



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

Machine Id
1R81935
Component
Diesel Engine
Fluid
VALVOLINE 15W40 (--- GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|----------|----------|
| Sample Number | | Client Info | | IL0036662 | --- | --- |
| Sample Date | | Client Info | | 14 Jun 2024 | --- | --- |
| Machine Age | mls | Client Info | | 192111 | --- | --- |
| Oil Age | mls | Client Info | | 0 | --- | --- |
| Filter Age | mls | Client Info | | 0 | --- | --- |
| Oil Changed | | Client Info | | Changed | --- | --- |
| Filter Changed | | Client Info | | Changed | --- | --- |
| Sample Status | | | | ABNORMAL | --- | --- |

WEAR

The aluminum level is abnormal. All other component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|-----|-----|
| Iron | ppm | ASTM D5185m | >100 | 24 | --- | --- |
| Chromium | ppm | ASTM D5185m | >20 | <1 | --- | --- |
| Nickel | ppm | ASTM D5185m | >4 | 0 | --- | --- |
| Titanium | ppm | ASTM D5185m | | 0 | --- | --- |
| Silver | ppm | ASTM D5185m | >3 | 0 | --- | --- |
| Aluminum | ppm | ASTM D5185m | >20 | ▲ 20 | --- | --- |
| Lead | ppm | ASTM D5185m | >40 | 0 | --- | --- |
| Copper | ppm | ASTM D5185m | >330 | 4 | --- | --- |
| Tin | ppm | ASTM D5185m | >15 | 0 | --- | --- |
| Vanadium | ppm | ASTM D5185m | | 0 | --- | --- |
| White Metal | scalar | *Visual | NONE | NONE | --- | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | --- | --- |

CONTAMINATION

Fuel content negligible. There is no indication of any contamination in the oil.

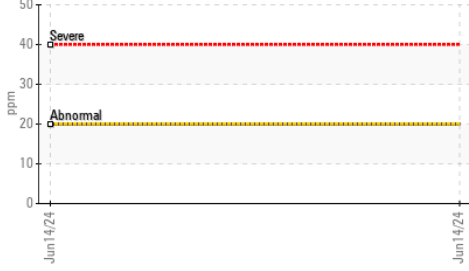
| | | | | | | |
|------------------|----------|-------------|-------|--------------|-----|-----|
| Silicon | ppm | ASTM D5185m | >25 | 8 | --- | --- |
| Potassium | ppm | ASTM D5185m | >20 | 26 | --- | --- |
| Fuel | % | ASTM D3524 | >5 | 0.5 | --- | --- |
| Water | | WC Method | >0.2 | NEG | --- | --- |
| Glycol | | WC Method | | NEG | --- | --- |
| Soot % | % | *ASTM D7844 | >3 | 0.4 | --- | --- |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 10.7 | --- | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 22.3 | --- | --- |
| Silt | scalar | *Visual | NONE | NONE | --- | --- |
| Debris | scalar | *Visual | NONE | NONE | --- | --- |
| Sand/Dirt | scalar | *Visual | NONE | NONE | --- | --- |
| Appearance | scalar | *Visual | NORML | NORML | --- | --- |
| Odor | scalar | *Visual | NORML | NORML | --- | --- |
| Emulsified Water | scalar | *Visual | >0.2 | NEG | --- | --- |

FLUID CONDITION

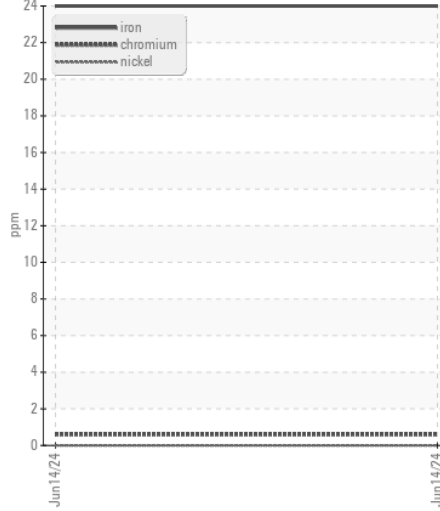
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

| | | | | | | |
|------------------|----------|-------------|------|--------------|-----|-----|
| Sodium | ppm | ASTM D5185m | | 2 | --- | --- |
| Boron | ppm | ASTM D5185m | 39 | 51 | --- | --- |
| Barium | ppm | ASTM D5185m | 1 | 0 | --- | --- |
| Molybdenum | ppm | ASTM D5185m | 49 | 84 | --- | --- |
| Manganese | ppm | ASTM D5185m | 1 | <1 | --- | --- |
| Magnesium | ppm | ASTM D5185m | 616 | 198 | --- | --- |
| Calcium | ppm | ASTM D5185m | 1554 | 1944 | --- | --- |
| Phosphorus | ppm | ASTM D5185m | 899 | 1008 | --- | --- |
| Zinc | ppm | ASTM D5185m | 1069 | 1241 | --- | --- |
| Sulfur | ppm | ASTM D5185m | 2624 | 4024 | --- | --- |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 18.0 | --- | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 6.9 | 5.8 | --- | --- |
| Visc @ 100°C | cSt | ASTM D445 | 13.6 | 12.4 | --- | --- |

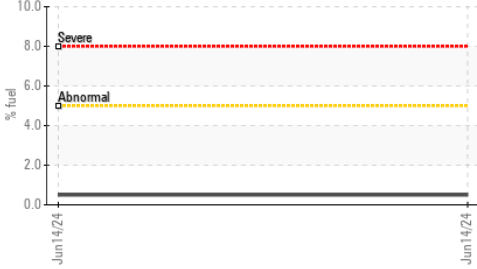
▲ Aluminum (ppm)



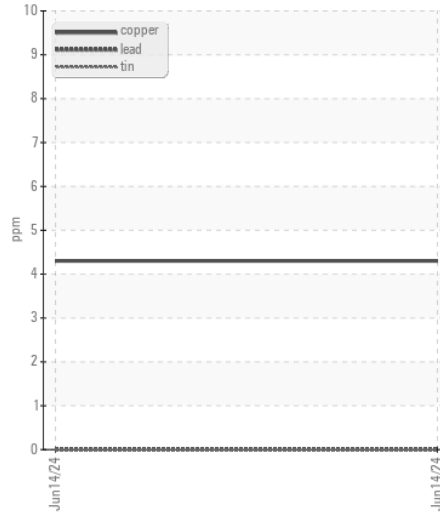
Ferrous Alloys



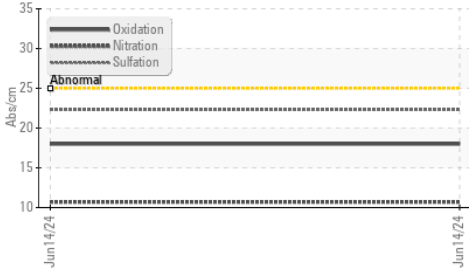
Fuel Dilution



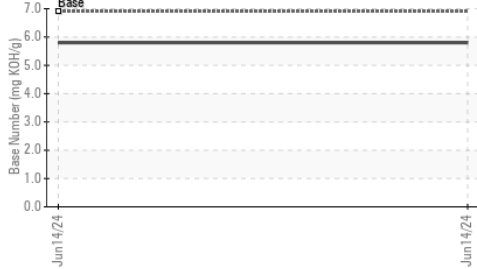
Non-ferrous Metals



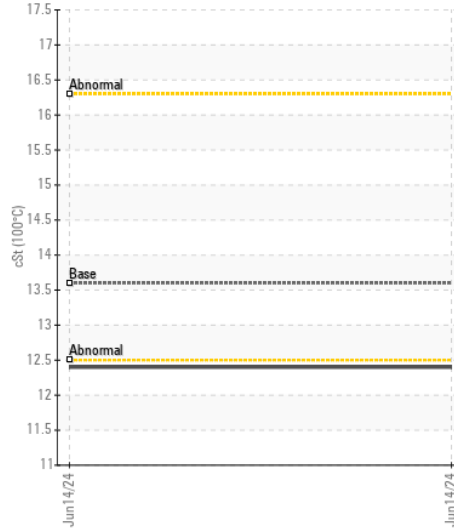
FT-IR (Direct Trend)



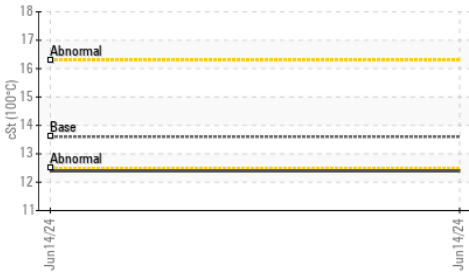
Base Number



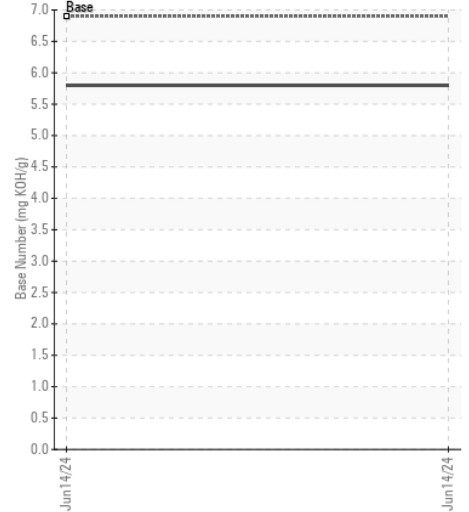
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : IL0036662

Lab Number : 06220678

Unique Number : 11098875

Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel)

Received : 26 Jun 2024

Tested : 28 Jun 2024

Diagnosed : 28 Jun 2024 - Jonathan Hester

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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)