



OIL ANALYSIS REPORT

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

Area
QC Engine
Machine Id
QC230725MOB2
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 40 (--- GAL)

RECOMMENDATION

We advise that you check for the source of water entry. We recommend that you drain the oil from the component if this has not already been done. We recommend you service the filters on this component. We recommend an early resample to monitor this condition. Please specify the component make and model with your next sample.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | WC0902252 | WC0902251 | WC0902248 |
| Sample Date | | Client Info | | 27 Feb 2024 | 26 Feb 2024 | 23 Feb 2024 |
| Machine Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Age | hrs | Client Info | | 0 | 0 | 0 |
| Filter Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | N/A | N/A | N/A |
| Filter Changed | | Client Info | | N/A | N/A | N/A |
| Sample Status | | | | ABNORMAL | ABNORMAL | ABNORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|----------|-----|---------------|------|--------------|----|----|
| Iron | ppm | ASTM D5185(m) | >100 | 20 | 20 | 20 |
| Chromium | ppm | ASTM D5185(m) | >20 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185(m) | >4 | <1 | <1 | <1 |
| Titanium | ppm | ASTM D5185(m) | | 2 | 2 | 2 |
| Silver | ppm | ASTM D5185(m) | >3 | 0 | 0 | <1 |
| Aluminum | ppm | ASTM D5185(m) | >20 | 5 | 5 | 5 |
| Lead | ppm | ASTM D5185(m) | >40 | 2 | 1 | 1 |
| Copper | ppm | ASTM D5185(m) | >330 | 9 | 9 | 9 |
| Tin | ppm | ASTM D5185(m) | >15 | <1 | <1 | <1 |
| Vanadium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |

CONTAMINATION

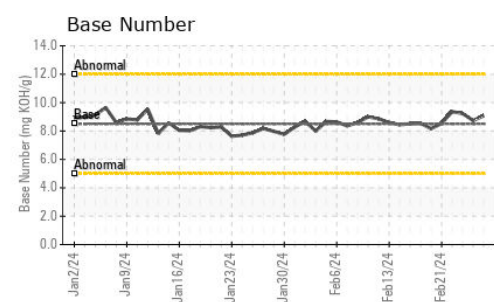
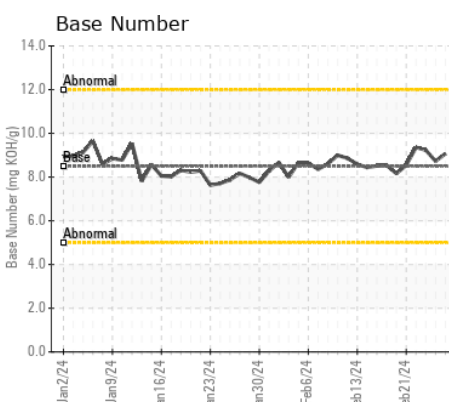
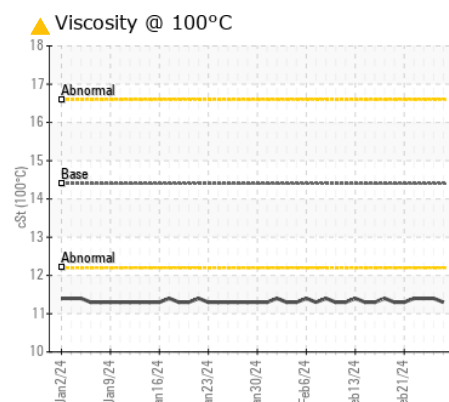
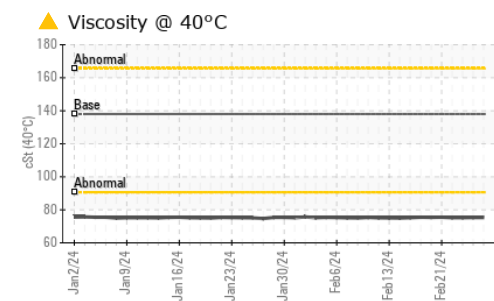
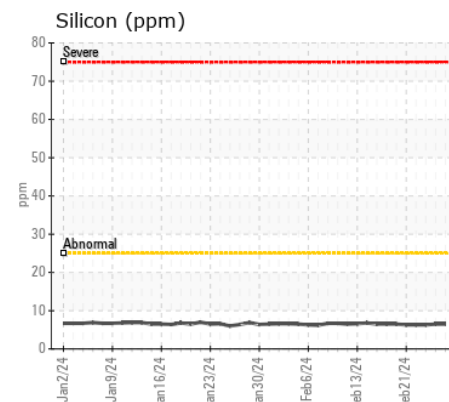
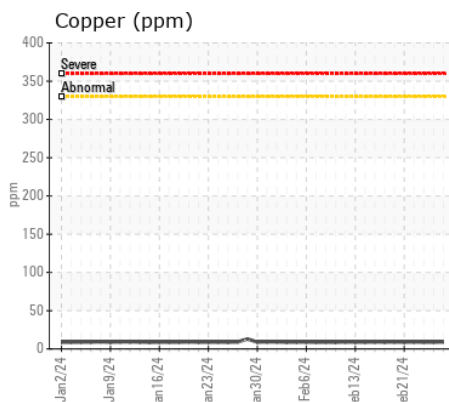
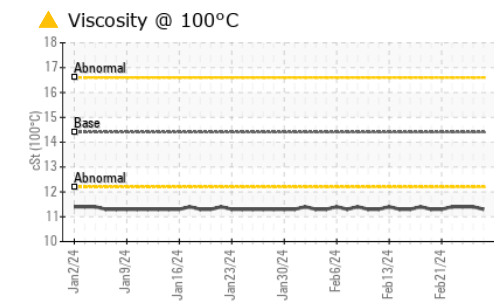
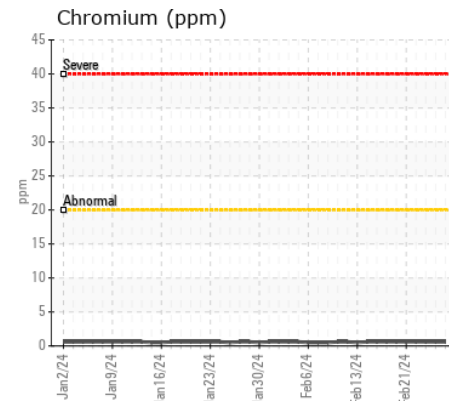
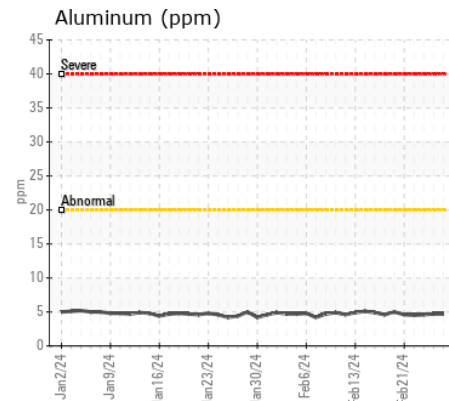
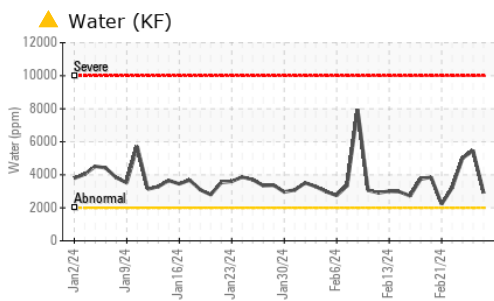
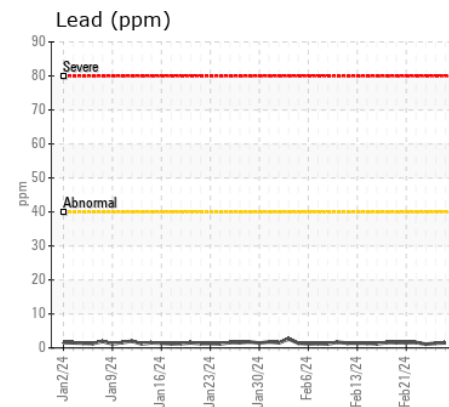
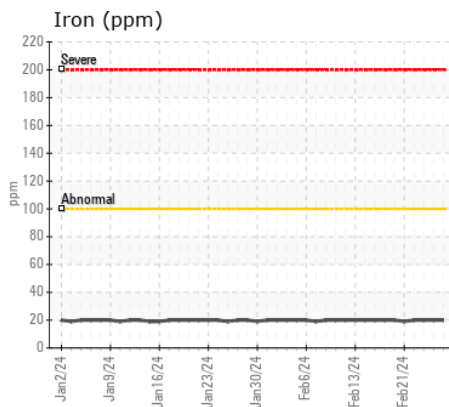
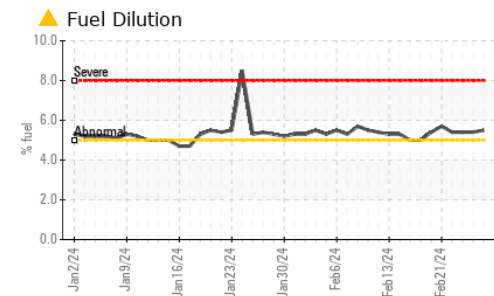
There is a moderate amount of fuel present in the oil. There is a light concentration of water present in the oil. Tests confirm the presence of fuel in the oil.

| | | | | | | |
|------------------|----------|---------------|-------|----------------|---------|---------|
| Silicon | ppm | ASTM D5185(m) | >25 | 6 | 6 | 6 |
| Potassium | ppm | ASTM D5185(m) | >20 | ▲ 15 | ▲ 15 | ▲ 15 |
| Fuel | % | ASTM D7593* | >5 | ▲ 5.5 | ▲ 5.4 | ▲ 5.4 |
| Water | % | ASTM D6304* | >0.2 | ▲ 0.289 | ▲ 0.545 | ▲ 0.501 |
| ppm Water | ppm | ASTM D6304* | >2000 | ▲ 2900 | ▲ 5458 | ▲ 5013 |
| Glycol | % | ASTM D7922* | | NEG | NEG | NEG |
| Soot % | % | ASTM D7844* | >3 | 0.3 | 0.3 | 0.3 |
| Nitration | Abs/cm | ASTM D7624* | >20 | 10.0 | 10.1 | 10.0 |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | 20.6 | 20.6 | 20.7 |
| Emulsified Water | scalar | Visual* | >0.2 | ▲ .2% | ▲ .2% | ▲ .5% |

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. Viscosity of sample indicates oil is within SAE 10W30 range, advise investigate. The oil is no longer serviceable due to the presence of contaminants.

| | | | | | | |
|----------------------|----------|---------------|------|---------------|--------|--------|
| Sodium | ppm | ASTM D5185(m) | >216 | ● 65 | ● 65 | ● 63 |
| Boron | ppm | ASTM D5185(m) | 250 | 29 | 28 | 29 |
| Barium | ppm | ASTM D5185(m) | 10 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | 100 | 47 | 47 | 46 |
| Manganese | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Magnesium | ppm | ASTM D5185(m) | 450 | 619 | 616 | 612 |
| Calcium | ppm | ASTM D5185(m) | 3000 | 1499 | 1487 | 1474 |
| Phosphorus | ppm | ASTM D5185(m) | 1150 | 864 | 877 | 862 |
| Zinc | ppm | ASTM D5185(m) | 1350 | 1009 | 1007 | 1002 |
| Sulfur | ppm | ASTM D5185(m) | 4250 | 2757 | 2766 | 2721 |
| Oxidation | Abs/.1mm | ASTM D7414* | >25 | 16.3 | 16.4 | 16.3 |
| Base Number (BN) | mg KOH/g | ASTM D2896* | 8.5 | 9.07 | 8.73 | 9.23 |
| Visc @ 40°C | cSt | ASTM D7279(m) | 138 | ▲ 75.3 | ▲ 75.3 | ▲ 75.2 |
| Visc @ 100°C | cSt | ASTM D7279(m) | 14.4 | ▲ 11.3 | ▲ 11.4 | ▲ 11.4 |
| Viscosity Index (VI) | Scale | ASTM D2270* | 102 | 141 | 143 | 143 |



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0902252 **Received** : 27 Feb 2024
Lab Number : 02618285 **Tested** : 28 Feb 2024
Unique Number : 5735395 **Diagnosed** : 28 Feb 2024 - Kevin Marson
Test Package : MOB 2 (Additional Tests: Glycol, KF, KV40, PercentFuel, VI)

WearCheck Quality Control Sample Results

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 CA
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To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.