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Automated Report

Technical Report for

Ursa Operating Company, LLC

BR B-19N

SGS Job Number: DA12869

Sampling Date: 01/15/19

Report to:

**URSA Operating Comp
792 Buckhorn Dr.
Rifle, CO 81650
dknudson@ursaresources.com**

ATTN: Dwane Knudson

Total number of pages in report: 24



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

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Laboratory Director

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Certifications: CO (CO00049), ID (CO00049), NE (NE-OS-06-04), ND (R-027), NJ (CO007), OK (D9942)
UT (NELAP CO00049), LA (LA150028), TX (T104704511), WY (8TMS-L)

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Test results relate only to samples analyzed.

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Sample Summary

Ursa Operating Company, LLC
BR B-19N

Job No: DA12869

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
DA12869-1	01/15/19	12:00 JR	01/16/19	AQ	Water	B-19N UIC

Summary of Hits

Job Number: DA12869
Account: Ursa Operating Company, LLC
Project: BR B-19N
Collected: 01/15/19

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
DA12869-1	B-19N UIC					
Calcium		259000	400		ug/l	EPA 200.7
Magnesium		22300	200		ug/l	EPA 200.7
Potassium		61600	1000		ug/l	EPA 200.7
Sodium		6610000	8000		ug/l	EPA 200.7
Chloride		7410	250		mg/l	EPA300.0/SW846 9056A
Solids, Total Dissolved		14700	10		mg/l	SM 2540C-2011
Sulfate		88.4	50		mg/l	EPA300.0/SW846 9056A



Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	B-19N UIC	Date Sampled:	01/15/19
Lab Sample ID:	DA12869-1	Date Received:	01/16/19
Matrix:	AQ - Water	Percent Solids:	n/a
Project:	BR B-19N		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	259000	400	ug/l	1	01/18/19	01/21/19 JR	EPA 200.7 ¹	EPA 200.7 ³
Magnesium	22300	200	ug/l	1	01/18/19	01/21/19 JR	EPA 200.7 ¹	EPA 200.7 ³
Potassium	61600	1000	ug/l	1	01/18/19	01/21/19 JR	EPA 200.7 ¹	EPA 200.7 ³
Sodium	6610000	8000	ug/l	20	01/18/19	01/22/19 JR	EPA 200.7 ²	EPA 200.7 ³

- (1) Instrument QC Batch: MA10940
(2) Instrument QC Batch: MA10950
(3) Prep QC Batch: MP27193

RL = Reporting Limit

Report of Analysis

Client Sample ID:	B-19N UIC	Date Sampled:	01/15/19
Lab Sample ID:	DA12869-1	Date Received:	01/16/19
Matrix:	AQ - Water	Percent Solids:	n/a
Project:	BR B-19N		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride	7410	250	mg/l	500	01/18/19 19:33	JB	EPA300.0/SW846 9056A
Solids, Total Dissolved	14700	10	mg/l	1	01/21/19	SK	SM 2540C-2011
Sulfate	88.4	50	mg/l	100	01/18/19 19:20	JB	EPA300.0/SW846 9056A

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

4036 Youngfield Street, Wheat Ridge, CO 80033
TEL: 303-425-6021 FAX: 303-425-6854
www.accutest.com

[illegible]

DA12869: Chain of Custody

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SGS Accutest Sample Receipt Summary

Job Number: DA12869

Client: URSA

Project: B019N UIC

Date / Time Received: 1/16/2019 3:00:00 PM

Delivery Method:

Airbill #'s: CO

Cooler Temps (Initial/Adjusted): #1: (2.1/2.1):

Cooler Security

Y or N

Y or N

- | | | | | | |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Cooler Temperature

Y or N

- | | | |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | IR Gun; | |
| 3. Cooler media: | Ice (Bag) | |
| 4. No. Coolers: | 1 | |

Quality Control Preservation

Y or N

N/A

- | | | | |
|---------------------------------|-------------------------------------|--------------------------|-------------------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Trip Blank listed on COC: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Samples preserved properly: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. VOCs headspace free: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Sample Integrity - Documentation

Y or N

- | | | |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Sample Integrity - Condition

Y or N

- | | | |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample: | Intact | |

Sample Integrity - Instructions

Y or N N/A

- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. Bottles received for unspecified tests | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 3. Sufficient volume recvd for analysis: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. Compositing instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Comments

DA12869: Chain of Custody

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Metals Analysis

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: DA12869
Account: UOCLCOR - Ursa Operating Company, LLC
Project: BR B-19N

QC Batch ID: MP27193
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 01/18/19

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	11	30		
Antimony	30	2.1	10		
Arsenic	25	3.8	7		
Barium	10	.2	2		
Beryllium	10	.9	1.3		
Boron	50	.8	7.4		
Cadmium	10	.2	1.6		
Calcium	400	2.4	53	28.6	<400
Chromium	10	.3	1.7		
Cobalt	5.0	.5	2.3		
Copper	10	.8	2.3		
Iron	10	1.5	3.1		
Lead	50	2.1	6.3		
Lithium	5.0	.4	4		
Magnesium	200	6.8	31	7.9	<200
Manganese	5.0	.5	1.1		
Molybdenum	10	.4	4.3		
Nickel	30	.5	6.1		
Phosphorus	100	15	24		
Potassium	1000	84	250	-97	<1000
Selenium	50	7.1	21		
Silicon	50	4.7	45		
Silver	30	.3	4		
Sodium	400	13	51	177	<400
Strontium	5.0	.01	.6		
Thallium	10	1.8	7.5		
Tin	60	12	51		
Titanium	10	.1	1.9		
Uranium	50	2.9	8.5		
Vanadium	10	.4	.7		
Zinc	30	.4	3.8		

Associated samples MP27193: DA12869-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: DA12869
Account: UOCLCOR - Ursa Operating Company, LLC
Project: BR B-19N

QC Batch ID: MP27193
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 01/18/19

Metal	RL	IDL	MDL	MB raw	final
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(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: DA12869
Account: UOCLCOR - Ursa Operating Company, LLC
Project: BR B-19N

QC Batch ID: MP27193
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 01/18/19

Metal	DA12869-1 Original MS		Spikelot ICPAL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic					
Barium					
Beryllium					
Boron					
Cadmium					
Calcium	259000	274000	25000	60.0 (a)	70-130
Chromium					
Cobalt					
Copper					
Iron	anr				
Lead					
Lithium					
Magnesium	22300	47300	25000	100.0	70-130
Manganese					
Molybdenum					
Nickel					
Phosphorus					
Potassium	58200	99100	25000	150.0N(b)	70-130
Selenium					
Silicon					
Silver					
Sodium	6610000	6840000	25000	920.0(a)	70-130
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP27193: DA12869-1

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: DA12869
 Account: UOCLCOR - Ursa Operating Company, LLC
 Project: BR B-19N

QC Batch ID: MP27193
 Matrix Type: AQUEOUS

Methods: EPA 200.7
 Units: ug/l

Prep Date: 01/18/19

Metal	DA12869-1 Original MS	Spikelot ICPALL2	% Rec	QC Limits
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(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

(b) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: DA12869
 Account: UOCLCOR - Ursa Operating Company, LLC
 Project: BR B-19N

QC Batch ID: MP27193
 Matrix Type: AQUEOUS

Methods: EPA 200.7
 Units: ug/l

Prep Date: 01/18/19

Metal	DA12869-1 Original MSD		Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Calcium	259000	273000	25000	56.0 (a)	0.4	20
Chromium						
Cobalt						
Copper						
Iron	anr					
Lead						
Lithium						
Magnesium	22300	46200	25000	95.6	2.4	20
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium	58200	97900	25000	145.2N(b)	1.2	20
Selenium						
Silicon						
Silver						
Sodium	6610000	6800000	25000	760.0(a)	0.6	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP27193: DA12869-1

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: DA12869
 Account: UOCLCOR - Ursa Operating Company, LLC
 Project: BR B-19N

QC Batch ID: MP27193
 Matrix Type: AQUEOUS

Methods: EPA 200.7
 Units: ug/l

Prep Date: 01/18/19

Metal	DA12869-1 Original MSD	SpikeLot ICPALL2 % Rec	MSD RPD	QC Limit
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(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

(b) Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: DA12869
 Account: UOCLCOR - Ursa Operating Company, LLC
 Project: BR B-19N

QC Batch ID: MP27193
 Matrix Type: AQUEOUS

Methods: EPA 200.7
 Units: ug/l

Prep Date: 01/18/19

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Boron				
Cadmium				
Calcium	25800	25000	103.2	85-115
Chromium				
Cobalt				
Copper				
Iron	anr			
Lead				
Lithium				
Magnesium	25600	25000	102.4	85-115
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium	25300	25000	101.2	85-115
Selenium				
Silicon				
Silver				
Sodium	25400	25000	101.6	85-115
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP27193: DA12869-1

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: DA12869
Account: UOCLCOR - Ursa Operating Company, LLC
Project: BR B-19N

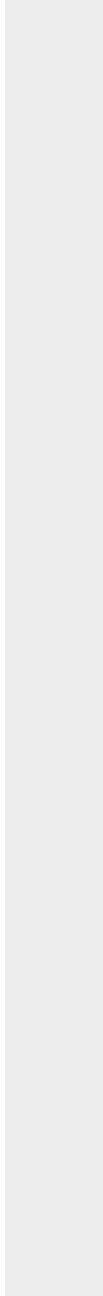
QC Batch ID: MP27193
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 01/18/19

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
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(anr) Analyte not requested



General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: DA12869
Account: UOCLCOR - Ursa Operating Company, LLC
Project: BR B-19N

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Bromide	GP24427/GN45852	0.050	0.0	mg/l	0.5	0.521	104.2	90-110%
Chloride	GP24427/GN45852	0.50	0.0	mg/l	5	5.19	103.8	90-110%
Fluoride	GP24427/GN45852	0.10	0.0	mg/l	1	1.04	104.0	90-110%
Nitrogen, Nitrate	GP24427/GN45852	0.010	0.0	mg/l	0.1	0.105	105.0	90-110%
Nitrogen, Nitrite	GP24427/GN45852	0.0040	0.0	mg/l	0.05	0.0532	106.4	90-110%
Solids, Total Dissolved	GN45857	10	0.0	mg/l	400	396	99.0	90-110%
Sulfate	GP24427/GN45852	0.50	0.0	mg/l	5	5.11	102.2	90-110%

Associated Samples:

Batch GN45857: DA12869-1

Batch GP24427: DA12869-1

(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: DA12869
Account: UOCLCOR - Ursa Operating Company, LLC
Project: BR B-19N

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Total Dissolved	GN45857	DA12889-1	mg/l	1710	1700	0.6	0-5%

Associated Samples:
Batch GN45857: DA12869-1
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: DA12869
Account: UOCLCOR - Ursa Operating Company, LLC
Project: BR B-19N

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Bromide	GP24427/GN45852	DA12841-1	mg/l	0.0	0.5	0.54	108.0	80-120%
Chloride	GP24427/GN45852	DA12841-1	mg/l	0.0	5	5.6	112.0	80-120%
Fluoride	GP24427/GN45852	DA12841-1	mg/l	0.45	1	1.5	105.0	80-120%
Nitrogen, Nitrate	GP24427/GN45852	DA12841-1	mg/l	0.16	0.1	0.27	110.0	80-120%
Nitrogen, Nitrite	GP24427/GN45852	DA12841-1	mg/l	0.0	0.05	0.052	104.0	80-120%
Sulfate	GP24427/GN45852	DA12841-1	mg/l	17.3	5	22.3	100.0	80-120%

Associated Samples:

Batch GP24427: DA12869-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: DA12869
Account: UOCLCOR - Ursa Operating Company, LLC
Project: BR B-19N

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Bromide	GP24427/GN45852	DA12841-1	mg/l	0.0	0.5	0.54	0.0	20%
Chloride	GP24427/GN45852	DA12841-1	mg/l	0.0	5	5.6	0.0	20%
Fluoride	GP24427/GN45852	DA12841-1	mg/l	0.45	1	1.5	0.0	20%
Nitrogen, Nitrate	GP24427/GN45852	DA12841-1	mg/l	0.16	0.1	0.27	0.0	20%
Nitrogen, Nitrite	GP24427/GN45852	DA12841-1	mg/l	0.0	0.05	0.054	3.8	20%
Sulfate	GP24427/GN45852	DA12841-1	mg/l	17.3	5	22.4	0.4	20%

Associated Samples:

Batch GP24427: DA12869-1

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits