Inspection Report For Well: UT20736 - 06481

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: 12:28 am / pm

OPERATOR (only if different): _____

REPRESENTATIVE(S): Chad Stevenson

PRE-INSPECTION REVIEW

Petroglyph Operating Company, Inc

Well Name:	Ute Tribal 21-14		
Well Type:	Enhanced Recovery (2R)		
Operating Status:	AC (ACTIVE) as of 2/2/2006		
Oil Field:	Antelope Creek (Duchesne)		
Location:	SESW S21 T5S R3W		
Indian Country:	X, Uintah and Ouray		
Last Inspection:	8/28/2012	***Allowable Inj Pressure:***	1685 /
Last MIT:	Pass 11/10/2012	***Annulus Pressure From Last MIT:***	1700

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 12/27/13
Initials DB

OBSERVED VALUES:

Tubing Gauge:	[X] Yes / [ ] No	Pressure: U: 1362 / 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

TAB	GREEN	BLUE	
		1	

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

UIC Entered
Date 12/17/13
Initial AR

Inspection Report For Well: UT20736 - 06481 (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

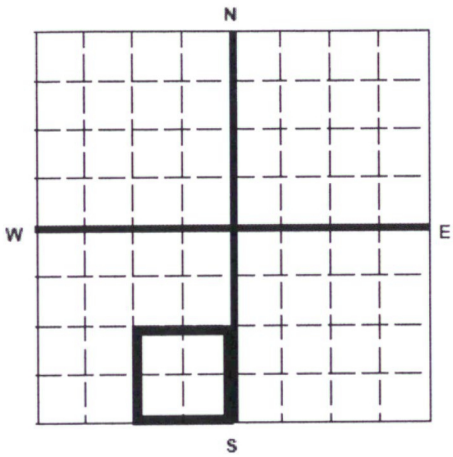
United States Environmental Protection Agency
Washington, DC 20460

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	UT2736-06481

Surface Location Description
____ 1/4 of 1/4 of SE 1/4 of SW 1/4 of Section 21 Township 5S Range 3W

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

Surface Location 2080 ft. frm (N/S) W Line of quarter section
and 660 ft. from (E/W) S 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 21-14

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING – CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	16	1568	1635	390		0	0
February	16	1597	1627	336		0	0
March	16	1606	1648	430		0	0
April	16	1612	1649	392		0	0
May	16	1456	1632	270		0	0
June	16	1611	1636	467		0	0
July	16	1583	1623	391		0	0
August	16	1593	1601	453		0	0
September	16	1535	1573	420		0	0
October	16	1502	1531	363		0	0
November	16	1511	1536	230		0	0
December	16	1535	1548	446		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

GREEN BLUE CBI
2

U2 Entered
Date 4/5/17
Initial DB

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

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 21-14 INJ, DUCHESNE**	Lab Tech:	**Kaitlyn Natelli**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2017**		
Sample ID:	**WA-345325**		

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

Sample Specifics

Test Date:	1/26/2017
System Temperature 1 (°F):	300
System Pressure 1 (psig):	2000
System Temperature 2 (°F):	130
System Pressure 2 (psig):	50
Calculated Density (g/ml):	0.9996
pH:	7.20
Calculated TDS (mg/L):	2434.86
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	30.00
H_2S in Gas (%):	
H2S in Water (mg/L):	5.00
Tot. SuspendedSolids(mg/L):	
Corrosivity(LanglierSat.Indx)	0.00
Alkalinity:	

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	0.00	Chloride (Cl):	170.00
Potassium (K):	2.23	Sulfate (SO_4):	80.00
Magnesium (Mg):	25.12	Bicarbonate (HCO_3):	854.00
Calcium (Ca):	52.25	Carbonate (CO_3):	
Strontium (Sr):	1.45	Hydroxide(HO):	
Barium (Ba):	2.65	Acetic Acid (CH_3COO)	
Iron (Fe):	931.82	Propionic Acid (C_2H_5COO)	
Zinc (Zn):	305.13	Butanoic Acid (C_3H_7COO)	
Lead (Pb):	0.00	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Ammonia NH_3:		Fluoride (F):	
Manganese (Mn):	1.14	Bromine (Br):	
Aluminum (Al):	0.57	Silica (SiO_2):	9.07
Lithium (Li):	2.65	Calcium Carbonate ($CaCO_3$):	
Boron (B):	1.07	Phosphates (PO_4):	22.74
Silicon (Si):	4.24	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	0.47	22.86	0.83	1.34	4.44	4.62	3.76	274.37	0.00	0.00	0.00	0.00	0.00	0.00	11.63	5.12
149.00	267.00	0.55	25.71	0.73	1.28	4.42	4.62	3.87	275.57	0.00	0.00	0.00	0.00	0.00	0.00	11.40	5.12
168.00	483.00	0.67	29.62	0.66	1.22	4.46	4.62	4.02	276.93	0.00	0.00	0.00	0.00	0.00	0.00	11.24	5.12
187.00	700.00	0.80	33.17	0.60	1.18	4.51	4.62	4.16	278.08	0.00	0.00	0.00	0.00	0.00	0.00	11.11	5.12
206.00	917.00	0.94	36.25	0.57	1.14	4.59	4.62	4.30	279.05	0.00	0.00	0.00	0.00	0.00	0.00	11.00	5.12
224.00	1133.00	1.09	38.78	0.54	1.12	4.69	4.62	4.44	279.87	0.00	0.00	0.00	0.00	0.00	0.00	10.91	5.12
243.00	1350.00	1.24	40.77	0.54	1.11	4.80	4.62	4.58	280.56	0.00	0.00	0.00	0.00	0.00	0.00	10.85	5.12
262.00	1567.00	1.41	42.28	0.54	1.11	4.93	4.62	4.71	281.14	0.00	0.00	0.00	0.00	0.00	0.00	10.80	5.12
281.00	1783.00	1.58	43.38	0.55	1.13	5.07	4.62	4.83	281.62	0.00	0.00	0.00	0.00	0.00	0.00	10.77	5.12
300.00	2000.00	1.75	44.15	0.57	1.15	5.22	4.62	4.95	282.01	0.00	0.00	0.00	0.00	0.00	0.00	10.76	5.12

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

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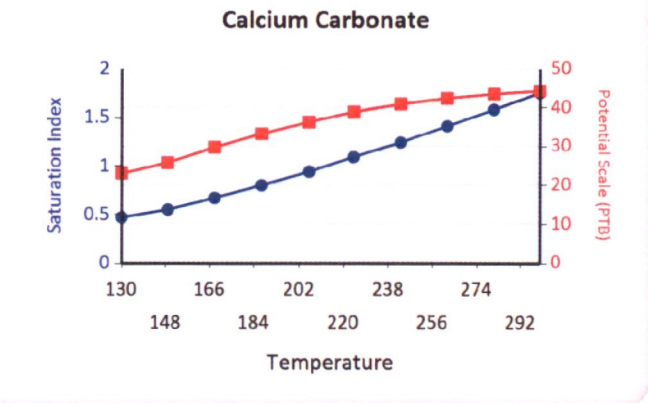
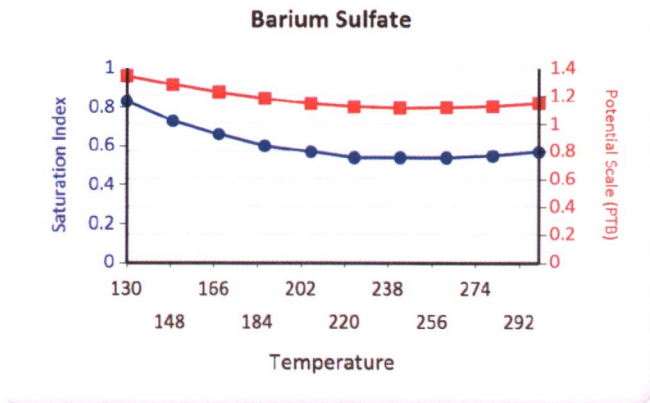
Water Analysis Report

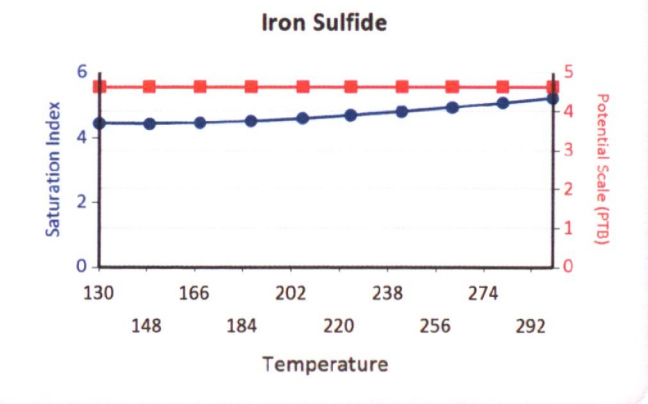
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	3.04	201.11	0.00	0.00	0.00	0.00	0.00	0.00	9.44	21.04
149.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	3.27	202.66	0.00	0.00	0.00	0.00	0.00	0.00	10.02	21.04
168.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	3.51	203.71	0.00	0.00	0.00	0.00	0.00	0.00	10.82	21.04
187.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	3.74	204.30	0.00	0.00	0.00	0.00	0.00	0.00	11.64	21.04
206.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	3.95	204.63	0.00	0.00	0.90	8.02	0.00	0.00	12.47	21.04
224.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	4.15	204.83	0.00	0.00	1.94	15.20	0.16	1.47	13.32	21.04
243.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	4.33	204.94	0.00	0.00	2.97	19.81	0.79	5.83	14.17	21.04
262.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	4.50	205.01	0.00	0.00	3.98	22.14	1.42	8.72	15.03	21.04
281.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	4.65	205.06	0.00	0.00	4.99	23.06	2.04	10.41	15.88	21.04
300.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	4.79	205.08	0.00	0.00	5.97	23.38	2.65	11.32	16.73	21.04

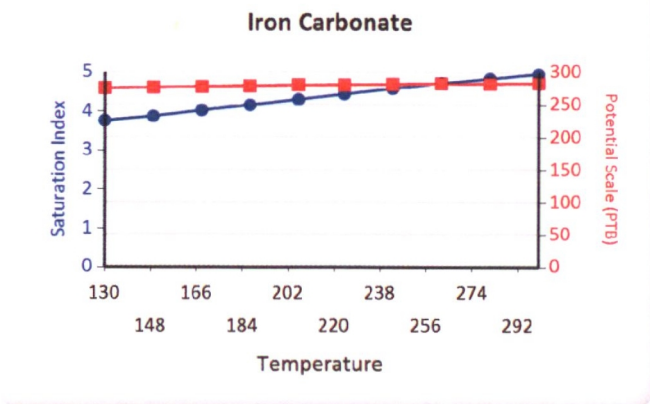
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Fe Silicate

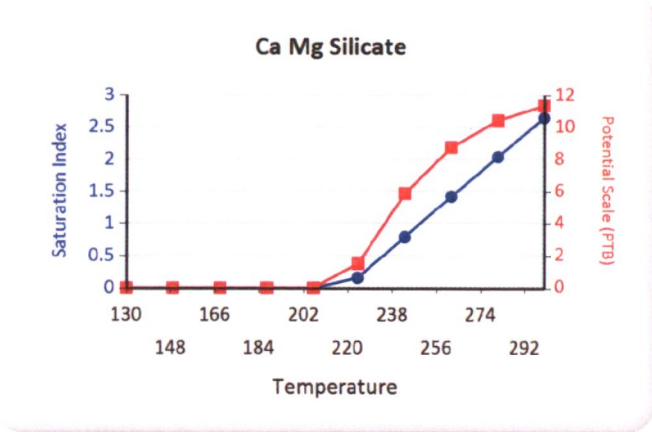
These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

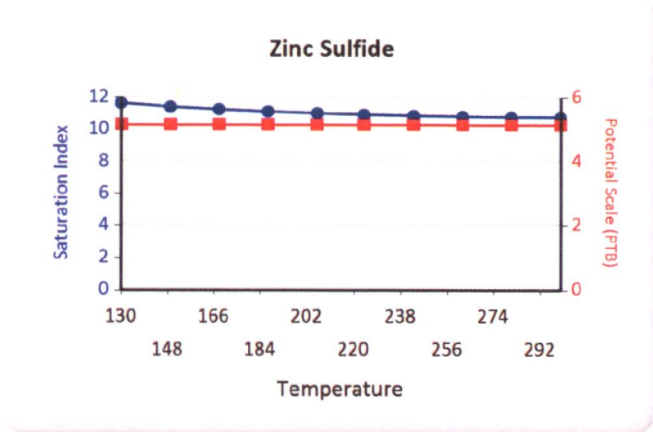









Ca Mg Silicate
Saturation Index
Potential Scale (PTB)
Temperature
130 148 166 184 202 220 238 256 274 292


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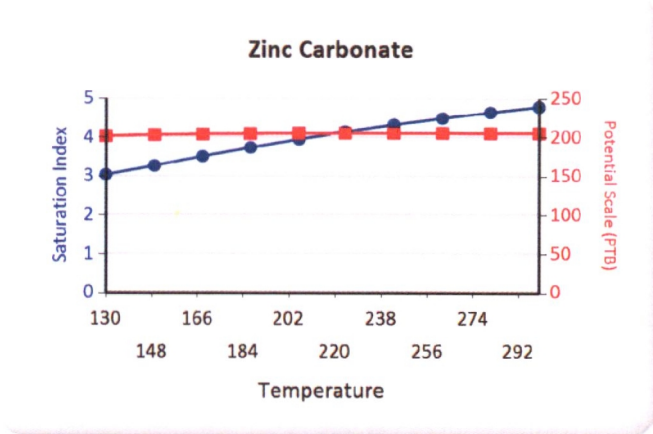
Zinc Carbonate
Saturation Index
Potential Scale (PTB)
Temperature
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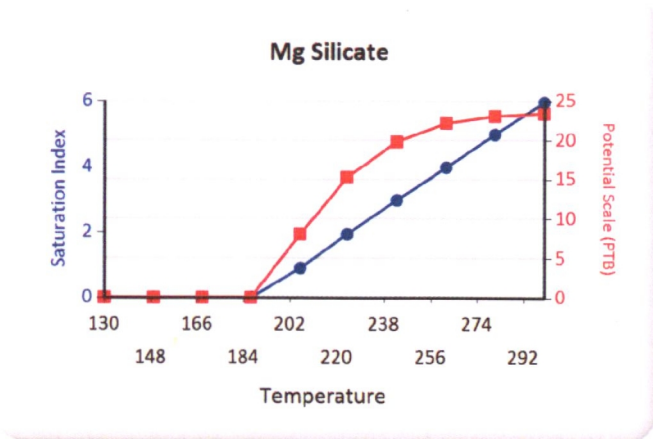
Mg Silicate
Saturation Index
Potential Scale (PTB)
Temperature
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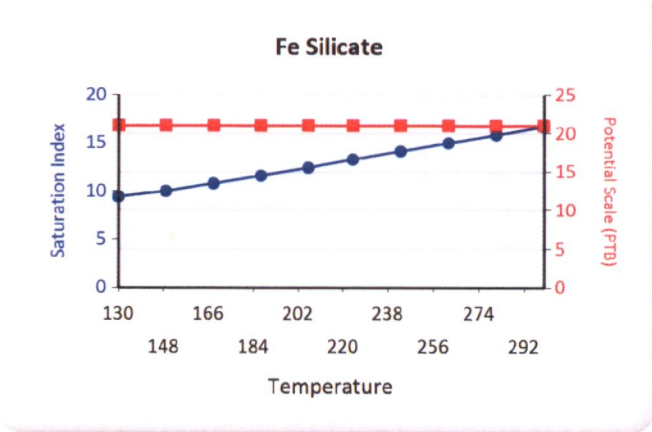

Fe Silicate
Saturation Index
Potential Scale (PTB)
Temperature
20
15
10
5
0
25
20
15
10
5
0
130
166
202
238
274
148
184
220
256
292

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

EPA

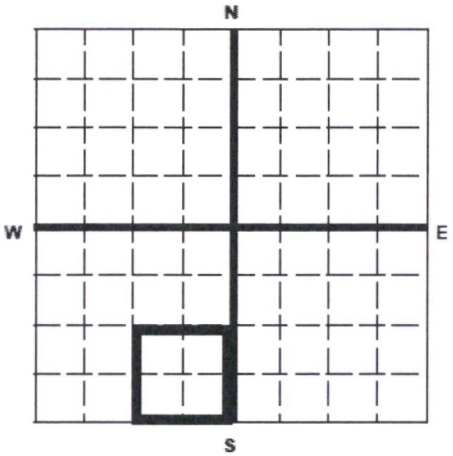
United States Environmental Protection Agency
Washington, DC 20460

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~~ 06481

Surface Location Description
___ 1/4 of ___ 1/4 of SE 1/4 of SW 1/4 of Section 21 Township 5S Range 3W

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

Surface Location 2080 ft. frm (N/S) W Line of quarter section
and 660 ft. from (E/W) S Line of quarter section.

U2 Entered
Date 3/2/16
Initial DB

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 21-14

		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	1439	1541	634		0	0
February	15	1543	1602	468		0	0
March	15	1556	1613	546		0	0
April	15	1450	1580	578		0	0
May	15	1534	1548	684		0	0
June	15	1422	1522	492		0	0
July	15	1541	1616	525		0	0
August	15	1482	1626	294		0	0
September	15	1618	1655	510		0	0
October	15	1573	1584	421		0	0
November	15	1472	1500	337		0	0
December	15	1520	1569	402		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

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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 21-14 INJ, DUCHESNE**	Lab Tech:	**Gary Peterson**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2016**		
Sample ID:	**WA-327621**		

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

Sample Specifics

Test Date:	1/7/2016
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:	7.70
Calculated TDS (mg/L):	5381.36
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):	1567.35	Chloride (Cl):	2000.00
Potassium (K):	3.75	Sulfate (SO_4):	530.00
Magnesium (Mg):	76.71	Bicarbonate (HCO_3):	976.00
Calcium (Ca):	179.44	Carbonate (CO_3):	
Strontium (Sr):	5.55	Acetic Acid (CH_3COO)	
Barium (Ba):	1.85	Propionic Acid (C_2H_5COO)	
Iron (Fe):	6.53	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	6.99	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.00	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.06	Silica (SiO_2):	27.13
Aluminum (Al):	0.07	Calcium Carbonate ($CaCO_3$):	
Lithium (Li):	0.56	Phosphates (PO_4):	5.22
Boron (B):	0.08	Oxygen (O_2):	
Silicon (Si):	12.68		

Notes:
S=198.42

(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	1.64	108.57	1.19	1.03	0.00	0.00	2.36	4.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
167.00	267.00	1.50	98.01	1.21	1.03	0.00	0.00	2.19	4.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
153.00	483.00	1.40	90.99	1.24	1.04	0.00	0.00	2.07	4.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140.00	700.00	1.30	84.06	1.28	1.04	0.00	0.00	1.94	4.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
127.00	917.00	1.21	77.32	1.33	1.05	0.00	0.00	1.82	4.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113.00	1133.00	1.13	70.89	1.39	1.06	0.00	0.00	1.69	4.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	1350.00	1.05	64.86	1.47	1.07	0.00	0.00	1.57	4.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
87.00	1567.00	0.98	59.30	1.56	1.07	0.00	0.00	1.45	4.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73.00	1783.00	0.92	54.28	1.66	1.08	0.00	0.00	1.33	4.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60.00	2000.00	0.86	49.84	1.79	1.08	0.00	0.00	1.21	4.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Multi-Chem Analytical Laboratory
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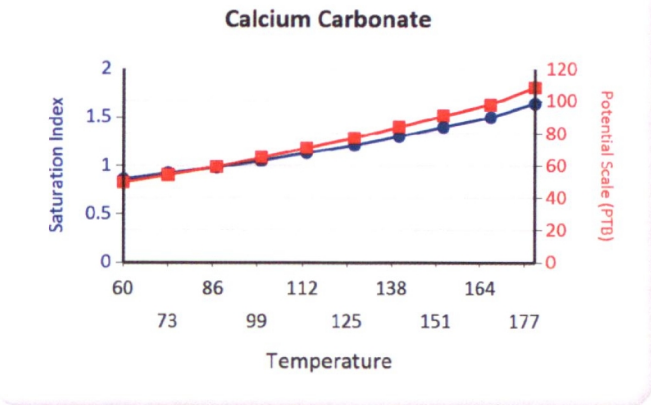
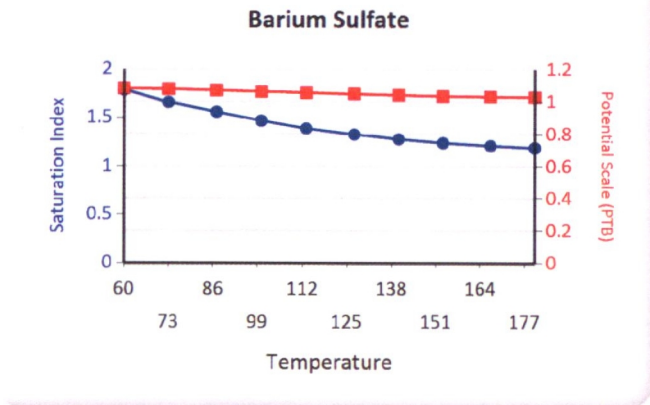
Water Analysis Report

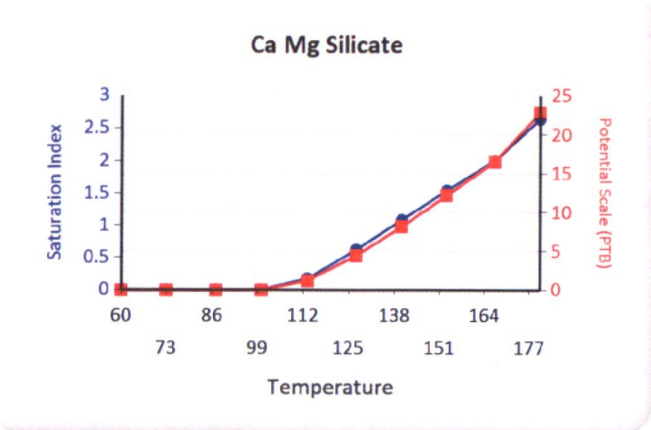
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	2.38	4.68	0.00	0.00	4.89	45.63	2.64	22.89	8.91	5.07
167.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	2.16	4.66	0.00	0.00	3.86	33.32	2.00	16.62	8.03	5.06
153.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	1.97	4.64	0.00	0.00	3.09	24.95	1.54	12.26	7.42	5.05
140.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	1.78	4.61	0.00	0.00	2.32	17.29	1.08	8.16	6.82	5.03
127.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	1.58	4.56	0.00	0.00	1.54	10.57	0.62	4.44	6.23	5.00
113.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	1.37	4.47	0.00	0.00	0.77	4.84	0.17	1.18	5.64	4.95
100.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	1.15	4.31	0.00	0.00	0.00	0.00	0.00	0.00	5.07	4.88
87.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	0.92	4.04	0.00	0.00	0.00	0.00	0.00	0.00	4.52	4.78
73.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	0.68	3.57	0.00	0.00	0.00	0.00	0.00	0.00	3.97	4.63
60.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42	2.73	0.00	0.00	0.00	0.00	0.00	0.00	3.45	4.41

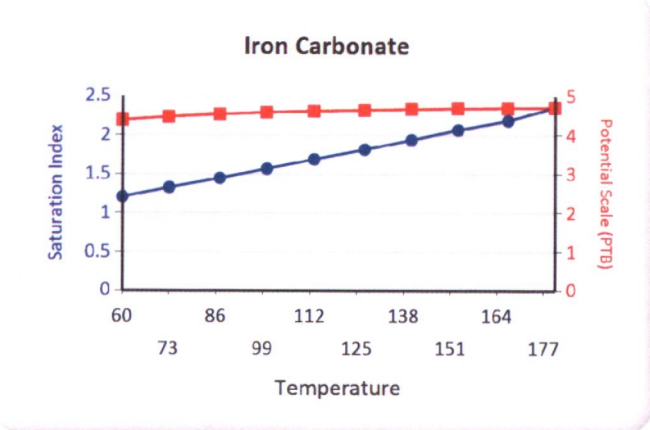
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

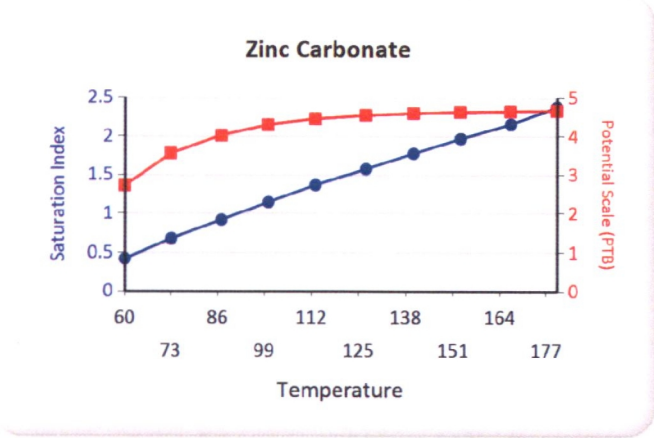
These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Fe Silicate

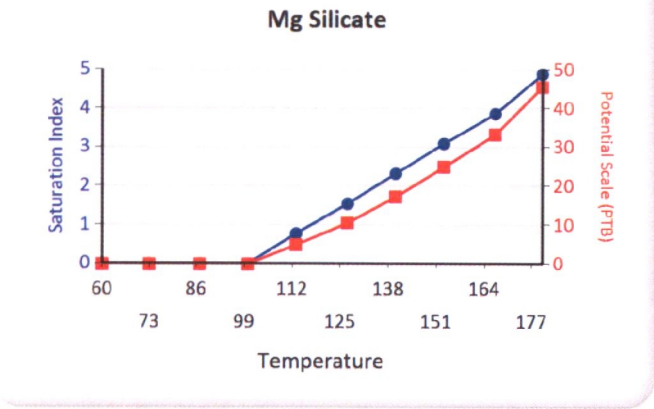


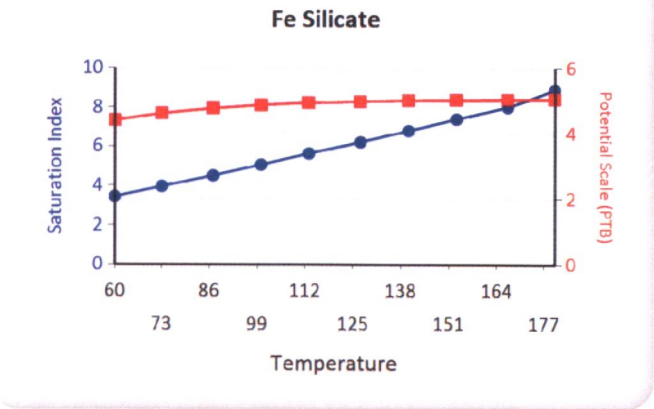







Zinc Carbonate
Saturation Index
Potential Scale (PTB)
Temperature
2.5
2
1.5
1
0.5
0
5
4
3
2
1
0
60
86
112
138
164
73
99
125
151
177


Mg Silicate
Saturation Index
Potential Scale (PTB)
Temperature
5
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
10
8
6
4
2
0
6
4
2
0
60
86
112
138
164
73
99
125
151
177

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

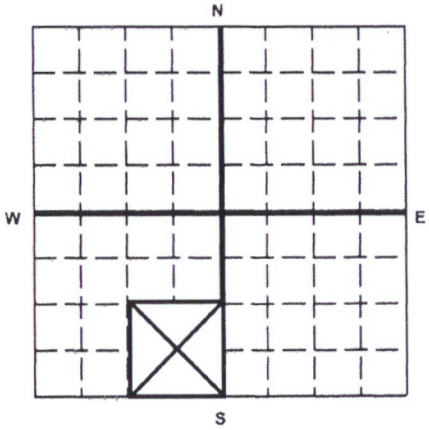
EPA

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	UT2736-06481

Surface Location Description

____ 1/4 of ____ 1/4 of SE 1/4 of SW 1/4 of Section 21 Township 5S Range 3W

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

Surface Location 2080 ft. frm (N/S) W Line of quarter section and 660 ft. from (E/W) S 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 21-14

		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	1541	1578	720		0	0
February	14	1438	1532	390		0	0
March	14	1584	1616	644		0	0
April	14	1396	1463	509		0	0
May	14	1460	1585	559		0	0
June	14	1400	1493	432		0	0
July	14	1317	1422	305		0	0
August	14	1361	1441	436		0	0
September	14	1424	1575	390		0	0
October	14	1481	1531	553		0	0
November	14	1435	1493	525		0	0
December	14	1497	1539	712		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 3/3/15
Initial GW

	GREEN	BLUE	CBI
TAB		2	

Multi-Chem Analytical Laboratory
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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 21-14 INJ, DUCHESNE**	Lab Tech:	**Gary Winegar**
Sample Point:	**Well**		
Sample Date:	**1/7/2015**		
Sample ID:	**WA-298828**		

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

Sample Specifics	
Test Date:	1/19/2015
System Temperature 1 (°F):	160
System Pressure 1 (psig):	1300
System Temperature 2 (°F):	80
System Pressure 2 (psig):	15
Calculated Density (g/ml):	1.0047
pH:	8.00
Calculated TDS (mg/L):	11233.35
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	20.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	3045.14	Chloride (Cl):	5000.00
Potassium (K):	46.79	Sulfate (SO_4):	361.00
Magnesium (Mg):	22.28	Bicarbonate (HCO_3):	2684.00
Calcium (Ca):	36.19	Carbonate (CO_3):	
Strontium (Sr):	4.73	Acetic Acid (CH_3COO)	
Barium (Ba):	2.73	Propionic Acid (C_2H_5COO)	
Iron (Fe):	1.91	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	2.26	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.13	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.08	Silica (SiO_2):	26.11

Notes:
B=7.07 Al=0 Li=1.55

(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	1.20	28.15	1.62	1.59	3.50	1.06	1.88	1.37	0.00	0.00	0.00	0.00	0.00	0.00	11.56	1.18
88.00	157.00	1.17	27.80	1.54	1.58	3.39	1.06	1.89	1.37	0.00	0.00	0.00	0.00	0.00	0.00	11.35	1.18
97.00	300.00	1.20	28.02	1.46	1.57	3.34	1.06	1.94	1.37	0.00	0.00	0.00	0.00	0.00	0.00	11.19	1.18
106.00	443.00	1.22	28.24	1.39	1.56	3.29	1.06	1.99	1.37	0.00	0.00	0.00	0.00	0.00	0.00	11.05	1.18
115.00	585.00	1.25	28.46	1.32	1.55	3.26	1.05	2.04	1.38	0.00	0.00	0.00	0.00	0.00	0.00	10.91	1.18
124.00	728.00	1.27	28.69	1.26	1.54	3.23	1.05	2.09	1.38	0.00	0.00	0.00	0.00	0.00	0.00	10.78	1.18
133.00	871.00	1.30	28.92	1.21	1.52	3.21	1.05	2.14	1.38	0.00	0.00	0.00	0.00	0.00	0.00	10.67	1.18
142.00	1014.00	1.34	29.14	1.16	1.51	3.19	1.05	2.19	1.38	0.00	0.00	0.00	0.00	0.00	0.00	10.56	1.18
151.00	1157.00	1.37	29.35	1.12	1.50	3.18	1.05	2.24	1.38	0.00	0.00	0.00	0.00	0.00	0.00	10.45	1.18
160.00	1300.00	1.41	29.55	1.08	1.49	3.18	1.05	2.29	1.38	0.00	0.00	0.00	0.00	0.00	0.00	10.36	1.18

		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	1.10	1.40	12.60	0.05	0.00	0.00	0.00	0.00	5.04	1.45
88.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	1.19	1.42	12.27	0.05	0.00	0.00	0.00	0.00	5.00	1.45
97.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	1.31	1.44	12.01	0.05	0.00	0.00	0.00	0.00	5.25	1.45
106.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	1.43	1.46	11.76	0.05	0.17	1.45	0.00	0.00	5.51	1.46
115.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	1.55	1.48	11.53	0.05	0.60	4.67	0.00	0.00	5.79	1.47
124.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	1.66	1.49	11.31	0.05	1.03	7.88	0.00	0.00	6.07	1.47
133.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	1.77	1.49	11.10	0.05	1.47	11.06	0.21	1.91	6.37	1.47
142.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	1.88	1.50	10.91	0.05	1.92	14.15	0.46	3.83	6.67	1.48
151.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	1.98	1.50	10.73	0.05	2.36	17.10	0.71	5.67	6.97	1.48
160.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	2.08	1.51	10.56	0.05	2.81	19.85	0.97	7.41	7.29	1.48

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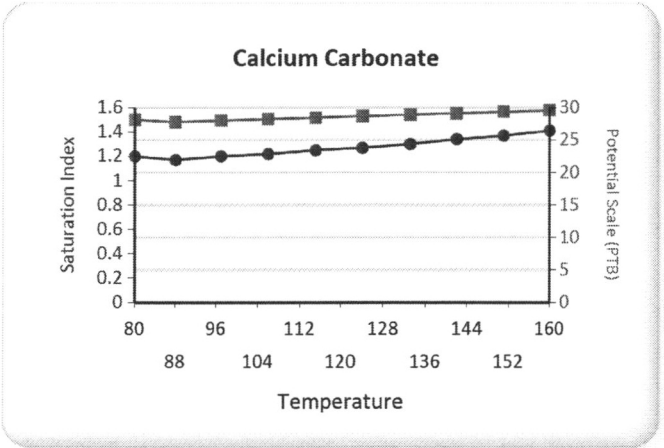
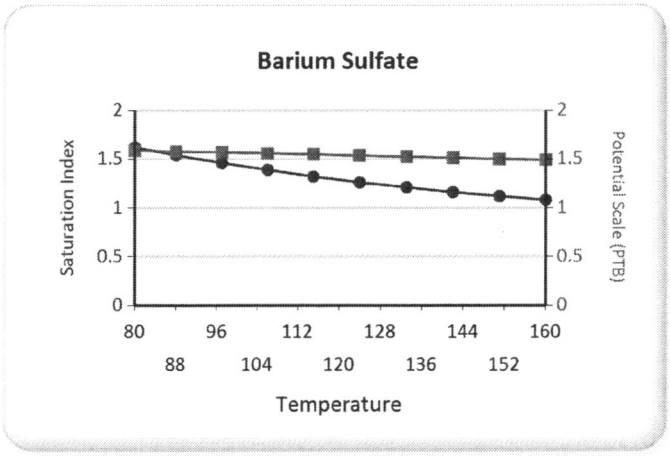
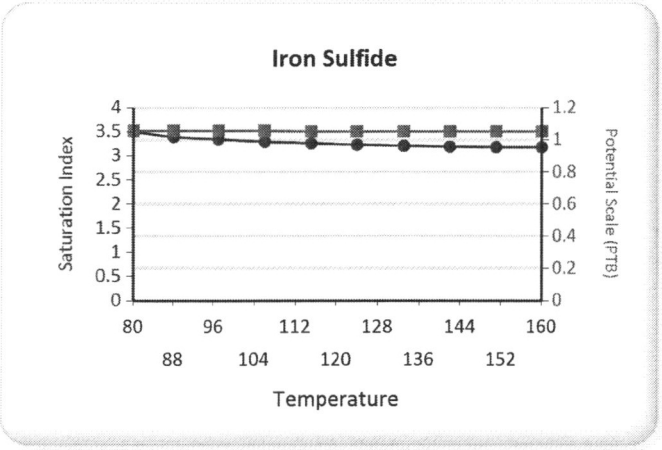
Water Analysis Report

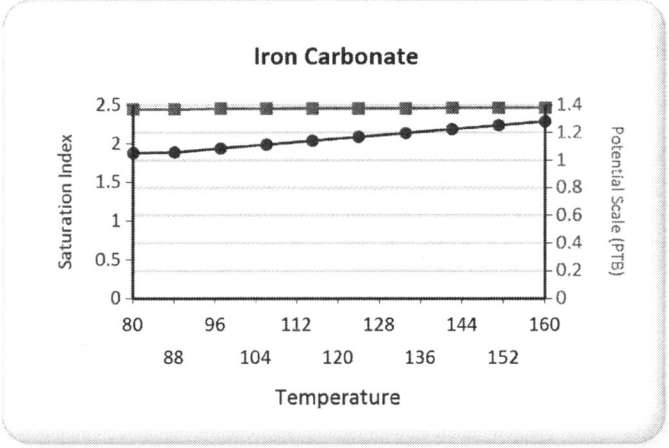
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Fe Silicate

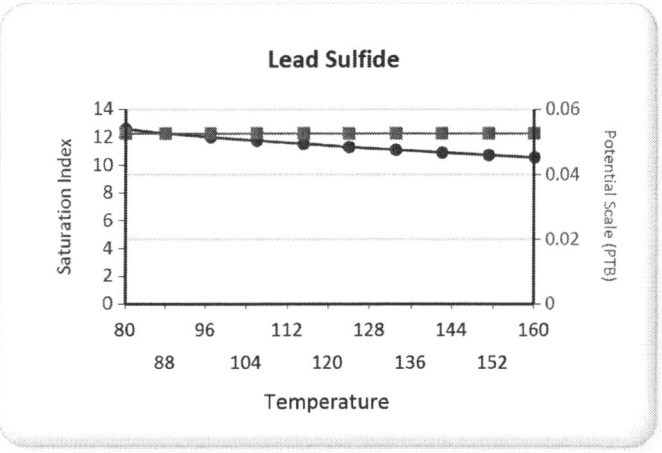
These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate

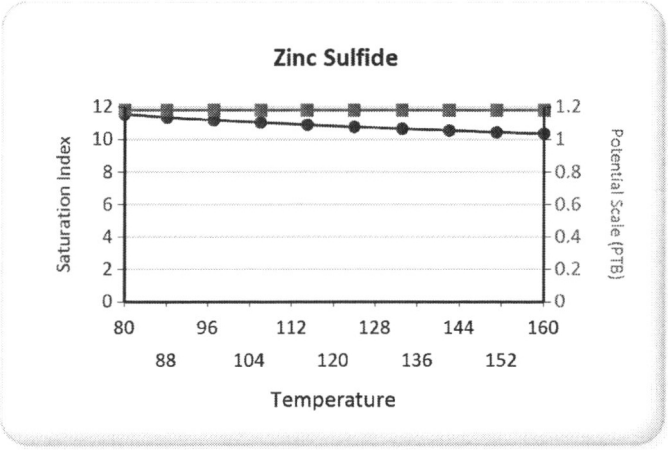












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Vernal, UT 84078

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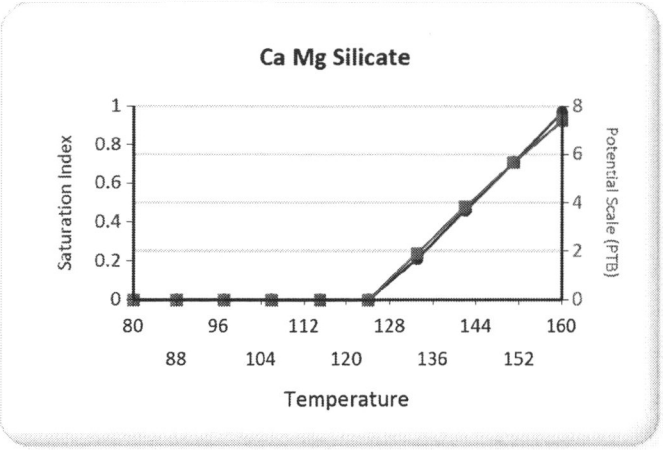
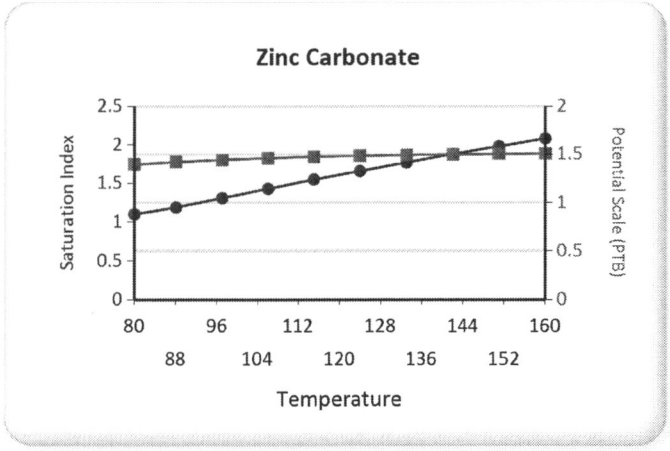
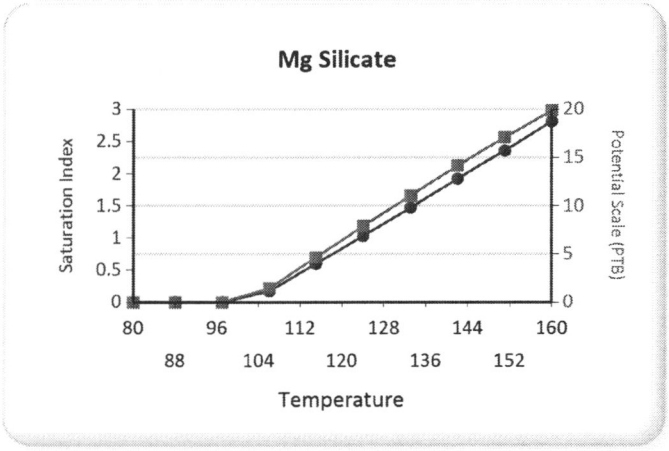
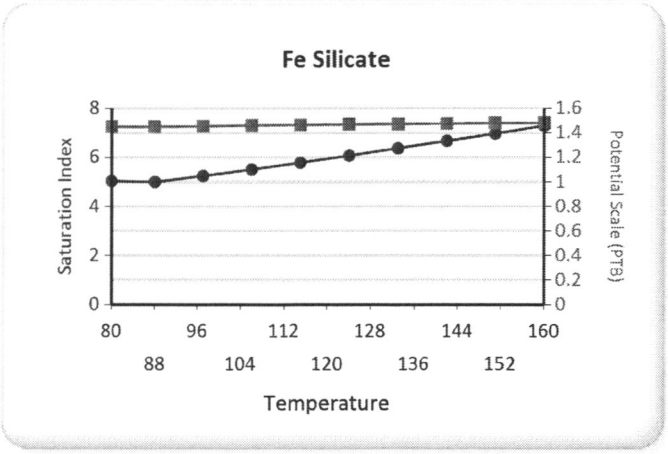
Water Analysis Report









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

EPA

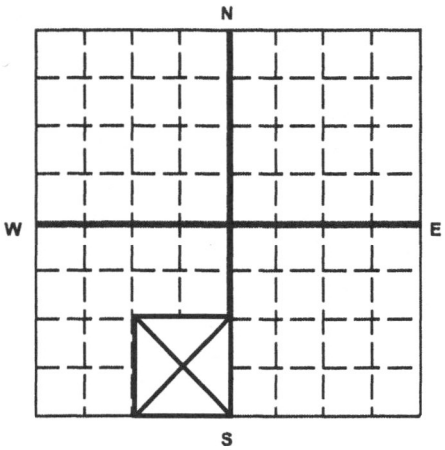
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
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	UT2736-06481

Surface Location Description
___ 1/4 of ___ 1/4 of SE 1/4 of SW 1/4 of Section 21 Township 5S Range 3W

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

Surface Location 2080 ft. frm (N/S) W Line of quarter section
and 660 ft. from (E/W) S 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 21-14

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	0	0	0		0	150
February	13	120	630	186		0	0
March	13	1285	1404	1548		0	0
April	13	1355	1523	980		0	0
May	13	1397	1614	1015		0	0
June	13	1427	1615	829		0	0
July	13	1491	1614	969		0	0
August	13	1517	1542	886		0	0
September	13	1538	1639	751		0	0
October	13	1591	1648	858		0	0
November	13	1571	1576	1197		0	0
December	13	1463	1593	658		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 CBL
TAB 2

U2 Entered
Date 3/21/14
Initial DB

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 ENERGY INC**
Well Name: **UTE TRIBAL 21-14 INJ**
Sample Point: **Wellhead**
Sample Date: **1/8/2014**
Sample ID: **WA-262984**

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:	7.00
Calculated TDS (mg/L):	2929.63
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	1.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	752.52	Chloride (Cl):	1000.00
Potassium (K):	4.80	Sulfate (SO_4):	333.00
Magnesium (Mg):	64.00	Bicarbonate (HCO_3):	610.00
Calcium (Ca):	136.00	Carbonate (CO_3):	
Strontium (Sr):	4.00	Acetic Acid (CH_3COO)	
Barium (Ba):	0.33	Propionic Acid (C_2H_5COO)	
Iron (Fe):	3.20	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	0.31	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.10	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.18	Silica (SiO_2):	21.19

Notes:
B=.7 Al=.03 Li=.07

(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	0.16	11.20	1.26	0.19	1.23	0.82	0.26	1.03	0.00	0.00	0.00	0.00	0.00	0.00	8.71	0.16
73.00	157.00	0.14	9.78	1.11	0.18	1.07	0.79	0.30	1.14	0.00	0.00	0.00	0.00	0.00	0.00	8.39	0.16
86.00	300.00	0.19	13.31	0.98	0.18	1.02	0.77	0.40	1.38	0.00	0.00	0.00	0.00	0.00	0.00	8.19	0.16
100.00	443.00	0.25	17.28	0.87	0.17	0.99	0.76	0.51	1.58	0.00	0.00	0.00	0.00	0.00	0.00	8.00	0.16
113.00	585.00	0.31	21.65	0.77	0.16	0.98	0.76	0.61	1.74	0.00	0.00	0.00	0.00	0.00	0.00	7.84	0.16
126.00	728.00	0.38	26.36	0.69	0.16	0.99	0.76	0.72	1.86	0.00	0.00	0.00	0.00	0.00	0.00	7.70	0.16
140.00	871.00	0.46	31.37	0.62	0.15	1.01	0.76	0.82	1.96	0.00	0.00	0.00	0.00	0.00	0.00	7.57	0.16
153.00	1014.00	0.54	36.60	0.57	0.14	1.04	0.77	0.93	2.04	0.00	0.00	0.00	0.00	0.00	0.00	7.46	0.16
166.00	1157.00	0.62	42.01	0.52	0.14	1.08	0.79	1.03	2.10	0.00	0.00	0.00	0.00	0.00	0.00	7.36	0.16
180.00	1300.00	0.71	47.53	0.49	0.13	1.13	0.80	1.14	2.15	0.00	0.00	0.00	0.00	0.00	0.00	7.28	0.16

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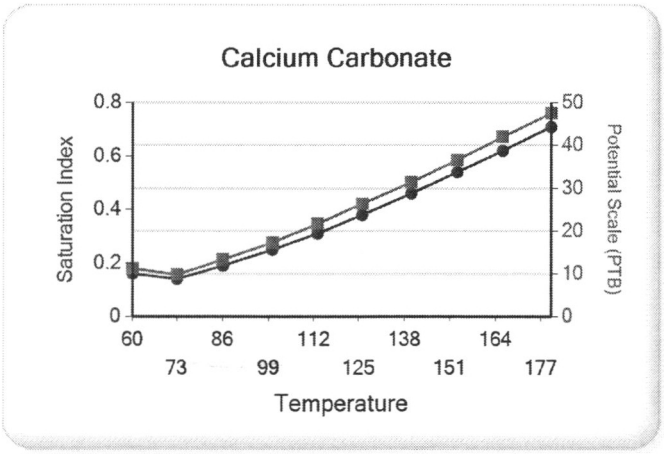
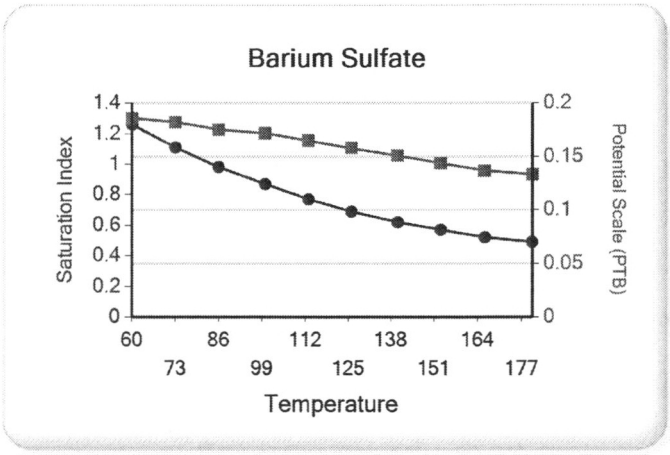
Water Analysis Report

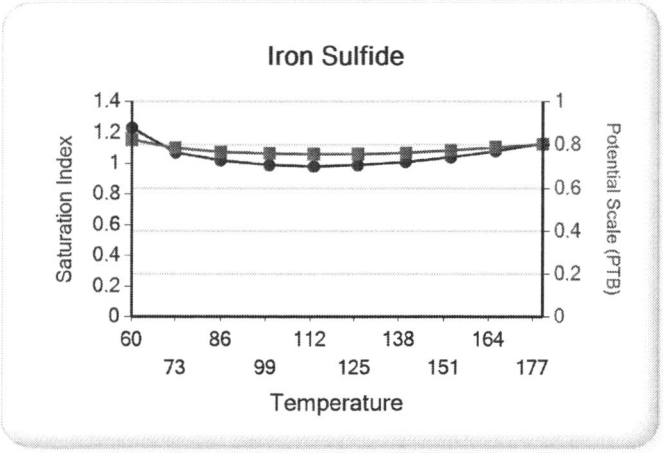
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.76	0.04	0.00	0.00	0.00	0.00	0.00	0.00
73.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.26	0.04	0.00	0.00	0.00	0.00	0.00	0.00
86.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.88	0.04	0.00	0.00	0.00	0.00	0.00	0.00
100.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.54	0.04	0.00	0.00	0.00	0.00	0.00	0.00
113.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.23	0.04	0.00	0.00	0.00	0.00	0.00	0.00
126.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.95	0.04	0.00	0.00	0.00	0.00	0.52	0.72
140.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.69	0.04	0.00	0.00	0.00	0.00	1.11	1.31
153.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.46	0.04	0.00	0.00	0.00	0.00	1.72	1.72
166.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01	8.26	0.04	0.00	0.00	0.00	0.00	2.35	2.00
180.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.07	8.07	0.04	0.03	0.32	0.00	0.00	2.98	2.19

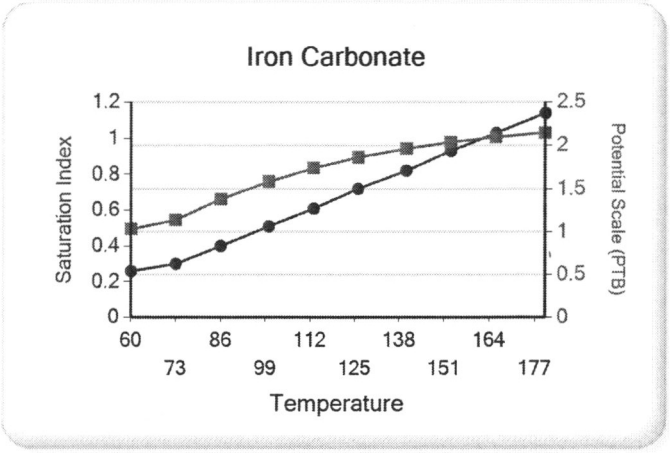
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Lead Sulfide

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









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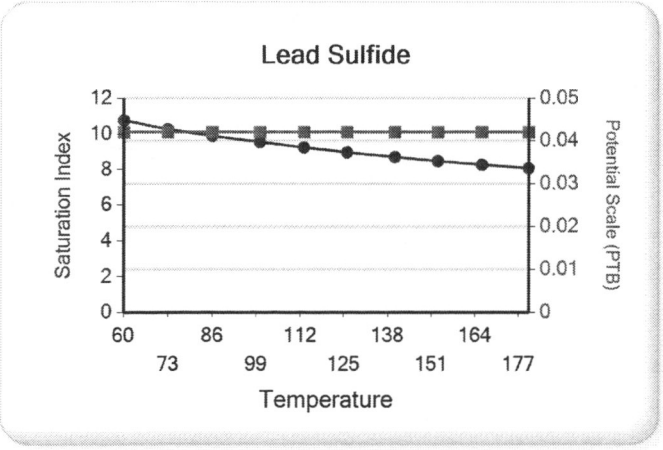
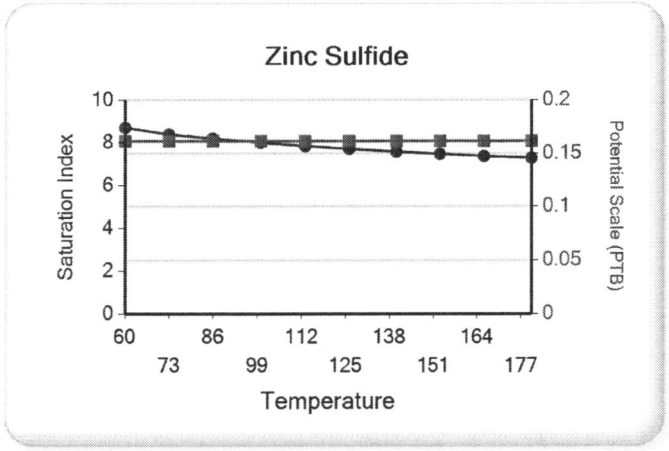
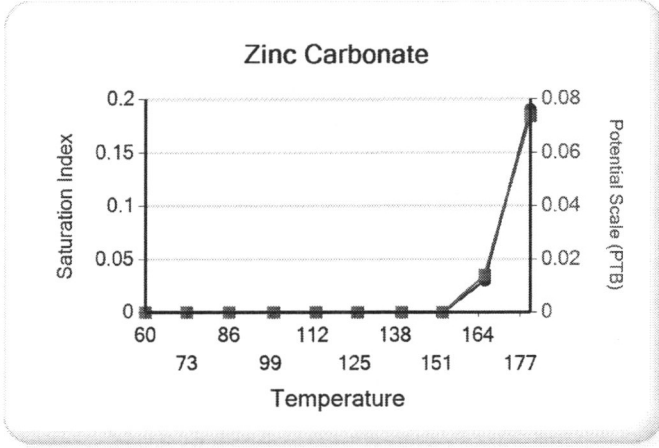
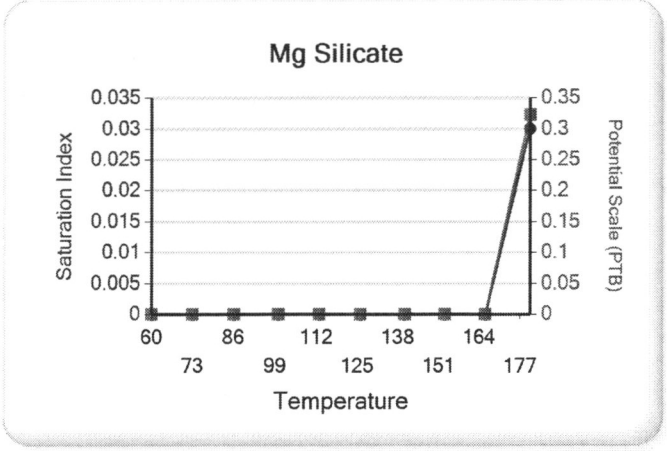
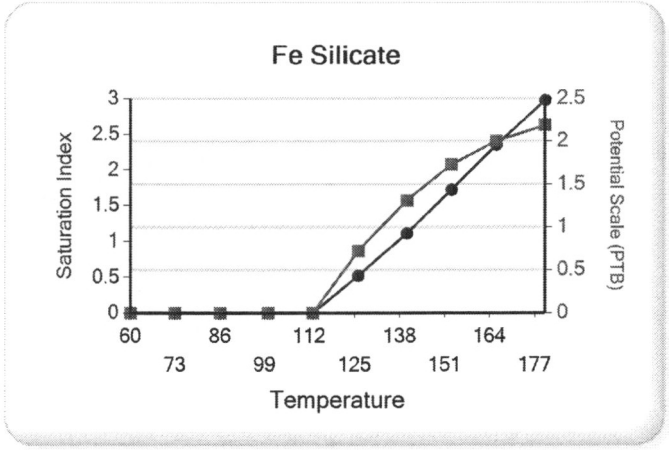
Water Analysis Report










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

Petroglyph Operating Company, Inc.
Annulus Pressure Cause and Mitigation Measures
2013 EPA Annual Injection Report

Well Name: Ute Tribal 21-14

UIC Permit Number: UT2736-06481

API Number: 43-013-31742

Cause of Pressure and Mitigation Measures:
This well was worked on during October 2012. It passed an MIT in November and approval to resume injection was received in January 2013. Injection did not resume until February. The small amount of pressure reported during January 2013 was due formation temperature. The pressure was relieved and did not return.

PETROGLYPH

Petroglyph Energy, Inc.
960 Broadway Ave., Ste. 500
BOISE, ID 83706
(208) 685-7600

WellWork LOE Chronological Regulatory

Well Name : UTE TRIBAL 21-14 INJ					
Prospect:	ANTELOPE CREEK			API #:	43013317420000
Sec/Twp/Rge:	21 / 5S / 3W	County, St.:	DUCHESNE, UT	Work Type:	Downhole Failure
Field:	ANTELOPE CREEK	Supervisor:	Steve Wall	WI:	1
Operator:	PETROGLYPH	Phone:		NRI:	0.7975
Production Current/Expected	Oil: /	Gas: /		Water: /	

Date :	10/22/2012	Activity Type :	MIRU Rig	Days On WellWork:	1
Daily Detail :	Remarks travel move on location but did not have deadmen wait on deadmen to get set r/u rig, n/u bops, r/u floor, tongs, change over for tbg(2 3/8) p/u tbg and tag cmt @ 4372', install washrubber, get circ, drill out cmt and plug, p/u 24jts to 100' below perfs pooh 30stands to above perfs travel				

Date :	10/23/2012	Activity Type :	Run Packer	Days On WellWork:	2
Daily Detail :	Remarks travel pooh w/bit, p/u scraper and trip to below btm perfs, circ well clean pooh w/bit and scraper p/u pkr, rih while breaking and doping each collar, pres test tbg to 3100#(test good), cont rih, left 10stands in derrick, sdfd travel				

Date :	10/24/2012	Activity Type :	Run Packer	Days On WellWork:	3
Daily Detail :	Remarks travel blow down well, resume rih while breaking and doping all collars, pres test tbg to 2000#(test good), retrieve standvalve r/d floor, tongs, n/d bops, n/u wellhead, pump pkr fluid, n/d wellhead, set pkr w/15000# tension, pres test csg to 1900#(no good) n/d wellhead, unset pkr, trie to move pkr(no good), work pkr more but no success, n/u bops, floor, tongs, pooh with pkr(missing 1st set of slips and rest of pkr), sdfd travel				

Date :	10/25/2012	Activity Type :	Fishing	Days On WellWork:	4
Daily Detail :	Remarks travel blow down csg, p/u impression block and rih(block showed mandrel, no slips), pooh w/impression block, rih w/overshot, bump sub, jars, 2 weight collars, latched on to remaining pkr, pooh slowly w/fished pkr, successfully fished pkr and slips out of well, l/d fish tools m/u new pkr, rih doping collars, pres test to 2000#(test good), make up fish for standvalve, retrieve standvalve, r/d floor, tongs, sdfd travel				

Date :	10/26/2012	Activity Type :	Set Pkr	Days On WellWork:	5
Daily Detail :	Remarks travel r/u pump lines and pump pkr fluid, n/d wellhead and set pkr, n/u wellhead, pres test to 1900#, monitor pres for 3hrs r/d pump and tank, sdfd, monitor fluids over weekend travel				

Well Name : UTE TRIBAL 21-14 INJ					
Prospect:	ANTELOPE CREEK			API #:	43013317420000
Sec/Twp/Rge:	21 / 5S / 3W	County, St.:	DUCHESNE, UT	Work Type:	Downhole Failure
Field:	ANTELOPE CREEK	Supervisor:	Steve Wall	WI:	1
Operator:	PETROGLYPH	Phone:		NRI:	0.7975
Production Current/Expected	Oil: /	Gas: /		Water: /	

Date :	**10/29/2012**	Activity Type :	Test	Days On WellWork:	8
Daily Detail :	Remarks travel pres up on csg, monitor pres(well bled off) wait on tool hand to release and set pkr release pkr, move dwn 1jt, set pkr, n/u wellhead, pres up to 1900#(no good), n/d wellhead and flange, teflon and green dope wellhead, n/u wellhead, pres test to 1900#(no good), n/d wellhead, unset pkr, test tbg pres to 2500#(held strong for 45min, test good), retrieved standvalve, reset pkr, n/u wellhead and pres test to 1900#(monitor pres overnight), sdfd travel EOT @ 4586.81'				
Date :	**10/30/2012**	Activity Type :	Pull Pkr	Days On WellWork:	9
Daily Detail :	Remarks Travel Bleed down well Lay down 2 jts tbg and wait on subs. PU and MU subs, and reset Pkr. Reset Pkr and attempt MIT test again. Same leak off. Pooh w/ Arrow set 1 Pkr PU and MU New Arrow set 1 pkr and RIH w/ same redope ND Bop Pump Pkr fluid and set Pkr @ 4538' again and preform test to 2000psi(ok) Leave well w/ 2000psi on casing.SWIFN Travel				
Date :	**10/31/2012**	Activity Type :	RDMOL	Days On WellWork:	10
Daily Detail :	Remarks Travel Check Psi on casing @ 1900psi. RDMOL Police loc. Rebuild rig pump Travel				

November 15, 2012

EPA
ATTN: Don Breffle
Region 8
1595 Wyncoop Street
Denver, CO 80202-8917

UIC Permit #UT2736-06481
Well ID: Ute Tribal 21-14
Ute Tribal No. 21-14, Duchesne County, Utah

Dear Mr. Breffle,

Please find enclosed the successful MIT test on the above referenced well. This test was performed to provide proof of integrity after we drilled out composite plug and cement cap previously placed. We then cleaned out the well and circulated, then ran back in with a new Arrowset 1 Packer breaking and doping all connections on the way in, pressure tested tubing to 3100psi/BHP, and performed an MIT on the casing to 1900psi with no loss. Please advise as soon as possible so we may resume injection on this well. Please let us know if there is a need for further action on our part and we will immediately comply. My direct number is 435-722-5302 if you wish to contact us.

Sincerely,

Rodrigo Jurado
Regulatory Compliance Spc

Encl: MIT

Mechanical Integrity Test
Casing or Annulus Pressure Mechanical Integrity Test

U.S. Environmental Protection Agency
Underground Injection Control Program, UIC Direct Implementation Program 8P-W-GW
999 18th Street, Suite 500 Denver, CO 80202-2466

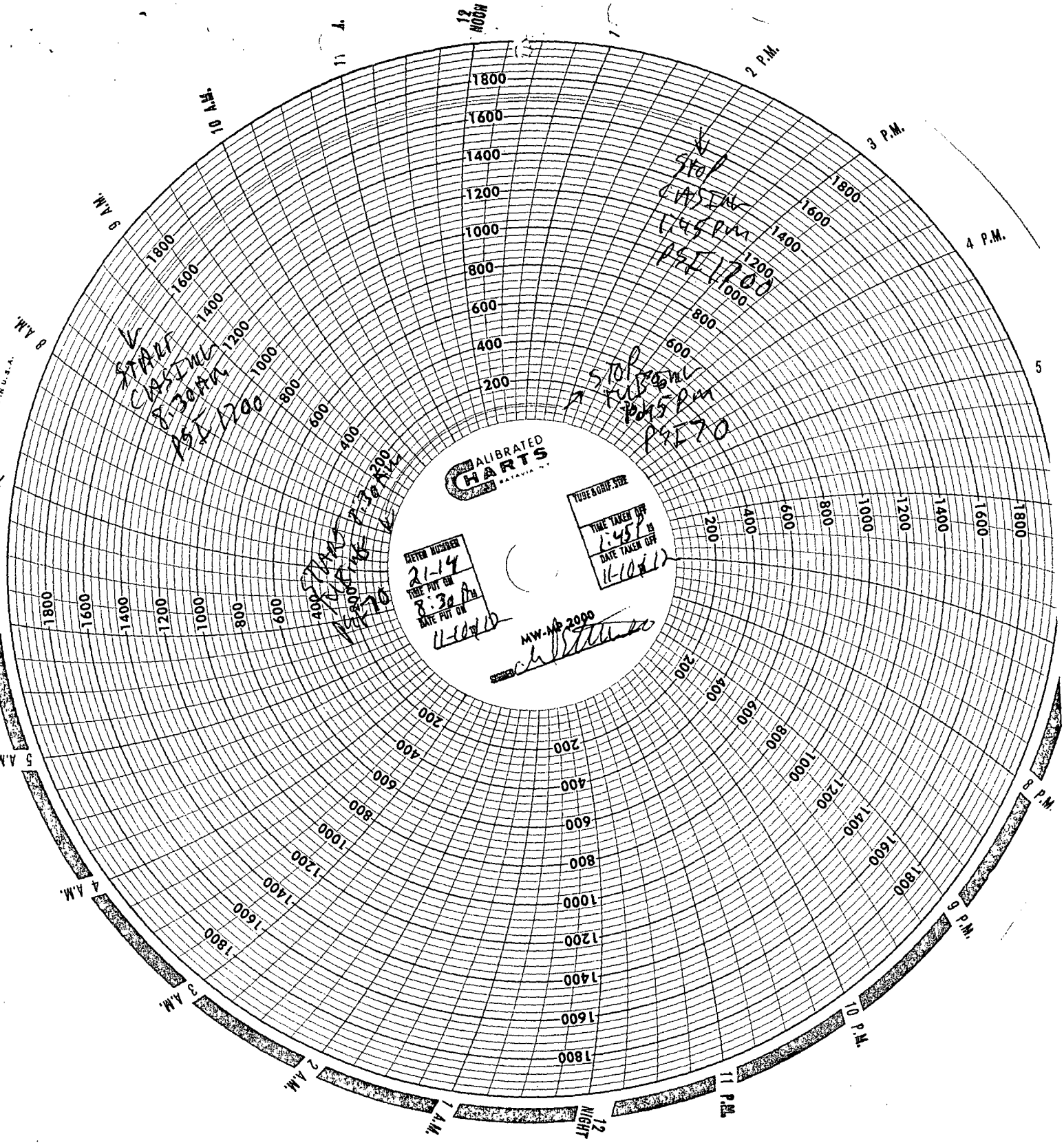
EPA Witness: _____ Date: 11-10-12
Test conducted by: BILL MURRAY
Others present: _____

Well Name: 21-14 Type: ER SWD Status: AC TA UC
Field: ANTELOPE CREEK
Location: 21-14 Sec: ____ T ____ N / S R ____ E / W County: DUCHESNE State: UT
Operator: PETROLOGY OIL ENERGY
Last MIT: ____ / ____ / ____ Maximum Allowable Pressure: _____ PSIG

Is this a regularly scheduled test? [ ] Yes [ ] No
Initial test for permit? [ ] Yes [ ] No
Test after well rework? [X] Yes [ ] No
Well injecting during test? [ ] Yes [X] No If Yes, rate: _____ bpd

Pre-test casing/tubing annulus pressure: _____ psig

MIT DATA TABLE	Test #1	Test #2	Test #3
TUBING PRESSURE			
Initial Pressure	70 psig	psig	psig
End of test pressure	70 psig	psig	psig
CASING / TUBING ANNULUS PRESSURE			
0 minutes	1700 psig	psig	psig
5 minutes	1700 psig	psig	psig
10 minutes	1700 psig	psig	psig
15 minutes	1700 psig	psig	psig
20 minutes	1700 psig	psig	psig
25 minutes	1700 psig	psig	psig
30 minutes	1700 psig	psig	psig
5 HOURS ~~minutes~~	1700 psig	psig	psig
minutes	psig	psig	psig
RESULT	[ ] P		


12 NOON
1
2 P.M.
3 P.M.
4 P.M.
5
6 P.M.
7 P.M.
8 P.M.
9 P.M.
10 P.M.
11 P.M.
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
CALIBRATED CHARTS BATAVIA N.Y.
MW-MP 2000
METER NUMBER
21-14
TIME PUT ON
8:30 AM
DATE PUT ON
TUBE BORE SIZE
TIME TAKEN OFF
1:45 PM
DATE TAKEN OFF
PRINTED IN U.S.A.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

JAN 08 2013

Ref: 8ENF-UFO

CERTIFIED MAIL 7009-3410-0000-2599-7631
RETURN RECEIPT REQUESTED

Mr. Les Farnsworth, District Supervisor
Petroglyph Operating Company, Inc.
4116 W 3000 S Ioka Lane
P.O. Box 607
Roosevelt, UT 84066

Re: Underground Injection Control (UIC)
Permission to Resume Injection
Tribal 21-14, 16-11, 21-03 and 07-09 Wells
EPA ID# UT20736-06481, 04393, 04363 and 04415
API # 43-013-31742, 43-013-31799, 43-013-31752 and 43-013-31900
Antelope Creek Oil Field
Duchesne County, UT

Dear Mr. Farnsworth:

On January 2, 2013, the Environmental Protection Agency (EPA) received information from Petroglyph Operating Company, Inc. on the above referenced wells concerning the workovers and the followup mechanical integrity tests (MIT) conducted between November 8, 2012 and November 11, 2012. The data submitted shows that the wells passed the required MITs. Therefore, pursuant to Title 40 of the Code of Federal Regulations Section 144.51(q)(2) (40 C.F.R. §144.51(q)(2)), permission to resume injection is granted. Under continuous service, the next MITs will be due on or before November 8, 2017 for the 07-09 well, November 9, 2017 for the 21-03 well, November 10, 2017 for the 21-14 well and November 11, 2017 for the 16-11 well.

Pursuant to 40 C.F.R. §144.52(a)(6), if the well is not used for a period of at least two (2) years ("temporary abandonment"), it shall be plugged and abandoned unless EPA is notified and procedures are described to EPA ensuring the well will not endanger underground sources of drinking water ("non-endangerment demonstration") during its continued temporary abandonment. A successful MIT is an acceptable non-endangerment demonstration and would be necessary every two (2) years the well continues in temporary abandonment.

Failure to comply with a UIC Permit, or the UIC regulations found at 40 C.F.R. Parts 144 through 148 constitute one or more violations of the Safe Drinking Water Act, 42 U.S.C. §300h. Such non-compliance may subject you to formal enforcement by EPA, as codified at 40 C.F.R. Part 22.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 200
DENVER, CO 80202-2466
Phone 800-227-8917
http://www.epa.gov/region08

AUTHORIZATION FOR ADDITIONAL WELL

UIC Area Permit No: UT20736-00000

The Antelope Creek Waterflood Final UIC Area Permit No. UT20736-00000, effective July 12, 1994, authorizes injection for the purpose of enhanced oil recovery into multiple lenticular sand units which are distributed throughout the lower portion of the Green River Formation. On August 1, 2000, the permittee provided notice to the Director concerning the following additional enhanced recovery injection well:

Well Name:	**Ute Tribal 21-14**
EPA Well ID Number:	**UT20736-06481**
Location:	660 ft FSL & 2080 ft FWL SE SW Sec. 21 - T5S - R3W Duchesne County, Utah.

Pursuant to 40 CFR §144.33, Area UIC Permit No. UT20736-00000 authorizes the permittee to construct and operate, convert, or plug and abandon additional enhanced recovery injection wells within the area permit. This well was determined to satisfy additional well criteria required by the permit.

This well is subject to all provisions of UIC Area Permit No. UT20736-00000, as modified and as specified in the Well Specific Requirements detailed below. This Authorization shall expire one year after the Effective Date unless the permittee has converted the well to injection or submits a written request to extend this Authorization prior to the expiration date.

This Authorization is effective upon signature.

Date: JAN 11 2006

Stephen S. Tuber
*Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

** The person holding this title is referred to as the Director throughout the Permit and Authorization*

WELL-SPECIFIC REQUIREMENTS

Well Name: **Ute Tribal 21-14**
EPA Well ID Number: **UT20736-06481**

Prior to commencing injection operations, the permittee shall submit the following information and receive written Authority to Inject from the Director:

1. a successful Part I (Internal) Mechanical Integrity test (MIT);
2. pore pressure calculation of the proposed injection zone; and
3. completed Well Rework Record EPA Form No. 7520-12 and schematic diagram.

Approved Injection Zone: Injection is approved between the base of the Green River A Lime Marker at 3945 ft to the top of the Basal Carbonate at 5947 ft.

Maximum Allowable Injection Pressure (MAIP): The initial MAIP is **1685 psig,** based on the following calculation:

MAIP = [FG - (0.433)(SG)] * D, where
FG = 0.80 psi/ft SG = 1.005 D = **4628 ft** (top perforation depth KB)
MAIP = 1685 psi

UIC Area Permit No. UT20736-00000 also provides the opportunity for the permittee to request a change of the MAIP based upon results of a step rate test that demonstrates the formation breakdown pressure will not be exceeded.

Well Construction and Corrective Action: ***No Corrective Action is required.*** Based on review of well construction and cementing Records, including a CBL, well construction is considered adequate to prevent fluid movement out of the injection zone and into USDWs.

Tubing and Packer: 2-3/8" or similar size injection tubing is approved; the packer shall be set at a depth no more than 100 ft above the top perforation.

Corrective Action for Wells in Area of Review: ***No Corrective Action is required.*** The following well or wells that penetrate the confining zone are within or proximate to a 1/4 mile radius around the Ute Tribal 21-14 were evaluated to determine if any corrective action is necessary to prevent fluid movement into USDWs:

Well: Ute Tribal No. 21-11L ● Location: NW SE Sec 21 - T5S - R3W
Well: Ute Tribal No. 21-14N ● Location: SW SE Sec 21 - T5S - R3W
Well: Ute Tribal No. 21-13 ← UT20736-06480 Location: SW SE Sec 21 - T5S - R3W

Demonstration of Mechanical Integrity: A successful demonstration of Part I (Internal) Mechanical Integrity using a standard Casing-Tubing pressure test is required prior to injection and at least once every five years thereafter. EPA reviewed the cementing records and determined the cement will provide an effective barrier to significant upward movement of fluids through vertical channels adjacent to the well bore pursuant to 40 CFR 146.8 (a)(2). Therefore, further demonstration of Part II (External) Mechanical Integrity is not required at this time.

Demonstration of Financial Responsibility: The applicant has demonstrated financial responsibility in the amount of $15,000 via a Surety Bond that has been reviewed and approved by the EPA.

Plugging and Abandonment: The well shall be plugged in a manner that isolates the injection zone and prevents movement of fluids into or between USDWs. Tubing, packers, and any downhole apparatus shall be removed. Class A, C, G, and H cements, with additives such as accelerators and retarders that control or enhance cement properties, may be used for plugs; however, volume extending additives and gel cements are not approved for plug use. Plug placement shall be verified by tagging. Plugging gel of at least 9.2 lb/gal shall be placed between all plugs. A minimum 50 ft surface plug shall be set inside and outside of the surface casing to seal pathways for fluid migration into the subsurface. Within sixty (60) days after plugging the owner or operator shall submit Plugging Record (EPA Form 7520-13) to the Director. The Plugging Record must be certified as accurate and complete by the person responsible for the plugging operation. At a minimum the following plugs shall be emplaced:

PLUG NO. 1: Set a cast iron bridge plug (CIBP) no more than 50 ft above the top perforation at 4628 ft with a minimum 20 ft cement plug on top of the CIBP.

PLUG NO. 2: Set a minimum 250 ft cement plug inside of the 5-1/2" casing across the Trona Zone and the Mahogany Shale, in the interval between at least approximately 2750 ft to 2900 ft.

PLUG NO. 3: Set a minimum 50 ft cement plug on the backside of the 5-1/2" casing, across the surface casing shoe at 256 ft.

PLUG NO. 4: Set a cement plug inside of the 5-1/2" casing, from at least 250 ft to 300 ft.

PLUG NO. 5: Set a cement plug, on the backside of the 5-1/2" casing, from surface to a depth of at least 50 ft.

PLUG NO. 6: Set a cement plug inside of the 5-1/2" casing from surface to a depth of at least 50 ft.

Cut off surface and 5-1/2" casing at least 4 ft below ground level and set P&A marker; submit Sundry Notices and all necessary data as required by the EPA and other regulatory agencies.

WELL-SPECIFIC CONSIDERATIONS

Well Name: **Ute Tribal 21-14**
EPA Well ID Number: **UT20736-00000**

Underground Sources of Drinking Water (USDWs): USDWs in the Antelope Creek Waterflood area generally may occur within the Uinta Formation, which extends from the surface to the top of the Green River Formation at approximately 15844 ft. According to *"Base of Moderately Saline Ground Water in the Uinta Basin, Utah, State of Utah Technical Publication No. 92,"* the base of moderately saline ground water is found at approximately 850 ft below ground surface at this well location. The top of casing cement in this well is at approximately 1850 ft below ground surface (CBL).

Confining Zone: The Confining Zone at this location is approximately 207 ft of interbedded limestone and shale between the depths of 3738 ft to 3945 ft (KB) which directly overlies the Injection Zone, based on correlation to the Antelope Creek Ute Tribal 04-03 well Type Log. Additional impermeable lacustrine shale beds above the Confining Zone provide for further protection for any overlying USDW.

Injection Zone: The Injection Zone at this well location is an approximately 2002 ft section of multiple lenticular sand units interbedded with shale, marlstone and limestone from the base of the Confining Zone at 3945 ft (KB) to the top of the Basal Carbonate Formation at 5947 ft (KB), based on correlation to the Antelope Creek Ute Tribal 04-03 well Type Log.

Well Construction: The CBL shows 80% or greater bond from approximately 3630 ft to 4140 ft, and from 4144 ft to 4820 ft; this is considered adequate to prevent migration of fluid out of the injection zone.

Surface casing:	8-5/8" casing is set at 256 ft in a 12-1/4" hole, using 150 sacks cement circulated to the surface.
Longstring casing:	5-1/2" casing is set at 6047 ft (KB) in a 7-7/8" 6061 ft Total Depth hole with a plugged back total depth (PBTD) of 5947 ft, cemented with 445 sacks cement. Top of Cement (TOC): 1850 ft (KB) CBL.
Perforations:	top perforation: **4628 ft** Bottom perforation: **5036 ft**

Wells in Area of Review (AOR): Construction and cementing records, including cement bond logs (CBL) as available, for two wells in the 1/4 mile AOR that penetrated the confining zone were reviewed and found adequate to prevent fluid movement out of the injection zone and into USDWs.

Well: Ute Tribal No. 21-11L ● TOC: 830 ft (CBL)
Well: Ute Tribal No. 21-14N ● TOC: 930 ft (CBL)
Well: Ute Tribal No. 21-13 ← UT20736-06480 TOC: 570 ft (CBL)