



OIL ANALYSIS REPORT

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

Machine Id
PETERBILT 272463
Component
Diesel Engine
Fluid
CASTROL VECTON 15W40 CK4 (46 QTS)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|----------|
| Sample Number | | Client Info | | RPL0017882 | RPL0007573 | --- |
| Sample Date | | Client Info | | 01 Jul 2024 | 02 Jun 2023 | --- |
| Machine Age | mls | Client Info | | 260313 | 198991 | --- |
| Oil Age | mls | Client Info | | 27396 | 32428 | --- |
| Filter Age | mls | Client Info | | 27396 | 32428 | --- |
| Oil Changed | | Client Info | | Changed | Changed | --- |
| Filter Changed | | Client Info | | Changed | Changed | --- |
| Sample Status | | | | ABNORMAL | ABNORMAL | --- |

WEAR

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

| | | | | | | |
|--------------|--------|-------------|------|--------------|-------------|-----|
| Iron | ppm | ASTM D5185m | >165 | 44 | 58 | --- |
| Chromium | ppm | ASTM D5185m | >5 | 2 | 3 | --- |
| Nickel | ppm | ASTM D5185m | >4 | 0 | <1 | --- |
| Titanium | ppm | ASTM D5185m | >2 | <1 | <1 | --- |
| Silver | ppm | ASTM D5185m | >2 | <1 | <1 | --- |
| Aluminum | ppm | ASTM D5185m | >20 | ▲ 27 | ▲ 36 | --- |
| Lead | ppm | ASTM D5185m | >150 | 6 | 8 | --- |
| Copper | ppm | ASTM D5185m | >90 | 3 | 3 | --- |
| Tin | ppm | ASTM D5185m | >5 | 0 | 1 | --- |
| Vanadium | ppm | ASTM D5185m | | <1 | <1 | --- |
| White Metal | scalar | *Visual | NONE | NONE | NONE | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | --- |

CONTAMINATION

There is no indication of any contamination in the oil.

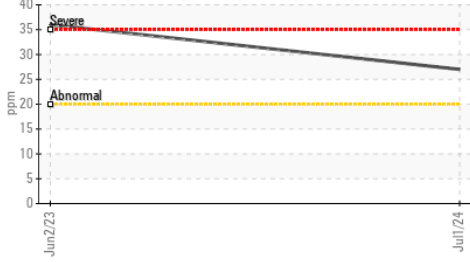
| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-----|
| Silicon | ppm | ASTM D5185m | >35 | 4 | 7 | --- |
| Potassium | ppm | ASTM D5185m | >20 | 20 | 40 | --- |
| Fuel | | WC Method | >3.0 | <1.0 | <1.0 | --- |
| Water | | WC Method | >0.2 | NEG | NEG | --- |
| Glycol | | WC Method | | NEG | NEG | --- |
| Soot % | % | *ASTM D7844 | >7.5 | 1.2 | 1.2 | --- |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 11.9 | 13.2 | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 25.0 | 30.5 | --- |
| 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

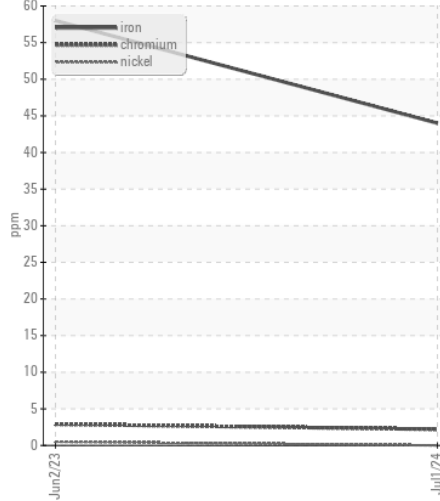
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| | | | | | | |
|------------------|----------|-------------|------|-------------|------|-----|
| Sodium | ppm | ASTM D5185m | | 6 | 3 | --- |
| Boron | ppm | ASTM D5185m | | 8 | 17 | --- |
| Barium | ppm | ASTM D5185m | | 0 | 0 | --- |
| Molybdenum | ppm | ASTM D5185m | | 60 | 72 | --- |
| Manganese | ppm | ASTM D5185m | | 1 | 1 | --- |
| Magnesium | ppm | ASTM D5185m | | 975 | 221 | --- |
| Calcium | ppm | ASTM D5185m | | 1211 | 2102 | --- |
| Phosphorus | ppm | ASTM D5185m | | 976 | 943 | --- |
| Zinc | ppm | ASTM D5185m | | 1147 | 1234 | --- |
| Sulfur | ppm | ASTM D5185m | | 2920 | 4072 | --- |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 21.2 | 25.6 | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10 | 6.6 | 5.2 | --- |
| Visc @ 100°C | cSt | ASTM D445 | 15.5 | 13.7 | 13.6 | --- |

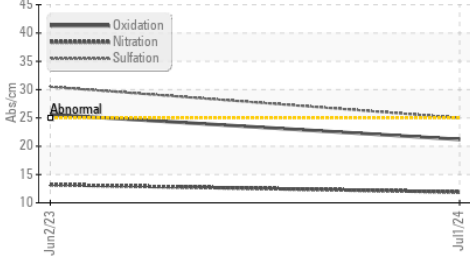
▲ Aluminum (ppm)



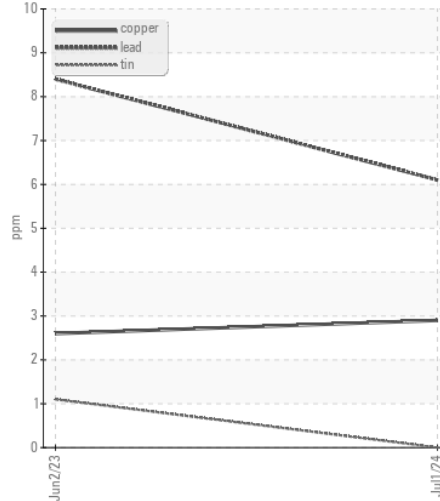
Ferrous Alloys



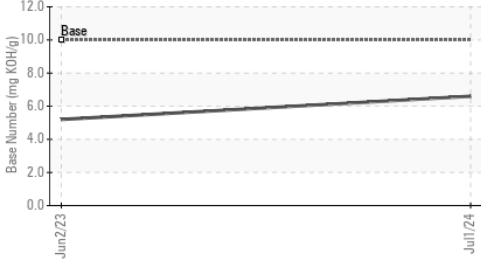
FT-IR (Direct Trend)



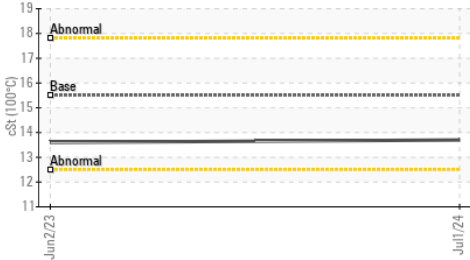
Non-ferrous Metals



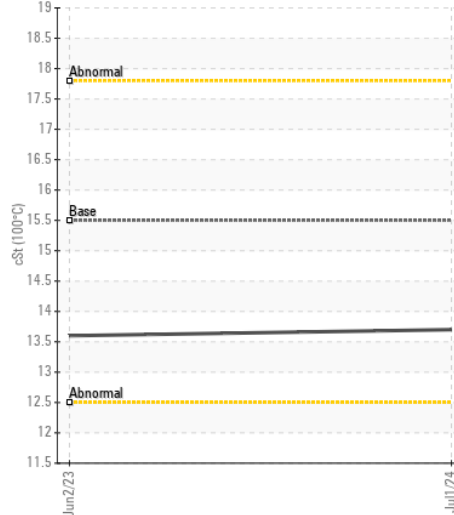
Base Number



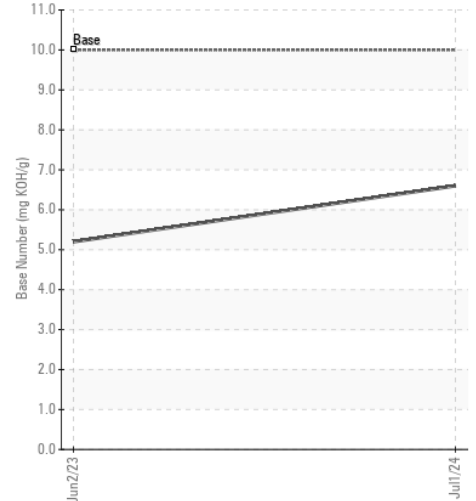
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : RPL0017882

Lab Number : 06228386

Unique Number : 11111879

Test Package : FLEET

Received : 05 Jul 2024

Tested : 08 Jul 2024

Diagnosed : 08 Jul 2024 - Don Baldrige

RTL PACLEASE - 7039 - Denver

379 W 66TH WAY

DENVER, CO

US 80221

Contact: JEFF THOMAS

thomasj2@rushenterprises.com

T:

F:

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)