**Facility Well Name** Holly Frontier #1 **UIC Permit #** KS-01-115-001 **Month** May **Year** 2021

**Submitted** 06/18/2021 **Approved** 06/21/2021 **KOLAR Document ID** 1577902

# 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** | 894 | 0.66 | 129 | 128 | -27.5 | -26.0 | |
| **Monthly Maximum** | 1,420 | 1.38 | 170 | 166 | -27.0 | -25.3 | |
| **Monthly Minimum** | 680 | 0.29 | 110 | 109 | -28.0 | -26.4 | |
| **Monthly Total** | 27,714 | | | | | | |

## Summary of Continuous Recorder Data

| Maximum Annulus Pressure psig | Minimum Annulus Pressure psig | Maximum Injection Pressure psig | Minimum Injection Pressure psig |
|---|---|---|---|
| 180.10 | 106.40 | -24.90 | -26.80 |

**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 | 08:30 | 908.71 | 0.79 | 125 | 123.3 | -27 | -25.7 | 22 | | | BC | | |
| 2 | 08:15 | 855.74 | 0.69 | 115 | 115.7 | -27 | -26.0 | 21 | | | SW | | |
| 3 | 07:20 | 856.17 | 0.57 | 118 | 115.9 | -27 | -26.0 | 21 | | | SW | | |
| 4 | 09:55 | 881.29 | 1.38 | 112 | 112.6 | -27 | -25.9 | 20 | | | SW | | |
| 5 | 11:40 | 967.57 | 0.57 | 118 | 117.4 | -27 | -26.0 | 21 | | | SW | | |
| 6 | 07:25 | 755.60 | 0.55 | 122 | 120.8 | -27 | -25.9 | 22 | | | SW | | |
| 7 | 09:00 | 882.69 | 0.64 | 115 | 113.6 | -28 | -26.2 | 20 | | | BC | | |
| 8 | 08:45 | 749.93 | 0.55 | 110 | 110.1 | -27 | -26.3 | 19 | | | BC | | |
| 9 | 08:45 | 872.24 | 0.52 | 115 | 115.3 | -27 | -26.3 | 20 | | | BC | | |
| 10 | 07:30 | 798.76 | 0.81 | 112 | 111.3 | -27 | -26.2 | 19 | | | SW | | |
| 11 | 07:40 | 765.71 | 0.81 | 110 | 109.3 | -27 | -26.3 | 19 | | | SW | | |
| 12 | 10:45 | 779.71 | 0.67 | 110 | 109.0 | -28 | -26.3 | 19 | | | SW | | |
| 13 | 07:15 | 874.57 | 0.57 | 112 | 111.3 | -28 | -26.0 | 19 | | | SW | | |
| 14 | 07:45 | 798.60 | 0.81 | 115 | 111.8 | -28 | -26.1 | 19 | | | BC | | |
| 15 | 08:20 | 778.67 | 0.52 | 125 | 121.7 | -28 | -26.4 | 19 | | | BC | | |
| 16 | 08:45 | 958.31 | 0.76 | 150 | 154.4 | -28 | -26.1 | 20 | | | BC | | |
| 17 | 10:00 | 794.45 | 0.57 | 150 | 149.9 | -27 | -26.1 | 20 | | | BC | | |
| 18 | 07:40 | 923.60 | 0.83 | 154 | 151.7 | -27 | -26.0 | 20 | | | SW | | |
| 19 | 10:35 | 882.14 | 0.69 | 152 | 150.1 | -28 | -26.1 | 20 | | | SW | | |
| 20 | 07:20 | 930.05 | 0.29 | 154 | 151.3 | -28 | -26.1 | 21 | | | SW | | |
| 21 | 07:30 | 883.07 | 0.60 | 152 | 150.8 | -28 | -25.9 | 21 | | | SW | | |
| 22 | 08:30 | 713.19 | 0.48 | 145 | 145.4 | -28 | -26.1 | 20 | | | BC | | |
| 23 | 10:00 | 680.10 | 0.38 | 145 | 142.4 | -28 | -26.3 | 19 | | | BC | | |
| 24 | 08:45 | 900.88 | 0.57 | 140 | 140.5 | -28 | -26.4 | 19 | | | BC | | |
| 25 | 08:30 | 1,420.17 | 1.17 | 170 | 166.4 | -27 | -25.3 | 23 | | | BC | | |
| 26 | 10:45 | 1,216.64 | 0.57 | 138 | 136.5 | -27 | -25.4 | 24 | | | SW | | |
| 27 | 07:50 | 1,324.40 | 1.02 | 135 | 134.1 | -27 | -25.3 | 23 | | | SW | | |
| 28 | 07:20 | 871.88 | 0.57 | 120 | 119.1 | -27 | -25.9 | 22 | | | SW | | |
| 29 | 07:25 | 882.86 | 0.36 | 115 | 114.4 | -28 | -26.1 | 20 | | | SW | | |
| 30 | 08:30 | 854.14 | 0.76 | 115 | 113.6 | -28 | -26.2 | 20 | | | BC | | |
| 31 | 14:50 | 951.69 | 0.52 | 115 | 115.9 | -28 | -26.2 | 19 | | | PS | | |

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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 | 97.15 | 05/05/2021 | 8.50 | 05/05/2021 | 295.0 | 05/05/2021 | 05/08/2021 | | |
| 2 | 89.63 | 05/12/2021 | 8.20 | 05/12/2021 | 293.0 | 05/12/2021 | 05/17/2021 | | |
| 3 | 97.41 | 05/19/2021 | 8.40 | 05/19/2021 | 631.0 | 05/19/2021 | 05/27/2021 | | |
| 4 | 108.22 | 05/26/2021 | 8.70 | 05/26/2021 | 215.0 | 05/26/2021 | 05/27/2021 | | |
| 5 | | | | | | | | | |

## No monthly injectate samples required.

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# Quarterly Injectate Samples

**Quarter** 2
**Date Sample Collected** 05/19/2021
**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 | 30.000 | mg/l |
| Arsenic | <0.500 | mg/l |
| Benzene | <0.005 | mg/l |
| Calcium | 222.000 | mg/l |
| Chromium | <0.0050 | mg/l |
| Conductivity | 24,400.000 | Mmhos |
| Cyanide | 0.080 | mg/l |
| Ethylbenzene | <0.005 | mg/l |
| Iron | 0.840 | mg/l |
| Magnesium | 20.800 | mg/l |
| Oil & Grease | <5.200 | mg/l |
| Sodium | 7,580.000 | mg/l |
| Sulfate | 18,500.000 | mg/l |
| Toluene | <0.005 | mg/l |
| Total Alkalinity as CaCO3 | 82.900 | mg/l |
| Total Dissolved Solids | 27,400.000 | mg/l |
| Total Suspended Solids | 12.000 | mg/l |
| Xylene | <0.015 | mg/l |
| | | |
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