**Facility Well Name** Holly Frontier #1 **UIC Permit #** KS-01-115-001 **Month** August **Year** 2023

**Submitted** 09/25/2023 **Approved** 09/29/2023 **KOLAR Document ID** 1729807

# Class I-V Injection Well Monthly Monitoring

## Summary of Monthly Report

**Number of days injection occurred:** 31

**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 | 782 | 0.55 | 144 | 142 | -18.2 | -17.4 | |
| Monthly Maximum | 1,340 | 1.21 | 154 | 152 | -5.0 | -5.0 | |
| Monthly Minimum | 404 | 0.07 | 118 | 117 | -26.0 | -25.1 | |
| Monthly Total | 24,254 | | | | | | |

## Summary of Continuous Recorder Data

| Maximum Annulus Pressure psig | Minimum Annulus Pressure psig | Maximum Injection Pressure psig | Minimum Injection Pressure psig |
|---|---|---|---|
| 171.30 | 110.50 | -4.80 | -25.50 |

**Comments:**

Holly Frontier #1 08/2023

# 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 | 08:30 | 869.98 | 0.52 | 138 | 134.1 | -25 | -24.5 | 26 | | | BC | | |
| 2 | 07:45 | 963.50 | 0.43 | 142 | 141.1 | -25 | -24.3 | 26 | | | BC | | |
| 3 | 07:35 | 981.74 | 0.57 | 142 | 140.9 | -25 | -24.5 | 26 | | | BC | | |
| 4 | 08:00 | 1,295.86 | 0.67 | 140 | 137.6 | -25 | -24.7 | 24 | | | TR | | |
| 5 | 08:00 | 1,340.02 | 1.21 | 143 | 136.2 | -25 | -25.1 | 27 | | | TR | | |
| 6 | 08:30 | 622.71 | 0.07 | 118 | 116.7 | -23 | -22.0 | 24 | | | MM | | |
| 7 | 07:30 | 825.50 | 0.48 | 143 | 141.4 | -26 | -25.0 | 24 | | | MM | | |
| 8 | 07:55 | 758.19 | 0.67 | 142 | 141.1 | -26 | -24.8 | 25 | | | BC | | |
| 9 | 07:58 | 872.02 | 0.26 | 144 | 140.8 | -26 | -24.8 | 25 | | | BC | | |
| 10 | 07:54 | 850.83 | 0.67 | 146 | 144.4 | -26 | -24.7 | 25 | | | BC | | |
| 11 | 08:25 | 798.07 | 0.52 | 142 | 139.9 | -26 | -24.7 | 25 | | | BC | | |
| 12 | 08:00 | 823.05 | 0.31 | 146 | 143.6 | -26 | -24.9 | 24 | | | MM | | |
| 13 | 08:00 | 724.31 | 0.71 | 137 | 136.3 | -26 | -24.5 | 23 | | | MM | | |
| 14 | 09:00 | 586.48 | 0.33 | 138 | 125.7 | -24 | -22.8 | 22 | | | TR | | |
| 15 | 08:00 | 798.00 | 0.74 | 150 | 147.8 | -18 | -20.6 | 20 | | | TR | | |
| 16 | 09:25 | 755.88 | 0.74 | 146 | 143.7 | -16 | -14.7 | 20 | | | BC | | |
| 17 | 08:20 | 651.95 | 0.26 | 148 | 144.9 | -12 | -11.7 | 20 | | | BC | | |
| 18 | 08:20 | 560.43 | 0.36 | 146 | 143.0 | -9 | -8.2 | 20 | | | BC | | |
| 19 | 07:55 | 560.10 | 0.36 | 150 | 145.3 | -7 | -7.2 | 20 | | | BC | | |
| 20 | 08:00 | 550.31 | 0.26 | 150 | 148.5 | -5 | -5.6 | 20 | | | TR | | |
| 21 | 08:00 | 537.14 | 0.38 | 150 | 150.3 | -14 | -6.9 | 21 | | | TR | | |
| 22 | 08:00 | 505.02 | 0.38 | 154 | 152.0 | -6 | -6.7 | 21 | | | TR | | |
| 23 | 08:00 | 498.10 | 0.36 | 153 | 150.3 | -13 | -5.7 | 20 | | | TR | | |
| 24 | 07:51 | 847.10 | 0.71 | 150 | 148.7 | -6 | -5.0 | 21 | | | BC | | |
| 25 | 07:54 | 1,153.29 | 0.69 | 146 | 142.4 | -15 | -14.5 | 20 | | | BC | | |
| 26 | 08:37 | 1,106.79 | 1.10 | 152 | 150.4 | -14 | -13.2 | 21 | | | BC | | |
| 27 | 07:45 | 880.48 | 0.45 | 148 | 145.8 | -15 | -14.3 | 21 | | | BC | | |
| 28 | 08:00 | 822.12 | 1.00 | 150 | 148.8 | -18 | -21.2 | 23 | | | TR | | |
| 29 | 08:00 | 404.17 | 1.10 | 144 | 141.0 | -14 | -15.8 | 22 | | | TR | | |
| 30 | 08:00 | 572.57 | 0.36 | 138 | 135.9 | -12 | -10.0 | 21 | | | TR | | |
| 31 | 08:00 | 738.74 | 0.43 | 143 | 140.5 | -15 | -16.5 | 22 | | | TR | | |

Holly Frontier #1 08/2023

# 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 | 155.90 | 08/02/2023 | 6.80 | 08/02/2023 | 297.0 | 08/02/2023 | 08/04/2023 | | |
| 2 | 105.90 | 08/09/2023 | 6.50 | 08/09/2023 | 426.0 | 08/09/2023 | 08/11/2023 | | |
| 3 | 87.60 | 08/16/2023 | 6.40 | 08/16/2023 | 55.6 | 08/16/2023 | 08/18/2023 | | |
| 4 | 92.70 | 08/23/2023 | 6.40 | 08/23/2023 | 54.2 | 08/23/2023 | 08/25/2023 | | |
| 5 | 92.80 | 08/29/2023 | 7.40 | 08/29/2023 | 138.0 | 08/30/2023 | 09/05/2023 | | |

## No monthly injectate samples required.

Holly Frontier #1 08/2023

# Quarterly Injectate Samples

**Quarter** 3
**Date Sample Collected** 08/23/2023
**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 | <0.200 | mg/l |
| Arsenic | <0.010 | mg/l |
| Benzene | <0.001 | mg/l |
| Calcium | 51.500 | mg/l |
| Chromium | <0.0050 | mg/l |
| Conductivity | 0.758 | Mmhos |
| Cyanide | 0.019 | mg/l |
| Ethylbenzene | <0.001 | mg/l |
| Iron | 0.224 | mg/l |
| Magnesium | 7.570 | mg/l |
| Oil & Grease | <5.000 | mg/l |
| Sodium | 49.600 | mg/l |
| Sulfate | 227.000 | mg/l |
| Toluene | <0.001 | mg/l |
| Total Alkalinity as CaCO3 | 37.800 | mg/l |
| Total Dissolved Solids | 459.000 | mg/l |
| Total Suspended Solids | 26.000 | mg/l |
| Xylene | <0.003 | mg/l |
| | | |
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