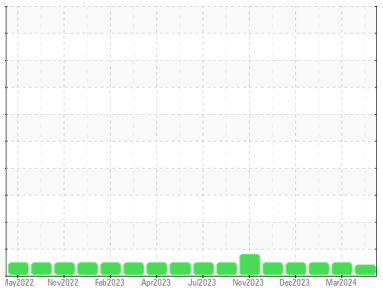
KIMBRO FLUID SOLUTIONS

# OIL ANALYSIS REPORT

Sample Rating Trend




**VIS DEBRIS**

Area
## HOTLINE/120 MILL
Machine Id
## EXIT HYD RETURN LINE 1415-113-1530
Component
**Hydraulic System**
Fluid
**QUAKER CHEMICAL QUINTOLUBRIC 888-46 (3500 GAL)**

## DIAGNOSIS

**Recommendation**
We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample.

**Wear**
All component wear rates are normal.

**Contamination**
Moderate concentration of visible dirt/debris present in the oil.

**Fluid Condition**
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **KFS0004565** | KFS0002554 | KFS0004623 |
| Sample Date | | Client Info | | **21 Jun 2024** | 22 Mar 2024 | 16 Feb 2024 |
| Machine Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **ABNORMAL** | NORMAL | NORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Water | | WC Method | >0.05 | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >20 | **0** | <1 | 0 |
| Chromium | ppm | ASTM D5185m | >20 | **0** | <1 | 0 |
| Nickel | ppm | ASTM D5185m | >20 | **0** | <1 | <1 |
| Titanium | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Silver | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | **0** | 3 | 0 |
| Lead | ppm | ASTM D5185m | >20 | **0** | 1 | 0 |
| Copper | ppm | ASTM D5185m | >20 | **0** | <1 | 0 |
| Tin | ppm | ASTM D5185m | >20 | **261** | 317 | 275 |
| Vanadium | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | <1 | 0 |

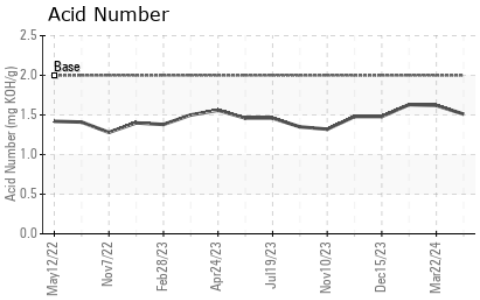
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Barium | ppm | ASTM D5185m | | **0** | 1 | 1 |
| Molybdenum | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Manganese | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Magnesium | ppm | ASTM D5185m | | **0** | 2 | 1 |
| Calcium | ppm | ASTM D5185m | | **26** | 63 | <1 |
| Phosphorus | ppm | ASTM D5185m | | **104** | 119 | 108 |
| Zinc | ppm | ASTM D5185m | | **0** | 18 | 7 |
| Sulfur | ppm | ASTM D5185m | | **715** | 616 | 501 |

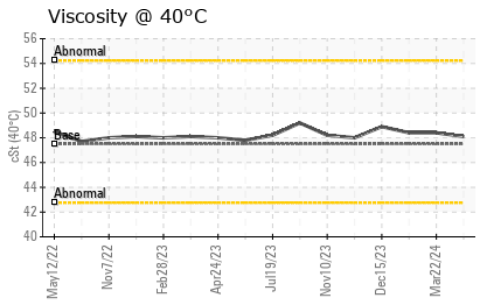
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >15 | **3** | 3 | <1 |
| Sodium | ppm | ASTM D5185m | | **3** | 0 | <1 |
| Potassium | ppm | ASTM D5185m | >20 | **0** | 1 | 0 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >5000 | **---** | 4966 | 3906 |
| Particles >6µm | | ASTM D7647 | >1300 | **---** | 272 | 94 |
| Particles >14µm | | ASTM D7647 | >160 | **---** | 5 | 3 |
| Particles >21µm | | ASTM D7647 | >40 | **---** | 1 | 1 |
| Particles >38µm | | ASTM D7647 | >10 | **---** | 0 | 1 |
| Particles >71µm | | ASTM D7647 | >3 | **---** | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | **---** | 19/15/10 | 19/14/9 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 2.0 | **1.51** | 1.62 | 1.63 |

# OIL ANALYSIS REPORT



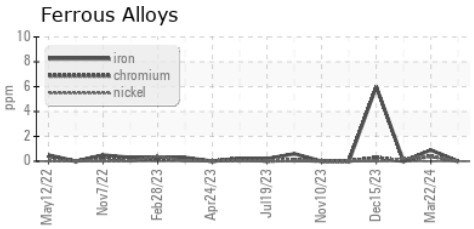



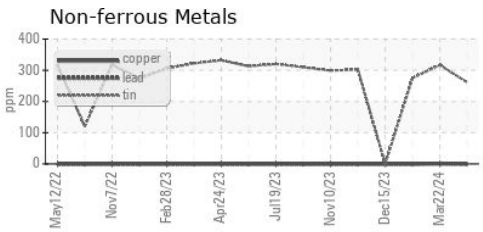

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Silt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Debris | scalar | *Visual | NONE | ▲ **MODER** | 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 | >0.05 | **NEG** | NEG | NEG |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

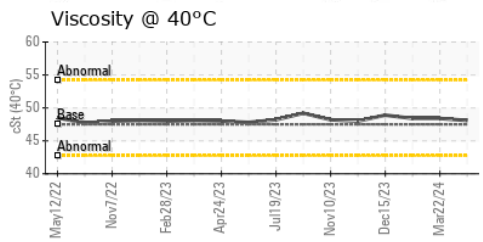
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 47.5 | **48.1** | 48.4 | 48.4 |

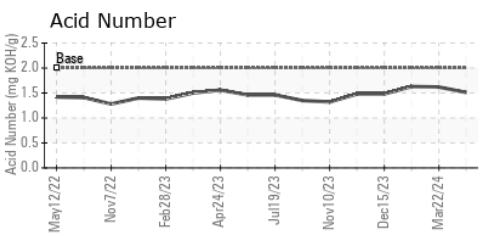
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  | | |
| Bottom | | |  | | |

## GRAPHS




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : KFS0004565
**Lab Number** : 06219631
**Unique Number** : 11097828
**Test Package** : IND 2

**Received** : 25 Jun 2024
**Tested** : 26 Jun 2024
**Diagnosed** : 26 Jun 2024 - Don Baldridge

*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)*

**CONSTELLIUM**
4805 SECOND STREET
MUSCLE SHOALS, AL
US 35661
Contact: Joel Even
joel.even@constellium.com
T: (256)740-7490
F: