

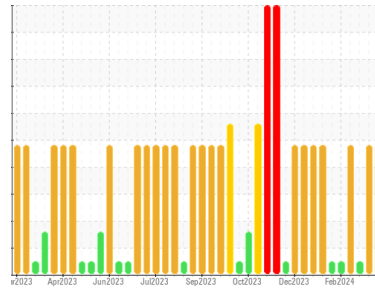


OIL ANALYSIS REPORT



Machine Id
DECM01BE (S/N ZBA01290)
 Component
Biogas Engine
 Fluid
CHEVRON HDAX 9500 GAS ENGINE OIL 40 (100 GAL)

Sample Rating Trend



DIAGNOSIS

▲ Recommendation

We recommend that you drain the oil and perform a filter service on this component if not already done. We recommend an early resample to monitor this condition. (Customer Sample Comment: Top Up Amount: 11 GAL)

Wear

All component wear rates are normal.

▲ Contamination

Elemental level of silicon (Si) above normal.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid.

SAMPLE INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | WC0732892 | WC0732897 | WC0732895 |
| Sample Date | Client Info | | 19 Apr 2024 | 10 Apr 2024 | 03 Apr 2024 |
| Machine Age | hrs | Client Info | 58720 | 58504 | 58345 |
| Oil Age | hrs | Client Info | 58345 | 58345 | 56062 |
| Oil Changed | Client Info | | Oil Added | Oil Added | Changed |
| Sample Status | | | SEVERE | SEVERE | NORMAL |

CONTAMINATION

| | method | limit/base | current | history1 | history2 |
|--------|-----------|------------|----------------|----------|----------|
| Fuel | WC Method | >4.0 | <1.0 | <1.0 | <1.0 |
| Water | WC Method | >.11 | NEG | NEG | NEG |
| Glycol | WC Method | | NEG | NEG | NEG |

WEAR METALS

| | method | limit/base | current | history1 | history2 |
|----------|--------|-----------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185m >15 | 4 | 3 | 3 |
| Chromium | ppm | ASTM D5185m >4 | <1 | <1 | 0 |
| Nickel | ppm | ASTM D5185m | 0 | 1 | 0 |
| Titanium | ppm | ASTM D5185m | 0 | <1 | 0 |
| Silver | ppm | ASTM D5185m | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m >6 | 2 | 2 | 1 |
| Lead | ppm | ASTM D5185m >9 | <1 | 2 | <1 |
| Copper | ppm | ASTM D5185m >6 | 0 | 2 | 1 |
| Tin | ppm | ASTM D5185m >4 | 2 | 2 | <1 |
| Vanadium | ppm | ASTM D5185m | 0 | <1 | 0 |
| Cadmium | ppm | ASTM D5185m | 0 | <1 | 0 |

ADDITIVES

| | method | limit/base | current | history1 | history2 |
|------------|--------|-------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185m | 8 | 6 | 7 |
| Barium | ppm | ASTM D5185m | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 12 | 12 | 11 |
| Manganese | ppm | ASTM D5185m | <1 | <1 | 0 |
| Magnesium | ppm | ASTM D5185m | 52 | 36 | 29 |
| Calcium | ppm | ASTM D5185m | 1914 | 1938 | 1899 |
| Phosphorus | ppm | ASTM D5185m | 320 | 332 | 290 |
| Zinc | ppm | ASTM D5185m | 412 | 398 | 361 |
| Sulfur | ppm | ASTM D5185m | 3088 | 2889 | 2589 |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|------------------|--------------|----------|----------|
| Silicon | ppm | ASTM D5185m >181 | ▲ 234 | ▲ 202 | 152 |
| Sodium | ppm | ASTM D5185m >21 | 2 | 1 | <1 |
| Potassium | ppm | ASTM D5185m >20 | 2 | 4 | <1 |

INFRA-RED

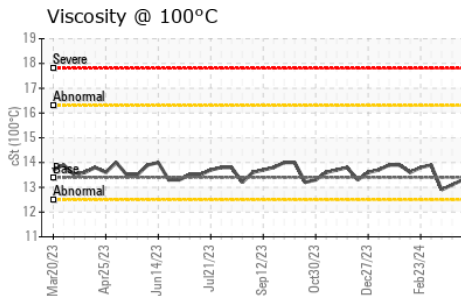
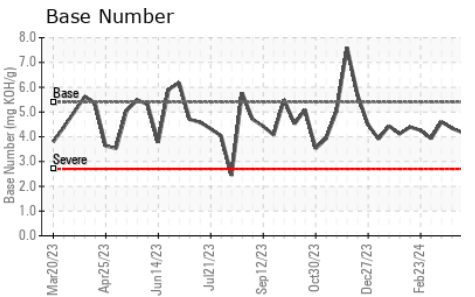
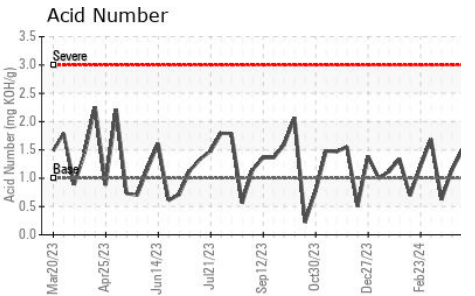
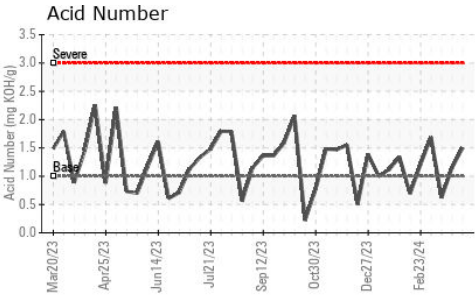
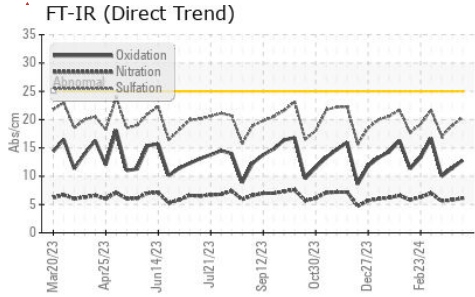
| | method | limit/base | current | history1 | history2 |
|-----------|----------|-------------|-------------|----------|----------|
| Soot % | % | *ASTM D7844 | 0.1 | 0 | 0 |
| Nitration | Abs/cm | *ASTM D7624 | 6.1 | 5.8 | 5.6 |
| Sulfation | Abs/.1mm | *ASTM D7415 | 20.4 | 18.9 | 17.1 |

FLUID DEGRADATION

| | method | limit/base | current | history1 | history2 |
|------------------|----------|----------------|-------------|----------|----------|
| Oxidation | Abs/.1mm | *ASTM D7414 | 12.8 | 11.4 | 10.0 |
| Acid Number (AN) | mg KOH/g | ASTM D8045 1.0 | 1.50 | 1.15 | 0.62 |
| Base Number (BN) | mg KOH/g | ASTM D2896 5.4 | 4.16 | 4.34 | 4.60 |



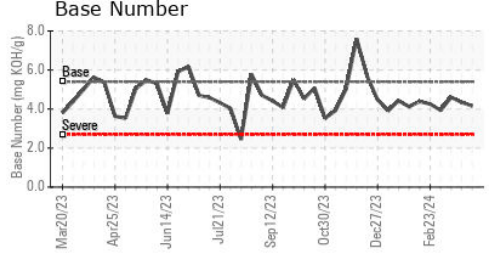
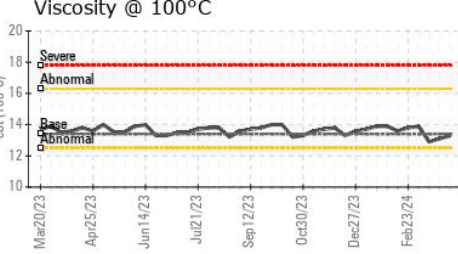
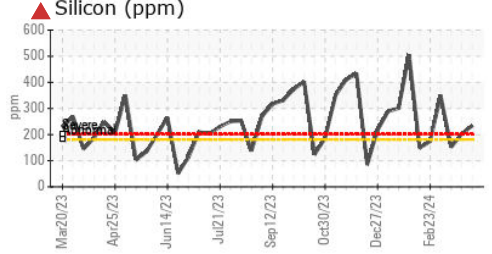
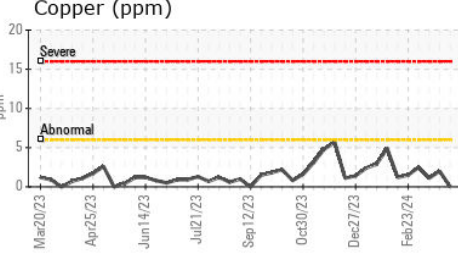
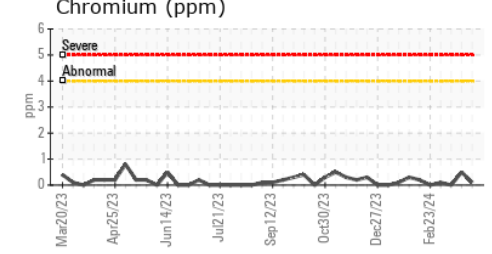
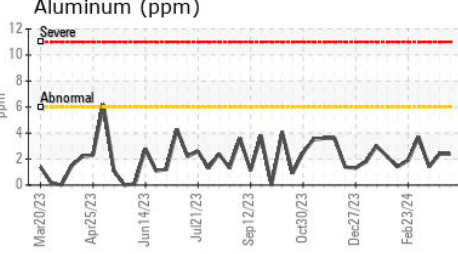
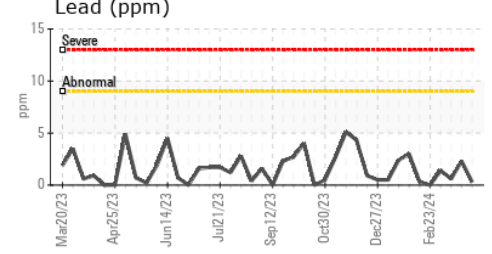
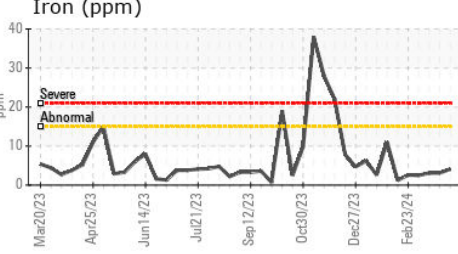
OIL ANALYSIS REPORT



| 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 | >.11 | NEG | NEG |
| Free Water | scalar | *Visual | | NEG | NEG |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Visc @ 100°C | cSt | ASTM D445 | 13.4 | 13.3 | 13.1 |

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : WC0732892
 Lab Number : 06157829
 Unique Number : 10993252
 Test Package : MOB 2

Received : 23 Apr 2024
 Tested : 24 Apr 2024
 Diagnosed : 25 Apr 2024 - Don Baldrige

EDL NA Recips-Decatur
 620 LANDFILL DRIVE
 TRINITY, AL
 US 35673

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)

Contact: JEFF SUMMERS
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