



# ALS Paragon



## Inorganics Case Narrative

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### Colorado Oil & Gas Conservation Commission

Complaint 200204501

Work Order Number: 0904037

1. This report consists of 1 water sample.
2. The sample was received cool and intact by ALS Paragon on 04/03/09.
3. The sample was prepared for analysis based on Methods for the Chemical Analysis of Waters and Wastes (MCAWW), May 1994 procedures and Environmental Monitoring Systems Laboratory (EMSL) Rev 2.1 procedures.
4. The sample was analyzed following MCAWW and EMSL procedures for the following methods:

<u>Analyte</u>	<u>Method</u>	<u>SOP #</u>
Alkalinity	310.1	1106 Rev 7
Bicarbonate	310.1	1106 Rev 7
Carbonate	310.1	1106 Rev 7
pH	150.1	1126 Rev 16
Specific conductance	120.1	1128 Rev 9
TDS	160.1	1101 Rev 10
Bromide	300.0	1113 Rev 11
Chloride	300.0	1113 Rev 11
Fluoride	300.0	1113 Rev 11
Nitrate as N	300.0	1113 Rev 11
Nitrite as N	300.0	1113 Rev 11
Sulfate	300.0	1113 Rev 11

5. All standards and solutions were used within their recommended shelf life.
6. The sample was prepared and analyzed within the established hold time for each analysis.

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

7. General quality control procedures.



- n A preparation (method) blank and laboratory control sample (LCS) were prepared and analyzed with the samples in each applicable preparation batch. There were not more than 20 samples in each preparation batch.
- n The method blank associated with each applicable batch was below the reporting limit for the requested analytes. This indicates that no contaminants were introduced to the samples during preparation and analysis.
- n The LCS was within the acceptance limits for each applicable analysis.
- n All initial and continuing calibration blanks (ICB/CCB) associated with each applicable analytical batch were below the reporting limit for the requested analytes with the exception of CCB1 for fluoride. None of the samples associated with this order number were bracketed by this CCB. The method blank was below the reporting limit.
- n All initial and continuing calibration verifications (ICV/CCV) associated with each applicable analytical batch were within the acceptance criteria for the requested analytes. This indicates a valid calibration and stable instrument conditions.

8. Matrix specific quality control procedures.

Sample 0904037-1 was designated as the quality control sample for the bromide, chloride, nitrate as N, nitrite as N, and sulfate analysis. Per method requirements, matrix QC was performed for the alkalinity, bicarbonate, carbonate, pH, specific conductance, TDS, and fluoride analyses. Since a sample from this order number was not the selected quality control (QC) sample, matrix specific QC results are not included in this report.

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.

- n A matrix spike (MS) and matrix spike duplicate (MSD) were prepared and analyzed with the bromide, chloride, nitrate as N, nitrite as N, and sulfate batch. All guidance criteria for precision and accuracy were met.

9. Reduced aliquots were taken of the sample for the alkalinity, bicarbonate, and carbonate analysis. Reporting limits were elevated accordingly.

10. Manual integrations are performed when needed to provide consistent and defensible data following the guidelines in SOP 939 Revision 3.



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.

Megan Johnson  
Megan Johnson  
Inorganics Primary Data Reviewer

4/13/09  
Date

C. A. L. T.  
Inorganics Final Data Reviewer

4/13/09  
Date



### **Inorganic Data Reporting Qualifiers**

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

- Concentration qualifier -- If the analyte was analyzed for but not detected a “U” is entered.
- QC qualifier -- Specified entries and their meanings are as follows:
  - N - Spiked sample recovery not within control limits.
  - \* - Duplicate analysis (relative percent difference) not within control limits.
  - Z - Calibration spike recovery not within control limits.

# ALS Paragon

## Sample Number(s) Cross-Reference Table

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**Paragon OrderNum:** 0904037

**Client Name:** Colorado Oil & Gas Conservation Commission

**Client Project Name:** Complaint 200204501

**Client Project Number:**

**Client PO Number:** OE PHA 09000000004

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Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
Dahl WW	0904037-1		WATER	02-Apr-09	12:18
Trip Blank	0904037-2		WATER	02-Apr-09	



**Paragon Analyticals**

225 Commerce Drive Fort Collins, CO 80524  
800-443-1511 or (970) 490-1511 (970) 490-1522 Fax

**Chain-of-Custody**

Accession Number (LAB ID) **0904037**  
Date **4/19/07** Page **1** of **1**  
Originator: Retain pink copy!

Project Name/No.: **Contaminants** Turnaround (circle one) **Standard** or **Rush** (Due **14 days**) Dispose: Date **30 days** or Return to Client

Report To: **Peter Gintautas**  
Phone: **719-846-3691**  
Fax:  
E-mail: **Peter.gintautas@state.co.us**  
Company: **Colo. C.I.T Gas Cons. Comm**  
Address:

Complaint **700-04501**

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

Sample ID	Date	Time*	Lab ID	Matrix	Preservative (indicate type: HCl, etc.)	No. of Containers
Dahl WW	4/19/07	Pile	①	W	none	
↓			↓		HCl	
Trip Blank			②		H <sub>2</sub> O <sub>2</sub>	
					HCl	

Method	SW#	Result
VOCS	SW8260B-25 Full + TICs	X
BTEX (only in off-gas, off-line)	SW8270C- Full + TICs	X
SVOCs	SW8270C- Full + TICs	X
OC Pesticides	SW8081A	X
PCBs	SW8082	
Herbicides	SW8151A	
Explosives	SW8330	
TCLP Organics	SW8260B 8270C 8081A 8151A	
TCLP Metals	SW610B 7470	
Total Metals by ICP Hg	SW610B 7470 7471 E200.7	
Dissolved Metals by ICP Hg	SW610B 7470 E200.7	X
Total Metals by ICP/MS	SW620A E200.8	X
Dissolved Metals by ICP/MS	SW620A E200.8	X
Hexachlorocyclopentadiene (HxCPCD)	SW1706A (specify in comments)	X
Inorganic Anions	SW9056 E300.0 (specify in comments)	X
Solids:	Total E160.3 TDS E160.1 TSS E160.2	X
pH	SW9040B SW9045C	X
TPH	SW8015B GRO DRO (circle one or both)	X
Gross Alpha / Beta	SW9310 E900.0	
Actinides by Paragon SOP	Pu / U / Am / Th / Cm /	
Tritium	E906.0	
Total Alpha-Emitting Radium	SW9315 E903.0	
Radium 226	E903.1	
Radium 228	SW9320 E904.0	
Strontium 90 (Total RadioSr)	D5811-00	
Gamma Isotopes	E901.1	
Radon 222	SM7510Rn	

\* 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:  
 Anions = Br, Cl, F, NO<sub>2</sub>, NO<sub>3</sub>, SO<sub>4</sub>  
 Dissolved = Filter + Preserve at Lab  
 200.7 = Br, Be, B, Ca, Cr, Co, Cu, Fe, Li, Mg, Mn, Ni, Pb, Na, Sr, Zn  
 200.8 = Sb, As, Cd, Pb, Mo, Se, Ag, Te, U

Relinquished By: Signature <u>[Signature]</u> Printed Name <u>Peter Gintautas</u> Date <u>4/19/07</u> Time <u>16:10</u> Company <u>Colo. C.I.T.</u>	Relinquished By: Signature _____ Printed Name _____ Date _____ Time _____ Company _____
Received By: Signature <u>[Signature]</u> Printed Name <u>Lara J Orban</u> Date <u>4/3/07</u> Time <u>10:08</u> Company <u>ALS Paragon</u>	Received By: Signature _____ Printed Name _____ Date _____ Time _____ Company _____

CONDITION OF SAMPLE UPON RECEIPT FORM

Paragon Analytics

Client: LOGCC

Workorder No: 0904037

Project Manager: AW

Initials: LJO

Date: 4/3/09

1. Does this project require any <b>special handling</b> in addition to standard Paragon procedures?	YES	<input checked="" type="radio"/> NO
2. Are custody <b>seals</b> on <b>shipping containers</b> intact?	NONE	<input checked="" type="radio"/> YES <input type="radio"/> NO
3. Are Custody seals on <b>sample containers</b> intact?	<u>4/3/09</u> NONE	<input checked="" type="radio"/> YES <input type="radio"/> NO
4. Is there a <b>COC (Chain-of-Custody)</b> present or other representative documents?	<input checked="" type="radio"/> YES	<input type="radio"/> NO
5. Are the <b>COC and bottle labels complete and legible</b> ?	<input checked="" type="radio"/> YES	<input type="radio"/> NO
6. Is the <b>COC in agreement</b> with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)	<input checked="" type="radio"/> YES	<input type="radio"/> NO
7. Were <b>airbills / shipping documents</b> present and/or removable?	DROP OFF: <input checked="" type="radio"/> YES	<input type="radio"/> NO
8. Are all aqueous <b>samples requiring preservation preserved correctly</b> ? (excluding volatiles)	N/A	<input checked="" type="radio"/> YES <input checked="" type="radio"/> NO *
9. Are all aqueous <b>non-preserved samples pH 4-9</b> ?	N/A	<input checked="" type="radio"/> YES <input type="radio"/> NO
10. Is there <b>sufficient sample</b> for the requested analyses?	<input checked="" type="radio"/> YES	<input type="radio"/> NO
11. Were all samples placed in the <b>proper containers</b> for the requested analyses?	<input checked="" type="radio"/> YES	<input type="radio"/> NO
12. Are all samples within <b>holding times</b> for the requested analyses?	<input checked="" type="radio"/> YES	<input type="radio"/> NO
13. Were all sample containers received <b>intact</b> ? (not broken or leaking, etc.)	<input checked="" type="radio"/> YES	<input type="radio"/> NO
14. Are all samples requiring <b>no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon)</b> headspace free? <b>Size of bubble:</b> <u>    </u> < green pea <u>    </u> > green pea	N/A	<input checked="" type="radio"/> YES <input type="radio"/> NO
15. Do perchlorate LCMS-MS samples <b>have</b> headspace? (at least 1/3 of container required)	<input checked="" type="radio"/> N/A	<input type="radio"/> YES <input type="radio"/> NO
16. Were samples checked for and free from the presence of <b>residual chlorine</b> ? (Applicable when PM has indicated samples are from a chlorinated water source; note if field preservation with sodium thiosulfate was not observed.)	<input checked="" type="radio"/> N/A	<input type="radio"/> YES <input type="radio"/> NO
17. Were the samples <b>shipped on ice</b> ?	<input checked="" type="radio"/> YES	<input type="radio"/> NO
18. Were cooler temperatures measured at 0.1-6.0°C? <b>IR gun used*:</b> <input checked="" type="radio"/> #2 <input type="radio"/> #4 <input type="radio"/> RAD ONLY	<input checked="" type="radio"/> YES	<input type="radio"/> NO
Cooler #: <u>1</u>		
Temperature (°C): <u>1.8</u>		
No. of custody seals on cooler: <u>1</u>		
DOT Survey/Acceptance Information	External µR/hr reading: <u>12</u>	
	Background µR/hr reading: <u>12</u>	
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <input checked="" type="radio"/> YES <input type="radio"/> NO <input type="radio"/> NA (If no. see Form 008.)		

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

\* The 500ml poly for metals analysis was received unpreserved. coc asks for it to be filtered and preserved upon receipt.

If applicable, was the client contacted? YES / NO / NA Contact: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Project Manager Signature / Date: AW 4/3/09

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

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

# BICARBONATE AS CaCO3

Method EPA310.1

## Sample Results

Lab Name: ALS Paragon

Client Name: Colorado Oil & Gas Conservation Commission

Client Project ID: Complaint 200204501

Work Order Number: 0904037

Final Volume: 100 ml

Reporting Basis: As Received

Matrix: WATER

Prep Method: NONE

Result Units: MG/L

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Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
Dahl WW	0904037-1	04/02/2009	04/03/2009	04/03/2009	N/A	1	200	20		25 ml

### Comments:

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1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *ak0904037-1*

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Date Printed: Thursday, April 09, 2009

ALS Paragon

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# CARBONATE AS CaCO3

Method EPA310.1

## Sample Results

Lab Name: ALS Paragon

Client Name: Colorado Oil & Gas Conservation Commission

Client Project ID: Complaint 200204501

Work Order Number: 0904037

Final Volume: 100 ml

Reporting Basis: As Received

Matrix: WATER

Prep Method: NONE

Result Units: MG/L

---

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
Dahl WW	0904037-1	04/02/2009	04/03/2009	04/03/2009	N/A	1	20	20	U	25 ml

### Comments:

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1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *ak0904037-1*

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Date Printed: Thursday, April 09, 2009

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# TOTAL ALKALINITY AS CaCO3

Method EPA310.1

## Sample Results

Lab Name: ALS Paragon

Client Name: Colorado Oil & Gas Conservation Commission

Client Project ID: Complaint 200204501

Work Order Number: 0904037

Final Volume: 100 ml

Reporting Basis: As Received

Matrix: WATER

Prep Method: NONE

Result Units: MG/L

---

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag	Sample Aliquot
Dahl WW	0904037-1	04/02/2009	04/03/2009	04/03/2009	N/A	1	210	20		25 ml

### Comments:

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1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *ak0904037-1*

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Date Printed: Thursday, April 09, 2009

ALS Paragon

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LIMS Version: 6.254A

# pH

## Method EPA150.1

### Sample Results

Lab Name: ALS Paragon

Work Order Number: 0904037

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200204501

Field ID:	Dahl WW
Lab ID:	0904037-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 02-Apr-09

Date Extracted: 03-Apr-09

Date Analyzed: 03-Apr-09

Prep Method: NONE

Prep Batch: PH090403-1

QCBatchID: PH090403-1-1

Run ID: ph090403-1a

Cleanup: NONE

Basis: As Received

File Name:

Sample Aliquot: 20 ml

Final Volume: 20 ml

Result Units: pH

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
10-29-7	PH	1	8.67	0.1		

Data Package ID: *ph0904037-1*

# Specific Conductance in Water

## Method EPA120.1

### Sample Results

Lab Name: ALS Paragon

Work Order Number: 0904037

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200204501

Field ID:	Dahl WW
Lab ID:	0904037-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 02-Apr-09

Date Extracted: 03-Apr-09

Date Analyzed: 03-Apr-09

Prep Method: NONE

Prep Batch: SC090403-1

QCBatchID: SC090403-1-1

Run ID: sc090403-1a

Cleanup: NONE

Basis: As Received

File Name:

Sample Aliquot: 45 ml

Final Volume: 45 ml

Result Units: umhos/cm

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
10-34-4	SPECIFIC CONDUCTIVITY	1	502	1		

Data Package ID: sc0904037-1

# Total Dissolved Solids

## Method EPA160.1

### Sample Results

Lab Name: ALS Paragon

Work Order Number: 0904037

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200204501

Field ID:	Dahl WW
Lab ID:	0904037-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 02-Apr-09

Date Extracted: 03-Apr-09

Date Analyzed: 06-Apr-09

Prep Method: METHOD

Prep Batch: TD090403-1

QCBatchID: TD090403-1-1

Run ID: td090406-1a

Cleanup: NONE

Basis: As Received

File Name: Manual Entry

Sample Aliquot: 100 ml

Final Volume: 100 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
10-33-3	TOTAL DISSOLVED SOLIDS	1	320	20		

Data Package ID: *td0904037-1*

Date Printed: Thursday, April 09, 2009

ALS Paragon

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LIMS Version: 6.254A

# Ion Chromatography

## Method EPA300.0 Revision 2.1

### Sample Results

Lab Name: ALS Paragon

Work Order Number: 0904037

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200204501

Field ID:	Dahl WW
Lab ID:	0904037-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 02-Apr-09

Date Extracted: 06-Apr-09

Date Analyzed: 06-Apr-09

Prep Method: NONE

Prep Batch: IC090406-1

QCBatchID: IC090406-1-1

Run ID: ic090406-1a

Cleanup: NONE

Basis: As Received

File Name: 90406\_019.DXD

Sample Aliquot: 5 ml

Final Volume: 5 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE	1	0.58	0.1		
16887-00-6	CHLORIDE	1	4.5	0.2		
14797-65-0	NITRITE AS N	1	0.1	0.1	U	
24959-67-9	BROMIDE	1	0.2	0.2	U	
14797-55-8	NITRATE AS N	1	0.24	0.2		
14808-79-8	SULFATE	1	49	1		

Data Package ID: *ic0904037-1*

Date Printed: Thursday, April 09, 2009

ALS Paragon

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LIMS Version: 6.254A

# BICARBONATE AS CaCO3

Method EPA310.1

Method Blank

Lab Name: ALS Paragon

Work Order Number: 0904037

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200204501

Lab ID: AK090403-1MB

Sample Matrix: WATER

% Moisture: N/A

Prep Batch: AK090403-1

QC Batch ID: AK090403-1-1

Run ID: ak090403-1a

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ml

Final Volume: 100 ml

Result Units: MG/L

Lab ID	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag
AK090403-1MB	4/3/2009	04/03/2009	N/A	1	5	5	U

## Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: ak0904037-1

Date Printed: Thursday, April 09, 2009

ALS Paragon

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# CARBONATE AS CaCO3

Method EPA310.1

Method Blank

Lab Name: ALS Paragon

Work Order Number: 0904037

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200204501

Lab ID: AK090403-1MB

Sample Matrix: WATER

% Moisture: N/A

Prep Batch: AK090403-1

QCBatchID: AK090403-1-1

Run ID: ak090403-1a

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ml

Final Volume: 100 ml

Result Units: MG/L

Lab ID	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag
AK090403-1MB	4/3/2009	04/03/2009	N/A	1	5	5	U

## Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *ak0904037-1*

Date Printed: Thursday, April 09, 2009

ALS Paragon

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# TOTAL ALKALINITY AS CaCO3

Method EPA310.1

Method Blank

Lab Name: ALS Paragon

Work Order Number: 0904037

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200204501

Lab ID: AK090403-1MB

Sample Matrix: WATER

% Moisture: N/A

Prep Batch: AK090403-1

QCBatchID: AK090403-1-1

Run ID: ak090403-1a

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ml

Final Volume: 100 ml

Result Units: MG/L

Lab ID	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Reporting Limit	Flag
AK090403-1MB	4/3/2009	04/03/2009	N/A	1	5	5	U

## Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Data Package ID: *ak0904037-1*

Date Printed: Thursday, April 09, 2009

ALS Paragon

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# TOTAL ALKALINITY AS CaCO3

Method EPA310.1

## Laboratory Control Sample

Lab Name: ALS Paragon

Work Order Number: 0904037

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200204501

Lab ID: AK090403-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 04/03/2009

Date Analyzed: 04/03/2009

Prep Batch: AK090403-1

QCBatchID: AK090403-1-1

Run ID: ak090403-1a

Cleanup: NONE

Basis: N/A

Sample Aliquot: 100 ml

Final Volume: 100 ml

Result Units: MG/L

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
11-43-8	TOTAL ALKALINITY AS CaCO3	100	98.3	5		98	85 - 115

Data Package ID: ak0904037-1

Date Printed: Thursday, April 09, 2009

ALS Paragon

LIMS Version: 6.254A

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# Total Dissolved Solids

Method EPA160.1

Method Blank

Lab Name: ALS Paragon

Work Order Number: 0904037

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200204501

Lab ID: TD090403-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 03-Apr-09

Date Analyzed: 06-Apr-09

Prep Method: METHOD

Prep Batch: TD090403-1

QCBatchID: TD090403-1-1

Run ID: td090406-1a

Cleanup: NONE

Basis: N/A

File Name: Manual Entry

Sample Aliquot: 100 ml

Final Volume: 100 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	Reporting Limit	Result Qualifier	EPA Qualifier
10-33-3	TOTAL DISSOLVED SOLIDS	1	20	20	U	

Data Package ID: *td0904037-1*

Date Printed: Thursday, April 09, 2009

ALS Paragon

LIMS Version: 6.254A

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# Total Dissolved Solids

Method EPA160.1

## Laboratory Control Sample

Lab Name: ALS Paragon

Work Order Number: 0904037

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200204501

Lab ID: TD090403-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 04/03/2009

Date Analyzed: 04/06/2009

Prep Method: METHOD

Prep Batch: TD090403-1

QCBatchID: TD090403-1-1

Run ID: td090406-1a

Cleanup: NONE

Basis: N/A

File Name: Manual Entry

Sample Aliquot: 100 ml

Final Volume: 100 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
10-33-3	TOTAL DISSOLVED SOLIDS	400	397	20		99	85 - 115%

Data Package ID: *td0904037-1*

Date Printed: Thursday, April 09, 2009

ALS Paragon

LIMS Version: 6.254A

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# Ion Chromatography

Method EPA300.0 Revision 2.1

Method Blank

Lab Name: ALS Paragon

Work Order Number: 0904037

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200204501

Lab ID: IC090403-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 03-Apr-09

Date Analyzed: 03-Apr-09

Prep Method: NONE

Prep Batch: IC090403-1

QCBatchID: IC090403-1-1

Run ID: ic090403-1a

Cleanup: NONE

Basis: N/A

File Name: 90403\_011.DXD

Sample Aliquot: 5 ml

Final Volume: 5 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	Reporting Limit	Result Qualifier	EPA Qualifier
16887-00-6	CHLORIDE	1	0.2	0.2	U	
14797-65-0	NITRITE AS N	1	0.1	0.1	U	
24959-67-9	BROMIDE	1	0.2	0.2	U	
14797-55-8	NITRATE AS N	1	0.2	0.2	U	
14808-79-8	SULFATE	1	1	1	U	

Data Package ID: ic0904037-1

Date Printed: Thursday, April 09, 2009

ALS Paragon

LIMS Version: 6.254A

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# Ion Chromatography

Method EPA300.0 Revision 2.1

Method Blank

Lab Name: ALS Paragon

Work Order Number: 0904037

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200204501

Lab ID: IC090406-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 06-Apr-09

Date Analyzed: 06-Apr-09

Prep Method: NONE

Prep Batch: IC090406-1

QCBatchID: IC090406-1-1

Run ID: ic090406-1a

Cleanup: NONE

Basis: N/A

File Name: 90406\_011.DXD

Sample Aliquot: 5 ml

Final Volume: 5 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	Reporting Limit	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE	1	0.1	0.1	U	

Data Package ID: ic0904037-1

Date Printed: Thursday, April 09, 2009

ALS Paragon

LIMS Version: 6.254A

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# Ion Chromatography

Method EPA300.0 Revision 2.1

Laboratory Control Sample

Lab Name: ALS Paragon

Work Order Number: 0904037

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200204501

Lab ID: IC090403-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 04/03/2009

Date Analyzed: 04/03/2009

Prep Method: NONE

Prep Batch: IC090403-1

QCBatchID: IC090403-1-1

Run ID: ic090403-1a

Cleanup: NONE

Basis: N/A

File Name: 90403\_012.DXD

Sample Aliquot: 5 ml

Final Volume: 5 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
16887-00-6	CHLORIDE	5	4.66	0.2		93	90 - 110%
14797-65-0	NITRITE AS N	2	1.97	0.1		98	90 - 110%
24959-67-9	BROMIDE	5	4.64	0.2		93	90 - 110%
14797-55-8	NITRATE AS N	5	4.74	0.2		95	90 - 110%
14808-79-8	SULFATE	25	23.9	1		96	90 - 110%

Data Package ID: *ic0904037-1*

Date Printed: Thursday, April 09, 2009

ALS Paragon

LIMS Version: 6.254A

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# Ion Chromatography

Method EPA300.0

## Laboratory Control Sample

Lab Name: Paragon Analytics

Work Order Number: 0904037

Client Name: Colorado Oil & Gas Conservation Commission

ClientProject ID: Complaint 200204501

Lab ID: IC090406-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 04/06/2009

Date Analyzed: 04/06/2009

Prep Method: NONE

Prep Batch: IC090406-1

QCBatchID: IC090406-1-1

Run ID: ic090406-1a

Cleanup: NONE

Basis: N/A

File Name: 90406\_012.DXD

Sample Aliquot: 5 ml

Final Volume: 5 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
16984-48-8	FLUORIDE	2.5	2.32	0.1		93	90 - 110%

Data Package ID: ic0904037-1

Date Printed: Thursday, April 09, 2009

ALS Paragon

LIMS Version: 6.254A

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# Ion Chromatography

## Method EPA300.0 Revision 2.1

### Matrix Spike And Matrix Spike Duplicate

**Lab Name:** ALS Paragon  
**Work Order Number:** 0904037  
**Client Name:** Colorado Oil & Gas Conservation Commission  
**ClientProject ID:** Complaint 200204501

<b>Field ID:</b> Dahl WW <b>LabID:</b> 0904037-1MS	<b>Sample Matrix:</b> WATER <b>% Moisture:</b> N/A <b>Date Collected:</b> 02-Apr-09 <b>Date Extracted:</b> 03-Apr-09 <b>Date Analyzed:</b> 03-Apr-09 <b>Prep Method:</b> NONE	<b>Prep Batch:</b> IC090403-1 <b>QCBatchID:</b> IC090403-1-1 <b>Run ID:</b> ic090403-1a <b>Cleanup:</b> NONE <b>Basis:</b> As Received	<b>Sample Aliquot:</b> 5 ml <b>Final Volume:</b> 5 ml <b>Result Units:</b> MG/L <b>File Name:</b> 90403_018.DXD
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CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
16887-00-6	CHLORIDE	4.5		9.29		0.2	5	95	85 - 115%
14797-65-0	NITRITE AS N	0.1	U	1.88		0.1	2	94	85 - 115%
24959-67-9	BROMIDE	0.2	U	4.98		0.2	5	100	85 - 115%
14797-55-8	NITRATE AS N	0.24		5.03		0.2	5	96	85 - 115%
14808-79-8	SULFATE	49		68.5		1	20	96	85 - 115%

<b>Field ID:</b> Dahl WW <b>LabID:</b> 0904037-1MSD	<b>Sample Matrix:</b> WATER <b>% Moisture:</b> N/A <b>Date Collected:</b> 02-Apr-09 <b>Date Extracted:</b> 03-Apr-09 <b>Date Analyzed:</b> 03-Apr-09 <b>Prep Method:</b> NONE	<b>Prep Batch:</b> IC090403-1 <b>QCBatchID:</b> IC090403-1-1 <b>Run ID:</b> ic090403-1a <b>Cleanup:</b> NONE <b>Basis:</b> As Received	<b>Sample Aliquot:</b> 5 ml <b>Final Volume:</b> 5 ml <b>Result Units:</b> MG/L <b>File Name:</b> 90403_019.DXD
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CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
16887-00-6	CHLORIDE	9.08		5	91	0.2	15	2
14797-65-0	NITRITE AS N	1.86		2	93	0.1	15	1
24959-67-9	BROMIDE	4.73		5	95	0.2	15	5
14797-55-8	NITRATE AS N	4.95		5	94	0.2	15	2
14808-79-8	SULFATE	69.1		20	99	1	15	1

**Data Package ID:** *ic0904037-1*