



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

Area

CHIP LACEY

Machine Id

[CHIP LACEY] 008 529830-8

Component

Starboard Genset

Fluid

CHEVRON DELO 400 XLE 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | MWM541315 | MW06111814 | MW0026016 |
| Sample Date | | Client Info | | 26 Mar 2024 | 24 Feb 2024 | 23 Jan 2024 |
| Machine Age | hrs | Client Info | | 39230 | 38831 | 38463 |
| Oil Age | hrs | Client Info | | 392 | 368 | 297 |
| Filter Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | N/A | N/A | N/A |
| Filter Changed | | Client Info | | N/A | N/A | N/A |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|-------------|------|------|
| Iron | ppm | ASTM D5185m | >50 | 8 | 7 | 9 |
| Chromium | ppm | ASTM D5185m | >4 | 0 | 0 | <1 |
| Nickel | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | 15 | 16 | 16 |
| Silver | ppm | ASTM D5185m | >5 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >12 | 2 | 1 | 2 |
| Lead | ppm | ASTM D5185m | >17 | 0 | 0 | <1 |
| Copper | ppm | ASTM D5185m | >70 | 2 | <1 | <1 |
| Tin | ppm | ASTM D5185m | >15 | 0 | 0 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | <1 | <1 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

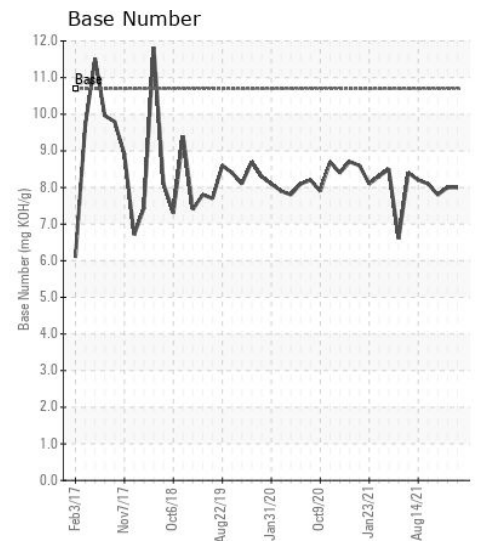
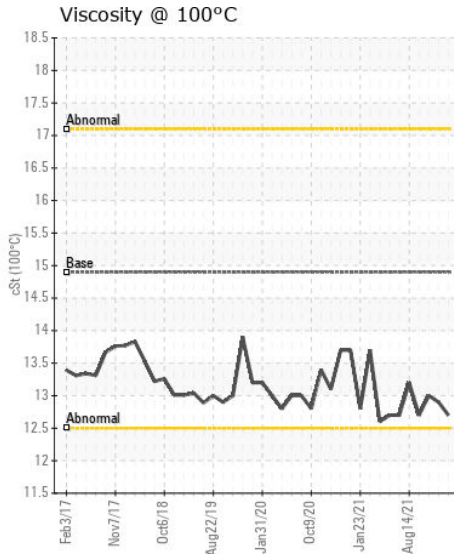
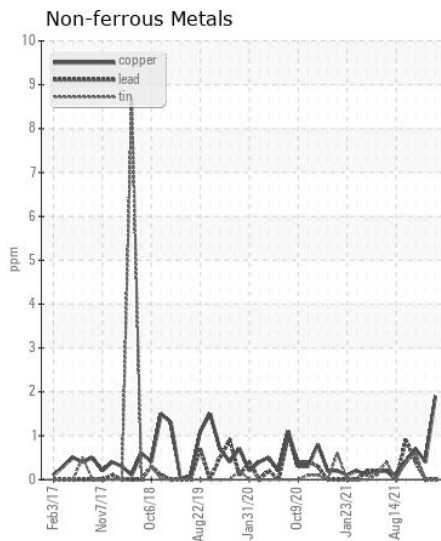
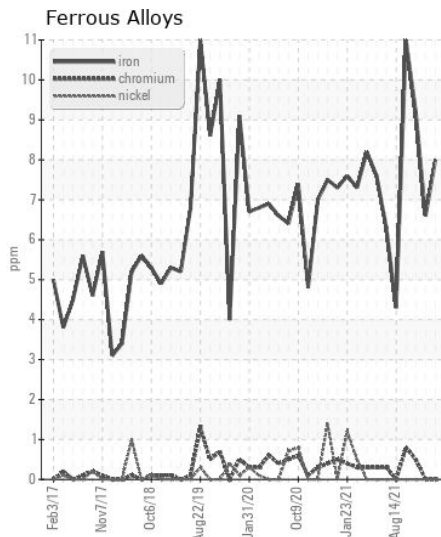
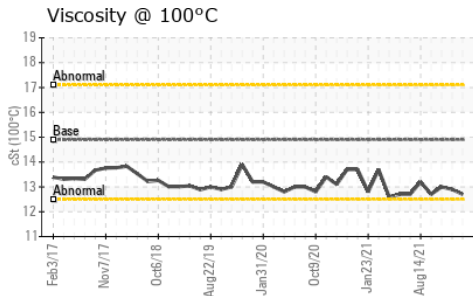
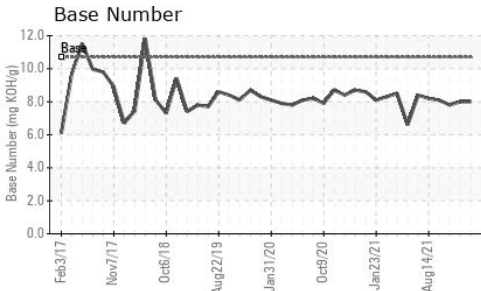
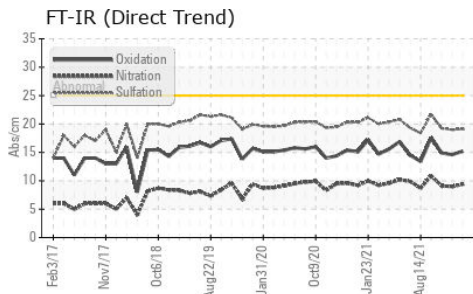
There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >25 | 4 | 4 | 6 |
| Potassium | ppm | ASTM D5185m | >20 | 1 | <1 | 3 |
| 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 | | 0.1 | 0.1 | 0.1 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 9.4 | 9.0 | 9.1 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 19.1 | 19.0 | 19.2 |
| 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 |

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.

| | | | | | | |
|------------------|----------|-------------|------|-------------|------|------|
| Sodium | ppm | ASTM D5185m | | 2 | 2 | 2 |
| Boron | ppm | ASTM D5185m | | 87 | 97 | 90 |
| Barium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | 32 | 33 | 34 |
| Manganese | ppm | ASTM D5185m | | 2 | 1 | 2 |
| Magnesium | ppm | ASTM D5185m | | 779 | 703 | 760 |
| Calcium | ppm | ASTM D5185m | | 1637 | 1728 | 1580 |
| Phosphorus | ppm | ASTM D5185m | 760 | 785 | 686 | 745 |
| Zinc | ppm | ASTM D5185m | 830 | 886 | 811 | 860 |
| Sulfur | ppm | ASTM D5185m | 2770 | 3740 | 3035 | 3171 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 15.2 | 14.6 | 14.9 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10.7 | 8.0 | 8.0 | 7.8 |
| Visc @ 100°C | cSt | ASTM D445 | 14.9 | 12.7 | 12.9 | 13.0 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MWM541315
Lab Number : 06147166
Unique Number : 10977244
Test Package : MAR 2
Received : 12 Apr 2024
Tested : 15 Apr 2024
Diagnosed : 16 Apr 2024 - Sean Felton

INGRAM BARGE
 900 S 3RD ST
 PADUCAH, KY
 US 42003

Contact: ANTHONY VAN CURA
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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)