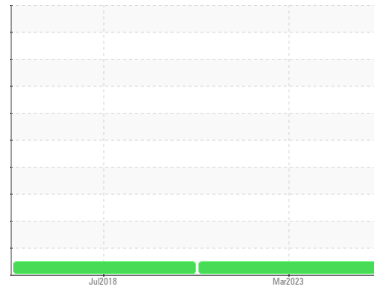


OIL ANALYSIS REPORT



Machine Id
CATERPILLAR 12H GRADER 6438 (S/N 8MN00572)
Component
Left Chain Drive
Fluid
LUBSOIL TO-4 50 (--- GAL)

Sample Rating Trend



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: 263 is the machine hr)

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

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 | TO10001720 | TO1006384 | --- |
| Sample Date | Client Info | 20 Mar 2023 | 14 Jul 2018 | --- |
| Machine Age | hrs | Client Info | 263 | 13328 |
| Oil Age | hrs | Client Info | 263 | 0 |
| Oil Changed | Client Info | Not Chngd | Not Chngd | --- |
| Sample Status | | NORMAL | NORMAL | --- |

WEAR METALS method limit/base current history1 history2

| | | | | | |
|----------|------------|-------------|-----------|--------------|-----|
| PQ | ASTM D8184 | | 33 | 89 | --- |
| Iron | ppm | ASTM D5185m | >200 | 24 | 89 |
| Chromium | ppm | ASTM D5185m | >10 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >10 | <1 | 0 |
| Titanium | ppm | ASTM D5185m | | <1 | <1 |
| Silver | ppm | ASTM D5185m | | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | | 3 | 2 |
| Lead | ppm | ASTM D5185m | | <1 | 0 |
| Copper | ppm | ASTM D5185m | | <1 | <1 |
| Tin | ppm | ASTM D5185m | | 0 | 0 |
| Antimony | ppm | ASTM D5185m | >5 | --- | 0 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 |

ADDITIVES method limit/base current history1 history2

| | | | | | |
|------------|-----|-------------|--|--------------|------|
| Boron | ppm | ASTM D5185m | | 0 | 6 |
| Barium | ppm | ASTM D5185m | | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | <1 | 3 |
| Manganese | ppm | ASTM D5185m | | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | | 10 | 15 |
| Calcium | ppm | ASTM D5185m | | 3444 | 3986 |
| Phosphorus | ppm | ASTM D5185m | | 1026 | 932 |
| Zinc | ppm | ASTM D5185m | | 1279 | 1094 |
| Sulfur | ppm | ASTM D5185m | | 4814 | 4784 |

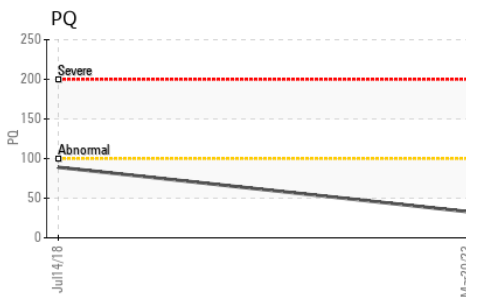
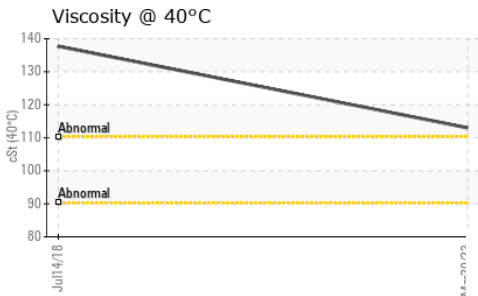
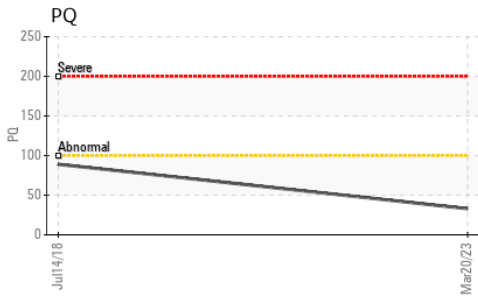
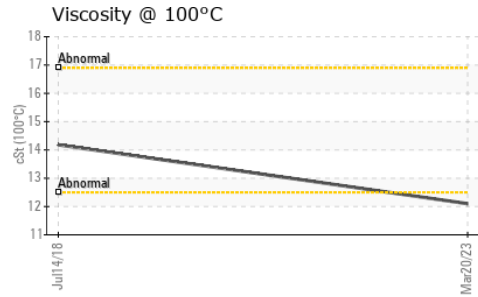
CONTAMINANTS method limit/base current history1 history2

| | | | | | |
|-----------|-----|-------------|------|------------|-----|
| Silicon | ppm | ASTM D5185m | | 13 | 12 |
| Sodium | ppm | ASTM D5185m | | 2 | <1 |
| Potassium | ppm | ASTM D5185m | >20 | 2 | 0 |
| Water | % | ASTM D6304 | >0.2 | NEG | NEG |

FLUID DEGRADATION method limit/base current history1 history2

| | | | | | |
|------------------|----------|------------|--|-------------|-------|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | | 1.10 | 1.181 |
|------------------|----------|------------|--|-------------|-------|

OIL ANALYSIS REPORT



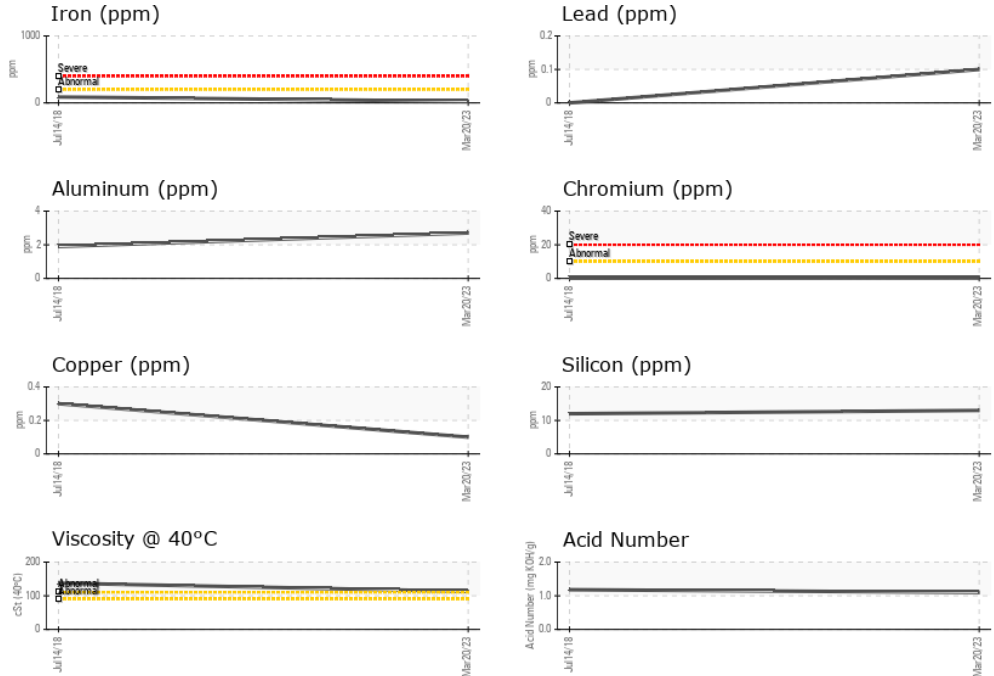
| VISUAL | method | limit/base | current | history1 | history2 | |
|------------------|--------|------------|---------|--------------|----------|-----|
| White Metal | scalar | *Visual | NONE | LIGHT | NONE | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | --- |
| Precipitate | scalar | *Visual | NONE | NONE | NONE | --- |
| Silt | scalar | *Visual | NONE | NONE | NONE | --- |
| Debris | scalar | *Visual | NONE | NONE | NONE | --- |
| Sand/Dirt | scalar | *Visual | NONE | NONE | NONE | --- |
| Appearance | scalar | *Visual | NORML | NORML | NORML | --- |
| Odor | scalar | *Visual | NORML | NORML | NORML | --- |
| Emulsified Water | scalar | *Visual | >0.2 | NEG | NEG | --- |
| Free Water | scalar | *Visual | | NEG | NEG | --- |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|----------------------|--------|------------|-------------|----------|----------|
| Visc @ 40°C | cSt | ASTM D445 | 113 | 137.7 | --- |
| Visc @ 100°C | cSt | ASTM D445 | 12.1 | 14.18 | --- |
| Viscosity Index (VI) | Scale | ASTM D2270 | 96 | 100 | --- |

SAMPLE IMAGES

| SAMPLE IMAGES | method | limit/base | current | history1 | history2 | |
|---------------|--------|------------|---------|-----------------|-----------------|-----------------|
| Color | | | | <i>no image</i> | <i>no image</i> | <i>no image</i> |
| Bottom | | | | <i>no image</i> | <i>no image</i> | <i>no image</i> |

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO10001720 **Received** : 28 Mar 2023
Lab Number : **05804118** **Tested** : 31 Mar 2023
Unique Number : 10401647 **Diagnosed** : 31 Mar 2023 - Jonathan Hester
Test Package : MOB 2 (Additional Tests: KF, KV100, PQ, VI)

ANCHOR STONE TULSA ROCK
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 TULSA, OK
 US 74137
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 F:

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)