



|                 |               |
|-----------------|---------------|
| WEAR            | <b>NORMAL</b> |
| CONTAMINATION   | <b>NORMAL</b> |
| FLUID CONDITION | <b>NORMAL</b> |

Machine Id  
**LINDA TAYLOR**  
Component  
**Starboard Main Engine**  
Fluid  
**CHEVRON DELO 400 LE 15W40 (165 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2    |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number  |     | Client Info |           | <b>MW0058191</b>   | MW06206139  | MW0049113   |
| Sample Date    |     | Client Info |           | <b>08 Jul 2024</b> | 20 May 2024 | 04 Jan 2024 |
| Machine Age    | hrs | Client Info |           | <b>34202</b>       | 0           | 32610       |
| Oil Age        | hrs | Client Info |           | <b>656</b>         | 0           | 1231        |
| Filter Age     | hrs | Client Info |           | <b>656</b>         | 0           | 500         |
| Oil Changed    |     | Client Info |           | <b>N/A</b>         | N/A         | N/A         |
| Filter Changed |     | Client Info |           | <b>N/A</b>         | N/A         | N/A         |
| Sample Status  |     |             |           | <b>NORMAL</b>      | NORMAL      | NORMAL      |

**WEAR**

All component wear rates are normal.

|              |        |             |      |              |       |      |
|--------------|--------|-------------|------|--------------|-------|------|
| Iron         | ppm    | ASTM D5185m | >120 | <b>4</b>     | 4     | 3    |
| Chromium     | ppm    | ASTM D5185m | >10  | <b>&lt;1</b> | <1    | 0    |
| Nickel       | ppm    | ASTM D5185m | >5   | <b>0</b>     | 0     | 0    |
| Titanium     | ppm    | ASTM D5185m |      | <b>&lt;1</b> | <1    | <1   |
| Silver       | ppm    | ASTM D5185m | >5   | <b>0</b>     | 0     | 0    |
| Aluminum     | ppm    | ASTM D5185m | >20  | <b>2</b>     | 3     | 2    |
| Lead         | ppm    | ASTM D5185m | >40  | <b>0</b>     | 0     | 0    |
| Copper       | ppm    | ASTM D5185m | >300 | <b>7</b>     | 7     | 1    |
| Tin          | ppm    | ASTM D5185m | >10  | <b>0</b>     | <1    | <1   |
| Vanadium     | ppm    | ASTM D5185m |      | <b>0</b>     | <1    | 0    |
| White Metal  | scalar | *Visual     | NONE | <b>NONE</b>  | LIGHT | NONE |
| Yellow Metal | scalar | *Visual     | NONE | <b>NONE</b>  | NONE  | NONE |

**CONTAMINATION**

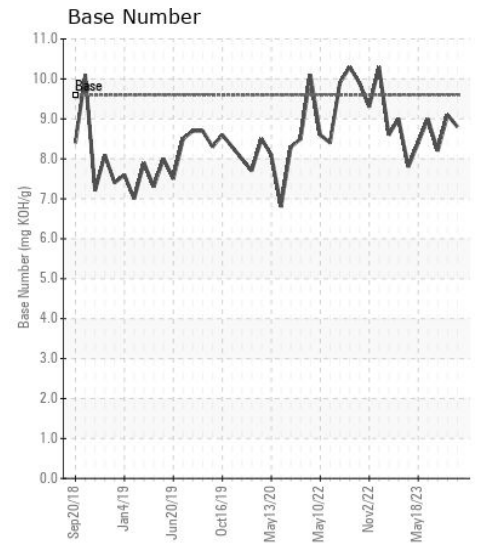
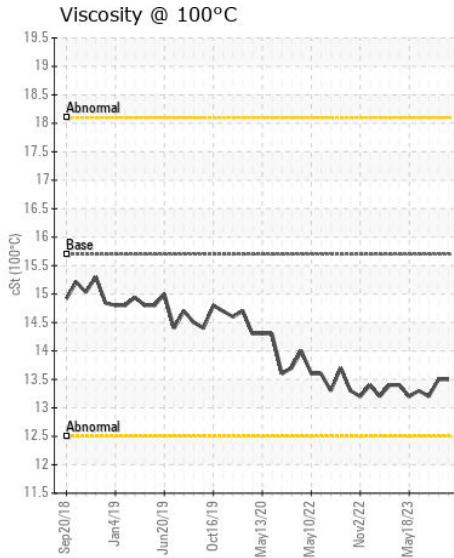
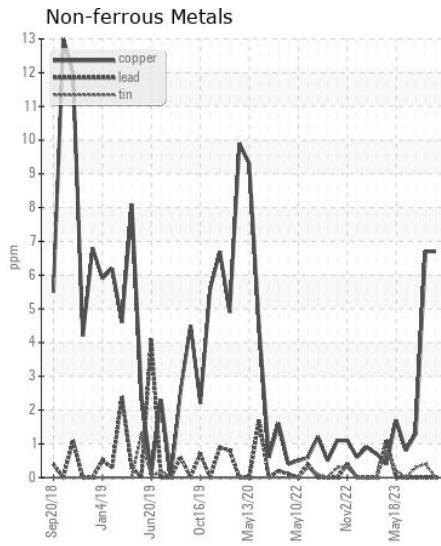
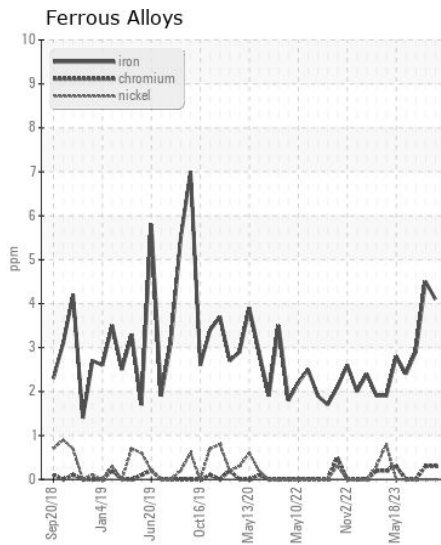
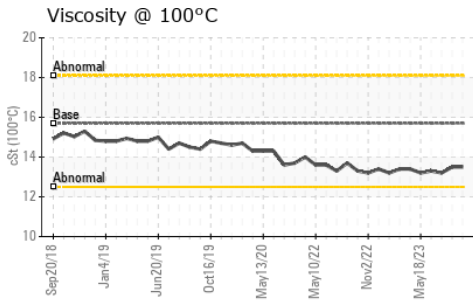
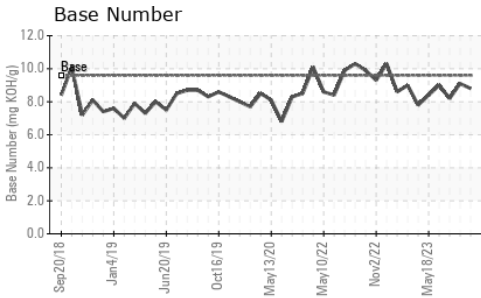
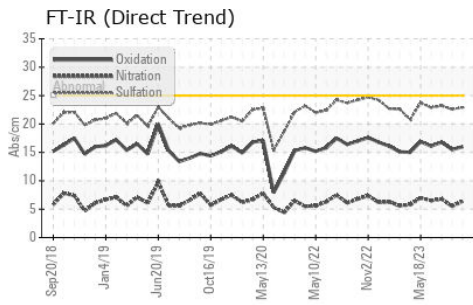
There is no indication of any contamination in the oil.

|                  |          |             |       |                |       |       |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon          | ppm      | ASTM D5185m | >25   | <b>6</b>       | 7     | 4     |
| Potassium        | ppm      | ASTM D5185m | >20   | <b>&lt;1</b>   | 2     | 2     |
| Fuel             |          | WC Method   | >4.0  | <b>&lt;1.0</b> | <1.0  | <1.0  |
| Water            |          | WC Method   | >0.1  | <b>NEG</b>     | NEG   | NEG   |
| Glycol           |          | WC Method   |       | <b>NEG</b>     | NEG   | NEG   |
| Soot %           | %        | *ASTM D7844 |       | <b>0.2</b>     | 0.1   | 0.1   |
| Nitration        | Abs/cm   | *ASTM D7624 | >20   | <b>6.4</b>     | 5.5   | 6.8   |
| Sulfation        | Abs/.1mm | *ASTM D7415 | >30   | <b>22.9</b>    | 22.6  | 23.2  |
| Silt             | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | NONE  |
| Debris           | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | NONE  |
| Sand/Dirt        | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | NONE  |
| Appearance       | scalar   | *Visual     | NORML | <b>NORML</b>   | NORML | NORML |
| Odor             | scalar   | *Visual     | NORML | <b>NORML</b>   | NORML | NORML |
| Emulsified Water | scalar   | *Visual     | >0.1  | <b>NEG</b>     | 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 |      | <b>2</b>     | <1   | 0    |
| Boron            | ppm      | ASTM D5185m |      | <b>305</b>   | 406  | 324  |
| Barium           | ppm      | ASTM D5185m |      | <b>&lt;1</b> | 0    | 0    |
| Molybdenum       | ppm      | ASTM D5185m |      | <b>119</b>   | 129  | 114  |
| Manganese        | ppm      | ASTM D5185m |      | <b>&lt;1</b> | <1   | <1   |
| Magnesium        | ppm      | ASTM D5185m |      | <b>657</b>   | 645  | 588  |
| Calcium          | ppm      | ASTM D5185m |      | <b>1668</b>  | 1472 | 1342 |
| Phosphorus       | ppm      | ASTM D5185m | 1200 | <b>728</b>   | 682  | 701  |
| Zinc             | ppm      | ASTM D5185m | 1300 | <b>858</b>   | 818  | 743  |
| Sulfur           | ppm      | ASTM D5185m | 3200 | <b>2911</b>  | 2683 | 2456 |
| Oxidation        | Abs/.1mm | *ASTM D7414 | >25  | <b>16.0</b>  | 15.5 | 16.8 |
| Base Number (BN) | mg KOH/g | ASTM D2896  | 9.6  | <b>8.8</b>   | 9.1  | 8.2  |
| Visc @ 100°C     | cSt      | ASTM D445   | 15.7 | <b>13.5</b>  | 13.5 | 13.2 |



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : MW0058191  
**Lab Number** : 06234285  
**Unique Number** : 11123119  
**Test Package** : MAR 2

**Received** : 11 Jul 2024  
**Tested** : 12 Jul 2024  
**Diagnosed** : 12 Jul 2024 - Wes Davis

**MAGNOLIA MARINE TRANSPORT**  
 697 HAINING ROAD  
 VICKSBURG, MS  
 US 39183  
 Contact: MMT MAINTENANCE PLANNERS  
 mmtmaintenanceplanners@ergon.com

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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