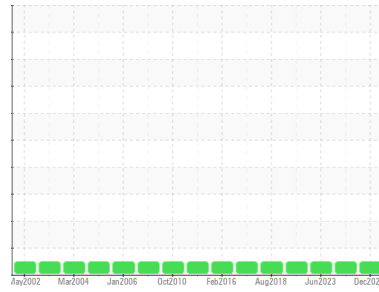




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
INGERSOLL RAND 202
 Component
Diesel Engine
 Fluid
 DIESEL ENGINE OIL SAE 15W40 (3 GAL)

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 | | | RW0005474 | RW0004707 | RW0004421 |
| Sample Date | Client Info | | | 20 Dec 2023 | 18 Oct 2023 | 17 Jun 2023 |
| Machine Age | hrs | Client Info | | 5559 | 5530 | 5407 |
| Oil Age | hrs | Client Info | | 29 | 123 | 204 |
| Oil Changed | Client Info | | | Changed | Changed | Changed |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---------------|-----------|--------|------------|----------------|----------|----------|
| 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 |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|-------------|-----|-------------|------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185m | >90 | 6 | 13 | 21 |
| Chromium | ppm | ASTM D5185m | >20 | <1 | 3 | 4 |
| Nickel | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | >2 | 0 | 0 | <1 |
| Silver | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 1 | 1 | 3 |
| Lead | ppm | ASTM D5185m | >40 | <1 | <1 | 2 |
| Copper | ppm | ASTM D5185m | >330 | 0 | 1 | 4 |
| Tin | ppm | ASTM D5185m | >15 | 0 | <1 | 1 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|------------|-----|-------------|------------|-------------|----------|----------|
| Boron | ppm | ASTM D5185m | 250 | 5 | 9 | 4 |
| Barium | ppm | ASTM D5185m | 10 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 100 | 66 | 59 | 49 |
| Manganese | ppm | ASTM D5185m | | 0 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 450 | 1121 | 902 | 757 |
| Calcium | ppm | ASTM D5185m | 3000 | 1316 | 1161 | 2317 |
| Phosphorus | ppm | ASTM D5185m | 1150 | 1224 | 1014 | 1210 |
| Zinc | ppm | ASTM D5185m | 1350 | 1504 | 1252 | 1508 |
| Sulfur | ppm | ASTM D5185m | 4250 | 4542 | 2908 | 4568 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|--------------|-----|-------------|------------|----------|----------|----------|
| Silicon | ppm | ASTM D5185m | >25 | 3 | 6 | 11 |
| Sodium | ppm | ASTM D5185m | >158 | 0 | 0 | 3 |
| Potassium | ppm | ASTM D5185m | >20 | 1 | 0 | 1 |

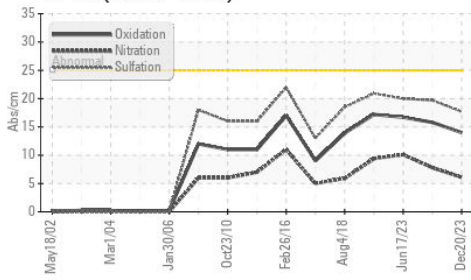
| INFRA-RED | | method | limit/base | current | history1 | history2 |
|-----------|----------|-------------|------------|-------------|----------|----------|
| Soot % | % | *ASTM D7844 | >6 | 0.1 | 0.3 | 0.4 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 6.1 | 7.8 | 10.1 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 17.7 | 19.7 | 20.0 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|-------------------|----------|-------------|------------|--------------|----------|----------|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 14.0 | 15.8 | 16.7 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 8.5 | 10.10 | 10.53 | 10.96 |

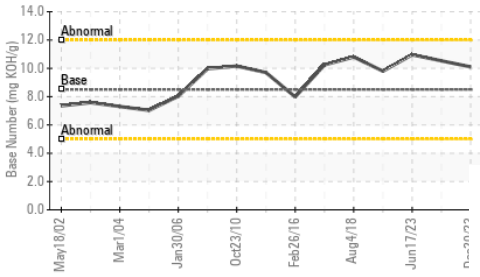


OIL ANALYSIS REPORT

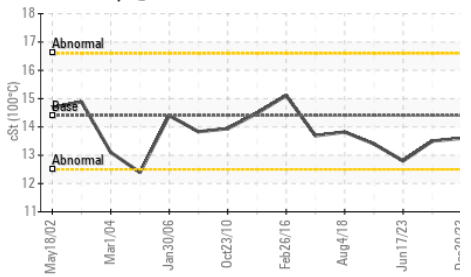
FT-IR (Direct Trend)



Base Number



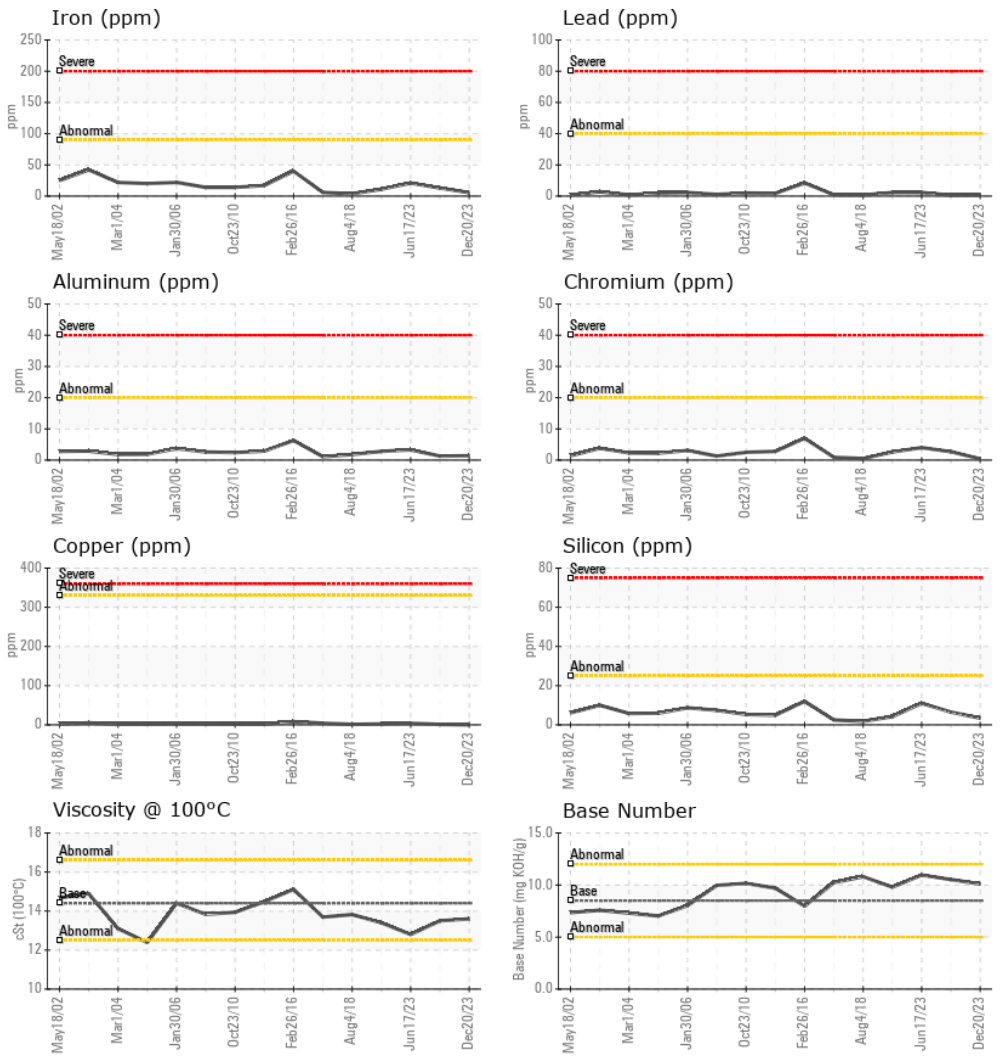
Viscosity @ 100°C



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

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 | |
|------------------|--------|------------|---------|----------|----------|------|
| Visc @ 100°C | cSt | ASTM D445 | 14.4 | 13.6 | 13.5 | 12.8 |

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : RW0005474
Lab Number : 06161022
Unique Number : 10996445
Test Package : MOB 2

Received : 25 Apr 2024
Tested : 26 Apr 2024
Diagnosed : 26 Apr 2024 - Wes Davis

HALLACK CONTRACTING, INC.
 4223 W POLK
 HART, MI
 US 49420

To discuss this sample report, contact Customer Service at 1-800-237-1369.

Contact: DAN HALLACK KARL BUTCHER
 shop@hallackcontracting.com

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

T: (231)873-5081

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

F: (231)873-2889