



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

Machine Id
6320189

Component
Diesel Engine

Fluid
DIESEL ENGINE OIL SAE 40 (--- GAL)

RECOMMENDATION

We advise that you check the fuel injection system. Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|----------|
| Sample Number | | Client Info | | IL0034897 | IL05911756 | --- |
| Sample Date | | Client Info | | 05 Jan 2024 | 29 Jun 2023 | --- |
| Machine Age | mls | Client Info | | 79200 | 30952 | --- |
| Oil Age | mls | Client Info | | 0 | 30952 | --- |
| Filter Age | mls | Client Info | | 0 | 0 | --- |
| Oil Changed | | Client Info | | N/A | N/A | --- |
| Filter Changed | | Client Info | | N/A | N/A | --- |
| Sample Status | | | | ABNORMAL | ABNORMAL | --- |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|-----|
| Iron | ppm | ASTM D5185m | >100 | 120 | 149 | --- |
| Chromium | ppm | ASTM D5185m | >20 | 6 | 6 | --- |
| Nickel | ppm | ASTM D5185m | >4 | <1 | <1 | --- |
| Titanium | ppm | ASTM D5185m | | 2 | 25 | --- |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | --- |
| Aluminum | ppm | ASTM D5185m | >20 | 24 | 51 | --- |
| Lead | ppm | ASTM D5185m | >40 | <1 | <1 | --- |
| Copper | ppm | ASTM D5185m | >330 | 5 | 34 | --- |
| Tin | ppm | ASTM D5185m | >15 | 1 | 2 | --- |
| Vanadium | ppm | ASTM D5185m | | 0 | <1 | --- |
| White Metal | scalar | *Visual | NONE | NONE | NONE | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | --- |

CONTAMINATION

Light fuel dilution occurring. Tests confirm the presence of fuel in the oil.

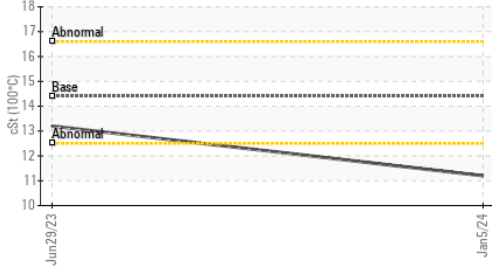
| | | | | | | |
|------------------|----------|-------------|-------|--------------|-------|-----|
| Silicon | ppm | ASTM D5185m | >25 | 21 | ▲ 36 | --- |
| Potassium | ppm | ASTM D5185m | >20 | 57 | 134 | --- |
| Fuel | % | ASTM D3524 | >5 | ▲ 4.7 | <1.0 | --- |
| Water | | WC Method | >0.2 | NEG | NEG | --- |
| Glycol | | WC Method | | NEG | NEG | --- |
| Soot % | % | *ASTM D7844 | >3 | 1.6 | 1.1 | --- |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 14.4 | 14.1 | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 26.6 | 27.3 | --- |
| 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 | --- |

FLUID CONDITION

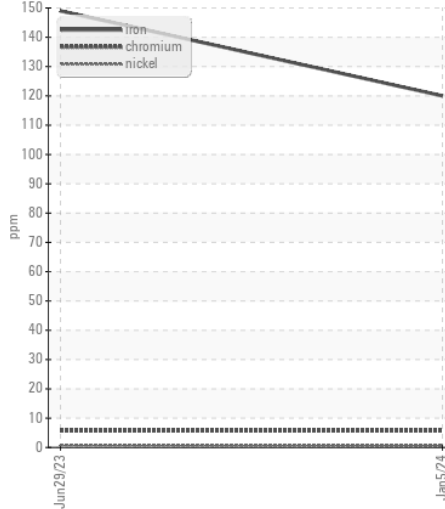
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil.

| | | | | | | |
|------------------|----------|-------------|------|---------------|------|-----|
| Sodium | ppm | ASTM D5185m | >216 | 3 | 6 | --- |
| Boron | ppm | ASTM D5185m | 250 | 33 | 15 | --- |
| Barium | ppm | ASTM D5185m | 10 | 0 | 2 | --- |
| Molybdenum | ppm | ASTM D5185m | 100 | 44 | 42 | --- |
| Manganese | ppm | ASTM D5185m | | 2 | 9 | --- |
| Magnesium | ppm | ASTM D5185m | 450 | 580 | 740 | --- |
| Calcium | ppm | ASTM D5185m | 3000 | 1466 | 1345 | --- |
| Phosphorus | ppm | ASTM D5185m | 1150 | 777 | 895 | --- |
| Zinc | ppm | ASTM D5185m | 1350 | 922 | 1149 | --- |
| Sulfur | ppm | ASTM D5185m | 4250 | 2289 | 2652 | --- |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 28.7 | 25.3 | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 8.5 | 5.8 | 6.4 | --- |
| Visc @ 100°C | cSt | ASTM D445 | 14.4 | ▲ 11.2 | 13.2 | --- |

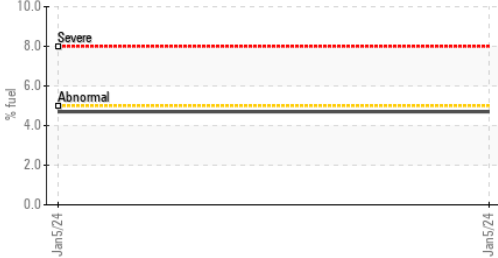
▲ Viscosity @ 100°C



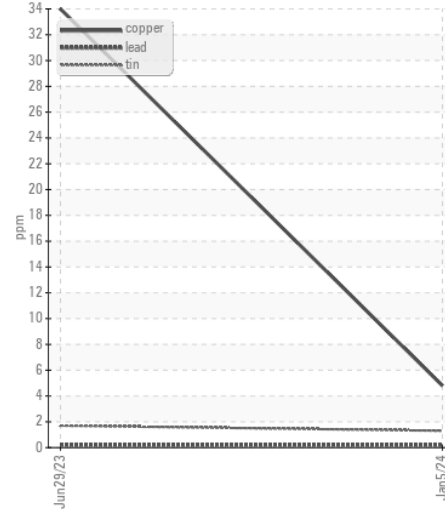
Ferrous Alloys



▲ Fuel Dilution



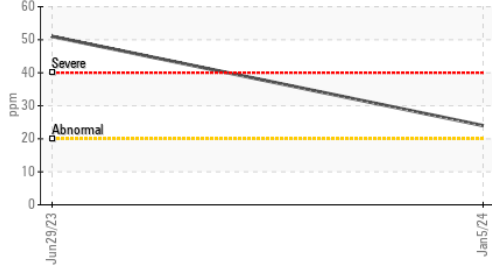
Non-ferrous Metals



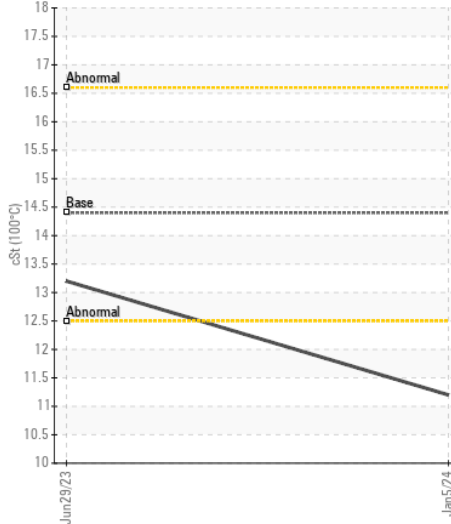
Base Number



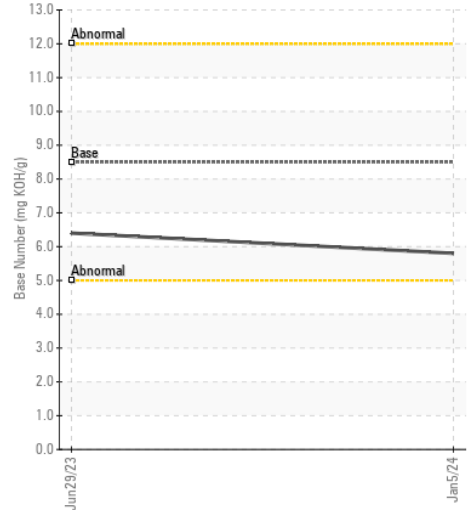
Aluminum (ppm)



▲ Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : IL0034897 **Received** : 17 Jan 2024
Lab Number : 06063332 **Diagnosed** : 24 Jan 2024
Unique Number : 10834714 **Diagnostician** : Angela Borella
Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel)

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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)