MAR II

WEAR CHECK Inland Marine Oil Analysis Program

# OIL ANALYSIS REPORT

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

Machine Id
## RICKEY HUGHES (S/N TSJ00166)
Component
## Port Main Engine
Fluid
## CHEVRON DELO 400 XLE 15W40 (265 GAL)

## RECOMMENDATION

Resample at the next service interval to monitor.

## WEAR

All component wear rates are normal.

## CONTAMINATION

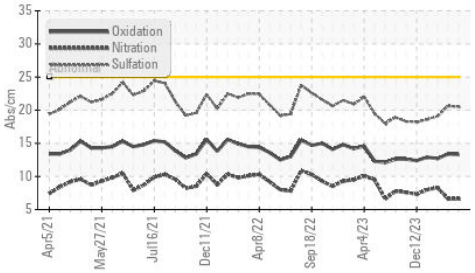
There is no indication of any contamination in the oil.

## FLUID CONDITION

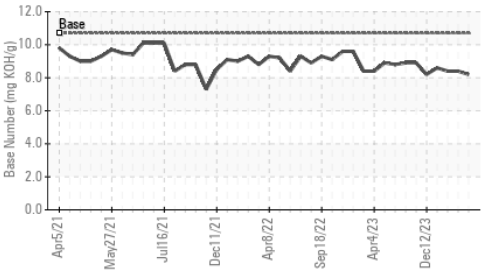
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | MW0069755 | MW06227272 | MW0062336 |
| Sample Date | | Client Info | | 29 Jun 2024 | 29 Jun 2024 | 12 May 2024 |
| Machine Age | hrs | Client Info | | 89002 | 89002 | 87942 |
| Oil Age | hrs | Client Info | | 156 | 156 | 443 |
| Filter Age | hrs | Client Info | | 156 | 0 | 443 |
| Oil Changed | | Client Info | | Not Changd | Not Changd | Not Changd |
| Filter Changed | | Client Info | | Not Changd | Not Changd | Not Changd |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |
| Iron | ppm | ASTM D5185m | >75 | 1 | 1 | 4 |
| Chromium | ppm | ASTM D5185m | >8 | <1 | 0 | 0 |
| Nickel | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | >3 | 9 | 7 | 15 |
| Silver | ppm | ASTM D5185m | >2 | <1 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >15 | 1 | 2 | 1 |
| Lead | ppm | ASTM D5185m | >18 | 0 | 0 | 0 |
| Copper | ppm | ASTM D5185m | >80 | 4 | 2 | <1 |
| Tin | ppm | ASTM D5185m | >14 | 0 | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | | <1 | <1 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Silicon | ppm | ASTM D5185m | >20 | 2 | 3 | 3 |
| Potassium | ppm | ASTM D5185m | >20 | 1 | 2 | 2 |
| Fuel | | WC Method | >4.0 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.1 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | | 0.9 | 0.9 | 1 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 6.6 | 6.6 | 8.3 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 20.5 | 20.6 | 19.1 |
| 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 | >0.1 | NEG | NEG | NEG |
| Sodium | ppm | ASTM D5185m | >75 | 4 | 1 | 2 |
| Boron | ppm | ASTM D5185m | | 306 | 231 | 103 |
| Barium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | 59 | 57 | 30 |
| Manganese | ppm | ASTM D5185m | | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | | 574 | 581 | 783 |
| Calcium | ppm | ASTM D5185m | | 1576 | 1443 | 1646 |
| Phosphorus | ppm | ASTM D5185m | 760 | 847 | 883 | 769 |
| Zinc | ppm | ASTM D5185m | 830 | 978 | 1031 | 889 |
| Sulfur | ppm | ASTM D5185m | 2770 | 3361 | 3634 | 3771 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 13.3 | 13.4 | 12.7 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10.7 | 8.2 | 8.4 | 8.4 |
| Visc @ 100°C | cSt | ASTM D445 | 14.9 | 14.4 | 14.6 | 14.9 |

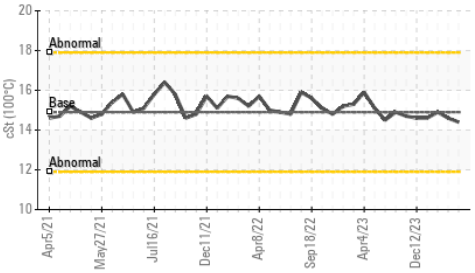
FT-IR (Direct Trend)



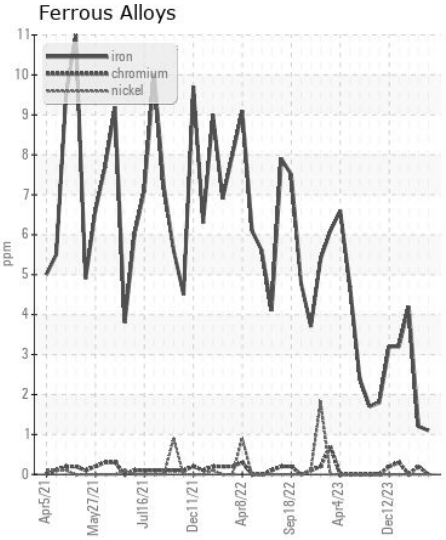

Base Number



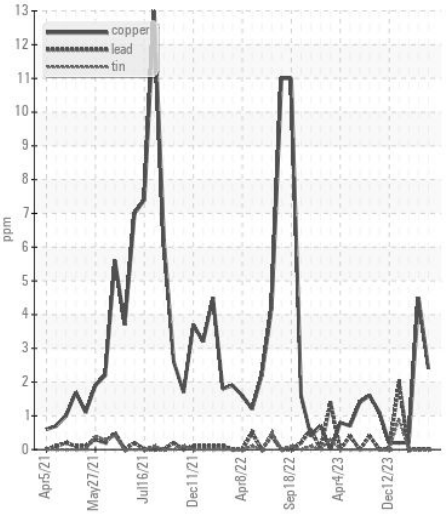

Viscosity @ 100°C



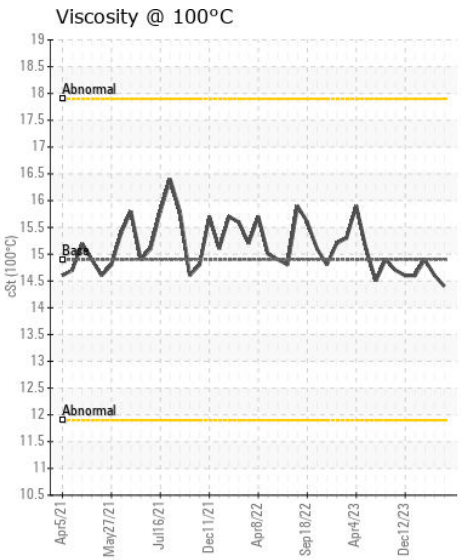

Ferrous Alloys




Non-ferrous Metals




Viscosity @ 100°C

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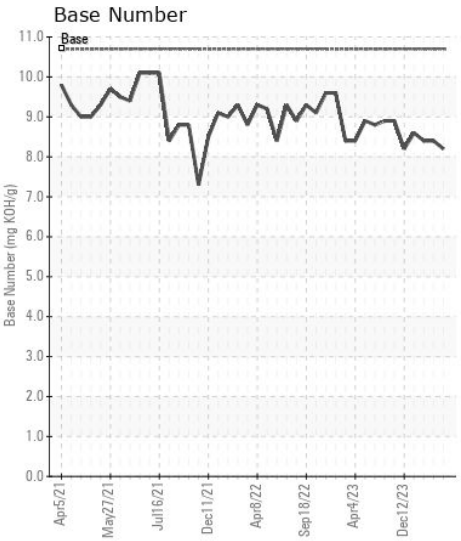


Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : MW0069755
**Lab Number** : 06228328
**Unique Number** : 11111821
**Test Package** : MAR 2

**Received** : 05 Jul 2024
**Tested** : 08 Jul 2024
**Diagnosed** : 08 Jul 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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