

Level D Data Package Deliverables

General Information

Project: 010HW019 JPL

APCL Service ID: 02-1393



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

Case Narrative

Project: JPL/00HW019

For SOTA Environmental

APCL Service No: 02-1393

1. Sample Identification

The sample identifications are listed in the following table:

SOTA Environmental Sample ID	APCL Sample ID
TB-13	02-01393-4
MW-13	02-01393-1
MW-16	02-01393-2
MW-16D	02-01393-3

2. Analytical Methodology

Samples are analyzed by EPA methods
524.2 (Volatile Organic Compounds),
7196 (Chromium (VI)),
E314 (Perchlorate, low level),
200.7 (Metals, by ICP),
300.0 (Anions by IC),
SM2320B (Carbonate),
150.1 (pH),
160.1 (Solids, Total Dissolved (TDS)),
200.9 (Arsenic, As, by GFAA),
310.1 (Alkalinity),
8270-SIM (1,4-Dioxane),

3. Holding Time

All samples were extracted, digested and analyzed within the holding times defined by the appropriate EPA methods of the analyses.

4. Preservation

All samples were preserved and stored according to the appropriate EPA methods.

5. Tele-log

None.

6. Anomaly

(1) 200.7:


Magnesium recoveries in the MS/MSD spiked on the sample MW-16, were 72-73%, slightly lower than 75-125% control limits.

(2) EPA 314.0:

MS/MSD recoveries, spiked on sample MW-16, were outside of control limit due to an high level of perchlorate in the native sample.

"I certify that these data are technically accurate, complete, and in compliance with the terms and conditions of the contract, for other than the conditions detailed above. Release of the data contained in the hardcopy data package and its electronic data deliverable submitted on diskette had been authorized by the Laboratory Manager or her/his designee, as verified by the following signature."

Respectfully submitted,


Kevin Xie, Ph.D.,
QA/QC Director
Applied P & Ch Laboratory



Applied P & Ch Laboratory

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 ENVI. TECH., INC.

Contact: MIKE SAYRE

Tel #: 858-485-8100 Fax #: 858-485-0812

Address: 16835 W. BERNARDO DR. #212

City: SAN DIEGO

State: CA

Zip code: 92127

Bill to: SOTA

Project Name/Code: JPL Job # 084W019 P.O. #

Project Address: PASADENA, CALIFORNIA APCL Quotation #

Due Date: regular rush: ___ days ___ hours Sampled by: MES/JST

Field Sample ID No.	Sample Description	Date Collected	Sample Matrix	Preservation	# of Containers	Analysis Items											White - With report Yellow - Lab copy Pink - Originator Remarks	
						VOCs (52+2)	SVOCs (120+8)	As (200.9)	Cr VI (196)	PERM-914 (314.0)	ARBEN (316.1)	NITRATE (308.0)	CHLORIDE (308.0)	TDS (160.1)	PH (150.1)	1.4 DIOXIN (8270)		NDA (1625C)
TB-13	TRIP BLANK	1/29/02	WATER	HCl	2	X	X	X	X	X	X	X	X	X	X	X	X	
MW-13	MW-13	1435		HCl	3	X	X	X	X	X	X	X	X	X	X	X	X	
				HNO ₃	2	X	X	X	X	X	X	X	X	X	X	X	X	MS/MSD ON 8270/1625C
					13	X	X	X	X	X	X	X	X	X	X	X	X	
MW-16	MW-16	1604		HCl	2	X	X	X	X	X	X	X	X	X	X	X	X	MS/MSD 200.8/200.9
				HNO ₃	6	X	X	X	X	X	X	X	X	X	X	X	X	MS/MSD ON 7196/314.9
MW-16D	MW-16 DUP			HCl	3	X	X	X	X	X	X	X	X	X	X	X	X	
				HNO ₃	2	X	X	X	X	X	X	X	X	X	X	X	X	
					5	X	X	X	X	X	X	X	X	X	X	X	X	

1399

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 1/29/02 1170z Received by *[Signature]* Date/Time 1/29/02 1170z

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

APCL USE ONLY Service # _____ Note: _____

Clients understand that all terms described in the proposals, quotations for this project, and/or the general terms provided in the current APCL price schedules will be followed. APCL reserves the right to terminate its service or withhold delivery of any reports, if in APCL's sole discretion the terms of the project have been broken.

APCL Form 4-101, Ver. 4.0, Dec. 20, 1994. Root-File:[CUST.DATA.LAB]CHAIN-ROOT.TEX File:[CUST.DATA.LAB]CHAIN4.TEX

Sample Receiving Checklist

APCL ServiceID: **1393** Client Name/Project: Sota Environmental

1. Sample Arrival

Date/Time Received 1/29/02 1702 Date/Time Opened 1/30/02 0930A By (name): Adam
Custody Transfer: Client Golden State UPS US Mail FedEx APCL Empl: Adam

2. Chain-of-Custody (CoC)

With Samples? Faxed? Client has Copy? Signed, dated? By: _____
 Project ID? Analyses Clear? Hold Samples? # on Hold _____ # Received 4
 CoC/Docs Zip-Locked under lid? Compos. #: _____ #Samples OK?
 Discrepancies? Client notified? Response (attach docs): _____

3. Shipping Container/Cooler

Cooler Used? # of 2 Cooled by: Ice Blue Ice Dry Ice None
Temp °C 3.9 4.3
(Cooler temperature measured from temp blank if present, otherwise measured from the cooler).
Cooler Custody Seal? Absent Intact Tampered?

4. Sample Preservation

pH <2 pH >12
If Not, pH = _____ Preserved by: Client APCL Third Party

5. Holding-time Requirements

pH 24hr BACT 6/24hr Cr^{VI} 24hr NO₃⁻ 48hr BOD 48hr
 Cl₂ ASAP Turbidity 48hr DO ASAP Fe(II) ASAP
 HT Expired? Client notified?

6. Sample Container Condition

Intact? Broken? Documented? Number: _____
Type: plastic glass Tube: brass/SS Tedlar Bag
 Quantity OK? Leaking? Anomaly?
 Caps tight? Air Bubbles? Anomaly?
Labels: Unique ID? Date/Time Preserved?

7. Turn Around Time

RUSH TAT: _____ Std (7-10 days) Not Marked

8. Sample Matrix

Drinking H₂O Other Liq Soil Wipe Polymer Air Other: _____
 Ground H₂O Sludge Filter Oil/Petro Paint W. Water Extract Unknown

9. Pre-Login Check List Completed & OK?

ALL OK? (if not, attach docs) Client Contact? (Name: _____) Date/Time: _____

Received/Checked by: [Signature] Date: 29 Jan 2002 Time: 8:50 a.m.

*HT: Samples must be analyzed for results to reflect total concentrations. Results generated outside required of holding times are considered minimal values and may be used to define waste as hazardous but not as non-hazardous.

Sample Login: Check List

02-01393 (1288_ 312) (4858100_ 312)

01/30/02

Part 1: General Information

<input type="checkbox"/> Company Information	Name:	<i>SOTA Environmental</i>
	Address:	<i>16835 W. Bernardo Dr, Ste. 212, San Diego, CA 92127</i>
<input type="checkbox"/> Project Information	Project Description:	<i>JPL</i>
	Project #:	<i>00HW019</i>
<input type="checkbox"/> Billing Information	P.O. #:	
	Bill Address:	<i>16835 W. Bernardo Dr, Ste. 212, San Diego, CA 92127</i>
	Lab Project ID:	<i>2002-0002</i>
	Client Database #:	<i>01</i>
<input type="checkbox"/> Receiving Information	Who Received Sample?	<i>Adam</i>
	Receiving Date/Time:	<i>01/29/02 1702</i>
	COC No.	
<input type="checkbox"/> Shipping Information	Shipping Company	<i>APCL pick up</i>
	Packing Information:	<i>Cooler/Ice Chester</i>
	Cooler Temperature:	<i>3.9 4.3 °C</i>
<input type="checkbox"/> Container Information	Container Provider:	<i>Client</i>
<input type="checkbox"/> Sampling Information	Sampling Person:	
	Sampling Company:	<i>Client</i>
<input type="checkbox"/> Turn-Around-Time Option:		<i>Rush 5 working day(s)</i>
<input type="checkbox"/> QC Option:		<i>NEESA D</i>
<input type="checkbox"/> Disposal Option:		<i>Not specify</i>

Part 2: Sample Information

Seq. #	Sample ID (on COC)	Sample Sub-ID	APCL Sample ID	Cont- Matrix	Preser- tainer	Vol, ml Am. g	# of Replica	Condition G, L, B	Collected mmdyy	Hold ?	Composite Group	TAT Days
1	TB-13 ✓	524.2	02-01393-4	W	V	C 40	2	G	012902	N	0	7 <input type="checkbox"/>
2	MW-13 ✓	524.2	02-01393-1- α	W	V	C 40	3	G	012902	N	0	7 <input type="checkbox"/>
	MW-13	Metals	02-01393-1- β	W	P	N 500	1	G	012902	N	0	7 <input type="checkbox"/>
	MW-13	8270	02-01393-1- γ	W	G	1000	6	G	012902	N	0	7 <input type="checkbox"/>
	MW-13	300	02-01393-1- δ	W	P	1000	2	G	012902	N	0	7 <input type="checkbox"/>
3	MW-16 ✓	524.2	02-01393-2- α	W	V	C 40	9	G	012902	N	0	7 <input type="checkbox"/>
	MW-16	Metals	02-01393-2- β	W	P	N 1000	1	G	012902	N	0	7 <input type="checkbox"/>
	MW-16	8270	02-01393-2- γ	W	G	1000	2	G	012902	N	0	7 <input type="checkbox"/>
	MW-16	300	02-01393-2- δ	W	P	1000	2	G	012902	N	0	7 <input type="checkbox"/>
4	MW-16D ✓	524.2	02-01393-3- α	W	V	C 40	3	G	012902	N	0	7 <input type="checkbox"/>
	MW-16D	Metals	02-01393-3- β	W	P	N 500	1	G	012902	N	0	7 <input type="checkbox"/>
	MW-16D	8270	02-01393-3- γ	W	G	1000	2	G	012902	N	0	7 <input type="checkbox"/>
	MW-16D	300	02-01393-3- δ	W	P	1000	2	G	012902	N	0	7 <input type="checkbox"/>

Part 3: Analysis Information

Test Items:	<input checked="" type="checkbox"/> 524.2	Volatile Organic Compounds
	<input type="checkbox"/> 1196	Chromium (VI)
	<input type="checkbox"/> 300.0	Perchlorate, low level
	<input type="checkbox"/> 200.7/6010	Sodium, Na, by ICP
	<input type="checkbox"/> 200.7/6010	Potassium, K, by ICP
	<input checked="" type="checkbox"/> 200.7/6010	Calcium, Ca, by ICP
	<input checked="" type="checkbox"/> 200.7/6010	Magnesium, Mg, by ICP
	<input checked="" type="checkbox"/> 200.7/6010	Iron, Fe, by ICP
	<input checked="" type="checkbox"/> 300.0	Sulfate (SO ₄ ⁻), by IC
	<input checked="" type="checkbox"/> 300.0/SM4500NON	Nitrate (NO ₃ ⁻) as N by IC
	<input type="checkbox"/> 300.0	Chloride Cl ⁻ by IC
	<input type="checkbox"/> SM2320B	Carbonate
	<input checked="" type="checkbox"/> SM2320B	Bicarbonate
	<input type="checkbox"/> 9040/150.1	pH
	<input type="checkbox"/> 160.1	Solids, Total Dissolved (TDS)
	<input checked="" type="checkbox"/> 206.2/7060	Arsenic, As, by GFAA
	<input checked="" type="checkbox"/> 310.1	Alkalinity
	<input checked="" type="checkbox"/> PAH-SIM	PAH (NOAA)

Seq. Client's Sample ID Sample APCL

#	(as given on COC)	Sub-ID	Sample ID	Matrix	524.2	CHROMIUM	PERCHL	NA	K	CA	MG	FE
1	TB-13	524.2	02-01393-4	W	X -							<input checked="" type="checkbox"/>
2	MW-13	524.2	02-01393-1- α	W	X -							<input type="checkbox"/>
	MW-13	Metals	02-01393-1- β	W				X -	X -	X -	X -	<input type="checkbox"/>
	MW-13	8270	02-01393-1- γ	W								<input type="checkbox"/>
	MW-13	300	02-01393-1- δ	W		X -	X -					<input type="checkbox"/>
3	MW-16	524.2	02-01393-2- α	W	X							<input type="checkbox"/>
	MW-16	Metals	02-01393-2- β	W				X	X	X	X	<input type="checkbox"/>
	MW-16	8270	02-01393-2- γ	W								<input type="checkbox"/>
	MW-16	300	02-01393-2- δ	W		X	X					<input type="checkbox"/>
4	MW-16D	524.2	02-01393-3- α	W	X							<input type="checkbox"/>
	MW-16D	Metals	02-01393-3- β	W				X	X	X	X	<input type="checkbox"/>
	MW-16D	8270	02-01393-3- γ	W								<input type="checkbox"/>
	MW-16D	300	02-01393-3- δ	W		X	X					<input type="checkbox"/>

Seq.	Client's Sample ID	Sample	APCL									
#	(as given on COC)	Sub-ID	Sample ID	Matrix	SO4	NO3	CL	CARBONATE	BICARBON	PH	TDS	AS
1	TB-13	524.2	02-01393-4	W								<input type="checkbox"/>
2	MW-13	524.2	02-01393-1- α	W								<input type="checkbox"/>
	MW-13	Metals	02-01393-1- β	W							X -	<input type="checkbox"/>
	MW-13	8270	02-01393-1- γ	W								<input type="checkbox"/>
	MW-13	300	02-01393-1- δ	W	X -	X -	X -	X -	X -	X -	X -	<input type="checkbox"/>
3	MW-16	524.2	02-01393-2- α	W								<input type="checkbox"/>
	MW-16	Metals	02-01393-2- β	W							X	<input type="checkbox"/>
	MW-16	8270	02-01393-2- γ	W								<input type="checkbox"/>
	MW-16	300	02-01393-2- δ	W	X	X	X	X	X	X	X	<input type="checkbox"/>
4	MW-16D	524.2	02-01393-3- α	W								<input type="checkbox"/>
	MW-16D	Metals	02-01393-3- β	W							X	<input type="checkbox"/>
	MW-16D	8270	02-01393-3- γ	W								<input type="checkbox"/>
	MW-16D	300	02-01393-3- δ	W	X	X	X	X	X	X	X	<input type="checkbox"/>

Seq.	Client's Sample ID	Sample	APCL				
#	(as given on COC)	Sub-ID	Sample ID	Matrix	ALKALIN	SIM	
1	TB-13	524.2	02-01393-4	W			<input type="checkbox"/>
2	MW-13	524.2	02-01393-1- α	W			<input type="checkbox"/>
	MW-13	Metals	02-01393-1- β	W			<input type="checkbox"/>
	MW-13	8270	02-01393-1- γ	W			<input type="checkbox"/>
	MW-13	300	02-01393-1- δ	W	X -		<input type="checkbox"/>
3	MW-16	524.2	02-01393-2- α	W			<input type="checkbox"/>
	MW-16	Metals	02-01393-2- β	W			<input type="checkbox"/>
	MW-16	8270	02-01393-2- γ	W		X	<input type="checkbox"/>
	MW-16	300	02-01393-2- δ	W	X		<input type="checkbox"/>
4	MW-16D	524.2	02-01393-3- α	W			<input type="checkbox"/>
	MW-16D	Metals	02-01393-3- β	W			<input type="checkbox"/>

56015

MW-16D	8270	02-01393-3- γ	W		X	<input type="checkbox"/>
MW-16D	300	02-01393-3- δ	W	X		<input type="checkbox"/>

- Client's Requirement: **PLEASE RUN MS/MSD ON SAMPLE #1,2** ✓
- IF ENOUGH SAMPLE**
- FOR 8270SIM, PLEASE INCLUDE 1,4-DIOXANE** ✓

Login By En-Yu Paul Kou

Check By ~~DX~~



A P C L

Applied Physics & Chemistry Laboratory

13760 Magnolia Ave. Chino CA 91710

Tel. (909) 590-1828 Fax (909) 590-1498

February 13, 2002

SOTA Environmental
Attention: Yu Zeng
16835 W. Bernardo Dr. Suite 212
San Diego CA 92127

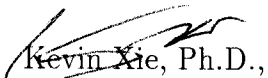
Dear Yu,

This package contains samples in our Service ID 02-1267 and your project is 00HW019 JPL.
Enclosed please find:

- (1) One original report.
- (2) One original Chain of Custody.
- (3) One diskette containing EDD Deliverable.
- (4) One original of Level D Data Package Deliverable.

If anything is missing or you have any questions, please feel free to contact me.

Respectfully submitted,


Kevin Xie, Ph.D.,

QA/QC Director

Applied P & Ch Laboratory

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710

Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:

SOTA Environmental

Attention: Yu Zeng

16835 W. Bernardo Dr, Ste. 212

San Diego CA 92127

Tel: (858)485-8100 Fax: (858)485-0812

Service ID #: 801-021267

Collected by: MES/JNT

Collected on: 01/18/02

Received: 01/18/02

Extracted: N/A

Tested: 01/18-25/02

Reported: 01/30/02

Sample Description: Water from Pasadena, CA

Project Description: 00HW019 JPL

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result	
				MW-14-1 02-01267-2	MW-14-2 02-01267-3
ALKALINITY	310.1	mg/L	2	209	239
BICARBONATE ^(a)	SM2320B	mg/L	2	209	239
CARBONATE ^(a)	SM2320B	mg-CaCO ₃ /L	2	<2	<2
PH	150.1	pH unit	0.01	6.98	7.43
SOLIDS, TOTAL DISSOLVED (TDS)	160.1	mg/L	10	802	816
Dilution Factor				20	20
CHLORIDE CL ⁻	300.0	mg/L	0.2	142	112
NITRATE AS N	300.0	mg/L	0.04	19.7	15.3
SULFATE SO ₄ ⁻	300.0	mg/L	0.5	210	179
Dilution Factor				1	1
CALCIUM	200.7	μg/L	200	154,000	149,000
IRON	200.7	μg/L	50	491	126
MAGNESIUM	200.7	μg/L	100	52,300	52,700
POTASSIUM	200.7	μg/L	400	3,210	3,040
SODIUM	200.7	μg/L	2000	46,600	34,500

Component Analyzed	Method	Unit	PQL	Analysis Result		
				MW-14-3 02-01267-4	MW-14-4 02-01267-5	MW-14-5 02-01267-6
ALKALINITY	310.1	mg/L	2	226	162	136
BICARBONATE ^(a)	SM2320B	mg/L	2	226	162	136
CARBONATE ^(a)	SM2320B	mg-CaCO ₃ /L	2	<2	<2	<2
PH	150.1	pH unit	0.01	7.66	7.65	8.39
SOLIDS, TOTAL DISSOLVED (TDS)	160.1	mg/L	10	655	404	226
Dilution Factor				20	10	2
CHLORIDE CL ⁻	300.0	mg/L	0.2	101	44.1	9.2
NITRATE AS N	300.0	mg/L	0.04	15.0	11.7	0.29
SULFATE SO ₄ ⁻	300.0	mg/L	0.5	147	41.2	16.0
Dilution Factor				1	1	1
CALCIUM	200.7	μg/L	200	120,000	62,700	17,700
IRON	200.7	μg/L	50	36.9J	21.1J	324
MAGNESIUM	200.7	μg/L	100	48,100	21,600	13,600
POTASSIUM	200.7	μg/L	400	3,480	2,330	2,170
SODIUM	200.7	μg/L	2000	40,700	28,800	30,900

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result		
				ER-7 02-01267-1	MW-14-1 02-01267-2	MW-14-2 02-01267-3
ARSENIC	200.9	µg/L	5	<5	<5	<5
CHROMIUM (VI)	7196	mg/L	0.01	<0.01	<0.01	<0.01
Dilution Factor				1	1	1
PERCHLORATE	E314	µg/L	4	<4	4.0	<4
VOLATILE ORGANIC COMPOUNDS						
Dilution Factor				1	1	1
CARBON TETRACHLORIDE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROFORM	524.2	µg/L	0.5	<0.5	0.6	0.6
1,1-DICHLOROETHANE	524.2	µg/L	0.5	<0.5	0.7	0.5J
1,2-DICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
METHYLENE CHLORIDE	524.2	µg/L	1	7.3	<1	<1
TETRACHLOROETHENE	524.2	µg/L	0.5	<0.5	1.2	0.8
TRICHLOROETHENE	524.2	µg/L	0.5	<0.5	0.3J	4.7
112TRICHLORO-122TRIFLUOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5

Component Analyzed	Method	Unit	PQL	Analysis Result			
				MW-14-3 02-01267-4	MW-14-4 02-01267-5	MW-14-5 02-01267-6	TB-7 02-01267-7
ARSENIC	200.9	µg/L	5	<5	<5	<5	-
CHROMIUM (VI)	7196	mg/L	0.01	<0.01	<0.01	<0.01	-
Dilution Factor				1	1	1	1
PERCHLORATE	E314	µg/L	4	5.9	<4	<4	-
VOLATILE ORGANIC COMPOUNDS							
Dilution Factor				1	1	1	1
CARBON TETRACHLORIDE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CHLOROFORM	524.2	µg/L	0.5	0.6	<0.5	<0.5	<0.5
1,1-DICHLOROETHANE	524.2	µg/L	0.5	0.5J	<0.5	<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	<0.5	<0.5
METHYLENE CHLORIDE	524.2	µg/L	1	0.3J	<1	1	0.4J
TETRACHLOROETHENE	524.2	µg/L	0.5	0.6	0.4J	<0.5	<0.5
TRICHLOROETHENE	524.2	µg/L	0.5	1.6	<0.5	<0.5	<0.5
112TRICHLORO-122TRIFLUOROETHANE	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.

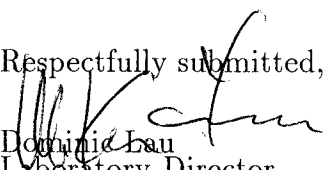
"-": Analysis is not required.

J: Reported between PQL and MDL.

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

(a) Calculated from alkalinity result by EPA 310.1

Respectfully submitted,


 Dominic Lau
 Laboratory Director
 Applied P & Ch Laboratory

Level D Data Package Deliverables

General Information

Project: 01HW019 JPL

APCL Service ID: 02-1267



Applied P & Ch Laboratory

13760 Magnolia Ave. Chino, CA 91710

Telephone (909)590-1828

Fax (909)590-1498

Case Narrative

Project: JPL/00HW019

For SOTA Environmental

APCL Service No: 02-1267

1. Sample Identification

The sample identifications are listed in the following table:

SOTA Environmental Sample ID	APCL Sample ID
TB-7	02-01267-7
MW-14-5	02-01267-6
MW-14-4	02-01267-5
ER-7	02-01267-1
MW-14-3	02-01267-4
MW-14-2	02-01267-3
MW-14-1	02-01267-2

2. Analytical Methodology

Samples are analyzed by EPA methods

524.2 (Volatile Organic Compounds),

7196 (Chromium (VI)),

E314 (Perchlorate, low level),

200.7 (Metals by ICP),

300.0 (Anions by IC),

SM2320B (Carbonate),

150.1 (pH),

160.1 (Solids, Total Dissolved (TDS)),

200.9 (Arsenic, As, by GFAA),

310.1 (Alkalinity),

3. Holding Time

All samples were extracted, digested and analyzed within the holding times defined by the appropriate EPA methods of the analyses.

4. Preservation

All samples were preserved and stored according to the appropriate EPA methods.

5. Tele-log

None.


6. Anomaly

(1) 200.9 - Arsenic:

ICV analyzed on 02/25/02 at 10:56 did not contain standard and was re-analyzed on 02/25/02 at 11:16 with acceptable recovery.

"I certify that these data are technically accurate, complete, and in compliance with the terms and conditions of the contract, for other than the conditions detailed above. Release of the data contained in the hardcopy data package and its electronic data deliverable submitted on diskette had been authorized by the Laboratory Manager or her/his designee, as verified by the following signature."

Respectfully submitted,


Kevin Xie, Ph.D.,
QA/QC Director
Applied P & Ch Laboratory

Sample Receiving Checklist

APCL ServiceID: 1267 Client Name/Project: Sota Environmental

1. Sample Arrival

Date/Time Received 1/18/02 1623 Date/Time Opened 1/18/02 1623 By (name): Paul

Custody Transfer: Client Golden State UPS US Mail FedEx APCL Empl: Kenny

2. Chain-of-Custody (CoC)

With Samples? Faxed? Client has Copy? Signed, dated? By: _____
 Project ID? Analyses Clear? Hold Samples? #on Hold _____ # Received _____
 CoC/Docs Zip-Locked under lid? Compos. #: _____ #Samples OK? _____
 Discrepancies? Client notified? Response (attach docs): _____

3. Shipping Container/Cooler

Cooler Used? # of 1 Cooled by: Ice Blue Ice Dry Ice None
Temp °C 2.6

(Cooler temperature measured from temp blank if present, otherwise measured from the cooler).

Cooler Custody Seal? Absent Intact Tampered?

4. Sample Preservation

pH < 2 pH > 12
If Not, pH = _____ Preserved by: Client APCL Third Party _____

5. Holding-time Requirements

pH 24hr BACT 6/24hr Cr^{VI} 24hr NO₃ 48hr BOD 48hr
 Cl₂ ASAP Turbidity 48hr DO ASAP Fe(II) ASAP
 HT Expired? Client notified?

6. Sample Container Condition

Intact? Broken? Documented? Number: _____
Type: plastic glass Tube: brass/SS Tedlar Bag
 Quantity OK? Leaking? Anomaly?
 Caps tight? Air Bubbles? Anomaly?
Labels: Unique ID? Date/Time Preserved?

7. Turn Around Time

RUSH TAT: SDAP Std (7-10 days) Not Marked

8. Sample Matrix

Drinking H₂O Other Liq Soil Wipe Polymer Air Other: _____
 Ground H₂O Sludge Filter Oil/Petro Paint W. Water Extract Unknown

9. Pre-Login Check List Completed & OK?

ALL OK? (if not, attach docs) Client Contact? (Name: _____) Date/Time: _____
Received/Checked by: Paul Date: 18 Jan 2002 Time: 9:09 a.m.

*HT: Samples must be analyzed for results to reflect total concentrations. Results generated outside required of holding times are considered minimal values and may be used to define waste as hazardous but not as non-hazardous.

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710

Tel: (909) 590-1828 Fax: (909) 590-1498

Sample Login: Check List

02-01267 (1288_ 304) (4858100_ 304)

01/18/02

Part 1: General Information

<input type="checkbox"/> Company Information	Name:	<i>SOTA Environmental</i>
	Address:	<i>16835 W. Bernardo Dr, Ste. 212 ,San Diego ,CA 92127</i>
<input type="checkbox"/> Project Information	Project Description:	<i>JPL</i>
	Project #:	<i>00HW019</i>
<input type="checkbox"/> Billing Information	P.O. #:	
	Bill Address:	<i>16835 W. Bernardo Dr, Ste. 212 ,San Diego ,CA 92127</i>
	Lab Project ID:	<i>2002_0002</i>
	Client Database #:	<i>01</i>
<input type="checkbox"/> Receiving Information	Who Received Sample?	<i>Kenny</i>
	Receiving Date/Time:	<i>01/18/02 1623</i>
	COC No.	
<input type="checkbox"/> Shipping Information	Shipping Company	<i>by Client</i>
	Packing Information:	<i>Cooler/Ice Chester</i>
	Cooler Temperature:	<i>2.6 °C</i>
<input type="checkbox"/> Container Information	Container Provider:	<i>Client</i>
<input type="checkbox"/> Sampling Information	Sampling Person:	
	Sampling Company:	<i>Client</i>
<input type="checkbox"/> Turn-Around-Time Option:		<i>Rush 5 working day(s)</i>
<input type="checkbox"/> QC Option:		<i>NEESA D</i>
<input type="checkbox"/> Disposal Option:		<i>Not specify</i>

050204

Part 2: Sample Information

Seq. #	Sample ID (on COC)	Sample Sub-ID	APCL Sample ID	Matrix	Cont- tainer	Preser- vative	Vol, ml Am. g	# of Replica	Condition G, L, B	Collected mmddyy	Hold ?	Composite Group	TAT Days
1	TB-7 ✓	524.2	02-01267-7	W	V	C	40	2	G	011802	N	0	7 <input type="checkbox"/>
2	MW-14-5 ✓	524.2	02-01267-6-α	W	V	C	40	3	G	011802	N	0	7 <input type="checkbox"/>
	MW-14-5	Metals	02-01267-6-β	W	P	N	500	1	G	011802	N	0	7 <input type="checkbox"/>
	MW-14-5	300	02-01267-6-γ	W	P		500	1	G	011802	N	0	7 <input type="checkbox"/>
3	MW-14-4 ✓	524.2	02-01267-5-α	W	V	C	40	3	G	011802	N	0	7 <input type="checkbox"/>
	MW-14-4	Metals	02-01267-5-β	W	P	N	500	1	G	011802	N	0	7 <input type="checkbox"/>
	MW-14-4	300	02-01267-5-γ	W	P		500	1	G	011802	N	0	7 <input type="checkbox"/>
4	ER-7 ✓	524.2	02-01267-1-α	W	V	C	40	3	G	011802	N	0	7 <input type="checkbox"/>
	ER-7	Metals	02-01267-1-β	W	P	N	500	1	G	011802	N	0	7 <input type="checkbox"/>
	ER-7	300	02-01267-1-γ	W	P		500	1	G	011802	N	0	7 <input type="checkbox"/>
5	MW-14-3 ✓	524.2	02-01267-4-α	W	V	C	40	3	G	011802	N	0	7 <input type="checkbox"/>
	MW-14-3	Metals	02-01267-4-β	W	P	N	500	1	G	011802	N	0	7 <input type="checkbox"/>
	MW-14-3	300	02-01267-4-γ	W	P		500	1	G	011802	N	0	7 <input type="checkbox"/>
6	MW-14-2 ✓	524.2	02-01267-3-α	W	V	C	40	3	G	011802	N	0	7 <input type="checkbox"/>
	MW-14-2	Metals	02-01267-3-β	W	P	N	500	1	G	011802	N	0	7 <input type="checkbox"/>
	MW-14-2	300	02-01267-3-γ	W	P		500	1	G	011802	N	0	7 <input type="checkbox"/>
7	MW-14-1 ✓	524.2	02-01267-2-α	W	V	C	40	3	G	011802	N	0	7 <input type="checkbox"/>
	MW-14-1	Metals	02-01267-2-β	W	P	N	500	1	G	011802	N	0	7 <input type="checkbox"/>
	MW-14-1	300	02-01267-2-γ	W	P		500	1	G	011802	N	0	7 <input type="checkbox"/>

Part 3: Analysis Information

Test Items:

- 524.2 Volatile Organic Compounds
- 196 Chromium (VI)
- 300.0 Perchlorate, low level
- 200.7/6010 Sodium, Na, by ICP
- 200.7/6010 Potassium, K, by ICP
- 200.7/6010 Calcium, Ca, by ICP
- 200.7/6010 Magnesium, Mg, by ICP
- 200.7/6010 Iron, Fe, by ICP
- 300.0 Sulfate (SO₄⁻), by IC
- 300.0/SM4500NOM Nitrate (NO₃⁻) as N by IC
- 300.0 Chloride Cl⁻ by IC
- SM2320B Carbonate
- SM2320B Bicarbonate
- 9040/150.1 pH
- 160.1 Solids, Total Dissolved (TDS)

206.2/7060 Arsenic, As, by GFAA
 310.1 Alkalinity
 PAH-SIM PAH (NOAA)

Seq. #	Client's Sample ID (as given on COC)	Sample Sub-ID	APCL Sample ID	Matrix	524.2	CHROMIUM	PERCHL	NA	K	CA	MG	FE
1	TB-7	524.2	02-01267-7	W	X ✓							<input type="checkbox"/>
2	MW-14-5	524.2	02-01267-6-α	W	X ✓							<input type="checkbox"/>
	MW-14-5	Metals	02-01267-6-β	W				X -	X -	X -	X -	<input type="checkbox"/>
	MW-14-5	300	02-01267-6-γ	W		X -	X -					<input type="checkbox"/>
3	MW-14-4	524.2	02-01267-5-α	W	X							<input type="checkbox"/>
	MW-14-4	Metals	02-01267-5-β	W				X	X	X	X	<input type="checkbox"/>
	MW-14-4	300	02-01267-5-γ	W		X	X					<input type="checkbox"/>
4	ER-7	524.2	02-01267-1-α	W	X ✓							<input type="checkbox"/>
	ER-7	Metals	02-01267-1-β	W								<input type="checkbox"/>
	ER-7	300	02-01267-1-γ	W		X ✓	X ✓					<input type="checkbox"/>
5	MW-14-3	524.2	02-01267-4-α	W	X							<input type="checkbox"/>
	MW-14-3	Metals	02-01267-4-β	W				X	X	X	X	<input type="checkbox"/>
	MW-14-3	300	02-01267-4-γ	W		X	X					<input type="checkbox"/>
6	MW-14-2	524.2	02-01267-3-α	W	X							<input type="checkbox"/>
	MW-14-2	Metals	02-01267-3-β	W				X	X	X	X	<input type="checkbox"/>
	MW-14-2	300	02-01267-3-γ	W		X	X					<input type="checkbox"/>
7	MW-14-1	524.2	02-01267-2-α	W	X							<input type="checkbox"/>
	MW-14-1	Metals	02-01267-2-β	W				X	X	X	X	<input type="checkbox"/>
	MW-14-1	300	02-01267-2-γ	W		X	X					<input type="checkbox"/>

Seq. #	Client's Sample ID (as given on COC)	Sample Sub-ID	APCL Sample ID	Matrix	SO4	NO3	CL	CARBONATE	BICARBON	PH	TDS	AS
1	TB-7	524.2	02-01267-7	W								<input type="checkbox"/>
2	MW-14-5	524.2	02-01267-6-α	W								<input type="checkbox"/>
	MW-14-5	Metals	02-01267-6-β	W								X - <input type="checkbox"/>
	MW-14-5	300	02-01267-6-γ	W	X -	X -	X -	X -	X -	X -	X -	<input type="checkbox"/>
3	MW-14-4	524.2	02-01267-5-α	W								<input type="checkbox"/>
	MW-14-4	Metals	02-01267-5-β	W								X <input type="checkbox"/>
	MW-14-4	300	02-01267-5-γ	W	X	X	X	X	X	X	X	<input type="checkbox"/>
4	ER-7	524.2	02-01267-1-α	W								<input type="checkbox"/>
	ER-7	Metals	02-01267-1-β	W								X - <input type="checkbox"/>
	ER-7	300	02-01267-1-γ	W								<input type="checkbox"/>
5	MW-14-3	524.2	02-01267-4-α	W								<input type="checkbox"/>
	MW-14-3	Metals	02-01267-4-β	W								X <input type="checkbox"/>
	MW-14-3	300	02-01267-4-γ	W	X	X	X	X	X	X	X	<input type="checkbox"/>
6	MW-14-2	524.2	02-01267-3-α	W								<input type="checkbox"/>
	MW-14-2	Metals	02-01267-3-β	W								X <input type="checkbox"/>
	MW-14-2	300	02-01267-3-γ	W	X	X	X	X	X	X	X	<input type="checkbox"/>



Applied Physics & Chemistry Laboratory

13760 Magnolia Ave. Chino CA 91710

Tel. (909) 590-1828 Fax (909) 590-1498

February 14, 2002

SOTA Environmental
Attention: Yu Zeng
16835 W. Bernardo Dr. Suite 212
San Diego CA 92127

Dear Yu,

This package contains samples in our Service ID 02-1442 and your project is 00HW019 JPL.
Enclosed please find:

- (1) One original report.
- (2) One original Chain of Custody.
- (3) One diskette containing EDD Deliverable.
- (4) One original of Level D Data Package Deliverable.

If anything is missing or you have any questions, please feel free to contact me.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Kevin Xie', is written over the typed name.

Kevin Xie, Ph.D.,

QA/QC Director

Applied P & Ch Laboratory

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710

Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
SOTA Environmental
Attention: Yu Zeng
16835 W. Bernardo Dr, Ste. 212
San Diego CA 92127
Tel: (858)485-8100 Fax: (858)485-0812

Service ID #: 801-021442
Collected by: MES/JNT
Collected on: 02/01/02
Received: 02/01/02
Extracted: N/A
Tested: 02/01-11/02
Reported: 02/11/02
Sample Description: Water from Pasadena, CA
Project Description: 00HW019 JPL

Analysis of Water Samples

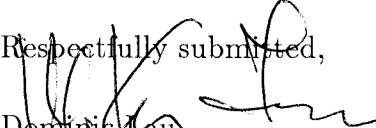
Component Analyzed	Method	Unit	PQL	Analysis Result			
				MW-6 02-01442-1	MW-15 02-01442-2	MW-15D 02-01442-3	TB-16 02-01442-4
ALKALINITY	310.1	mg/L	2	249	212	214	-
BICARBONATE ^(a)	SM2320B	mg/L	2	249	212	214	-
CARBONATE ^(a)	SM2320B	mg-CaCO ₃ /L	2	<2	<2	<2	-
PH	150.1	pH unit	0.01	6.94	7.28	7.32	-
SOLIDS, TOTAL DISSOLVED (TDS)	160.1	mg/L	10	794	381	379	-
CHROMIUM (VI)	7196	mg/L	0.01	<0.01	<0.01	<0.01	-
Dilution Factor				1	1	1	1
PERCHLORATE	E314	µg/L	4	3.2J	<4	<4	-
Dilution Factor				12.5	5	5	1
CHLORIDE CL ⁻	300.0	mg/L	0.2	122	30.1	32.5	-
NITRATE AS N	300.0	mg/L	0.04	10.7	2.3	2.5	-
SULFATE SO ₄ ⁻⁻	300.0	mg/L	0.5	173	60.6	64.0	-
Dilution Factor				1	1	1	1
ARSENIC	200.9	µg/L	5	3.4J	3.0J	3.4J	-
Dilution Factor				1	1	1	1
CALCIUM	200.7	µg/L	200	154,000	73,600	73,400	-
IRON	200.7	µg/L	50	1,880	223	166	-
MAGNESIUM	200.7	µg/L	100	48,700	22,900	23,000	-
POTASSIUM	200.7	µg/L	400	2,960	3,510	3,460	-
SODIUM	200.7	µg/L	2000	32,900	27,400	27,500	-
VOLATILE ORGANIC COMPOUNDS							
Dilution Factor				1	1	1	1
CARBON TETRACHLORIDE	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
CHLOROFORM	524.2	µg/L	0.5	0.9	<0.5	<0.5	<0.5
1,1-DICHLOROETHANE	524.2	µg/L	0.5	1.3	<0.5	<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	0.7	<0.5	<0.5	<0.5
METHYLENE CHLORIDE	524.2	µg/L	1	0.9J	1J	1J	2
TETRACHLOROETHENE	524.2	µg/L	0.5	4.6	<0.5	<0.5	<0.5
TRICHLOROETHENE	524.2	µg/L	0.5	0.4J	<0.5	<0.5	<0.5
112TRICHLORO-122TRIFLUOROETHANE	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

^(a) Calculated from alkalinity result by EPA 310.1

Respectfully submitted,

Dominic Chau
Laboratory Director
Applied P & Ch Laboratory

Level D Data Package Deliverables

General Information

Project: 010HW019 JPL

APCL Service ID: 02-1442



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

Case Narrative

Project: JPL/Pasadena, CA/00HW019

For SOTA Environmental

APCL Service No: 02-1442

1. Sample Identification

The sample identifications are listed in the following table:

SOTA Environmental Sample ID	APCL Sample ID
TB-16	02-01442-4
MW-6	02-01442-1
MW-15	02-01442-2
MW-15D	02-01442-3

2. Analytical Methodology

Samples are analyzed by EPA methods
524.2 (Volatile Organic Compounds),
7196 (Chromium (VI)),
E314 (Perchlorate, low level),
200.7 (Metals by ICP),
300.0 (Anions by IC),
SM2320B (Carbonate),
150.1 (pH),
160.1 (Solids, Total Dissolved (TDS)),
200.9 (Arsenic, As, by GFAA),
310.1 (Alkalinity),

3. Holding Time

All samples were extracted, digested and analyzed within the holding times defined by the appropriate EPA methods of the analyses.

4. Preservation

All samples were preserved and stored according to the appropriate EPA methods.

5. Tele-log

None.

6. Anomaly

(1) EPA 524.2:


Sample TB-16 was analyzed 14 minutes outside of 12 hour BFB tune period.

(2) EPA 314.0:

MS/MSD recoveries, spiked on sample MW-16, were outside of control limit due to an high level of perchlorate in the native sample.

"I certify that these data are technically accurate, complete, and in compliance with the terms and conditions of the contract, for other than the conditions detailed above. Release of the data contained in the hardcopy data package and its electronic data deliverable submitted on diskette had been authorized by the Laboratory Manager or her/his designee, as verified by the following signature."

Respectfully submitted,


Kevin Xae, Ph.D.,
QA/QC Director
Applied P & Ch Laboratory



Applied P & Ch Laboratory

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

APCL

Chain of Custody

Please Print in pen Page 1 of 1

Client: SOTA ENVIRONMENTAL, INC. Contact: MIVE SAYRE Tel #: 858-485-8100 Fax #: 858-485-0812

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

Bill to: SOTA

Project Name/Code JPL Job # 0044019 P.O. # _____

Project Address PASADENA CALIFORNIA APCL Quotation # _____

Due Date: regular rush: _____ days _____ hours Sampled by: MES/JNT

Field Sample ID No.	Sample Description	Date Collected	Sample Matrix	Preservation	# of Containers	Analysis Items	Remarks
TB-16	TRIP BLANK	2/10/02	WATER	HCl	2	As (200.9) Cd (10.0) Cr VI (196) Fe (100.0) Mn (100.0) Ni (100.0) Pb (100.0) Se (100.0) Zn (100.0)	White - With report Yellow - Lab copy Pink - Originator
MW-6	MW-6	1031		HCl HNO ₃	3 2	As (200.9) Cd (10.0) Cr VI (196) Fe (100.0) Mn (100.0) Ni (100.0) Pb (100.0) Se (100.0) Zn (100.0)	
MW-15	MW-15	917		HCl HNO ₃	3 2	As (200.9) Cd (10.0) Cr VI (196) Fe (100.0) Mn (100.0) Ni (100.0) Pb (100.0) Se (100.0) Zn (100.0)	
MW-15D	MW-15 DURESS			HCl HNO ₃	3 2	As (200.9) Cd (10.0) Cr VI (196) Fe (100.0) Mn (100.0) Ni (100.0) Pb (100.0) Se (100.0) Zn (100.0)	

1442

QC Requirement: Regular; QA/QC Report; WIP; Raw Data; Extended Raw Data CLP; ACE AFCEE NEBSA (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 2/1/02/1154 Received by [Signature] Date/Time 2/1/02/1154A

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

Sample Receiving Checklist

APCL ServiceID: **1442**

Client Name/Project: Sota Environmental

1. Sample Arrival

Date/Time Received 2/1/02 1154 Date/Time Opened 2/1/02 1154 By (name): [Signature]

Custody Transfer: Client Golden State UPS US Mail FedEx APCL Empl:

2. Chain-of-Custody (CoC)

With Samples? Faxed? Client has Copy? Signed, dated? By: _____
 Project ID? Analyses Clear? Hold Samples? # on Hold _____ # Received 4
 CoC/Docs Zip-Locked under lid? Compos.#: _____ #Samples OK?
 Discrepancies? Client notified? Response (attach docs): _____

3. Shipping Container/Cooler

Cooler Used? # of 1 Cooled by: Ice Blue Ice Dry Ice None
Temp °C 3.7
(Cooler temperature measured from temp blank if present, otherwise measured from the cooler).
Cooler Custody Seal? Absent Intact Tampered?

4. Sample Preservation

pH <2 pH >12
If Not, pH = _____ Preserved by: Client APCL Third Party

5. Holding-time Requirements

pH 24hr BACT 6/24hr Cr^{VI} 24hr NO₃⁻ 48hr BOD 48hr
 Cl₂ ASAP Turbidity 48hr DO ASAP Fe(II) ASAP
 HT Expired? Client notified?

6. Sample Container Condition

Intact? Broken? Documented? Number: _____
Type: plastic glass Tube: brass/SS Tedlar Bag
 Quantity OK? Leaking? Anomaly?
 Caps tight? Air Bubbles? Anomaly?
Labels: Unique ID? Date/Time Preserved?

7. Turn Around Time

RUSH TAT: _____ Std (7-10 days) Not Marked

8. Sample Matrix

Drinking H₂O Other Liq Soil Wipe Polymer Air Other: _____
 Ground H₂O Sludge Filter Oil/Petro Paint W. Water Extract Unknown

9. Pre-Login Check List Completed & OK?

ALL OK? (if not, attach docs) Client Contact? (Name: _____) Date/Time: _____
Received/Checked by: [Signature] Date: 1 Feb 2002 Time: 8:49 a.m.

*HT: Samples must be analyzed for results to reflect total concentrations. Results generated outside required of holding times are considered minimal values and may be used to define waste as hazardous but not as non-hazardous.

Sample Login: Check List

02-01442 (1288_ 315) (4858100_ 315)

02/01/02

Part 1: General Information

-
- | | | | |
|--------------------------|--------------------------|----------------------|--|
| <input type="checkbox"/> | Company Information | Name: | <i>SOTA Environmental</i> |
| | | Address: | <i>16835 W. Bernardo Dr, Ste. 212 ,San Diego ,CA 92127</i> |
| <input type="checkbox"/> | Project Information | Project Description: | <i>JPL</i> |
| | | Project #: | <i>00HW019</i> |
| <input type="checkbox"/> | Billing Information | P.O. #: | |
| | | Bill Address: | <i>16835 W. Bernardo Dr, Ste. 212 ,San Diego ,CA 92127</i> |
| | | Lab Project ID: | <i>2002_0002</i> |
| | | Client Database #: | <i>01</i> |
| <input type="checkbox"/> | Receiving Information | Who Received Sample? | <i>Kenny</i> |
| | | Receiving Date/Time: | <i>02/01/02 1154</i> |
| | | COC No. | |
| <input type="checkbox"/> | Shipping Information | Shipping Company | <i>by Client</i> |
| | | Packing Information: | <i>Cooler/Ice Chester</i> |
| | | Cooler Temperature: | <i>3.9 °C</i> |
| <input type="checkbox"/> | Container Information | Container Provider: | <i>Client</i> |
| <input type="checkbox"/> | Sampling Information | Sampling Person: | |
| | | Sampling Company: | <i>Client</i> |
| <input type="checkbox"/> | Turn-Around-Time Option: | | <i>Rush 5 working day(s)</i> |
| <input type="checkbox"/> | QC Option: | | <i>NEESA D</i> |
| <input type="checkbox"/> | Disposal Option: | | <i>Not specify</i> |
-

Part 2: Sample Information

Seq. #	Sample ID (on COC)	Sample Sub-ID	APCL Sample ID	Matrix	Cont- tainer	Preser- vative	Vol, ml Am. g	# of Replica	Condition G, L, B	Collected mmddyy	Hold ?	Composite Group	TAT Days
1	TB-16 ✓	524.2	02-01442-4	W	V	C	40	2	G	020102	N	0	7 <input type="checkbox"/>
2	MW-6 ✓	524.2	02-01442-1-α	W	V	C	40	3	G	020102	N	0	7 <input type="checkbox"/>
	MW-6	Metals	02-01442-1-β	W	P	N	500	1	G	020102	N	0	7 <input type="checkbox"/>
	MW-6	300	02-01442-1-γ	W	P		500	1	G	020102	N	0	7 <input type="checkbox"/>
3	MW-15 ✓	524.2	02-01442-2-α	W	V	C	40	3	G	020102	N	0	7 <input type="checkbox"/>
	MW-15	Metals	02-01442-2-β	W	P	N	500	1	G	020102	N	0	7 <input type="checkbox"/>
	MW-15	300	02-01442-2-γ	W	P		500	1	G	020102	N	0	7 <input type="checkbox"/>
4	MW-15D ✓	524.2	02-01442-3-α	W	V	C	40	3	G	020102	N	0	7 <input type="checkbox"/>
	MW-15D	Metals	02-01442-3-β	W	P	N	500	1	G	020102	N	0	7 <input type="checkbox"/>
	MW-15D	300	02-01442-3-γ	W	P		500	1	G	020102	N	0	7 <input type="checkbox"/>

Part 3: Analysis Information

Test Items:	<input checked="" type="checkbox"/> 524.2	Volatile Organic Compounds
	<input checked="" type="checkbox"/> 7196	Chromium (VI)
	<input checked="" type="checkbox"/> 300.0	Perchlorate, low level
	<input checked="" type="checkbox"/> 200.7/6010	Sodium, Na, by ICP
	<input checked="" type="checkbox"/> 200.7/6010	Potassium, K, by ICP
	<input checked="" type="checkbox"/> 200.7/6010	Calcium, Ca, by ICP
	<input checked="" type="checkbox"/> 200.7/6010	Magnesium, Mg, by ICP
	<input checked="" type="checkbox"/> 200.7/6010	Iron, Fe, by ICP
	<input checked="" type="checkbox"/> 300.0	Sulfate (SO ₄ ²⁻), by IC
	<input checked="" type="checkbox"/> 300.0/SM4500NOM	Nitrate (NO ₃ ⁻) as N by IC
	<input type="checkbox"/> 300.0	Chloride Cl ⁻ by IC
	<input checked="" type="checkbox"/> SM2320B	Carbonate
	<input checked="" type="checkbox"/> SM2320B	Bicarbonate
	<input checked="" type="checkbox"/> 9040/150.1	pH
	<input checked="" type="checkbox"/> 160.1	Solids, Total Dissolved (TDS)
	<input checked="" type="checkbox"/> 206.2/7060	Arsenic, As, by GFAA
	<input checked="" type="checkbox"/> 310.1	Alkalinity
	<input type="checkbox"/> PAH-SIM	PAH (NOAA)

Seq. #	Client's Sample ID (as given on COC)	Sample Sub-ID	APCL Sample ID	Matrix	524.2	CHROMIUM	PERCHL	NA	K	CA	MG	FE
1	TB-16	524.2	02-01442-4	W	X							<input type="checkbox"/>

2	MW-6	524.2	02-01442-1- α	W	X									<input type="checkbox"/>
	MW-6	Metals	02-01442-1- β	W					X	X	X	X	X	<input type="checkbox"/>
	MW-6	300	02-01442-1- γ	W			X	X						<input type="checkbox"/>
3	MW-15	524.2	02-01442-2- α	W	X									<input type="checkbox"/>
	MW-15	Metals	02-01442-2- β	W					X	X	X	X	X	<input type="checkbox"/>
	MW-15	300	02-01442-2- γ	W			X	X						<input type="checkbox"/>
4	MW-15D	524.2	02-01442-3- α	W	X									<input type="checkbox"/>
	MW-15D	Metals	02-01442-3- β	W					X	X	X	X	X	<input type="checkbox"/>
	MW-15D	300	02-01442-3- γ	W			X	X						<input type="checkbox"/>

Seq. #	Client's Sample ID (as given on COC)	Sample Sub-ID	APCL Sample ID	Matrix	SO4	NO3	CL	CARBONATE	BICARBON	PH	TDS	AS	
1	TB-16	524.2	02-01442-4	W									<input type="checkbox"/>
2	MW-6	524.2	02-01442-1- α	W									<input type="checkbox"/>
	MW-6	Metals	02-01442-1- β	W								X	<input type="checkbox"/>
	MW-6	300	02-01442-1- γ	W	X	X	X	X	X	X	X		<input type="checkbox"/>
3	MW-15	524.2	02-01442-2- α	W									<input type="checkbox"/>
	MW-15	Metals	02-01442-2- β	W								X	<input type="checkbox"/>
	MW-15	300	02-01442-2- γ	W	X	X	X	X	X	X	X		<input type="checkbox"/>
4	MW-15D	524.2	02-01442-3- α	W									<input type="checkbox"/>
	MW-15D	Metals	02-01442-3- β	W								X	<input type="checkbox"/>
	MW-15D	300	02-01442-3- γ	W	X	X	X	X	X	X	X		<input type="checkbox"/>

Seq. #	Client's Sample ID (as given on COC)	Sample Sub-ID	APCL Sample ID	Matrix	ALKALIN	SIM	
1	TB-16	524.2	02-01442-4	W			<input type="checkbox"/>
2	MW-6	524.2	02-01442-1- α	W			<input type="checkbox"/>
	MW-6	Metals	02-01442-1- β	W			<input type="checkbox"/>
	MW-6	300	02-01442-1- γ	W	X		<input type="checkbox"/>
3	MW-15	524.2	02-01442-2- α	W			<input type="checkbox"/>
	MW-15	Metals	02-01442-2- β	W			<input type="checkbox"/>
	MW-15	300	02-01442-2- γ	W	X		<input type="checkbox"/>
4	MW-15D	524.2	02-01442-3- α	W			<input type="checkbox"/>
	MW-15D	Metals	02-01442-3- β	W			<input type="checkbox"/>
	MW-15D	300	02-01442-3- γ	W	X		<input type="checkbox"/>

- Client's Requirement: **PLEASE RUN MS/MSD ON SAMPLE #**
 IF ENOUGH SAMPLE
 FOR 8270SIM, PLEASE INCLUDE 1,4-DIOXANE

Login By En-Yu Paul Kou

dy

54805



A P C L

Applied Physics & Chemistry Laboratory

13760 Magnolia Ave. Chino CA 91710

Tel. (909) 590-1828 Fax (909) 590-1498

February 8, 2002

SOTA Environmental
Attention: Yu Zeng
16835 W. Bernardo Dr. Suite 212
San Diego CA 92127

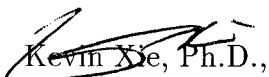
Dear Yu,

This package contains samples in our Service ID 02-1118 and your project is 00HW019 JPL.
Enclosed please find:

- (1) One original report.
- (2) One original Chain of Custody.
- (3) One diskette containing EDD Deliverable.
- (4) One original of Level D Data Package Deliverable.

If anything is missing or you have any questions, please feel free to contact me.

Respectfully submitted,


Kevin Xie, Ph.D.,

QA/QC Director

Applied P & Ch Laboratory

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710

Tel: (909) 590-1828 Fax: (909) 590-1498

Submitted to:

SOTA Environmental

Attention: Yu Zeng

16835 W. Bernardo Dr, Ste. 212

San Diego CA 92127

Tel: (858)485-8100 Fax: (858)485-0812

APCL Analytical Report

Service ID #: 801-021118

Received: 01/10/02

Collected by: MES/JNT

Extracted: 01/14/02

Collected on: 01/10/02

Tested: 01/11-16/02

Reported: 01/21/02

Sample Description: Water from Pasadena, CA

Project Description: 00HW019 JPL

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result	
				MW-17-1 02-01118-2	MW-17-2 02-01118-3
ALKALINITY	310.1	mg/L	2	149	160
BICARBONATE ^(a)	SM2320B	mg/L	2	149	160
CARBONATE ^(a)	SM2320B	mg-CaCO ₃ /L	2	<2	<2
PH	150.1	pH unit	0.01	7.53	7.72
SOLIDS, TOTAL DISSOLVED (TDS)	160.1	mg/L	10	221	233
Dilution Factor				2	2
CHLORIDE CL ⁻	300.0	mg/L	0.2	7.9	10.1
NITRATE AS N	300.0	mg/L	0.04	0.71	0.73
SULFATE SO ₄ ⁻	300.0	mg/L	0.5	30.6	28.1
Dilution Factor				1	1
CALCIUM	200.7	µg/L	200	42,400	42,400
IRON	200.7	µg/L	50	16.4J	271
MAGNESIUM	200.7	µg/L	100	14,500	15,700
POTASSIUM	200.7	µg/L	400	2,140	2,150
SODIUM	200.7	µg/L	2000	14,700	14,700

Component Analyzed	Method	Unit	PQL	Analysis Result		
				MW-17-3 02-01118-4	MW-17-4 02-01118-5	MW-17-5 02-01118-6
ALKALINITY	310.1	mg/L	2	173	173	179
BICARBONATE ^(a)	SM2320B	mg/L	2	173	173	179
CARBONATE ^(a)	SM2320B	mg-CaCO ₃ /L	2	<2	<2	<2
PH	150.1	pH unit	0.01	8.01	7.79	7.96
SOLIDS, TOTAL DISSOLVED (TDS)	160.1	mg/L	10	235	269	259
Dilution Factor				2	2	2
CHLORIDE CL ⁻	300.0	mg/L	0.2	11.1	13.4	13.1
NITRATE AS N	300.0	mg/L	0.04	1.0	2.1	2.0
SULFATE SO ₄ ⁻	300.0	mg/L	0.5	33.1	32.0	31.2
Dilution Factor				1	1	1
CALCIUM	200.7	µg/L	200	41,200	47,800	46,200
IRON	200.7	µg/L	50	695	15.9J	117
MAGNESIUM	200.7	µg/L	100	19,000	13,300	13,300
POTASSIUM	200.7	µg/L	400	2,020	1,560	1,660
SODIUM	200.7	µg/L	2000	20,300	27,800	29,000
Dilution Factor				1	1	1
1,4-DIOXANE	8270-SIM	µg/L	3	<3	-	-

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result		
				ER-2 02-01118-1	MW-17-1 02-01118-2	MW-17-2 02-01118-3
CHROMIUM (VI)	7196	mg/L	0.01	<0.01	<0.01	<0.01
Dilution Factor				1	1	1
PERCHLORATE	E314	µg/L	4	<4	<4	<4
Dilution Factor				1	1	1
ARSENIC	200.9	µg/L	5	<5	<5	<5
VOLATILE ORGANIC COMPOUNDS						
Dilution Factor				1	1	1
CARBON TETRACHLORIDE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROFORM	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
METHYLENE CHLORIDE	524.2	µg/L	1	<1	7.3	15
TETRACHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
TRICHLOROETHENE	524.2	µg/L	0.5	<0.5	<0.5	<0.5
1,1,2-TRICHLORO-1,2,2-TRIFLUORO	524.2	µg/L	0.5	<0.5	<0.5	<0.5

Component Analyzed	Method	Unit	PQL	Analysis Result			
				MW-17-3 02-01118-4	MW-17-4 02-01118-5	MW-17-5 02-01118-6	TB-2 02-01118-7
Dilution Factor				1	1	1	1
PERCHLORATE	E314	µg/L	4	6.3	11.0	14.7	-
ARSENIC	200.9	µg/L	5	2.0J	2.9J	<5	-
CHROMIUM (VI)	7196	mg/L	0.01	<0.01	<0.01	<0.01	-
VOLATILE ORGANIC COMPOUNDS							
Dilution Factor				1	1	1	1
CARBON TETRACHLORIDE	524.2	µg/L	0.5	0.7	<0.5	<0.5	<0.5
CHLOROFORM	524.2	µg/L	0.5	1.5	1.1	1.1	<0.5
1,1-DICHLOROETHANE	524.2	µg/L	0.5	<0.5	<0.5	<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	<0.5	<0.5
TETRACHLOROETHENE	524.2	µg/L	0.5	<0.5	0.4J	<0.5	<0.5
TRICHLOROETHENE	524.2	µg/L	0.5	1.3	6.2	6.1	<0.5
1,1,2-TRICHLORO-1,2,2-TRIFLUORO	524.2	µg/L	0.5	<0.5	<0.5	<0.5	<0.5

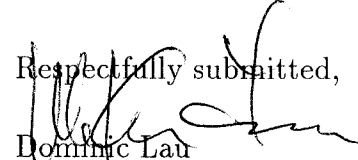
PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
 N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.

J: Reported between PQL and MDL.

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

(a) Calculated from alkalinity result by EPA 310.1

Respectfully submitted,


 Dominic Lau
 Laboratory Director
 Applied P & Ch Laboratory