

## Machine Id **CR-6618** Component **Diesel Engine** Fluid **MOBIL 15W40 (--- GAL)**

| RECOMMENDATION  | Test             | UOM      | Method      | Limit/Abn | Current     | History1    | History2    |
|---|------------------|----------|-------------|-----------|-------------|-------------|-------------|
| No corrective action is recommended at this time. Resample at the next service interval to monitor.                                       | Sample Number    |          | Client Info |           | WC0823427   | WC0809502   | WC0761846   |
|   | Sample Date      |          | Client Info |           | 14 Feb 2024 | 01 Jun 2023 | 28 Oct 2022 |
|   | Machine Age      | hrs      | Client Info |           | 0           | 8776        | 8113        |
|   | Oil Age          | hrs      | Client Info |           | 0           | 0           | 637         |
|   | Filter Age       | hrs      | Client Info |           | 0           | 0           | 637         |
|   | Oil Changed      |          | Client Info |           | N/A         | Changed     | Changed     |
|   | Filter Changed   |          | Client Info |           | N/A         | Changed     | Changed     |
|   | Sample Status    |          |             |           | ABNORMAL    | NORMAL      | NORMAL      |
| WEAR<br>All component wear rates are normal.  | Iron             | ppm      | ASTM D5185m | >100      | 2           | 4           | 4           |
|   | Chromium         | ppm      | ASTM D5185m | >20       | 0           | 0           | 0           |
|   | Nickel           | ppm      | ASTM D5185m | >4        | 0           | <1          | 0           |
|   | Titanium         | ppm      | ASTM D5185m |           | <1          | <1          | 0           |
|   | Silver           | ppm      | ASTM D5185m | >3        | 0           | 0           | 0           |
|   | Aluminum         | ppm      | ASTM D5185m | >20       | 1           | 0           | 1           |
|   | Lead             | ppm      | ASTM D5185m | >40       | <1          | <1          | <1          |
|   | Copper           | ppm      | ASTM D5185m | >330      | <1          | 1           | 2           |
|   | Tin              | ppm      | ASTM D5185m | >15       | 0           | <1          | 0           |
|   | Vanadium         | ppm      | ASTM D5185m |           | 0           | 0           | 0           |
|   | White Metal      | scalar   | *Visual     | NONE      | NONE        | NONE        | NONE        |
|   | Yellow Metal     | scalar   | *Visual     | NONE      | NONE        | NONE        | NONE        |
| CONTAMINATION   | Silicon          | ppm      | ASTM D5185m | >25       | 5           | 6           | 4           |
|   | Potassium        | ppm      | ASTM D5185m | >20       | <1          | 5           | 2           |
| Fuel content negligible. There is no indication of any contamination in the oil.  | Fuel             | %        | ASTM D3524  | >5        | 1.5         | <1.0        | <1.0        |
|   | Water            |          | WC Method   | >0.2      | NEG         | NEG         | NEG         |
|   | Glycol           |          | WC Method   |           | NEG         | NEG         | NEG         |
|   | Soot %           | %        | *ASTM D7844 | >3        | 0.1         | 0.1         | 0.3         |
|   | Nitration        | Abs/cm   | *ASTM D7624 | >20       | 9.6         | 9.7         | 8.1         |
|   | Sulfation        | Abs/.1mm | *ASTM D7415 | >30       | 18.3        | 22.1        | 20.7        |
|   | Silt             | scalar   | *Visual     | NONE      | NONE        | NONE        | NONE        |
|   | Debris           | scalar   | *Visual     | NONE      | NONE        | NONE        | NONE        |
|   | Sand/Dirt        | scalar   | *Visual     | NONE      | NONE        | NONE        | NONE        |
|   | Appearance       | scalar   | *Visual     | NORML     | NORML       | NORML       | NORML       |
|   | Odor             | scalar   | *Visual     | NORML     | NORML       | NORML       | NORML       |
|   | Emulsified Water | scalar   | *Visual     | >0.2      | NEG         | NEG         | NEG         |
| FLUID CONDITION   | Sodium           | ppm      | ASTM D5185m | >118      | 1           | 0           | 2           |
|   | Boron            | ppm      | ASTM D5185m |           | 112         | 126         | 57          |
| The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type. | Barium           | ppm      | ASTM D5185m |           | 0           | 0           | 0           |
|   | Molybdenum       | ppm      | ASTM D5185m |           | 44          | 31          | 46          |
|   | Manganese        | ppm      | ASTM D5185m |           | <1          | <1          | <1          |
|   | Magnesium        | ppm      | ASTM D5185m |           | 872         | 338         | 391         |
|   | Calcium          | ppm      | ASTM D5185m |           | 1326        | 1824        | 1852        |
|   | Phosphorus       | ppm      | ASTM D5185m |           | 759         | 970         | 1043        |
|   | Zinc             | ppm      | ASTM D5185m |           | 877         | 1166        | 1201        |
|   | Sulfur           | ppm      | ASTM D5185m |           | 2395        | 3440        | 3933        |
|   | Oxidation        | Abs/.1mm | *ASTM D7414 | >25       | 19.7        | 19.1        | 12.1        |
|   | Base Number (BN) | mg KOH/g | ASTM D2896  |           | 8.3         | 6.9         | 6.8         |
|   | Vier O 10000     | . 01     |             |           | A           | 44.0        | 44.0        |

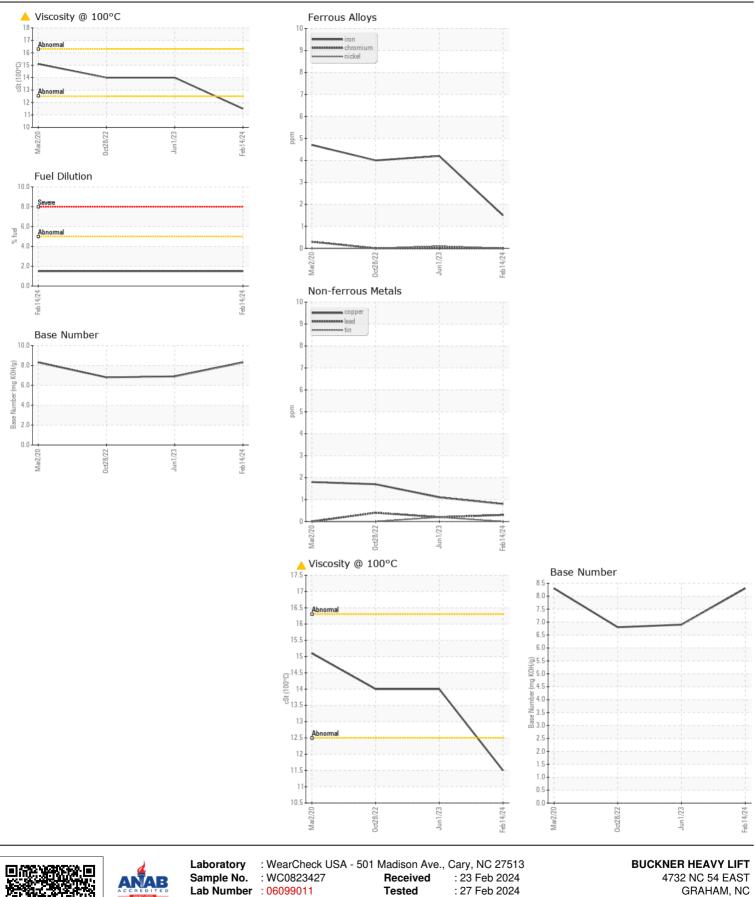
Visc @ 100°C cSt

ASTM D445

14.0

11.5

14.0



 Unique Number
 10897241
 Diagnosed
 : 27 Feb 2024 - Sean Felton
 US 27253-9215

 Certificate 12367
 Test Package
 : CONST (Additional Tests: FuelDilution, PercentFuel, TBN)
 Contact: MICHAEL LAWSON

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

 \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.
 T: (336)376-8888

 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)
 F: (336)376-4090