-11
12 MW-20-1		1132						-10
13 ER-20		1038						-2
14 ER-11	10/16/02	1044						-16
15 MW-23-4	10/22/02	0745						-21
16 MW-23-3		0838						-20
17 MW-23-3D		0838						-22
18 MW-23-2		1026						-19

Sample Conditions: Seal ☒ Intact ☐ Broken ☐ None; Temperature ☒ Cold ☐ Room; Other 2-2°C

Relinquished by [signature]	Date/Time 10/29/02 1000A	Received by [signature]	Date/Time 10/29/02 11:52
Relinquished by	Date/Time	Received by	Date/Time
Relinquished by	Date/Time	Received by	Date/Time
Relinquished by	Date/Time	Received by	Date/Time

* APCL must be notified if unit price is incorrect.

010 010

APCL

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

Subcontract Chain of Custody

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TO: Advanced Technology Laboratories Contact Ruvi Romualdo Tel: (562) 989 4045 Fax: (562) 989-4040

Address 3275 Walnut Avenue City Signal Hill State CA Zip code 90807

APCL Project Title/Code JPL Sampler Sample disposition: Date ☐client; ☐APCL

Bill to (if different from above) APCL Quotation # P.O.#

Due date ☒regular ☐rush ~~Client signature~~ Lab Contact: Kenny Chan Date 10/29/02

Sample Description	Date Collected	Time Collected	Matrix	Pres. Y/N	Filtered Y/N	Analysis items	Unit Price*	APCL Lab-ID
19 MW-23-1	10/22/02	1056	W	HNO3	N	Total Cr by 200.8		5612-18
20 ER-23	↓	0653	↓	↓	↓	With EDD Level		-17
21 MW-11-3D	10/16/02	1044 19 K.C	↓	↓	↓	4 Package		-6

Sample Conditions: Seal ☒ Intact ☐ Broken ☐ None; Temperature ☒ Cold ☐ Room; Other

Relinquished by	Date/Time	Received by	Date/Time
[signature]	10/29/02 1000A	CARMEN AGUIRE	10/29/02 11:52

* APCL must be notified if unit price is incorrect.

011

011

INORGANICS COMPLETE INVENTORY SHEET

Client: Applied P & Ch Laboratory
Attn: Kenny Chan
Client's Project: JPL

Laboratory Name: Advanced Technology Laboratories
Laboratory Address: 3275 Walnut Avenue, Signal Hill, CA 90807

ATL Number: 059557-001A/021A
Date Sampled: 10/15/02
Date Received: 10/29/02

Method 200.8 (Metals)

	Topic	Page(s)
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Standards Data	Initial Calibration	036
	Initial Calibration Verification and Continuing Calibration Verification/External Reference Standard	037-038
	Tune File	039-041
	Internal Standard Table	042-043
Raw QC Data	Blank Report Sheet	044-045
	Spike Sample Recovery	046-047
	Laboratory Control Spike Report	048-049
	Duplicate Report Sheet	050-052
	Holding Times Summary Sheet	053
Miscellaneous Items	Preparation Log	055-056
	Analysis Run Log	057
	Standards Log	058-065
	List of Method Detection Limits	066
Raw Data Package	Standards Data Sample Data QC Data	067-116

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

Advanced Technology Laboratories

Date: *29-Jan-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-12-3
Lab Order:	059557		
Project:	JPL	**Collection Date:**	10/15/2002 11:04:00 AM
Lab ID:	059557-001A	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS						
				EPA 200.8		
RunID: ICP4_021029A	QC Batch: R22268					Analyst: **NS**
Chromium	2.5	1.0		µg/L	1	10/29/2002

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 interferen
H - Sample exceeded analytical holding time
E - Value above quantitation range
Results are wet unless otherwise specified

013

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

Advanced Technology Laboratories

Date: *29-Jan-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-12-2
Lab Order:	059557		
Project:	JPL	**Collection Date:**	10/15/2002 11:32:00 AM
Lab ID:	059557-002A	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS						
			EPA 200.8			
RunID: ICP4_021029A	QC Batch: R22268					Analyst: **NS**
Chromium	2.8	1.0		µg/L	1	10/29/2002

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 interferen
H - Sample exceeded analytical holding time
E - Value above quantitation range
Results are wet unless otherwise specified

Advanced Technology Laboratories

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

Advanced Technology Laboratories

Date: *29-Jan-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-12-1
Lab Order:	059557		
Project:	JPL	**Collection Date:**	10/15/2002 12:00:00 PM
Lab ID:	059557-003A	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS						
				EPA 200.8		
RunID: ICP4_021029A	QC Batch: R22268					Analyst: **NS**
Chromium	2.4	1.0		µg/L	1	10/29/2002

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 interferen
H - Sample exceeded analytical holding time
E - Value above quantitation range
Results are wet unless otherwise specified

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

Advanced Technology Laboratories

Date: *29-Jan-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	ER-12
Lab Order:	059557		
Project:	JPL	**Collection Date:**	10/15/2002 11:05:00 AM
Lab ID:	059557-004A	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS						
			EPA 200.8			
RunID: ICP4_021029A	QC Batch: R22268					Analyst: **NS**
Chromium	ND	1.0		µg/L	1	10/29/2002

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 interferen
H - Sample exceeded analytical holding time
E - Value above quantitation range
Results are wet unless otherwise specified

Advanced Technology Laboratories

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

Advanced Technology Laboratories

Date: *29-Jan-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-11-3
Lab Order:	059557		
Project:	JPL	**Collection Date:**	10/16/2002 10:19:00 AM
Lab ID:	059557-005A	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS						
				EPA 200.8		
RunID: ICP4_021029A	QC Batch: R22268					Analyst: **NS**
Chromium	2.0	1.0		µg/L	1	10/29/2002

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 interferen
H - Sample exceeded analytical holding time
E - Value above quantitation range
Results are wet unless otherwise specified

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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: *29-Jan-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-11-2
Lab Order:	059557		
Project:	JPL	**Collection Date:**	10/16/2002 11:18:00 AM
Lab ID:	059557-006A	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS						
			EPA 200.8			
RunID: ICP4_021029A	QC Batch: R22268					Analyst: **NS**
Chromium	1.9	1.0		µg/L	1	10/29/2002

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 interferen
H - Sample exceeded analytical holding time
E - Value above quantitation range
Results are wet unless otherwise specified

Advanced Technology Laboratories

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

Advanced Technology Laboratories

Date: *29-Jan-03*

CLIENT: Applied P & Ch Laboratories
Lab Order: 059557
Project: JPL
Lab ID: 059557-007A

Client Sample ID: MW-11-1
Collection Date: 10/16/2002 11:43:00 AM
Matrix: WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS						
				EPA 200.8		
RunID: ICP4_021029A	QC Batch: R22268					Analyst: **NS**
Chromium	2.5	1.0		µg/L	1	10/29/2002

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 interferen
H - Sample exceeded analytical holding time
E - Value above quantitation range
Results are wet unless otherwise specified

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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: *29-Jan-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-20-5
Lab Order:	059557		
Project:	JPL	**Collection Date:**	10/17/2002 9:17:00 AM
Lab ID:	059557-008A	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS						
				EPA 200.8		
RunID: ICP4_021029A	QC Batch: R22268					Analyst: **NS**
Chromium	1.5	1.0		µg/L	1	10/29/2002

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 interferen
H - Sample exceeded analytical holding time
E - Value above quantitation range
Results are wet unless otherwise specified

020

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

Advanced Technology Laboratories

Date: *29-Jan-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-20-4
Lab Order:	059557		
Project:	JPL	**Collection Date:**	10/17/2002 9:59:00 AM
Lab ID:	059557-009A	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS						
				EPA 200.8		
RunID: ICP4_021029A	QC Batch: R22268					Analyst: **NS**
Chromium	1.3	1.0		µg/L	1	10/29/2002

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 interferen
H - Sample exceeded analytical holding time
E - Value above quantitation range
Results are wet unless otherwise specified

021

Advanced Technology Laboratories

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

Advanced Technology Laboratories

Date: *29-Jan-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-20-3
Lab Order:	059557		
Project:	JPL	**Collection Date:**	10/17/2002 10:37:00 AM
Lab ID:	059557-010A	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS						
			EPA 200.8			
RunID: ICP4_021029A	QC Batch: R22268					Analyst: **NS**
Chromium	2.5	1.0		µg/L	1	10/29/2002

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 interferen
H - Sample exceeded analytical holding time
E - Value above quantitation range
Results are wet unless otherwise specified

Advanced Technology Laboratories

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

Advanced Technology Laboratories

Date: *29-Jan-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-20-2
Lab Order:	059557		
Project:	JPL	**Collection Date:**	10/17/2002 11:06:00 AM
Lab ID:	059557-011A	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS						
			EPA 200.8			
RunID: ICP4_021029A	QC Batch: R22268					Analyst: **NS**
Chromium	1.6	1.0		µg/L	1	10/29/2002

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 interferen
H - Sample exceeded analytical holding time
E - Value above quantitation range
Results are wet unless otherwise specified

023

Advanced Technology Laboratories

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

Advanced Technology Laboratories

Date: *29-Jan-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-20-1
Lab Order:	059557		
Project:	JPL	**Collection Date:**	10/17/2002 11:32:00 AM
Lab ID:	059557-012A	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS						
			EPA 200.8			
RunID: ICP4_021029A	QC Batch: R22268					Analyst: **NS**
Chromium	2.3	1.0		µg/L	1	10/29/2002

Qualifiers:

ND - Not Detected at the Reporting Limit
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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 interferen
H - Sample exceeded analytical holding time
E - Value above quantitation range
Results are wet unless otherwise specified

024

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

Advanced Technology Laboratories

Date: *29-Jan-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	ER-20
Lab Order:	059557		
Project:	JPL	**Collection Date:**	10/17/2002 10:38:00 AM
Lab ID:	059557-013A	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS						
			EPA 200.8			
RunID: ICP4_021029A QC Batch: R22268						Analyst: **NS**
Chromium	ND	1.0		µg/L	1	10/29/2002

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 interferen
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Advanced Technology Laboratories

Date: *29-Jan-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	ER-11
Lab Order:	059557		
Project:	JPL	**Collection Date:**	10/16/2002 10:44:00 AM
Lab ID:	059557-014A	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS						
			EPA 200.8			
RunID: ICP4_021029A	QC Batch: R22268					Analyst: **NS**
Chromium	ND	1.0		µg/L	1	10/29/2002

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 interferen
H - Sample exceeded analytical holding time
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Advanced Technology Laboratories

Date: *29-Jan-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-23-4
Lab Order:	059557		
Project:	JPL	**Collection Date:**	10/22/2002 7:45:00 AM
Lab ID:	059557-015A	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS						
			EPA 200.8			
RunID: ICP4_021029A	QC Batch: R22268					Analyst: **NS**
Chromium	2.5	1.0		µg/L	1	10/29/2002

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 interferen
H - Sample exceeded analytical holding time
E - Value above quantitation range
Results are wet unless otherwise specified

027

Advanced Technology Laboratories
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Advanced Technology Laboratories

Date: *29-Jan-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-23-3
Lab Order:	059557		
Project:	JPL	**Collection Date:**	10/22/2002 8:38:00 AM
Lab ID:	059557-016A	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS						
				EPA 200.8		
RunID: ICP4_021029A QC Batch: R22268						Analyst: **NS**
Chromium	4.1	1.0		µg/L	1	10/29/2002

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 interferen
H - Sample exceeded analytical holding time
E - Value above quantitation range
Results are wet unless otherwise specified

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Advanced Technology Laboratories

Date: *29-Jan-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-23-3D
Lab Order:	059557		
Project:	JPL	**Collection Date:**	10/22/2002 8:38:00 AM
Lab ID:	059557-017A	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS						
				EPA 200.8		
RunID: ICP4_021029A	QC Batch: R22268					Analyst: **NS**
Chromium	3.9	1.0		µg/L	1	10/29/2002

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 interferen
H - Sample exceeded analytical holding time
E - Value above quantitation range
Results are wet unless otherwise specified

029

Advanced Technology Laboratories

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

Advanced Technology Laboratories

Date: *29-Jan-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-23-2
Lab Order:	059557		
Project:	JPL	**Collection Date:**	10/22/2002 10:26:00 AM
Lab ID:	059557-018A	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS						
			EPA 200.8			
RunID: ICP4_021029A	QC Batch: R22268					Analyst: **NS**
Chromium	3.4	1.0		µg/L	1	10/29/2002

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 interferen
H - Sample exceeded analytical holding time
E - Value above quantitation range
Results are wet unless otherwise specified

030

Advanced Technology Laboratories

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

Advanced Technology Laboratories

Date: *29-Jan-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-23-1
Lab Order:	059557		
Project:	JPL	**Collection Date:**	10/22/2002 10:56:00 AM
Lab ID:	059557-019A	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS						
				EPA 200.8		
RunID: ICP4_021029A	QC Batch: R22268					Analyst: **NS**
Chromium	3.9	1.0		µg/L	1	10/29/2002

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 interferen
H - Sample exceeded analytical holding time
E - Value above quantitation range
Results are wet unless otherwise specified

Advanced Technology Laboratories
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Advanced Technology Laboratories

Date: *29-Jan-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	ER-23
Lab Order:	059557		
Project:	JPL	**Collection Date:**	10/22/2002 6:53:00 AM
Lab ID:	059557-020A	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS						
			EPA 200.8			
RunID: ICP4_021029A QC Batch: R22268						Analyst: **NS**
Chromium	ND	1.0		µg/L	1	10/29/2002

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 interferen
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Advanced Technology Laboratories

Date: *29-Jan-03*

CLIENT:	Applied P & Ch Laboratories	**Client Sample ID:**	MW-11-3D
Lab Order:	059557		
Project:	JPL	**Collection Date:**	10/16/2002 10:19:00 AM
Lab ID:	059557-021A	**Matrix:**	WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP-MS METALS						
				EPA 200.8		
RunID: ICP4_021029B	QC Batch: R22269					Analyst: **NS**
Chromium	1.7	1.0		µg/L	1	10/29/2002

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 interferen
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