**Facility Well Name** ONEOK (Bushton) #5 **UIC Permit #** KS-01-053-004 **Month** June **Year** 2019

**Submitted** 07/22/2019 **Approved** 08/15/2019 **KOLAR Document ID** 1466404

# Class I-V Injection Well Monthly Monitoring

## Summary of Monthly Report

**Number of days injection occurred:** 30

**Barrels per Day Maximum:** 30,952

| | | | 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** | 2,434 | 1.71 | 78 | 79 | -28.1 | -28.7 | 0 |
| **Monthly Maximum** | 3,566 | 2.98 | 83 | 84 | -28.0 | -28.0 | 0 |
| **Monthly Minimum** | 898 | 0.62 | 75 | 75 | -29.0 | -29.2 | 0 |
| **Monthly Total** | 73,011 | | | | | | 0 |

## Summary of Continuous Recorder Data

| Maximum Annulus Pressure psig | Minimum Annulus Pressure psig | Maximum Injection Pressure psig | Minimum Injection Pressure psig |
|---|---|---|---|
| 85.82 | 72.97 | -1.70 | -29.29 |

**Comments:**

*Function test 6.29.19

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# Daily Recorder Data

| Day | Time<br>24 hr | Injection Volume<br>Barrels Per Day | Injection Rate<br>Barrels Per Minute | Annulus Pressure (Gauge)<br>psig | Annulus Pressure (Continuous Recorder)<br>psig | Injection Pressure (Gauge)<br>+ / - | Injection Pressure (Continuous Recorder)<br>+ / - | Seal Pot Fluid Level<br>inches | Type of Fluid Added to Seal Pot | Amount of Fluid Added to Seal Pot<br>gallons | Initials of Collector of Field Recordings | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 05:30 | 2,806.50 | 1.95 | 83 | 83.7 | -28 | -28.8 | 13 | | 0 | JI | | |
| 2 | 05:42 | 2,803.38 | 1.95 | 80 | 80.0 | -28 | -28.1 | 13 | | 0 | JI | | |
| 3 | 05:34 | 2,963.83 | 2.05 | 80 | 81.3 | -28 | -28.9 | 13 | | 0 | JI | | |
| 4 | 05:40 | 3,286.76 | 2.29 | 80 | 81.1 | -28 | -29.0 | 13 | | 0 | JI | | |
| 5 | 05:40 | 2,011.31 | 1.40 | 80 | 80.2 | -28 | -29.2 | 13 | | 0 | JI | | |
| 6 | 06:25 | 897.83 | 0.62 | 80 | 80.8 | -28 | -28.9 | 13 | | 0 | JE | | |
| 7 | 06:18 | 1,381.10 | 0.95 | 78 | 78.6 | -28 | -29.1 | 13 | | 0 | JE | | |
| 8 | 05:59 | 2,123.69 | 1.48 | 78 | 79.2 | -28 | -28.3 | 13 | | 0 | JE | | |
| 9 | 05:44 | 2,142.05 | 1.48 | 78 | 79.1 | -28 | -28.3 | 13 | | 0 | JE | | |
| 10 | 05:55 | 2,090.55 | 1.45 | 75 | 75.2 | -28 | -28.9 | 13 | | 0 | JE | | |
| 11 | 06:14 | 2,181.26 | 1.52 | 76 | 76.2 | -28 | -29.1 | 13 | | 0 | JE | | |
| 12 | 06:23 | 1,925.36 | 1.33 | 76 | 76.2 | -28 | -29.1 | 13 | | 0 | JE | | |
| 13 | 06:05 | 1,645.31 | 1.14 | 76 | 75.7 | -28 | -28.4 | 13 | | 0 | WW | | |
| 14 | 05:37 | 2,500.12 | 1.74 | 77 | 77.4 | -28 | -28.4 | 13 | | 0 | HM | | |
| 15 | 05:49 | 3,053.52 | 2.12 | 78 | 78.3 | -28 | -28.8 | 13 | | 0 | WW | | |
| 16 | 05:20 | 2,756.48 | 1.90 | 77 | 78.2 | -29 | -28.0 | 13 | | 0 | HM | | |
| 17 | 05:33 | 2,799.33 | 1.95 | 78 | 77.6 | -28 | -28.7 | 13 | | 0 | WW | | |
| 18 | 05:46 | 3,184.64 | 2.21 | 78 | 78.4 | -28 | -28.5 | 13 | | 0 | HM | | |
| 19 | 05:20 | 2,888.76 | 2.00 | 77 | 77.1 | -28 | -28.6 | 13 | | 0 | WW | | |
| 20 | 06:02 | 2,554.33 | 1.79 | 77 | 76.7 | -28 | -28.8 | 13 | | 0 | WW | | |
| 21 | 05:35 | 2,553.74 | 1.76 | 79 | 79.4 | -28 | -28.7 | 13 | | 0 | CK | | |
| 22 | 06:11 | 3,268.12 | 2.26 | 78 | 77.3 | -28 | -28.7 | 13 | | 0 | TS | | |
| 23 | 08:04 | 2,475.38 | 1.71 | 76 | 75.9 | -28 | -28.5 | 13 | | 0 | CK | | |
| 24 | 06:40 | 2,379.88 | 1.64 | 76 | 76.4 | -28 | -29.1 | 13 | | 0 | TS | | |
| 25 | 05:47 | 2,654.83 | 1.83 | 80 | 79.4 | -28 | -28.5 | 13 | | 0 | CK | | |
| 26 | 05:22 | 2,019.98 | 1.40 | 80 | 79.8 | -28 | -28.6 | 13 | | 0 | TS | | |
| 27 | 05:51 | 1,287.79 | 0.90 | 81 | 81.1 | -28 | -28.7 | 13 | | 0 | JI | | |
| 28 | 07:05 | 1,990.79 | 1.38 | 80 | 80.3 | -29 | -28.7 | 13 | | 0 | JI | | |
| 29 | 06:09 | 2,818.12 | 1.95 | 80 | 80.2 | -28 | -28.0 | 13 | | 0 | JI | | |
| 30 | 05:27 | 3,565.86 | 2.98 | 80 | 80.5 | -28 | -28.8 | 13 | | 0 | JI | | |
| 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 | 74.10 | 05/27/2019 | 7.47 | 05/27/2019 | 1,200.0 | 05/27/2019 | 06/11/2019 | | |
| 2 | 72.20 | 06/02/2019 | 7.44 | 06/02/2019 | 1,470.0 | 06/02/2019 | 06/11/2019 | | |
| 3 | 72.80 | 06/09/2019 | 7.39 | 06/09/2019 | 1,200.0 | 06/09/2019 | 06/20/2019 | | |
| 4 | 73.00 | 06/16/2019 | 7.36 | 06/16/2019 | 2,030.0 | 06/16/2019 | 06/28/2019 | | |
| 5 | 70.50 | 06/23/2019 | 7.60 | 06/23/2019 | 458.0 | 06/23/2019 | 07/02/2019 | | |

## No monthly injectate samples required.

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# Quarterly Injectate Samples

**Quarter** 2
**Date Sample Collected** 05/22/2019
**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 |
|---|---|---|
| Benzene | ND | mg/l |
| Calcium | 363.000 | mg/l |
| Conductivity | 5,260.000 | Mmhos |
| Iron | 0.700 | mg/l |
| Magnesium | 62.800 | mg/l |
| Sulfate | 979.000 | mg/l |
| Total Alkalinity as CaCO3 | 331.000 | mg/l |
| Total Dissolved Solids | 3,930.000 | mg/l |
| Total Hardness as CaCO3 | 1,170.000 | mg/l |
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