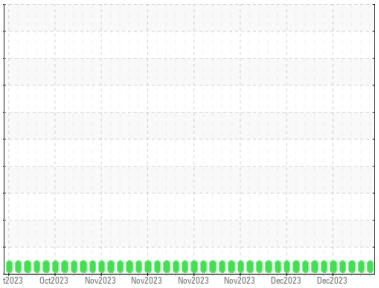
# OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
## QC230213IND2
Component
**Hydraulic System**
Fluid
**AW HYDRAULIC OIL ISO 68 (--- GAL)**

## DIAGNOSIS

**Recommendation**

Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

**Wear**

All component wear rates are normal.

**Contamination**

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The water content is negligible. The system and fluid cleanliness is acceptable.

**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 | | **WC0883411** | WC0883410 | WC0883409 |
| Sample Date | | Client Info | | **14 Dec 2023** | 13 Dec 2023 | 12 Dec 2023 |
| 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 | | | | **NORMAL** | --- | NORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185(m) | >20 | **0** | 0 | 0 |
| Chromium | ppm | ASTM D5185(m) | >20 | **0** | 0 | 0 |
| Nickel | ppm | ASTM D5185(m) | >20 | **0** | <1 | 0 |
| Titanium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |
| Aluminum | ppm | ASTM D5185(m) | >20 | **0** | 0 | <1 |
| Lead | ppm | ASTM D5185(m) | >20 | **0** | <1 | 0 |
| Copper | ppm | ASTM D5185(m) | >20 | **<1** | <1 | 0 |
| Tin | ppm | ASTM D5185(m) | >20 | **0** | 0 | 0 |
| Antimony | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Vanadium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Beryllium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |

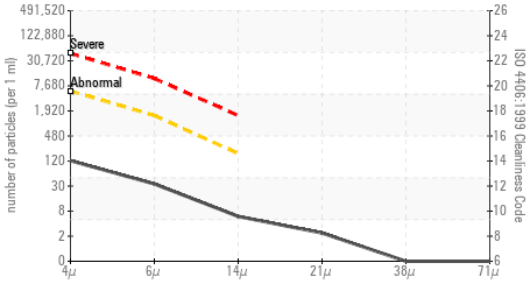
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185(m) | 5 | **<1** | <1 | <1 |
| Barium | ppm | ASTM D5185(m) | 5 | **<1** | <1 | <1 |
| Molybdenum | ppm | ASTM D5185(m) | 5 | **0** | 0 | 0 |
| Manganese | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Magnesium | ppm | ASTM D5185(m) | 25 | **0** | 0 | <1 |
| Calcium | ppm | ASTM D5185(m) | 200 | **42** | 42 | 43 |
| Phosphorus | ppm | ASTM D5185(m) | 300 | **328** | 336 | 341 |
| Zinc | ppm | ASTM D5185(m) | 370 | **423** | 419 | 427 |
| Sulfur | ppm | ASTM D5185(m) | 2500 | **684** | 704 | 743 |
| Lithium | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >15 | **0** | 0 | 0 |
| Sodium | ppm | ASTM D5185(m) | | **0** | <1 | 0 |
| Potassium | ppm | ASTM D5185(m) | >20 | **0** | 0 | 0 |
| Water | % | ASTM D6304* | >0.05 | **0.002** | 0.003 | 0.003 |
| ppm Water | ppm | ASTM D6304* | >500 | **23** | 29 | 29 |

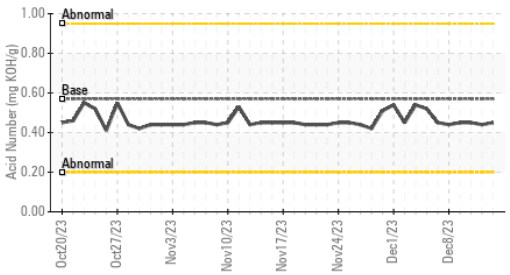
| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >5000 | **108** | --- | 52 |
| Particles >6µm | | ASTM D7647 | >1300 | **30** | --- | 11 |
| Particles >14µm | | ASTM D7647 | >160 | **5** | --- | 3 |
| Particles >21µm | | ASTM D7647 | >40 | **2** | --- | 2 |
| Particles >38µm | | ASTM D7647 | >10 | **0** | --- | 0 |
| Particles >71µm | | ASTM D7647 | >3 | **0** | --- | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | **14/12/10** | --- | 13/11/9 |

# OIL ANALYSIS REPORT

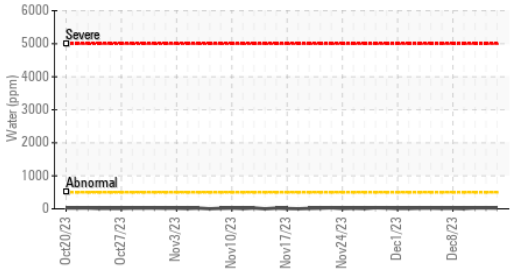
Particle Count



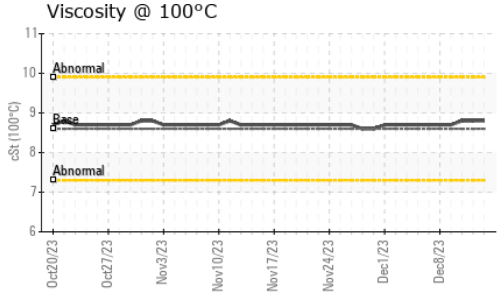

Acid Number



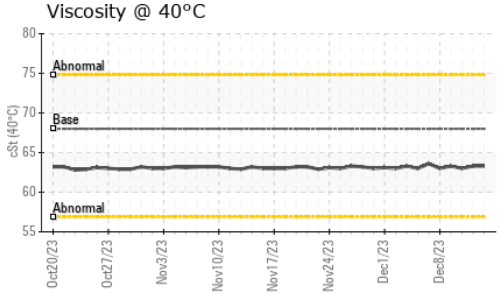

Water (KF)




Viscosity @ 100°C



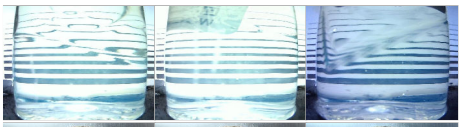

Viscosity @ 40°C




| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D974* | 0.57 | **0.45** | 0.44 | 0.45 |

| 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 D7279(m) | 68 | **63.3** | 63.3 | 63.0 |
| Visc @ 100°C | cSt | ASTM D7279(m) | 8.6 | **8.8** | 8.8 | 8.8 |
| Viscosity Index (VI) | Scale | ASTM D2270* | 96 | **112** | 112 | 113 |

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

ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **WearCheck Quality Control Sample Results**
**Sample No.** : WC0883411 **Received** : 14 Dec 2023
**Lab Number** : 02603192 **Diagnosed** : 15 Dec 2023
**Unique Number** : 5696277 **Diagnostician** : Wes Davis
**Test Package** : IND 2 ( Additional Tests: KF, KV100, VI )

*To discuss this sample report, contact Customer Service at 1-800-268-2131.*
*Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.*
*Validity of results and interpretation are based on the sample and information as supplied.*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