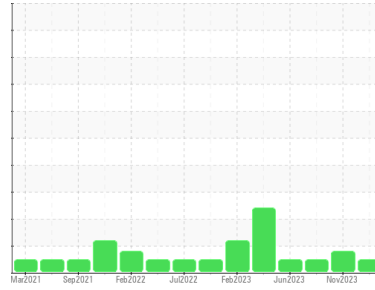




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
728022-1149

Component
Diesel Engine

Fluid
CHEVRON DELO 400 XLE 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination 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 | | GFL0104602 | GFL0096235 | GFL0064424 |
| Sample Date | Client Info | | 06 Mar 2024 | 06 Nov 2023 | 11 Sep 2023 |
| Machine Age | hrs | Client Info | 14646 | 13681 | 15450 |
| Oil Age | hrs | Client Info | 820 | 0 | 425 |
| Oil Changed | Client Info | | Not Changed | Changed | Not Changed |
| Sample Status | | | NORMAL | ABNORMAL | NORMAL |

CONTAMINATION

| | method | limit/base | current | history1 | history2 |
|--------|-----------|------------|----------------|----------|----------|
| Fuel | WC Method | >5 | <1.0 | <1.0 | <1.0 |
| Water | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | WC Method | | NEG | NEG | NEG |

WEAR METALS

| | method | limit/base | current | history1 | history2 |
|----------|--------|------------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185m >80 | 69 | ▲ 103 | 79 |
| Chromium | ppm | ASTM D5185m >5 | 2 | 3 | 2 |
| Nickel | ppm | ASTM D5185m >2 | <1 | 2 | 2 |
| Titanium | ppm | ASTM D5185m | 10 | 8 | 8 |
| Silver | ppm | ASTM D5185m >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m >30 | 9 | 9 | 8 |
| Lead | ppm | ASTM D5185m >30 | 0 | <1 | <1 |
| Copper | ppm | ASTM D5185m >150 | 1 | 2 | 2 |
| Tin | ppm | ASTM D5185m >5 | 0 | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | 0 | 0 | <1 |
| Cadmium | ppm | ASTM D5185m | 0 | 0 | 0 |

ADDITIVES

| | method | limit/base | current | history1 | history2 |
|------------|--------|------------------|-------------|----------|----------|
| Boron | ppm | ASTM D5185m | 83 | 73 | 64 |
| Barium | ppm | ASTM D5185m | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 48 | 88 | 83 |
| Manganese | ppm | ASTM D5185m | 1 | 1 | 1 |
| Magnesium | ppm | ASTM D5185m | 625 | 752 | 801 |
| Calcium | ppm | ASTM D5185m | 1461 | 1686 | 1855 |
| Phosphorus | ppm | ASTM D5185m 760 | 719 | 773 | 782 |
| Zinc | ppm | ASTM D5185m 830 | 821 | 992 | 975 |
| Sulfur | ppm | ASTM D5185m 2770 | 3224 | 2881 | 3631 |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|-----------------|-----------|----------|----------|
| Silicon | ppm | ASTM D5185m >20 | 15 | 19 | 18 |
| Sodium | ppm | ASTM D5185m | 3 | 8 | 9 |
| Potassium | ppm | ASTM D5185m >20 | 15 | 8 | 7 |

INFRA-RED

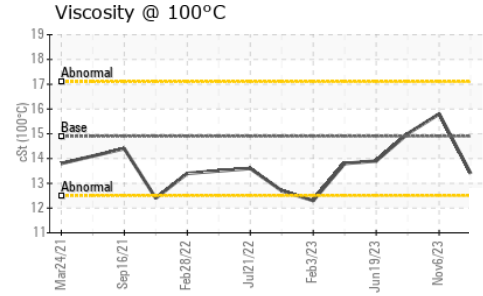
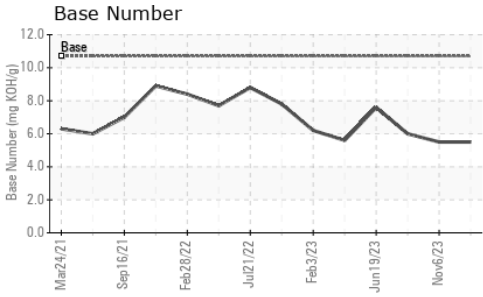
| | method | limit/base | current | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot % | % | *ASTM D7844 >3 | 0.6 | 1.1 | 0.8 |
| Nitration | Abs/cm | *ASTM D7624 >20 | 13.0 | 15.7 | 13.4 |
| Sulfation | Abs/.1mm | *ASTM D7415 >30 | 24.3 | 31.8 | 26.9 |

FLUID DEGRADATION

| | method | limit/base | current | history1 | history2 |
|------------------|----------|-----------------|-------------|----------|----------|
| Oxidation | Abs/.1mm | *ASTM D7414 >25 | 22.7 | 33.7 | 26.4 |
| Base Number (BN) | mg KOH/g | ASTM D2896 10.7 | 5.5 | 5.5 | 6.0 |



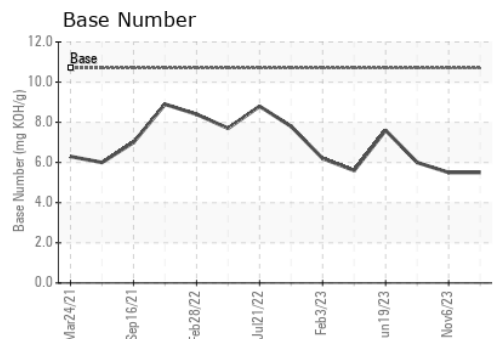
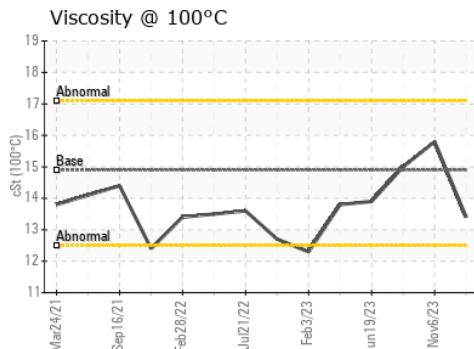
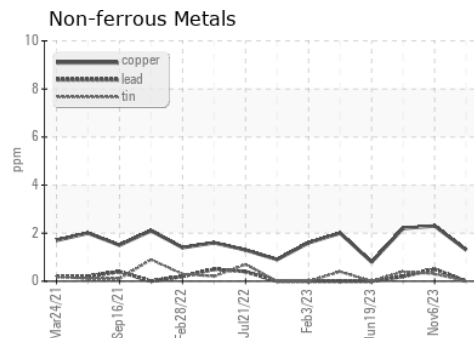
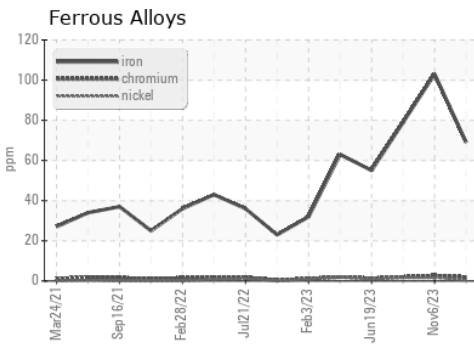
OIL ANALYSIS REPORT



| 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 | 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 @ 100°C | cSt | ASTM D445 | 14.9 | 13.4 | 15.8 | 15.0 |

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0104602 **Received** : 12 Mar 2024
Lab Number : 06116353 **Tested** : 13 Mar 2024
Unique Number : 10925186 **Diagnosed** : 13 Mar 2024 - Wes Davis
Test Package : FLEET

GFL Environmental - 624 - Elmira Hauling
 10164 M-32
 Elmira, MI
 US 49730
 Contact: ANDY GROBASKI
 andyg@americanwaste.org
 T: (989)370-2941
 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)