



ALS Paragon



Metals Case Narrative

Colorado Oil & Gas Conservation Commission

Complaint 200204222

Work Order Number: 0902200

1. This report consists of 1 water sample.
2. The sample was received cool and intact by ALS Paragon on 02/25/09.
3. The sample was to be analyzed for dissolved metals. The sample was filtered through a 0.45 micron filter and preserved with nitric acid to a pH less than two prior to analysis.
4. The sample was prepared for analysis based on Methods for the Determination of Metals in Environmental Samples – Supplement 1 procedures.

Prior to analysis by Trace ICP, an ionization buffer was added to the sample and associated QC to improve the sodium and potassium quantitation.

For analysis by Trace ICP and ICP-MS, the sample was digested following method 200.2 and SOP 806 Rev. 13.

The sample was prepared for ICP-MS analysis of arsenic and selenium by passing the digested sample and associated QC through a cation exchange column. The cation exchange column removes cations from the matrix and eliminates the CaCl^+ (mass 75) interferences on arsenic.

5. The sample was analyzed following Methods for the Determination of Metals in Environmental Samples – Supplement 1 procedures.

Analysis by Trace ICP followed method 200.7 and SOP 807 Rev. 11.

The relationship between intensity and concentration for each element is established using at least four standards, one of which is a blank solution.

During sample analysis concentrations are computed by the software and the results are printed in mg/L. The instrument software does not provide a printout which gives both intensity and concentration. The validity of the calibration equation is tested by analyzing the following



solutions: a blank, a low level check solution with concentrations near the reporting limit, an Initial Calibration Verification (ICV) standard from a 2nd source standard solution with concentrations near the middle of the analytical range, a Continuing Calibration Verification (CCV) standard with concentrations at two times those in the ICV, and a readback of the highest calibration standard.

These solutions provide verification that the calibration equations are functioning properly throughout the analytical range of the instrument. During sample analysis dilutions are made for analytes found at concentrations above the highest calibration standard. No results are taken from extrapolations beyond the highest standard.

Analysis by ICP-MS followed method 200.8 and SOP 827 Rev. 6.

The relationship between intensity and concentration for each element is established using at least four standards, one of which is a blank solution. A calibration equation relating instrument response to concentration is developed by the instrument software. The equation is a higher order polynomial. This type of equation is used to improve quantitation accuracy at lower concentrations where the relationship between concentration and instrument response is non-linear.

During sample analysis concentrations are computed by the software and the results are printed in ug/L. The validity of the calibration equation is tested by analyzing the following solutions: a blank, a low level check solution with concentrations near the reporting limit, an Initial Calibration Verification (ICV) standard from a 2nd source standard solution with concentrations near the middle of the analytical range, a Continuing Calibration Verification (CCV) standard with concentrations near the middle of the analytical range but different than those in the ICV, and a readback of the highest calibration standard.

These solutions provide verification that the calibration equations are functioning properly throughout the analytical range of the instrument. During sample analysis dilutions are made for analytes found at concentrations above the highest calibration standard. No results are taken from extrapolations beyond the highest standard.

6. All standards and solutions are NIST traceable and were used within their recommended shelf life.
7. The sample was prepared and analyzed within the established hold times.

All in house quality control procedures were followed, as described below.

8. General quality control procedures.
 - A filter (method) blank and laboratory control sample were filtered, preserved, and digested at the same time as the samples. There were not more than 20 samples associated with each filtered blank and laboratory control sample.
 - The filter (method) blank associated with each digestion batch was below the practical quantitation limit for each requested analyte.



- The laboratory control sample associated with each digestion batch was within the acceptance limits. This indicates complete digestion according to the method.
- All initial and continuing calibration blanks associated with each analytical batch were below the practical quantitation limits for the requested analytes.
- All initial and continuing calibration verifications associated with each analytical batch were within the acceptance criteria for the requested analytes. This indicates a valid calibration and stable instrument conditions.
- The interference check samples associated with Method 200.8 were analyzed, and the high standard readbacks were within acceptance criteria.
- The interference check samples and high standard readbacks associated with Method 200.7 were within acceptance criteria.

9. Matrix specific quality control procedures.

Sample 0902200-1 was designated as the quality control sample for each analysis.

Similarity of matrix and therefore relevance of the QC results should not be automatically inferred for any sample other than the native sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for accuracy were met.
- A sample duplicate and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for precision were met.
- A serial dilution was analyzed with each ICP batch. All acceptance criteria were met.

10. It is a standard ALS Paragon practice that samples for ICP-MS are analyzed at a dilution.

11. Sodium Adsorption Ratio (SAR) was determined by calculation based on a reference from the client. Calcium, magnesium, and sodium concentrations were determined by ICP, Method 200.7.

$$SAR = Na / (((Ca + Mg) / 2)^{1/2})$$

The analyte results are the me/L concentrations based on conversions from their mg/L concentrations.



The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS Paragon certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Emily Knodel
Emily Knodel
Inorganics Primary Data Reviewer

03-04-09
Date

Greg Fink
Inorganics Final Data Reviewer

3/4/09
Date



Inorganic Data Reporting Qualifiers

The following qualifiers are used by the laboratory when reporting results of inorganic analyses.

- Result qualifier -- If the analyte was analyzed for but not detected a “U” is entered.
- QC qualifier -- Specified entries and their meanings are as follows:
 - E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.
 - M - Duplicate injection precision was not met.
 - N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.
 - Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.
 - * - Duplicate analysis (relative percent difference) not within control limits.
 - S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

ALS Paragon

Sample Number(s) Cross-Reference Table

Paragon OrderNum: 0902200

Client Name: Colorado Oil & Gas Conservation Commission

Client Project Name: Complaint 200204222

Client Project Number:

Client PO Number: OE PHA 09000000004

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
Dasko WW	0902200-1		WATER	24-Feb-09	14:37
Trip Blank	0902200-2		WATER	24-Feb-09	

Report To: Peter Gintantus
Phone: 714-846-3091
Fax:
E-mail: peter.gintantus@statoil.co.us
Company: Colic Oil & Gas Cons. Comm.
Address:

Complaint 200204222

Circle method (right): provide additional information as needed (comments).

[illegible]

* Time Zone: EST CST MST PST Matrix Key: O = oil, S = soil, NS = non-soil solid, W = water, L = liquid, E = extract, F = filter

Comments:

Filter + preserve metals y/n. Except
 Animals = Br, Cl, F, Nb₂, Nb₃, Cu₂
 zoo.7 = Ba, Be, B, Ca, Cr, Cu, Fe, Li, Mg, Mn, Ni, K, Na, Zn, Sr
 zoo.8 = Sb, As, Cd, Pb, Mo, Se, Ag, Te, U

Relinquished By: John C. Cantelano
Signature John C. Cantelano
Printed Name John C. Cantelano
Date 2/26/2007 Time 17.25
Company Col. C. H. Caslow Comm.

Received By: Lara J Orban
Signature _____
Printed Name Lara J Orban
Date 2/25/09 Time 1030
Company ATSParas.com

Relinquished By: _____
 Signature _____
 Printed Name _____
 Date _____ Time _____
 Company _____

Received By: _____
Signature _____
Printed Name _____
Date _____ Time _____
Company _____

CONDITION OF SAMPLE UPON RECEIPT FORM

Paragon Analytics

Client: COGCCWorkorder No: 0902200Project Manager: AWInitials: LJODate: 2/25/09

1. Does this project require any special handling in addition to standard Paragon procedures?	YES	<u>NO</u>
2. Are custody seals on shipping containers intact?	NONE	<u>YES</u> NO
3. Are Custody seals on sample containers intact?	<u>NONE</u>	YES NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?	<u>YES</u>	NO
5. Are the COC and bottle labels complete and legible ?	<u>YES</u>	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)	<u>YES</u>	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF <u>YES</u>	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	<u>YES</u> <u>NO</u>
9. Are all aqueous non-preserved samples pH 4-9?	N/A	<u>YES</u> NO
10. Is there sufficient sample for the requested analyses?	<u>YES</u>	NO
11. Were all samples placed in the proper containers for the requested analyses?	<u>YES</u>	NO
12. Are all samples within holding times for the requested analyses?	<u>YES</u>	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)	<u>YES</u>	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: <u> </u> < green pea <u> x </u> > green pea	N/A	YES <u>NO</u>
15. Do perchlorate LCMS-MS samples have headspace? (at least 1/3 of container required)	<u>N/A</u>	YES NO
16. Were samples checked for and free from the presence of residual chlorine? (Applicable when PM has indicated samples are from a chlorinated water source; note if field preservation with sodium thiosulfate was not observed.)	<u>N/A</u>	YES NO
17. Were the samples shipped on ice?	<u>YES</u>	NO
18. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: <u>#2</u> #4	RAD ONLY <u>YES</u>	NO
Cooler #: <u>1</u>		
Temperature (°C): <u>1.16</u>		
No. of custody seals on cooler: <u>2</u>		
External µR/hr reading: <u>14</u>		
Background µR/hr reading: <u>11</u>		
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <u>YES</u> NO / NA (If no. see Form 008.)		

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

- The 125ml amber for toc analysis had no identification label.
- * The 500ml poly for metals analysis was received unpreserved.
- + Sample #2 (Trip Blank) 2 of 2 40ml vial contain headspace > pea.

If applicable, was the client contacted? YES / NO / NA Contact: Peter GintantasDate/Time: e-mail
2/25/09Project Manager Signature / Date: AW 2/25/09

*IR Gun #2: Oakton, SN 29922500201-0066

*IR Gun #4: Oakton, SN 2372220101-0002

Dissolved Metals by 200.7

Method EPA200.7 Revision 4.4

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0902200

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200204222

Field ID: Dasko WW

Lab ID: 0902200-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 24-Feb-09

Date Extracted: 27-Feb-09

Date Analyzed: 02-Mar-09

Prep Method: EPA200.2 Rev 2.8

Prep Batch: IP090227-2

QCBatchID: IP090227-2-1

Run ID: IT090302-2A3

Cleanup: NONE

Basis: As Received

File Name: 090302A.

Sample Aliquot: 50 g

Final Volume: 50 g

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7440-39-3	BARIUM	1	0.11	0.1		
7440-41-7	BERYLLIUM	1	0.002	0.002	U	
7440-42-8	BORON	1	0.1	0.1	U	
7440-70-2	CALCIUM	1	20	1		
7440-47-3	CHROMIUM	1	0.01	0.01	U	
7440-48-4	COBALT	1	0.01	0.01	U	
7440-50-8	COPPER	1	0.01	0.01	U	
7439-89-6	IRON	1	0.1	0.1	U	
7439-93-2	LITHIUM	1	0.01	0.01		
7439-95-4	MAGNESIUM	1	1.9	1		
7439-96-5	MANGANESE	1	0.01	0.01	U	
7440-02-0	NICKEL	1	0.02	0.02	U	
7440-09-7	POTASSIUM	1	1	1	U	
7440-23-5	SODIUM	1	89	1		
	SODIUM ADSORPTION RATIO	1	5.1	0.17		
7440-24-6	STRONTIUM	1	0.48	0.01		
7440-66-6	ZINC	1	0.02	0.02	U	

Data Package ID: IT0902200-1

Date Printed: Wednesday, March 04, 2009

ALS Paragon

Page 1 of 1

LIMS Version: 6.248A

Dissolved Metals by 200.8

Method EPA200.8 Revision 5.4

Sample Results

Lab Name: ALS Paragon

Work Order Number: 0902200

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200204222

Field ID:	Dasko WW
Lab ID:	0902200-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 24-Feb-09

Date Extracted: 27-Feb-09

Date Analyzed: 02-Mar-09

Prep Method: EPA200.2 Rev 2.8

Prep Batch: IP090227-2

QCBatchID: IP090227-2-2

Run ID: IM090302-1A3

Cleanup: NONE

Basis: As Received

File Name: 02MAR09A

Sample Aliquot: 50 g

Final Volume: 50 g

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7440-36-0	ANTIMONY	10	0.3	0.3	U	
7440-38-2	ARSENIC	10	2	2	U	
7440-43-9	CADMIUM	10	0.3	0.3	U	
7439-92-1	LEAD	10	0.5	0.5	U	
7439-98-7	MOLYBDENUM	10	1.4	1		
7782-49-2	SELENIUM	10	1	1	U	
7440-22-4	SILVER	10	0.1	0.1	U	
7440-28-0	THALLIUM	10	0.2	0.2	U	
7440-61-1	URANIUM	10	0.12	0.1		

Data Package ID: IM0902200-1

Date Printed: Wednesday, March 04, 2009

ALS Paragon

LIMS Version: 6.248A

Page 1 of 1

Metals by 200.7

Method EPA200.7 Revision 4.4

Method Blank

Lab Name: ALS Paragon

Work Order Number: 0902200

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200204222

Lab ID: F090226-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 27-Feb-09

Date Analyzed: 02-Mar-09

Prep Method: EPA200.2 Rev 2.8

Prep Batch: IP090227-2

QCBatchID: IP090227-2-1

Run ID: IT090302-2A3

Cleanup: NONE

Basis: N/A

File Name: 090302A.

Sample Aliquot: 50 g

Final Volume: 50 g

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7440-39-3	BARIUM	1	0.1	0.1	U	
7440-41-7	BERYLLIUM	1	0.002	0.002	U	
7440-42-8	BORON	1	0.1	0.1	U	
7440-70-2	CALCIUM	1	1	1	U	
7440-47-3	CHROMIUM	1	0.01	0.01	U	
7440-48-4	COBALT	1	0.01	0.01	U	
7440-50-8	COPPER	1	0.01	0.01	U	
7439-89-6	IRON	1	0.1	0.1	U	
7439-93-2	LITHIUM	1	0.01	0.01	U	
7439-95-4	MAGNESIUM	1	1	1	U	
7439-96-5	MANGANESE	1	0.01	0.01	U	
7440-02-0	NICKEL	1	0.02	0.02	U	
7440-09-7	POTASSIUM	1	1	1	U	
7440-23-5	SODIUM	1	1	1	U	
7440-24-6	STRONTIUM	1	0.01	0.01	U	
7440-66-6	ZINC	1	0.02	0.02	U	

Data Package ID: IT0902200-1

Date Printed: Wednesday, March 04, 2009

ALS Paragon

LIMS Version: 6.248A

Page 1 of 1

Metals by 200.7

Method EPA200.7 Revision 4.4

Laboratory Control Sample

Lab Name: ALS Paragon

Work Order Number: 0902200

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200204222

Lab ID: F090226-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 02/27/2009

Date Analyzed: 03/02/2009

Prep Method: EPA200.22.8

Prep Batch: IP090227-2

QCBatchID: IP090227-2-1

Run ID: IT090302-2A3

Cleanup: NONE

Basis: N/A

File Name: 090302A.

Sample Aliquot: 50 g

Final Volume: 50 g

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
7440-39-3	BARIUM	2	2.13	0.1		107	85 - 115%
7440-41-7	BERYLLIUM	0.05	0.0503	0.002		101	85 - 115%
7440-42-8	BORON	1	1.05	0.1		105	85 - 115%
7440-70-2	CALCIUM	40	41.6	1		104	85 - 115%
7440-47-3	CHROMIUM	0.2	0.198	0.01		99	85 - 115%
7440-48-4	COBALT	0.5	0.517	0.01		103	85 - 115%
7440-50-8	COPPER	0.25	0.26	0.01		104	85 - 115%
7439-89-6	IRON	1	1.01	0.1		101	85 - 115%
7439-93-2	LITHIUM	0.5	0.503	0.01		101	85 - 115%
7439-95-4	MAGNESIUM	40	42.5	1		106	85 - 115%
7439-96-5	MANGANESE	0.5	0.487	0.01		97	85 - 115%
7440-02-0	NICKEL	0.5	0.543	0.02		109	85 - 115%
7440-09-7	POTASSIUM	40	40.6	1		101	85 - 115%
7440-23-5	SODIUM	40	42.2	1		106	85 - 115%
7440-24-6	STRONTIUM	0.5	0.523	0.01		105	85 - 115%
7440-66-6	ZINC	0.5	0.526	0.02		105	85 - 115%

Data Package ID: IT0902200-1

Date Printed: Wednesday, March 04, 2009

ALS Paragon

LIMS Version: 6.248A

Page 1 of 1

Metals by 200.7

Method EPA200.7 Revision 4.4

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Paragon
Work Order Number: 0902200
Client Name: Colorado Oil & Gas Conservation Commission
ClientProject ID: Complaint 200204222

Field ID: Dasko WW LabID: 0902200-1MS	Sample Matrix: WATER % Moisture: N/A Date Collected: 24-Feb-09 Date Extracted: 27-Feb-09 Date Analyzed: 02-Mar-09 Prep Method: EPA200.2 Rev 2.8	Prep Batch: IP090227-2 QCBatchID: IP090227-2-1 Run ID: IT090302-2A3 Cleanup: NONE Basis: As Received	Sample Aliquot: 50 g Final Volume: 50 g Result Units: MG/L File Name: 090302A.
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CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7440-39-3	BARIIUM	0.11		2.18		0.1	2	104	70 - 130%
7440-41-7	BERYLLIUM	0.002	U	0.0483		0.002	0.05	97	70 - 130%
7440-42-8	BORON	0.1	U	1.04		0.1	1	104	70 - 130%
7440-70-2	CALCIUM	20		59.2		1	40	99	70 - 130%
7440-47-3	CHROMIUM	0.01	U	0.189		0.01	0.2	95	70 - 130%
7440-48-4	COBALT	0.01	U	0.5		0.01	0.5	100	70 - 130%
7440-50-8	COPPER	0.01	U	0.261		0.01	0.25	104	70 - 130%
7439-89-6	IRON	0.1	U	0.976		0.1	1	98	70 - 130%
7439-93-2	LITHIUM	0.01		0.566		0.01	0.5	111	70 - 130%
7439-95-4	MAGNESIUM	1.9		42.3		1	40	101	70 - 130%
7439-96-5	MANGANESE	0.01	U	0.467		0.01	0.5	93	70 - 130%
7440-02-0	NICKEL	0.02	U	0.525		0.02	0.5	105	70 - 130%
7440-09-7	POTASSIUM	1	U	50.6		1	40	126	70 - 130%
7440-23-5	SODIUM	89		129		1	40	102	70 - 130%
7440-24-6	STRONTIUM	0.48		0.991		0.01	0.5	101	70 - 130%
7440-66-6	ZINC	0.02	U	0.494		0.02	0.5	99	70 - 130%

Data Package ID: IT0902200-1

Date Printed: Wednesday, March 04, 2009

ALS Paragon

LIMS Version: 6.248A

Page 1 of 2

Metals by 200.7

Method EPA200.7 Revision 4.4

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Paragon
Work Order Number: 0902200
Client Name: Colorado Oil & Gas Conservation Commission
ClientProject ID: Complaint 200204222

Field ID: Dasko WW

LabID: 0902200-1MSD

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 24-Feb-09

Date Extracted: 27-Feb-09

Date Analyzed: 02-Mar-09

Prep Method: EPA200.2 Rev 2.8

Prep Batch: IP090227-2

QCBatchID: IP090227-2-1

Run ID: IT090302-2A3

Cleanup: NONE

Basis: As Received

Sample Aliquot: 50 g

Final Volume: 50 g

Result Units: MG/L

File Name: 090302A.

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
7440-39-3	BARIUM	2.17		2	103	0.1	20	0
7440-41-7	BERYLLIUM	0.0487		0.05	97	0.002	20	1
7440-42-8	BORON	1.04		1	104	0.1	20	1
7440-70-2	CALCIUM	60		40	101	1	20	1
7440-47-3	CHROMIUM	0.19		0.2	95	0.01	20	0
7440-48-4	COBALT	0.503		0.5	101	0.01	20	1
7440-50-8	COPPER	0.26		0.25	104	0.01	20	0
7439-89-6	IRON	0.98		1	98	0.1	20	0
7439-93-2	LITHIUM	0.564		0.5	111	0.01	20	0
7439-95-4	MAGNESIUM	42.6		40	102	1	20	1
7439-96-5	MANGANESE	0.47		0.5	94	0.01	20	1
7440-02-0	NICKEL	0.53		0.5	106	0.02	20	1
7440-09-7	POTASSIUM	50.5		40	126	1	20	0
7440-23-5	SODIUM	130		40	103	1	20	0
7440-24-6	STRONTIUM	0.992		0.5	102	0.01	20	0
7440-66-6	ZINC	0.502		0.5	100	0.02	20	2

Data Package ID: IT0902200-1

Date Printed: Wednesday, March 04, 2009

ALS Paragon

LIMS Version: 6.248A

Page 2 of 2

Metals by 200.8

Method EPA200.8 Revision 5.4

Method Blank

Lab Name: ALS Paragon

Work Order Number: 0902200

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200204222

Lab ID: F090226-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 27-Feb-09

Date Analyzed: 02-Mar-09

Prep Method: EPA200.2 Rev 2.8

Prep Batch: IP090227-2

QCBatchID: IP090227-2-2

Run ID: IM090302-1A3

Cleanup: NONE

Basis: N/A

File Name: 02MAR09A

Sample Aliquot: 50 g

Final Volume: 50 g

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	Reporting Limit	Result Qualifier	EPA Qualifier
7440-36-0	ANTIMONY	10	0.3	0.3	U	
7440-38-2	ARSENIC	10	2	2	U	
7440-43-9	CADMIUM	10	0.3	0.3	U	
7439-92-1	LEAD	10	0.5	0.5	U	
7439-98-7	MOLYBDENUM	10	1	1	U	
7782-49-2	SELENIUM	10	1	1	U	
7440-22-4	SILVER	10	0.1	0.1	U	
7440-28-0	THALLIUM	10	0.2	0.2	U	
7440-61-1	URANIUM	10	0.1	0.1	U	

Data Package ID: IM0902200-1

Date Printed: Wednesday, March 04, 2009

ALS Paragon

LIMS Version: 6.248A

Page 1 of 1

Metals by 200.8

Method EPA200.8 Revision 5.4

Laboratory Control Sample

Lab Name: ALS Paragon

Work Order Number: 0902200

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200204222

Lab ID: FM90226-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 02/27/2009

Date Analyzed: 03/02/2009

Prep Method: EPA200.22.8

Prep Batch: IP090227-2

QCBatchID: IP090227-2-2

Run ID: IM090302-1A3

Cleanup: NONE

Basis: N/A

File Name: 02MAR09A

Sample Aliquot: 50 g

Final Volume: 50 g

Result Units: UG/L

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
7440-36-0	ANTIMONY	20	20	0.3		100	85 - 115%
7440-38-2	ARSENIC	40	38.9	2		97	85 - 115%
7440-43-9	CADMIUM	20	20.5	0.3		102	85 - 115%
7439-92-1	LEAD	100	101	0.5		101	85 - 115%
7439-98-7	MOLYBDENUM	20	20.5	1		103	85 - 115%
7782-49-2	SELENIUM	40	37.9	1		95	85 - 115%
7440-22-4	SILVER	20	20.8	0.1		104	85 - 115%
7440-28-0	THALLIUM	1	0.868	0.2		87	85 - 115%
7440-61-1	URANIUM	20	20.3	0.1		102	85 - 115%

Data Package ID: IM0902200-1

Date Printed: Wednesday, March 04, 2009

ALS Paragon

LIMS Version: 6.248A

Page 1 of 1

Metals by 200.8

Method EPA200.8 Revision 5.4

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Paragon

Work Order Number: 0902200

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200204222

Field ID: Dasko WW

LabID: 0902200-1MS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 24-Feb-09

Date Extracted: 27-Feb-09

Date Analyzed: 02-Mar-09

Prep Method: EPA200.2 Rev 2.8

Prep Batch: IP090227-2

QCBatchID: IP090227-2-2

Run ID: IM090302-1A3

Cleanup: NONE

Basis: As Received

Sample Aliquot: 50 g

Final Volume: 50 g

Result Units: UG/L

File Name: 02MAR09A

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
7440-36-0	ANTIMONY	0.3	U	19.9		0.3	20	100	70 - 130%
7440-38-2	ARSENIC	2	U	38.6		2	40	97	70 - 130%
7440-43-9	CADMIUM	0.3	U	19.7		0.3	20	99	70 - 130%
7439-92-1	LEAD	0.5	U	102		0.5	100	102	70 - 130%
7439-98-7	MOLYBDENUM	1.4		21.3		1	20	100	70 - 130%
7782-49-2	SELENIUM	1	U	38.1		1	40	95	70 - 130%
7440-22-4	SILVER	0.1	U	20.5		0.1	20	103	70 - 130%
7440-28-0	THALLIUM	0.2	U	0.885		0.2	1	89	70 - 130%
7440-61-1	URANIUM	0.12		20.8		0.1	20	103	70 - 130%

Data Package ID: IM0902200-1

Date Printed: Wednesday, March 04, 2009

ALS Paragon

LIMS Version: 6.248A

Page 1 of 2

Metals by 200.8

Method EPA200.8 Revision 5.4

Matrix Spike And Matrix Spike Duplicate

Lab Name: ALS Paragon

Work Order Number: 0902200

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200204222

Field ID: Dasko WW

LabID: 0902200-1MSD

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 24-Feb-09

Date Extracted: 27-Feb-09

Date Analyzed: 02-Mar-09

Prep Method: EPA200.2 Rev 2.8

Prep Batch: IP090227-2

QCBatchID: IP090227-2-2

Run ID: IM090302-1A3

Cleanup: NONE

Basis: As Received

Sample Aliquot: 50 g

Final Volume: 50 g

Result Units: UG/L

File Name: 02MAR09A

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
7440-36-0	ANTIMONY	20		20	100	0.3	20	0
7440-38-2	ARSENIC	39.8		40	100	2	20	3
7440-43-9	CADMIUM	20.1		20	100	0.3	20	2
7439-92-1	LEAD	103		100	103	0.5	20	1
7439-98-7	MOLYBDENUM	21.9		20	103	1	20	3
7782-49-2	SELENIUM	37.7		40	94	1	20	1
7440-22-4	SILVER	20.5		20	103	0.1	20	0
7440-28-0	THALLIUM	0.919		1	92	0.2	20	
7440-61-1	URANIUM	20.9		20	104	0.1	20	1

Data Package ID: IM0902200-1

Date Printed: Wednesday, March 04, 2009

ALS Paragon

LIMS Version: 6.248A

Page 2 of 2