DEPARTMENT OF TOXIC SUBSTANCES CONTROL

ENVIRONMENTAL CHEMISTRY LABORATORY

Contract Laboratory Audit Report
Advanced Technology Laboratories

ECL REPORT NUMBER 2009-04

October 2009

Environmental Chemistry Laboratory Report

Contract Laboratory Audit Report: Advanced Technology Laboratory

Prepared By

Audit Team

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Lorna Garcia
Contract Laboratory Assistant Manager
Juliet Tabajonda

Team Members
Jiong Cao, IT Specialist
Gurmail Sivia, Ph. D., Sample Management Officer
Jarnail Garcha, Section Chief

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Chief
Environmental Chemistry Laboratory
Department of Toxic Substances Control

1/7/2010
Date

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AUDIT REPORT

Audit of Advanced Technology Laboratories (ATL)
Environmental Chemistry Laboratory's (ECL) Contract Laboratory

PURPOSE

The audit team of Technical Support Section audited Advanced Technology Laboratories, located at Signal Hill on October 8, 2009. The purpose of the audit was to ascertain that ATL, a newly acquired contract laboratory, complies with the contract requirements specified in the Scope of Work, Agreement No. 08 - T3623 and generates good quality and legally defensible laboratory data.

AUDIT PREPARATION

An audit notification and the agenda were sent via e-mail to ATL on September 25, 2009. The date of the audit was set on October 8, 2009. ATL's updated organization Chart was requested. The Agenda is in Attachment 1 and Organization Chart is in Attachment 2

MEETING REPORT:

1. Introduction of ECL's Staff and ATL's Management Staff:
   Each staff introduced himself/herself, their titles, duties and responsibilities. Jarnail Garcha introduced himself and explained the purpose and the plan of the visit.

ECL's Staff:
Lorna Garcia, Contract Lab Manager
Juliet S. Tabajonda, Contract Lab Assistant Manager
Jiong Cao, IT Specialist
Gurmail Sivia, Sample Management Officer
Jarnail Garcha, Section Chief

ATL's Management Staff: See attachment 2
Puri Romualdo – President
Bing Roura – Technical Sales Advisor
Edwardo Rodriguez- Laboratory Director
Beth Alpante – Quality Assurance/Health and Safety Officer
Diane Galvan - Project Coordinator
Carmen Aguila - Sample Control /Field Services Manager
Rowena Quizon – Metals Analysis Supervisor
Clifford Baldrige - Inorganics Analysis Supervisor
Marmellie Ramos – Semivolatiles Analysis Supervisor
Tracy Tran Tron - Volatiles Analysis Supervisor
Junn Palpalatoc – IT Manager

2. Discussion of the Scope of Work, Agreement No. 08 -T3623 with ATL Management Staff:

   The term of the agreement expires on April 30, 2011. The importance of complying with the requirements as specified in the Scope of Work was explained and clarified. Non compliant issues should be reported to ECL for immediate resolution.

   For chain of custody, SAR and ARF: Printed names, signatures and inclusive dates were emphasized. Date gaps on the chain of custody are not acceptable. ECL must be notified for incomplete SAR, eSAR and ARF forms. ARF, SAR and electronic SAR must always be provided by the collectors upon delivering the samples.

   Holding Time must be met. If holding time cannot be met, DTSC collector must be notified prior to analysis. All communications should be documented in the SAR.

   Turn Around Time (TAT) must be met at all times. If not met, the cost of analysis will be adjusted. TAT level 1 and rush TAT must have the signature of the chief or designee in the ARF. If not provided, notify ECL and the sample collector.

   Laboratory reports and raw data (data package) must be submitted to ECL in electronic form via DTSC-FTP. On October 2, 2009, ATL submitted their first electronic laboratory report and raw data. The e-laboratory report submitted was evaluated and found to be consistent with the requirements stated in the scope of work. Some corrections were noted: The name Hazardous Materials Laboratory should be changed to Environmental Chemistry Laboratory. The sample photograph submitted has no ATL's label. An example of the correct sample photograph was provided, showing the custody seal, laboratory label with correct sample information and collector's information. ECL shall be notified for any discrepancy. ECL would routinely review the e- laboratory reports and raw data submitted.

   The procedure for submitting laboratory reports was clarified: Electronic Laboratory reports and raw data (pdf files) are submitted to Lorna Garcia and Jiong Cao via DTSC-FTP server. The laboratory reports, (no raw data) consisting of sample results, QA/QC results, ARF, SAR and sample photographs are submitted to the requestor/collector and Juliet Tabajonda via e-mail.

   The format for electronic data deliverables (EDD) transfer which would include information for the chain of custody, sample results and QA/QC results will be set up. ATL will send several examples of EDDs to ECL. One

of them or a new format will be used for data transferring between ECL and ATL.

To ensure good quality data, the QA/QC parameters will be reviewed. These include the Chain of Custody, turn around times, holding times, method blanks, laboratory control sample, matrix spike/matrix spike duplicate, sample duplicate, surrogate and other QC specified in the method. All results must be within the acceptance criteria.

After data review, the invoice will be approved for payment. The invoice is sent to Sacramento and to Juliet Tabajonda. ECL reviews the invoice for proper accounting and payment.

Only SW-846 Methods must be used for all hazardous waste analyses unless otherwise specified. No deviation from the method unless authorized by ECL

For each method, the scope of work has the list of target compounds. These target compounds must be analyzed and reported.

Communication: ECL or DTSC requestors should be contacted immediately by phone, e-mail or fax to communicate urgent issues such as insufficient amount of samples, samples past holding times or any discrepancies with the samples. Jarnail Garcha suggested that ATL proceed with the analysis to avoid further delay.

TOUR OF THE LABORATORY

Bing Roura led the ECL's staff walked through the different sections of the laboratory showing the different laboratory operations.

Sample Receiving Section: Carmen Aguila, Sample Control Manager showed how samples were received; inspected for appropriate conditions, check custody seals, proper sample containers and correct cooler temperature; logged in the LIMS system; labeled, sample photograph taken and stored at controlled temperature. Emphasis was given on the chain of custody making sure that the printed names, signatures and inclusive dates of the originator were legible and complete. The records for walk-in refrigerators temperature log and the internal chain of custody were checked. They were updated and found to be satisfactory. See attachments 4 and 5.

Semi volatiles, Volatiles, Metals and Inorganic Sections: Each section's Lead Analysts/Managers explained their routine operation. Different instruments, all modern and operational were designated for each section of the laboratory. Records for instrument maintenance log for ICP, ICP/MS, GC, GC/MS, HPCL, etc. were checked and found to be updated and satisfactory. See attachment 6.

Sample Preparation Section: Separate section for sample preparation was designed to avoid contamination. The room was equipped with apparatus and complete glassware needed for extraction and digestion.

CONCLUSION

The first audit of ATL raised awareness to ATL's management, clarified ECL's expectations, goals and set a healthy working relationship. ECL's role is to oversee the performance of the laboratory and its compliance with the contract. ECL wants to see ATL as a productive and effective laboratory that can handle samples with such integrity to stand in court. Meeting with the ATL's management was productive and opened the door for better communications and faster resolution of important issues.

ATL was successful in submitting electronic laboratory report and raw data (data package) thru DTSC-FTP server.

For the laboratory report, ATL will change the name of the laboratory from Hazardous Material Laboratory to Environmental Chemistry Laboratory. The sample photograph will be taken properly to show the custody seal, ATL's label with correct sample information and collector's information.

ECL and ATL are in the process of working together to set up the format for the transfer of electronic data deliverables to ECL's LIMs system.

ATL is willing to cooperate and open to ECL's recommendations in achieving good quality data and eliminating errors.

FUTURE ACTIVITIES

Follow-up to check if the issues are resolved, corrected and implemented
Set up the format for transfer of electronic data deliverables.
Set up for periodic testing of blind/double blind performance evaluation samples.
Set up the data review of data package
Plan the next unannounced/announced audit.

ATTACHMENT 1

AGENDA

Department of Toxic Substances Control
Environmental Chemistry Laboratory
Advanced Technology Laboratory Audit

Date: October 8, 2009 (Thursday)
Time: 10:00 AM
Location: Advanced Technology Laboratory
3275 Walnut Avenue, Signal Hill, CA 90755
Audit Team: Jarnail Garcha, Russ Chin, Gurmail Sivia, Lorna Garcia, Juliet Tabajonda, Jiong Cao

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Agenda

I. Meeting Opening - Jarnail Garcha
Introduction of ECL Staff and ATL Staff (15-30 min)

II. Tour of the Laboratory: (2 hours)
- Sample Receiving, Storage, Disposal area
- Sample Logging Procedure
- Standard Preparation.
- Sample Preparation-Digestion/Extraction
- Inorganic Lab Section - Metal analysis
- Organic Lab Section -Volatiles/Semi Volatiles analysis

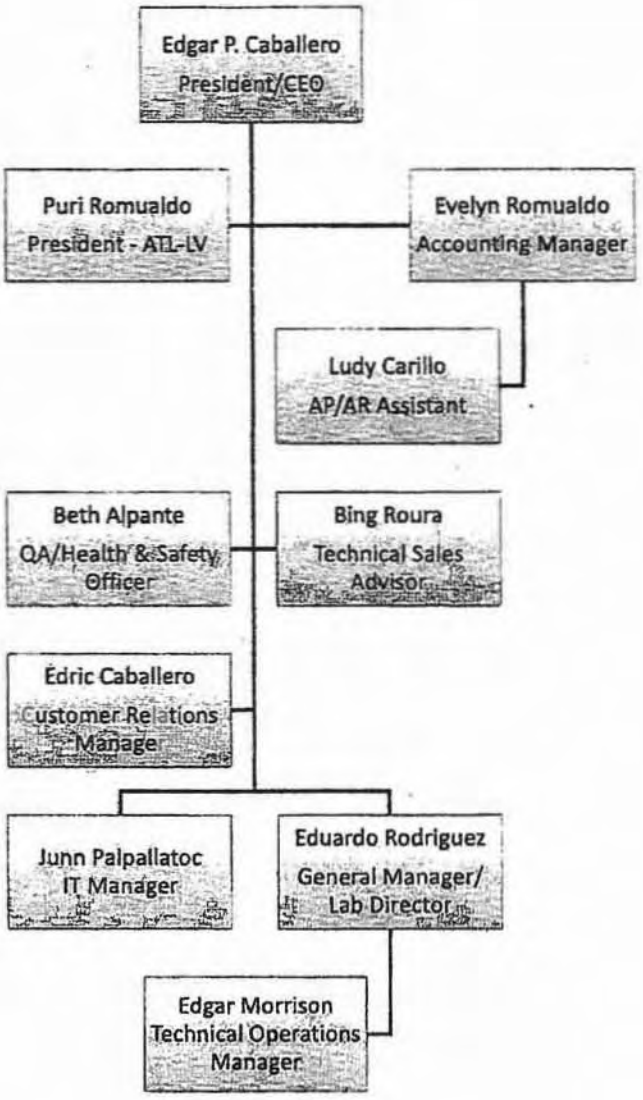
III. Meeting Discussion – Agreement No. 08-T3623, Scope of Work (2 hour)

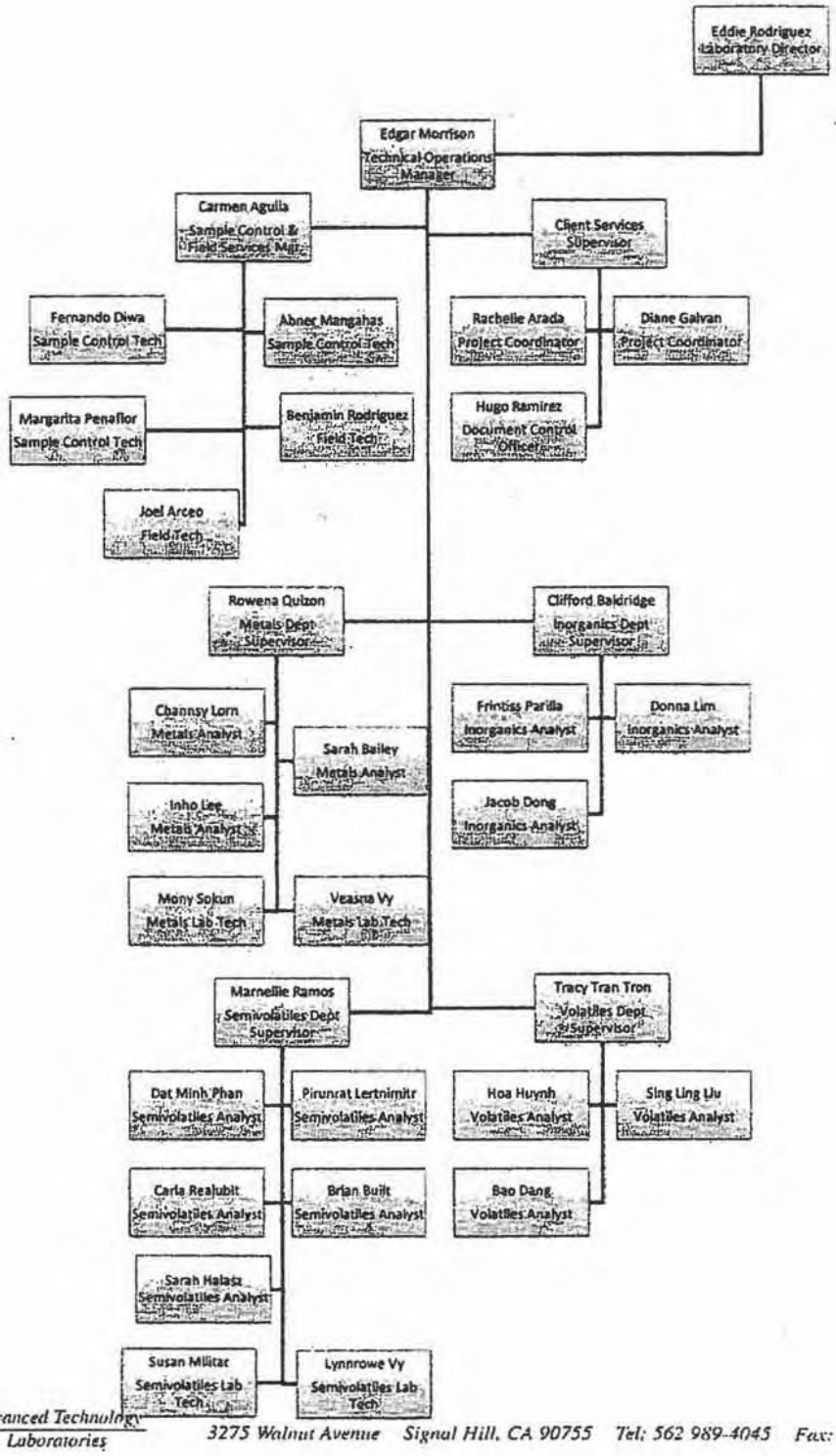
- Jarnail Garcha and Russ Chin –Formal Discussions with Lab Manager and senior project managers. Explain the DTSC Regions, collector's expectations, dropping samples or splitting samples. ECL's needs and expectation. HT, TAT and Data audits in general.
- Gurmail Sivia – Procedure for Sample Request (ARF), sample submission (SAR) and sample disposal.
- Juliet Tabajonda - Completeness of Reports, Data Review and Approval of Invoices
- Jiong Cao – Electronic Transfer of data to ECL's LIMS
- Lorna Garcia – Electronic Data Deliverables, Cost

IV. Meeting Exit - Questions/Answers (30 min).

ATTACHMENT 2

ORGANIZATION CHART


Edgar P. Caballero
President/CEO
Puri Romualdo
President - ATL-LV
Evelyn Romualdo
Accounting Manager
Ludy Carillo
AP/AR Assistant
Beth Alpante
QA/Health & Safety Officer
Bing Roura
Technical Sales Advisor
Edric Caballero
Customer Relations Manager
Junn Palpallatoc
IT Manager
Eduardo Rodriguez
General Manager/ Lab Director
Edgar Morrison
Technical Operations Manager



Advanced Technology Laboratories
3275 Walnut Avenue Signal Hill, CA 90755 Tel: 562 989-4045 Fax: 562 989-4040

ATTACHMENT 3

LABORATORY PICTURE


Advanced Technology Laboratories

ATTACHMENT 4

WALK - IN REFRIGERATOR'S TEMPERATURE LOG

SAMPLE CONTROL WALK-IN REFRIGERATORS

DATE	TIME	Temperature Reading, °C				STATUS	INITIAL	COMMENTS
		WS	WW	WV	WH			
9/04/09	4:25	5.5	3.5	5.0		P1	ACM	
9/8/09	7:35	4.5	4.0	4.5		P	ACM	
	4:15	6.0	3.5	4.5		P	ACM	
9/9/09	7:30	5.5	4.0	4.5		P	ACM	
	4:20	5.5	4.0	4.5		P	ACM	
9/10/09	8:00	4.5	4.0	5.0		P	ACM	
	4:45	5.5	3.0	5.0		P	ACM	
9/11/09	7:30	4.5	4.0	5.0		P	ACM	
		5.5	4.5	5.0		P	ACM	
9/14/09	8:00	4.5	3.5	4.5		P	ACM	
	5:00	5.5	4.0	4.5		P	ACM	
9/15/09	8:00	5.0	4.0	4.0		P	ACM	
	5:15	5.5	4.0	5.0		P	ACM	
9/16/09	7:35	4.5	3.5	4.5		P	ACM	
	5:00	5.5	3.5	4.5		P	ACM	
9/17/09	7:30	5.0	3.5	5.0		P	ACM	
	4:00	6.0	3.0	5.0		P	ACM	
9/18/09	7:25	5.5	4.0	5.0		P	ACM	
	4:00 PM	6.0	3.5	5.0		P	ACM	
9/21/09	7:30 AM	4.5	4.0	4.5		P	ACM	
	5:25 PM	5.5	4.0	4.5		P	ACM	
9-22-09	7:30	5.0	4.0	4.5		P	ACM	
	4:30	5.0	3.0	5.0		P	ACM	
9-23-09	7:30	4.5	4.0	4.5		P	ACM	
	5:00	5.5	4.0	4.5		P	ACM	
9-24-09	7:30	4.5	4.0	5.0		P	ACM	
	4:20	5.5	3.5	5.0		P	ACM	

Logbook #5

Acceptance Criteria: 2°C to 6°C
Status: P = Pass, F = Fail

SAMPLE CONTROL WALK-IN REFRIGERATORS

DATE	TIME	Temperature Reading, °C				STATUS	INITIAL	COMMENTS
		WS	WW	WV	WH			
9-25-09	7:35	5.0	3.5	4.5		P	ACH	
		5.5	4.0	5.0		P	ACH	
9-28-09	7:55	4.5	4.0	5.0		P	ACH	
	4:50	6.0	3.0	4.5		P	ACH	
9-29-09	7:40	5.0	4.0	4.5		P	ACH	
	4:58	5.5	4.0	4.5		P	ACH	
9-30-09	7:50	5.5	3.5	4.5		P	ACH	
	4:30	5.5	3.0	5.0		P	ACH	
10-1-09	7:30	4.5	3.5	5.0		P	ACH	
	4:30	5.5	3.5	5.0		P	ACH	
10-2-09	8:00	4.5	3.5	5.0		P	ACH	
		4.5	3.5	4.5		P	ACH	
10-5-09	7:30	4.5	3.5	5.0		P	ACH	
	5:00	5.5	3.5	3.5		P	ACH	
10-6-09	7:30	4.0	3.5	3.5		P	ACH	
	4:30	5.5	3.5	4.0		P	ACH	
10-7-09	7:30	4.5	4.5	5.0		P	ACH	
	5:00	5.5	3.0	5.5		P	ACH	
10-8-09	7:45	4.5	4.0	5.5		P	ACH	
	4:00	5.5	4.5	5.5		P	ACH	
10-9-09	7:30	5.5	4.0	5.0		P	ACH	
	4:30	6.0	4.0	5.5		P	ACH	
10-12-09	7:30	5.0	4.0	5.0		P	ACH	
	4:25	5.5	3.5	4.0		P	ACH	
10-13-09	7:30	5.0	3.5	5.0		P	ACH	

Logbook #5

Acceptance Criteria: 2°C to 6°C
Status: P = Pass, F = Fail

ATTACHMENT 5

INTERNAL CHAIN OF CUSTODY

DTSC-BERKELEY 9/17/2009
P-17 (DTSC) 1 1
107517-001B
107517-001B;1

ATL Internal Chain Of Custody
(Legal or Evidentiary purposes)

This Chain serves as record of possession of sample from sample receipt, sample preparation, sample analysis and storage at all periods of time. Please make sure that all entries are made using indelible ink and erasures must be done using single line.

1. Relinquished by: [illegible] Date and Time: 9/23/09 Received By: JV Date and Time: 9/23/09 5:00pm
(Signature and Printed Name) (Signature and Printed Name)
Remarks:

2. Relinquished by: JV Date and Time: 4:00pm 9/23/09 Received By: [illegible] Date and Time: 9/24/09 [illegible]
(Signature and Printed Name) (Signature and Printed Name)
Remarks:

3. Relinquished by: Date and Time: Received By: Date and Time:
(Signature and Printed Name) (Signature and Printed Name)
Remarks:

4. Relinquished by: Date and Time: Received By: Date and Time:
(Signature and Printed Name) (Signature and Printed Name)
Remarks:

5. Relinquished by: Date and Time: Received By: Date and Time:
(Signature and Printed Name) (Signature and Printed Name)
Remarks:

6. Relinquished by: Date and Time: Received By: Date and Time:
(Signature and Printed Name) (Signature and Printed Name)
Remarks:

7. Relinquished by: Date and Time: Received By: Date and Time:
(Signature and Printed Name) (Signature and Printed Name)
Remarks:

8. Relinquished by: Date and Time: Received By: Date and Time:
(Signature and Printed Name) (Signature and Printed Name)
Remarks:

ATTACHMENT 6

INSTRUMENT MAINTENANCE LOG: ICP, ICP/MS, GC, GC/MS, HPLC

INSTRUMENT INFORMATION
ADVANCED TECHNOLOGY LABORATORIES

INSTRUMENT ID: ICP-C

INSTRUMENT NAME: PERKIN ELMER OPTIMA 5300 DV

MANUFACTURER: PERKIN ELMER INSTRUMENTS

MODEL: OPTIMA 5300 DV

SERIAL NO.: 077N4062101

LOCATION: 3275 Building

INSTRUMENT MANUAL (reference to its location):

DATE RECEIVED: August 2004

DATE PLACED IN SERVICE: August 2004

CONDITION WHEN RECEIVED: New

INSTRUMENT SOFTWARE (if any): WinLab

VERSION (if any): WinLab 5.0

ICP-OES DAILY CUSTOMER MAINTENANCE

Page:___

Month/Year BS Sept 2009

I-Inspected X- Instrument off
R- Replaced N.A.- Not applicable

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Sample Introduction System															
On a weekly basis, inspect the torch, glassware, and injector tube. The glassware should be clean and dry, with no traces of deposits or signs of melting	I	I	I	I			I	I	I	I	I			I	I
On weekly basis, check that the nebulizer is not clogged.	I	I	I	I			I	I	I	I	I			I	I
Check that the nebulizer/ end cap is tightly secured to spray chamber	I	I	I	I			I	I	I	I	I			I	I
Check that the sample capillary tubing is clean and in good condition.	I	I	I	I			I	I	I	I	I			I	I
Check that the sample capillary tubing is attached to the nebulizer sample inlet.	I	I	I	I			I	I	I	I	I			I	I
Check that the RF coil is clean and dry.	I	I	I	I			I	I	I	I	I			I	I
Check that the drain fitting is secured on the spray chamber drain.	I	I	I	I			I	I	I	I	I			I	I
Analyst:	CL	CL	CL	CL			CL	CL	CL	CL	CL			CL	CL

ICP-OES DAILY CUSTOMER MAINTENANCE (continued)

Page:___

Month/Year Sept 2001

I-Inspected X- Instrument off
R- Replaced N.A.- Not applicable

Day	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Sample Introduction System																
On a weekly basis, inspect the torch, glassware, and injector tube. The glassware should be clean and dry, with no traces of deposits or signs of melting	✓	✓	✓			✓	✓	✓	✓	✓			✓	✓	✓	
On weekly basis, check that the nebulizer is not clogged.	✓	✓	✓			✓	✓	✓	✓	✓			✓	✓	✓	
Check that the nebulizer/ end cap is tightly secured to spray chamber	✓	✓	✓			✓	✓	✓	✓	✓			✓	✓	✓	
Check that the sample capillary tubing is clean and in good condition.	✓	✓	✓			✓	✓	✓	✓	✓			✓	✓	✓	
Check that the sample capillary tubing is attached to the nebulizer sample inlet.	✓	✓	✓			✓	✓	✓	✓	✓			✓	✓	✓	
Check that the RF coil is clean and dry.	✓	✓	✓			✓	✓	✓	✓	✓			✓	✓	✓	
Check that the drain fitting is secured on the spray chamber drain.	✓	✓	✓			✓	✓	✓	✓	✓			✓	✓	✓	

Analyst: CL CL CL CL CL CL CL CL CL CL CL CL CL CL CL

ICP-OES DAILY CUSTOMER MAINTENANCE (continued)

Page:___

I - Inspected D- Drained N.A.- Not applicable
D- Delivered X- Instrument off

Month/Year ~~Jul~~ Sept 2009

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
System Gases															
Check the argon supply, connnections and pressure. Make sure a spare tank is ready if necessary.	/	/	/	/			/	/	/	/	/			/	/
Check the nitrogen purge gas tank connections, supply and pressure. Make sure a spare tank is ready if necessary.	/	/	/	/			/	/	/	/	/			/	/
Check weekly the shear gas (usually compressed air) connections, supply and pressure. Make sure a spare tank is ready if necessary. Drain water in the air compressor.	/	/	/	/			/	/	/	/	/				
Check that the cylinder valves are open and that the regulators of the gases are within the proper pressure range.	/	/	/	/			/	/	/	/	/			/	/
Check for leaks at the gas connection at the instrument.	/	/	/	/			/	/	/	/	/			/	/

Analyst: [illegible]

ICP-OES DAILY CUSTOMER MAINTENANCE (continued)

I - Inspected D- Drained N.A.- Not applicable
D- Delivered X- Instrument off

Month/Year Sept 2009

Day	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
System Gases																
Check the argon supply, connnections and pressure. Make sure a spare tank is ready if necessary.	✓	✓	✓			✓	✓	✓	✓	✓			✓	✓	✓	
Check the nitrogen purge gas tank connections, supply and pressure. Make sure a spare tank is ready if necessary.	✓		✓			✓	✓	✓	✓	✓			✓	✓	✓	
Check weekly the shear gas (usually compressed air) connections, supply and pressure. Make sure a spare tank is ready If necessary. Drain water in the air compressor.	✓	✓	✓			✓	✓	✓	✓	✓			✓	✓	✓	
Check that the cylinder valves are open and that the regulators of the gases are within the proper pressure range.	✓	✓	✓			✓	✓	✓	✓	✓			✓	✓	✓	
Check for leaks at the gas connection at the Instrument.	✓	✓	✓			✓	✓	✓	✓	✓			✓	✓	✓	
Analyst:	CU	CU	CU			CU	CU	CU	CU	CU			CU	CU	CU	

ICP-OES DAILY CUSTOMER MAINTENANCE (continued)

I-Inspected E-Emptied N.A.- Not applicable
R-Replaced X- Instrument off

Month/Year Sept 2009

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Peristaltic Pump															
Check the pump drain.	✓	✓	✓	✓			✓	✓	✓	✓	✓			✓	✓
Check that the pump rollers are clean and can move freely.	✓	✓	✓	✓			✓	✓	✓	✓	✓			✓	✓
Check that the pump tubing is correctly installed around the pump head.	✓	✓	✓	✓			✓	✓	✓	✓	✓			✓	✓
Visually inspect the pump tubing. Replace the pump tubing if flat spots are visible or after every few hours of use.	✓														✓
Check that the spray chamber drain is properly set up on the peristaltic pump so that waste is pumped OUT of the spray chamber.	✓	✓	✓	✓			✓	✓	✓	✓	✓			✓	✓
Replace drain tubing if it has deteriorated.	✓														
Check that drain tubing leads to the drain bottle.	E														
Empty drain bottle when necessary.	✓	✓	✓	✓			✓	✓	✓	✓	✓			✓	✓
Release the pressure plate and release the tubing when the pump is not in use.	✓	✓	✓	✓			✓	✓	✓	✓	✓			✓	✓
Analyst:	CL	CL	CL	CL			CL	CL	CL	CL	CL			CL	CL