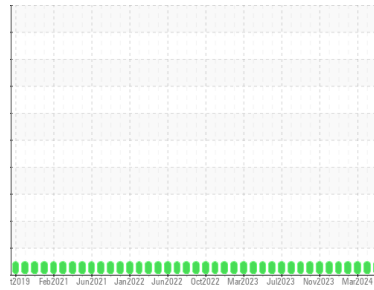




# OIL ANALYSIS REPORT

## Sample Rating Trend



**NORMAL**



Area

**Nashville**

Machine Id

**[Nashville] Oil - Port Reduction Gear**

Component

**Port Reduction Gear**

Fluid

**GEAR OIL SAE 85W140 (180 GAL)**

### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

#### 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>WC0769319</b>   | WC0874896   | WC0874905   |
| Sample Date   | Client Info |             | <b>13 May 2024</b> | 15 Apr 2024 | 18 Mar 2024 |
| Machine Age   | hrs         | Client Info | <b>2574</b>        | 2268        | 1961        |
| Oil Age       | hrs         | Client Info | <b>2574</b>        | 2268        | 19611961    |
| Oil Changed   |             | Client Info | <b>Not Chngd</b>   | Filtered    | Not Chngd   |
| Sample Status |             |             | <b>NORMAL</b>      | NORMAL      | NORMAL      |

### WEAR METALS

|          | method | limit/base       | current      | history1 | history2 |
|----------|--------|------------------|--------------|----------|----------|
| Iron     | ppm    | ASTM D5185m >150 | <b>15</b>    | 12       | 14       |
| Chromium | ppm    | ASTM D5185m >10  | <b>&lt;1</b> | <1       | 0        |
| Nickel   | ppm    | ASTM D5185m >10  | <b>0</b>     | 0        | <1       |
| Titanium | ppm    | ASTM D5185m      | <b>0</b>     | <1       | <1       |
| Silver   | ppm    | ASTM D5185m      | <b>0</b>     | 0        | 0        |
| Aluminum | ppm    | ASTM D5185m >25  | <b>0</b>     | 1        | 2        |
| Lead     | ppm    | ASTM D5185m >100 | <b>0</b>     | 0        | <1       |
| Copper   | ppm    | ASTM D5185m >50  | <b>2</b>     | 0        | <1       |
| Tin      | ppm    | ASTM D5185m >10  | <b>0</b>     | <1       | <1       |
| Vanadium | ppm    | ASTM D5185m      | <b>0</b>     | 0        | <1       |
| Cadmium  | ppm    | ASTM D5185m      | <b>0</b>     | 0        | 0        |

### ADDITIVES

|            | method | limit/base        | current      | history1 | history2 |
|------------|--------|-------------------|--------------|----------|----------|
| Boron      | ppm    | ASTM D5185m 400   | <b>299</b>   | 290      | 256      |
| Barium     | ppm    | ASTM D5185m 200   | <b>0</b>     | 0        | 0        |
| Molybdenum | ppm    | ASTM D5185m 12    | <b>&lt;1</b> | 0        | 0        |
| Manganese  | ppm    | ASTM D5185m       | <b>&lt;1</b> | <1       | <1       |
| Magnesium  | ppm    | ASTM D5185m 12    | <b>11</b>    | 5        | 0        |
| Calcium    | ppm    | ASTM D5185m 150   | <b>25</b>    | 17       | 15       |
| Phosphorus | ppm    | ASTM D5185m 1650  | <b>1100</b>  | 1109     | 1052     |
| Zinc       | ppm    | ASTM D5185m 125   | <b>12</b>    | 6        | 0        |
| Sulfur     | ppm    | ASTM D5185m 22500 | <b>20768</b> | 21734    | 21803    |

### CONTAMINANTS

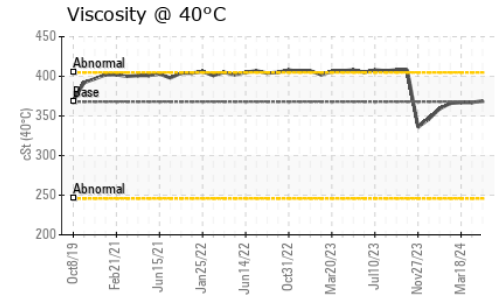
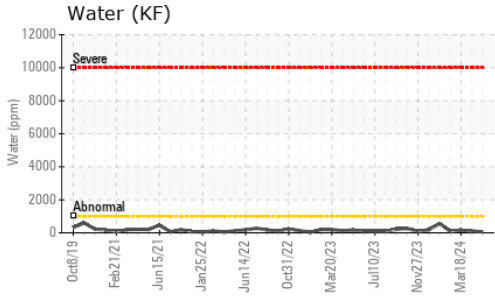
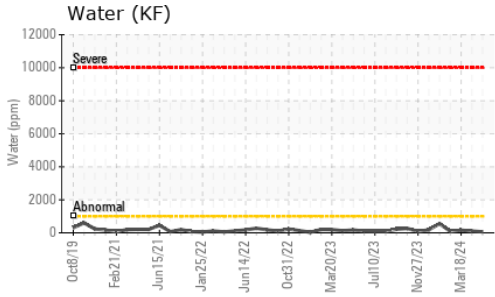
|           | method | limit/base       | current      | history1 | history2 |
|-----------|--------|------------------|--------------|----------|----------|
| Silicon   | ppm    | ASTM D5185m >50  | <b>0</b>     | 3        | <1       |
| Sodium    | ppm    | ASTM D5185m      | <b>2</b>     | 1        | 2        |
| Potassium | ppm    | ASTM D5185m >20  | <b>0</b>     | 2        | 1        |
| Water     | %      | ASTM D6304 >0.1  | <b>0.006</b> | 0.010    | 0.015    |
| ppm Water | ppm    | ASTM D6304 >1000 | <b>60</b>    | 108      | 159      |

### FLUID DEGRADATION

|                  | method   | limit/base      | current     | history1 | history2 |
|------------------|----------|-----------------|-------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 2.00 | <b>1.61</b> | 1.73     | 1.67     |



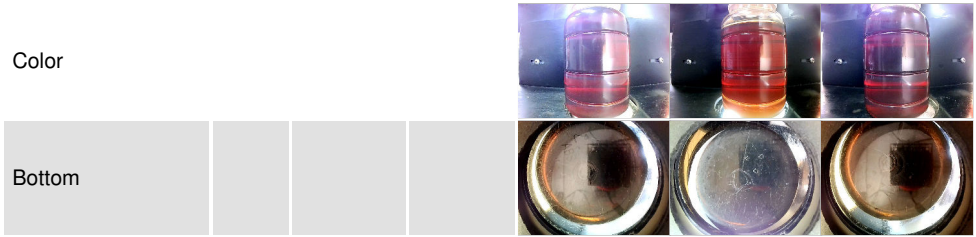
# OIL ANALYSIS REPORT



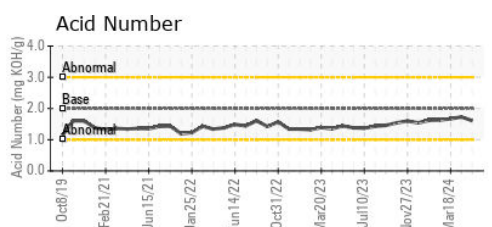
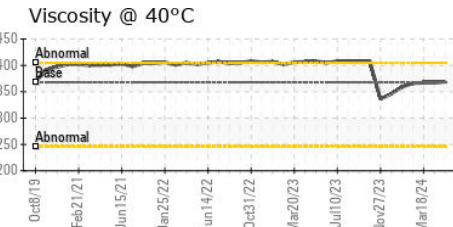
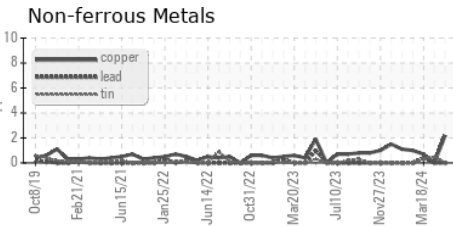
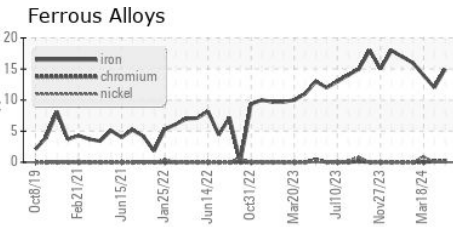
| VISUAL           | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal      | scalar | *Visual    | NONE    | NONE     | NONE     |
| Yellow Metal     | scalar | *Visual    | NONE    | NONE     | NONE     |
| 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  | 368     | 369      | 367      |

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



## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0769319      **Received** : 16 May 2024  
**Lab Number** : 06181426      **Tested** : 17 May 2024  
**Unique Number** : 11032752      **Diagnosed** : 17 May 2024 - Wes Davis  
**Test Package** : IND 2 ( Additional Tests: KF )

**MARATHON PETROLEUM CO.**  
 101 12TH ST  
 CATLETTSBURG, KY  
 US 41169  
 Contact: CORY GUMBERT  
 cagumbert@marathonpetroleum.com

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)

T: (606)585-3950

F: x: