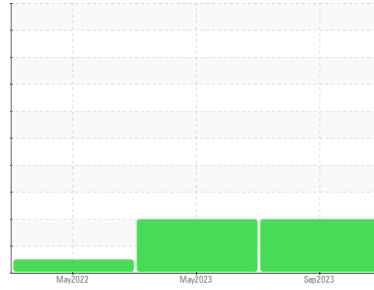




OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Area
METRO
 Machine Id
METRO 23015
 Component
Transmission (Manual)
 Fluid
NOT GIVEN (--- GAL)

DIAGNOSIS

Recommendation

We recommend you service the filters on this component. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is a high amount of particulates present in the fluid.

Fluid Condition

The AN level is acceptable for this fluid. The condition of the fluid is acceptable for the time in service.

SAMPLE INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | WC0853943 | WC0815559 | WC0692968 |
| Sample Date | Client Info | | 20 Sep 2023 | 07 May 2023 | 17 May 2022 |
| Machine Age | mls | Client Info | 110691 | 77045 | 6 |
| Oil Age | mls | Client Info | 0 | 0 | 0 |
| Oil Changed | Client Info | | N/A | N/A | N/A |
| Sample Status | | | ABNORMAL | ABNORMAL | NORMAL |

WEAR METALS

| | method | limit/base | current | history1 | history2 |
|----------|--------|------------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185m >200 | 41 | 46 | 2 |
| Chromium | ppm | ASTM D5185m >5 | 0 | <1 | 0 |
| Nickel | ppm | ASTM D5185m >5 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m >7 | 0 | 0 | 1 |
| Aluminum | ppm | ASTM D5185m >25 | 7 | 7 | <1 |
| Lead | ppm | ASTM D5185m >45 | 0 | 0 | <1 |
| Copper | ppm | ASTM D5185m >225 | 7 | 4 | <1 |
| Tin | ppm | ASTM D5185m >10 | <1 | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | <1 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | 0 | 0 | <1 |

ADDITIVES

| | method | limit/base | current | history1 | history2 |
|------------|--------|-------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185m | 13 | 22 | 46 |
| Barium | ppm | ASTM D5185m | <1 | 0 | 3 |
| Molybdenum | ppm | ASTM D5185m | 287 | 322 | 338 |
| Manganese | ppm | ASTM D5185m | 1 | 2 | <1 |
| Magnesium | ppm | ASTM D5185m | 2 | 2 | 2 |
| Calcium | ppm | ASTM D5185m | 305 | 373 | 574 |
| Phosphorus | ppm | ASTM D5185m | 794 | 958 | 1058 |
| Zinc | ppm | ASTM D5185m | 5 | <1 | 3 |
| Sulfur | ppm | ASTM D5185m | 10704 | 15101 | 13307 |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|------------------|--------------|----------|----------|
| Silicon | ppm | ASTM D5185m >125 | 10 | 10 | 6 |
| Sodium | ppm | ASTM D5185m | 2 | <1 | 0 |
| Potassium | ppm | ASTM D5185m >20 | 5 | 2 | <1 |
| Water | % | ASTM D6304 >0.1 | 0.015 | 0.008 | 0.025 |
| ppm Water | ppm | ASTM D6304 >1000 | 153.8 | 86.1 | 257.2 |

FLUID CLEANLINESS

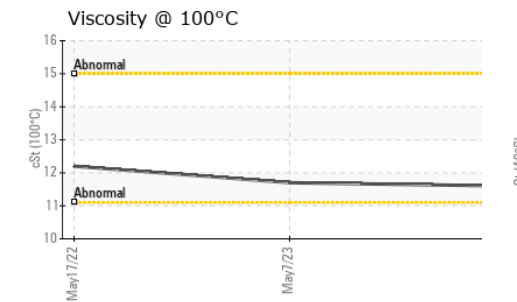
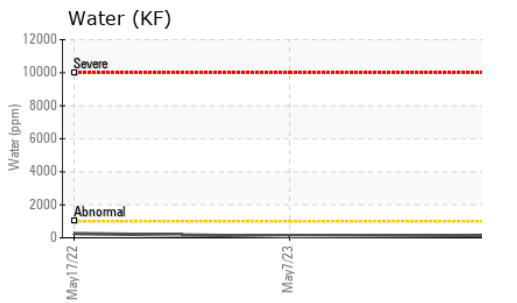
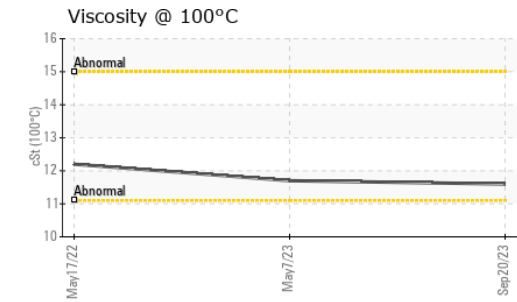
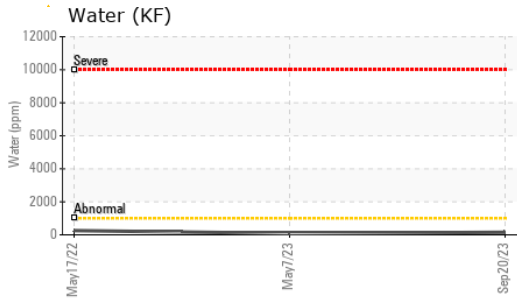
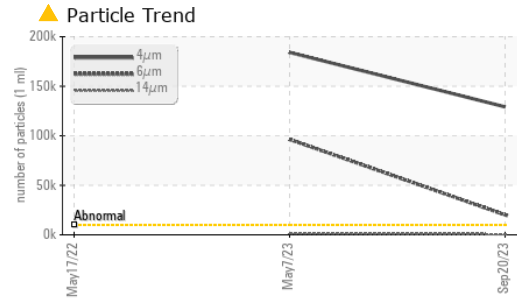
| | method | limit/base | current | history1 | history2 |
|-----------------|--------------|------------|-------------------|------------|----------|
| Particles >4µm | ASTM D7647 | >10000 | ▲ 129176 | ▲ 184160 | --- |
| Particles >6µm | ASTM D7647 | >2500 | ▲ 20133 | ▲ 96389 | --- |
| Particles >14µm | ASTM D7647 | >320 | ▲ 504 | ▲ 1460 | --- |
| Particles >21µm | ASTM D7647 | >80 | ▲ 130 | ▲ 158 | --- |
| Particles >38µm | ASTM D7647 | >20 | 5 | 4 | --- |
| Particles >71µm | ASTM D7647 | >4 | 0 | 0 | --- |
| Oil Cleanliness | ISO 4406 (c) | >20/18/15 | ▲ 24/22/16 | ▲ 25/24/18 | --- |

FLUID DEGRADATION

| | method | limit/base | current | history1 | history2 |
|------------------|----------|------------|-------------|----------|----------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.93 | 1.01 | 1.64 |



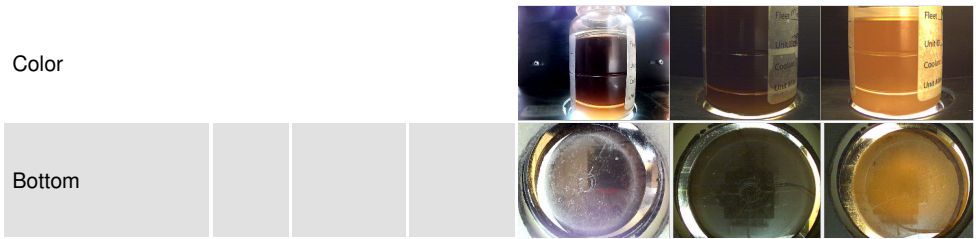
OIL ANALYSIS REPORT



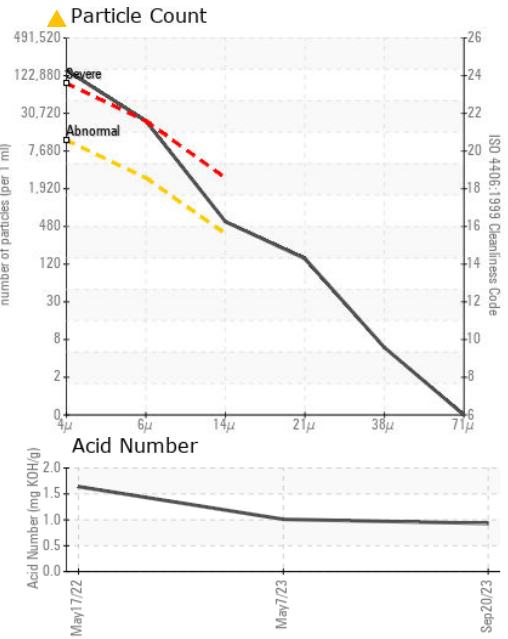
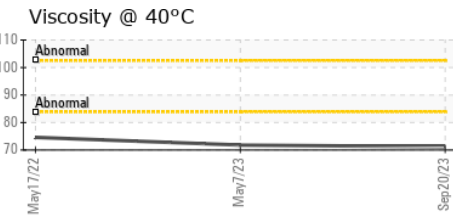
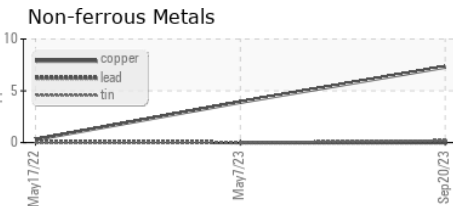
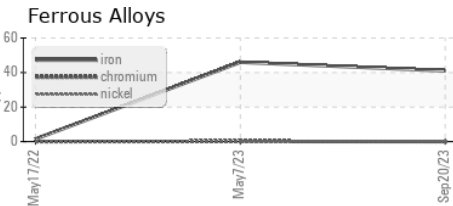
| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | NONE | NONE |
| Silt | scalar | *Visual | NONE | NONE | NONE |
| Debris | scalar | *Visual | NONE | NONE | LIGHT |
| Sand/Dirt | scalar | *Visual | NONE | NONE | NONE |
| Appearance | scalar | *Visual | NORML | NORML | NORML |
| Odor | scalar | *Visual | NORML | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.1 | NEG | NEG |
| Free Water | scalar | *Visual | | NEG | NEG |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|----------------------|--------|------------|---------|----------|----------|
| Visc @ 40°C | cSt | ASTM D445 | 71.2 | 71.8 | 74.6 |
| Visc @ 100°C | cSt | ASTM D445 | 11.6 | 11.7 | 12.2 |
| Viscosity Index (VI) | Scale | ASTM D2270 | 157 | 158 | 161 |

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



GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0853943 **Received** : 01 Nov 2023
Lab Number : 05996282 **Diagnosed** : 03 Nov 2023
Unique Number : 10724642 **Diagnostician** : Don Baldrige
Test Package : MOB 2 (Additional Tests: KF, KV100, PrtCount, VI)

BASF - GIANNA CREDAROLI
 500 WHITE PLAINS RD
 TARRYTOWN, NY
 US 10591
 Contact: GIANNA CREDAROLI
 gianna.credaroli@basf.com

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)