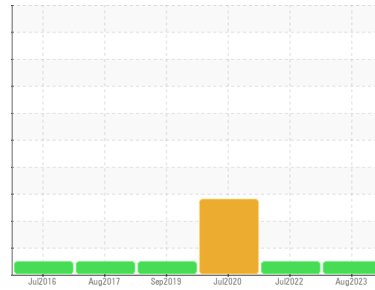




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Machine Id  
**PERKINS/HARPERS M0011**  
 Component  
**Diesel Engine**  
 Fluid  
**DIESEL ENGINE OIL SAE 15W40 (16 LTR)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### 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 |             | <b>WC0836772</b>   | WC0709824   | WC0442713   |
| Sample Date   | Client Info |             | <b>30 Aug 2023</b> | 29 Jul 2022 | 16 Jul 2020 |
| Machine Age   | hrs         | Client Info | <b>319</b>         | 316         | 303         |
| Oil Age       | hrs         | Client Info | <b>11</b>          | 7           | 9           |
| Oil Changed   | Client Info |             | <b>Not Chngd</b>   | Not Chngd   | Not Chngd   |
| Sample Status |             |             | <b>NORMAL</b>      | NORMAL      | ABNORMAL    |

## CONTAMINATION

|        | method    | limit/base | current        | history1 | history2 |
|--------|-----------|------------|----------------|----------|----------|
| Fuel   | WC Method | >5         | <b>&lt;1.0</b> | <1.0     | <1.0     |
| Glycol | WC Method |            | <b>NEG</b>     | NEG      | 0.0      |

## WEAR METALS

|           | method | limit/base    | current | history1     | history2 |    |
|-----------|--------|---------------|---------|--------------|----------|----|
| Iron      | ppm    | ASTM D5185(m) | >100    | <b>2</b>     | 2        | 3  |
| Chromium  | ppm    | ASTM D5185(m) | >20     | <b>0</b>     | 0        | 0  |
| Nickel    | ppm    | ASTM D5185(m) | >4      | <b>0</b>     | <1       | 0  |
| Titanium  | ppm    | ASTM D5185(m) |         | <b>0</b>     | <1       | 0  |
| Silver    | ppm    | ASTM D5185(m) | >3      | <b>&lt;1</b> | 0        | 0  |
| Aluminum  | ppm    | ASTM D5185(m) | >20     | <b>&lt;1</b> | <1       | <1 |
| Lead      | ppm    | ASTM D5185(m) | >40     | <b>1</b>     | <1       | 1  |
| Copper    | ppm    | ASTM D5185(m) | >330    | <b>4</b>     | 3        | 4  |
| Tin       | ppm    | ASTM D5185(m) | >15     | <b>0</b>     | <1       | <1 |
| Antimony  | ppm    | ASTM D5185(m) |         | <b>0</b>     | <1       | 0  |
| Vanadium  | ppm    | ASTM D5185(m) |         | <b>0</b>     | 0        | 0  |
| Beryllium | ppm    | ASTM D5185(m) |         | <b>0</b>     | 0        | 0  |
| Cadmium   | ppm    | ASTM D5185(m) |         | <b>0</b>     | 0        | 0  |

## ADDITIVES

|            | method | limit/base    | current | history1     | history2 |      |
|------------|--------|---------------|---------|--------------|----------|------|
| Boron      | ppm    | ASTM D5185(m) | 250     | <b>4</b>     | 4        | 7    |
| Barium     | ppm    | ASTM D5185(m) | 10      | <b>&lt;1</b> | 0        | 0    |
| Molybdenum | ppm    | ASTM D5185(m) | 100     | <b>4</b>     | 4        | 31   |
| Manganese  | ppm    | ASTM D5185(m) |         | <b>0</b>     | 0        | <1   |
| Magnesium  | ppm    | ASTM D5185(m) | 450     | <b>75</b>    | 80       | 629  |
| Calcium    | ppm    | ASTM D5185(m) | 3000    | <b>2060</b>  | 2116     | 1269 |
| Phosphorus | ppm    | ASTM D5185(m) | 1150    | <b>824</b>   | 833      | 969  |
| Zinc       | ppm    | ASTM D5185(m) | 1350    | <b>962</b>   | 978      | 1145 |
| Sulfur     | ppm    | ASTM D5185(m) | 4250    | <b>2885</b>  | 3011     | 2816 |
| Lithium    | ppm    | ASTM D5185(m) |         | <b>&lt;1</b> | <1       | <1   |

## CONTAMINANTS

|           | method | limit/base    | current | history1     | history2 |    |
|-----------|--------|---------------|---------|--------------|----------|----|
| Silicon   | ppm    | ASTM D5185(m) | >25     | <b>2</b>     | 2        | 3  |
| Sodium    | ppm    | ASTM D5185(m) | >158    | <b>2</b>     | 2        | <1 |
| Potassium | ppm    | ASTM D5185(m) | >20     | <b>&lt;1</b> | <1       | 2  |

## INFRA-RED

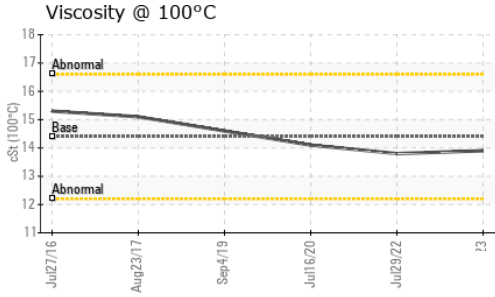
|           | method   | limit/base  | current | history1    | history2 |      |
|-----------|----------|-------------|---------|-------------|----------|------|
| Soot %    | %        | ASTM D7844* | >3      | <b>0</b>    | 0        | 0    |
| Nitration | Abs/cm   | ASTM D7624* | >20     | <b>5.4</b>  | 5.3      | 6.4  |
| Sulfation | Abs/.1mm | ASTM D7415* | >30     | <b>15.3</b> | 15.4     | 20.5 |

## FLUID DEGRADATION

|           | method   | limit/base  | current | history1   | history2 |      |
|-----------|----------|-------------|---------|------------|----------|------|
| Oxidation | Abs/.1mm | ASTM D7414* | >25     | <b>9.1</b> | 9.3      | 11.8 |



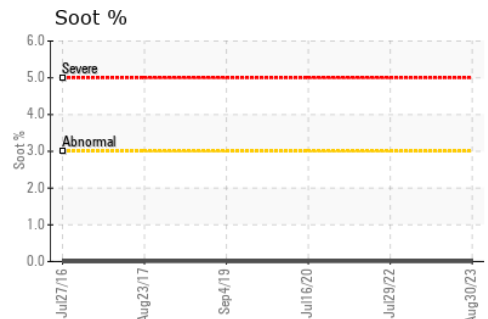
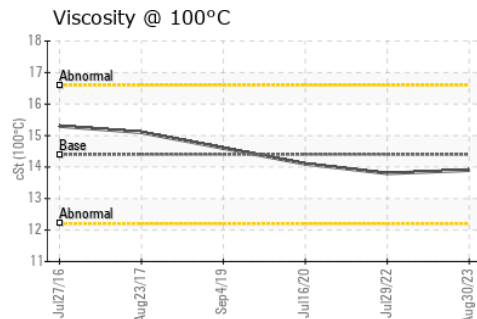
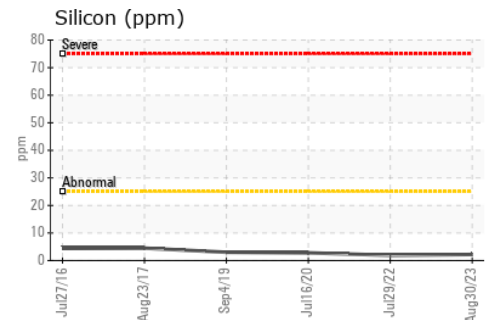
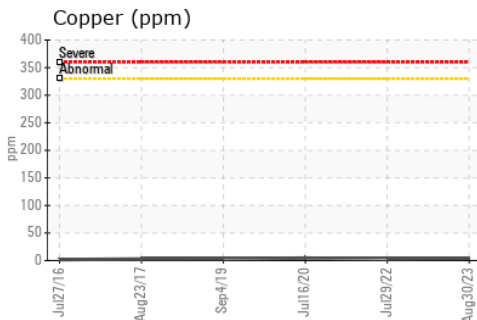
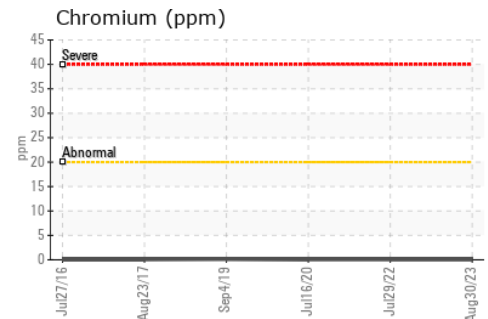
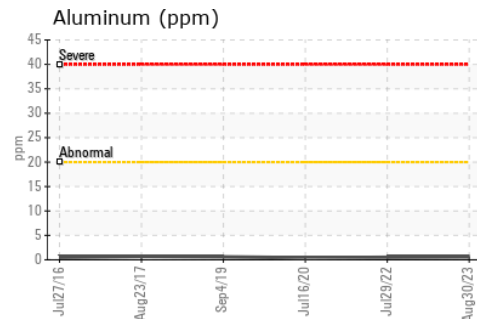
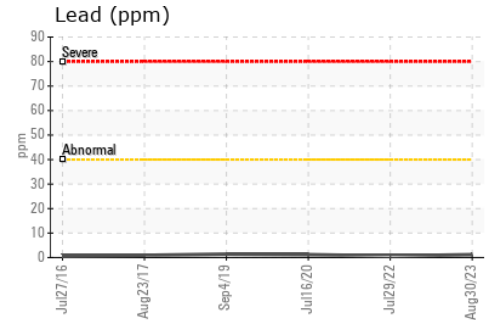
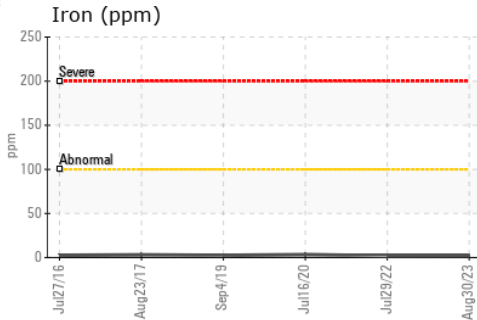
# OIL ANALYSIS REPORT



| VISUAL           | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Emulsified Water | scalar | Visual*    | >0.2    | NEG      | NEG      |
| Free Water       | scalar | Visual*    |         | NEG      | ▲ .2%    |

| FLUID PROPERTIES | method | limit/base    | current | history1    | history2 |
|------------------|--------|---------------|---------|-------------|----------|
| Visc @ 100°C     | cSt    | ASTM D7279(m) | 14.4    | <b>13.9</b> | 13.8     |

## GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0836772      **Received** : 04 Oct 2023  
**Lab Number** : **02586687**      **Diagnosed** : 04 Oct 2023  
**Unique Number** : 5655753      **Diagnostician** : Wes Davis  
**Test Package** : MOB 1

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 F: (519)451-1707

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.