Facility Well Name Holly Frontier #1 **UIC Permit #** KS-01-115-001 **Month** November **Year** 2019

Submitted 12/27/2019 **Approved** 01/02/2020 **KOLAR Document ID** 1486414

Class I-V Injection Well Monthly Monitoring

Summary of Monthly Report

Number of days injection occurred: 20

Barrels per Day Maximum: 6,167

			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	1,259	0.88	149	150	-19.1	-23.0	
Monthly Maximum	1,869	1.50	168	185	-16.0	-9.7	
Monthly Minimum	530	0.21	136	136	-20.0	-26.3	
Monthly Total	25,183						

Summary of Continuous Recorder Data

Maximum Annulus Pressure psig	Minimum Annulus Pressure psig	Maximum Injection Pressure psig	Minimum Injection Pressure psig
185.20	131.90	-26.60	-6.30

Comments:

Well was out of service from 11/2 to 11/10. pH was outside limits on 11/13. Low pH boiler feed water was used to wash the scrubber during shutdown. Caustic valves for pH adjustment did not come online in time to bring pH back up.

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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		
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11	16:00	529.52	0.21	136	135.8	-17	-22.0	15			RC		
12	08:40	1,442.10	0.69	155	185.1	-18	-18.7	17			RC		
13	11:00	1,267.07	0.95	155	168.0	-18	-20.3	20			RC		
14	07:50	1,284.43	0.93	168	167.9	-18	-26.3	19			RC		
15	08:10	1,379.43	0.81	152	152.6	-19	-15.8	21			RC		
16	06:15	1,388.02	1.05	154	152.9	-19	-21.7	21			TN		
17	08:25	927.88	0.86	162	150.4	-16	-9.7	21			TN		
18	07:34	1,459.64	0.76	150	151.2	-17	-14.1	22			CM		
19	07:38	1,220.24	0.88	152	152.5	-20	-25.9	21			CM		
20	10:55	1,182.31	0.90	150	149.2	-20	-25.9	21			CM		
21	07:55	1,146.52	0.83	147	146.0	-20	-25.9	21			CM		
22	07:40	1,118.43	1.12	142	142.6	-20	-26.1	21			CM		
23	08:39	1,148.24	0.88	144	143.5	-20	-25.9	21			RTM		
24	09:15	1,868.86	1.50	146	143.3	-20	-25.7	21			RTM		
25	08:00	1,136.31	0.79	150	149.4	-20	-25.7	22			RC		
26	08:00	1,226.26	0.93	148	144.7	-19	-25.9	21			RC		
27	09:00	1,609.64	0.79	140	136.3	-20	-26.1	20			RC		
28	08:30	1,145.48	0.93	140	140.1	-20	-26.0	21			RTM		
29	09:07	1,149.24	0.98	144	142.2	-20	-26.0	21			RTM		
30	08:10	1,553.86	0.88	143	143.5	-20	-25.8	21			PS		
31													

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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									
2	91.00	11/13/2019	4.30	11/13/2019	35.3	11/13/2019	11/17/2019		
3	101.00	11/20/2019	9.20	11/20/2019	56.1	11/20/2019	11/22/2019		
4	101.00	11/26/2019	7.80	11/26/2019	94.9	11/26/2019	12/05/2019		
5									

No monthly injectate samples required.

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Quarterly Injectate Samples

Quarter 4
Date Sample Collected 11/26/2019
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
Ammonia	24.600	mg/l
Arsenic	47.400	mg/l
Benzene	<0.001	mg/l
Calcium	114.000	mg/l
Chromium	0.0060	mg/l
Conductivity	10,500.000	Mmhos
Cyanide	0.080	mg/l
Ethylbenzene	<0.001	mg/l
Iron	0.410	mg/l
Magnesium	16.900	mg/l
Oil and Grease	<5.600	mg/l
Sodium	3,040.000	mg/l
Sulfate	6,600.000	mg/l
Toluene	<0.001	mg/l
Total Alkalinity as CaCO3	44.300	mg/l
Total Dissolved Solids	9,080.000	mg/l
Total Suspended Solids	8.000	mg/l
Xylene	<0.003	mg/l