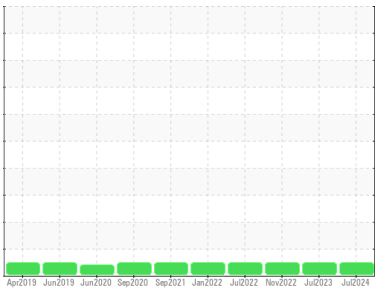
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Area
## Kentucky
Machine Id
## [Kentucky] Hydraulic - Steering
Component
**Hydraulic System**
Fluid
**R&O OIL ISO 100 (35 GAL)**

## DIAGNOSIS

**Recommendation**
Resample at the next service interval to monitor. ( Customer Sample Comment: Chris wray )

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

**Contamination**
There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

**Fluid Condition**
Confirm oil type. 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 | | **WC0898568** | WC0769169 | WC0731864 |
| Sample Date | | Client Info | | **09 Jul 2024** | 06 Jul 2023 | 04 Nov 2022 |
| Machine Age | hrs | Client Info | | **22313** | 15655 | 0 |
| Oil Age | hrs | Client Info | | **15447** | 8788 | 0 |
| Oil Changed | | Client Info | | **Not Changd** | N/A | N/A |
| Sample Status | | | | **NORMAL** | NORMAL | NORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >30 | **2** | 2 | 2 |
| Chromium | ppm | ASTM D5185m | >2 | **<1** | 0 | <1 |
| Nickel | ppm | ASTM D5185m | >2 | **<1** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Silver | ppm | ASTM D5185m | | **0** | 0 | 1 |
| Aluminum | ppm | ASTM D5185m | >2 | **2** | 0 | 0 |
| Lead | ppm | ASTM D5185m | >10 | **<1** | <1 | <1 |
| Copper | ppm | ASTM D5185m | >25 | **5** | 5 | 7 |
| Tin | ppm | ASTM D5185m | >20 | **<1** | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **<1** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 5 | **0** | 0 | <1 |
| Barium | ppm | ASTM D5185m | 5 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 5 | **<1** | <1 | <1 |
| Manganese | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Magnesium | ppm | ASTM D5185m | 5 | **5** | 4 | 4 |
| Calcium | ppm | ASTM D5185m | 5 | **56** | 76 | 76 |
| Phosphorus | ppm | ASTM D5185m | 100 | **278** | 296 | 300 |
| Zinc | ppm | ASTM D5185m | 25 | **419** | 424 | 431 |
| Sulfur | ppm | ASTM D5185m | 1500 | **2913** | 3117 | 3438 |

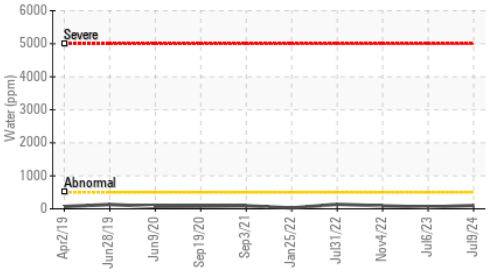
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **<1** | 4 | <1 |
| Sodium | ppm | ASTM D5185m | | **0** | 0 | <1 |
| Potassium | ppm | ASTM D5185m | >20 | **<1** | <1 | <1 |
| Water | % | ASTM D6304 | >0.05 | **0.010** | 0.005 | 0.009 |
| ppm Water | ppm | ASTM D6304 | >500 | **103** | 53.5 | 90.1 |

| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >5000 | **3369** | 974 | 2551 |
| Particles >6µm | | ASTM D7647 | >1300 | **235** | 115 | 308 |
| Particles >14µm | | ASTM D7647 | >160 | **20** | 7 | 26 |
| Particles >21µm | | ASTM D7647 | >40 | **7** | 3 | 7 |
| Particles >38µm | | ASTM D7647 | >10 | **0** | 0 | 0 |
| Particles >71µm | | ASTM D7647 | >3 | **0** | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | **19/15/11** | 17/14/10 | 19/15/12 |

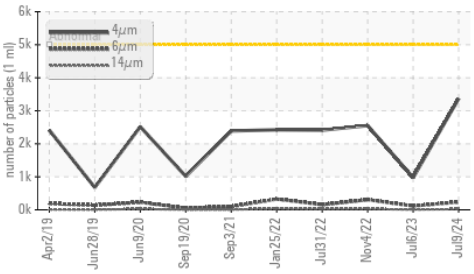
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.08 | **0.44** | 0.43 | 0.47 |

# OIL ANALYSIS REPORT

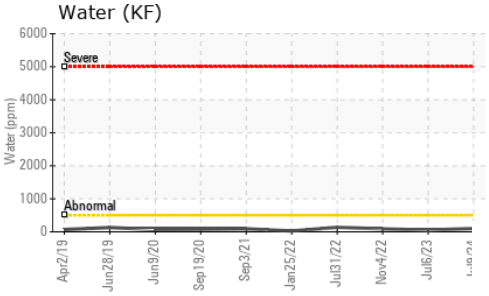
Water (KF)



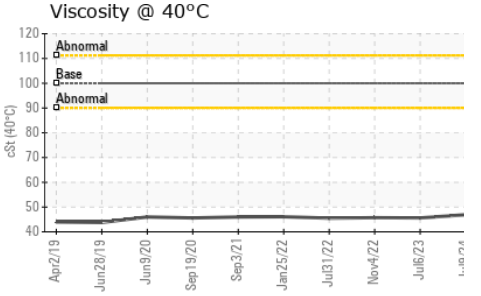

Particle Trend



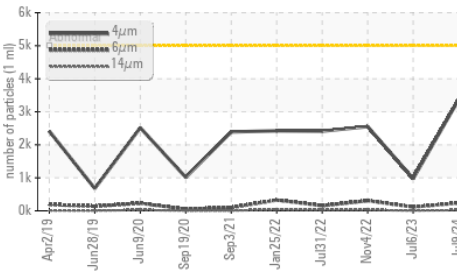

Water (KF)




Viscosity @ 40°C

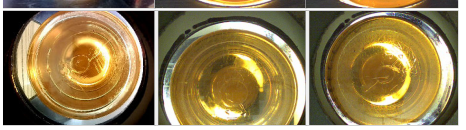



Particle Trend



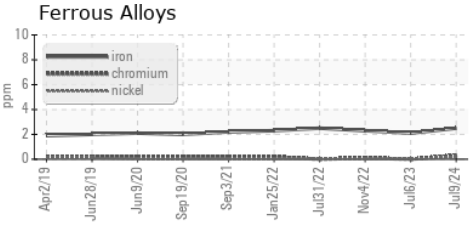

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 100 | **46.9** | 45.6 | 45.7 |

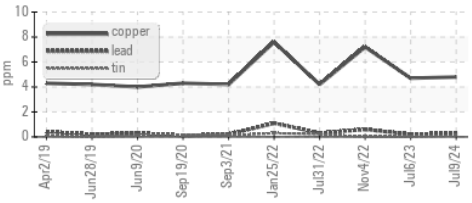
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  | | |
| Bottom | | |  | | |

## GRAPHS

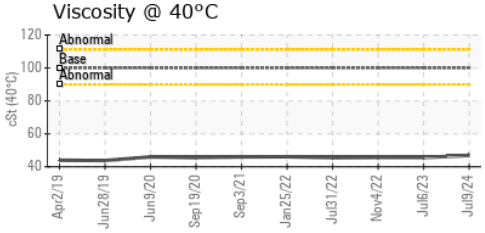
Ferrous Alloys



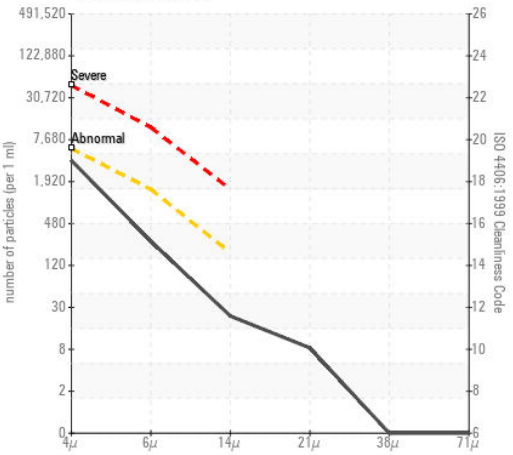

Non-ferrous Metals



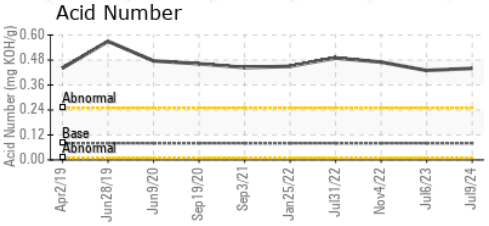

Viscosity @ 40°C




Particle Count




Acid Number




**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0898568 **Received** : 15 Jul 2024
**Lab Number** : 06235936 **Tested** : 16 Jul 2024
**Unique Number** : 11124770 **Diagnosed** : 16 Jul 2024 - Don Baldridge
**Test Package** : IND 2 ( Additional Tests: KF )

Certificate L2367

*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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Submitted By: M/V KENTUCKY