



OIL ANALYSIS REPORT

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



Machine Id
CATERPILLAR 980M 6161 (S/N MK210767)
Component
Transmission
Fluid
TULCO LUBSOIL TO-4 30 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|----------|----------|
| Sample Number | | Client Info | | TO10002788 | --- | --- |
| Sample Date | | Client Info | | 18 Oct 2023 | --- | --- |
| Machine Age | hrs | Client Info | | 8534 | --- | --- |
| Oil Age | hrs | Client Info | | 300 | --- | --- |
| Filter Age | hrs | Client Info | | 300 | --- | --- |
| Oil Changed | | Client Info | | Not Changd | --- | --- |
| Filter Changed | | Client Info | | Not Changd | --- | --- |
| Sample Status | | | | NORMAL | --- | --- |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|-----|-----|
| PQ | | ASTM D8184 | | 11 | --- | --- |
| Iron | ppm | ASTM D5185m | >200 | 14 | --- | --- |
| Chromium | ppm | ASTM D5185m | >10 | <1 | --- | --- |
| Nickel | ppm | ASTM D5185m | | 0 | --- | --- |
| Titanium | ppm | ASTM D5185m | | 0 | --- | --- |
| Silver | ppm | ASTM D5185m | | 0 | --- | --- |
| Aluminum | ppm | ASTM D5185m | >50 | 1 | --- | --- |
| Lead | ppm | ASTM D5185m | >50 | 0 | --- | --- |
| Copper | ppm | ASTM D5185m | >200 | 5 | --- | --- |
| Tin | ppm | ASTM D5185m | >10 | 0 | --- | --- |
| Vanadium | ppm | ASTM D5185m | | 0 | --- | --- |
| White Metal | scalar | *Visual | NONE | NONE | --- | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | --- | --- |

CONTAMINATION

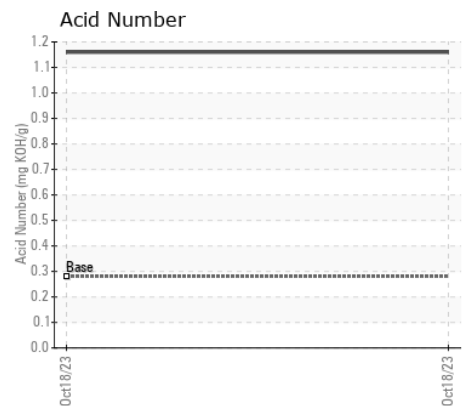
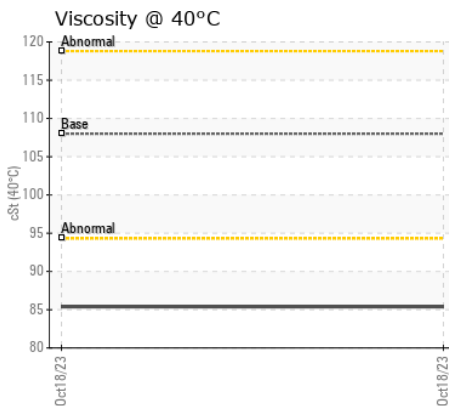
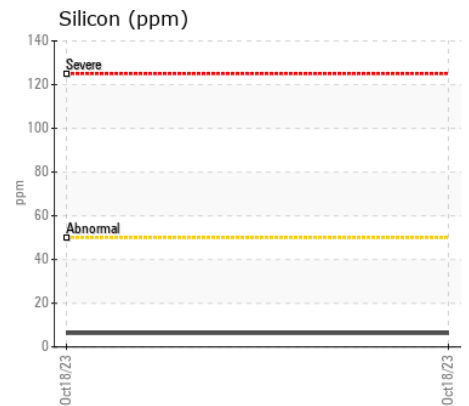
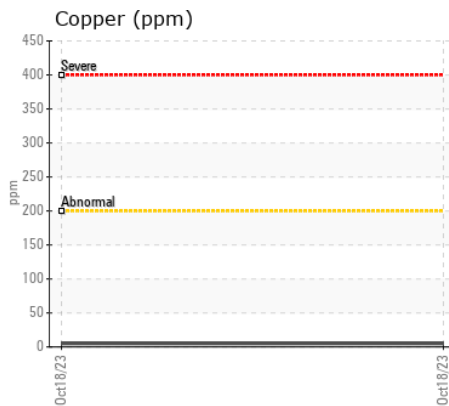
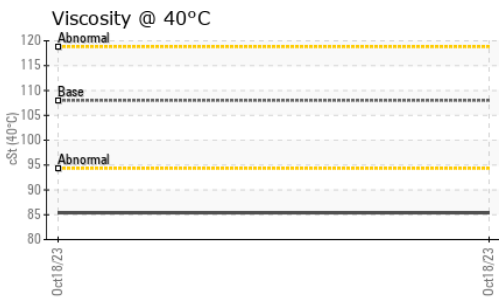
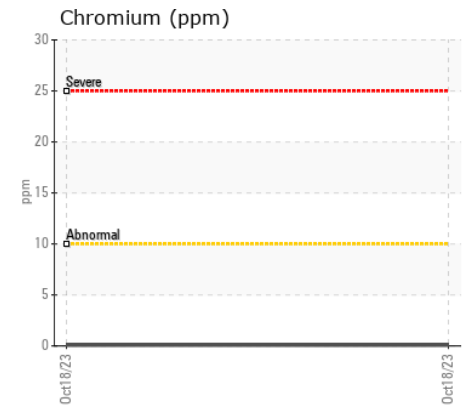
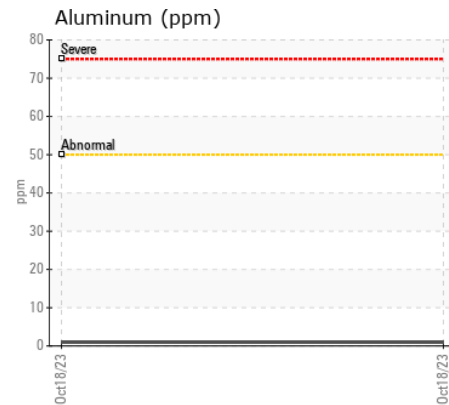
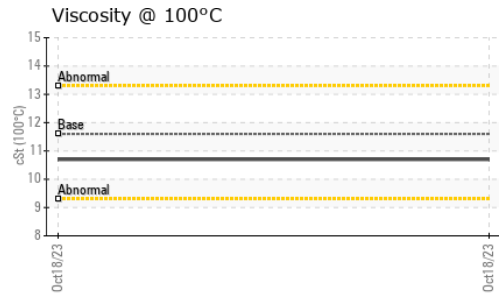
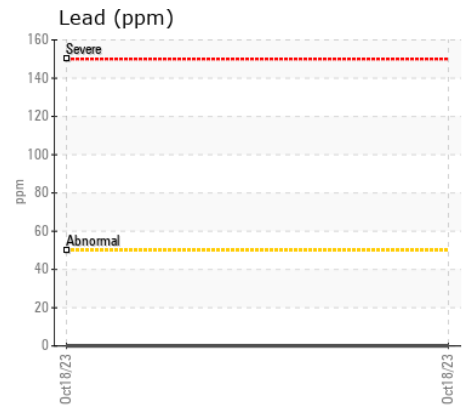
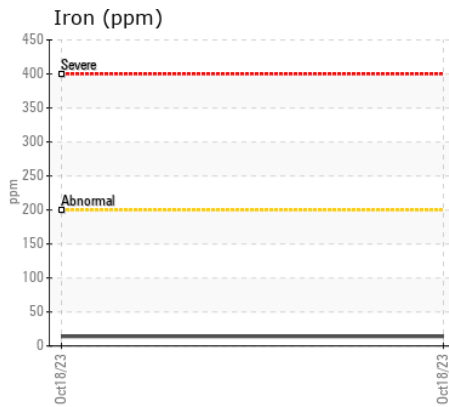
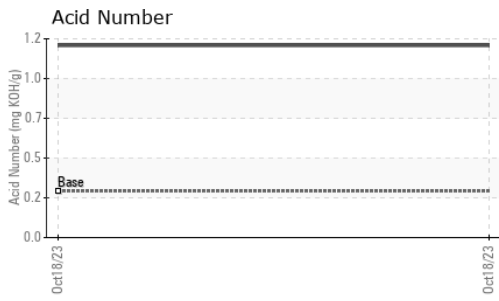
There is no indication of any contamination in the fluid.

| | | | | | | |
|------------------|--------|-------------|-------|--------------|-----|-----|
| Silicon | ppm | ASTM D5185m | >50 | 6 | --- | --- |
| Potassium | ppm | ASTM D5185m | >20 | <1 | --- | --- |
| Water | | WC Method | >0.1 | NEG | --- | --- |
| Silt | scalar | *Visual | NONE | NONE | --- | --- |
| Debris | scalar | *Visual | NONE | NONE | --- | --- |
| Sand/Dirt | scalar | *Visual | NONE | NONE | --- | --- |
| Appearance | scalar | *Visual | NORML | NORML | --- | --- |
| Odor | scalar | *Visual | NORML | NORML | --- | --- |
| Emulsified Water | scalar | *Visual | >0.1 | 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 | | 1 | --- | --- |
| Boron | ppm | ASTM D5185m | | 2 | --- | --- |
| Barium | ppm | ASTM D5185m | | 0 | --- | --- |
| Molybdenum | ppm | ASTM D5185m | | <1 | --- | --- |
| Manganese | ppm | ASTM D5185m | | <1 | --- | --- |
| Magnesium | ppm | ASTM D5185m | 9 | 25 | --- | --- |
| Calcium | ppm | ASTM D5185m | 4500 | 2950 | --- | --- |
| Phosphorus | ppm | ASTM D5185m | 1150 | 1025 | --- | --- |
| Zinc | ppm | ASTM D5185m | 1250 | 1231 | --- | --- |
| Sulfur | ppm | ASTM D5185m | 4500 | 5616 | --- | --- |
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.28 | 1.16 | --- | --- |
| Visc @ 40°C | cSt | ASTM D445 | 108 | 85.4 | --- | --- |
| Visc @ 100°C | cSt | ASTM D445 | 11.6 | 10.7 | --- | --- |
| Viscosity Index (VI) | Scale | ASTM D2270 | 94 | 109 | --- | --- |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO10002788 **Received** : 24 Oct 2023
Lab Number : 05988285 **Diagnosed** : 26 Oct 2023
Unique Number : 10710947 **Diagnostician** : Wes Davis
Test Package : MOB 2 (Additional Tests: KV100, PQ, 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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