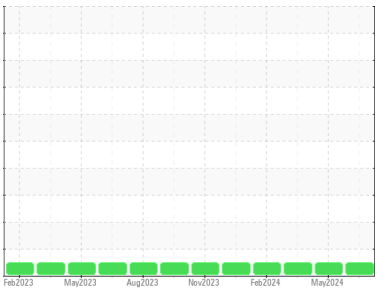
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
**2209**
Component
**Natural Gas Engine**
Fluid
**DIESEL ENGINE OIL SAE 15W40 (--- GAL)**

## DIAGNOSIS

**Recommendation**
Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

**Wear**
Metal levels are typical for a new component breaking in.

**Contamination**
There is no indication of any contamination in the oil.

**Fluid Condition**
The condition of the oil is acceptable for the time in service.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC0937204** | WC0937368 | WC0917570 |
| Sample Date | | Client Info | | **25 Jun 2024** | 03 May 2024 | 18 Mar 2024 |
| Machine Age | kms | Client Info | | **108731** | 98503 | 86736 |
| Oil Age | kms | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **N/A** | N/A | N/A |
| Sample Status | | | | **NORMAL** | NORMAL | NORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Water | | WC Method | >0.1 | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185(m) | >50 | **8** | 10 | 7 |
| Chromium | ppm | ASTM D5185(m) | >4 | **<1** | <1 | <1 |
| Nickel | ppm | ASTM D5185(m) | >2 | **<1** | <1 | <1 |
| Titanium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | >3 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >9 | **1** | 1 | 1 |
| Lead | ppm | ASTM D5185(m) | >30 | **1** | <1 | 0 |
| Copper | ppm | ASTM D5185(m) | >35 | **<1** | 2 | <1 |
| Tin | ppm | ASTM D5185(m) | >4 | **<1** | 0 | 0 |
| Antimony | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Vanadium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Beryllium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185(m) | 250 | **9** | 9 | 12 |
| Barium | ppm | ASTM D5185(m) | 10 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | 100 | **54** | 55 | 53 |
| Manganese | ppm | ASTM D5185(m) | | **<1** | <1 | 0 |
| Magnesium | ppm | ASTM D5185(m) | 450 | **842** | 845 | 794 |
| Calcium | ppm | ASTM D5185(m) | 3000 | **1246** | 1294 | 1192 |
| Phosphorus | ppm | ASTM D5185(m) | 1150 | **648** | 633 | 622 |
| Zinc | ppm | ASTM D5185(m) | 1350 | **879** | 879 | 851 |
| Sulfur | ppm | ASTM D5185(m) | 4250 | **1943** | 1923 | 1881 |
| Lithium | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |

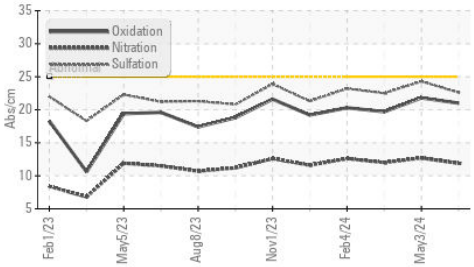
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >+100 | **4** | 3 | 5 |
| Sodium | ppm | ASTM D5185(m) | >158 | **2** | 6 | 3 |
| Potassium | ppm | ASTM D5185(m) | >20 | **<1** | <1 | <1 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | ASTM D7844* | | **0** | 0 | 0 |
| Nitration | Abs/cm | ASTM D7624* | >20 | **11.9** | 12.7 | 12.0 |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | **22.6** | 24.3 | 22.5 |

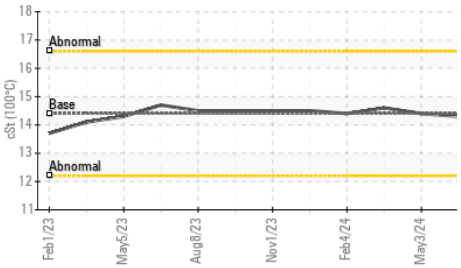
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | ASTM D7414* | >25 | **21.0** | 21.8 | 19.7 |

# OIL ANALYSIS REPORT

FT-IR (Direct Trend)




Viscosity @ 100°C

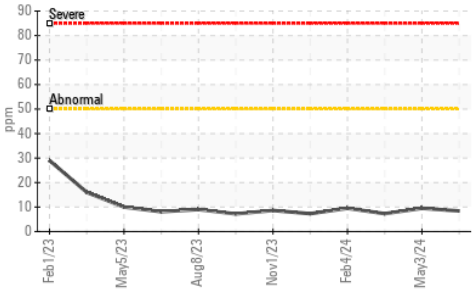



| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Emulsified Water | scalar | Visual* | >0.1 | **NEG** | NEG | NEG |
| Free Water | scalar | Visual* | | **NEG** | NEG | NEG |

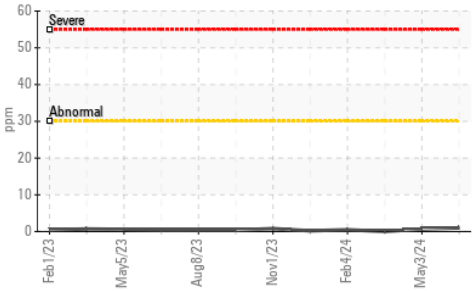
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D7279(m) | 14.4 | **14.3** | 14.4 | 14.6 |

GRAPHS

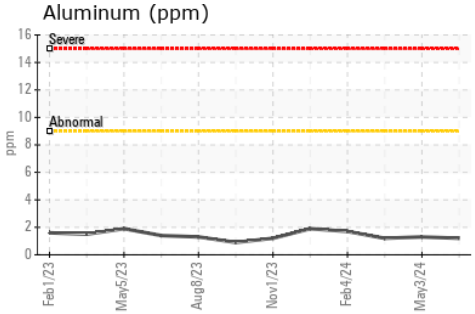
Iron (ppm)



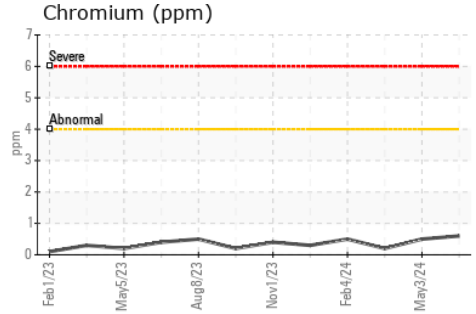

Lead (ppm)



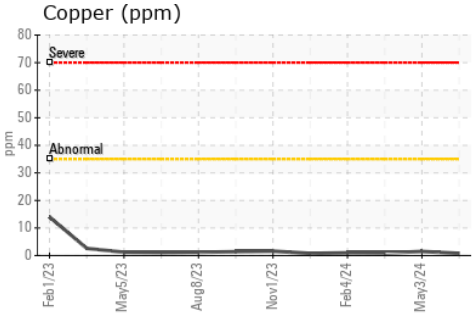

Aluminum (ppm)



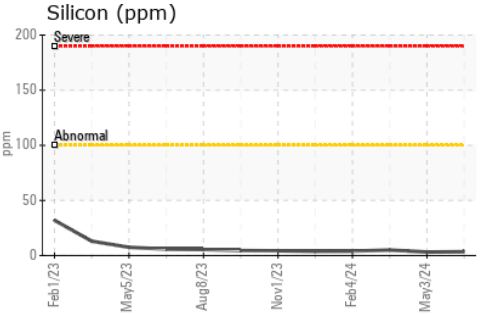

Chromium (ppm)



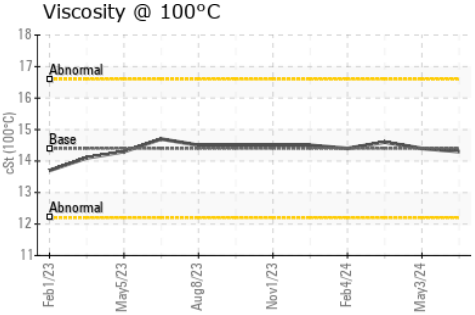

Copper (ppm)



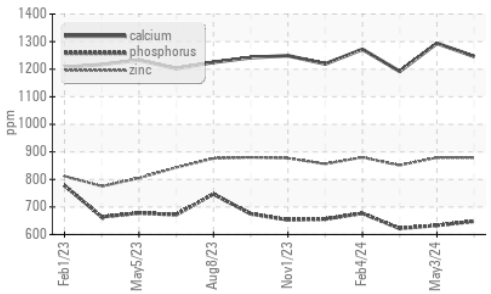

Silicon (ppm)




Viscosity @ 100°C




Additives




ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
**Sample No.** : WC0937204
**Lab Number** : 02644557
**Unique Number** : 5802096
**Test Package** : MOB 1

**Received** : 28 Jun 2024
**Tested** : 28 Jun 2024
**Diagnosed** : 28 Jun 2024 - Wes Davis

*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.*


**CITY OF HAMILTON**
2200 UPPER JAMES,, MOUNTAIN TRANSIT STOREROOM
MOUNT HOPE, ON
CA L0R 1W0
Contact: Jeff Parr
jeff.parr@hamilton.ca
T: (905)546-2424
F: (905)679-4502