



# Inorganics Case Narrative

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## COGCC

### Vondy #3

Work Order Number: 1701016

1. This report consists of 1 water sample.
2. The sample was received cool and intact by ALS on 01/04/17.
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 current revisions of the following SOPs and methods:

<u>Analyte</u>	<u>Method</u>	<u>SOP #</u>
Alkalinity	310.1	1106
Bicarbonate	310.1	1106
Carbonate	310.1	1106
pH	150.1	1126
Specific conductance	120.1	1128
TDS	160.1	1101
Bromide	300.0 Revision 2.1	1113
Chloride	300.0 Revision 2.1	1113
Fluoride	300.0 Revision 2.1	1113
Nitrate as N	300.0 Revision 2.1	1113
Nitrite as N	300.0 Revision 2.1	1113
Sulfate	300.0 Revision 2.1	1113

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 with the exception of nitrate as N and nitrite as N. The sample was received with no hold time remaining.



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

7. General quality control procedures.

- n A preparation (method) blank, laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) were prepared and analyzed with the samples in each applicable preparation batch.
- n The method blank associated with each applicable batch was below the reporting limit for the requested analytes.
- n All laboratory control sample criteria were met.
- n All initial and continuing calibration blanks were below the reporting limit for the requested analytes.
- n All initial and continuing calibration verifications were within the acceptance criteria for the requested analytes.

8. Matrix specific quality control procedures.

Sample 1701016-1 was designated as the quality control sample for the alkalinity, bicarbonate, carbonate, pH, specific conductance and anion analyses. Per method requirements, matrix QC was performed for the TDS analysis. 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 anion batch. All guidance criteria for precision and accuracy were met with the following exceptions:

<u>Analyte</u>	<u>Sample ID</u>
Nitrite as N	1701016-1MS & MSD

The native sample result is flagged for nitrite as N. The laboratory control sample indicates that the procedure was in control.

- n Matrix spike recoveries could not be evaluated for the following analyte:

<u>Analyte</u>	<u>Sample ID</u>
Chloride	1701016-1MS & MSD

The chloride concentration in the native sample was above the analytical range; therefore accurate quantitation of MS/MSD recoveries were not possible. The LCS, ICV, and CCV results indicate the procedure was in control for this analyte.



- n A sample duplicate was prepared and analyzed with the alkalinity, bicarbonate, carbonate, pH and specific conductance batches. All guidance criteria for precision were met.

For pH, the difference between the pH of the sample and its duplicate must be less than or equal to 0.2 pH units to be in control. RPD is not calculated for this analysis.

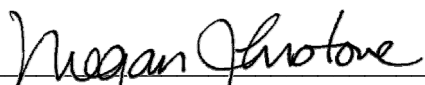
- 9. Electrical conductivity screening indicated that the concentration of dissolved salts was high in the sample. Therefore, it was necessary to dilute the sample prior to injection into the ion chromatograph in order to minimize the amount of salts loaded into the analytical column.

It was necessary to further dilute the sample in order to bring the chloride concentration into the analytical range of the ion chromatograph (IC).

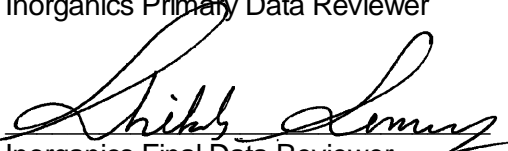
Reduced aliquots were taken of the sample for the alkalinity, bicarbonate, carbonate and TDS analyses. Reporting limits were elevated accordingly.

- 10. Manual integrations are performed when needed to provide consistent and defensible data following the guidelines in the current revision of SOP 939.

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

  
Megan Johnstone  
Inorganics Primary Data Reviewer

1/17/17  
Date

  
Inorganics Final Data Reviewer

1/18/17  
Date



### **Inorganic Data Reporting Qualifiers**

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

- Concentration qualifier -- A "J" is entered if the reported value was obtained from a reading that was less than the Reporting Limit but greater than or equal to ALS's Method Detection Limit. 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 -- Fort Collins

## Sample Number(s) Cross-Reference Table

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**OrderNum:** 1701016

**Client Name:** COGCC

**Client Project Name:** Vondy #3

**Client Project Number:**

**Client PO Number:** CT 2017-0221

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Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
Vondy #3	1701016-1		WATER	30-Dec-16	12:30
TB	1701016-2		WATER	30-Dec-16	



**ALS Environmental**

225 Commerce Drive, Fort Collins, Colorado 80524  
 TF: (970) 448-1511 PH: (970) 486-1511 FX: (970) 490-4522

**Chain-of-Custody**

Turnaround time for samples received after 2 p.m. will be calculated beginning from the next business day.  
 Turnaround time for samples received Saturday will be calculated beginning from the next business day.

ALS WORKORDER #  
**1701016**

PAGE **1** of **1**

DISPOSAL BY LAB or RETURN

PROJECT NAME: **Vondy #3**

PROJECT NO.:

COMPANY NAME: **COGCC**

SEND REPORT TO: **Robert Young**

ADDRESS:

CITY/STATE/ZIP:

PHONE: **303-252-0126**

FAX:

E-MAIL: **rob.young@state.co.us**

TURNAROUND TIME: **Std.**

SAMPLER: **Robert Young**

SITE ID:

EDD FORMAT:

PURCHASE ORDER: **CT 2017-0221**

BILL TO COMPANY:

INVOICE ATTN TO:

ADDRESS:

CITY/STATE/ZIP:

PHONE:

FAX:

E-MAIL:

**PARAMETER/METHOD REQUEST FOR ANALYSIS**

A	Alkalinity/Conductivity/Amones/pH (1L amber glass)
B	Dissolved metals/SAR (lab filtration)
C	Nitrate/Nitrite
D	8260 - <b>BTEX SS 11/5/17</b>
E	RSK-175
F	8015-GRO
G	TDS
H	8015-DRO
I	8270 <b>SIM SS 11/5/17</b>
J	<b>TB</b>

LAB ID	FIELD ID	MATRIX	SAMPLE DATE	SAMPLE TIME	# OF BOTTLES	PRESERVATIVE	QC	A	B	C	D	E	F	G	H	I	J	SEE NOTES SECTION
1	Vondy #3	Aq	12/30/16	1230	1	None		X										
2					1	None			X									
3					1	Sulfuric				X								
4					3	HCL					X							
5					3	HCL						X						
6					3	HCL							X					
7					1	None								X				
8					1	None									X			
9					1	None										X		
2109					2	HCL												X

Form 2029

RELINQUISHED BY: **Robert Young** DATE: **1-4-2017** TIME: **1445**

RECEIVED BY: **JOSHUA DONATI-SUA** DATE: **1-4-17** TIME: **1450**

RELINQUISHED BY:

RECEIVED BY:

RELINQUISHED BY:

RECEIVED BY:

REPORT LEVEL / QC REQUIRED:

Summary (Standard OC)

LEVEL II (Standard OC)

LEVEL III (Std OC + forms)

LEVEL IV (Std OC + forms - raw data)

1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaOH/H2AsO4 6-NaHSO4 7-4°C 8-Other



ALS Environmental - Fort Collins  
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: COGCC

Workorder No: COGCC1701016

Project Manager: SS

Initials: JWS Date: ~~1/5/17~~ 1/5/17

1. Does this project require any special handling in addition to standard ALS procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on shipping containers intact?	NONE	YES	NO
3. Are Custody seals on sample containers intact?	NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the COC and bottle labels complete and legible?		<input checked="" type="radio"/> YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	<input checked="" type="radio"/> YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	N/A	<input checked="" type="radio"/> YES	NO
10. Is there sufficient sample for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the proper containers for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within holding times for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		<input checked="" type="radio"/> YES	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ___ < green pea ___ > green pea	N/A	YES	NO
15. Do any water samples contain sediment? Amount Amount of sediment: ___ dusting ___ moderate ___ heavy	N/A	YES	<input checked="" type="radio"/> NO
16. Were the samples shipped on ice?		<input checked="" type="radio"/> YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 #4	RAD ONLY	<input checked="" type="radio"/> YES	NO
Cooler #: <u>1</u>			
Temperature (°C): <u>2.7</u>			
No. of custody seals on cooler: <u>0</u>			
External µR/hr reading: <u>-</u>			
Background µR/hr reading: <u>-</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? YES / NO / <input checked="" 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.

Handwriting on labels faded and hard to make out.

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

Project Manager Signature / Date: [Signature]

# BICARBONATE AS CaCO3

Method EPA310.1

## Sample Results

Lab Name: ALS -- Fort Collins  
Client Name: COGCC  
Client Project ID: Vondy #3  
Work Order Number: 1701016  
Reporting Basis: As Received  
Prep Method: NONE  
Analyst: Hannah M. Alt

Final Volume: 100 ml  
Matrix: WATER  
Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit/LOQ/LOD	Flag	Sample Aliquot
Vondy #3	1701016-1	12/30/2016	01/09/2017	01/09/2017	N/A	1	230	20		25 ml

### Comments:

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

Data Package ID: *ak1701016-1*

# CARBONATE AS CaCO3

Method EPA310.1

## Sample Results

Lab Name: ALS -- Fort Collins  
Client Name: COGCC  
Client Project ID: Vondy #3  
Work Order Number: 1701016  
Reporting Basis: As Received  
Prep Method: NONE  
Analyst: Hannah M. Alt

Final Volume: 100 ml  
Matrix: WATER  
Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit/LOQ/LOD	Flag	Sample Aliquot
Vondy #3	1701016-1	12/30/2016	01/09/2017	01/09/2017	N/A	1	20	20	U	25 ml

### Comments:

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

Data Package ID: *ak1701016-1*

# TOTAL ALKALINITY AS CaCO3

Method EPA310.1

## Sample Results

Lab Name: ALS -- Fort Collins  
Client Name: COGCC  
Client Project ID: Vondy #3  
Work Order Number: 1701016  
Reporting Basis: As Received  
Prep Method: NONE  
Analyst: Hannah M. Alt

Final Volume: 100 ml  
Matrix: WATER  
Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	RptLimit/LOQ/LOD	Flag	Sample Aliquot
Vondy #3	1701016-1	12/30/2016	01/09/2017	01/09/2017	N/A	1	230	20		25 ml

### Comments:

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

Data Package ID: *ak1701016-1*

# pH

## Method EPA150.1

### Sample Results

**Lab Name:** ALS -- Fort Collins  
**Work Order Number:** 1701016  
**Client Name:** COGCC  
**ClientProject ID:** Vondy #3

<b>Field ID:</b>	Vondy #3
<b>Lab ID:</b>	1701016-1

**Sample Matrix:** WATER  
**% Moisture:** N/A  
**Date Collected:** 30-Dec-16  
**Date Extracted:** 06-Jan-17  
**Date Analyzed:** 06-Jan-17  
**Prep Method:** NONE

**Prep Batch:** PH170106-1  
**QCBatchID:** PH170106-1-1  
**Run ID:** PH170106-1A1  
**Cleanup:** NONE  
**Basis:** As Received  
**File Name:**

**Analyst:** Hannah M. Alt  
**Sample Aliquot:** 20 ML  
**Final Volume:** 20 ML  
**Result Units:** pH  
**Clean DF:** 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	Result Qualifier	EPA Qualifier
10-29-7	PH AnalysisTime: 09:30	1	8.07	0.1		

**Data Package ID:** pH1701016-1

# Specific Conductance in Water

Method EPA120.1

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1701016

Client Name: COGCC

ClientProject ID: Vondy #3

Field ID:	Vondy #3
Lab ID:	1701016-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 30-Dec-16

Date Extracted: 06-Jan-17

Date Analyzed: 06-Jan-17

Prep Method: NONE

Prep Batch: SC170106-1

QCBatchID: SC170106-1-1

Run ID: SC170106-1A1

Cleanup: NONE

Basis: As Received

File Name:

Analyst: Hannah M. Alt

Sample Aliquot: 20 ML

Final Volume: 20 ML

Result Units: umhos/cm

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	Result Qualifier	EPA Qualifier
10-34-4	SPECIFIC CONDUCTIVITY AnalysisTime: 10:00	1	11460	1		

Data Package ID: SC1701016-1

Date Printed: Tuesday, January 17, 2017

ALS -- Fort Collins

Page 1 of 1

LIMS Version: 6.837

# Total Dissolved Solids

Method EPA160.1

Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1701016

Client Name: COGCC

ClientProject ID: Vondy #3

Field ID:	Vondy #3
Lab ID:	1701016-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 30-Dec-16

Date Extracted: 06-Jan-17

Date Analyzed: 09-Jan-17

Prep Method: METHOD

Prep Batch: TD170106-1

QCBatchID: TD170106-1-2

Run ID: TD170109-1A1

Cleanup: NONE

Basis: As Received

File Name: Manual Entry

Analyst: Hannah M. Alt

Sample Aliquot: 10 ML

Final Volume: 10 ML

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	Result Qualifier	EPA Qualifier
10-33-3	TOTAL DISSOLVED SOLIDS	1	5400	200		

Data Package ID: *td1701016-1*

# Ion Chromatography

Method EPA300.0 Revision 2.1

## Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1701016

Client Name: COGCC

ClientProject ID: Vondy #3

Field ID:	Vondy #3
Lab ID:	1701016-1

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 30-Dec-16

Date Extracted: 06-Jan-17

Date Analyzed: 06-Jan-17

Prep Method: NONE

Prep Batch: IC170106-1

QCBatchID: IC170106-1-1

Run ID: IC170106-1A2

Cleanup: NONE

Basis: As Received

File Name: 70106\_030.DXD

Analyst: Alyssa M. Gruziano

Sample Aliquot: 5 ml

Final Volume: 5 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	Dilution Factor	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE AnalysisTime: 15:39	10	0.79	1	0.3	J	
16887-00-6	CHLORIDE AnalysisTime: 13:58	250	3900	50	15		
14797-65-0	NITRITE AS N AnalysisTime: 15:39	10	0.3	1	0.3	U	N
24959-67-9	BROMIDE AnalysisTime: 15:39	10	28	2	0.6		
14797-55-8	NITRATE AS N AnalysisTime: 15:39	10	0.6	2	0.6	U	
14808-79-8	SULFATE AnalysisTime: 15:39	10	3	10	3	U	

Data Package ID: IC1701016-1

Date Printed: Tuesday, January 17, 2017

ALS -- Fort Collins

Page 1 of 1

LIMS Version: 6.837

# BICARBONATE AS CaCO3

Method EPA310.1

Method Blank

Lab Name: ALS -- Fort Collins

Work Order Number: 1701016

Client Name: COGCC

ClientProject ID: Vondy #3

Lab ID: AK170109-1MB

Sample Matrix: WATER

% Moisture: N/A

Prep Batch: AK170109-1

QCBatchID: AK170109-1-4

Run ID: AK170109-1A1

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	RptLimit/ LOQ	Flag
AK170109-1MB	1/9/2017	01/09/2017	N/A	1	5	5	U

## Comments:

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

Data Package ID: *ak1701016-1*

Date Printed: Tuesday, January 17, 2017

ALS -- Fort Collins

LIMS Version: 6.837

Page 1 of 3

# CARBONATE AS CaCO3

Method EPA310.1

Method Blank

Lab Name: ALS -- Fort Collins

Work Order Number: 1701016

Client Name: COGCC

ClientProject ID: Vondy #3

Lab ID: AK170109-1MB

Sample Matrix: WATER

% Moisture: N/A

Prep Batch: AK170109-1

QCBatchID: AK170109-1-4

Run ID: AK170109-1A1

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	RptLimit/ LOQ	Flag
AK170109-1MB	1/9/2017	01/09/2017	N/A	1	5	5	U

## Comments:

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

Data Package ID: *ak1701016-1*

Date Printed: Tuesday, January 17, 2017

ALS -- Fort Collins

LIMS Version: 6.837

Page 2 of 3

# TOTAL ALKALINITY AS CaCO3

Method EPA310.1

Method Blank

Lab Name: ALS -- Fort Collins

Work Order Number: 1701016

Client Name: COGCC

ClientProject ID: Vondy #3

Lab ID: AK170109-1MB

Sample Matrix: WATER

% Moisture: N/A

Prep Batch: AK170109-1

QCBatchID: AK170109-1-4

Run ID: AK170109-1A1

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	RptLimit/ LOQ	Flag
AK170109-1MB	1/9/2017	01/09/2017	N/A	1	5	5	U

## Comments:

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

Data Package ID: *ak1701016-1*

Date Printed: Tuesday, January 17, 2017

ALS -- Fort Collins

LIMS Version: 6.837

Page 3 of 3

# TOTAL ALKALINITY AS CaCO3

## Method EPA310.1

### Laboratory Control Sample and Laboratory Control Sample Duplicate

Lab Name: ALS -- Fort Collins

Work Order Number: 1701016

Client Name: COGCC

ClientProject ID: Vondy #3

Lab ID: AK170109-1LCS	Sample Matrix: WATER	Prep Batch: AK170109-1	Sample Aliquot: 100 ml
	% Moisture: N/A	QCBatchID: AK170109-1-4	Final Volume: 100 ml
	Date Collected: N/A	Run ID: AK170109-1A1	Result Units: MG/L
	Date Extracted: 09-Jan-17	Cleanup: NONE	
	Date Analyzed: 09-Jan-17	Basis: N/A	
	Prep Method: NONE		

CASNO	Target Analyte	Spike Added	LCS Result	Reporting Limit	Result Qualifier	LCS % Rec.	Control Limits
	TOTAL ALKALINITY AS CaCO3	100	98.1	5		98	85 - 115

Lab ID: AK170109-1LCSD	Sample Matrix: WATER	Prep Batch: AK170109-1	Sample Aliquot: 100 ml
	% Moisture: N/A	QCBatchID: AK170109-1-4	Final Volume: 100 ml
	Date Collected: N/A	Run ID: AK170109-1A1	Result Units: MG/L
	Date Extracted: 09-Jan-17	Cleanup: NONE	
	Date Analyzed: 09-Jan-17	Basis: N/A	
	Prep Method: NONE		

CASNO	Target Analyte	Spike Added	LCSD Result	Reporting Limit	Result Qualifier	LCSD % Rec.	RPD Limit	RPD
	TOTAL ALKALINITY AS CaCO3	100	97.8	5		98	15	0

Data Package ID: ak1701016-1

# BICARBONATE AS CaCO3

Method EPA310.1

## Duplicate Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1701016

Client Name: COGCC

ClientProject ID: Vondy #3

Reporting Basis: As Received

Sample Aliquot: 25 ml

Final Volume: 100ml

Matrix: WATER

Result Units MG/L

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Dup Qual	Sample Result	Samp Qual	Reporting Limit	RPD	RPD Limit
Vondy #3	1701016-1D	01/09/2017	01/09/2017	1	218		230		20	4	15

### Comments:

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

Data Package ID: ak1701016-1

Date Printed: Tuesday, January 17, 2017

ALS -- Fort Collins

LIMS Version: 6.837

Page 1 of 3

# CARBONATE AS CaCO3

Method EPA310.1

## Duplicate Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1701016

Client Name: COGCC

ClientProject ID: Vondy #3

Reporting Basis: As Received

Sample Aliquot: 25 ml

Final Volume: 100ml

Matrix: WATER

Result Units MG/L

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Dup Qual	Sample Result	Samp Qual	Reporting Limit	RPD	RPD Limit
Vondy #3	1701016-1D	01/09/2017	01/09/2017	1	20	U	20	U	20		15

### Comments:

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

Data Package ID: ak1701016-1

Date Printed: Tuesday, January 17, 2017

ALS -- Fort Collins

LIMS Version: 6.837

Page 2 of 3

# TOTAL ALKALINITY AS CaCO3

Method EPA310.1

## Duplicate Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1701016

Client Name: COGCC

ClientProject ID: Vondy #3

Reporting Basis: As Received

Sample Aliquot: 25 ml

Final Volume: 100ml

Matrix: WATER

Result Units MG/L

Client Sample ID	Lab ID	Date Prepared	Date Analyzed	Dilution Factor	Duplicate Result	Dup Qual	Sample Result	Samp Qual	Reporting Limit	RPD	RPD Limit
Vondy #3	1701016-1D	01/09/2017	01/09/2017	1	218		230		20	4	15

### Comments:

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

Data Package ID: *ak1701016-1*

Date Printed: Tuesday, January 17, 2017

ALS -- Fort Collins

LIMS Version: 6.837

Page 3 of 3

# pH

## Method EPA150.1

### Duplicate Sample Results

**Lab Name:** ALS -- Fort Collins

**Work Order Number:** 1701016

**Client Name:** COGCC

**ClientProject ID:** Vondy #3

<b>Field ID:</b>	Vondy #3
<b>Lab ID:</b>	1701016-1D

**Sample Matrix:** WATER  
**% Moisture:** N/A  
**Date Collected:** 12/30/2016  
**Date Extracted:** 01/06/2017  
**Date Analyzed:** 01/06/2017

**Prep Batch:** PH170106-1  
**QCBatchID:** PH170106-1-1  
**Run ID:** PH170106-1A1  
**Cleanup:** NONE  
**Basis:** As Received  
**File Name:**

**Sample Aliquot:** 20 ml  
**Final Volume:** 20 ml  
**Result Units:** pH  
**Clean DF:** 1

CASNO	Target Analyte	Sample Result	Samp Qual	Duplicate Result	Dup Qual	Reporting Limit	Dilution Factor	RPD	RPD Limit
10-29-7	PH	8.07		8.02		0.1	1		0.2

**Data Package ID:** pH1701016-1

# Specific Conductance in Water

Method EPA120.1

## Duplicate Sample Results

Lab Name: ALS -- Fort Collins

Work Order Number: 1701016

Client Name: COGCC

ClientProject ID: Vondy #3

Field ID:	Vondy #3
Lab ID:	1701016-1D

Sample Matrix: WATER

% Moisture: N/A

Date Collected: 12/30/2016

Date Extracted: 01/06/2017

Date Analyzed: 01/06/2017

Prep Batch: SC170106-1

QCBatchID: SC170106-1-1

Run ID: SC170106-1A1

Cleanup: NONE

Basis: As Received

File Name:

Sample Aliquot: 20 ml

Final Volume: 20 ml

Result Units: umhos/cm

Clean DF: 1

CASNO	Target Analyte	Sample Result	Samp Qual	Duplicate Result	Dup Qual	Reporting Limit	Dilution Factor	RPD	RPD Limit
10-34-4	SPECIFIC CONDUCTIVITY	11460		11400		1	1	0	10

Data Package ID: SC1701016-1

Date Printed: Tuesday, January 17, 2017

ALS -- Fort Collins

Page 1 of 1

LIMS Version: 6.837

# Total Dissolved Solids

Method EPA160.1

Method Blank

Lab Name: ALS -- Fort Collins

Work Order Number: 1701016

Client Name: COGCC

ClientProject ID: Vondy #3

Lab ID: TD170106-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 06-Jan-17

Date Analyzed: 09-Jan-17

Prep Method: METHOD

Prep Batch: TD170106-1

QCBatchID: TD170106-1-2

Run ID: TD170109-1A1

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	RptLimit/ LOQ/LOD	Result Qualifier	EPA Qualifier
10-33-3	TOTAL DISSOLVED SOLIDS	1	20	20	U	

Data Package ID: *td1701016-1*

Date Printed: Tuesday, January 17, 2017

ALS -- Fort Collins

Page 1 of 1

LIMS Version: 6.837

# Total Dissolved Solids

Method EPA160.1

## Laboratory Control Sample

Lab Name: ALS -- Fort Collins

Work Order Number: 1701016

Client Name: COGCC

ClientProject ID: Vondy #3

Lab ID: TD170106-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 01/06/2017

Date Analyzed: 01/09/2017

Prep Method: METHOD

Prep Batch: TD170106-1

QCBatchID: TD170106-1-2

Run ID: TD170109-1A1

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	396	20		99	85 - 115%

Data Package ID: *td1701016-1*

Date Printed: Tuesday, January 17, 2017

ALS -- Fort Collins

Page 1 of 1

LIMS Version: 6.837

# Ion Chromatography

Method EPA300.0 Revision 2.1

Method Blank

Lab Name: ALS -- Fort Collins

Work Order Number: 1701016

Client Name: COGCC

ClientProject ID: Vondy #3

Lab ID: IC170106-1MB

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 06-Jan-17

Date Analyzed: 06-Jan-17

Prep Batch: IC170106-1

QCBatchID: IC170106-1-1

Run ID: IC170106-1A2

Cleanup: NONE

Basis: N/A

File Name: 70106\_014.dxd

Sample Aliquot: 5 ml

Final Volume: 5 ml

Result Units: MG/L

Clean DF: 1

CASNO	Target Analyte	DF	Result	RptLimit/ LOQ/LOD	MDL/DL	Result Qualifier	EPA Qualifier
16984-48-8	FLUORIDE	1	0.03	0.1	0.03	U	
16887-00-6	CHLORIDE	1	0.06	0.2	0.06	U	
14797-65-0	NITRITE AS N	1	0.03	0.1	0.03	U	
24959-67-9	BROMIDE	1	0.06	0.2	0.06	U	
14797-55-8	NITRATE AS N	1	0.06	0.2	0.06	U	
14808-79-8	SULFATE	1	0.3	1	0.3	U	

Data Package ID: IC1701016-1

Date Printed: Tuesday, January 17, 2017

ALS -- Fort Collins

Page 1 of 1

LIMS Version: 6.837

# Ion Chromatography

Method EPA300.0 Revision 2.1

## Laboratory Control Sample

Lab Name: ALS -- Fort Collins

Work Order Number: 1701016

Client Name: COGCC

ClientProject ID: Vondy #3

Lab ID: IC170106-1LCS

Sample Matrix: WATER

% Moisture: N/A

Date Collected: N/A

Date Extracted: 01/06/2017

Date Analyzed: 01/06/2017

Prep Method: NONE

Prep Batch: IC170106-1

QCBatchID: IC170106-1-1

Run ID: IC170106-1A2

Cleanup: NONE

Basis: N/A

File Name: 70106\_015.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	1.8	0.1		90	90 - 110%
16887-00-6	CHLORIDE	5	4.9	0.2		98	90 - 110%
14797-65-0	NITRITE AS N	2	1.87	0.1		94	90 - 110%
24959-67-9	BROMIDE	5	5.01	0.2		100	90 - 110%
14797-55-8	NITRATE AS N	5	4.9	0.2		98	90 - 110%
14808-79-8	SULFATE	20	19.7	1		99	90 - 110%

Data Package ID: IC1701016-1

Date Printed: Tuesday, January 17, 2017

ALS -- Fort Collins

Page 1 of 1

LIMS Version: 6.837

# Ion Chromatography

## Method EPA300.0 Revision 2.1

### Matrix Spike And Matrix Spike Duplicate

**Lab Name:** ALS -- Fort Collins  
**Work Order Number:** 1701016  
**Client Name:** COGCC  
**ClientProject ID:** Vondy #3

<b>Field ID:</b> Vondy #3
<b>LabID:</b> 1701016-1MS

**Sample Matrix:** WATER  
**% Moisture:** N/A  
**Date Collected:** 30-Dec-16  
**Date Extracted:** 06-Jan-17  
**Date Analyzed:** 06-Jan-17  
**Prep Method:** NONE

**Prep Batch:** IC170106-1  
**QCBatchID:** IC170106-1-1  
**Run ID:** IC170106-1A2  
**Cleanup:** NONE  
**Basis:** As Received

**Sample Aliquot:** 5 ml  
**Final Volume:** 5 ml  
**Result Units:** MG/L  
**File Name:** 70106\_031.DXD

CASNO	Target Analyte	Sample Result	Samp Qual	MS Result	MS Qual	Reporting Limit	Spike Added	MS % Rec.	Control Limits
16984-48-8	FLUORIDE	0.79	J	18.5		1	20	89	85 - 115%
14797-65-0	NITRITE AS N	0.3	U	12.6	N	1	20	63	85 - 115%
24959-67-9	BROMIDE	28		75.4		2	50	94	85 - 115%
14797-55-8	NITRATE AS N	0.6	U	46		2	50	92	85 - 115%
14808-79-8	SULFATE	3	U	185		10	200	93	85 - 115%

<b>Field ID:</b> Vondy #3
<b>LabID:</b> 1701016-1MSD

**Sample Matrix:** WATER  
**% Moisture:** N/A  
**Date Collected:** 30-Dec-16  
**Date Extracted:** 06-Jan-17  
**Date Analyzed:** 06-Jan-17  
**Prep Method:** NONE

**Prep Batch:** IC170106-1  
**QCBatchID:** IC170106-1-1  
**Run ID:** IC170106-1A2  
**Cleanup:** NONE  
**Basis:** As Received

**Sample Aliquot:** 5 ml  
**Final Volume:** 5 ml  
**Result Units:** MG/L  
**File Name:** 70106\_032.DXD

CASNO	Target Analyte	MSD Result	MSD Qual	Spike Added	MSD % Rec.	Reporting Limit	RPD Limit	RPD
16984-48-8	FLUORIDE	18.7		20	90	1	15	1
14797-65-0	NITRITE AS N	12.5	N	20	62	1	15	1
24959-67-9	BROMIDE	74.6		50	93	2	15	1
14797-55-8	NITRATE AS N	45.8		50	92	2	15	1
14808-79-8	SULFATE	189		200	94	10	15	2

**Data Package ID:** IC1701016-1