# OIL ANALYSIS REPORT

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

Machine Id
## CRANE CARRIER 172427
Component
## Diesel Engine
Fluid
## DIESEL ENGINE OIL SAE 15W40 (27 QTS)

## RECOMMENDATION

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

## WEAR

All component wear rates are normal.

## CONTAMINATION

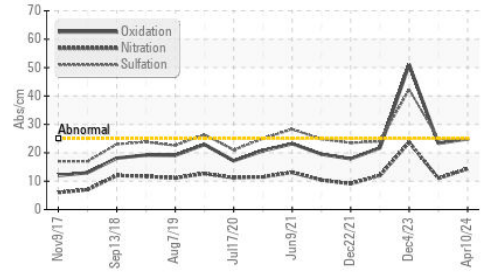
There is no indication of any contamination in the oil.

## FLUID CONDITION

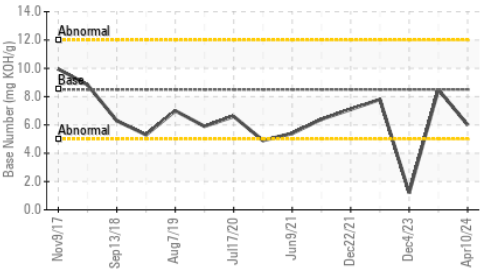
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | WC0756859 | WC0756831 | WC0887363 |
| Sample Date | | Client Info | | 10 Apr 2024 | 13 Dec 2023 | 04 Dec 2023 |
| Machine Age | mls | Client Info | | 80835 | 77219 | 77012 |
| Oil Age | mls | Client Info | | 3823 | 207 | 0 |
| Filter Age | mls | Client Info | | 3823 | 207 | 0 |
| Oil Changed | | Client Info | | Changed | Changed | N/A |
| Filter Changed | | Client Info | | Changed | Changed | N/A |
| Sample Status | | | | NORMAL | NORMAL | SEVERE |
| Iron | ppm | ASTM D5185m | >75 | 53 | 62 | ▲ 204 |
| Chromium | ppm | ASTM D5185m | >5 | 2 | 2 | ▲ 6 |
| Nickel | ppm | ASTM D5185m | >4 | 0 | <1 | <1 |
| Titanium | ppm | ASTM D5185m | >2 | 0 | <1 | <1 |
| Silver | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >15 | 5 | 6 | 13 |
| Lead | ppm | ASTM D5185m | >25 | <1 | 1 | 4 |
| Copper | ppm | ASTM D5185m | >100 | 3 | 5 | 16 |
| Tin | ppm | ASTM D5185m | >4 | <1 | <1 | 0 |
| Vanadium | ppm | ASTM D5185m | | 0 | <1 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Silicon | ppm | ASTM D5185m | >25 | 8 | 10 | 20 |
| Potassium | ppm | ASTM D5185m | >20 | 2 | 5 | 11 |
| Fuel | | WC Method | >3.0 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >6 | 0.9 | 0.8 | 3 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 14.4 | 11.0 | 23.7 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 24.8 | 24.7 | 42.3 |
| 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 | >158 | 5 | 7 | 11 |
| Boron | ppm | ASTM D5185m | 250 | 32 | 58 | 14 |
| Barium | ppm | ASTM D5185m | 10 | 0 | 0 | 3 |
| Molybdenum | ppm | ASTM D5185m | 100 | 71 | 67 | 70 |
| Manganese | ppm | ASTM D5185m | | <1 | <1 | 1 |
| Magnesium | ppm | ASTM D5185m | 450 | 641 | 962 | 868 |
| Calcium | ppm | ASTM D5185m | 3000 | 1708 | 1521 | 1409 |
| Phosphorus | ppm | ASTM D5185m | 1150 | 985 | 897 | 866 |
| Zinc | ppm | ASTM D5185m | 1350 | 1135 | 1118 | 1060 |
| Sulfur | ppm | ASTM D5185m | 4250 | 3458 | 3570 | 2678 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 24.9 | 23.3 | 51.0 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 8.5 | 6.0 | 8.5 | ▲ 1.2 |
| Visc @ 100°C | cSt | ASTM D445 | 14.4 | 14.1 | 14.6 | 16.1 |

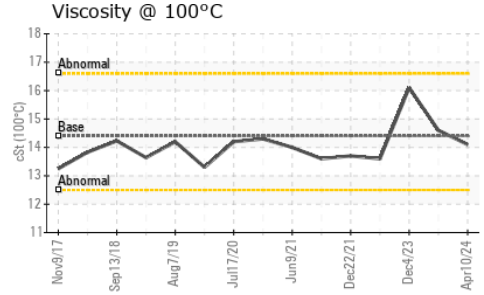
FT-IR (Direct Trend)



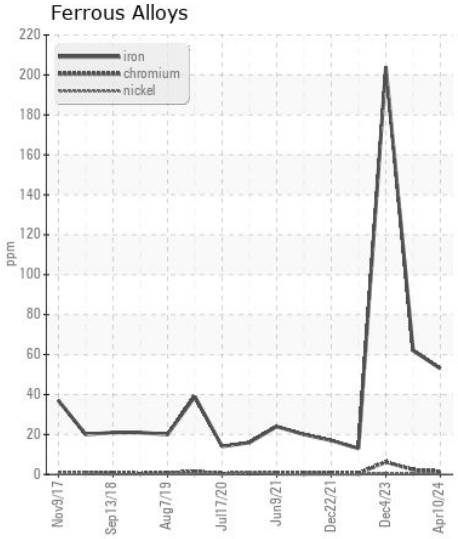

Base Number



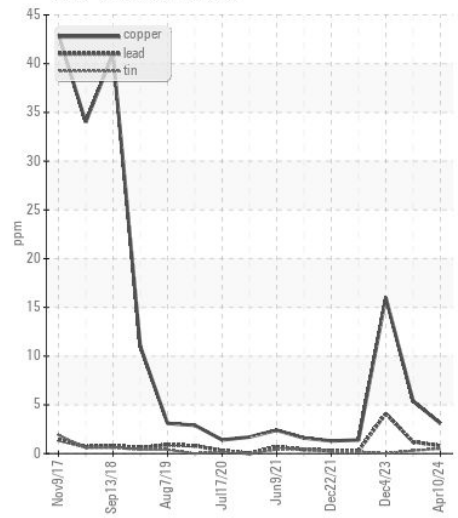

Viscosity @ 100°C



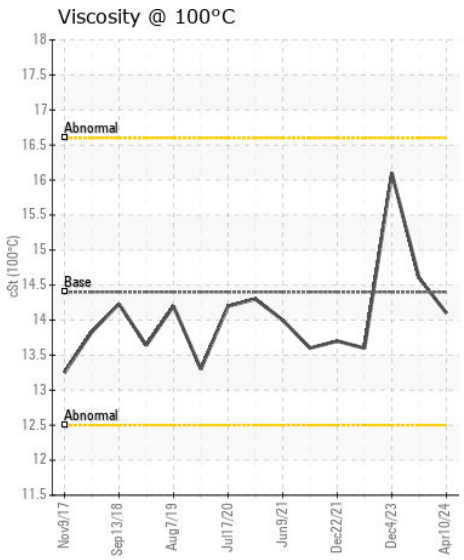

Ferrous Alloys



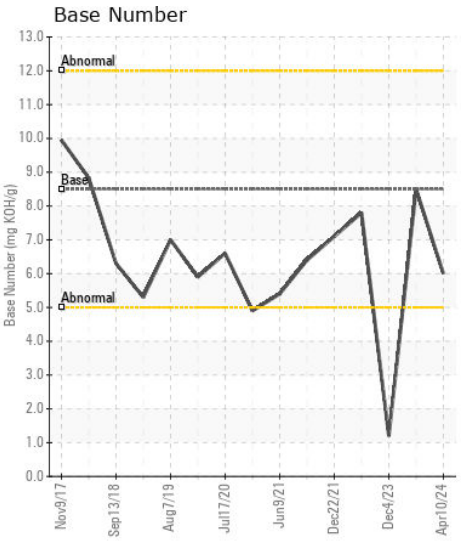

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0756859
**Lab Number** : 06150061
**Unique Number** : 10980139
**Test Package** : FLEET

**Received** : 16 Apr 2024
**Tested** : 17 Apr 2024
**Diagnosed** : 17 Apr 2024 - Wes Davis

*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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