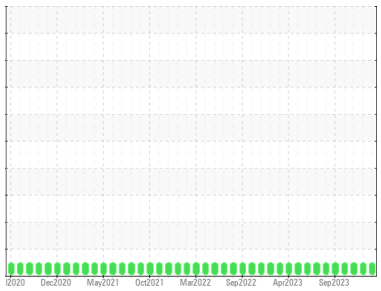
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Area
**OKLAHOMA**
Machine Id
**PETERBILT 8466**
Component
**Diesel Engine**
Fluid
**DIESEL ENGINE OIL SAE 40 (--- QTS)**

## DIAGNOSIS

**Recommendation**
Resample at the next service interval to monitor.

**Wear**
All component wear rates are normal.

**Contamination**
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.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC0559208** | WC0857193 | WC0838592 |
| Sample Date | | Client Info | | **06 Mar 2024** | 05 Jan 2024 | 03 Nov 2023 |
| Machine Age | hrs | Client Info | | **8381** | 8192 | 7984 |
| Oil Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **NORMAL** | NORMAL | NORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >5 | **<1.0** | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | **NEG** | NEG | NEG |
| Glycol | | WC Method | | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >110 | **69** | 62 | 50 |
| Chromium | ppm | ASTM D5185m | >4 | **2** | 2 | 2 |
| Nickel | ppm | ASTM D5185m | >2 | **0** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | **0** | 0 | <1 |
| Silver | ppm | ASTM D5185m | >2 | **0** | <1 | <1 |
| Aluminum | ppm | ASTM D5185m | >25 | **10** | 9 | 7 |
| Lead | ppm | ASTM D5185m | >45 | **7** | 8 | 7 |
| Copper | ppm | ASTM D5185m | >85 | **15** | 14 | 15 |
| Tin | ppm | ASTM D5185m | >4 | **2** | 2 | 2 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | <1 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 250 | **24** | 30 | 27 |
| Barium | ppm | ASTM D5185m | 10 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 100 | **29** | 30 | 28 |
| Manganese | ppm | ASTM D5185m | | **1** | 1 | <1 |
| Magnesium | ppm | ASTM D5185m | 450 | **758** | 794 | 692 |
| Calcium | ppm | ASTM D5185m | 3000 | **1446** | 1533 | 1463 |
| Phosphorus | ppm | ASTM D5185m | 1150 | **1075** | 1224 | 1006 |
| Zinc | ppm | ASTM D5185m | 1350 | **1383** | 1493 | 1354 |
| Sulfur | ppm | ASTM D5185m | 4250 | **3183** | 3488 | 2692 |

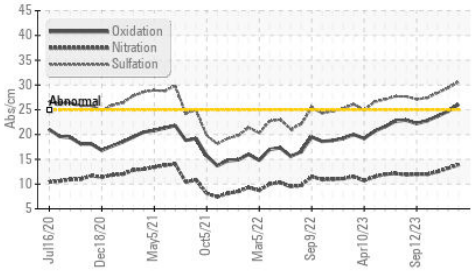
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >30 | **10** | 10 | 9 |
| Sodium | ppm | ASTM D5185m | >216 | **8** | 8 | 7 |
| Potassium | ppm | ASTM D5185m | >20 | **19** | 18 | 12 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **1.9** | 1.7 | 1.5 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **13.9** | 13.2 | 12.5 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **30.6** | 29.4 | 28.4 |

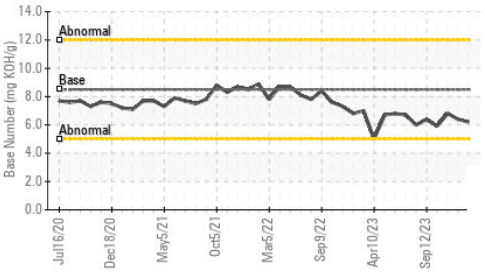
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **26.1** | 24.7 | 23.7 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 8.5 | **6.2** | 6.4 | 6.8 |

# OIL ANALYSIS REPORT

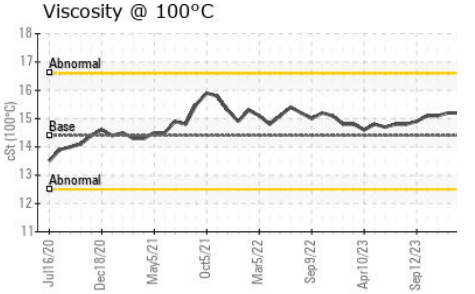
FT-IR (Direct Trend)




Base Number




Viscosity @ 100°C

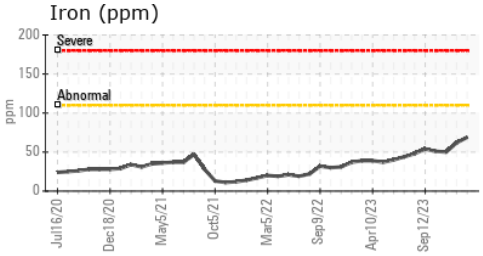



| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| 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 |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

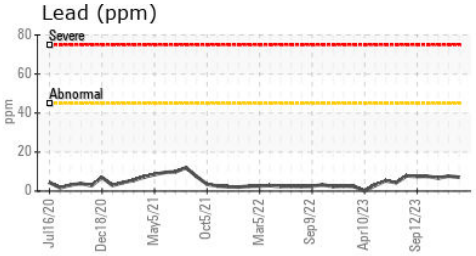
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 14.4 | **15.2** | 15.2 | 15.1 |

GRAPHS

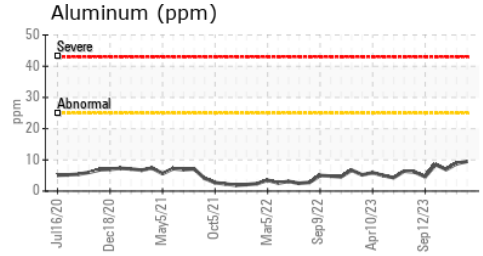
Iron (ppm)



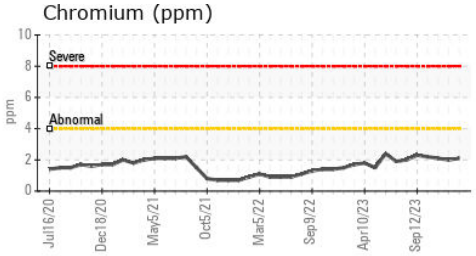

Lead (ppm)



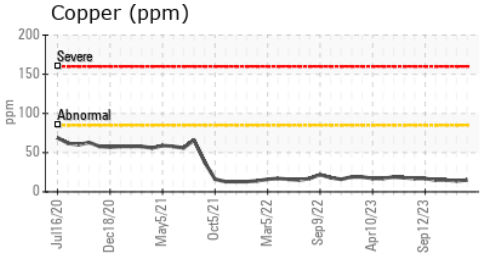

Aluminum (ppm)



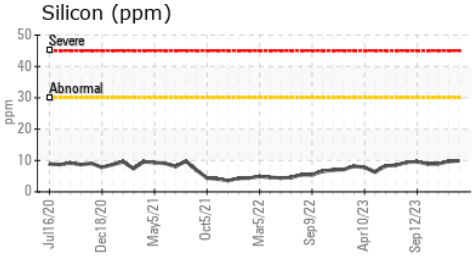

Chromium (ppm)



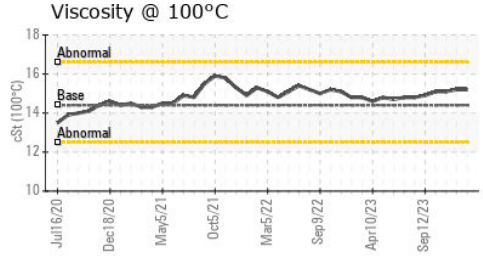

Copper (ppm)



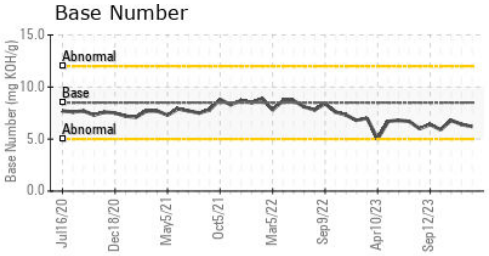

Silicon (ppm)




Viscosity @ 100°C




Base Number




**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0559208
**Lab Number** : 06158342
**Unique Number** : 10993765
**Test Package** : MOB1+

**Received** : 23 Apr 2024
**Tested** : 24 Apr 2024
**Diagnosed** : 25 Apr 2024 - Jonathan Hester

Certificate L2367

*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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