Inspection Report For Well: UT20736 - 04391

U.S. Environmental Protection Agency
Underground Injection Control Program, 8ENF-T
999 18th Street, Suite 300, Denver, CO 80202-2466

This form was printed on 9/24/2013

INSPECTOR(S): Lead: Roberts, Sarah — Date: ~~10~~ 12/11/2013

Others: Ajayi, Christopher — Time: 11:02 am / pm

OPERATOR (only if different): _____

REPRESENTATIVE(S): Chad Stevenson

PRE-INSPECTION REVIEW

Petroglyph Operating Company, Inc

Well Name:	Ute Tribal 18-15		
Well Type:	Enhanced Recovery (2R)		
Operating Status:	AC (ACTIVE) as of 12/31/2002		
Oil Field:	Antelope Creek (Duchesne)		
Location:	SWSE S18 T5S R3W		
Indian Country:	X, Uintah and Ouray		
Last Inspection:	8/29/2012	***Allowable Inj Pressure:***	2156 /
Last MIT:	Pass 11/24/2009	***Annulus Pressure From Last MIT:***	1350

BLACK = POSSIBLE VIOLATION GREY = DATA MISSING

INSPECTION TYPE: **(Select One)**

- [ ] Construction / Workover
- [ ] Plugging
- [ ] Post-Closure
- [ ] Response to Complaint
- [x] Routine
- [ ] Witness MIT
- [ ] Other

IOIS Entered
Date 1/2/14
Initials DJ

OBSERVED VALUES:

Tubing Gauge:	[x] Yes / [ ] No	Pressure: U: 1757 / L: ____ psig Gauge Range: Scada psig	Gauge Owner:	[ ] EPA / [x] Operator
Annulus Gauge:	[x] Yes / [ ] No	Pressure: 0 psig Gauge Range: opened psig	Gauge Owner:	[x] EPA / [ ] Operator
Bradenhead Gauge:	[ ] Yes / [ ] No	Pressure: ____ psig Gauge Range: ____ psig	Gauge Owner:	[ ] EPA / [ ] Operator
Pump Gauge:	[ ] Yes / [ ] No	Pressure: ____ psig Gauge Range: ____ psig	Gauge Owner:	[ ] EPA / [ ] Operator

Operating Status: (Select One)
- [x] Active
- [ ] Being Reworked
- [ ] Not Injecting
- [ ] Production
- [ ] Plugged and Abandoned
- [ ] Under Construction

UIC Entered
Date 12/17/13
Initial AC

See page 2 for photos, comments, and site conditions.

GREEN	BLUE	CBI
	/	

Inspection Report For Well: UT20736 - 04391 (PAGE 2)

PHOTOGRAPHS: ☐ Yes ☒ No List of photos taken: _____

Comments and site conditions observed during inspection: _____

GPS: GPS File ID: _____

Signature of EPA Inspector(s): _____ _____

☐ Data Entry ☐ Compliance Staff ☐ Hard Copy Filing

NOTICE OF INSPECTION

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII, 999 18TH STREET - SUITE 500
DENVER, COLORADO 80202-2405

Date: 12/16/13
Hour: 8:00a

Notice of inspection is hereby given according to Section 1445(b) of the Safe Drinking Water Act (42 U.S.C. §300f et seq.).

Firm Name: Petrochych Operating Inc.

Firm Address: Roosevelt, UT, Antelope Creek Oil Field

REASON FOR INSPECTION:

For the purpose of inspecting records, files, papers, processes, controls and facilities, and obtaining samples to determine whether the person subject to an applicable underground injection control program has acted or is acting in compliance with the Safe Drinking Water Act and any applicable condition of permit or rule authorization.

SECTION 1445(b) of the SAFE DRINKING WATER ACT is quoted below:

Section 1445(b)(1): Except as provided in Paragraph (2), the Administrator, or representatives of the Administrator duly designated by him, upon presenting appropriate credentials, and a written notice to any supplier of water or other person subject to (a), or person subject (A) a national primary drinking water regulation prescribed under Section 1412(B) an applicable Underground Injection Control Program, or (C) any requirement to monitor an unregulated contaminant pursuant to subsection (a), or person in charge of any of the property of such supplier or other person referred to in clause (A), (B), or (C), is authorized to enter any establishment, ... facility, or other property of such supplier or other person in order to determine whether such supplier or other person has acted or is acting in compliance with this title, including for this purpose, inspection, at reasonable times, of records, files, papers, processes, controls, and facilities, or in order to test any feature of a public water system, including its raw water source. The Administrator or the Comptroller General (or any representative designated by either) shall have access for the purpose of audit and examination to any records, reports, or information of a grantee which are required to be maintained under subsection (a) or which are pertinent to any financial assistance under this title.

Sarah Roberts
Inspector's Name & Title (Print)

Inspector's Signature

EPA R8 3560-1 (8-89)

Original - Regional Office Copy
Yellow Copy - Operator Copy

OMB No. 2040-0042 Approval Expires 11/30/2014

EPA

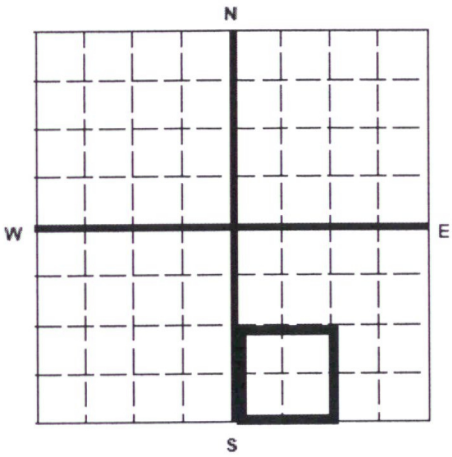
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah, 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-04391

Surface Location Description
___ 1/4 of ___ 1/4 of SW 1/4 of SE 1/4 of Section 18 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 660 ft. frm (N/S) S Line of quarter section
and 1980 ft. from (E/W) E Line of quarter section.

U2 Entered
Date 4/4/17
Initial JB

WELL ACTIVITY
- [ ] Brine Disposal
- [X] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [X] Area

Number of Wells 111

Lease Name Ute Indian Tribe

Well Number UTE TRIBAL 18-15

GREEN BLUE 581
2

MONTH	YEAR	INJECTION PRESSURE AVERAGE PSIG	INJECTION PRESSURE MAXIMUM PSIG	TOTAL VOLUME INJECTED BBL	TOTAL VOLUME INJECTED MCF	TUBING – CASING ANNULUS PRESSURE (OPTIONAL MONITORING) MINIMUM PSIG	TUBING – CASING ANNULUS PRESSURE (OPTIONAL MONITORING) MAXIMUM PSIG
January	16	1771	1787	632		0	0
February	16	1797	1808	751		0	0
March	16	1793	1801	819		0	0
April	16	1769	1786	708		0	0
May	16	1810	1820	790		0	0
June	16	1776	1815	697		0	0
July	16	1768	1771	825		0	0
August	16	1816	1846	1012		0	0
September	16	1870	1884	1137		0	0
October	16	1879	1904	1104		0	0
November	16	1899	1931	1187		0	0
December	16	1915	1929	1174		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		03/21/2017

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

multi-chem
A HALLIBURTON SERVICE

Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 18-15 INJ, DUCHESNE**	Lab Tech:	**Kaitlyn Natelli**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2017**		
Sample ID:	**WA-345367**		

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics

Test Date:	1/23/2017
System Temperature 1 (°F):	300
System Pressure 1 (psig):	2000
System Temperature 2 (°F):	130
System Pressure 2 (psig):	50
Calculated Density (g/ml):	1.0025
pH:	8.40
Calculated TDS (mg/L):	7544.34
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	10.00
Tot. SuspendedSolids(mg/L):	
Corrosivity(LanglierSat.Indx)	0.00
Alkalinity:	

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	2526.55	Chloride (Cl):	3000.00
Potassium (K):	19.59	Sulfate (SO_4):	40.00
Magnesium (Mg):	18.31	Bicarbonate (HCO_3):	1830.00
Calcium (Ca):	38.76	Carbonate (CO_3):	
Strontium (Sr):	3.59	Hydroxide(HO):	
Barium (Ba):	7.32	Acetic Acid (CH_3COO)	
Iron (Fe):	23.15	Propionic Acid (C_2H_5COO)	
Zinc (Zn):	18.96	Butanoic Acid (C_3H_7COO)	
Lead (Pb):	0.00	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Ammonia NH_3:		Fluoride (F):	
Manganese (Mn):	0.14	Bromine (Br):	
Aluminum (Al):	0.12	Silica (SiO_2):	17.97
Lithium (Li):	2.74	Calcium Carbonate ($CaCO_3$):	
Boron (B):	3.77	Phosphates (PO_4):	13.58
Silicon (Si):	8.40	Oxygen (O_2):	

Notes:

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	1.55	31.55	0.87	3.70	4.37	9.06	3.42	16.82	0.00	0.00	0.00	0.00	0.00	0.00	11.83	9.91
149.00	267.00	1.60	31.85	0.78	3.55	4.32	9.06	3.52	16.83	0.00	0.00	0.00	0.00	0.00	0.00	11.57	9.91
168.00	483.00	1.68	32.25	0.70	3.40	4.29	9.06	3.61	16.83	0.00	0.00	0.00	0.00	0.00	0.00	11.35	9.91
187.00	700.00	1.76	32.60	0.65	3.27	4.29	9.06	3.71	16.83	0.00	0.00	0.00	0.00	0.00	0.00	11.16	9.91
206.00	917.00	1.86	32.90	0.61	3.17	4.31	9.06	3.80	16.83	0.00	0.00	0.00	0.00	0.00	0.00	10.99	9.91
224.00	1133.00	1.96	33.15	0.58	3.11	4.35	9.06	3.88	16.83	0.00	0.00	0.00	0.00	0.00	0.00	10.84	9.91
243.00	1350.00	2.06	33.35	0.57	3.07	4.40	9.06	3.96	16.83	0.00	0.00	0.00	0.00	0.00	0.00	10.72	9.91
262.00	1567.00	2.18	33.50	0.57	3.06	4.47	9.06	4.04	16.83	0.00	0.00	0.00	0.00	0.00	0.00	10.61	9.91
281.00	1783.00	2.29	33.61	0.58	3.08	4.54	9.06	4.11	16.83	0.00	0.00	0.00	0.00	0.00	0.00	10.52	9.91
300.00	2000.00	2.41	33.70	0.59	3.13	4.63	9.06	4.16	16.83	0.00	0.00	0.00	0.00	0.00	0.00	10.44	9.91

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

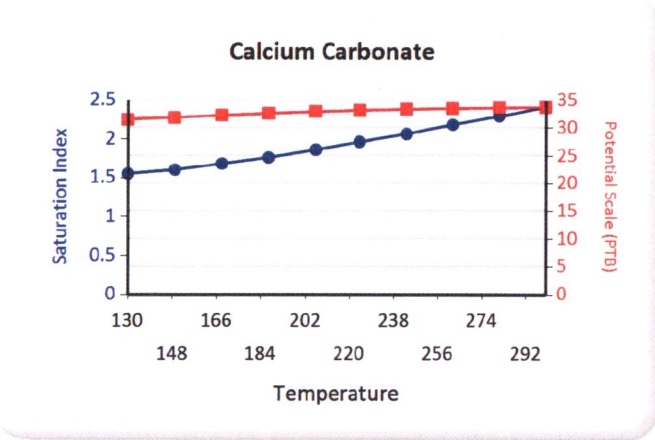
multi-chem®
A HALLIBURTON SERVICE

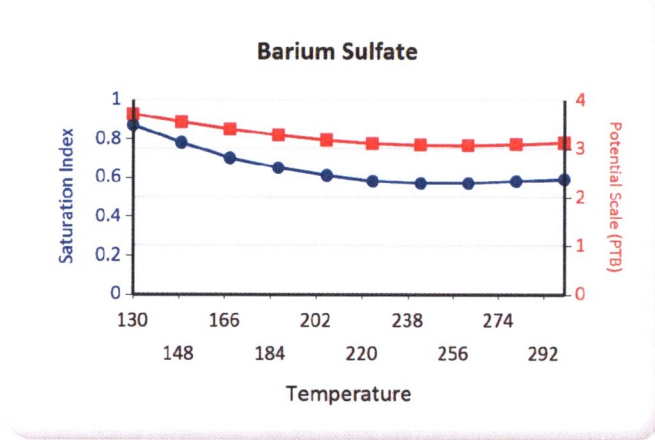
Water Analysis Report

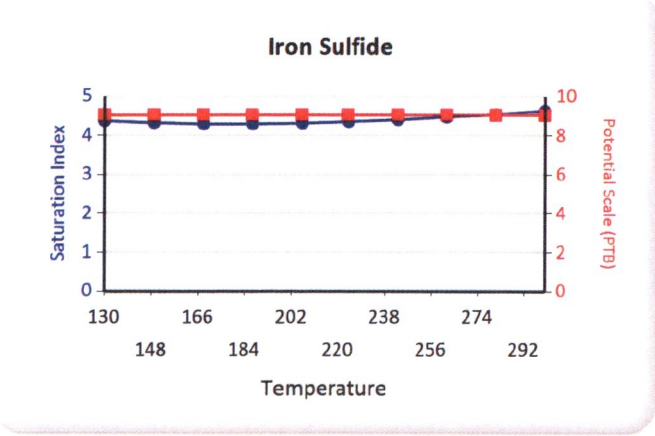
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	2.98	12.73	0.00	0.00	3.72	21.33	1.89	13.13	12.00	17.99
149.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	3.18	12.74	0.00	0.00	4.45	24.69	2.29	15.37	12.45	18.00
168.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	3.38	12.74	0.00	0.00	5.23	28.23	2.72	17.82	12.96	18.00
187.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	3.56	12.74	0.00	0.00	6.00	31.15	3.15	19.94	13.49	18.00
206.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	3.72	12.74	0.00	0.00	6.76	33.33	3.59	21.57	14.03	18.00
224.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	3.86	12.74	0.00	0.00	7.50	34.77	4.02	22.70	14.57	18.01
243.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	3.99	12.75	0.00	0.00	8.22	35.63	4.44	23.40	15.10	18.01
262.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	4.10	12.75	0.00	0.00	8.92	36.09	4.85	23.80	15.63	18.01
281.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	4.19	12.75	0.00	0.00	9.59	36.34	5.25	24.02	16.14	18.01
300.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	4.27	12.75	0.00	0.00	10.23	36.46	5.63	24.14	16.63	18.01

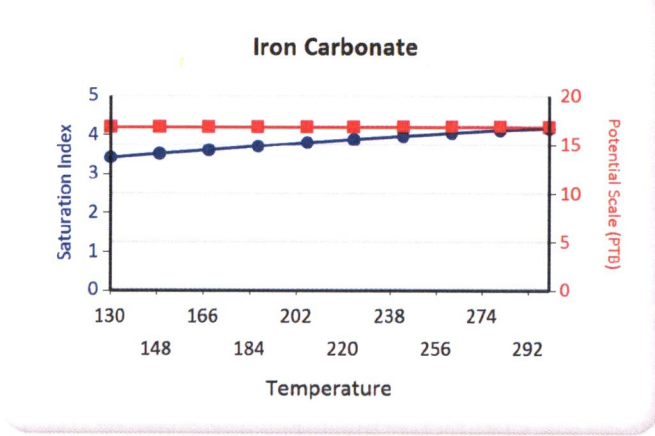
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

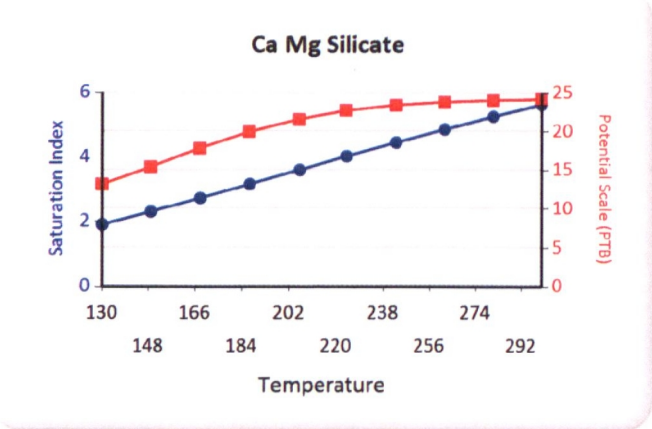
These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

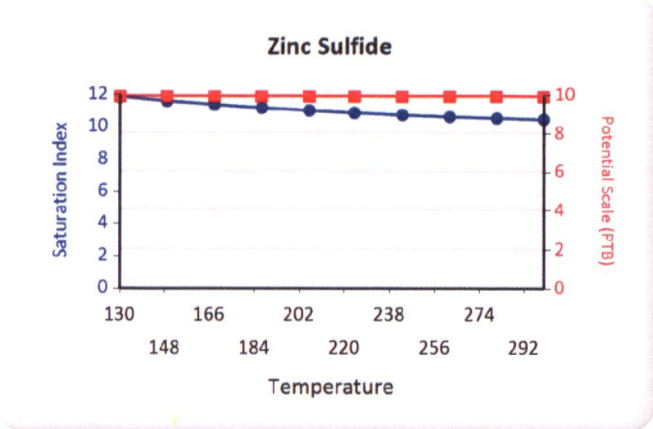









Ca Mg Silicate
Saturation Index
Potential Scale (PTB)
Temperature
130 148 166 184 202 220 238 256 274 292


Zinc Sulfide
Saturation Index
Potential Scale (PTB)
Temperature
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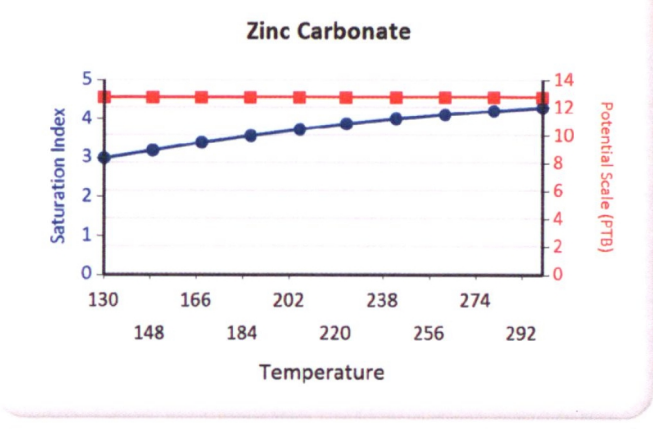
Zinc Carbonate
Saturation Index
Potential Scale (PTB)
Temperature
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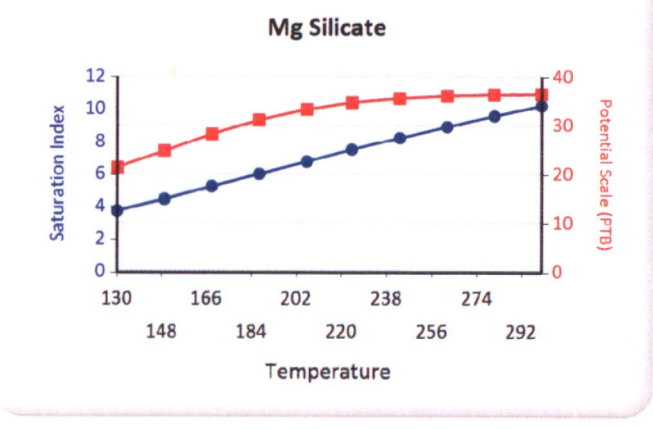
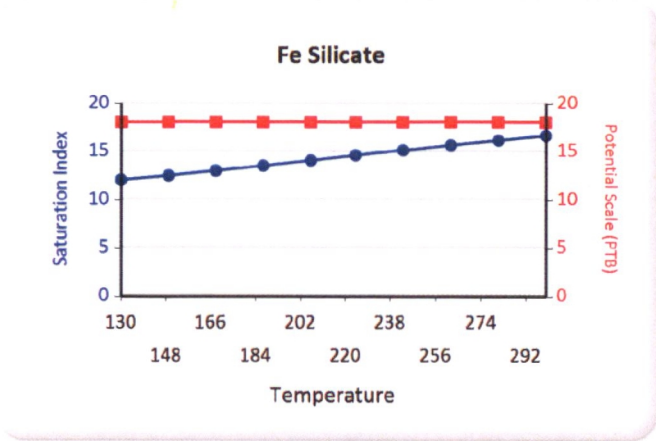

Mg Silicate
Saturation Index
Potential Scale (PTB)
Temperature
130 148 166 184 202 220 238 256 274 292


Fe Silicate
Saturation Index
Potential Scale (PTB)
20
15
10
5
0
130
166
202
238
274
148
184
220
256
292
Temperature

OMB No. 2040-0042 Approval Expires 11/30/2014

EPA

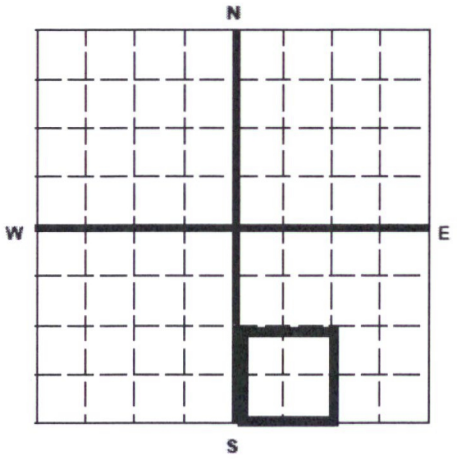
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah, 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-~~04434~~ 04391

Surface Location Description
___ 1/4 of ___ 1/4 of SW 1/4 of SE 1/4 of Section 18 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 660 ft. frm (N/S) S Line of quarter section
and 1980 ft. from (E/W) E Line of quarter section. U2 Entered

WELL ACTIVITY
- [ ] Brine Disposal
- [X] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [X] Area

Number of Wells 111

Date 3/2/16
Initial DB

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 18-15

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING – CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	15	1759	1769	824		0	0
February	15	1798	1807	830		0	0
March	15	1810	1835	917		0	0
April	15	1784	1791	824		0	0
May	15	1796	1817	890		0	0
June	15	1805	1815	888		0	0
July	15	1806	1812	886		0	0
August	15	1790	1800	830		0	0
September	15	1781	1803	767		0	0
October	15	1814	1827	857		0	0
November	15	1805	1813	753		0	0
December	15	1811	1828	701		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		02/08/2016

GREEN BLUE CBI
TAB 2

EPA Form 7520-11 (Rev. 12-11)

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

multi-chem®
A HALLIBURTON SERVICE

Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 18-15 INJ, DUCHESNE**	Lab Tech:	**Michele Pike**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2016**		
Sample ID:	**WA-327530**		

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics

Test Date:	1/14/2016
System Temperature 1 (°F):	60
System Pressure 1 (psig):	2000
System Temperature 2 (°F):	180
System Pressure 2 (psig):	50
Calculated Density (g/ml):	1.0011
pH:	7.40
Calculated TDS (mg/L):	5296.73
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	80.00
H_2S in Gas (%):	
H2S in Water (mg/L):	0.00
Tot. SuspendedSolids(mg/L):	
Corrosivity(LanglierSat.Indx)	0.00
Alkalinity:	

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	1422.11	Chloride (Cl):	2000.00
Potassium (K):	0.77	Sulfate (SO_4):	540.00
Magnesium (Mg):	87.67	Bicarbonate (HCO_3):	903.00
Calcium (Ca):	196.25	Carbonate (CO_3):	
Strontium (Sr):	5.53	Acetic Acid (CH_3COO)	
Barium (Ba):	0.36	Propionic Acid (C_2H_5COO)	
Iron (Fe):	44.20	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	60.36	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.49	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.09	Silica (SiO_2):	35.90
Aluminum (Al):	0.11	Calcium Carbonate ($CaCO_3$):	
Lithium (Li):	0.95	Phosphates (PO_4):	6.90
Boron (B):	0.78	Oxygen (O_2):	
Silicon (Si):	16.78		

Notes:

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	1.39	105.28	0.47	0.14	0.00	0.00	2.90	32.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
167.00	267.00	1.23	93.28	0.49	0.14	0.00	0.00	2.72	32.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	483.00	1.13	85.39	0.52	0.15	0.00	0.00	2.58	31.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	700.00	1.03	77.64	0.56	0.15	0.00	0.00	2.45	31.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
127.00	917.00	0.93	70.15	0.61	0.16	0.00	0.00	2.32	31.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	1133.00	0.85	63.01	0.67	0.17	0.00	0.00	2.19	31.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	1350.00	0.76	56.33	0.75	0.18	0.00	0.00	2.06	31.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
87.00	1567.00	0.69	50.17	0.84	0.18	0.00	0.00	1.94	31.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	1783.00	0.62	44.61	0.95	0.19	0.00	0.00	1.82	31.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.00	2000.00	0.56	39.69	1.08	0.20	0.00	0.00	1.70	30.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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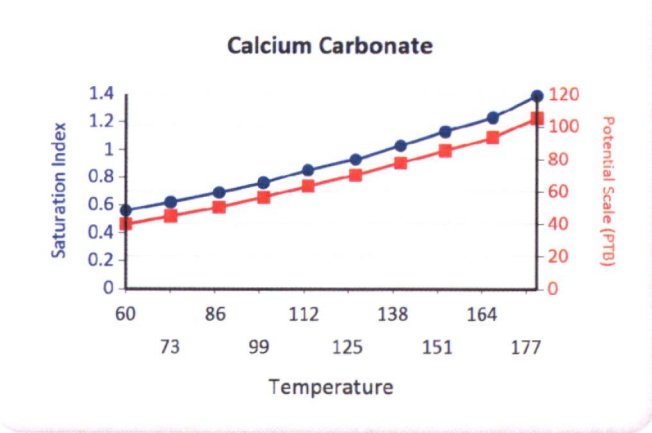
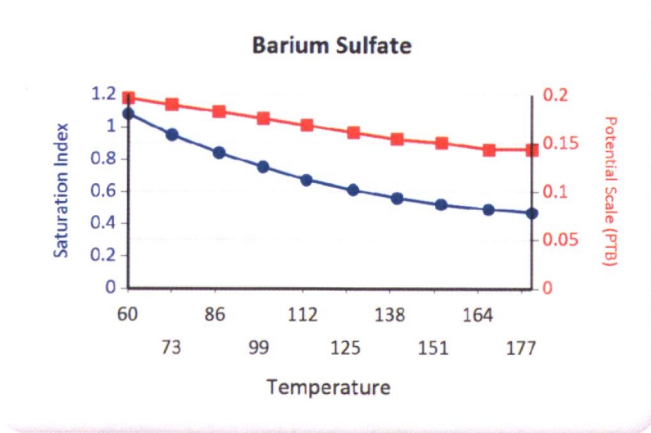
Water Analysis Report

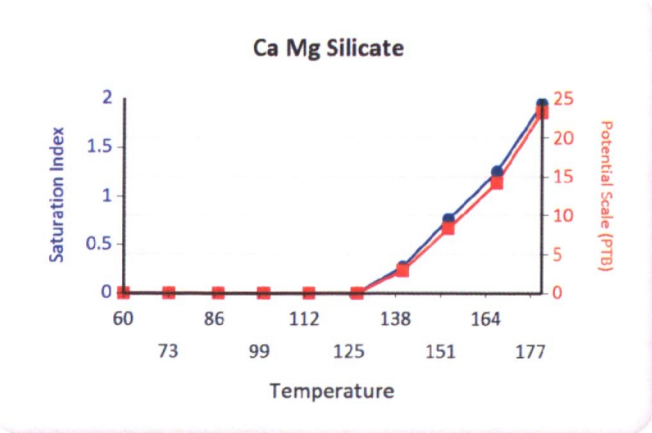
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	3.02	40.50	0.00	0.00	3.74	46.36	1.94	23.33	10.06	34.24
167.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	2.79	40.43	0.00	0.00	2.63	30.14	1.25	14.29	9.10	34.08
153.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	2.60	40.35	0.00	0.00	1.82	19.58	0.76	8.35	8.45	33.89
140.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	2.40	40.22	0.00	0.00	1.01	10.12	0.27	2.91	7.81	33.58
127.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	2.20	40.00	0.00	0.00	0.20	1.94	0.00	0.00	7.19	33.11
113.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	1.98	39.62	0.00	0.00	0.00	0.00	0.00	0.00	6.57	32.40
100.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	1.76	38.97	0.00	0.00	0.00	0.00	0.00	0.00	5.98	31.40
87.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	1.52	37.86	0.00	0.00	0.00	0.00	0.00	0.00	5.40	30.03
73.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	1.28	35.95	0.00	0.00	0.00	0.00	0.00	0.00	4.83	28.28
60.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	1.02	32.72	0.00	0.00	0.00	0.00	0.00	0.00	4.29	26.13

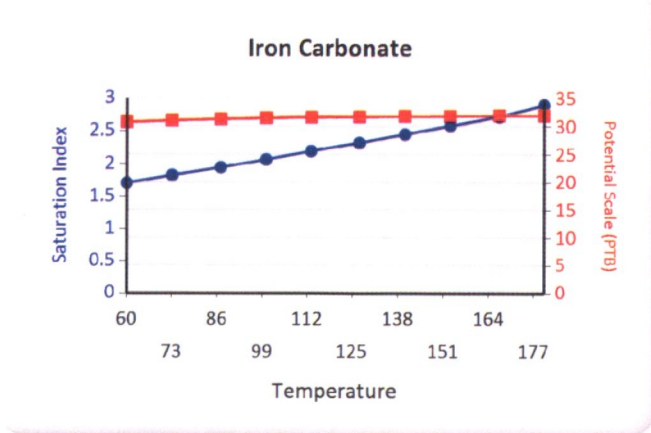
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

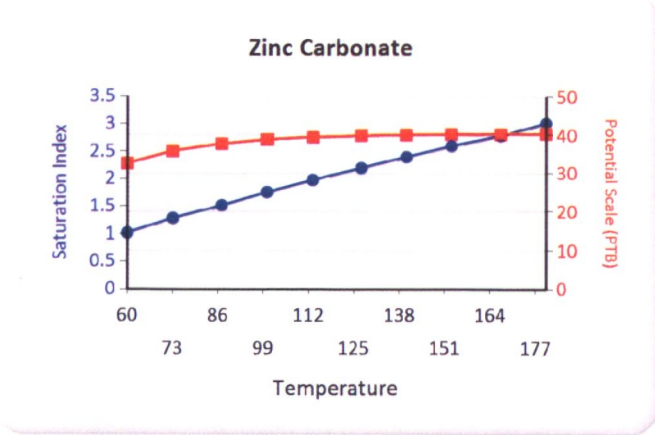
These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Fe Silicate

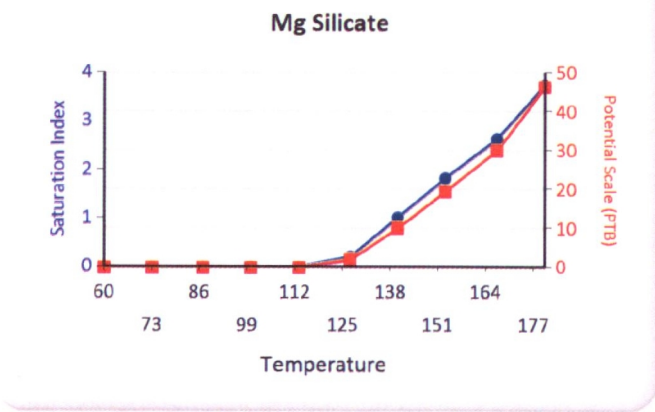


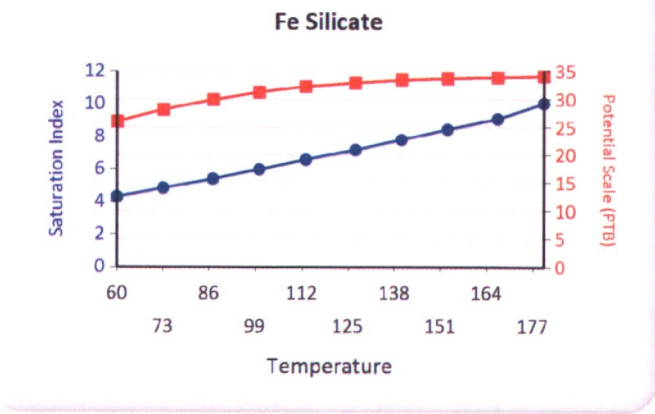







Zinc Carbonate
Saturation Index
Potential Scale (PTB)
Temperature
3.5
3
2.5
2
1.5
1
0.5
0
50
40
30
20
10
0
60
86
112
138
164
73
99
125
151
177


Mg Silicate
Saturation Index
Potential Scale (PTB)
Temperature
4
3
2
1
0
50
40
30
20
10
0
60
86
112
138
164
73
99
125
151
177


Fe Silicate
Saturation Index
Potential Scale (PTB)
Temperature
12
10
8
6
4
2
0
35
30
25
20
15
10
5
0
60
86
112
138
164
73
99
125
151
177

OMB No. 2040-0042 Approval Expires 12/31/2011

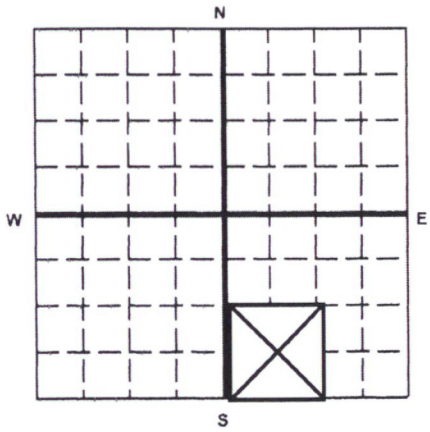
EPA

United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee	Name and Address of Surface Owner
Petroglyph Operating Company, Inc. 2258 P.O. Box 7608 Boise, Idaho 83709	Ute Indian Tribe P.O. Box 70 Ft. Duchesne, Utah 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-04391

Surface Location Description

___ 1/4 of ___ 1/4 of SW 1/4 of SE 1/4 of Section 18 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 660 ft. frm (N/S) S Line of quarter section and 1980 ft. from (E/W) E Line of quarter section.

WELL ACTIVITY
- [ ] Brine Disposal
- [x] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [x] Area

Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 18-15

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	14	1774	1776	1083		0	0
February	14	1792	1793	1073		0	0
March	14	1813	1812	1009		0	0
April	14	1811	1815	979		0	0
May	14	1818	1819	1132		0	0
June	14	1821	1821	1010		0	0
July	14	1821	1857	952		0	0
August	14	1748	1822	763		0	0
September	14	1459	1786	491		0	0
October	14	1785	1805	932		0	0
November	14	1806	1818	873		0	0
December	14	1797	1813	926		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		2/10/2015

EPA Form 7520-11 (Rev. 12-08)

U2 Entered
Date 3/30/15
Initial GW

GREEN
TAB 2

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 18-15 INJ, DUCHESNE**	Lab Tech:	**Gary Winegar**
Sample Point:	**WELLHEAD**		
Sample Date:	**1/7/2015**		
Sample ID:	**WA-297439**		

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics	
Test Date:	1/14/2015
System Temperature 1 (°F):	160
System Pressure 1 (psig):	1300
System Temperature 2 (°F):	80
System Pressure 2 (psig):	15
Calculated Density (g/ml):	1.0043
pH:	8.30
Calculated TDS (mg/L):	10510.62
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	5.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	3284.79	Chloride (Cl):	5000.00
Potassium (K):	51.08	Sulfate (SO_4):	103.00
Magnesium (Mg):	18.33	Bicarbonate (HCO_3):	1954.00
Calcium (Ca):	34.25	Carbonate (CO_3):	
Strontium (Sr):	6.05	Acetic Acid (CH_3COO)	
Barium (Ba):	16.41	Propionic Acid (C_2H_5COO)	
Iron (Fe):	8.37	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	8.10	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.00	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.14	Silica (SiO_2):	26.10

Notes:
B=6.38 Al=.09 Li=1.94

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
80.00	14.00	1.31	26.84	1.88	9.63	3.77	4.50	2.59	6.07	0.00	0.00	0.00	0.00	0.00	0.00	11.84	4.23
88.00	157.00	1.31	26.65	1.79	9.60	3.68	4.49	2.61	6.07	0.00	0.00	0.00	0.00	0.00	0.00	11.64	4.23
97.00	300.00	1.32	26.80	1.72	9.57	3.62	4.49	2.66	6.07	0.00	0.00	0.00	0.00	0.00	0.00	11.48	4.23
106.00	443.00	1.34	26.96	1.65	9.53	3.56	4.48	2.70	6.07	0.00	0.00	0.00	0.00	0.00	0.00	11.32	4.23
115.00	585.00	1.36	27.13	1.58	9.49	3.52	4.48	2.75	6.07	0.00	0.00	0.00	0.00	0.00	0.00	11.18	4.23
124.00	728.00	1.38	27.30	1.52	9.45	3.48	4.48	2.79	6.07	0.00	0.00	0.00	0.00	0.00	0.00	11.04	4.23
133.00	871.00	1.40	27.48	1.47	9.40	3.46	4.47	2.83	6.08	0.00	0.00	0.00	0.00	0.00	0.00	10.92	4.23
142.00	1014.00	1.43	27.65	1.42	9.36	3.43	4.47	2.88	6.08	0.00	0.00	0.00	0.00	0.00	0.00	10.80	4.23
151.00	1157.00	1.45	27.82	1.38	9.32	3.42	4.47	2.92	6.08	0.00	0.00	0.00	0.00	0.00	0.00	10.69	4.23
160.00	1300.00	1.48	27.99	1.34	9.27	3.41	4.47	2.96	6.08	0.00	0.00	0.00	0.00	0.00	0.00	10.59	4.23

		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
80.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	1.81	5.35	0.00	0.00	0.68	4.52	0.02	0.45	8.46	6.49
88.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	1.92	5.37	0.00	0.00	0.93	5.79	0.13	1.19	8.54	6.49
97.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	2.04	5.39	0.00	0.00	1.30	7.92	0.33	2.49	8.75	6.49
106.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	2.15	5.40	0.00	0.00	1.68	10.04	0.53	3.79	8.97	6.50
115.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	2.26	5.41	0.00	0.00	2.06	12.14	0.74	5.08	9.20	6.50
124.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	2.37	5.42	0.00	0.00	2.45	14.21	0.95	6.35	9.44	6.50
133.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	2.47	5.43	0.00	0.00	2.84	16.24	1.17	7.59	9.69	6.50
142.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	2.57	5.43	0.00	0.00	3.23	18.20	1.38	8.78	9.94	6.51
151.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	2.66	5.43	0.00	0.00	3.63	20.09	1.60	9.91	10.20	6.51
160.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	2.75	5.44	0.00	0.00	4.02	21.87	1.82	10.97	10.47	6.51

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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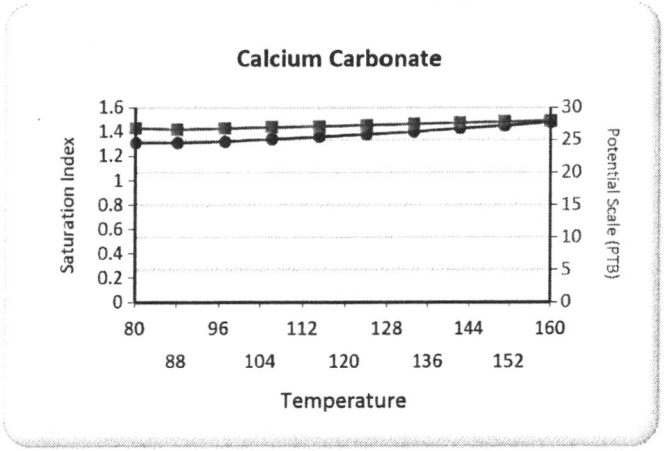
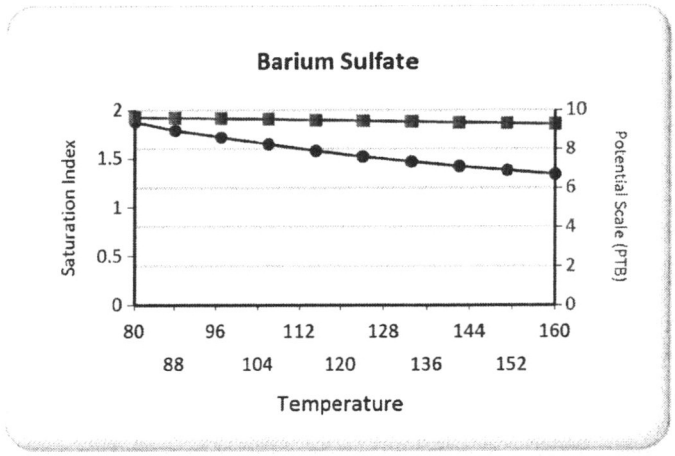
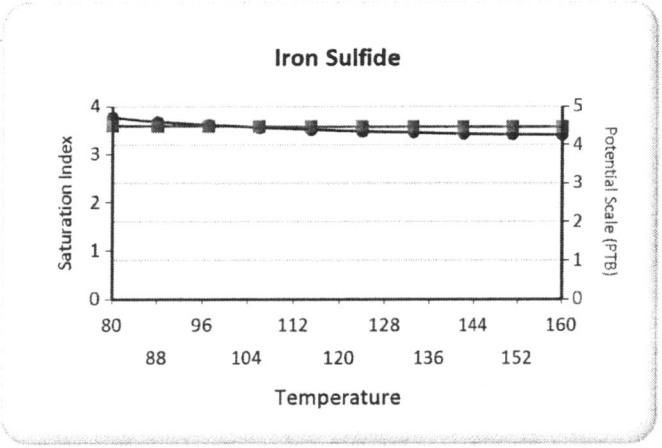
Water Analysis Report

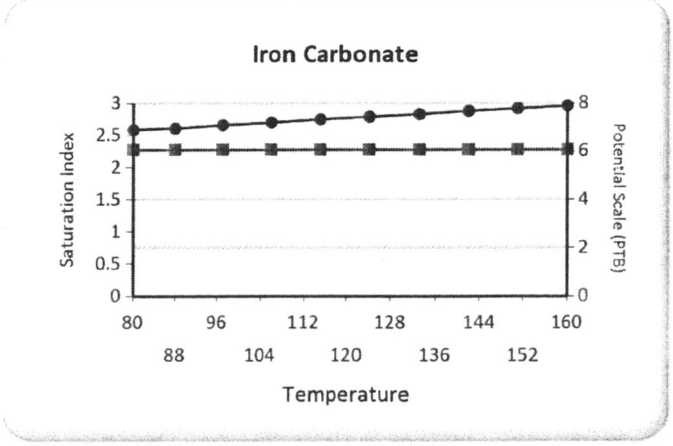
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

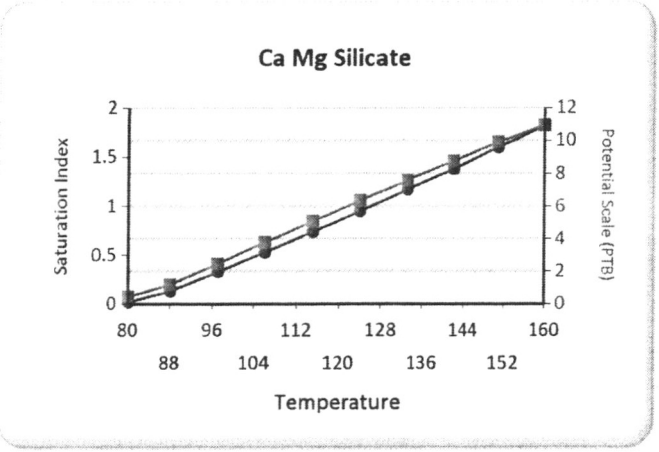
These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

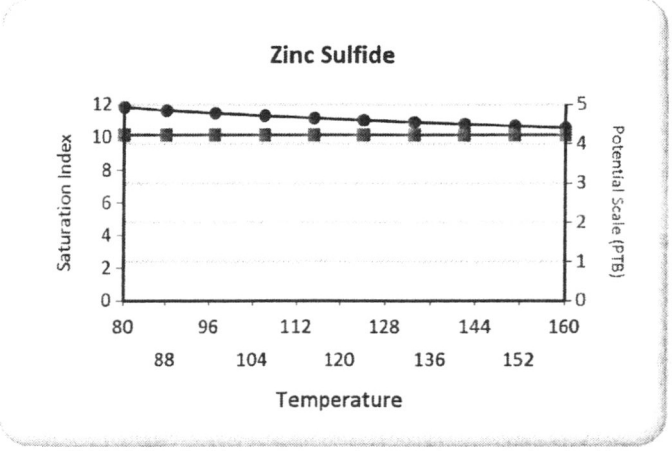


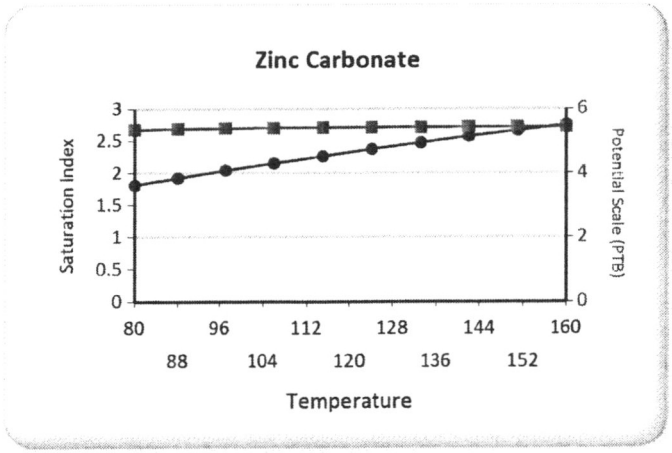


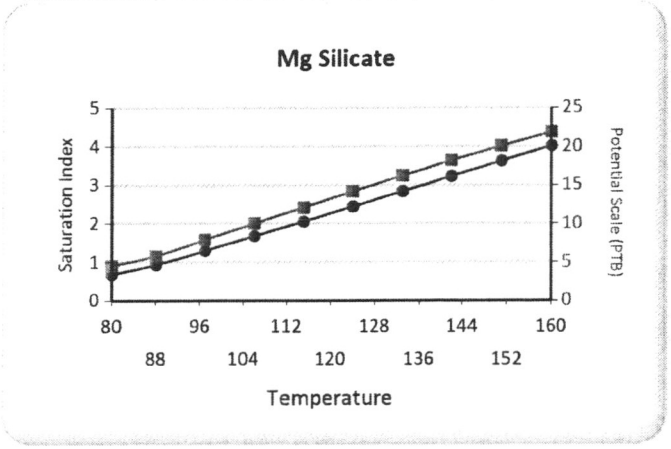


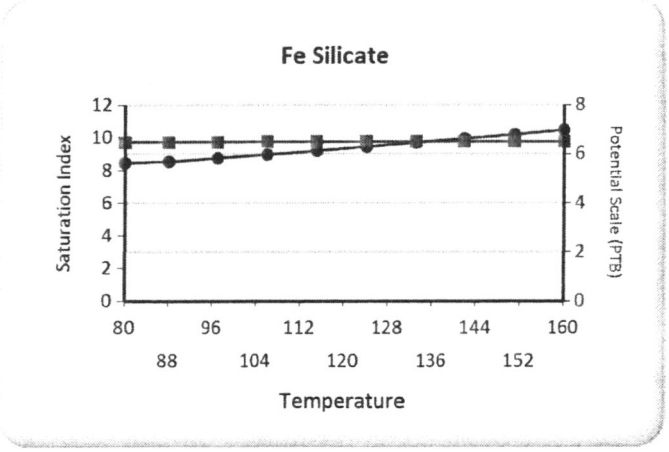







Zinc Carbonate
Saturation Index
Potential Scale (PTB)
Temperature
0
0.5
1
1.5
2
2.5
3
0
2
4
6
80
88
96
104
112
120
128
136
144
152
160


Mg Silicate
Saturation Index
Potential Scale (PTB)
Temperature
0
1
2
3
4
5
0
5
10
15
20
25
80
88
96
104
112
120
128
136
144
152
160


Fe Silicate
Saturation Index
Potential Scale (PTB)
Temperature
0
2
4
6
8
10
12
0
2
4
6
8
80
88
96
104
112
120
128
136
144
152
160

November 26, 2014

Don Breffle
Mail Code: 8ENF-UFO
US EPA Region 8
1595 Wyncoop Street
Denver, CO 80202-1129

RE: EPA AREA PERMIT NO. UT2736-04391
Mechanical Integrity Test
Standard Five year retesting for Ute Tribal 18-15

Mr. Breffle:
The enclose Mechanical Integrity Test was performed on the above referenced well on November 21, 2014. This MIT was performed because the well was due for the regular five year Mechanical Integrity Test.

If you need any more information please call at (435) 722-5302.

Sincerely,
Petroglyph Operating Co., Inc.

Rodrigo Jurado
Regulatory Compliance Specialist

Encl: MIT for the Ute Tribal 18-15

U2 Entered
Date 12/1/14
Initial DB

	GREEN	BLUE	CBI
TAB		2	

Mechanical Integrity Test
Tubing/Casing Annulus Pressure Test

U.S. Environmental Protection Agency
Underground Injection Control Program
1595 Wynkoop Street, Denver, CO 80202

EPA Witness: _____ Date: 11/21/14
Test conducted by: CHAD STEVENSON
Others present: _____

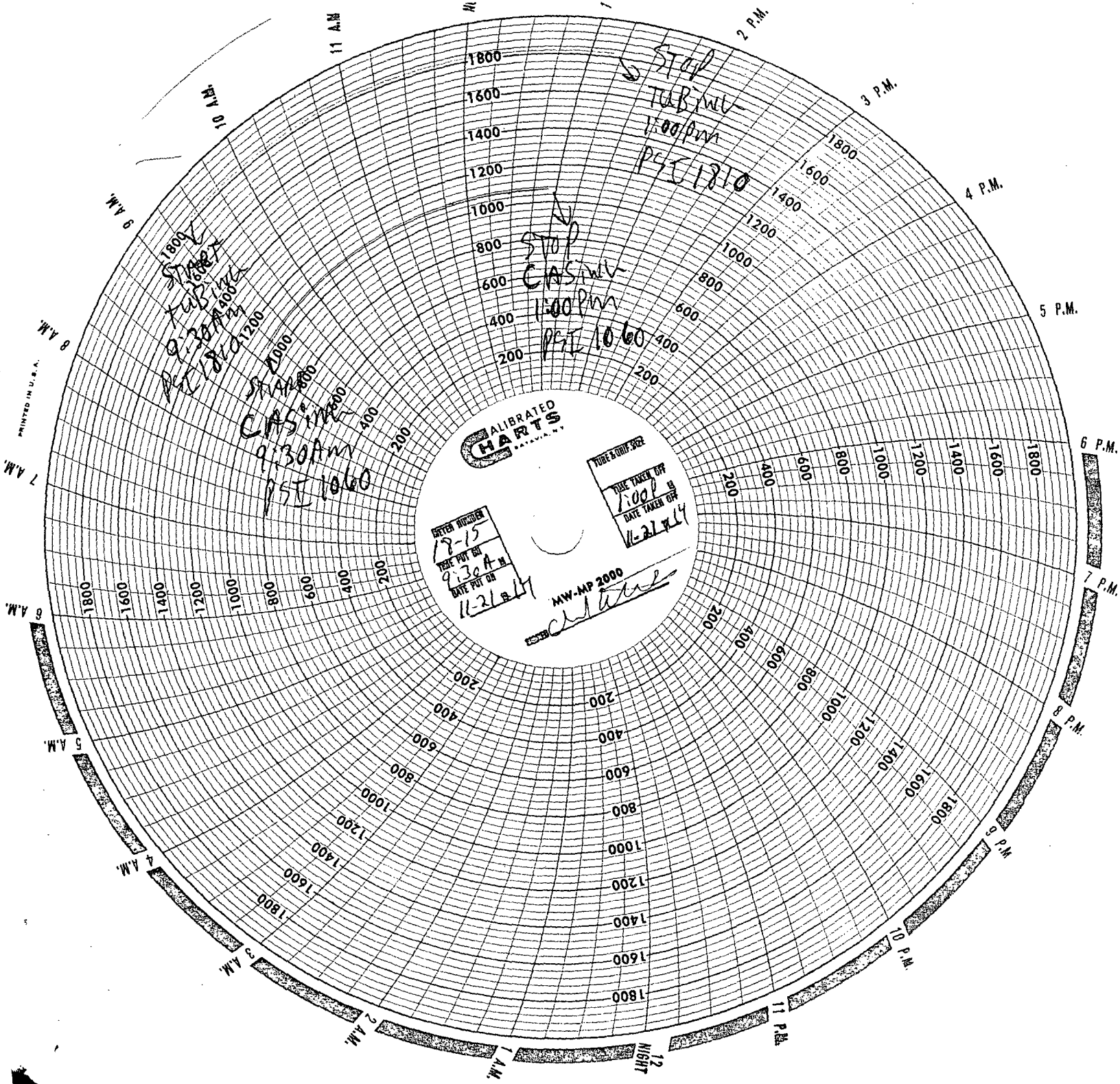
Well Name: 18-15 Type: ER SWD **Status: AC TA UC**
Field: ANTELOPE CREEK
Location: 18-15 Sec: ____ T ____ N / S R ____ E / W County: DUCHESNE State: UT
Operator: PETROGLYPH ENERGY
Last MIT: ___/___/___ **Maximum Allowable Pressure:** _____ **PSIG**

Regularly scheduled test? [X] Yes [ ] No
Initial test for permit? [ ] Yes [ ] No
Test after well rework? [ ] Yes [ ] No

Well injecting during test? If Yes, rate: 30 **bpd**
Pre-test annulus pressure: _____ **psig**

MIT DATA TABLE	*Test #1*	*Test #2*	*Test #3*
TUBING		***PRESSURE RECORD***	
Initial Pressure	1810 psig	psig	psig
End of test pressure	1810 psig	psig	psig
CASING / TUBING ANNULUS		***PRESSURE RECORD***	
0 minutes	1060 psig	psig	psig
5 minutes	1060 psig	psig	psig
10 minutes	1060 psig	psig	psig
15 minutes	1060 psig	psig	psig
20 minutes	1060 psig	psig	psig
25 minutes	1060 psig	psig	psig
30 minutes	1060 psig	psig	psig
3 1/2 Hour *minutes*	1060 psig	psig	psig
_____ *minutes*	psig	psig	psig
RESULT	*[ ] Pass [ ]Fail*	*[ ] Pass [ ]Fail*	*[ ] Pass [ ]Fail*

Does the annulus pressure build back up after the test ? If Yes, _____ psig.


CALIBRATED CHARTS
MW-MP 2000
PRINTED IN U.S.A.
Start TUBING 9:30AM PSI 1810
Start CASING 9:30AM PSI 1060
Stop TUBING 1:00PM PSI 1810
Stop CASING 1:00PM PSI 1060
PIPE & ORIF. SIZE
PIPE TAKEN OFF 1:00 PM
DATE TAKEN OFF 11-21-14
METER NUMBER 18-15
TIME PUT ON 9:30 AM
DATE PUT ON 11-21-14
12 NIGHT
1 A.M.
2 A.M.
3 A.M.
4 A.M.
5 A.M.
6 A.M.
7 A.M.
8 A.M.
9 A.M.
10 A.M.
11 A.M.
12 NOON
1 P.M.
2 P.M.
3 P.M.
4 P.M.
5 P.M.
6 P.M.
7 P.M.
8 P.M.
9 P.M.
10 P.M.
11 P.M.

RECEIVED
NOV 24 2014
Office of Enforcement, Compliance
and Environmental Justice (UFO)

November 18, 2013

Don Breffle
Mail Code: 8ENF-UFO
US EPA Region 8
1595 Wyncoop Street
Denver, CO 80202-1129

RE: Underground Injection Control (UIC)
Notice of Violation
Loss of Mechanical Integrity
EPA Permit #UT2736-04420
Well No. Ute Tribal 33-14-D3
Antelope Creek Oil Field
Duchesne County, Utah

Dear Mr. Breffle:

Please be advised that on November 14, 2014 we lost Mechanical Integrity on the Ute Tribal 33-14-D3 Injection Well. My direct number is 435-722-5302 if you wish to contact us.

Sincerely,
Petroglyph Operating Company, Inc.

Rodrigo Jurado
Regulatory Compliance Specialist

U2 Entered
Date 11/26/14
Initial DB

	GREEN	BLUE	CBI
TAB		2	

OMB No. 2040-0042 Approval Expires 12/31/2011

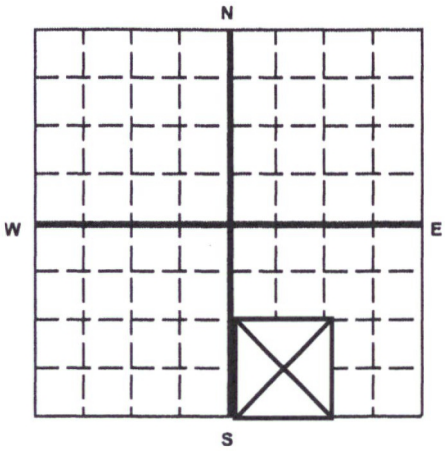
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-04391

Surface Location Description
___ 1/4 of ___ 1/4 of SW 1/4 of SE 1/4 of Section 18 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 660 ft. frm (N/S) S Line of quarter section
and 1980 ft. from (E/W) E Line of quarter section.

WELL ACTIVITY
- [ ] Brine Disposal
- [x] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [x] Area

Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 18-15

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	13	1787	1814	1038		0	0
February	13	1795	1816	1017		0	0
March	13	1799	1832	1129		0	0
April	13	1773	1787	978		0	0
May	13	1787	1804	1012		0	0
June	13	1756	1785	807		0	0
July	13	1777	1831	908		0	0
August	13	1800	1813	1000		0	0
September	13	1792	1815	1052		0	0
October	13	1773	1784	937		0	0
November	13	1787	1801	1004		0	0
December	13	1763	1775	1025		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		2/11/2014

EPA Form 7520-11 (Rev. 12-08)

	GREEN	BLUE	CBI
FAC		2	

U2 Entered
Date 2/2/14
Initial

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

multi-chem®
A HALLIBURTON SERVICE

Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH ENERGY INC**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 18-15 INJ**	Lab Tech:	**Gary Winegar**
Sample Point:	**Wellhead**		
Sample Date:	**1/8/2014**		
Sample ID:	**WA-263369**		

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics	
Test Date:	1/15/2014
System Temperature 1 (°F):	180
System Pressure 1 (psig):	1300
System Temperature 2 (°F):	60
System Pressure 2 (psig):	15
Calculated Density (g/ml):	1.005
pH:	8.30
Calculated TDS (mg/L):	13033.95
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	0.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	3191.00	Chloride (Cl):	8000.00
Potassium (K):	139.00	Sulfate (SO_4):	44.00
Magnesium (Mg):	19.00	Bicarbonate (HCO_3):	1512.80
Calcium (Ca):	50.00	Carbonate (CO_3):	
Strontium (Sr):	6.30	Acetic Acid (CH_3COO)	
Barium (Ba):	18.00	Propionic Acid (C_2H_5COO)	
Iron (Fe):	28.00	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	0.03	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.00	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.14	Silica (SiO_2):	25.68

Notes:
B=7 Al=.01 Li=1.9

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	1.33	36.08	1.69	10.42	0.00	0.00	2.84	20.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	157.00	1.34	35.88	1.55	10.30	0.00	0.00	2.90	20.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86.00	300.00	1.36	36.42	1.42	10.16	0.00	0.00	2.97	20.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	443.00	1.39	37.01	1.30	10.00	0.00	0.00	3.04	20.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	585.00	1.42	37.62	1.21	9.82	0.00	0.00	3.11	20.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
126.00	728.00	1.45	38.25	1.12	9.63	0.00	0.00	3.17	20.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	871.00	1.49	38.87	1.05	9.44	0.00	0.00	3.24	20.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	1014.00	1.54	39.48	0.99	9.25	0.00	0.00	3.30	20.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
166.00	1157.00	1.59	40.05	0.93	9.08	0.00	0.00	3.37	20.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.00	1300.00	1.64	40.58	0.89	8.92	0.00	0.00	3.43	20.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

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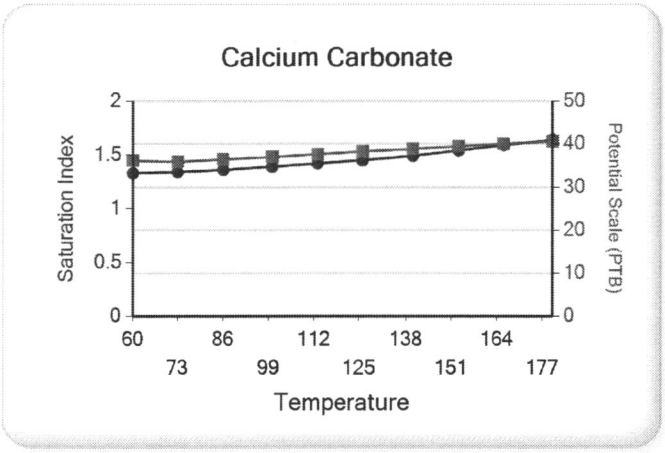
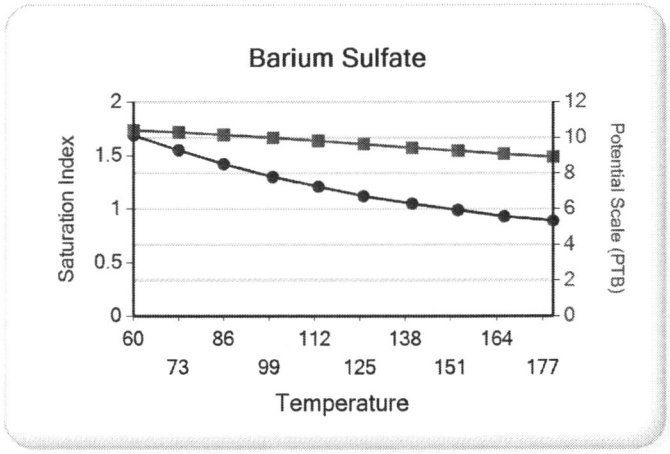
Water Analysis Report

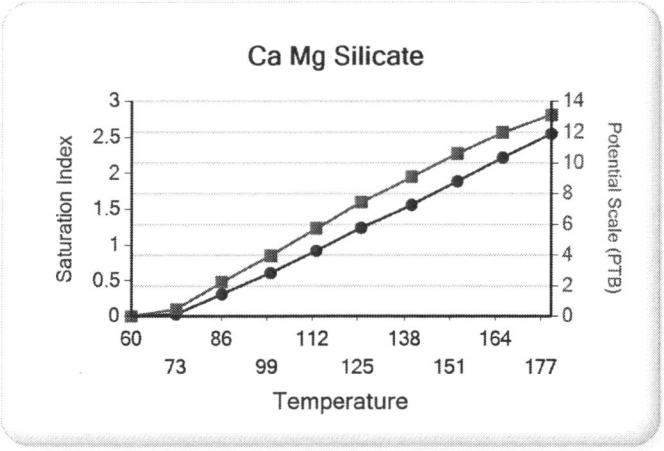
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.49	21.35
73.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.43	2.70	0.03	0.47	9.68	21.37
86.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.98	5.66	0.31	2.22	9.97	21.47
100.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54	8.59	0.61	3.99	10.28	21.56
113.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.11	11.50	0.92	5.74	10.62	21.62
126.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.68	14.37	1.24	7.45	10.98	21.67
140.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.27	17.19	1.56	9.09	11.35	21.70
153.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00	0.00	3.85	19.91	1.89	10.62	11.74	21.73
166.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.01	0.00	0.00	4.44	22.46	2.22	11.98	12.13	21.75
180.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.01	0.00	0.00	5.02	24.75	2.55	13.13	12.53	21.76

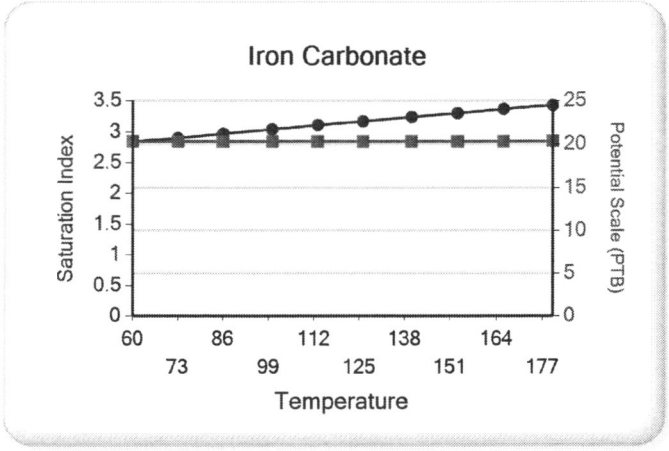
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Fe Silicate

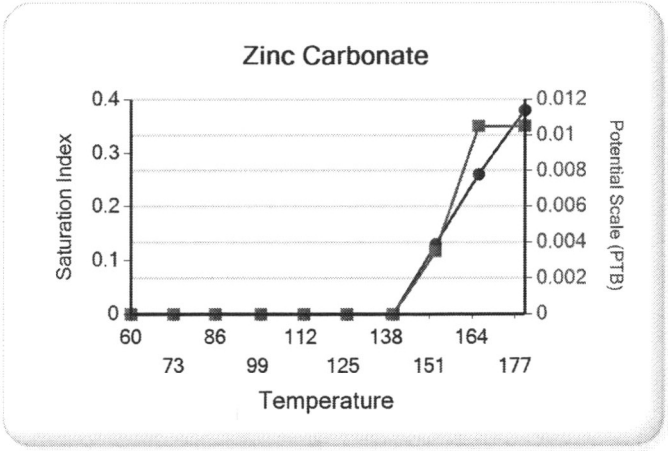
These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

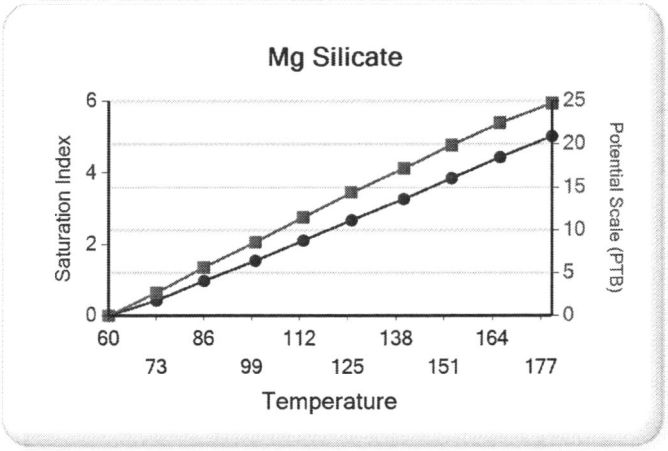


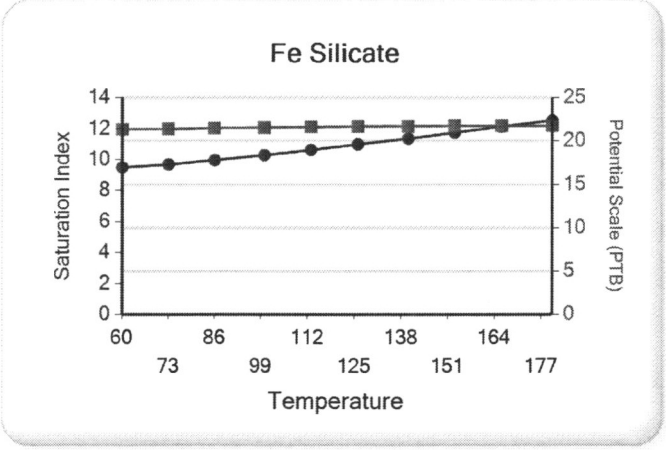







Zinc Carbonate
Saturation Index
Potential Scale (PTB)
Temperature
0.4
0.3
0.2
0.1
0
0.012
0.01
0.008
0.006
0.004
0.002
0
60
73
86
99
112
125
138
151
164
177


Mg Silicate
Saturation Index
Potential Scale (PTB)
Temperature
6
4
2
0
25
20
15
10
5
0
60
73
86
99
112
125
138
151
164
177


Fe Silicate
Saturation Index
Potential Scale (PTB)
Temperature
14
12
10
8
6
4
2
0
25
20
15
10
5
0
60
73
86
99
112
125
138
151
164
177

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

Ref: 8P2-W-GW

OCT 6 1997

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Kathy Turner
Geology/Petroleum Engineering Technician
Petroglyph Operating Company, Inc.
P. O. Box 1839
Hutchinson, KS 67504-1839

RE: UNDERGROUND INJECTION CONTROL (UIC)
Authorization to Inject
Ute Tribal #18-15 (UT04391)
Antelope Creek Waterflood
EPA Area Permit No. UT2736-00000
Duchesne County, Utah

Dear Ms. Turner:

Thank you for the recently submitted information pertaining to the above-referenced area permit and well. The Well Rework Record, injection zone fluid pore pressure survey, fracture treatment reports showing average ISIP of 2156 psi, and the successfully run mechanical integrity test, with chart, on the Ute Tribal #18-15 (UT2736-04391) have been reviewed and approved. Petroglyph Operating Company, Inc, has complied with all of the pertinent permit conditions (Part II, Section C. 2.) for the Antelope Creek Waterflood Area Permit.

Pleased be advised that administrative approval has been granted for injection of Class II fluids into the above referenced well for enhanced recovery of oil and gas. Please also be aware of the monitoring, recordkeeping and reporting requirements described in Part II, Section D of the permit and that the current **maximum surface injection pressure (Pmax) is limited to 2156 psig,** as modified by UIC Minor Permit Modification dated August 8, 1997.

Upon receipt of this letter, the Compliance Officer, Mr. John Carson will then take over routine matters involving well operations, future correspondence, forms, and reports. Please direct all correspondence to the attention of Mr. Carson at the above letterhead (**MAIL CODE ENF-T**) or contact Mr. Carson at (303) 312-6203. Thank you for your continued cooperation.

Sincerely,

D. Edwin Hogle
Director, Groundwater Program
Office of Pollution Prevention
State and Tribal Assistance

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
999 18th STREET - SUITE 500
DENVER, COLORADO 80202-2466

OCT 6 1997

Scan under
UT 20736 -04391
Authorization to
Inject - Final
10/6/1997

ing Technician
ay, Inc.

E: UNDERGROUND INJECTION CONTROL (UIC)
Authorization to Inject
Ute Tribal #18-15 (UT04391)
Antelope Creek Waterflood
EPA Area Permit No. UT2736-00000
Duchesne County, Utah

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Sincerely,

D. Edwin Hogle
Director, Groundwater Program
Office of Pollution Prevention
State and Tribal Assistance

Printed on Recycled Paper

cc: Mr. Ronald Wopsock, Chairman
Uintah & Ouray Business Committee
Ute Indian Tribe

Ms. Elaine Willie, Environmental Director
Ute Indian Tribe

Mr. Norman Cambridge
BIA - Uintah & Ouray Agency

Mr. Gil Hunt
State of Utah Natural Resources
Division of Oil, Gas, and Mining

Mr. Jerry Kenczka
BLM - Vernal District Office

10/7/97 CW 3144C

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write *"Return Receipt Requested"* on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

OCT 7 1997

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Ms. Kathy Turner
Geology/Petroleum Engineering Technician
Petroglyph Operating Company, Inc.
P.O. Box 1839
Hutchinson, KS 67504-1839

4a. Article Number
P 164 014 374

4b. Service Type
☐ Registered ■ Certified
☐ Express Mail ☐ Insured
☐ Return Receipt for Merchandise ☐ COD

7. Date of Delivery
OCT - 9 1997

5. Received By: *(Print Name)*
Gail A. Dennis

8. Addressee's Address *(Only if requested and fee is paid)*
rec'd KC

6. Signature: *(Addressee or Agent)*
X Gail A. Dennis

OCT 15 1997

PS Form **3811**, December 1994 E Domestic Return Receipt

Thank you for using Return Receipt Service.

10/7/97 CW 3144C
P 164 014 374

#1815

US Postal Service
Receipt for Certified Mail
No Insurance Coverage Provided.
Do not use for International Mail *(See reverse)*

Sent to Ms. Kathy Turner Geology/Petroleum Engineering Technician	
Street & Number Petroglyph Operating Company, Inc.	
Post Office, State, & ZIP Code P.O. Box 1839 Hutchinson, KS 67504-1839	
Postage $	
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	$
Postmark or Date	

PS Form **3800**, April 1995