Inspection Report For Well: UT20736 - 04393

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~~ 12/10/2013

Others: Ajayi, Christopher — Time: 11:30 am / pm

OPERATOR (only if different): _____

REPRESENTATIVE(S): Chad Stevinson

PRE-INSPECTION REVIEW

Petroglyph Operating Company, Inc

Well Name:	Ute Tribal 16-11		
Well Type:	Enhanced Recovery (2R)		
Operating Status:	AC (ACTIVE) as of 12/31/2002		
Oil Field:	Antelope Creek (Duchesne)		
Location:	NESW S16 T5S R3W		
Indian Country:	X, Uintah and Ouray		
Last Inspection:	8/28/2012	***Allowable Inj Pressure:***	2396 /
Last MIT:	Pass 11/11/2012	***Annulus Pressure From Last MIT:***	1870

BLACK = POSSIBLE VIOLATION GREY = DATA MISSING

INSPECTION TYPE: **(Select One)**

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

ICIS Entered
Date 12/20/13
Initials DCJ

OBSERVED VALUES:

Tubing Gauge:	[x] Yes [ ] No	Pressure: U: 1974 / 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

GREEN | BLUE | BI

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

ICIS Entered
Date 12/17/13
Initial AR

Inspection Report For Well: UT20736 - 04393 (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: Petroglyph 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

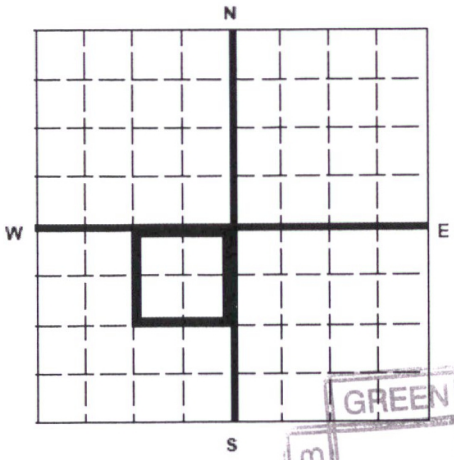
United States Environmental Protection Agency
Washington, DC 20460

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	UT2736-04393

Surface Location Description
___ 1/4 of ___ 1/4 of NE 1/4 of SW 1/4 of Section 16 Township 5S Range 3W

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

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

U2 Entered
Date 4/3/17
Initial DB

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 16-11

GREEN BLUE ORL TAB 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	1870	1896	533		0	0
February	16	1954	1991	757		0	0
March	16	1965	1977	855		0	0
April	16	1943	1966	682		0	0
May	16	1959	1977	902		0	0
June	16	1935	1975	742		0	0
July	16	1945	1952	826		0	0
August	16	1931	1954	825		0	0
September	16	1912	1930	588		0	0
October	16	1938	1941	765		0	0
November	16	1867	1898	423		0	0
December	16	1881	1933	801		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®
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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 16-11,DUCHESNE**	Lab Tech:	**Kaitlyn Natelli**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2017**		
Sample ID:	**WA-345313**		

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

Sample Specifics

Test Date:	1/25/2017
System Temperature 1 (°F):	300
System Pressure 1 (psig):	2000
System Temperature 2 (°F):	130
System Pressure 2 (psig):	50
Calculated Density (g/ml):	1.0052
pH:	8.30
Calculated TDS (mg/L):	11499.87
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
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):	4037.99	Chloride (Cl):	5000.00
Potassium (K):	33.31	Sulfate (SO_4):	4.00
Magnesium (Mg):	7.26	Bicarbonate (HCO_3):	2318.00
Calcium (Ca):	18.46	Carbonate (CO_3):	
Strontium (Sr):	5.20	Hydroxide(HO):	
Barium (Ba):	33.39	Acetic Acid (CH_3COO)	
Iron (Fe):	11.41	Propionic Acid (C_2H_5COO)	
Zinc (Zn):	2.35	Butanoic Acid (C_3H_7COO)	
Lead (Pb):	0.06	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Ammonia NH_3:		Fluoride (F):	
Manganese (Mn):	0.14	Bromine (Br):	
Aluminum (Al):	0.39	Silica (SiO_2):	28.30
Lithium (Li):	3.11	Calcium Carbonate ($CaCO_3$):	
Boron (B):	5.47	Phosphates (PO_4):	6.56
Silicon (Si):	13.23	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	1.16	14.64	0.38	1.85	0.00	0.00	3.08	8.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
149.00	267.00	1.21	14.82	0.29	1.50	0.00	0.00	3.17	8.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
168.00	483.00	1.29	15.04	0.21	1.17	0.00	0.00	3.26	8.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
187.00	700.00	1.37	15.24	0.15	0.89	0.00	0.00	3.35	8.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
206.00	917.00	1.46	15.43	0.11	0.67	0.00	0.00	3.44	8.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
224.00	1133.00	1.56	15.58	0.08	0.51	0.00	0.00	3.52	8.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
243.00	1350.00	1.67	15.72	0.07	0.42	0.00	0.00	3.60	8.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
262.00	1567.00	1.78	15.82	0.06	0.38	0.00	0.00	3.67	8.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
281.00	1783.00	1.90	15.91	0.06	0.40	0.00	0.00	3.74	8.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	2000.00	2.02	15.97	0.07	0.46	0.00	0.00	3.80	8.30	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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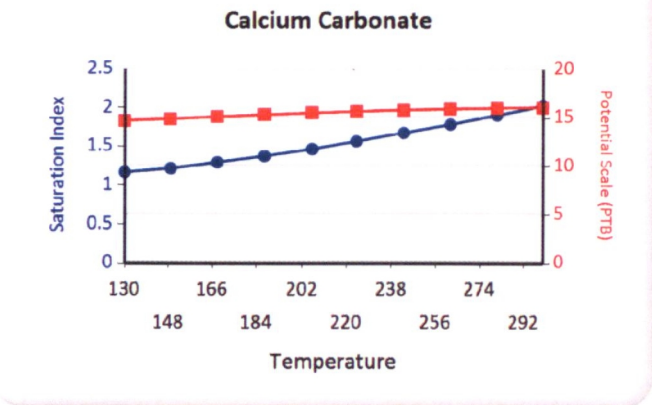
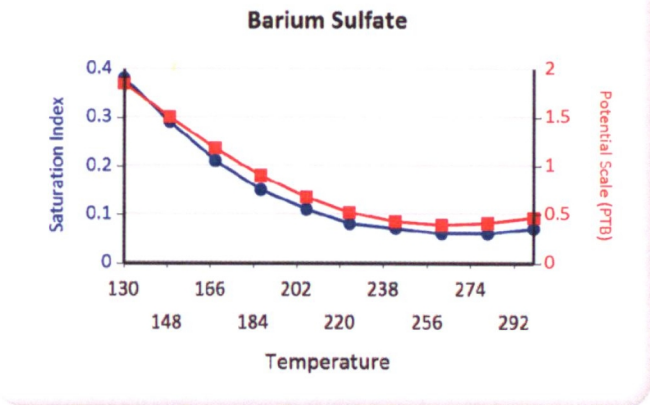
Water Analysis Report

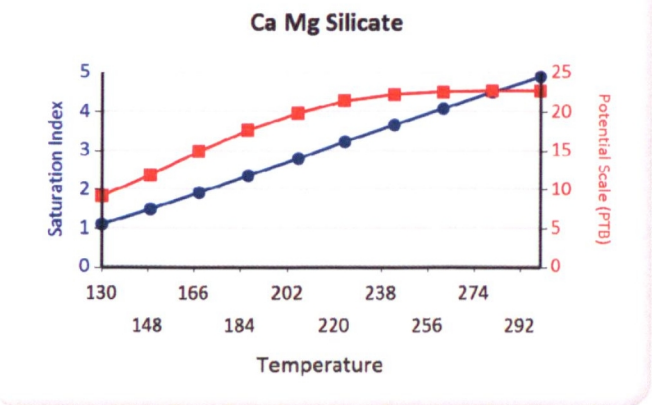
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	1.97	1.56	0.00	0.00	2.22	9.75	1.10	9.14	10.86	8.87
149.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	2.17	1.57	0.00	0.00	2.95	11.49	1.49	11.88	11.29	8.87
168.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	2.36	1.57	0.00	0.00	3.72	12.79	1.92	14.88	11.80	8.87
187.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	2.53	1.57	0.00	0.00	4.49	13.57	2.36	17.58	12.32	8.87
206.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	2.69	1.58	0.00	0.00	5.25	14.00	2.80	19.81	12.86	8.87
224.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	2.83	1.58	0.00	0.00	6.00	14.24	3.23	21.35	13.40	8.87
243.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	2.96	1.58	0.00	0.00	6.74	14.36	3.66	22.18	13.94	8.87
262.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	3.07	1.58	0.00	0.00	7.45	14.43	4.08	22.51	14.47	8.87
281.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	3.16	1.58	0.00	0.00	8.14	14.46	4.50	22.62	15.00	8.87
300.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	3.24	1.58	0.00	0.00	8.81	14.48	4.90	22.66	15.51	8.87

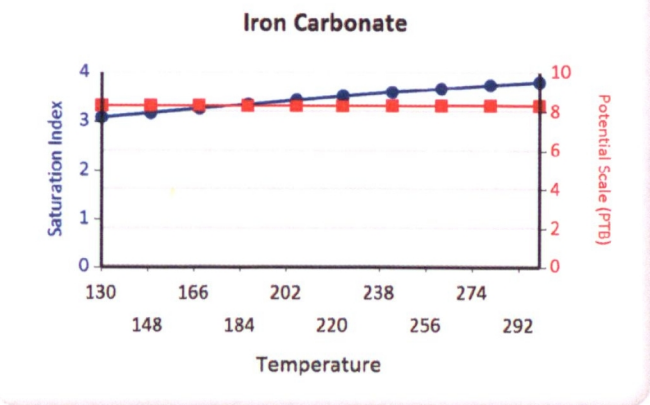
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

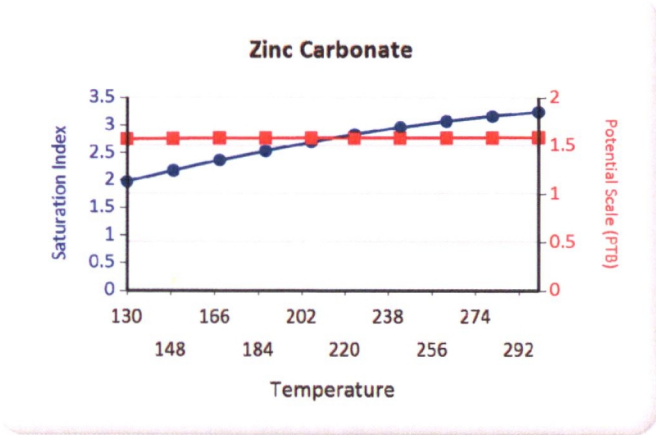
These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

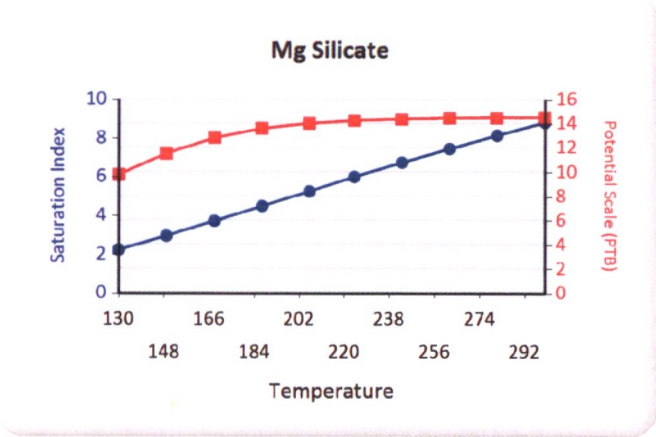


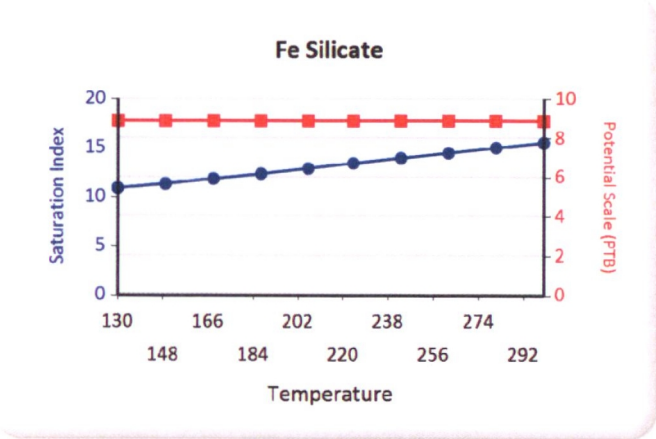







Zinc Carbonate
Saturation Index
Potential Scale (PTB)
Temperature
3.5
3
2.5
2
1.5
1
0.5
0
2
1.5
1
0.5
0
130
148
166
184
202
220
238
256
274
292


Mg Silicate
Saturation Index
Potential Scale (PTB)
Temperature
10
8
6
4
2
0
16
14
12
10
8
6
4
2
0
130
148
166
184
202
220
238
256
274
292


Fe Silicate
Saturation Index
Potential Scale (PTB)
Temperature
20
15
10
5
0
10
8
6
4
2
0
130
148
166
184
202
220
238
256
274
292

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

EPA

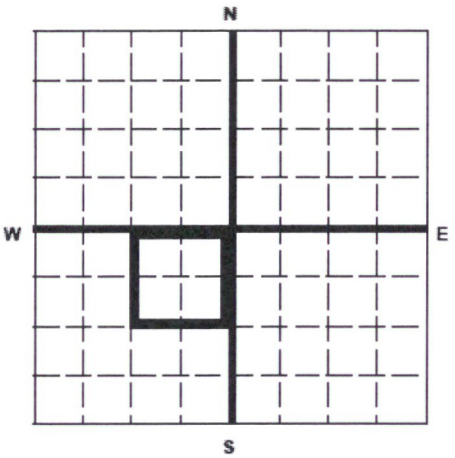
United States Environmental Protection Agency
Washington, DC 20460

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~~ 04393

Surface Location Description
___ 1/4 of ___ 1/4 of NE 1/4 of SW 1/4 of Section 16 Township 5S Range 3W

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

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

U2 Entered
Date 3/1/16
Initial DJ

WELL ACTIVITY	TYPE OF PERMIT
[ ] Brine Disposal	[ ] Individual
[X] Enhanced Recovery	[X] Area
[ ] Hydrocarbon Storage	Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 16-11

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	15	1906	1942	838		0	0
February	15	1954	1976	856		0	0
March	15	1960	1974	873		0	0
April	15	1935	1972	755		0	0
May	15	1944	1962	778		0	0
June	15	1940	1963	784		0	0
July	15	1966	1969	902		0	0
August	15	1951	1966	819		0	0
September	15	1936	1970	735		0	0
October	15	1911	1940	743		0	0
November	15	1906	1934	762		0	0
December	15	1975	1975	819		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
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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 16-11,DUCHESNE**	Lab Tech:	**Michele Pike**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2016**		
Sample ID:	**WA-327912**		

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):	1.0004
pH:	6.80
Calculated TDS (mg/L):	4480.83
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):	1234.99	Chloride (Cl):	1800.00
Potassium (K):	22.92	Sulfate (SO_4):	540.00
Magnesium (Mg):	85.68	Bicarbonate (HCO_3):	561.00
Calcium (Ca):	187.00	Carbonate (CO_3):	
Strontium (Sr):	5.90	Acetic Acid (CH_3COO)	
Barium (Ba):	0.74	Propionic Acid (C_2H_5COO)	
Iron (Fe):	8.69	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	1.79	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.24	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.20	Silica (SiO_2):	31.68
Aluminum (Al):	0.17	Calcium Carbonate ($CaCO_3$):	
Lithium (Li):	4.82	Phosphates (PO_4):	79.05
Boron (B):	26.80	Oxygen (O_2):	
Silicon (Si):	14.81		

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	0.61	46.92	0.84	0.38	0.00	0.00	1.39	6.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
167.00	267.00	0.44	34.52	0.86	0.38	0.00	0.00	1.20	5.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	483.00	0.33	26.28	0.88	0.38	0.00	0.00	1.07	5.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	700.00	0.23	18.25	0.92	0.39	0.00	0.00	0.93	5.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
127.00	917.00	0.13	10.52	0.97	0.39	0.00	0.00	0.79	5.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	1133.00	0.04	3.19	1.04	0.40	0.00	0.00	0.66	4.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	1350.00	0.00	0.00	1.11	0.41	0.00	0.00	0.53	4.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
87.00	1567.00	0.00	0.00	1.20	0.41	0.00	0.00	0.40	3.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	1783.00	0.00	0.00	1.31	0.42	0.00	0.00	0.28	2.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.00	2000.00	0.00	0.00	1.44	0.42	0.00	0.00	0.16	1.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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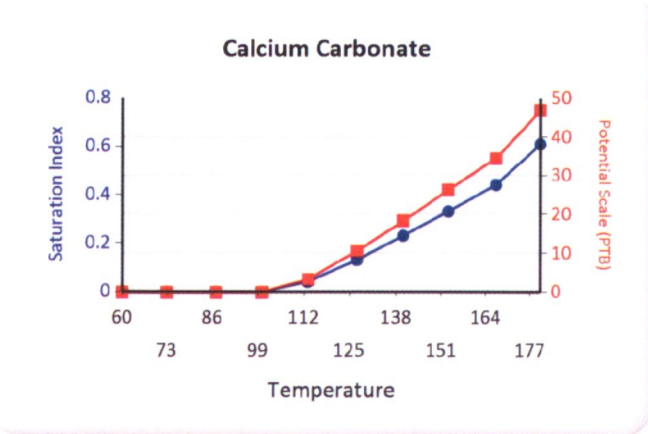
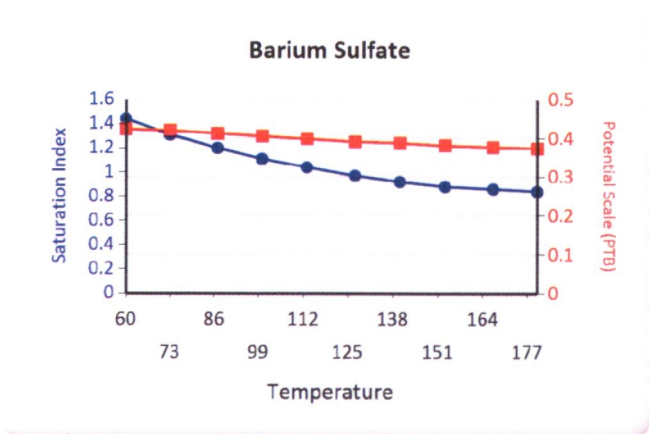
Water Analysis Report

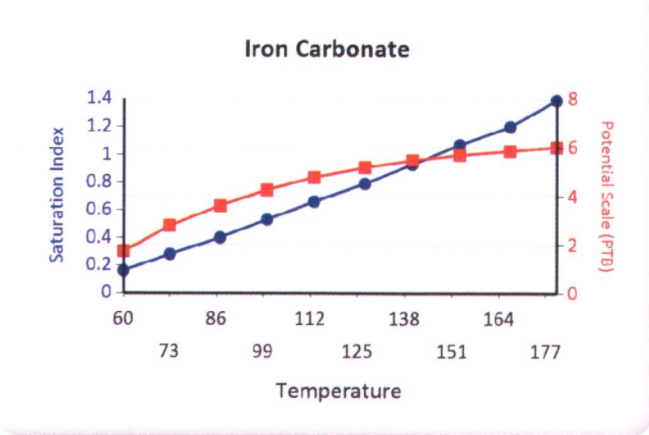
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.98	0.00	0.00	0.17	2.67	0.00	0.00	4.31	6.42
167.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.82	0.00	0.00	0.00	0.00	0.00	0.00	3.29	6.03
153.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.61	0.00	0.00	0.00	0.00	0.00	0.00	2.62	5.56
140.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.26	0.00	0.00	0.00	0.00	0.00	0.00	1.96	4.84
127.00	917.00	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	1.32	3.78
113.00	1133.00	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	0.69	2.28
100.00	1350.00	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	0.07	0.28
87.00	1567.00	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	0.00	0.00
73.00	1783.00	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	0.00	0.00
60.00	2000.00	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	0.00	0.00

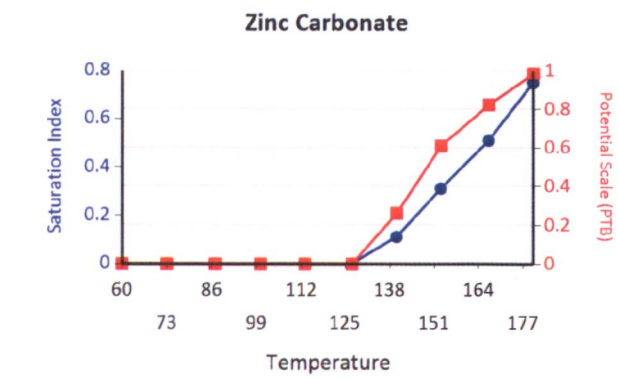
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Mg Silicate Fe Silicate

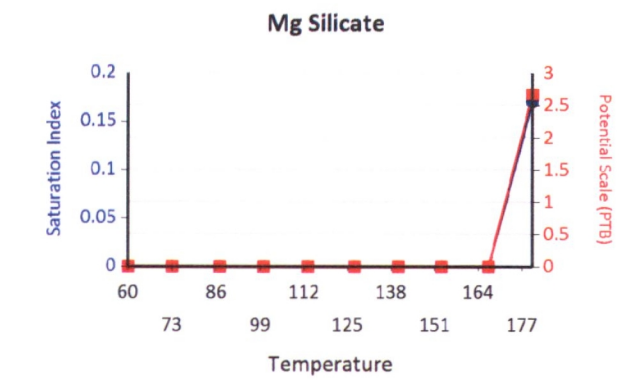
These scales have positive scaling potential under final temperature and pressure: Barium Sulfate Iron Carbonate

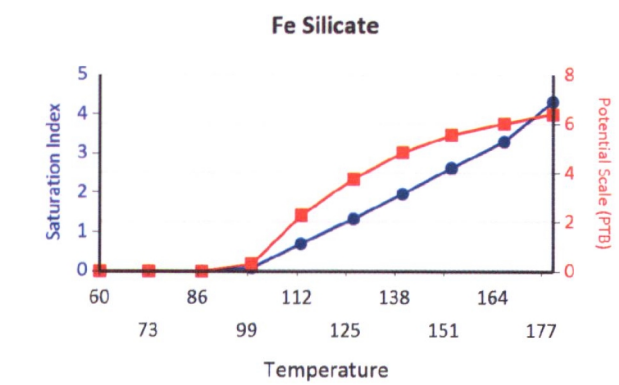







Zinc Carbonate
Saturation Index
Potential Scale (PTB)
Temperature
0.8
0.6
0.4
0.2
0
1
0.8
0.6
0.4
0.2
0
60
86
112
138
164
73
99
125
151
177


Mg Silicate
Saturation Index
Potential Scale (PTB)
Temperature
0.2
0.15
0.1
0.05
0
3
2.5
2
1.5
1
0.5
0
60
86
112
138
164
73
99
125
151
177


Fe Silicate
Saturation Index
Potential Scale (PTB)
Temperature
5
4
3
2
1
0
8
6
4
2
0
60
86
112
138
164
73
99
125
151
177

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

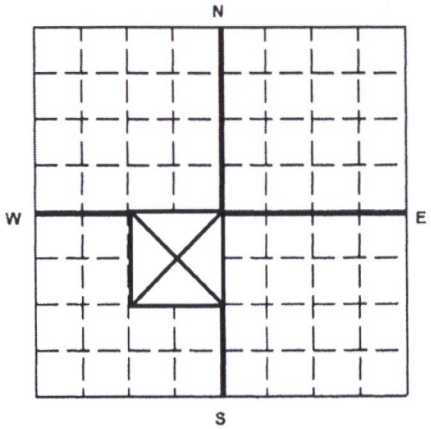
EPA

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	UT2736-04393

Surface Location Description

___ 1/4 of ___ 1/4 of NE 1/4 of SW 1/4 of Section 16 Township 5S Range 3W

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

Surface Location 1980 ft. frm (N/S) S Line of quarter section and 1980 ft. from (E/W) W 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 16-11

		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	1992	2004	1073		0	0
February	14	2003	2008	1018		0	0
March	14	1977	1993	1081		0	0
April	14	2005	2013	1281		0	0
May	14	1989	1999	1172		0	0
June	14	1972	2012	923		0	0
July	14	1951	1995	827		0	0
August	14	1972	1990	985		0	0
September	14	1955	1974	967		0	0
October	14	1993	1990	1056		0	0
November	14	1996	2004	900		0	0
December	14	1967	1989	864		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		2/10/2015

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

U2 Entered
Date 2/23/15
Initial GW

TAB	GREEN	BLUE	CBI
		2	

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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 16-11 INJ, DUCHESNE**	Lab Tech:	**Gary Winegar**
Sample Point:	**WELLHEAD**		
Sample Date:	**1/7/2015**		
Sample ID:	**WA-297512**		

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):	0.9986
pH:	7.40
Calculated TDS (mg/L):	2222.34
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	24.00
H_2S in Gas (%):	
H2S in Water (mg/L):	5.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	203.99	Chloride (Cl):	1000.00
Potassium (K):	2.60	Sulfate (SO_4):	296.00
Magnesium (Mg):	72.73	Bicarbonate (HCO_3):	488.00
Calcium (Ca):	130.22	Carbonate (CO_3):	
Strontium (Sr):	4.38	Acetic Acid (CH_3COO)	
Barium (Ba):	0.48	Propionic Acid (C_2H_5COO)	
Iron (Fe):	1.47	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	0.23	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.03	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.07	Silica (SiO_2):	22.14

Notes:
B=.84 Al=.04 Li=.22

(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	0.60	26.45	1.25	0.27	2.09	0.80	0.46	0.69	0.00	0.00	0.00	0.00	0.00	0.00	9.56	0.12
88.00	157.00	0.55	23.78	1.17	0.27	1.95	0.80	0.44	0.67	0.00	0.00	0.00	0.00	0.00	0.00	9.31	0.12
97.00	300.00	0.58	25.37	1.09	0.26	1.92	0.80	0.50	0.72	0.00	0.00	0.00	0.00	0.00	0.00	9.18	0.12
106.00	443.00	0.62	27.11	1.02	0.26	1.89	0.80	0.57	0.77	0.00	0.00	0.00	0.00	0.00	0.00	9.05	0.12
115.00	585.00	0.66	28.98	0.96	0.26	1.88	0.80	0.63	0.81	0.00	0.00	0.00	0.00	0.00	0.00	8.94	0.12
124.00	728.00	0.70	30.98	0.90	0.25	1.87	0.80	0.70	0.84	0.00	0.00	0.00	0.00	0.00	0.00	8.83	0.12
133.00	871.00	0.74	33.09	0.85	0.25	1.87	0.80	0.76	0.88	0.00	0.00	0.00	0.00	0.00	0.00	8.73	0.12
142.00	1014.00	0.79	35.31	0.81	0.24	1.87	0.80	0.83	0.90	0.00	0.00	0.00	0.00	0.00	0.00	8.64	0.12
151.00	1157.00	0.83	37.64	0.77	0.24	1.89	0.80	0.89	0.93	0.00	0.00	0.00	0.00	0.00	0.00	8.56	0.12
160.00	1300.00	0.88	40.05	0.74	0.23	1.90	0.80	0.95	0.95	0.00	0.00	0.00	0.00	0.00	0.00	8.48	0.12

		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	0.00	0.00	10.94	0.01	0.00	0.00	0.00	0.00	0.74	0.45
88.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.59	0.01	0.00	0.00	0.00	0.00	0.54	0.34
97.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.35	0.01	0.00	0.00	0.00	0.00	0.85	0.50
106.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.12	0.01	0.00	0.00	0.00	0.00	1.19	0.63
115.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.91	0.01	0.00	0.00	0.00	0.00	1.53	0.75
124.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.71	0.01	0.00	0.00	0.00	0.00	1.89	0.84
133.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.53	0.01	0.00	0.00	0.00	0.00	2.26	0.91
142.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.35	0.01	0.39	2.08	0.00	0.00	2.64	0.97
151.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.01	9.19	0.01	0.91	4.98	0.00	0.00	3.03	1.01
160.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.05	9.04	0.01	1.44	8.07	0.00	0.00	3.43	1.05

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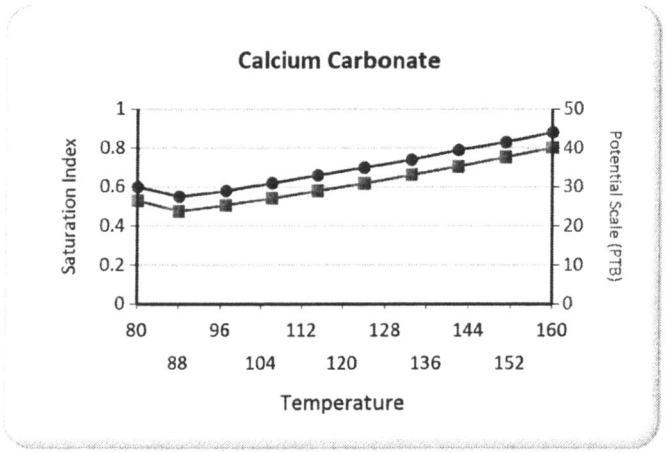
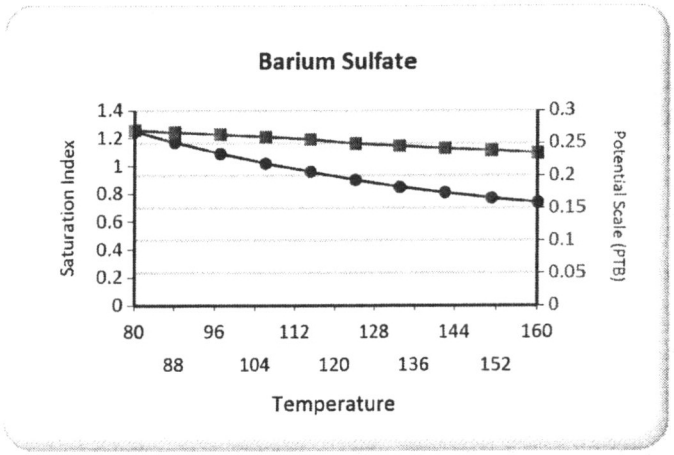
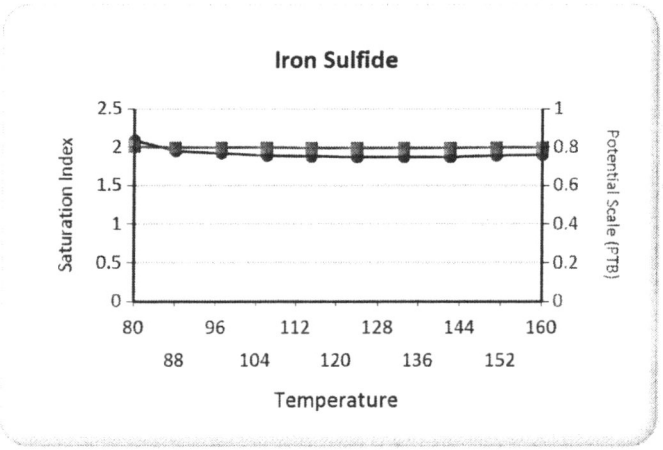
Water Analysis Report

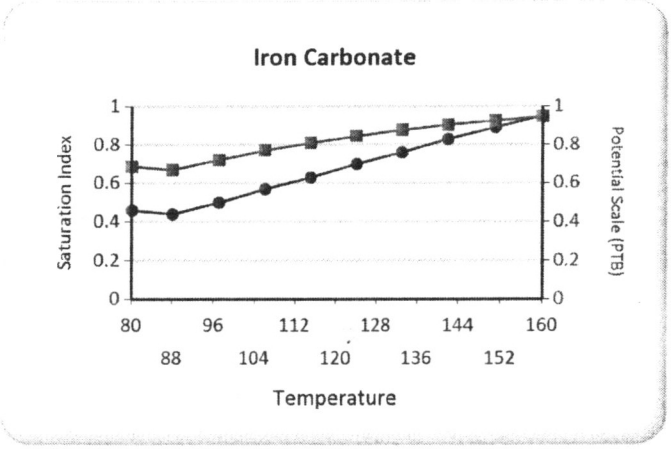
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Lead Sulfide Fe Silicate

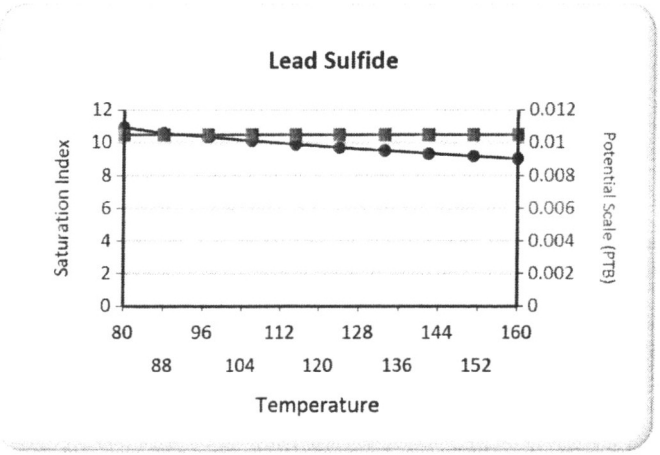
These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Fe Silicate

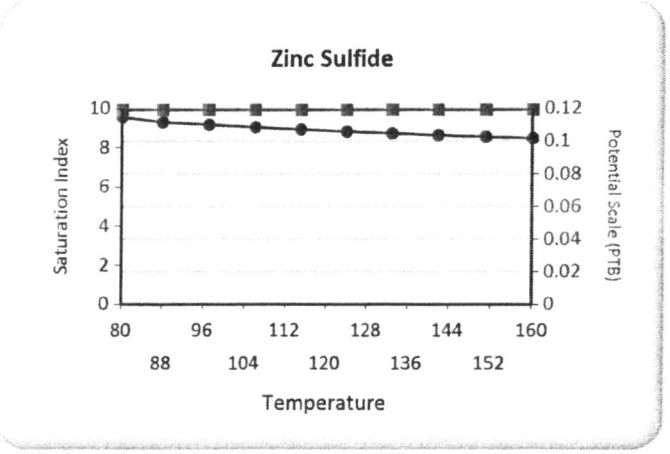


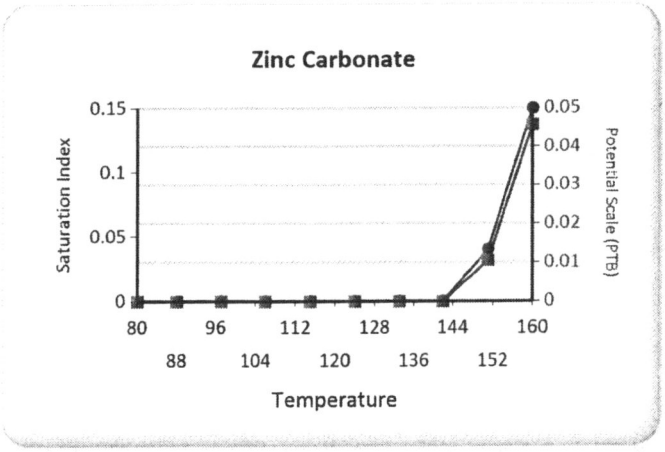


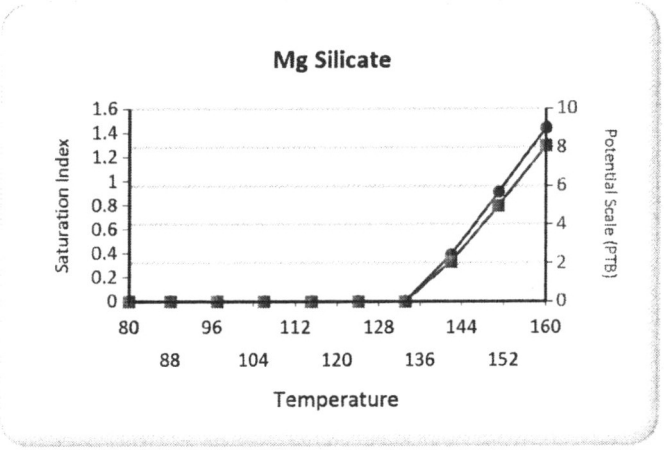


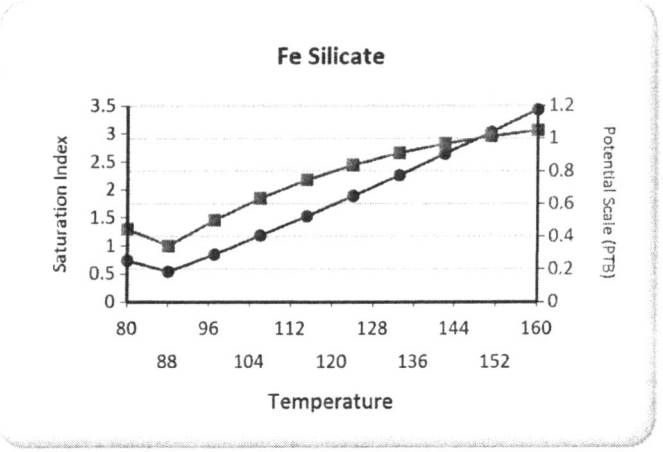







Zinc Carbonate
Saturation Index
Potential Scale (PTB)
Temperature
0.15
0.1
0.05
0
0.05
0.04
0.03
0.02
0.01
0
80
88
96
104
112
120
128
136
144
152
160


Mg Silicate
Saturation Index
Potential Scale (PTB)
Temperature
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
10
8
6
4
2
0
80
88
96
104
112
120
128
136
144
152
160


Fe Silicate
Saturation Index
Potential Scale (PTB)
Temperature
3.5
3
2.5
2
1.5
1
0.5
0
1.2
1
0.8
0.6
0.4
0.2
0
80
88
96
104
112
120
128
136
144
152
160

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

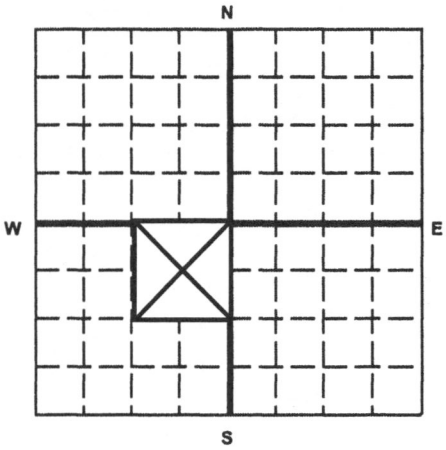
United States Environmental Protection Agency
Washington, DC 20460

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	UT2736-04393

Surface Location Description
___ 1/4 of ___ 1/4 of NE 1/4 of SW 1/4 of Section 16 Township 5S Range 3W

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

Surface Location 1980 ft. frm (N/S) S Line of quarter section
and 1980 ft. from (E/W) W 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 16-11

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	13	1630	1846	1990		0	0
February	13	1879	1947	2026		0	0
March	13	1910	1938	1788		0	0
April	13	1954	1954	2160		0	0
May	13	1990	2015	1835		0	0
June	13	1977	2008	1402		0	0
July	13	1976	2026	1402		0	0
August	13	1959	2027	1258		0	0
September	13	1999	2027	1356		0	0
October	13	2007	2025	1361		0	0
November	13	1973	2000	1358		0	0
December	13	1986	1988	1038		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)

TAB | CBI

U2 Entered
Date 3/18/14
Initial

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Units of Measurement: **Standard**

Water Analysis Report

Production Company: **PETROGLYPH ENERGY INC**
Well Name: **UTE TRIBAL 16-11 INJ**
Sample Point: **Wellhead**
Sample Date: **1/8/2014**
Sample ID: **WA-263040**

Sales Rep: **James Patry**
Lab Tech: **Gary Winegar**

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):	0.999
pH:	8.00
Calculated TDS (mg/L):	3105.00
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):	798.76	Chloride (Cl):	1000.00
Potassium (K):	4.00	Sulfate (SO_4):	339.00
Magnesium (Mg):	65.00	Bicarbonate (HCO_3):	732.00
Calcium (Ca):	138.00	Carbonate (CO_3):	
Strontium (Sr):	4.00	Acetic Acid (CH_3COO)	
Barium (Ba):	0.50	Propionic Acid (C_2H_5COO)	
Iron (Fe):	1.80	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	0.27	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.07	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.20	Silica (SiO_2):	21.40

Notes:
B=.7 Al=0 Li=.03

(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	1.25	48.81	1.43	0.29	0.00	0.00	1.11	1.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	157.00	1.25	47.68	1.28	0.28	0.00	0.00	1.16	1.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
86.00	300.00	1.29	50.30	1.16	0.28	0.00	0.00	1.25	1.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	443.00	1.33	53.27	1.04	0.27	0.00	0.00	1.34	1.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	585.00	1.38	56.55	0.95	0.26	0.00	0.00	1.43	1.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
126.00	728.00	1.44	60.12	0.87	0.26	0.00	0.00	1.52	1.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	871.00	1.49	63.92	0.80	0.25	0.00	0.00	1.61	1.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	1014.00	1.56	67.91	0.74	0.25	0.00	0.00	1.70	1.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
166.00	1157.00	1.62	72.03	0.69	0.24	0.00	0.00	1.78	1.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180.00	1300.00	1.69	76.25	0.66	0.23	0.00	0.00	1.87	1.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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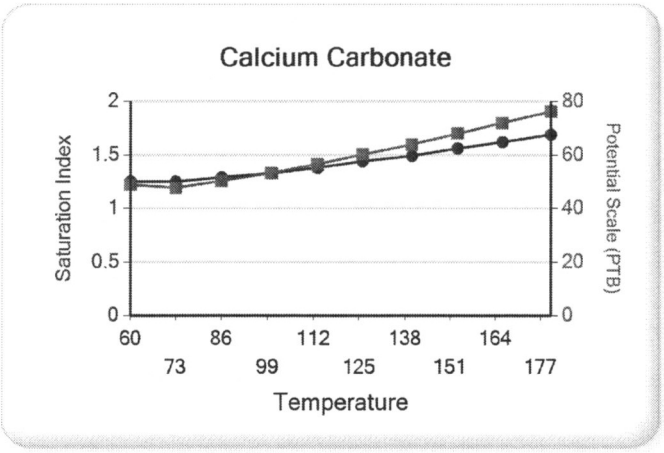
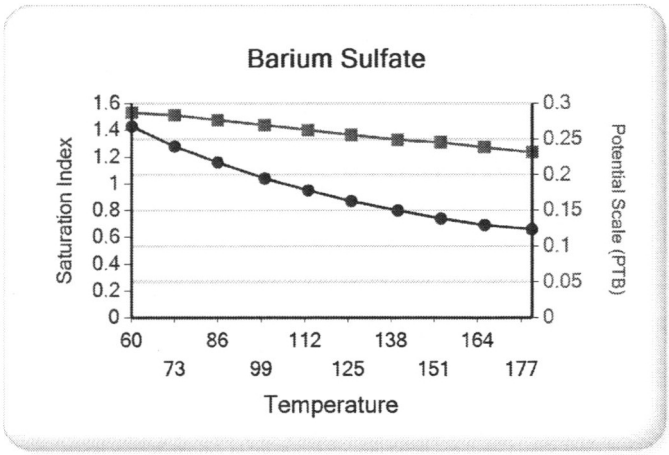
Water Analysis Report

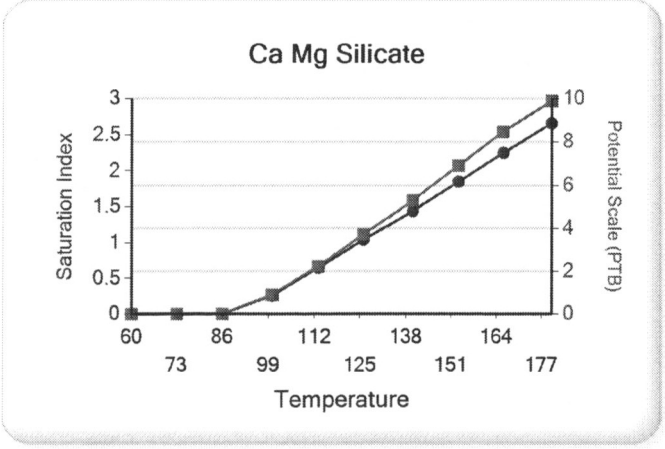
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.77	1.29
73.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.88	1.30
86.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.61	1.89	0.00	0.00	4.28	1.32
100.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.04	0.00	0.00	1.28	4.15	0.26	0.90	4.72	1.35
113.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.09	0.00	0.00	1.97	6.80	0.65	2.24	5.17	1.36
126.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47	0.12	0.00	0.00	2.66	9.84	1.04	3.72	5.65	1.37
140.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.14	0.00	0.00	3.37	13.20	1.44	5.29	6.15	1.38
153.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.15	0.00	0.00	4.07	16.68	1.85	6.92	6.66	1.39
166.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.96	0.16	0.00	0.00	4.77	19.94	2.25	8.49	7.17	1.39
180.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10	0.17	0.00	0.00	5.47	22.56	2.66	9.89	7.68	1.40

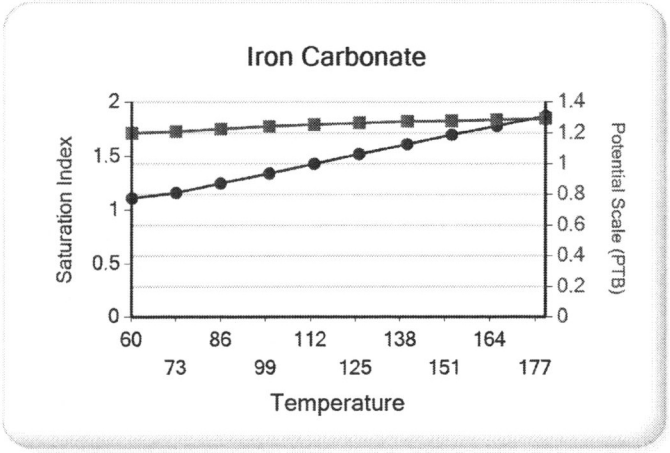
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Fe Silicate

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









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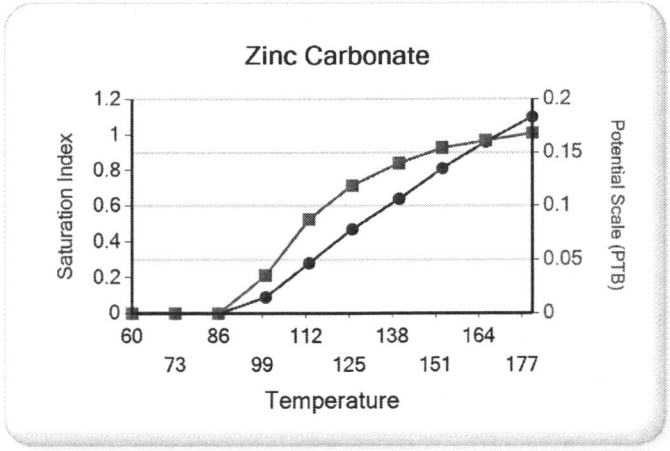
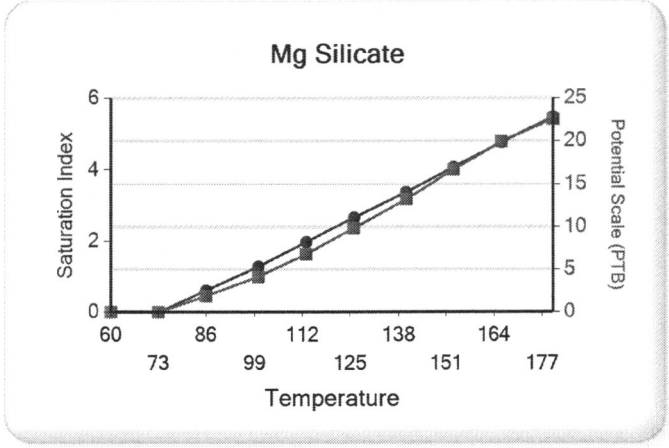
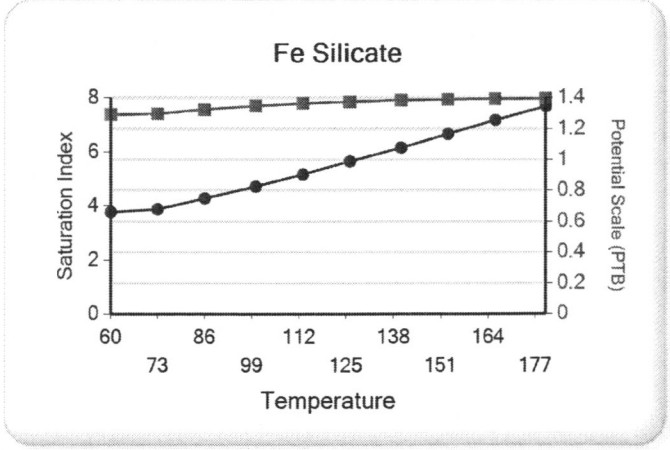
Water Analysis Report







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

Ref: 8P2-W-GW

OCT 9 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 #16-11 (UT04393)
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 and the successfully run mechanical integrity test, with chart, on the Ute Tribal #16-11 (UT2736-04393) 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 2396 psig**, as modified by UIC Minor Permit Modification dated August 29, 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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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

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

AUG 29 1997

Ref: 8P2-W-GW

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Ms. Kathy Turner
Petroleum Engineering Technician
Petroglyph Operating Company, Inc.
6209 North Highway 61
Hutchinson, Kansas 67502

RE: **UIC Minor Permit Modification**
Conversion of Additional Well to
EPA Area Permit UT2736-00000
Antelope Creek Waterflood
Duchesne County, Utah

Dear Ms. Turner:

Your letter of July 17, 1997, requesting that the following production well be converted to a Class II enhanced oil recovery well and added to the Antelope Creek Waterflood, as authorized under EPA Area Permit #UT2736-00000, is hereby granted.

NAME	LOCATION	EPA WELL PERMIT NO.
Ute Tribal #16-11	*NE/SW Section 16* T 5 S - R 3 W Antelope Creek Field Duchesne County, UT	*#UT2736-04393*

This additional well is within the boundary of the existing area permit for the Antelope Creek Waterflood (UT2736-00000), and this addition is made by minor permit modification according to the terms and conditions of that permit. Unless specifically mentioned in this Minor Permit Modification, all terms and conditions of the original permit will apply to the construction, operation, monitoring, and plugging and abandonment of this additional injection well. The proposed well location, well schematic, conversion procedures, plugging and abandonment plan and schematic, submitted by your office, have been reviewed and approved as follows:

(1) The **conversion** of this production well has been reviewed, and found satisfactory, therefore, no corrective action is required.

(2) **Maximum injection pressure (Pmax)** - the permittee submitted a list of two (2) individual zones, within the Ute Tribal #16-11, which were individually fraced and established an average fracture gradient (Fg) of

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0.935 psi/ft. which was derived from instantaneous shut-in pressures (ISIP) from each zone. This Fg is acceptable to the Environmental Protection Agency (EPA), and a theoretical maximum allowable surface injection pressure (Pmax), for this well, may be calculated as shown below:

$$Pmax = [Fg - 0.433\ (Sg)]\ d$$

Where: Pmax = Maximum surface injection pressure at wellhead

d = 4772' shallowest perforations

Sg = Specific gravity of injected water

Pmax = [0.935 - .433 (1.00)] 4772

Pmax = 2396 psig

Until such time as the permittee demonstrates that a fracture gradient other than 0.935 psi/ft applies to the disposal zones of this newly converted well, the maximum allowable wellhead injection pressure **(Pmax) for this well shall be 2396 psig.**

(3) The **plugging and abandonment plan and schematic**, submitted by your office, has been reviewed, and approved.

Prior to commencing injection into this well, permittee must fulfill permit condition Part II, C. 2. and have received **written authorization** to inject **by the Environmental Protection Agency**. In summary, these requirements for your newly permitted injection well are:

(1) All conversion is complete and the permittee has submitted a completed **Well Rework Record (EPA Form 7520-12)**.

(2) The **pore pressure has been determined.**

(3) The well has successfully completed and passed a **mechanical integrity test (MIT)**; EPA MIT form enclosed.

All other provisions and conditions of the area permit remain as originally issued, July 12, 1994.

If you have any questions, please contact Mr. Chuck Williams at (303) 312-6625.

Also, please direct the above requirements to Mr. Williams at the above letterhead address, citing **MAIL CODE 8P2-W-GW.** Thank you for your continued cooperation.

Sincerely,

Kerrigan G. Clough
Assistant Regional Administrator
Office of Pollution Prevention,
State and Tribal Assistance

Enclosure: EPA MIT Form

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

Mechanical Integrity Test
Casing or Annulus Pressure Test for Well UT2736-04393

U.S. Environmental Protection Agency
Underground Injection Control Program, UIC Implementation Section, 8WM-DW
999 18th Street, Suite 500, Denver, CO 80202-2466
This form was printed on 08/15/1997.

EPA Witness: _____ Date __/__/__

Test conducted by: _____

Others present: _____

UTE TRIBAL #16-11 2R UC as of / /
ANTELOPE CREEK NESW 16 05S 03W
Petroglyph Operating Company, Inc., Hutchinson, KS Op ID PTG01

Last MIT: No record / /
Max Allowed Press psig 199 Max Reported Press 0 psig

Is this a regularly scheduled test? [ ] Yes [ ] No
Initial test for permit? [ ] Yes [ ] No
Test after well rework? [ ] Yes [ ] No

Well injecting during test? [ ] NO [ ] YES _____ BPD

Initial casing/tubing annulus pressure _____ psig
Does the annulus pressure build back up? [ ] Yes [ ] No

TUBING PRESSURE			
Initial	psig	psig	psig
End of Test	psig	psig	psig

CASING/TUBING ANNULUS PRESSURE			
Time	Test #1	Test #2	Test #3
0 min	psig	psig	psig
5			
10			
15 min			
20			
25			
30 min			
Result (circle)	Pass Fail	Pass Fail	Pass Fail