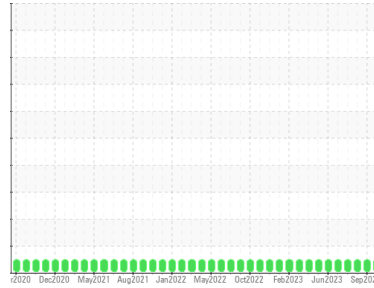




# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Area  
**Tampa**  
 Machine Id  
**[Tampa] Oil - Port Reduction Gear**  
 Component  
**Port Reduction Gear**  
 Fluid  
**MOBIL DELVAC 1640 (35 GAL)**

## DIAGNOSIS

**Recommendation**  
 Resample at the next service interval to monitor.

**Wear**  
 All component wear rates are normal.

**Contamination**  
 The water content is negligible. 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>WC0805338</b>   | WC0769428   | WC0769433   |
| Sample Date   | Client Info |             | <b>25 Oct 2023</b> | 27 Sep 2023 | 30 Aug 2023 |
| Machine Age   | hrs         | Client Info | <b>19526</b>       | 18858       | 18286       |
| Oil Age       | hrs         | Client Info | <b>2202</b>        | 1568        | 962         |
| Oil Changed   | Client Info |             | <b>Not Chngd</b>   | Not Chngd   | Not Chngd   |
| Sample Status |             |             | <b>NORMAL</b>      | NORMAL      | NORMAL      |

## WEAR METALS

|          | method | limit/base       | current      | history1 | history2 |
|----------|--------|------------------|--------------|----------|----------|
| Iron     | ppm    | ASTM D5185m >150 | <b>12</b>    | 10       | 11       |
| Chromium | ppm    | ASTM D5185m >10  | <b>&lt;1</b> | <1       | <1       |
| Nickel   | ppm    | ASTM D5185m >10  | <b>&lt;1</b> | 0        | 0        |
| Titanium | ppm    | ASTM D5185m      | <b>&lt;1</b> | <1       | 0        |
| Silver   | ppm    | ASTM D5185m      | <b>0</b>     | <1       | 0        |
| Aluminum | ppm    | ASTM D5185m >25  | <b>2</b>     | 1        | 1        |
| Lead     | ppm    | ASTM D5185m >100 | <b>&lt;1</b> | 0        | 0        |
| Copper   | ppm    | ASTM D5185m >50  | <b>21</b>    | 19       | 19       |
| Tin      | ppm    | ASTM D5185m >10  | <b>0</b>     | <1       | 0        |
| Vanadium | ppm    | ASTM D5185m      | <b>0</b>     | 0        | 0        |
| Cadmium  | ppm    | ASTM D5185m      | <b>&lt;1</b> | 0        | 0        |

## ADDITIVES

|            | method | limit/base  | current      | history1 | history2 |
|------------|--------|-------------|--------------|----------|----------|
| Boron      | ppm    | ASTM D5185m | <b>25</b>    | 23       | 24       |
| Barium     | ppm    | ASTM D5185m | <b>5</b>     | 0        | 0        |
| Molybdenum | ppm    | ASTM D5185m | <b>40</b>    | 41       | 44       |
| Manganese  | ppm    | ASTM D5185m | <b>&lt;1</b> | <1       | <1       |
| Magnesium  | ppm    | ASTM D5185m | <b>196</b>   | 215      | 231      |
| Calcium    | ppm    | ASTM D5185m | <b>2668</b>  | 2885     | 3284     |
| Phosphorus | ppm    | ASTM D5185m | <b>785</b>   | 742      | 828      |
| Zinc       | ppm    | ASTM D5185m | <b>814</b>   | 872      | 987      |
| Sulfur     | ppm    | ASTM D5185m | <b>7133</b>  | 6574     | 8307     |

## CONTAMINANTS

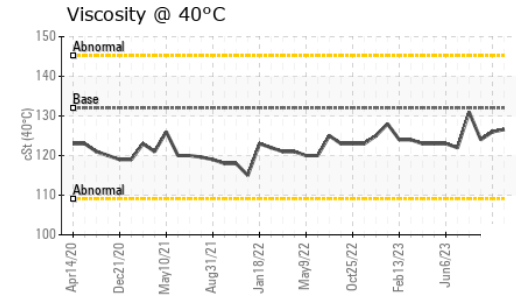
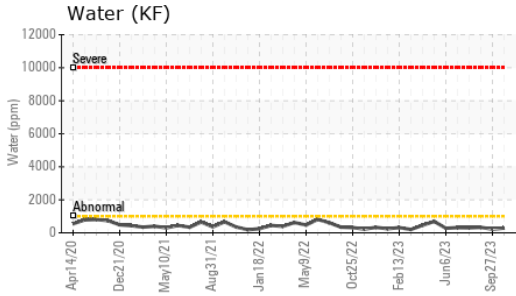
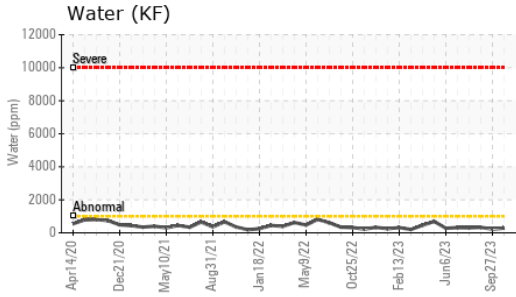
|           | method | limit/base       | current      | history1 | history2 |
|-----------|--------|------------------|--------------|----------|----------|
| Silicon   | ppm    | ASTM D5185m >50  | <b>5</b>     | 6        | 6        |
| Sodium    | ppm    | ASTM D5185m      | <b>4</b>     | 6        | 7        |
| Potassium | ppm    | ASTM D5185m >20  | <b>6</b>     | 3        | 4        |
| Water     | %      | ASTM D6304 >0.1  | <b>0.028</b> | 0.021    | 0.033    |
| ppm Water | ppm    | ASTM D6304 >1000 | <b>286.3</b> | 217.9    | 334.1    |

## FLUID DEGRADATION

|                  | method   | limit/base | current     | history1 | history2 |
|------------------|----------|------------|-------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | <b>0.55</b> | 1.59     | 0.52     |



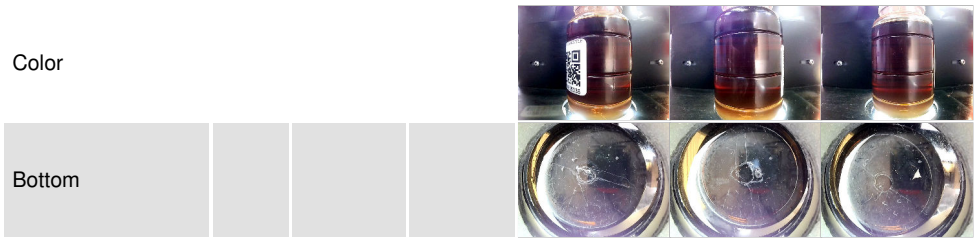
# OIL ANALYSIS REPORT



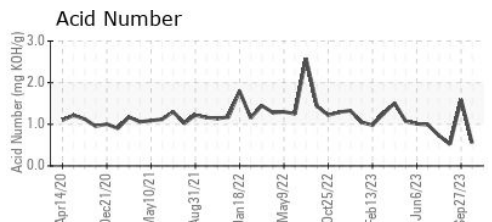
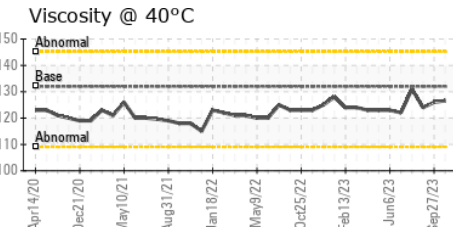
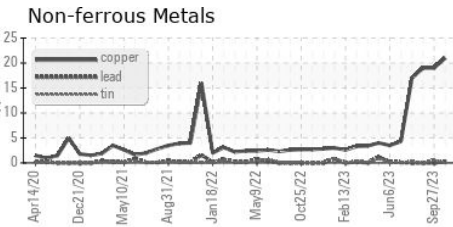
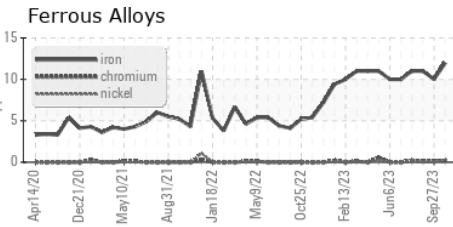
| VISUAL           | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal      | scalar | *Visual    | NONE    | NONE     | LIGHT    |
| Yellow Metal     | scalar | *Visual    | NONE    | NONE     | NONE     |
|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

| FLUID PROPERTIES | method | limit/base | current | history1     | history2 |
|------------------|--------|------------|---------|--------------|----------|
| Visc @ 40°C      | cSt    | ASTM D445  | 132     | <b>126.6</b> | 126      |

| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---------------|--------|------------|---------|----------|----------|
|---------------|--------|------------|---------|----------|----------|



## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0805338 **Received** : 01 Nov 2023  
**Lab Number** : 05995689 **Diagnosed** : 07 Nov 2023  
**Unique Number** : 10724049 **Diagnostician** : Jonathan Hester  
**Test Package** : IND 2 ( Additional Tests: KF )

**MARATHON PETROLEUM CO.**  
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 CATLETTSBURG, KY  
 US 41169  
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 cagumbert@marathonpetroleum.com  
 T: (606)585-3950  
 F: x:

Certificate L2367  
 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)