Facility Well Name Deffenbaugh #2 **UIC Permit #** KS-01-091-002 **Month** April **Year** 2019

Submitted 05/13/2019 **Approved** 06/07/2019 **KOLAR Document ID** 1460112

Class I-V Injection Well Monthly Monitoring

Summary of Monthly Report

Number of days injection occurred: 30

Barrels per Day Maximum: 14,286

			Annulus Pressure psig min 60		Injection Pressure		
	Injection Volume Barrels per Day	Injection Rate Barrels per Minute	Gauge psig	Cont. Record psig	Gauge psig	Cont. Record psig	Amount Added to Seal Pot
Monthly Average	3,230	2.13	78	77	-11.9	-12.1	0
Monthly Maximum	8,094	6.62	80	80	-2.0	-2.1	0
Monthly Minimum	1	0.00	76	76	-13.0	-13.2	0
Monthly Total	96,910						0

Summary of Continuous Recorder Data

Maximum Annulus Pressure psig	Minimum Annulus Pressure psig	Maximum Injection Pressure psig	Minimum Injection Pressure psig
79.50	75.80	-2.10	-13.20

Comments:

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Daily Recorder Data

Day	Time 24 hr	Injection Volume Barrels Per Day	Injection Rate Barrels Per Minute	Annulus Pressure (Gauge) psig	Annulus Pressure (Continuous Recorder) psig	Injection Pressure (Gauge) + / -	Injection Pressure (Continuous Recorder) + / -	Seal Pot Fluid Level inches	Type of Fluid Added to Seal Pot	Amount of Fluid Added to Seal Pot gallons	Initials of Collector of Field Recordings	pH Standard Units	Temp-ature degrees F
1	06:50	0.57	0.00	78	78.6	-12	-12.9	21	N/A	0	DWK	7.56	55.40
2	05:35	6,761.81	0.00	79	78.7	-12	-12.3	21	N/A	0	DWK	7.58	60.50
3	07:00	8,093.52	6.62	79	79.3	-6	-5.5	24	N/A	0	DWK	7.40	83.20
4	06:55	6,529.95	3.86	80	79.5	-12	-12.3	24	N/A	0	DWK	7.40	84.30
5	07:00	5,258.05	3.90	78	77.3	-12	-12.4	24	N/A	0	DWK	7.30	82.10
6	09:50	4,086.24	2.40	78	77.3	-12	-12.9	24	N/A	0	RLW	7.30	81.90
7	06:52	5,117.48	4.88	78	77.9	-12	-12.5	23	N/A	0	AWK	7.40	83.10
8	06:55	5,492.33	2.50	78	77.8	-13	-12.9	24	N/A	0	DWK	7.40	82.00
9	07:15	1,190.95	3.69	78	77.2	-13	-12.6	24	N/A	0	DWK	7.50	80.00
10	07:05	2,757.86	2.48	77	76.9	-13	-12.8	24	N/A	0	DWK	7.50	79.70
11	07:10	2,494.71	2.38	77	76.7	-13	-12.8	24	N/A	0	DWK	7.50	81.80
12	07:10	2,560.90	3.45	77	77.4	-13	-12.9	23	N/A	0	DWK	7.60	76.70
13	10:00	1,714.95	1.00	76	75.8	-13	-12.7	23	N/A	0	RLW	7.50	77.90
14	07:40	1,971.71	4.48	78	77.5	-12	-12.7	23	N/A	0	DWK	7.60	77.00
15	06:58	1,970.38	1.00	77	76.8	-12	-12.8	23	N/A	0	AWK	7.60	77.50
16	06:55	2,799.62	2.45	79	76.6	-13	-13.0	23	N/A	0	AWK	7.58	80.30
17	06:53	3,265.05	2.38	78	76.8	-12	-12.9	23	N/A	0	AWK	7.49	82.00
18	06:51	3,798.33	2.45	79	76.8	-12	-13.0	23	N/A	0	AWK	7.43	81.40
19	06:52	3,059.95	1.17	78	76.9	-12	-12.8	23	N/A	0	AWK	7.57	80.50
20	06:48	2,841.62	1.12	79	76.5	-12	-12.7	23	N/A	0	AWK	7.44	79.80
21	06:50	2,617.43	2.43	77	76.6	-13	-13.2	23	N/A	0	DWK	7.40	80.30
22	07:00	2,078.57	1.05	77	76.2	-13	-12.5	24	N/A	0	DWK	7.40	81.20
23	07:00	2,088.05	1.07	76	75.9	-13	-12.7	23	N/A	0	DWK	7.50	80.00
24	07:02	2,161.33	1.05	76	76.0	-13	-12.8	23	N/A	0	DWK	7.50	79.80
25	07:05	1,813.19	1.00	76	76.4	-13	-12.6	23	N/A	0	DWK	7.50	78.60
26	07:05	2,939.57	0.10	76	76.3	-13	-12.8	23	N/A	0	DWK	7.50	78.00
27	10:00	1,898.38	1.60	76	75.8	-13	-12.2	23	N/A	0	RLW	7.40	80.30
28	07:30	2,117.10	1.07	78	76.8	-11	-11.9	23	N/A	0	AWK	7.48	76.40
29	07:00	240.43	2.24	77	76.8	-13	-13.1	23	N/A	0	DWK	7.60	79.50
30	07:00	7,190.29	0.00	76	76.2	-2	-2.1	23	N/A	0	DWK	7.30	66.40
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Quarterly Injectate Samples

Quarter 1
Date Sample Collected 03/19/2019
Kansas Lab Certificate Number E-10419
Lab Name Geochemical Testing

These samples shall be representative of injection activity and shall therefore be collected on days of injection.

Constituent	Value	Units
1,1,1-Trichloroethane	<0.001	mg/l
1,1-Dichloroethane	<0.001	mg/l
1,2-Dichlorobenzene	<0.001	mg/l
1,2-Dichloroethane	<0.001	mg/l
1,1-Dichloroethylene	<0.001	mg/l
1,2-Dichloropropane	<0.001	mg/l
1,3-Dichloropropene	<0.001	mg/l
Acetone	0.692	mg/l
Arsenic	0.168	mg/l
Benzene	0.004	mg/l
Calcium	111.000	mg/l
Chloride	1,020.000	mg/l
Chlorobenzene	0.001	mg/l
Chloroethane	<0.001	mg/l
Chloroform	<0.001	mg/l
Cis-1,2-Dichloroethylene	<0.001	mg/l
Conductivity	9,100.000	Mmhos
Copper	0.041	mg/l
Dichloromethane (Methylene Chloride)	<0.001	mg/l
Ethylbenzene	0.009	mg/l
Heptachlor	0.000	mg/l
Iron	1.360	mg/l
Lead	0.003	mg/l

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Quarterly Injectate Samples (continued)

Constituent	Value	Units
Magnesium	93.400	mg/l
Methyl Ethyl Ketone (2-Butanone)	0.822	mg/l
Methyl Isobutyl Ketone (4-Methyl 2-Pentanone)	0.015	mg/l
Nitrobenzene	<0.010	mg/l
Phenol	0.130	mg/l
Pyrene	<0.001	mg/l
Silver	<0.000	mg/l
Sulfate	197.000	mg/l
Tetrachloroethylene	<0.001	mg/l
Thallium	<0.000	mg/l
Toluene	0.006	mg/l
Total Alkalinity as CaCO3	3,160.000	mg/l
Total Dissolved Solids	4,460.000	mg/l
Total Hardness as CaCO3	926.000	mg/l
Total Suspended Solids	19.000	mg/l
Trichloroethylene	<0.001	mg/l
Trichlorofluoromethane	<0.001	mg/l
Vinyl Chloride	<0.001	mg/l
Xylene	0.020	mg/l
Zinc	0.070	mg/l