Facility Well Name CHS Refinery #3 **UIC Permit #** KS-01-113-010 **Month** March **Year** 2019

Submitted 04/22/2019 **Approved** 05/03/2019 **KOLAR Document ID** 1458183

Class I-V Injection Well Monthly Monitoring

Summary of Monthly Report

Number of days injection occurred: 25

Barrels per Day Maximum: 51,429

			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	6,064	4.21	103	104	3.9	2.9	
Monthly Maximum	8,177	5.67	112	115	20.0	16.5	
Monthly Minimum	24	0.02	90	90	1.0	0.3	
Monthly Total	151,603						

Summary of Continuous Recorder Data

Maximum Annulus Pressure psig	Minimum Annulus Pressure psig	Maximum Injection Pressure psig	Minimum Injection Pressure psig
127.29	0.00	17.29	0.00

Comments:

Annulus Continuous Recorder was calibrated on 2/26/19.

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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	07:00	6,550.98	4.55	100	100.8	2	0.9	3			TB		
2	07:00	6,328.98	4.40	98	98.6	1	0.7	3			ZB		
3	07:00	6,317.07	4.38	92	90.3	2	0.5	1			ZB		
4	07:00	6,704.10	4.67	90	91.5	2	0.6	2			AS		
5	07:00	6,879.24	4.79	94	94.3	2	0.7	2			AS		
6	07:00	6,575.00	4.57	99	98.0	2	0.7	3			ZB		
7	07:00	5,963.62	4.14	100	101.8	2	0.7	3			ZB		
8	07:00	6,114.57	4.24	104	105.4	2	0.7	4			AS		
9	07:00	6,390.76	4.43	110	110.8	2	0.7	4			AS		
10	07:00	6,403.19	4.45	102	101.5	1	0.8	4			AS		
11	07:00	6,339.21	4.40	100	100.8	16	15.6	4			JC		
12	07:00	7,514.33	5.21	108	110.5	1	0.9	6			JC		
13	07:00	6,639.38	4.62	110	112.0	2	0.7	6			AS		
14	07:00	7,368.17	5.12	105	106.1	2	0.7	5			AS		
15	07:00	7,587.17	5.26	100	100.4	3	2.4	4			JC		
16	07:00	7,225.24	5.02	104	105.4	15	15.0	5			JC		
17	07:00	7,783.71	5.40	110	109.7	2	0.9	6			JC		
18	07:00	7,601.38	5.29	110	110.0	6	5.3	7			RM		
19	07:00	7,873.69	5.48	112	115.1	3	1.6	8			RM		
20	07:00	7,637.17	5.31	110	109.3	6	4.6	7			TB		
21	07:00	8,176.95	5.67	110	110.7	13	11.7	8			TB		
22	07:00	4,074.52	2.83	102	104.5	20	16.5	5			RM		
23	07:00	1,173.83	0.81	108	107.4	1	0.6	5			RM		
24	07:00			105	106.4	2	0.6	5			ZB		
25	07:00			106	106.6	1	0.6	5			TB		
26	07:00	357.14	0.24	101	101.8	1	0.3	4			TB		
27	07:00	23.81	0.02	106	105.5	1	0.9	4			RM		
28	07:00			108	107.3	2	1.1	5			RM		
29	07:00			103	104.7	2	1.3	5			TB		
30	07:00			100	100.8	2	1.4	5			TB		
31	07:00			99	98.6	2	1.6	5			ZB		

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Weekly Injectate Samples

Kansas Lab Certificate Number E-10116

Week	**Temperature**		**pH**		**Chloride**				
	Degrees Fahrenheit	Date	Standard Units	Date	Cl concentration (mg/l)	Date Sample Collected	Date Sampl Analysed		
1	72.00	03/05/2019	7.28	03/05/2019	837.0	03/05/2019	03/13/2019		
2	79.00	03/15/2019	7.30	03/15/2019	710.0	03/15/2019	04/01/2019		
3	83.00	03/19/2019	7.25	03/19/2019	759.0	03/19/2019	04/10/2019		
4	58.00	03/26/2019	7.67	03/26/2019	817.0	03/26/2019	04/10/2019		
5									

No monthly injectate samples required.

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Quarterly Injectate Samples

Quarter 1
Date Sample Collected 03/15/2019
Kansas Lab Certificate Number E-10116
Lab Name Pace Analytical-Lenexa

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

Constituent	Value	Units
Calcium	136.000	mg/l
Iron	3.810	mg/l
Magnesium	16.400	mg/l
Sulfate	750.000	mg/l
Total Dissolved Solids	2,370.000	mg/l
Total Suspended Solids	50.000	mg/l
Total Alkalinity as CaCO3	224.000	mg/l (as CaCO3)
Conductivity	4.000	Mmhos
1,2-Dichloroethane	ND	mg/l
Benzene	0.152	mg/l
Ethylbenzene	0.011	mg/l
Toluene	0.190	mg/l
Trichloroethylene	ND	mg/l
Xylene (Total)	0.096	mg/l
Sodium	626.000	mg/l
Oil & Grease	26.200	mg/l
Ammonia	58.900	mg/l