**Facility Well Name** Koch Fertilizer #3 **UIC Permit #** KS-01-057-002 **Month** March **Year** 2019

**Submitted** 05/14/2019 **Approved** 05/26/2019 **KOLAR Document ID** 1458560

# Class I-V Injection Well Monthly Monitoring

## Summary of Monthly Report

**Number of days injection occurred:** 8

**Barrels per Day Maximum:** 20,143

| | | | 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** | 2,711 | 1.42 | 152 | 152 | -25.0 | -21.4 | 0 |
| **Monthly Maximum** | 17,029 | 11.88 | 162 | 162 | -20.0 | -20.3 | 0 |
| **Monthly Minimum** | 0 | 0.00 | 132 | 131 | -26.0 | -22.0 | 0 |
| **Monthly Total** | 84,031 | | | | | | 0 |

## Summary of Continuous Recorder Data

| Maximum Annulus Pressure psig | Minimum Annulus Pressure psig | Maximum Injection Pressure psig | Minimum Injection Pressure psig |
|---|---|---|---|
| 161.80 | 130.90 | -16.80 | -22.00 |

**Comments:**

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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 | 08:15 | 14,250.17 | 10.26 | 132 | 131.0 | -25 | -20.6 | 12 | | 0 | DH | | |
| 2 | 11:45 | 11,420.14 | 0.00 | 142 | 142.0 | -26 | -21.8 | 15 | | 0 | DH | | |
| 3 | 15:15 | 0.00 | 0.00 | 143 | 143.0 | -25 | -22.0 | 16 | | 0 | DH | | |
| 4 | 09:30 | 0.00 | 0.00 | 151 | 151.0 | -25 | -22.0 | 17 | | 0 | DH | | |
| 5 | 10:00 | 0.00 | 0.00 | 153 | 152.0 | -26 | -22.0 | 17 | | 0 | DN | | |
| 6 | 10:50 | 0.00 | 0.00 | 153 | 153.0 | -26 | -21.7 | 17 | | 0 | DN | | |
| 7 | 09:43 | 0.00 | 0.00 | 156 | 156.0 | -26 | -21.5 | 17 | | 0 | DN | | |
| 8 | 10:40 | 0.00 | 0.00 | 157 | 157.0 | -26 | -21.5 | 17 | | 0 | DN | | |
| 9 | 09:33 | 1,664.12 | 0.00 | 147 | 146.0 | -25 | -20.8 | 16 | | 0 | DN | | |
| 10 | 08:55 | 0.00 | 0.00 | 155 | 155.0 | -25 | -21.5 | 17 | | 0 | RR | | |
| 11 | 13:45 | 0.00 | 0.00 | 157 | 157.0 | -25 | -21.5 | 17 | | 0 | RR | | |
| 12 | 08:35 | 10,933.76 | 11.00 | 136 | 136.0 | -25 | -20.7 | 13 | | 0 | RR | | |
| 13 | 10:35 | 8,145.48 | 0.00 | 149 | 149.0 | -25 | -20.6 | 16 | | 0 | KB | | |
| 14 | 09:04 | 0.00 | 0.00 | 153 | 153.0 | -25 | -21.2 | 17 | | 0 | KB | | |
| 15 | 10:13 | 0.00 | 0.00 | 155 | 156.0 | -25 | -21.8 | 17 | | 0 | KB | | |
| 16 | 08:56 | 0.00 | 0.00 | 157 | 157.0 | -25 | -21.8 | 17 | | 0 | KB | | |
| 17 | 10:20 | 0.00 | 0.00 | 158 | 158.0 | -25 | -21.6 | 17 | | 0 | KB | | |
| 18 | 09:40 | 0.00 | 0.00 | 159 | 158.0 | -25 | -21.7 | 18 | | 0 | KB | | |
| 19 | 09:45 | 0.00 | 0.00 | 159 | 159.0 | -25 | -21.5 | 18 | | 0 | DH | | |
| 20 | 09:45 | 0.00 | 0.00 | 160 | 159.0 | -25 | -21.7 | 18 | | 0 | DH | | |
| 21 | 11:55 | 0.00 | 0.00 | 160 | 160.0 | -26 | -21.7 | 18 | | 0 | DN | | |
| 22 | 11:05 | 0.00 | 0.00 | 160 | 160.0 | -25 | -21.6 | 18 | | 0 | DN | | |
| 23 | 10:55 | 0.00 | 0.00 | 160 | 161.0 | -25 | -21.4 | 18 | | 0 | DN | | |
| 24 | 11:08 | 0.00 | 0.00 | 160 | 161.0 | -25 | -21.5 | 18 | | 0 | DN | | |
| 25 | 09:55 | 0.00 | 0.00 | 162 | 162.0 | -25 | -21.7 | 18 | | 0 | RR | | |
| 26 | 09:55 | 11,767.05 | 11.00 | 135 | 134.0 | -25 | -20.9 | 12 | | 0 | RR | | |
| 27 | 08:30 | 17,029.12 | 11.88 | 138 | 137.0 | -24 | -20.3 | 13 | | 0 | RR | | |
| 28 | 08:35 | 8,820.76 | 0.00 | 151 | 151.0 | -25 | -21.3 | 16 | | 0 | RR | | |
| 29 | 12:00 | 0.00 | 0.00 | 155 | 150.0 | -20 | -21.4 | 17 | | 0 | JB | | |
| 30 | 09:40 | 0.00 | 0.00 | 155 | 155.0 | -25 | -21.7 | 17 | | 0 | JB | | |
| 31 | 13:15 | 0.00 | 0.00 | 154 | 157.0 | -25 | -21.8 | 17 | | 0 | JB | | |

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# Weekly Injectate Samples

**Kansas Lab Certificate Number** 60295869001

| Week | Temperature | | pH | | Chloride | | | Nitrate | Orthophosphate |
|---|---|---|---|---|---|---|---|---|---|
| | Degrees Fahrenheit | Date | Standard Units | Date | Cl concentration (mg/l) | Date Sample Collected | Date Sampl Analysed | mg/l | mg/l |
| 1 | 69.50 | 03/04/2019 | 6.94 | 03/04/2019 | 199.0 | 03/04/2019 | 03/08/2019 | 44.70000 | 0.41000 |
| 2 | 75.30 | 03/12/2019 | 7.17 | 03/12/2019 | 209.0 | 03/12/2019 | 03/18/2019 | 60.60000 | 0.36000 |
| 3 | 72.70 | 03/18/2019 | 7.06 | 03/18/2019 | 183.0 | 03/18/2019 | 03/22/2019 | 50.00000 | 0.48000 |
| 4 | 73.10 | 03/25/2019 | 7.00 | 03/25/2019 | 199.0 | 03/25/2019 | 04/04/2019 | 51.10000 | 0.87000 |
| 5 | | | | | | | | | |

# Monthly Injectate Samples

**Date Sample Collected** 03/04/2019

**Kansas Lab Certificate Number** 60295869001

| Constituent | Value | Units |
|---|---|---|
| Chromium | 0.0327 | mg/l |
| | | |
| | | |
| | | |
| | | |

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# Quarterly Injectate Samples

**Quarter** 1
**Date Sample Collected** 01/02/2019
**Kansas Lab Certificate Number** 60295869001
**Lab Name**

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

| Constituent | Value | Units |
|---|---|---|
| Calcium | 444.000 | mg/l |
| Conductivity | 4,710.000 | Mmhos |
| Iron | 0.178 | mg/l |
| Magnesium | 108.000 | mg/l |
| Sodium | 414.000 | mg/l |
| Specific Gravity | 1.000 | N/A |
| Sulfate | 1,670.000 | mg/l |
| Total Alkalinity as CaCO3 | 610.000 | mg/l |
| Total Dissolved Solids | 3,450.000 | mg/l |
| Total Hardness as CaCO3 | 1,550.000 | mg/l |
| Zinc | 0.453 | mg/l |
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