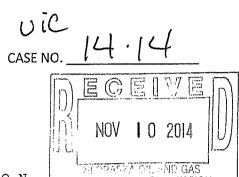
SALT WATER DISPOSAL WELL APPLICATION

BEFORE THE NEBRASKA OIL AND GAS CONSERVATION COMMISSION

IN THE MATTER OF THE APPLICATION OF
TEREX ENERGY CORP FOR APPROVAL TO CONVERT THE
LAUCOMER 13-1, LOCATED AT 25N/56W IN THE NE NW
CORNER OF SEC. 13 IN THE SPOTTED TAIL CREEK
FIELD IN SIOUX COUNTY NEBRASKA, FOR USE AS A SALT
WATER DISPOSAL WELL), IN ACCORDANCE WITH
CHAPTER 4 OF THE RULES AND REGULATIONS OF THE
NEBRASKA OIL AND GAS CONSERVATION COMMISSION.



APPLICATION

Comes now Terex Energy Corp, Applicant in the above-entitled cause and herewith represents unto this Honorable Commission.

- 1. Applicant, Terex Energy Corp, will soon be duly authorized to transact business in the State of Nebraska, with offices being located at 520 Zang Street, Suite 250, Broomfield, CO, 80021.
- 2. Applicant requests approval to convert the Laucomer 13-1, API #26165211640000, to a Class II-D disposal well for the purpose of disposing of water produced with oil and gas in the Spotted Tail Creek Field, Sioux County, Nebraska, and from other such nearby wells as may be necessary in the future. The proposed disposal well is located as follows: 352 from the north line and 1907 from the west line of Section 13, T25N, R56W, Sioux County, Nebraska.
- 3. Attached hereto in Section A, marked Exhibits A and B1 and B2, and by this reference specifically incorporated and made a part hereof, is a plat outlining and showing the following:
 - a. The area within one-half mile of the proposed disposal well Exhibit A.
 - b. All wells, including dry, producing, abandoned or drilling wells, properly located and designated thereon Exhibit B1
 - c. The location of the proposed disposal well- Exhibit B2.
- 4. Attached hereto Section B, and by this reference specifically incorporated herein and made a part hereof, is a list showing the names and addresses of each owner or operator (fee, leasehold, mineral or royalty interest) of wells within one-half mile of the proposed disposal well.
- 5. The following information and data is presented as to the proposed disposal well in Section C and F-5:
 - a. The proposed disposal well is the Lacomer 13-1 located as

follows: T25N / R56W / Section 13 Sioux County, Nebraska. The Laucomer 13-1 was drilled to a total depth of 7926.95 ft. Surface casing was set at 604 ft., measured from KB and cemented to the surface. Said well was cased with 10 ¾ 40.4 PPFT - J55 casing set at 603ft cemented with 360 sacks. Said well is necessary to dispose of produced waters brought to the surface during oil and gas production operations.

- b. The maximum proposed injection pressure will be 0.7 psig as measured at the surface. The projected maximum initial rate of injection will be 10,000 barrels per day. The fracture initiation pressure in the Sundance Sand and/or the Spearfish Sand is expected to be in excess of 4329 psig $(0.7 \times 6184 \text{ Depth})$ and is derived from pressures experienced during operations involving other area wells at the same approximate depth and characteristics as explained in Section I and Section J-1.
- 6. An analysis of a representative sample of fluids to be injected is attached hereto, marked Exhibit G in Section J-3, and by this reference specifically incorporated herein and made a part hereof.
- 7. Analysis of nearby fresh water wells is attached hereto, marked Exhibit H in Section J-4, and is by this reference specifically incorporated herein and made a part hereof.
- 8. Attached Hereto in Section E copies of the Log and the Well Completion Report for the Laucomer 13-1 are contained in the Commission files and are also attached hereto, marked Exhibit C, D, and E and by this reference specifically incorporated herein and made a part hereof.
- 9. A schematic of the Laucomer 13-1 showing total depth, casing purpose, size, specifications, setting depth, cement used, cement tops, tubing and packer setting depth, disposal zone and geological formation of the disposal zone is attached hereto, explained in Section F and Exhibit "F" and by this reference specifically incorporated herein and made a part hereof.
- 10. No unplugged or improperly plugged wells exist within the area to the best of our knowledge, which would allow migration of injected fluids or formation fluids to enter any fresh water strata as seen in Section A and Exhibit B and explained in Section H.
- 11. The lowest fresh water zone is the Ogallala Aquifer with the depth to the base of the fresh water zone being approximately 550 feet as explained in Section J-5.
- 12. The vertical distance separating the disposal zone and the base of the fresh water strata is approximately 5316 feet. There are no known existing faults which would allow communication between the disposal zone and the fresh water strata as explained in Section G.
- 13. The operator of the Laucomer 13-1 disposal well will be the Applicant, Terex Energy Corp with offices located in Broomfield, Colorado; and their mailing address is 520 Zang Street, Suite 250, Broomfield, CO 80021

A geological description of the Sundance Sand is that the formation consists of sandstone, light tan - tan, partially consolidated friable unconsolidated, med-coarse grained, subrounded round, clayey - slightly calcareous cement, fair sorting, slight frosted trace bentonite. Sonic porosity = 12-15%. No Known fault zones exist.

A geological description of the Spearfish Sand is that the formation consists of sandstone, light - med grey, partly consolidated, subrounded, predominately clay cement, some calcite cement, fine - very fine, trace reworked shale fragments. Sonic porosity = 10-12%. No known fault zones exist.

The Sundance Sand occurs at approximately 5,866 ft. to 5,922 ft. and the Spearfish Sand is approximately 6,100 ft. to 6,184 ft. in the proposed disposal well. Further description of the Sundance Sand and Spearfish Sand is contained in Exhibit "F" attached hereto and by this reference specifically incorporated and made a part hereof.

WHEREFORE, Applicant requests that as to the approval of the proposed disposal well that this matter be set for hearing in the event that any person files a written objection to the same within ten (10) days of the filing of this application of the Nebraska Oil and Gas Conservation Commission, that notice of such hearing be given as required by law, and that upon such hearing, or without a hearing if no objection is filed, that an order be entered by the Commission approving the salt water disposal well as aforesaid.

Dated this $\overline{1}$ day of Nov,

Respectfully submitted,

TEREX ENERGY CORP, Applicant

By: Em, / my

(Name/Title) Corl Magovac

Ops. Mgr.

APPLICATION FOR DISPOSAL WELL SIOUX COUNTY, NEBRASKA TEREX ENERGY CORP

CASE NUMBER ULC 14-14



A. PLAT MAP OUTLINING AFFECTED AREA

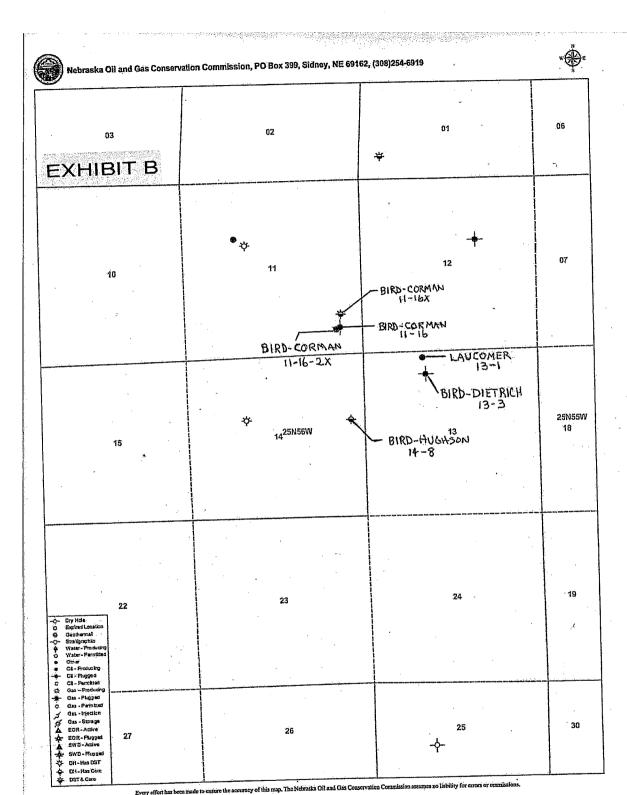
The affected area of the proposed disposal well will be the area surrounding the site in Sections 11, 12, 13, and 14 at T25N / R56W in Sioux County, NE. The site is about 14 miles north of Mitchell, Nebraska to the right on State Highway 29.

Exhibit A shows the affected areas. Exhibit B1 shows the locations of all of the wells drilled within ½ mile of the proposed disposal well and a few hundred feet beyond. Exhibit B2 Shows the Location of the proposed disposal well – The Laucomer 13-1 (Previously named the Bird 21-13H).

The only producing well near the area of influence is the Bird-Corman 11-16-2X in the SE corner of Sec. 11 – a little bit more than ½ mile from the proposed disposal well – See Section H for further information. Also in the SE corner of Section 11, the Bird-Corman 11-16 and the Bird-Corman 11-16X were P and Aed in July of 1986. The Bird-Dietrich 13-3 in the NW corner of Section 13 was P and Aed in July of 1986. The Bird-Hughson 14-8 in the NE corner of Section of Section 14 was junked and abandoned in June of 1988. There are no well sites in the SW corner of Section 12.

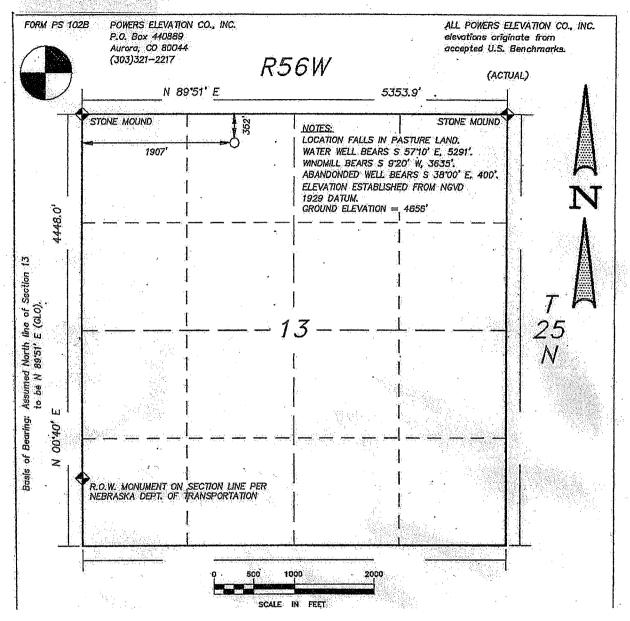
See Exhibits A and B1 and B2 - Next Three Pages

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Every effort has been made to ensure the accuracy of this map. The Nebruska Oil and Gas Conservation Commission assumes no liability for errors or omnissions.

EXHIBIT B



B. NAMES AND ADDRESSES OF AFFECTED OWNERS

1. Surface and Mineral Owners - T25N - R56W

Owner North of Site: SW/4 Sec. 12 E of Hwy 29 and SE/4 Sec. 12

Stevan V. Johnson Revocable Trust 1911 Highway 29 Mitchell, NE 69357

Marilyn K. Johnson Revocable Trust 1911 Highway 29 Mitchell, NE 69357 Ph. 308-632-8484

Owner West of Site: NE/4 Sec. 14-NW/4 Sec. 13 W of Hwy 29

Hughson Flying "A" Ranch, Inc. c/o Lee M. Hughson, President 2205 Hwy. 29 Mitchell, NE 69346

Owners Northwest of Site: SE/4 Sec. 11 – SW/4 Sec.12 W of Hwy 29

Sioux Ranch, Inc. PO Box 709 Morril, NE 69358

Corman Ranch and Farms
Phil V. Corman
10399 Rd. 82
Bridgeport, NE 69336-2685

Ph. 308-262-4765



Ross & Shannon Corman 6634 Rd. 101 Dalton, NE 69131 Ph. 308-262-0890

Owner to East and South of Site: Sec. 13 E of Hwy 29

FX Land Company
David Laucomer
Box 166,
Scotts Bluff, NE 69363

2. Oil and Gas Leasehold

<u>Section 11</u>: SE/4 – SW/4 Sec. 12 W of Hwy 29 LF Cottonwood, LLC 1301 McKinney, Suite 3150 Houston, TX 77010

<u>Section 12</u>: SW/4 E of Hwy 29 Whitmar Exploration Company 555 17th Street, Suite 880 Denver Co 80209

Section 13: Sec. 13 E of Hwy 29
Robert T. Birdsong
2552 East Alameda #50
Denver, CO 80209 Ph. 303-378-4942

Section 14: NE/4 – Sec 13 NW/4 W of Hwy 29 LF Cottonwood, LLC 1301 McKinney, Suite 3150 Houston, TX 77010

3. <u>Bird-Corman 11-16-2X</u> (SE/4 of Section 11, T25N-R56W)

Net Revenue Interests

Allen Heim 411 S. Myrtle Kimball, NE 69145 Working Interest
Overriding Royalty Interest

M. C. Heim PO Box 230028 Anchorage, AK 99523-0028 **Working Interest**

Sunburst, Inc. and/or Walter P. Jackson 1401 E. Girard # 143 Englewood, CO 80113 **Overriding Royalty Interest**

AA Oil & Gas Corp. 411 S. Myrtle Kimball, NE 69145 Overriding Royalty Interest

Phillip V. Corman 10399 RD 82 Bridgeport, NE 69336 **Royalty Interest**

Bruce A. Corman PO Box 520 Burlington, CO 80807 **Royalty Interest**

Ross A. Corman 6634 Rd. 101 Dalton, NE 69131 Royalty Interest

Jane A. Grove PO Box 709 Morrill, NE 69358 **Royalty Interest**

Phil Corman 10399 Rd. 82 Bridgeport, NE 69336-2685 308-262-4765

Royalty Interest

Jacquelyn Meissner 7080 S. Filmore CT. Centennial, CO 80122 **Overriding Royalty Interest**

Fred F. Meissner Estate C/O Jacquelyn Meissner, Personal Representative 7080 S. Filmore CT. Centennial, CO 80122 **Overriding Royalty Interest**

4. Right of Way Owner (Both Sides of Hwy 29)

Nebraska Department of Roads District 5 PO Box 220 Gering, NE 69341 Attention: Don Hull

B. NAMES AND ADDRESSES OF AFFECTED OWNERS

1. Land Owners - T25N - R56W

Owner North of Site: SW/4 Sec. 12 E of Hwy 29

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Marilyn K. Johnson Revocable Trust 1911 Highway 29 Mitchell, NE 69357 Ph. 308-632-8484

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2. Mineral Owners

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<u>Section 12</u>: SW/4 E of Hwy 29 Whitmore Exploration Company 555 17th Street, Suite 880 Denver Co 80209

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3. Royalty Interest Owners

Bird-Corman 11-16-2X

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4. Right of Way Owner (Both Sides of Hwy 29)

Nebraska Department of Roads District 5 PO Box 220 Gering, NE 69341 Attention: Don Hull

C. DESCRIPTION OF OPERATION

Terex Energy Corp. proposes converting the non-producing Laucomer 13-1 oil well located in Sioux County at 25N / 56W in the NE NW corner of Section 13, about 14 miles north of Mitchell, NE, into a commercial saltwater disposal well. The approximately 11 acres site will be fully fenced and gated.

Terex expects to operate 24 hours a day, seven days a week. We expect to take produced water from Nebraska, Wyoming and Colorado and could be accepting water from the Silo Field, the Wattenberg Fields and many other operations in the area in need of disposal facilities.

The 'produced' water is to be filtered and run through separators to remove solids and any oil cut prior to injection. We expect to inject into the Sundance Sands and/or the Spearfish Sands. We expect to have an initial capacity of up to 10,000 bpd.

Terex expects to average up to 80 trucks per day with 130 bbls per truck when operating at initial full capacity. The unit will likely have 4 to 6 lanes to accommodate the trucks in a timely manner. We expect to create 10 to 15 jobs from in and around Mitchell and Harrison, NE.

As discussed with Stan Belieu, Deputy Director COGCC, final approval/issuance of the permit is subject to water samples taken from both the Sundance Sands and Spearfish Sands during the upcoming pressure tests passing suitability standards for disposal wells as set forth by the Nebraska Oil and Gas Conservation Commission.

D. OPERATOR INFORMATION

The operator of the proposed injection well is to be:

Terex Energy Corp 520 Zang Street, Suite 250 Broomfield, Co 80021 Office 720-502-4483 Fax 720-302-0749

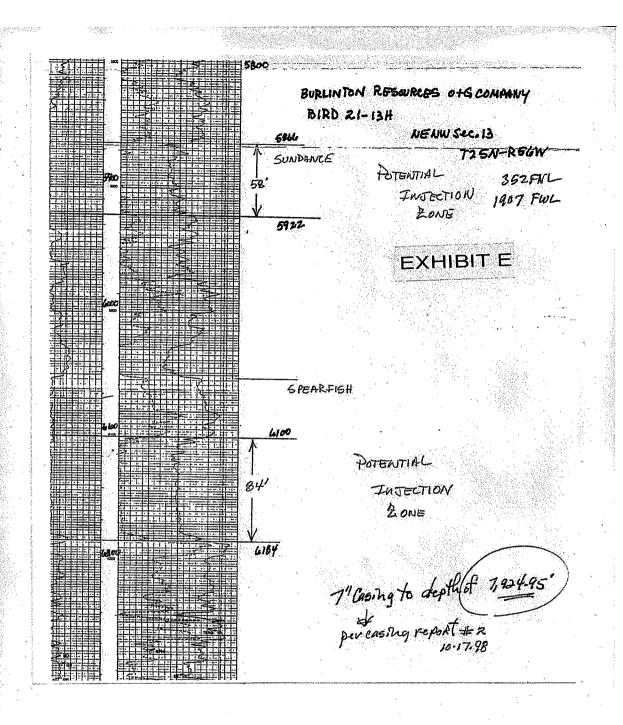
The primary contacts in the company are: Don Walford, CEO; Allen Heim, VP Operations; Martin Gottlob, Geology; Emil Magovac, Field Operations.

E. COPY OF COMPLETION REPORTS AND LOGS

See Exhibits C, D and E – Next Three Pages

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F. SCHEMATIC DIAGRAM OF WELL

1. T.D./ 2. Depth of Injection Disposal Interval / 3. Geological Names /

4. Geological Description

See Attachment F - Next Page

5. Depths Tops/Bottoms Casing and Cement Info

The Surface hole is 13 $\frac{1}{2}$ ", using 10 $\frac{3}{4}$ 40.4 PPFT, J55 casing set @ 603'. It was cemented with 360 sacks "G" cement with 2% CaC12 and $\frac{1}{4}$ # / sack cellophane. Yield 1:18 mixed @ 15.2 PPG, topped off with 25 sacks "G" cement with 2% CaC12, and $\frac{1}{4}$ # / sack cellophane.

The intermediate casing is a 9 7/8" hole:

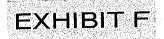
7" LTC 23# PFT J55	5708.99'
7" LTC 23# PFT S95	217.62'
7" LTC 29# PFT S95	1477.09'
7" LTC 23# PFT S95	474.28'
7" FLOAT COLLAR	1.87'
7" LTC 23# PFT S95	45.10'
7" FLOAT SHOE	2.00'
LANDED @ 7926.95' TMD	

The lead was cemented with 1275 sack High Bond 75: Yield 1.95 @ 12 PPG. The middle was cemented with 500 sacks 50/50 POZ: Yield 1.33 @ 14.2 PPG. The tail was cemented with 250 sacks "G": Yield 1.18 @ 15.6 PPG. One-hundred BBL of cement circulated to the surface.

6. Size and Specs Casing & Tubing / Setting Depths & Types of Packers

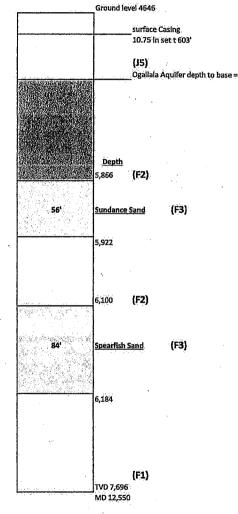
For size and specs of existing casing and tubing, see #5 above. Tubing will be replaced with corrosion resistant coated tubing. A retrievable packer will be set no more than 100' from top of the highest perfs in the Sundance Sands at about 5966'. A cast-iron bridge plug will be set about 100' below the lowest perfs in the Spearfish Sands at about 6284'.

Schematic Diagram



Bird 21-13H (Laucomer 13-1)

NENW Sec. 13 T25N-R56W



(F4)

Sample Description

Sandstone, light tan - tan, partially consolidated-friable unconsolidated, Med-course grained, subrounded - round, clayey-slightly calcareous cement, fair sorting, slight frosted trace bentonite.

Sonic porosity = 12-15%

No known fault zones detected

(F4)

Sample Description

sandstone, light-med grey, partly consolidated, subrounded, Predominately clay cement, some calcite cement, finevery fine, trace reworked shale fragments, Sonic porosity = 10-12%

Sonic porosity = 10-12%

No known fault zones detected

G. WATER ZONE INFORMATION

The higher proposed injection zone, The Sundance Sand, is immediately overlain by 30' of hard sand, with 5% or less sonic porosity. The tight sand is immediately overlain by 76' of impermeable shale. Both of these zones represent a substantial and impenetrable barrier and are thick enough to deter any fracturing that would allow injected fluids to pass through.

H. UNPLUGGED WELL INFORMATION

There are no producing or unplugged wells within ½ mile radius of the proposed disposal well. The closest producing well is the Bird-Corman 11-16-2X in the SESE Sec. 11 T25N – R56W. It is approximately 2806 ft. NW of the proposed disposal well. It is completed and perforated in the Virgil Zone at depths of 7619-24 and 7636-44, being over 1400 ft. above our zones of injection. Any communication between this well and the proposed water disposal well is not anticipated.

I. FRACTURE PRESSURES

We estimate the injection pressures in the injection zone to be at a maximum of 0.7 psi per foot depth, which would be below the frac gradient. We will report a more accurate calculation when we establish an injection rate.

J. OPERATING DATA

1. Maximum Rates and Pressures

We desire to operate at maximum allowable pressures, but below the frac gradient.

2. Source of Fluids

We expect trucks to deliver produced water from Nebraska, Wyoming and Colorado. There are many wells in those areas in need of disposal and we will receive waters from primarily Silo, but will also likely receive water from the Wattenberg, and other producers in these areas.

3. Produced Water Sample Analysis

We acquired recent representative water analysis's of produced water from six EOG Resources wells from the Silo Field north of Cheyenne, WY., from a water hauling company. See Exhibit G – Next 12 Pages



Phone: (307)-856-0866 • Toll Free: (866)-985-0866

Laboratory Analytical Report

Customer Name:

EOG - DJ Basin

14080717

Project ID:

EOG-Colorado CWA

Report Date: 8/12/2014

Lab Sample ID:

14080717-01

Date

Time

Customer Sample ID:

JUBILEE 5-53

Collection: 7/31/2014 2:30 PM

Matrix:

Aqueous

Received:

8/7/2014 2:23 PM

Notes:

Analyses	Result	Units	RL Qual	. Method	Analysis Date/Time	Analyst
Alkalinity, Bicarbonate (HCO3)	1000.0	mg/L	2	SM 2320 B	8/12/2014 7:46:00 AM	GW
Alkalinity, Carbonate (CO3)	ND	mg/L	2	SM 2320 B	8/12/2014 7:46:00 AM	GW
Alkalinity, Hydroxide (OH)	ND	mg/L	2	SM 2320 B	8/12/2014 7:46:00 AM	GW
Total Alkalinity	1000.0	mg/L	2	SM 2320 B	8/12/2014 7:46:00 AM	GW
Barium	ND	mg/L	5	EPA 200.7	8/12/2014 11:11:24 AM	NW
Calcium	. 110	mg/L	5	EPA 200.7	8/12/2014 11:11:24 AM	NW
Calcium (meq/L)	5.5	meq/L	0	EPA 200.7	8/12/2014 11:11:24 AM	ИW
Calcium as CaCO3	280	mg/L	2.5	EPA 200.7	8/12/2014 11:11:24 AM	.NW
Anions	244.3	meq/L	-50	Calculation	8/12/2014 12:07:00 PM	PR
Cation/Anion Balance	2.9	%	-50	Calculation	8/12/2014 12:07:00 PM	PR
Cations	259	meq/L	-50	Calculation	8/12/2014 12:07:00 PM	PR
Chloride	7928	mg/L	1000	EPA 300.0	8/11/2014 3;18:00 PM	TMC
Chloride as NaCl	13070	mg/L	1.6	EPA 300.0	8/11/2014 3:18:00 PM	TMC
Ionic Strength	0.3	mol/L	0	Calculation	8/12/2014 12:07:00 PM	PR
Iron	ND	mg/L	5	EPA 200.7	8/12/2014 11:11:24 AM	NW
Magnesium	ND	mg/L	5	EPA 200.7	8/12/2014 11:11:24 AM	NW
Magnesium (meq/L)	0.0	meq/L	, O .	EPA 200.7	8/12/2014 11:11:24 AM	NW
Нq	6.98	s.u.	0.01	EPA 150.1	8/11/2014 3:55:00 PM	GW
Potassium	10	mg/L	5 .	EPA 200.7	8/12/2014 11:11:24 AM	NW
Potassium (meg/L)	0.3	meq/L	0	EPA 200.7	8/12/2014 11:11:24 AM	NW
Resistivity, 25C	0.42	ohms m	0.01	SM 2510 B	8/11/2014 4:06:00 PM	GW
Sodium	5800	mg/L	500	EPA 200.7	8/12/2014 11:00:24 AM	ŃW
Sodium (meg/L)	253	meq/L	0	EPA 200.7	8/12/2014 11:00:24 AM	NW
Specific Gravity	1.013	g/cc	0.001	ASTM D 1429-03	8/11/2014 4:05:00 PM	GW

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Definitions;

ND-Not Detected at the reporting limit

RL-Analyte Reporting Limit

S-Spike Recovery outside accepted recovery limits J-Analyte detected below quantitation limits

D-Diluted out of recovery limits L-Analyzed by a contract laboratory

H-Holding times for preparation or analysis exceeded

Documentation will be kept for five (5) years.

M-Matrix Effect

Page 1 of 2



Phone: (307)-856-0866 • Toll Free: (866)-985-0866

Laboratory Analytical Report

Customer Name:	EOG - DJ Basin		•		Order ID:	14080717	
Project ID:	EOG-Colorado CV	VA 、			Report Date:	8/12/2014	
Strontium	ND	mg/L	5	EPA 200.7	8/12	/2014 11:11:24 AM	ИŴ
Sulfate	208.0	mg/L	20	EPA 375.4	8/11	2014 1:20:00 PM	TMC
Temperature (Thermometri	c) 17.8	· °C	0.1	N/A	8/12	2014 2:44:00 PM	AC
Total Dissolved Solids (TD:	S) 15080	mg/L	5	Calculation	8/12	2014 12:07:00 PM	PR
Total Solids (TS)	19100	mg/L	1	SM 2540 B	8/11/	2012 11:06:00 AM	KF

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Definitions

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H-Holding times for preparation or analysis exceeded

Documentation will be kept for five (5) years.

S-Spike Recovery outside accepted recovery limits
J-Analyte detected below quantilation limits

M-Matrix Effect

D-Diluted out of recovery limits L-Analyzed by a contract laboratory

Page 2 of 2



Phone: (307)-856-0866 • Toll Free: (866)-985-0866

Laboratory Analytical Report

Customer Name:

EOG - DJ Basin

Order ID:

14060605

Date

Project ID:

EOG-Colorado CWA

Report Date: 6/18/2014

Lab Sample ID:

14060605-08

Time

Customer Sample ID:

Windy 504-1806H

Collection:

6/2/2014 12:25 PM

Matrix:

Aqueous

Received:

6/6/2014 9:01 AM

Notes:

Analyses	Result	Units	RL. Qu	al. Method	Analysis Date/Time	Analyst
Alkalinity, Bicarbonate (HCO3)	500.0	mg/L	2	SM 2320 B	6/13/2014 7:57:00 AM	GW
Alkalinity, Carbonate (CO3)	ND	mg/L	2	SM 2320 B	6/13/2014 7:57:00 AM	GW
Alkalinity, Hydroxide (OH)	ND	mg/L	2	SM 2320 B	6/13/2014 7:57:00 AM	GW
Total Alkalinity	500.0	mg/L	2.	SM 2320 B	6/13/2014 7:57:00 AM	GW
Barium	50.8	mg/L	- 5	EPA 200.7	6/10/2014 9:51:31 PM	cv
Calcium	720	mg/L	5	EPA 200.7	6/10/2014 9:51:31 PM	CV
Calcium (meq/L)	35.9	meq/L	0	EPA 200.7	6/10/2014 9:51:31 PM	CV
Calcium as CaCO3	1800	mg/L	2.5	EPA 200.7	6/10/2014 9:51:31 PM	CV
Anions	892.6	meq/L	-50	Calculation	6/18/2014 10:49:00 AM	AC
Cation/Anion Balance	-14.4	%	-50	Calculation	6/18/2014 10:49:00 AM	AC
Cations	668	meq/L	-50	Calculation	6/18/2014 10:49:00 AM	AC
Chloride	31190	mg/L	1000	EPA 300.0	6/11/2014 5:15:00 PM	TMC
Chloride as NaCl	51420	mg/L	1.6	EPA 300.0	6/11/2014 5:15:00 PM	TMC
Ionic Strength	0.8	mol/L	·O	Calculation	6/18/2014 10:49:00 AM	AC
Iron	11.9	mg/L	5	EPA 200.7	6/10/2014 9:51:31 PM	cv
Magnesium	84	mg/L	-5	EPA 200.7	6/10/2014 9:51:31 PM	CV
Magnesium (meq/L)	6.9	meq/L	0	EPA 200.7	6/10/2014 9:51:31 PM	CV
pH	6.19	s.u.	0.01	EPA 150.1	6/11/2014 2:48:00 PM	GW
Potassium	1500	mg/L	500	EPA 200.7	6/10/2014 6:39:57 PM	CV
Potassium (meq/L)	38.4	meq/L	0	EPA 200.7	6/10/2014 6:39:57 PM	cv
Resistivity, 25C	0.15	ohms m	0.01	SM 2510 B	6/11/2014 3:17:00 PM	GW
Sodium	14000	mg/L	500	EPA 200.7	6/10/2014 6:39:57 PM	CV
Sodium (meq/L)	587	meq/L	0.	EPA 200.7	6/10/2014 6:39:57 PM	CV
Specific Gravity	1.033	g/cc	0.001	ASTM D 1429-03	6/10/2014 3:50:00 PM	GW

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Definitions:

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D-Diluted out of recovery limits L-Analyzed by a contract laboratory

RL-Analyte Reporting Limit

H-Holding times for preparation or analysis exceeded

M-Matrix Effect

Page 1 of 2

Documentation will be kept for five (5) years.



Phone: (307)-856-0866 • Toll Free: (866)-985-0866

Laboratory Analytical Report

		-	-				
Customer Name:	EOG - DJ Basin			0	rder ID:	14060605	
Project ID:	EOG-Colorado CV	V A		R	eport Date:	6/18/2014	
Strontium	140	mg/L	5	EPA 200.7	6/10	/2014 9:51:31 PM	ĊV
Sulfate	227.0	mg/L	20	EPA 375.4	6/11	/2014 10:15:00 AM	TMC
Sulfate (meq/L)	4.7	meq/L	Ö	EPA 375.4	6/11	/2014 10:15:00 AM	TMC
Temperature (Thermomet	tric) 23.2	°C	0.1	N/A	.6/18	/2014 10:49:00 AM	AC
Total Dissolved Solids (TI	OS) 47740	mg/L	5	Calculation	6/18	/2014 10:49:00 AM	AC
Total Hardness as CaCO	3 2150	mg/L	6.6	EPA 200.7	6/10	/2014 9:51:31 PM	CA
Total Solids (TS)	45400	mg/L	1 ,	SM 2540 B	6/13	/2014 12:11:00 PM	KF

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RL-Analyte Reporting Limit

H-Holding times for preparation or analysis exceeded

Documentation will be kept for five (5) years.

S-Spike Recovery outside accepted recovery limits

J-Analyte detected below quantitation limits

M-Matrix Effect

D-Diluted out of recovery limits L-Analyzed by a contract laboratory

Page 2 of 2



Phone: (307)-856-0866 • Toll Free: (866)-985-0866

Laboratory Analytical Report

Customer Name:

EOG - DJ Basin

Order ID:

14072216

Project ID:

EOG-Colorado CWA

Report Date: 8/4/2014

Lab Sample ID:

14072216-01

Date

Time

Customer Sample ID:

Jubilee 30-07H

Collection: 7/17/2014 11:15 AM

Matrix:

Aqueous

Received: 7/22/2014 2:31 PM

Notes:

Notes:						
Analyses	Result	Units	RL	Qual. Method	Analysis Date/Time	Analyst
Alkalinity, Bicarbonate (HCO3)	650.0	mg/L	2	SM 2320 B	7/30/2014 2:31:00 PM	GW
Alkalinity, Carbonate (CO3)	ND	mg/L	2.	SM 2320 B	7/30/2014 2:31:00 PM	GW
Alkalinity, Hydroxide (OH)	ND	mg/L	2	SM 2320 B	7/30/2014 2:31:00 PM	GW
Total Alkalinity	650.0	mg/L	. 2	SM 2320 B	7/30/2014 2:31:00 PM	GW
Barlum	36.5	mg/L	5	EPA 200.7	7/30/2014 8:50:38 PM	CV
Calcium	620	mg/L	.5	EPA 200.7	7/30/2014 8:50:38 PM	CV
Calcium (meq/L)	31.1	meq/L	Ġ.	EPA 200.7	7/30/2014 8:50:38 PM	CV
Calcium as CaCO3	1600	mg/L	2.5	EPA 200.7	7/30/2014 8:50:38 PM	CV
Anions	586.0	meq/L	-50	Calculation	. 8/4/2014 12:47:00 PM	AC
Cation/Anion Balance	5.7	%	-50	Calculation	8/4/2014 12:47:00 PM	AC
Cations	656	meq/L	-50	Calculation	8/4/2014 12:47:00 PM	AC
Chloride	20360	mg/L	1000	EPA 300.0	7/29/2014 9:58:00 PM	TMC
Chloride as NaCl	33560	mg/L	1.6	EPA 300.0	7/29/2014 9:58:00 PM	TMC
lonic Strength	0.6	mol/L	0	Calculation	8/4/2014 12:47:00 PM	AC
lron;	12.8	mg/L	5	EPA 200.7	7/30/2014 8:50:38 PM	CV
Magnesium	24	mg/L	5	EPA 200.7	7/30/2014 8:50:38 PM	CV
Magnesium (meq/L)	2.0	meq/L	:0	EPA 200.7	7/30/2014 8:50:38 PM	CV
pH	6.18	s.u.	0.01	EPA 150.1	7/25/2014 3:52:00 PM	GW
Potassium	51	mg/L	5	EPA 200.7	7/30/2014 8:50:38 PM	CV
Potassium (meq/L)	1.3	meq/L	Ō	EPA 200.7	7/30/2014 8:50:38 PM	CV
Resistivity, 25C	0.18	ohms m	0.01	SM 2510 B	7/30/2014 2:25:00 PM	GW
Sodium	14000	mg/L	500	EPA 200.7	7/30/2014 6:12:10 PM	ĊV
Sodium (meq/L)	622	meq/L	.0	EPA 200.7	7/30/2014 6:12:10 PM	CV
Specific Gravity	1.029	g/cc	0.001	ASTM D 1429-03	7/30/2014 10:36:00 AM	GW

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Definitions:

ND-Not Detected at the reporting limit

RL-Analyte Reporting Limit

H-Holding times for preparation or analysis exceeded

S-Spike Recovery outside accepted recovery limits

J-Analyte detected below quantitation limits

M-Matrix Effect

D-Diluted out of recovery limits L-Analyzed by a contract laboratory

Documentation will be kept for five (5) years.

Page 1 of 2



Gas Measurement . Emissions Testing

Laboratory • Sample Collection

Phone: (307)-856-0866 • Toll Free: (866)-985-0866

Laboratory Analytical Report

Customer Name:	EOG - DJ Basin			Orde	er ID: 14072216	
Project ID:	EOG-Colorado CV	VA.		Rep	ort Date: 8/4/2014	
Strontium	85.6	mg/L	5	EPA 200.7	7/30/2014 8:50:38 PM	CV
Sulfate	61.5	mg/L	20	EPA 375.4	7/29/2014 3:13:00 PM	TMC
Temperature (Thermometric)	24.6	°C	0.1	N/A	8/4/2014 12:47:00 PM	AC
Total Dissolved Solids (TDS)	36080	mg/L	5	Calculation	8/4/2014 12:47:00 PM	AC
Total Solids (TS)	40400	mg/L	1	SM 2540 B	7/30/2014 10:01:00 AM	KF

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Definitions:

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S-Spike Recovery outside accepted recovery limits J-Analyte detected below quantitation limits

M-Matrix Effect

Documentation will be kept for five (5) years.

D-Diluted out of recovery limits L-Analyzed by a contract laboratory

Page 2 of 2



Phone: (307)-856-0866 • Toll Free: (866)-985-0866

Laboratory Analytical Report

Customer Name:

EOG - DJ Basin

14050208

Project ID:

Report Date: 5/13/2014

Lab Sample ID:

14050208-01

Date

Time

Customer Sample ID:

Jubilee 586-1705H

Collection: 4/25/2014 1:52 PM

Matrix:

Aqueous

Received:

5/2/2014 11:00 AM

Notes:

Notes.					•	
Analyses	Result	Units	RL Qua	Method	Analysis Date/Time	Analyst
Alkalinity, Bicarbonate (HCO3)	700.0	mg/L	2	SM 2320 B	5/12/2014 8:57:00 AM	GW
Alkalinity, Carbonate (CO3)	ND	mg/L	2	SM 2320 B	5/12/2014 8:57:00 AM	GW
Alkalinity, Hydroxide (OH)	ND	mg/L	2	SM 2320 B	5/12/2014 8:57:00 AM	GW
Total Alkalinity	700.0	mg/L	2	SM 2320 B	5/12/2014 8:57:00 AM	GW
Barium	44.0	mg/L	5	EPA 200.7	5/13/2014 11:00:03 AM	cv
Calcium	750	mg/L	5	EPA 200.7	5/13/2014 11:00:03 AM	CV
Calcium (meq/L)	37.4	meq/L	0	EPA 200.7	5/13/2014 11:00:03 AM	CV
Calcium as CaCO3	1900	mg/L	2.5	EPA 200.7	5/13/2014 11:00:03 AM	CV
Anions	1124	meq/L	-50	Calculation	5/12/2014 10:40:00 AM	JP
Cation/Anion Balance	-27,9	%	-50	Calculation	5/12/2014 10:40:00 AM	JP
Cations	634	meq/L	-50	Calculation	5/12/2014 10:40:00 AM	JP
Chloride	39400	mg/L	1000	EPA 300.0	5/5/2014 4:20:00 PM	TMC
Chloride as NaCl	64950	mg/L	1.6	EPA 300.0	5/5/2014 4:20:00 PM	TMC
Ionic Strength	0.9	mol/L	0	Calculation	5/12/2014 10:40:00 AM	JP
Iron	21.4	mg/L	5	EPA 200.7	5/13/2014 11:00:03 AM	CV
Magnesium	92	mg/L	5	EPA 200.7	5/13/2014 11:00:03 AM	CV
Magnesium (meq/L)	7.6	meq/L	0 ^	EPA 200.7	5/13/2014 11:00:03 AM	CV
Hq	7.06	s.u.	0.01	EPA 150.1	5/10/2014 11:26:00 AM	GW
Potassium	240	mg/L	5	EPA 200.7	5/13/2014 11:00:03 AM	cv
Potassium (meq/L)	6.1	meq/L	O	EPA 200.7	5/13/2014 11:00:03 AM	CV
Resistivity, 25C	0.18	ohms m	0.01	SM 2510 B	5/10/2014 11:39:00 AM	GW
Sodium	13000	mg/L	500	EPA 200.7	5/5/2014 1:17:10 PM	CV
Sodium (meq/L)	583	meq/L	Ö	EPA 200.7	5/5/2014 1:17:10 PM	CV
Specific Gravity	1.032	g/cc	0.001	ASTM D 1429-03	5/10/2012 11:23:00 AM	GW

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Documentation will be kept for five (5) years.

S-Spike Recovery outside accepted recovery limits

J-Analyte detected below quantitation limits

M-Matrix Effect

D-Diluted out of recovery limits

L-Analyzed by a contract laboratory

Page 1 of 2



Gas Measurement • Emissions Testing

Laboratory • Sample Collection

Phone: (307)-856-0866 • Toll Free: (866)-985-0866

Laboratory Analytical Report

Customer Name:	EOG - DJ Basin		e e e e e e e e e e e e e e e e e e e	Orde	er ID: 14050208	
Project ID:				Rep	ort Date: 5/13/2014	
Strontium	116	mg/L	5	EPA 200.7	5/13/2014 11:00:03 AM	cv
Sulfate	88.8	mg/L	20	EPA 375.4	5/12/2014 1:10:00 PM	TMC
Temperature (Thermometric)	20.8	°C	0.1	N/A	5/13/2014 4:36:00 PM	AC
Total Dissolved Solids (TDS)	54690	mg/L	5	Calculation	5/12/2014 10:40:00 AM	JP
Total Hardness as CaCO3	2250	mg/L	6.6	EPA 200.7	5/13/2014 11:00:03 AM	cv
Total Solids (TS)	39100	mg/L	1	SM 2540 B	5/6/2014 12:00:00 PM	KF

29 Country Acres Rd., Riverton, WY 82501 • E-mail: Admin@Precision-Labs.com • www.Precision-Labs.com

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RL-Analyte Reporting Limit

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S-Spike Recovery outside accepted recovery limits

J-Analyte detected below quantitation limits

M-Matrix Effect

D-Diluted out of recovery limits L-Analyzed by a contract laboratory

Page 2 of 2



Phone: (307)-856-0866 • Toll Free: (866)-985-0866

Laboratory Analytical Report

Customer Name:

EOG - DJ Basin

Order ID:

14022617

Project ID:

Jubillee 103-0433H Offsets

Report Date: 3/6/2014

Lab Sample ID:

14022617-06

Date

Time

Customer Sample ID:

Jubilee 69-04H H2O

Collection: 2/20/2014

1:30 PM

Matrix:

Aqueous

Received: 2/26/2014

1:43 PM

Notes:

Analyses	Result	Units	RL Qua	il. Method	Analysis Date/Time	Analyst
Alkalinity, Bicarbonate (HCO3)	1500.00	mg/L	2	SM 2320 B	3/3/2014 12:49:00 PM	КВ
Alkalinity, Carbonate (CO3)	ND	mg/L	2	SM 2320 B	3/3/2014 12:49:00 PM	КВ
Alkalinity, Hydroxide (OH)	ND	mg/L	2	SM 2320 B	3/3/2014 12:49:00 PM	КВ
Total Alkalinity	1500.0	mg/L	. 2	SM 2320 B	3/3/2014 12:49:00 PM	КВ
Barium	64.20	mg/L	5	EPA 200.7	2/27/2014 8:39:32 PM	cv
Calcium	1100	mg/L	500	EPA 200.7	2/27/2014 5:22:56 PM	cν
Calcium (meq/L)	53.4	meq/L	0	EPA 200.7	2/27/2014 5:22:56 PM	CV
Calcium as CaCO3	2700	mg/L	2.5	EPA 200.7	2/27/2014 5:22:56 PM	cv
Anions	879.88	meq/L	-50	Calculation	3/6/2014 1:25:00 PM	AC
Cation/Anion Balance	7.56	%	-50	Calculation	3/6/2014 1:25:00 PM	AC
Cations	1023.87	meq/L	-50	Calculation	3/6/2014 1:25:00 PM	AC
Chloride	30000	mg/L	1000	EPA 300.0	2/28/2014 5:06:00 PM	TMC
Chloride as NaCl	50000.00	mg/L	1.6	EPA 300.0	2/28/2014 5:06:00 PM	TMC
Ionic Strength	0.990	mol/L	Ò	Calculation	3/6/2014 1:25:00 PM	AC
Iron	40	mg/L	5.	EPA 200.7	2/27/2014 8:39:32 PM	cv
Magnesium	120	mg/L	5	EPA 200.7	2/27/2014 8:39:32 PM	CV
Magnesium (meq/L)	10.0	meq/L	0	EPA 200.7	2/27/2014 8:39:32 PM	CV
pH;	6.39	s.u.	0.01	EPA 150.1	3/4/2014 10:01:00 AM	GW
Potassium	820	mg/L	5	EPA 200.7	2/27/2014 8:39:32 PM	CV
Potassium (meq/L)	21.0	meq/L	0.	EPA-200.7	2/27/2014 8:39:32 PM	CV
Resistivity, 25C	0.12	ohms m	0.01	SM 2510 B	3/3/2014 3:45:00 PM	KF
Sodium	22000	mg/L	500	EPA 200.7	2/27/2014 5:22:56 PM	CV
Sodium (meq/L)	940	meq/L	0	EPA 200.7	2/27/2014 5:22:56 PM	CV
Specific Gravity	1.036	g/cc	0,001	ASTM D 1429-03	2/27/2014 12:52:00 PM	GW

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Definitions:

ND-Not Detected at the reporting limit

S-Spike Recovery outside accepted recovery limits

D-Diluted out of recovery limits

RL-Analyte Reporting Limit

H-Holding times for preparation or analysis exceeded

J-Analyte detected below quantitation limits

L-Analyzed by a contract laboratory

M-Matrix Effect

Documentation will be kept for five (5) years.

Page 1 of 2



Gas Measurement • Emissions Testing

Laboratory • Sample Collection

Phone: (307)-856-0866 • Toll Free: (866)-985-0866

Laboratory Analytical Report

Customer Name:	EOG - DJ Basin	٠,	,	Orde	r ID: 14022617	,
Project ID:	Jubillee 103-0433H	Offsets		Repo	rt Date: 3/6/2014	
Strontium	186.00	mg/L	5	EPA 200.7	2/27/2014 8:39:32 PM	CV
Sulfate	ND	mg/L	2	EPA 375.4	2/28/2014 11:05:00 AM	TMC
Sulfate (meq/L)	ŅD	meq/L	0	EPA 375.4	2/28/2014 11:05:00 AM	TMC
Temperature (Thermometric)	12.4	°C	0.1	N/A	3/6/2014 1:25:00 PM	AC
Total Dissolved Solids (TDS)	55000	mg/L	5	Calculation	3/6/2014 1:25:00 PM	AC
Total Hardness as CaCO3	3200	mg/L	6.6	EPA 200.7	2/27/2014 5:22:56 PM	CV
Total Solids (TS)	57000	mg/L	1	SM 2540 B	3/3/2014 3:20:00 PM	KF

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Definitions:

ND-Not Detected at the reporting limit

RL-Analyte Reporting Limit

H-Holding times for preparation or analysis exceeded

S-Spike Recovery outside accepted recovery limits
J-Analyte detected below quantitation limits

M-Matrix Effect

Documentation will be kept for five (5) years.

D-Diluted out of recovery limits L-Analyzed by a contract laboratory

Page 2 of 2



Gas Measurement • Emissions Testing

Laboratory • Sample Collection

Phone: (307)-856-0866 • Toll Free: (866)-985-0866

Laboratory Analytical Report

Customer Name:

EOG - DJ Basin

14022617

Project ID:

Jubillee 103-0433H Offsets

Report Date: 3/6/2014

Lab Sample ID:

14022617-04

Date

Time

Customer Sample ID:

Jubilee 103-0433H H2O

Collection: 2/20/2014

1:15 PM

Matrix: Notes:

Aqueous

Received:

2/26/2014 1:43 PM

Analyses	Result	Units	RLQ	ual. Method	Analysis Date/Time	Analyst
Alkalinity, Bicarbonate (HCO3)	690.00	mg/L	2	SM 2320 B	3/3/2014 12;49:00 PM	KB
Alkalinity, Carbonate (CO3)	ND	mg/L	2	SM 2320 B	3/3/2014 12:49:00 PM	KB .
Alkalinity, Hydroxide (OH)	ND	mg/L	2	SM 2320 B	3/3/2014 12:49:00 PM	KB
Total Alkalinity	690.0	mg/L	. 2	SM 2320 B	3/3/2014 12:49:00 PM	KB
Barium	69.50	mg/L	5	EPA 200.7	2/27/2014 8:12:17 PM	CV

Calcium 980 mg/L 5 EPA 200.7 2/27/2014 8:12:17 PM CV Calcium (meg/L) 48.8 'n EPA 200.7 meg/L 2/27/2014 8:12:17 PM CV Calcium as CaCO3 2400 mg/L 2.5 EPA 200.7 2/27/2014 8:12:17 PM CV Anions 840.10 meq/L -50 Calculation 3/6/2014 1:25:00 PM AC Cation/Anion Balance 5.61 % -50 Calculation 3/6/2014 1:25:00 PM AC Cations 939.98 -50 Calculation 3/6/2014 1:25:00 PM meg/L AC Chloride 29000 1000 EPA 300.0 2/28/2014 4:42:00 PM ma/L TMC Chloride as NaCl 48400.00 mg/L 1.6 EPA 300.0 2/28/2014 4:42:00 PM TMC Ionic Strength 0.925 mol/L 0 Calculation 3/6/2014 1:25:00 PM AC iron 9 5 ma/L EPA 200.7 2/27/2014 8:12:17 PM ĊΫ Magnesium 110 5 mg/L EPA 200.7 2/27/2014 8:12:17 PM CV Magnesium (meq/L) 9.2 meg/L 0 EPA 200.7 2/27/2014 8:12:17 PM pĤ 6:68 0.01 EPA 150.1 s.u. 3/4/2014 10:01:00 AM GW Potassium 1200 500 EPA 200.7 ma/L 2/27/2014 5:17:26 PM CV Potassium (meg/L) 29.4 0 meq/L EPA 200.7 2/27/2014 5:17:26 PM CV Resistivity, 25C 0.13 óhṁs m 0.01 SM 2510 B 3/3/2014 3:45:00 PM KF 20000 EPA 200.7 Sodium mg/L 500 2/27/2014 5:17:26 PM CV Sodium (meq/L) 853 meq/L 0 EPA 200.7 2/27/2014 5:17:26 PM CV

0.001 29 Country Acres Rd., Riverton, WY 82501 . E-mail: Admin@Precision-Labs.com . www.Precision-Labs.com

Definitions:

Specific Gravity

ND-Not:Detected at the reporting limit

RL-Analyte Reporting Limit

H-Holding times for preparation or analysis exceeded

S-Spike Recovery outside accepted recovery limits J-Analyte detected below quantitation limits

M-Matrix Effect

Documentation will be kept for five (5) years.

1.034

D-Diluted out of recovery limits L-Analyzed by a contract laboratory

2/27/2014 12:52:00 PM

ASTM D 1429-03

Page 1 of 2

GW



Phone: (307)-856-0866 • Toll Free: (866)-985-0866

Laboratory Analytical Report

Customer Name:	EOG - DJ Basin			Orde	er ID: 14022617			
Project ID: Jubiliee 103-0433H Offsets			Report Date: 3/6/2014					
Strontium	189.00	mg/L	5	EPA 200.7	2/27/2014 8:12:17 PM	CV		
Sulfate	ND:	mg/L	2	EPA 375.4	2/28/2014 11:05:00 AM	TMC		
Sulfate (meq/L)	ND	meq/L	0	EPA 375.4	2/28/2014 11:05:00 AM	TMC		
Temperature (Thermometric)	12.4	°C	0.1	N/A	3/6/2014 1:25:00 PM	AC		
Total Dissolved Solids (TDS)	52000	mg/L	z 5	Calculation	3/6/2014 1:25:00 PM	AC		
Total Hardness as CaCO3	2900	mg/L	6.6	EPA 200.7	2/27/2014 8:12:17 PM	CV		
Total Solids (TS)	51000	mg/L	1.	SM 2540 B	3/3/2014 3:20:00 PM	KÉ		

29 Country Acres Rd., Riverton, WY 82501 . E-mail: Admin@Precision-Labs.com . www.Precision-Labs.com

Definitions:

ND-Not Detected at the reporting limit

RL-Analyte Reporting Limit

H-Holding times for preparation or analysis exceeded Documentation will be kept for five (5) years.

S-Spike Recovery outside accepted recovery limits

M-Matrix Effect

J-Analyte detected below quantitation limits

D-Diluted out of recovery limits L-Analyzed by a contract laboratory

Page 2 of 2

4. Fresh Water Analysis

There are two water wells within one mile of the proposed injection well. One well is virtually straight north at GPS coordinates 42 9' 24" N / 103 48' 26" W – about one half mile from the proposed operation. The other is about a half of a mile south at 42 8' 6" N / 103 48' 47" W. Allen Heim collected the water samples in lab supplied containers on October 7^{th} at around 1:00pm. The first report is for the south well, and the second report is for the north well. The water was analyzed at Olsen's Agricultural Laboratory, Inc. See Results in Exhibit H – Next 3 Pages

Olsen's Agricultural Laboratory, Inc.

210 East 1st / PO Box 370 / McCook, Nebraska 69001 Office: 308-345-3670 / FAX: 308-345-7880 www.olsenlab.com



WATER SAMPLE REPORT

Account Number:

20392

TEREX ENERGY 520 ZANG ST SUITE 250 **BROOMFIELD CO 80021** Date & Time Sampled: 10/07/2014 @ 1230 Date & Time Received: 10/09/2014 @ 0000 Date Reported: 10/15/2014

Name:

WELL 1

Sample ID: WINDMILL SOUTH OF LAUCOMER 13 1

Lab Number:

62629

Constituent Analyzed	Results	Drinking Water Guidelines * see comments on back *	Analytical Method
pH	8.1 s.u.	6.5 8.5	SM 4500 HB.
Electrical Conductivity	0.31 mmhos/	cm < 0.8	SM 2510 B
Total Dissolved Solids (calculated)	197 mg/L	< 500	SM 1030F
Carbonate	<1 mg/L	N/A	SM 2320 B
Bicarbonate	195 mg/L	N/A	SM 2320 B
Alkalinity (as CaCO3)	160 mg/L	N/A	SM 2320 B
Calcium	32 mg/L	N/A	SM 3120 B
Magnesium	9 mg/L	N/A	SM 3120 B
Potassium	7 mg/L	N/A	SM 3120 B
Sodium	16 mg/L	N/A	SM 3120 B
Nitrate-N plus Nitrite-N *	3.97 mg/L	10 mg/L	Lachat 10-107-04-1
Phosphorus (Total)	0.02 mg/L	N/A	SM 3120 B
Sulfur (Total)	5.30 mg/L	< 80	SM 3120 B
Chloride	4.00 mg/L	< 250	SM 4500 CI E
Iron	0.56 mg/L	< 0.3	SM 3120 B
Manganese	0.03 mg/L	< 0.05	SM 3120 B
Zinc	0.13 mg/L	< 5.0	SM 3120 B
Copper	0.01 mg/L	1,3 mg/L	SM 3120 B
Boron	0.06 mg/L	N/A	SM 3120 B
Total Hardness (Ca+Mg) as CaCO3	6.83 grains/g	allon Moderate	SM 2340 B
Lime (as CaCO3)	433 lbs/acre	-foot	SM 2340 B
SAR	0.6	L	FAO 29
SARadj	1.2	anno de la companya del companya de la companya de la companya del companya de la	FAO 29
Salinity Hazard	LOW		FAO 29
Sodium Hazard, SAR	LOW		FAO 29
Sodium Hazard, SARadj	LOW		FAO 29

Sterile Bottle: YES

* Date & Time Analyzed: 10/15/2014 @ 1344

** Date & Time Started:

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Olsen's Agricultural Laboratory, Inc.

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WATER SAMPLE REPORT

TEREX ENERGY 520 ZANG ST SUITE 250 BROOMFIELD CO 80021

Account Number:

20392

Date & Time Sampled: 10/07/2014 @ 1300 Date & Time Received: 10/09/2014 @ 0000 Date Reported: 10/15/2014

Name: WELL2
Sample ID: WINDMILL NORTH OF LAUCOMER 13 1

Lab Number:

62630

Constituent Analyzed	Results	Drinking Water Guidelines * see comments on back *	Analytical Method
рН	8.2 s.u.	6.5 8.5	SM 4500 H B.
Electrical Conductivity	0.21 mmho:	s/cm < 0,8	SM 2510 B
Total Dissolved Solids (calculated)	137 mg/L	< 500	SM 1030F
Carbonate	< 1 mg/L	N/A	SM 2320 B
Bicarbonate	148 mg/L	N/A	SM 2320 B
Alkalinity (as CaCO3)	121 mg/L	N/A	SM 2320 B
Calcium	25 mg/L	N/A	SM 3120 B
Magnesium	7 mg/L	N/A	SM 3120 B
Potassium	5 mg/L	N/A	SM 3120 B
Sodium	11 mg/L	N/A	SM 3120 B
Nitrate-N plus Nitrite-N *	0.92 mg/L	10 mg/L	Lachat 10-107-04-1
Phosphorus (Total)	0.03 mg/L	N/A	SM 3120 B
Sulfur (Total)	2.20 mg/L	< 80	SM 3120 B
Chloride	6.00 mg/L	< 250	SM 4500 CI E
Iron	0.05 mg/L	< 0.3	SM 3120 B
Manganese	< 0.01 mg/L	< 0.05	SM 3120 B
Zinc	0.01 mg/L	< 5.0	SM 3120 B
Copper	< 0.01 mg/L	1.3 mg/L	SM 3120 B
Boron	< 0.01 mg/L	N/A	SM 3120 B
Total Hardness (Ca+Mg) as CaCO3	5.33 grains	/gallon Moderate	SM 2340 B
Lime (as CaCO3)	327 lbs/ac	re-foot	SM 2340 B
SAR	0.5	L	FAO 29
SARadj	0.8		FAO 29
Salinity Hazard	LOW		FAO 29
Sodium Hazard, SAR	LOW		FAO 29
Sodium Hazard, SARadj	LOW		FAO 29

Sterile Bottle: YES

* Date & Time Analyzed: 10/15/2014 @ 1344

** Date & Time Started:

RY.			

Olsen's Agricultural Laboratory, Inc. 210 East 1st / PO Box 370 / McCook, Nebraska 69001 Office: 308-345-3670 / FAX: 308-345-7880

www.olsenlab.com



COMMENTS

Definitions:

mg/L = milligrams per liter ug/L = micrograms per liter ppm = parts per million (approximately the same as mg/L) ppb = parts per billion (approximately the same as ug/L) MCL = maximum contaminant level MRDL = maximum residual disinfectant level N/A = not available

Calculation:

mg/L x 2.7 = lbs/acre-foot

5. Fresh Water Zone Info

The Ogallala Aquifer is the fresh water source in this region. The surface casing for the Bird 21-13H was set at 603' when it was completed in 1989. The likely bottom of the aquifer is at least 50' above that at 550'.

6. Injection Zone Fresh Water Zone Separation

The top of the Sundance Sands is at 5866'. Separation from the bottom of The Ogallala Aquifer is approximately 5316'. The top of the deeper Spearfish Sands is 6100'. Separation is approximately 6550'.

K. CERTIFICATES OF MAILING

To be sent on date of mailing.