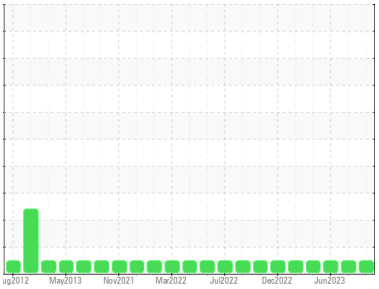
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
**8362**
Component
**Diesel Engine**
Fluid
**DIESEL ENGINE OIL SAE 30 (--- 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 | | **WC0837042** | WC0831230 | WC0816349 |
| Sample Date | | Client Info | | **21 Aug 2023** | 12 Jul 2023 | 06 Jun 2023 |
| Machine Age | hrs | Client Info | | **9130** | 8619 | 8382 |
| Oil Age | hrs | Client Info | | **519** | 237 | 566 |
| Oil Changed | | Client Info | | **Changed** | Changed | Changed |
| Sample Status | | | | **NORMAL** | NORMAL | NORMAL |

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

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >100 | **28** | 7 | 13 |
| Chromium | ppm | ASTM D5185m | >20 | **<1** | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >4 | **0** | <1 | <1 |
| Titanium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185m | >3 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | **2** | 2 | 0 |
| Lead | ppm | ASTM D5185m | >40 | **7** | <1 | 2 |
| Copper | ppm | ASTM D5185m | >330 | **4** | 1 | 3 |
| Tin | ppm | ASTM D5185m | >15 | **<1** | 0 | <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 | **0** | 4 | 2 |
| Barium | ppm | ASTM D5185m | 10 | **0** | 2 | 0 |
| Molybdenum | ppm | ASTM D5185m | 100 | **65** | 61 | 63 |
| Manganese | ppm | ASTM D5185m | | **<1** | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 450 | **963** | 900 | 947 |
| Calcium | ppm | ASTM D5185m | 3000 | **1228** | 1168 | 1135 |
| Phosphorus | ppm | ASTM D5185m | 1150 | **1029** | 1042 | 1045 |
| Zinc | ppm | ASTM D5185m | 1350 | **1263** | 1251 | 1280 |
| Sulfur | ppm | ASTM D5185m | 4250 | **2922** | 3196 | 3226 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **7** | 3 | 4 |
| Sodium | ppm | ASTM D5185m | >75 | **0** | <1 | 0 |
| Potassium | ppm | ASTM D5185m | >20 | **1** | <1 | 1 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **0.8** | 0.3 | 0.4 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **10.6** | 7.7 | 10.2 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **22.1** | 19.9 | 20.8 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **18.1** | 15.3 | 17.1 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 8.5 | **6.2** | 9.0 | 7.7 |

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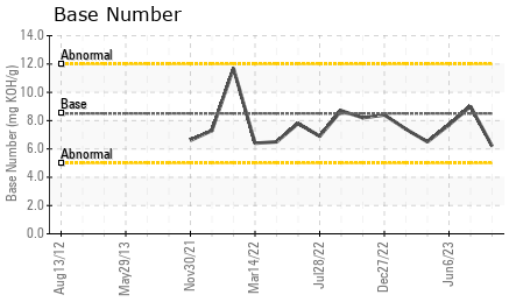
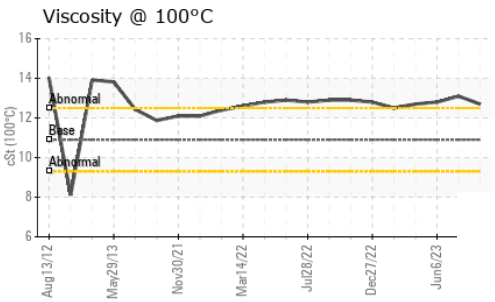
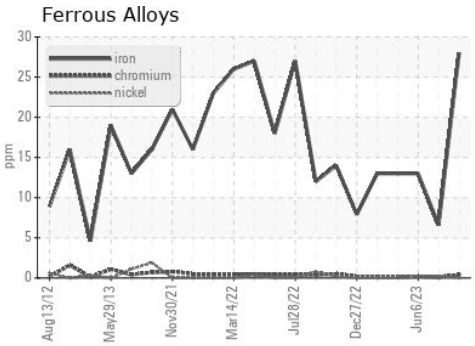


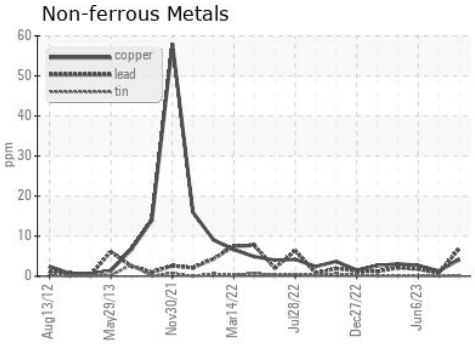



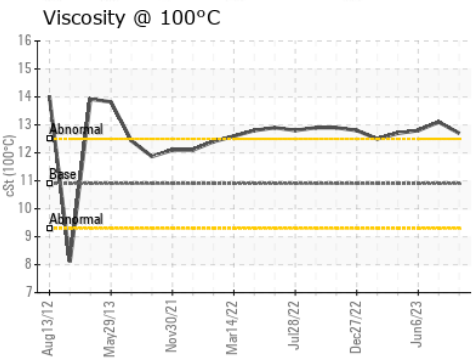

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

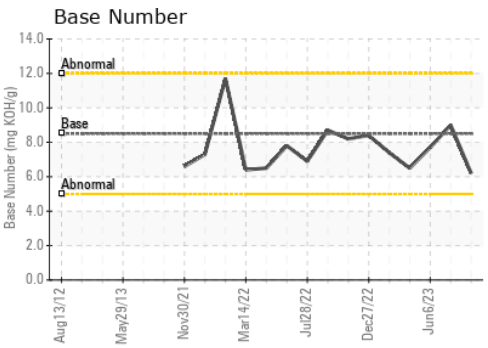
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 10.9 | **12.7** | 13.1 | 12.8 |

## GRAPHS




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0837042 **Received** : 23 Aug 2023
**Lab Number** : 05931988 **Diagnosed** : 25 Aug 2023
**Unique Number** : 10617259 **Diagnostician** : Jonathan Hester
**Test Package** : CONST ( Additional Tests: TBN )

*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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