Facility Well Name Northern (Mullinville) #1 **UIC Permit #** KS-01-097-001 **Month** October **Year** 2020

Submitted 11/24/2020 **Approved** 11/30/2020 **KOLAR Document ID** 1535090

Class I-V Injection Well Monthly Monitoring

Summary of Monthly Report

Number of days injection occurred: 13

Barrels per Day Maximum: 2,381

			Annulus Pressure psig min 40		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	124	0.06	71	69	-26.1	-24.0	0
Monthly Maximum	667	1.19	90	71	-26.0	-24.0	0
Monthly Minimum	0	0.00	70	68	-27.0	-25.0	0
Monthly Total	3,833						0

Summary of Continuous Recorder Data

Maximum Annulus Pressure psig	Minimum Annulus Pressure psig	Maximum Injection Pressure psig	Minimum Injection Pressure psig
71.10	67.900	-23.90	-26.00

Comments:

Northern (Mullinville) #1 10/2020

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		
1	08:57	23.81	0.00	70	69.0	-26	-24.0	58	N/A	0	RFS		
2	09:19	523.81	0.00	70	70.0	-26	-24.0	55	N/A	0	RFS		
3	07:59	0.00	0.00	70	69.0	-26	-24.0	57	N/A	0	RFS		
4	07:47	0.00	0.00	70	69.0	-26	-24.0	58	N/A	0	RFS		
5	08:44	0.00	0.00	70	69.0	-26	-24.0	59	N/A	0	RFS		
6	08:43	0.00	0.00	90	69.0	-26	-24.0	56	N/A	0	RFS		
7	11:15	0.00	0.00	70	69.0	-26	-24.0	58	N/A	0	JWN		
8	08:30	23.81	0.76	70	69.0	-26	-24.0	59	N/A	0	JWN		
9	10:00	428.57	0.00	70	69.0	-26	-24.0	45	N/A	0	JWN		
10	10:50	0.00	0.00	70	69.0	-26	-24.0	57	N/A	0	JWN		
11	09:20	0.00	0.00	70	69.0	-26	-24.0	58	N/A	0	JWN		
12	11:10	0.00	0.00	70	69.0	-26	-24.0	59	N/A	0	JWN		
13	09:50	0.00	0.00	70	69.0	-26	-24.0	59	N/A	0	JWN		
14	13:25	0.00	0.00	70	70.0	-26	-24.0	59	N/A	0	GDJ		
15	13:45	238.10	0.00	70	71.0	-26	-24.0	52	N/A	0	GDJ		
16	09:40	190.48	0.00	70	70.0	-27	-24.0	57	N/A	0	DJA		
17	09:15	0.00	0.00	70	69.0	-26	-24.0	58	N/A	0	DJA		
18	07:20	380.95	1.19	70	68.0	-26	-24.0	47	N/A	0	DJA		
19	10:38	95.24	0.00	70	69.0	-26	-24.0	58	N/A	0	DJA		
20	10:00	0.00	0.00	70	69.0	-26	-24.0	58	N/A	0	GDJ		
21	08:15	0.00	0.00	70	69.0	-26	-24.0	59	N/A	0	RFS		
22	10:33	476.19	0.00	70	70.0	-26	-24.0	56	N/A	0	RFS		
23	08:50	0.00	0.00	70	69.0	-26	-24.0	58	N/A	0	RFS		
24	06:30	190.48	0.00	70	69.0	-26	-24.0	57	N/A	0	RFS		
25	07:10	0.00	0.00	70	68.0	-26	-24.0	59	N/A	0	RFS		
26	08:52	190.48	0.00	70	70.0	-26	-24.0	56	N/A	0	RFS		
27	07:58	0.00	0.00	70	69.0	-26	-24.0	58	N/A	0	RFS		
28	09:34	0.00	0.00	70	69.0	-26	-24.0	59	N/A	0	AT		
29	10:35	666.67	0.00	70	71.0	-27	-24.0	41	N/A	0	AT		
30	09:27	404.76	0.00	70	69.0	-27	-25.0	51	N/A	0	AT		
31	09:05	0.00	0.00	70	69.0	-27	-24.0	56	N/A	0	AT		

Northern (Mullinville) #1 10/2020

Weekly Injectate Samples

Kansas Lab Certificate Number E-10146

Week	**Temperature**		**pH**		**Chloride**				
	Degrees Fahrenheit	Date	Standard Units	Date	Cl concentration (mg/l)	Date Sample Collected	Date Sampl Analysed		
1	62.90	10/01/2020	7.60	10/01/2020	N/A				
2	71.30	10/08/2020	8.20	10/08/2020	N/A				
3	66.40	10/15/2020	7.00	10/15/2020	N/A				
4	73.20	10/22/2020	7.30	10/22/2020	N/A				
5	66.10	10/29/2020	7.10	10/29/2020	N/A				

No monthly injectate samples required.

Northern (Mullinville) #1 10/2020

Quarterly Injectate Samples

Quarter 3
Date Sample Collected 07/09/2020
Kansas Lab Certificate Number E-10146
Lab Name Pace Analytical-Salina

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

Constituent	Value	Units
Calcium	201,000.000	mg/l
Chloride	127.000	mg/l
Iron	412.000	mg/l
Magnesium	26,500.000	mg/l
Sulfate	468.000	mg/l
Total Dissolved Solids	1,290.000	mg/l
Total Alkalinity as CaCO3		mg/l
Total Hardness as CaCO3	612,000.000	mg/l
Conductivity	1,540.000	Mmhos