KIMBRO FLUID SOLUTIONS

# OIL ANALYSIS REPORT

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

Area
**BARGE TRANSPORTATION**
Machine Id
**CHRIS MILLS 2.0**
Component
**Port Main Engine**
Fluid
**{not provided} (--- GAL)**

## RECOMMENDATION

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

## WEAR

All component wear rates are normal.

## CONTAMINATION

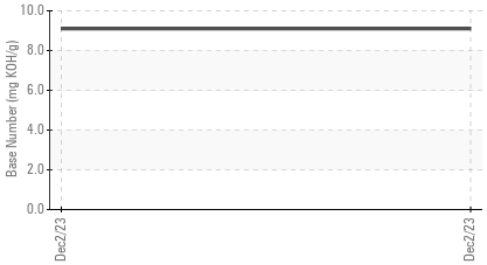
There is no indication of any contamination in the oil.

## 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.

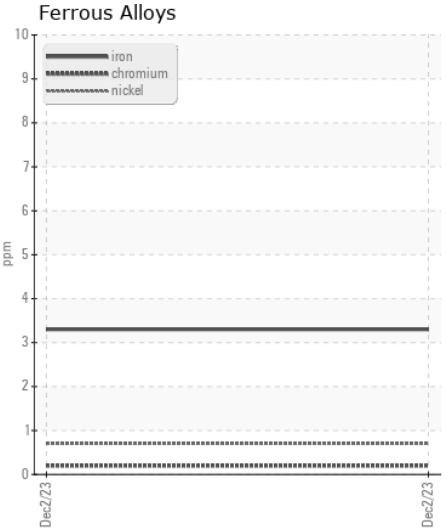
| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | KFS0002675 | --- | --- |
| Sample Date | | Client Info | | 02 Dec 2023 | --- | --- |
| Machine Age | hrs | Client Info | | 0 | --- | --- |
| Oil Age | hrs | Client Info | | 500 | --- | --- |
| Filter Age | hrs | Client Info | | 0 | --- | --- |
| Oil Changed | | Client Info | | Not Changd | --- | --- |
| Filter Changed | | Client Info | | N/A | --- | --- |
| Sample Status | | | | NORMAL | --- | --- |
| Iron | ppm | ASTM D5185m | >75 | 3 | --- | --- |
| Chromium | ppm | ASTM D5185m | >8 | <1 | --- | --- |
| Nickel | ppm | ASTM D5185m | >2 | <1 | --- | --- |
| Titanium | ppm | ASTM D5185m | >3 | <1 | --- | --- |
| Silver | ppm | ASTM D5185m | >2 | 0 | --- | --- |
| Aluminum | ppm | ASTM D5185m | >15 | 1 | --- | --- |
| Lead | ppm | ASTM D5185m | >18 | 0 | --- | --- |
| Copper | ppm | ASTM D5185m | >80 | 2 | --- | --- |
| Tin | ppm | ASTM D5185m | >14 | 0 | --- | --- |
| Vanadium | ppm | ASTM D5185m | | <1 | --- | --- |
| White Metal | scalar | *Visual | NONE | NONE | --- | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | --- | --- |
| Silicon | ppm | ASTM D5185m | >20 | 3 | --- | --- |
| Potassium | ppm | ASTM D5185m | >20 | 2 | --- | --- |
| Fuel | | WC Method | >4.0 | <1.0 | --- | --- |
| Water | | WC Method | >0.1 | NEG | --- | --- |
| Glycol | | WC Method | | NEG | --- | --- |
| Soot % | % | *ASTM D7844 | | 0.1 | --- | --- |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 5.3 | --- | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 17.9 | --- | --- |
| Silt | scalar | *Visual | NONE | NONE | --- | --- |
| Debris | scalar | *Visual | NONE | NONE | --- | --- |
| Sand/Dirt | scalar | *Visual | NONE | NONE | --- | --- |
| Appearance | scalar | *Visual | NORML | NORML | --- | --- |
| Odor | scalar | *Visual | NORML | NORML | --- | --- |
| Emulsified Water | scalar | *Visual | >0.1 | NEG | --- | --- |
| Sodium | ppm | ASTM D5185m | >75 | <1 | --- | --- |
| Boron | ppm | ASTM D5185m | | 12 | --- | --- |
| Barium | ppm | ASTM D5185m | | 0 | --- | --- |
| Molybdenum | ppm | ASTM D5185m | | 78 | --- | --- |
| Manganese | ppm | ASTM D5185m | | 0 | --- | --- |
| Magnesium | ppm | ASTM D5185m | | 1151 | --- | --- |
| Calcium | ppm | ASTM D5185m | | 1272 | --- | --- |
| Phosphorus | ppm | ASTM D5185m | | 1151 | --- | --- |
| Zinc | ppm | ASTM D5185m | | 1503 | --- | --- |
| Sulfur | ppm | ASTM D5185m | | 3480 | --- | --- |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 14.0 | --- | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | 9.1 | --- | --- |
| Visc @ 100°C | cSt | ASTM D445 | | 12.8 | --- | --- |

Base Number

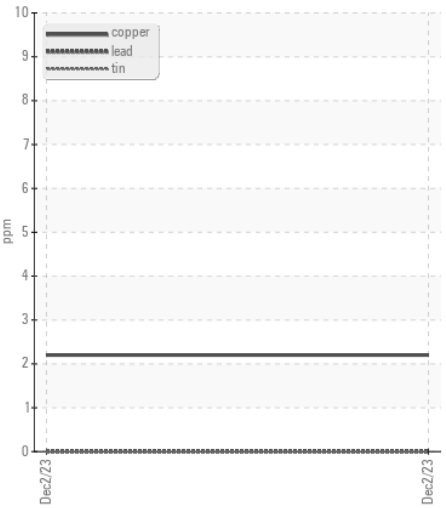



Viscosity @ 100°C

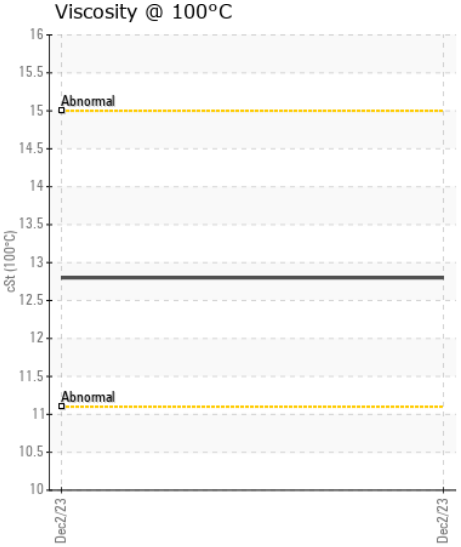

Ferrous Alloys



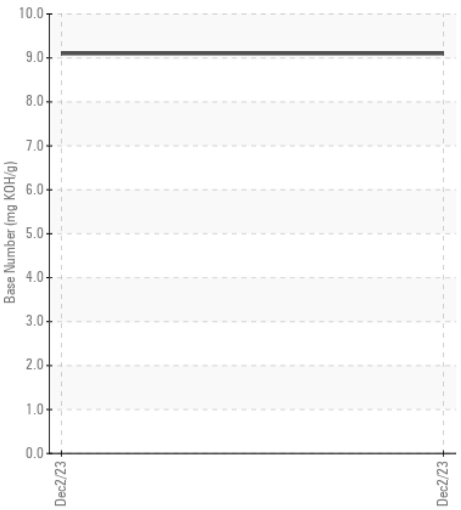

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : KFS0002675
**Lab Number** : 06087015
**Unique Number** : 10874460
**Test Package** : FLEET

**Received** : 13 Feb 2024
**Tested** : 14 Feb 2024
**Diagnosed** : 14 Feb 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)*

**M/V CHRIS MILLS**
3501 STARLITE DR
PADUCAH, KY
US 42003
Contact: CHRIS MILLS
cmills@hfline.com
T:
F: