

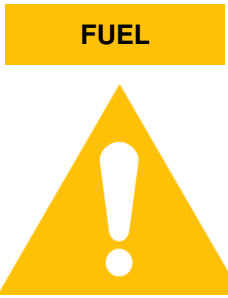
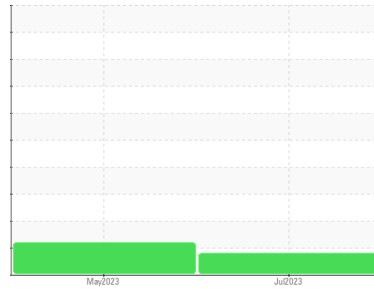


PROBLEM SUMMARY



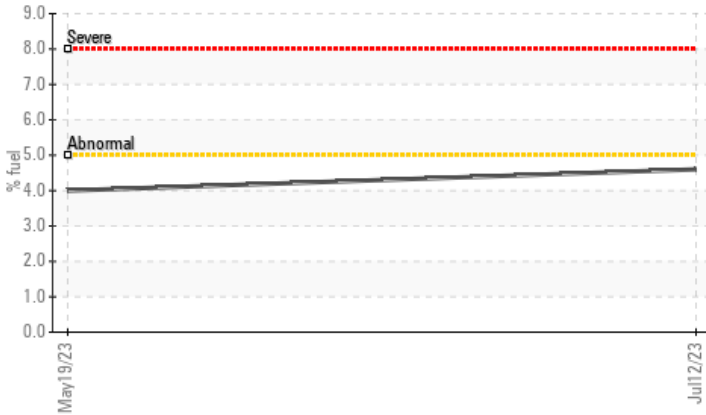
Machine Id
CATERPILLAR SN12-PP
 Component
Diesel Engine
 Fluid
CHEVRON 15W40 (--- GAL)

Sample Rating Trend



COMPONENT CONDITION SUMMARY

▲ Fuel Dilution



RECOMMENDATION

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

PROBLEMATIC TEST RESULTS

| Sample Status | | | | MARGINAL | ABNORMAL | --- |
|---------------|---|------------|----|----------|----------|-----|
| Fuel | % | ASTM D3524 | >5 | ▲ 4.6 | ▲ 4.0 | --- |

Customer Id: DEEMID
 Sample No.: AO0000036
 Lab Number: 05902064
 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Wes Davis +1 905-569-8600 x223
wesd@wearcheck.ca

To change component or sample information:
 Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

19 May 2023 Diag: Wes Davis

FUEL



The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. No other corrective action is recommended at this time. All component wear rates are normal. Light fuel dilution occurring. No other contaminants were detected in the oil. Sulfur ppm levels are abnormally high. The BN result indicates that there is suitable alkalinity remaining in the oil.

view report





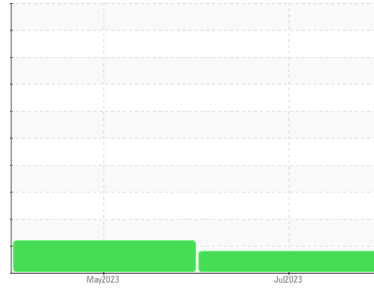
OIL ANALYSIS REPORT

Sample Rating Trend

FUEL



Machine Id
CATERPILLAR SN12-PP
 Component
Diesel Engine
 Fluid
CHEVRON 15W40 (--- GAL)



DIAGNOSIS

Recommendation

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

Wear

All component wear rates are normal.

Contamination

Light fuel dilution occurring. No other contaminants were detected in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|-------------|----------|
| Sample Number | Client Info | | AO0000036 | AO0000203 | --- |
| Sample Date | Client Info | | 12 Jul 2023 | 19 May 2023 | --- |
| Machine Age | hrs | Client Info | 3965 | 2935 | --- |
| Oil Age | hrs | Client Info | 405 | 280 | --- |
| Oil Changed | Client Info | | Changed | Changed | --- |
| Sample Status | | | MARGINAL | ABNORMAL | --- |

CONTAMINATION

| | method | limit/base | current | history1 | history2 |
|--------|-----------|------------|------------|----------|----------|
| Glycol | WC Method | | NEG | NEG | --- |

WEAR METALS

| | method | limit/base | current | history1 | history2 |
|----------|--------|------------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185m >100 | 55 | 67 | --- |
| Chromium | ppm | ASTM D5185m >20 | <1 | <1 | --- |
| Nickel | ppm | ASTM D5185m >2 | 0 | 0 | --- |
| Titanium | ppm | ASTM D5185m >2 | <1 | 0 | --- |
| Silver | ppm | ASTM D5185m >2 | 0 | 0 | --- |
| Aluminum | ppm | ASTM D5185m >25 | 7 | 13 | --- |
| Lead | ppm | ASTM D5185m >40 | 2 | <1 | --- |
| Copper | ppm | ASTM D5185m >330 | 3 | 3 | --- |
| Tin | ppm | ASTM D5185m >15 | <1 | <1 | --- |
| Vanadium | ppm | ASTM D5185m | <1 | 0 | --- |
| Cadmium | ppm | ASTM D5185m | 0 | 0 | --- |

ADDITIVES

| | method | limit/base | current | history1 | history2 |
|------------|--------|-------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185m | 0 | 0 | --- |
| Barium | ppm | ASTM D5185m | 0 | 0 | --- |
| Molybdenum | ppm | ASTM D5185m | 68 | 62 | --- |
| Manganese | ppm | ASTM D5185m | <1 | <1 | --- |
| Magnesium | ppm | ASTM D5185m | 993 | 422 | --- |
| Calcium | ppm | ASTM D5185m | 1291 | 1946 | --- |
| Phosphorus | ppm | ASTM D5185m | 1137 | 1089 | --- |
| Zinc | ppm | ASTM D5185m | 1387 | 1361 | --- |
| Sulfur | ppm | ASTM D5185m | 3746 | ▲ 3928 | --- |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|-----------------|--------------|----------|----------|
| Silicon | ppm | ASTM D5185m >25 | 8 | 11 | --- |
| Sodium | ppm | ASTM D5185m >50 | 4 | 3 | --- |
| Potassium | ppm | ASTM D5185m >20 | 2 | 9 | --- |
| Fuel | % | ASTM D3524 >5 | ▲ 4.6 | ▲ 4.0 | --- |

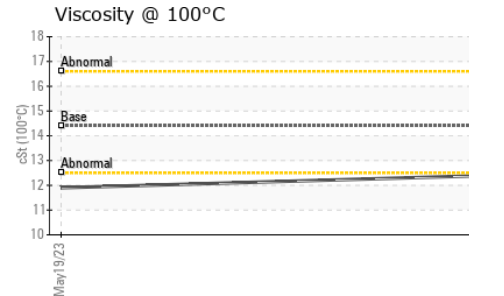
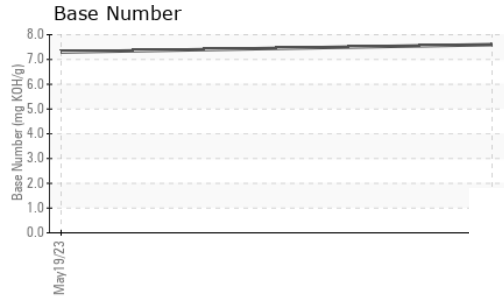
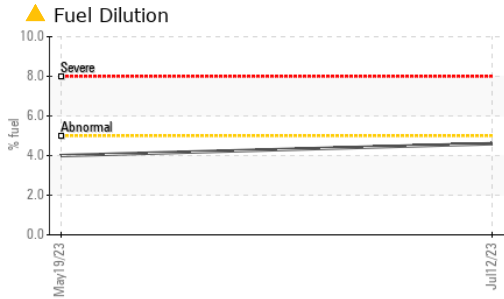
INFRA-RED

| | method | limit/base | current | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot % | % | *ASTM D7844 >3 | 0.5 | 0.9 | --- |
| Nitration | Abs/cm | *ASTM D7624 >20 | 11.2 | 12.0 | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 >30 | 21.5 | 22.7 | --- |

FLUID DEGRADATION

| | method | limit/base | current | history1 | history2 |
|------------------|----------|-----------------|-------------|----------|----------|
| Oxidation | Abs/.1mm | *ASTM D7414 >25 | 17.9 | 18.1 | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 7.6 | 7.3 | --- |

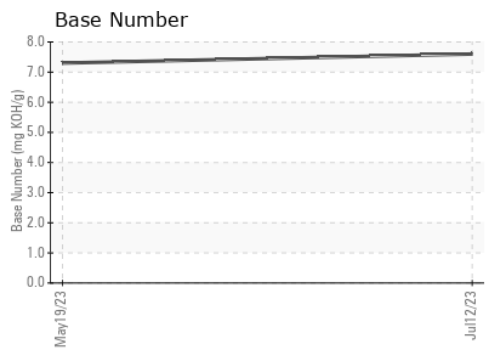
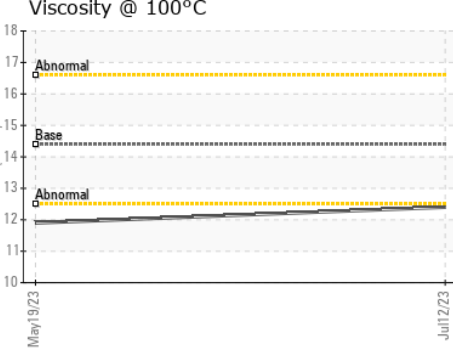
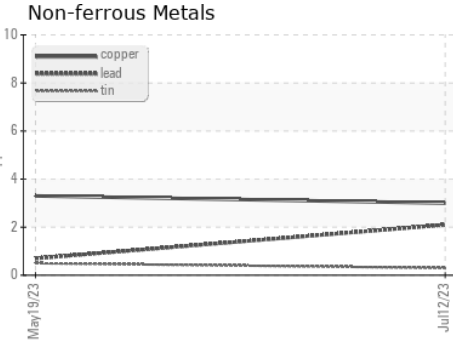
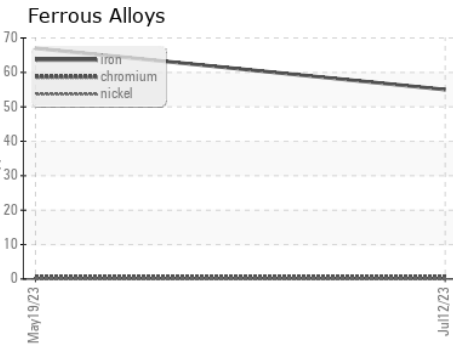
OIL ANALYSIS REPORT



| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | --- |
| Precipitate | scalar | *Visual | NONE | NONE | --- |
| 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 | >0.2 | NEG | --- |
| Free Water | scalar | *Visual | | NEG | --- |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 | |
|------------------|--------|------------|---------|-------------|----------|-----|
| Visc @ 100°C | cSt | ASTM D445 | 14.4 | 12.4 | 11.9 | --- |

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : AO0000036 **Received** : 19 Jul 2023
Lab Number : **05902064** **Diagnosed** : 20 Jul 2023
Unique Number : 10563420 **Diagnostician** : Wes Davis
Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel)

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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