



OIL ANALYSIS REPORT

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



Area
DE Samples - CAT LAB
Machine Id
CATERPILLAR 775D 6441 (S/N 8AS00350)
Component
Steering
Fluid
TULCO LUBSOIL SUPER HYDRAULIC HZ 46 (21 GAL)

RECOMMENDATION

No corrective action is recommended at this time. The filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | TO10001697 | TO10002872 | TO10002448 |
| Sample Date | | Client Info | | 20 Feb 2024 | 13 Nov 2023 | 09 Aug 2023 |
| Machine Age | hrs | Client Info | | 43280 | 42811 | 42272 |
| Oil Age | hrs | Client Info | | 4527 | 4058 | 3519 |
| Filter Age | hrs | Client Info | | 469 | 539 | 475 |
| Oil Changed | | Client Info | | Not Changed | Not Changed | Not Changed |
| Filter Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | ATTENTION | NORMAL | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >60 | 1 | 3 | 3 |
| Chromium | ppm | ASTM D5185m | >12 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >6 | 0 | <1 | 0 |
| Titanium | ppm | ASTM D5185m | | 0 | <1 | 0 |
| Silver | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >4 | 0 | <1 | 0 |
| Lead | ppm | ASTM D5185m | >12 | 0 | 0 | 0 |
| Copper | ppm | ASTM D5185m | >30 | 1 | 2 | <1 |
| Tin | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | | <1 | <1 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

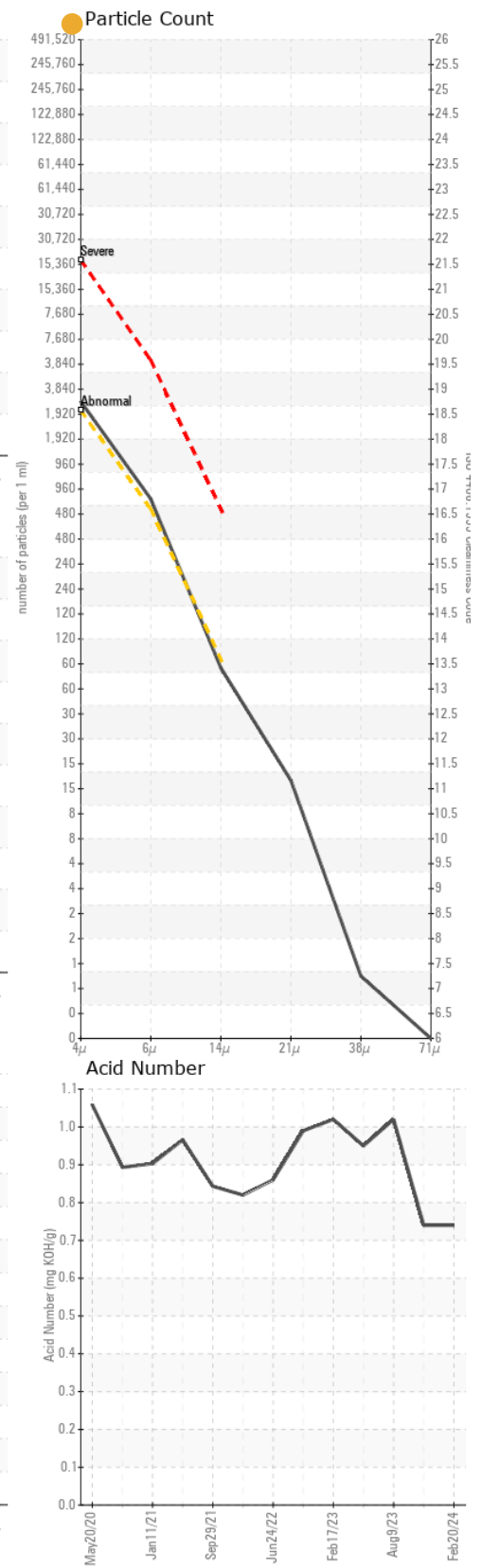
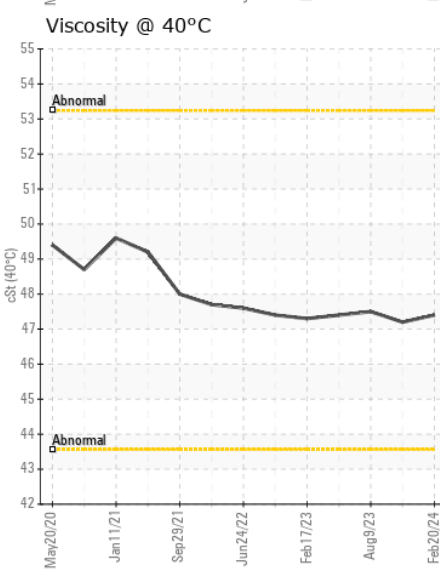
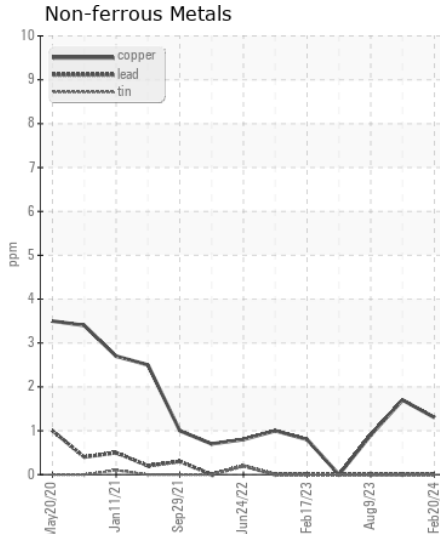
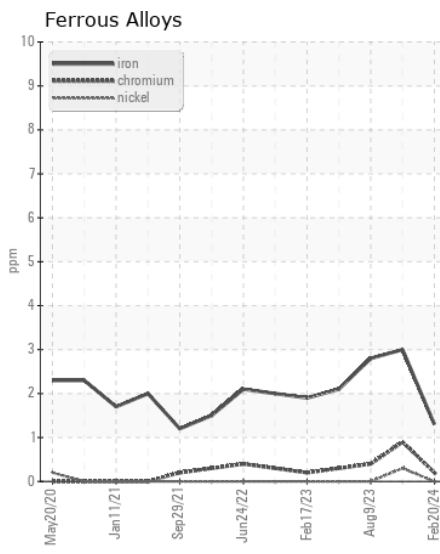
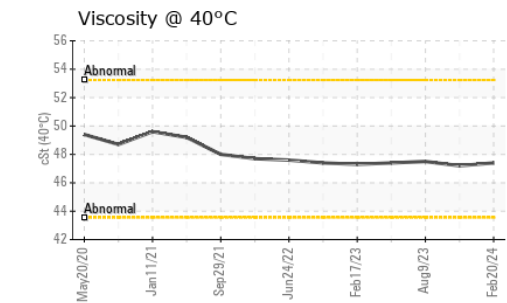
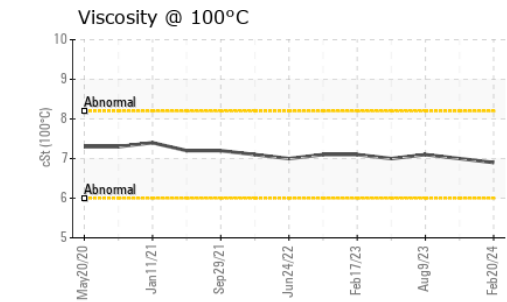
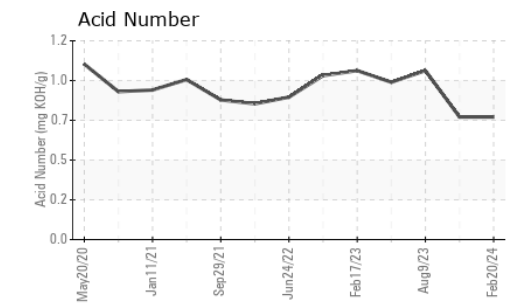
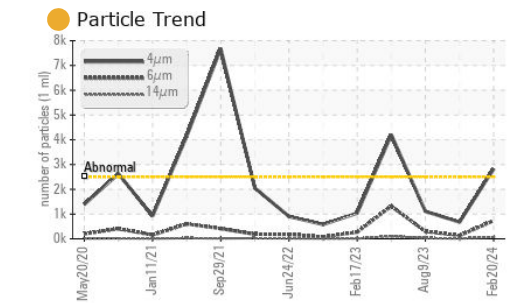
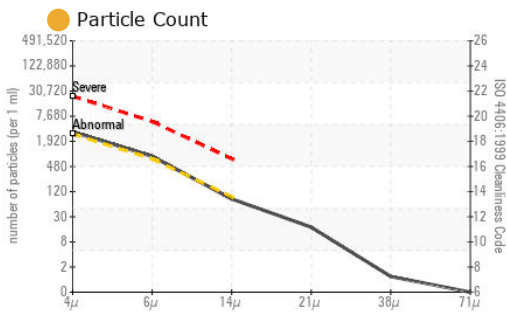
There is a moderate amount of silt (particulates < 14 microns in size) present in the fluid.

| | | | | | | |
|------------------|--------|--------------|-----------|-----------------|----------|----------|
| Silicon | ppm | ASTM D5185m | >10 | <1 | 2 | <1 |
| Potassium | ppm | ASTM D5185m | >20 | 0 | 0 | 0 |
| Water | | WC Method | | NEG | NEG | NEG |
| Particles >4µm | | ASTM D7647 | >2500 | 2826 | 674 | 1109 |
| Particles >6µm | | ASTM D7647 | >640 | 734 | 133 | 298 |
| Particles >14µm | | ASTM D7647 | >80 | 71 | 10 | 29 |
| Particles >21µm | | ASTM D7647 | >20 | 15 | 2 | 8 |
| Particles >38µm | | ASTM D7647 | >4 | 1 | 0 | 0 |
| Particles >71µm | | ASTM D7647 | >3 | 0 | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >18/16/13 | 19/17/13 | 17/14/10 | 17/15/12 |
| 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 | | NEG | NEG | NEG |

FLUID CONDITION

The AN level is acceptable for this fluid. The condition of the fluid is suitable for further service.

| | | | | | | |
|----------------------|----------|-------------|--|-------------|------|------|
| Sodium | ppm | ASTM D5185m | | 6 | 4 | 5 |
| Boron | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Barium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | 0 | <1 | 0 |
| Manganese | ppm | ASTM D5185m | | 0 | <1 | 0 |
| Magnesium | ppm | ASTM D5185m | | 140 | 79 | 149 |
| Calcium | ppm | ASTM D5185m | | 151 | 102 | 155 |
| Phosphorus | ppm | ASTM D5185m | | 644 | 730 | 786 |
| Zinc | ppm | ASTM D5185m | | 835 | 952 | 997 |
| Sulfur | ppm | ASTM D5185m | | 2494 | 2587 | 3600 |
| Acid Number (AN) | mg KOH/g | ASTM D8045 | | 0.74 | 0.74 | 1.02 |
| Visc @ 40°C | cSt | ASTM D445 | | 47.4 | 47.2 | 47.5 |
| Visc @ 100°C | cSt | ASTM D445 | | 6.9 | 7 | 7.1 |
| Viscosity Index (VI) | Scale | ASTM D2270 | | 100 | 104 | 107 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO10001697 **Received** : 29 Feb 2024
Lab Number : 06105198 **Tested** : 01 Mar 2024
Unique Number : 10903428 **Diagnosed** : 04 Mar 2024 - Don Baldrige
Test Package : MOB 2 (Additional Tests: KV100, PrtCount, VI)

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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