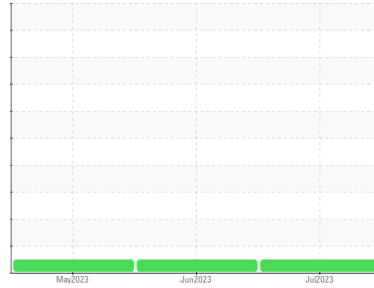




# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Machine Id  
**69K-3**  
 Component  
**Compressor**  
 Fluid  
**HP R&O ISO 100 (--- GAL)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil.

### Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

| SAMPLE INFORMATION |             | method      | limit/base | current            | history1    | history2    |
|--------------------|-------------|-------------|------------|--------------------|-------------|-------------|
| Sample Number      | Client Info |             |            | <b>HPL0003232</b>  | HPL0003470  | HPL0003421  |
| Sample Date        | Client Info |             |            | <b>13 Jul 2023</b> | 15 Jun 2023 | 15 May 2023 |
| Machine Age        | hrs         | Client Info |            | <b>0</b>           | 0           | 0           |
| Oil Age            | hrs         | Client Info |            | <b>0</b>           | 0           | 0           |
| Oil Changed        | Client Info |             |            | <b>N/A</b>         | N/A         | N/A         |
| Sample Status      |             |             |            | <b>NORMAL</b>      | NORMAL      | NORMAL      |

| WEAR METALS |     | method      | limit/base | current      | history1 | history2 |
|-------------|-----|-------------|------------|--------------|----------|----------|
| Iron        | ppm | ASTM D5185m | >50        | <b>&lt;1</b> | <1       | 1        |
| Chromium    | ppm | ASTM D5185m | >10        | <b>0</b>     | 0        | 0        |
| Nickel      | ppm | ASTM D5185m |            | <b>0</b>     | 0        | 0        |
| Titanium    | ppm | ASTM D5185m |            | <b>0</b>     | 0        | 0        |
| Silver      | ppm | ASTM D5185m |            | <b>0</b>     | 0        | <1       |
| Aluminum    | ppm | ASTM D5185m | >25        | <b>2</b>     | 0        | <1       |
| Lead        | ppm | ASTM D5185m | >25        | <b>0</b>     | 0        | 0        |
| Copper      | ppm | ASTM D5185m | >50        | <b>2</b>     | 2        | <1       |
| Tin         | ppm | ASTM D5185m | >15        | <b>0</b>     | 0        | 0        |
| Vanadium    | ppm | ASTM D5185m |            | <b>0</b>     | 0        | 0        |
| Cadmium     | ppm | ASTM D5185m |            | <b>0</b>     | 0        | <1       |

| ADDITIVES  |     | method      | limit/base | current      | history1 | history2 |
|------------|-----|-------------|------------|--------------|----------|----------|
| Boron      | ppm | ASTM D5185m |            | <b>0</b>     | 0        | 0        |
| Barium     | ppm | ASTM D5185m |            | <b>0</b>     | 0        | 0        |
| Molybdenum | ppm | ASTM D5185m |            | <b>0</b>     | 0        | 0        |
| Manganese  | ppm | ASTM D5185m |            | <b>0</b>     | 0        | <1       |
| Magnesium  | ppm | ASTM D5185m |            | <b>&lt;1</b> | <1       | 2        |
| Calcium    | ppm | ASTM D5185m |            | <b>&lt;1</b> | <1       | 28       |
| Phosphorus | ppm | ASTM D5185m |            | <b>158</b>   | 158      | 221      |
| Zinc       | ppm | ASTM D5185m |            | <b>2</b>     | 2        | 0        |
| Sulfur     | ppm | ASTM D5185m |            | <b>18550</b> | 17630    | 15398    |

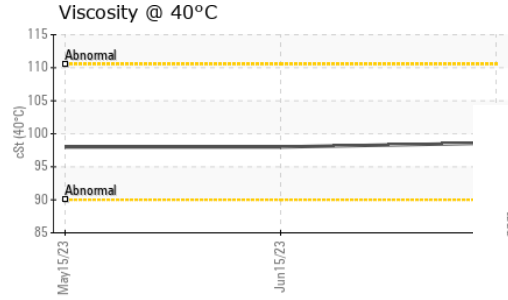
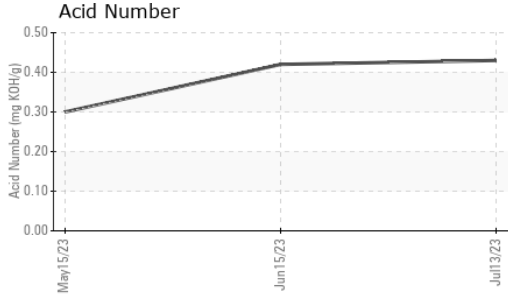
| CONTAMINANTS |     | method      | limit/base | current      | history1 | history2 |
|--------------|-----|-------------|------------|--------------|----------|----------|
| Silicon      | ppm | ASTM D5185m | >25        | <b>6</b>     | 4        | 2        |
| Sodium       | ppm | ASTM D5185m |            | <b>0</b>     | 0        | <1       |
| Potassium    | ppm | ASTM D5185m | >20        | <b>&lt;1</b> | <1       | <1       |

| FLUID DEGRADATION |          | method     | limit/base | current     | history1 | history2 |
|-------------------|----------|------------|------------|-------------|----------|----------|
| Acid Number (AN)  | mg KOH/g | ASTM D8045 |            | <b>0.43</b> | 0.42     | 0.30     |

| VISUAL           |        | method  | limit/base | current      | history1 | history2 |
|------------------|--------|---------|------------|--------------|----------|----------|
| White Metal      | scalar | *Visual | NONE       | <b>NONE</b>  | NONE     | NONE     |
| Yellow Metal     | scalar | *Visual | NONE       | <b>NONE</b>  | NONE     | NONE     |
| Precipitate      | scalar | *Visual | NONE       | <b>NONE</b>  | NONE     | NONE     |
| Silt             | scalar | *Visual | NONE       | <b>NONE</b>  | NONE     | NONE     |
| Debris           | scalar | *Visual | NONE       | <b>NONE</b>  | NONE     | LIGHT    |
| Sand/Dirt        | scalar | *Visual | NONE       | <b>NONE</b>  | NONE     | NONE     |
| Appearance       | scalar | *Visual | NORML      | <b>NORML</b> | NORML    | NORML    |
| Odor             | scalar | *Visual | NORML      | <b>NORML</b> | NORML    | NORML    |
| Emulsified Water | scalar | *Visual | >0.1       | <b>NEG</b>   | NEG      | NEG      |
| Free Water       | scalar | *Visual |            | <b>NEG</b>   | NEG      | NEG      |



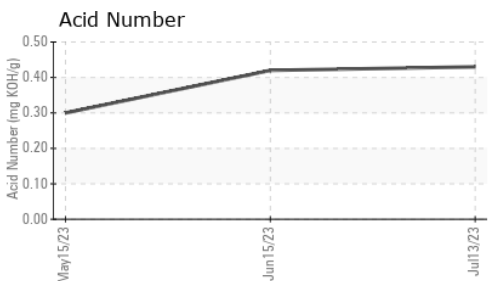
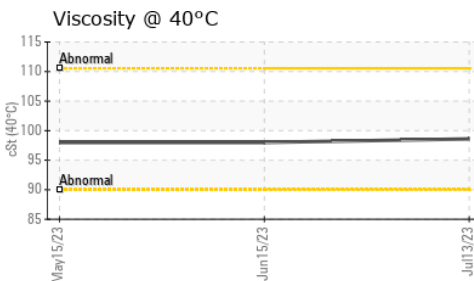
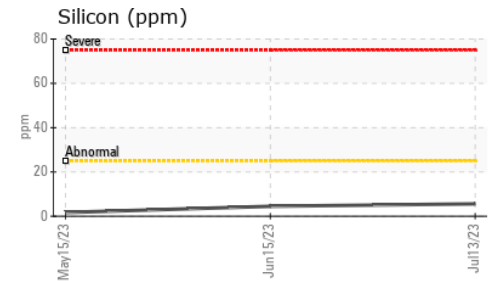
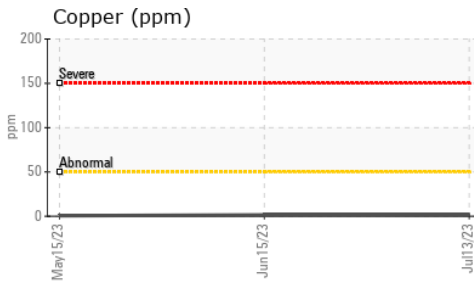
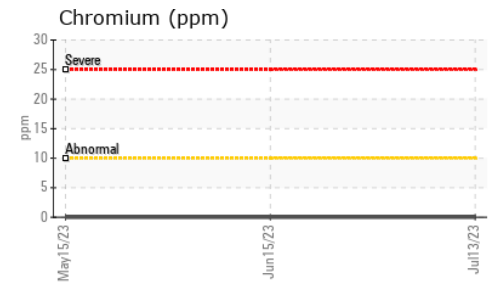
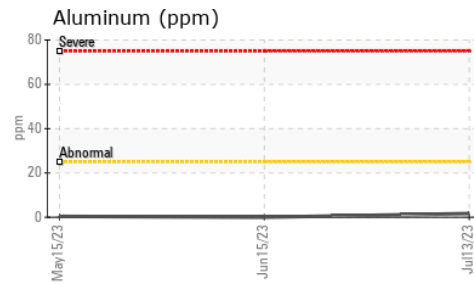
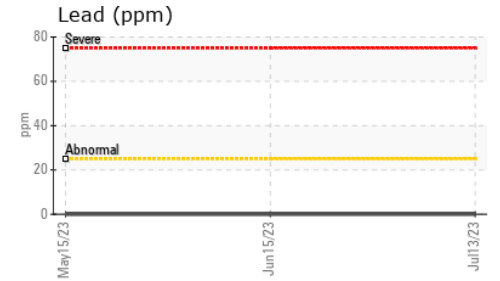
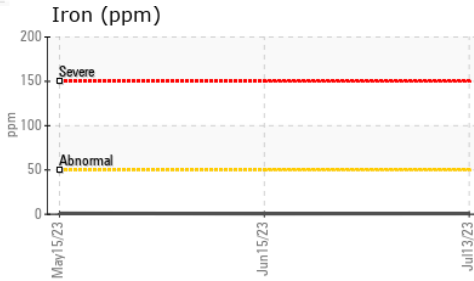
# OIL ANALYSIS REPORT



| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Visc @ 40°C      | cSt    | ASTM D445  | 98.6    | 98.0     | 98.0     |

| SAMPLE IMAGES | method | limit/base | current  | history1 | history2 |
|---------------|--------|------------|----------|----------|----------|
| Color         |        |            | no image | no image | no image |
| Bottom        |        |            | no image | no image | no image |

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : HPL0003232 **Received** : 18 Jul 2023  
**Lab Number** : 05901429 **Diagnosed** : 19 Jul 2023  
**Unique Number** : 10562785 **Diagnostician** : Wes Davis  
**Test Package** : MOB 2

**MARATHON PETROLEUM CO.**  
 IL. REFINING DIVISION, 400 S MARATHON AVE  
 ROBINSON, IL  
 US 62454  
 Contact: M.S. MANHART  
 mmanhart@marathonpetroleum.com  
 T: (618)544-2121  
 F: x:

To discuss this sample report, contact Customer Service at 1-800-237-1369.

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)