# OIL ANALYSIS REPORT

| | |
|---|---|
| WEAR | NORMAL |
| CONTAMINATION | NORMAL |
| FLUID CONDITION | NORMAL |

Machine Id
**17822**
Component
**Diesel Engine**
Fluid
**MOBIL 15W40 (--- QTS)**

## RECOMMENDATION

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

## WEAR

Metal levels are typical for a new component breaking in.

## CONTAMINATION

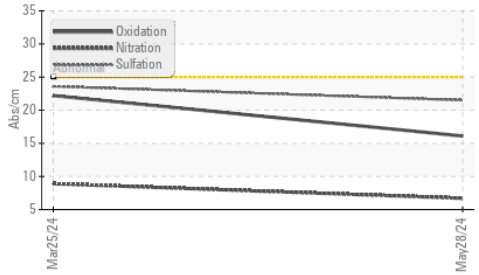
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

## FLUID CONDITION

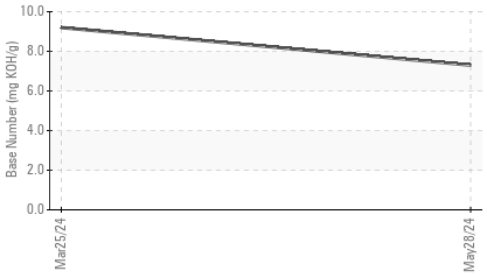
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC0904498** | WC0904538 | --- |
| Sample Date | | Client Info | | **28 May 2024** | 25 Mar 2024 | --- |
| Machine Age | mls | Client Info | | **26162** | 13617 | --- |
| Oil Age | mls | Client Info | | **30000** | 13000 | --- |
| Filter Age | mls | Client Info | | **30000** | 13000 | --- |
| Oil Changed | | Client Info | | **Changed** | Changed | --- |
| Filter Changed | | Client Info | | **Changed** | Changed | --- |
| Sample Status | | | | **NORMAL** | NORMAL | --- |
| Iron | ppm | ASTM D5185m | >100 | **34** | 60 | --- |
| Chromium | ppm | ASTM D5185m | >20 | **<1** | 2 | --- |
| Nickel | ppm | ASTM D5185m | >4 | **0** | <1 | --- |
| Titanium | ppm | ASTM D5185m | | **0** | <1 | --- |
| Silver | ppm | ASTM D5185m | >3 | **0** | 0 | --- |
| Aluminum | ppm | ASTM D5185m | >20 | **10** | 13 | --- |
| Lead | ppm | ASTM D5185m | >40 | **0** | 1 | --- |
| Copper | ppm | ASTM D5185m | >330 | **5** | 49 | --- |
| Tin | ppm | ASTM D5185m | >15 | **<1** | <1 | --- |
| Vanadium | ppm | ASTM D5185m | | **0** | <1 | --- |
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Silicon | ppm | ASTM D5185m | >25 | **11** | 35 | --- |
| Potassium | ppm | ASTM D5185m | >20 | **22** | 30 | --- |
| Fuel | | WC Method | >5 | **<1.0** | <1.0 | --- |
| Water | | WC Method | >0.2 | **NEG** | NEG | --- |
| Glycol | | WC Method | | **NEG** | NEG | --- |
| Soot % | % | *ASTM D7844 | >3 | **0.2** | 0.4 | --- |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **6.7** | 8.9 | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **21.5** | 23.6 | --- |
| 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 | >0.2 | **NEG** | NEG | --- |
| Sodium | ppm | ASTM D5185m | >118 | **2** | 7 | --- |
| Boron | ppm | ASTM D5185m | | **379** | 46 | --- |
| Barium | ppm | ASTM D5185m | | **<1** | 4 | --- |
| Molybdenum | ppm | ASTM D5185m | | **84** | 41 | --- |
| Manganese | ppm | ASTM D5185m | | **1** | 6 | --- |
| Magnesium | ppm | ASTM D5185m | | **412** | 513 | --- |
| Calcium | ppm | ASTM D5185m | | **1351** | 1627 | --- |
| Phosphorus | ppm | ASTM D5185m | | **1021** | 721 | --- |
| Zinc | ppm | ASTM D5185m | | **1214** | 821 | --- |
| Sulfur | ppm | ASTM D5185m | | **3442** | 2471 | --- |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **16.1** | 22.2 | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | **7.3** | 9.2 | --- |
| Visc @ 100°C | cSt | ASTM D445 | | **13.1** | 13.0 | --- |

FT-IR (Direct Trend)

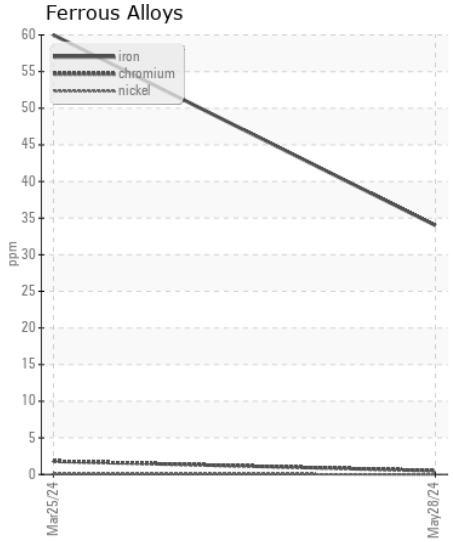



Base Number

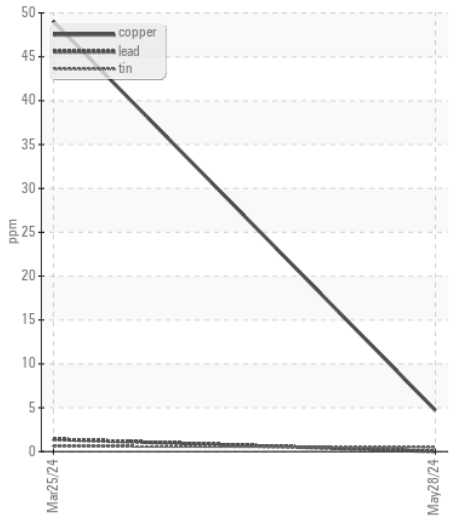



Viscosity @ 100°C

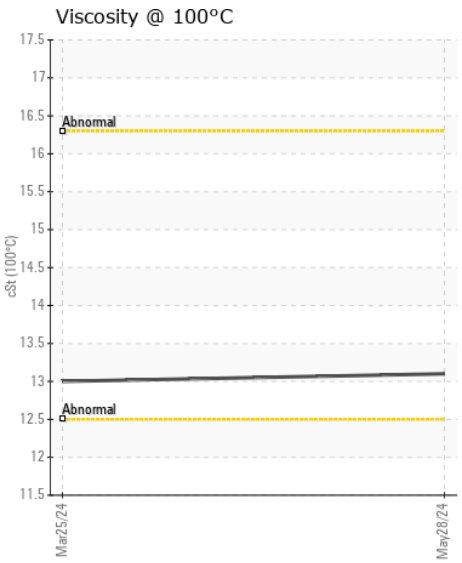

Ferrous Alloys



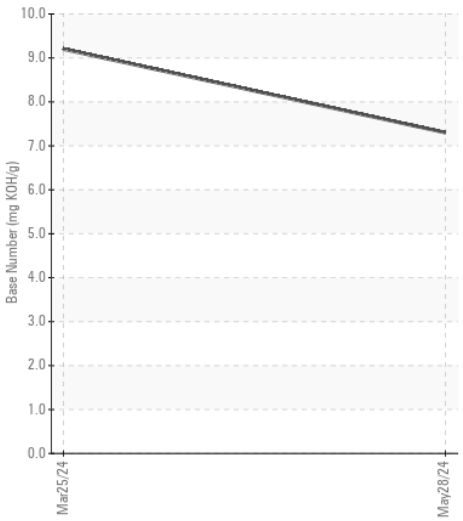

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0904498
**Lab Number** : 06196446
**Unique Number** : 11058569
**Test Package** : FLEET

**Received** : 31 May 2024
**Tested** : 03 Jun 2024
**Diagnosed** : 03 Jun 2024 - Wes Davis

*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)*

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