MOB I

Dura-Check Fluid Analysis

# OIL ANALYSIS REPORT

| | |
|---|---|
| WEAR | NORMAL |
| CONTAMINATION | SEVERE |
| FLUID CONDITION | ABNORMAL |

Machine Id
**A-349**
Component
**Diesel Engine**
Fluid
**DURAMAX 15W40 (--- QTS)**

## RECOMMENDATION

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.

## WEAR

All component wear rates are normal.

## CONTAMINATION

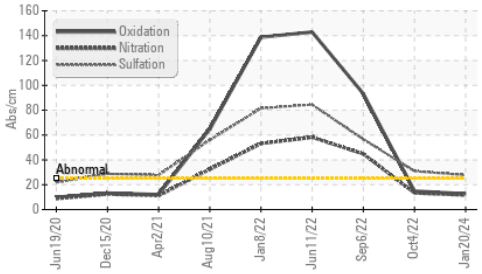
There is an abnormal amount of solids and carbon present in the oil.

## FLUID CONDITION

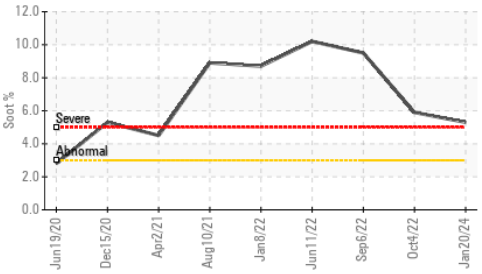
The BN level is low. The oil is no longer serviceable due to the presence of contaminants.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | DC0029815 | DC0021266 | DC0020557 |
| Sample Date | | Client Info | | 20 Jan 2024 | 04 Oct 2022 | 06 Sep 2022 |
| Machine Age | hrs | Client Info | | 32084 | 27177 | 30306 |
| Oil Age | hrs | Client Info | | 951 | 843 | 589 |
| Filter Age | hrs | Client Info | | 951 | 843 | 589 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Filter Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | SEVERE | SEVERE | SEVERE |
| Iron | ppm | ASTM D5185m | >100 | 50 | ▲ 104 | 43 |
| Chromium | ppm | ASTM D5185m | >20 | 1 | 3 | 2 |
| Nickel | ppm | ASTM D5185m | >4 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 2 | 4 | 3 |
| Lead | ppm | ASTM D5185m | >40 | <1 | 2 | 2 |
| Copper | ppm | ASTM D5185m | >330 | 52 | 22 | 39 |
| Tin | ppm | ASTM D5185m | >15 | 3 | 2 | 3 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Silicon | ppm | ASTM D5185m | >25 | 6 | 6 | 4 |
| Potassium | ppm | ASTM D5185m | >20 | 0 | 2 | 3 |
| Fuel | % | ASTM D3524 | >5 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | ▲ 5.3 | ▲ 5.9 | ▲ 9.5 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 11.7 | 13.4 | 44.8 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 27.7 | 30.9 | 56.6 |
| 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 |
| Sodium | ppm | ASTM D5185m | | 2 | 0 | <1 |
| Boron | ppm | ASTM D5185m | | 2 | 55 | 3 |
| Barium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | 4 | 26 | 5 |
| Manganese | ppm | ASTM D5185m | | <1 | 1 | <1 |
| Magnesium | ppm | ASTM D5185m | | 62 | 152 | 53 |
| Calcium | ppm | ASTM D5185m | | 2359 | 2265 | 2414 |
| Phosphorus | ppm | ASTM D5185m | | 877 | 854 | 836 |
| Zinc | ppm | ASTM D5185m | | 1056 | 1030 | 1042 |
| Sulfur | ppm | ASTM D5185m | | 3720 | 3960 | 3599 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 12.7 | 14.9 | 93.3 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | ▲ 0.0 | ▲ -5.2 | ▲ 0.0 |
| Visc @ 100°C | cSt | ASTM D445 | | 14.6 | 15.8 | ▲ 17.3 |

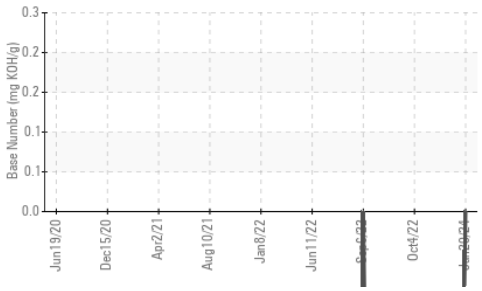
FT-IR (Direct Trend)



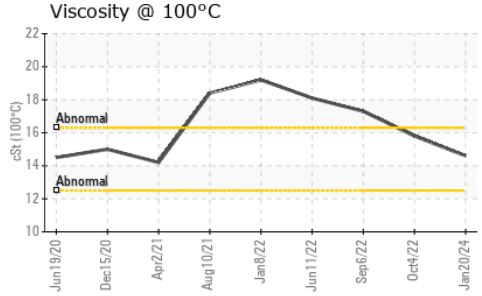

Soot %



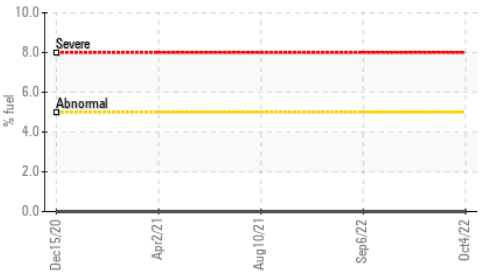

Base Number



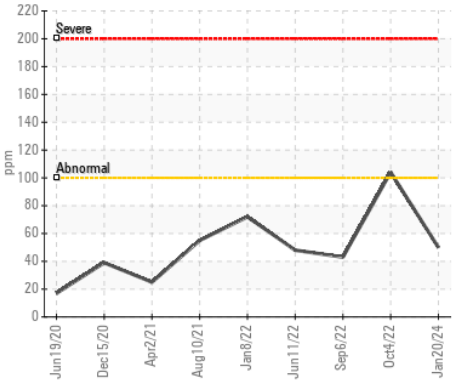

Viscosity @ 100°C



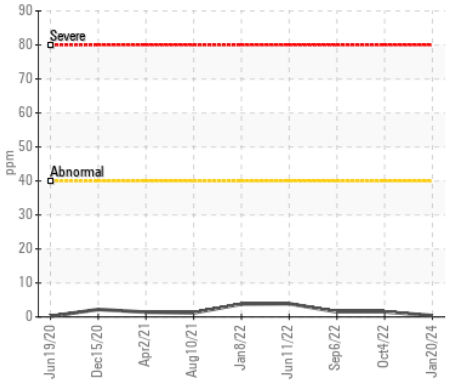

Fuel Dilution



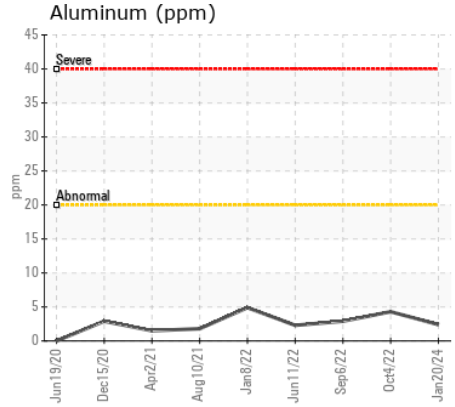

Iron (ppm)



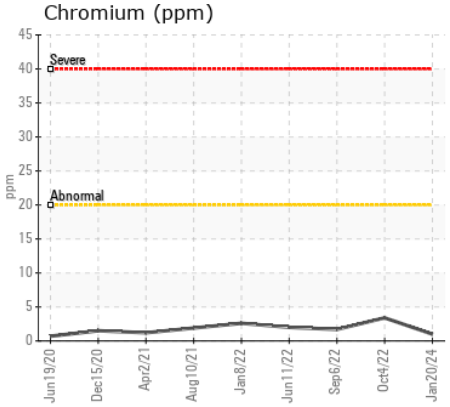

Lead (ppm)



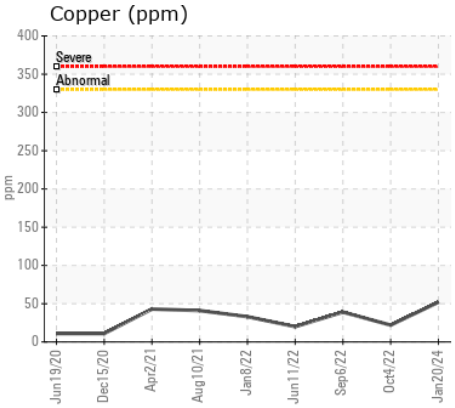

Aluminum (ppm)



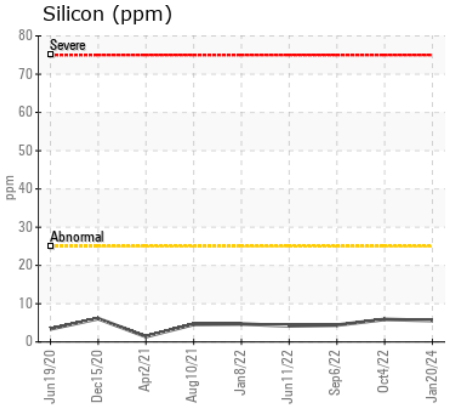

Chromium (ppm)



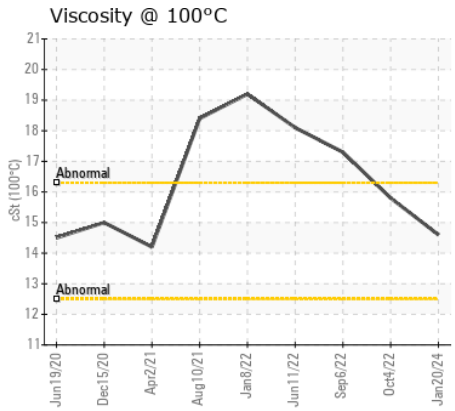

Copper (ppm)



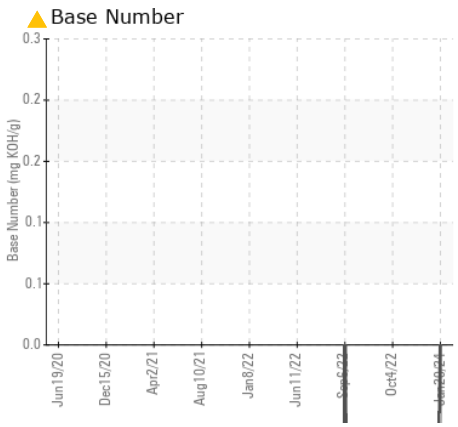

Silicon (ppm)




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : DC0029815
**Lab Number** : 06146443
**Unique Number** : 10976521
**Test Package** : MOB 1 ( Additional Tests: FuelDilution, PercentFuel, TBN )

**Received** : 11 Apr 2024
**Tested** : 15 Apr 2024
**Diagnosed** : 15 Apr 2024 - Don Baldridge

*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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