



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

Area
CPT OA FRANKS
Machine Id
[CPT OA FRANKS] 008 586734-8
Component
Starboard Genset
Fluid
CHEVRON DELO 400 LE 15W40 (5 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | MW06063255 | MW06032595 | MW05897855 |
| Sample Date | | Client Info | | 30 Oct 2023 | 15 Oct 2023 | 30 Jun 2023 |
| Machine Age | hrs | Client Info | | 26933 | 26892 | 25720 |
| Oil Age | hrs | Client Info | | 0 | 385 | 0 |
| 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 | 2 | 5 | 2 |
| Chromium | ppm | ASTM D5185m | >4 | 0 | <1 | 0 |
| Nickel | ppm | ASTM D5185m | >2 | 0 | <1 | 0 |
| Titanium | ppm | ASTM D5185m | | 4 | 5 | 4 |
| Silver | ppm | ASTM D5185m | >5 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >12 | 2 | 3 | 3 |
| Lead | ppm | ASTM D5185m | >17 | 0 | <1 | 0 |
| Copper | ppm | ASTM D5185m | >70 | 0 | <1 | <1 |
| Tin | ppm | ASTM D5185m | >15 | 0 | <1 | 0 |
| Vanadium | ppm | ASTM D5185m | | 0 | <1 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

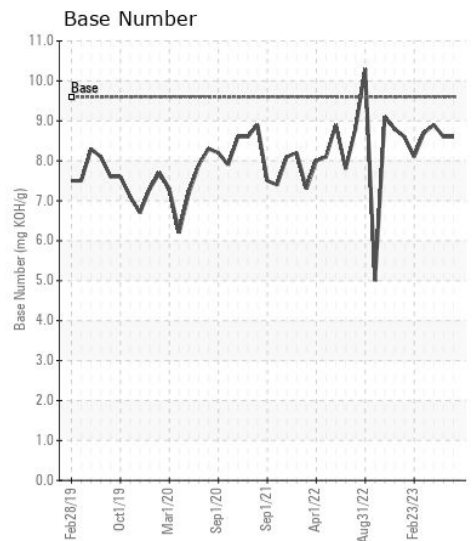
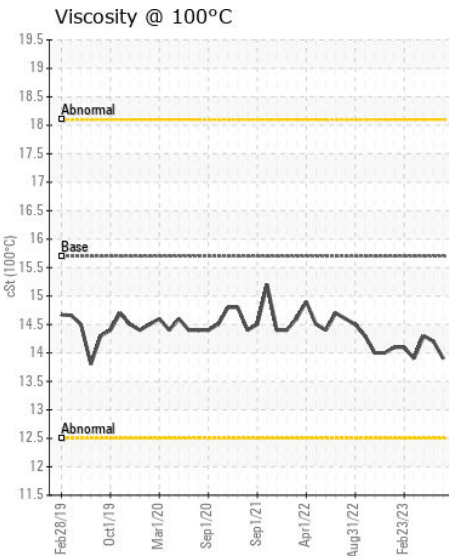
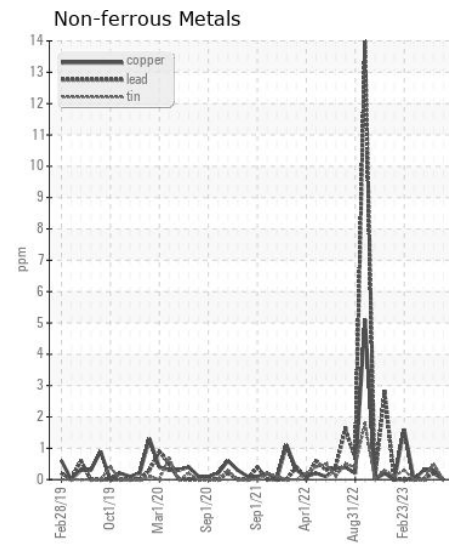
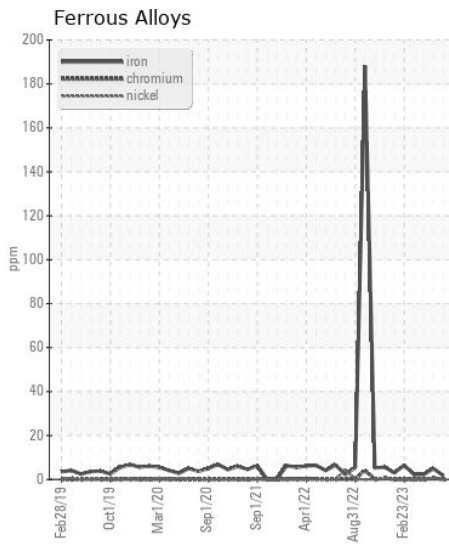
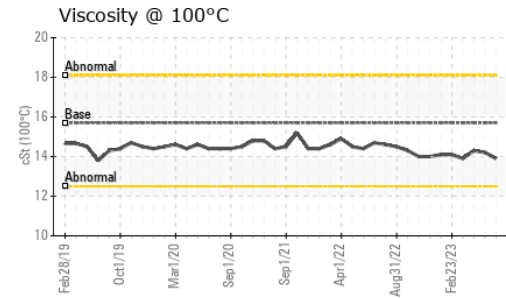
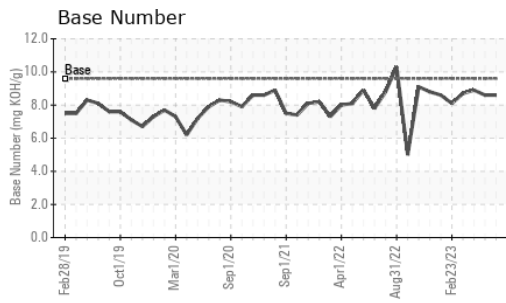
There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >25 | 4 | 7 | 6 |
| Potassium | ppm | ASTM D5185m | >20 | 0 | 3 | 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 | | 0.1 | 0.1 | 0.1 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 6.8 | 7.3 | 5.3 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 20.6 | 21.0 | 20.8 |
| 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 | 0 |
| Boron | ppm | ASTM D5185m | | 276 | 286 | 296 |
| Barium | ppm | ASTM D5185m | | 0 | 11 | 0 |
| Molybdenum | ppm | ASTM D5185m | | 88 | 93 | 84 |
| Manganese | ppm | ASTM D5185m | | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | | 675 | 620 | 533 |
| Calcium | ppm | ASTM D5185m | | 1614 | 1543 | 1450 |
| Phosphorus | ppm | ASTM D5185m | 1200 | 754 | 709 | 680 |
| Zinc | ppm | ASTM D5185m | 1300 | 868 | 864 | 780 |
| Sulfur | ppm | ASTM D5185m | 3200 | 2831 | 2974 | 2664 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 15.2 | 15.8 | 15.0 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.6 | 8.6 | 8.6 | 8.9 |
| Visc @ 100°C | cSt | ASTM D445 | 15.7 | 13.9 | 14.2 | 14.3 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW06063255 **Received** : 17 Jan 2024
Lab Number : 06063255 **Diagnosed** : 24 Jan 2024
Unique Number : 10834637 **Diagnostician** : Wes Davis
Test Package : MAR 2

INGRAM BARGE
 900 S 3RD ST
 PADUCAH, KY
 US 42003
 Contact: JAMES ADAIR
 james.adair@ingrambarge.com
 T: (270)415-4467
 F: (615)695-3697

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)