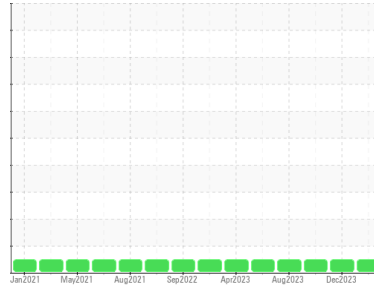




# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Area  
**51000 series**  
 Machine Id  
**Freightliner 51900**

Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 10W30 (40 LTR)**

## 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 condition of the oil is acceptable for the time in service.

| SAMPLE INFORMATION |             | method      | limit/base | current            | history1    | history2    |
|--------------------|-------------|-------------|------------|--------------------|-------------|-------------|
| Sample Number      | Client Info |             |            | <b>WC0904874</b>   | WC0805745   | WC0864515   |
| Sample Date        | Client Info |             |            | <b>02 Mar 2024</b> | 19 Dec 2023 | 24 Oct 2023 |
| Machine Age        | mls         | Client Info |            | <b>677083</b>      | 640996      | 604282      |
| Oil Age            | mls         | Client Info |            | <b>36087</b>       | 36714       | 37294       |
| Oil Changed        | Client Info |             |            | <b>Changed</b>     | Changed     | Changed     |
| Sample Status      |             |             |            | <b>NORMAL</b>      | NORMAL      | NORMAL      |

| CONTAMINATION |           | method | limit/base | current        | history1 | history2 |
|---------------|-----------|--------|------------|----------------|----------|----------|
| Fuel          | WC Method | >3.0   |            | <b>&lt;1.0</b> | <1.0     | <1.0     |
| Water         | WC Method | >0.2   |            | <b>NEG</b>     | NEG      | NEG      |
| Glycol        | WC Method |        |            | <b>NEG</b>     | NEG      | NEG      |

| WEAR METALS |     | method        | limit/base | current      | history1 | history2 |
|-------------|-----|---------------|------------|--------------|----------|----------|
| Iron        | ppm | ASTM D5185(m) | >65        | <b>26</b>    | 20       | 20       |
| Chromium    | ppm | ASTM D5185(m) | >5         | <b>2</b>     | 1        | 1        |
| Nickel      | ppm | ASTM D5185(m) | >3         | <b>&lt;1</b> | <1       | <1       |
| Titanium    | ppm | ASTM D5185(m) | >5         | <b>0</b>     | 0        | 0        |
| Silver      | ppm | ASTM D5185(m) | >2         | <b>0</b>     | 0        | <1       |
| Aluminum    | ppm | ASTM D5185(m) | >35        | <b>15</b>    | 12       | 7        |
| Lead        | ppm | ASTM D5185(m) | >10        | <b>&lt;1</b> | <1       | <1       |
| Copper      | ppm | ASTM D5185(m) | >180       | <b>4</b>     | 4        | 4        |
| Tin         | ppm | ASTM D5185(m) | >8         | <b>&lt;1</b> | 0        | 0        |
| Antimony    | ppm | ASTM D5185(m) | >35        | <b>0</b>     | 0        | 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        |

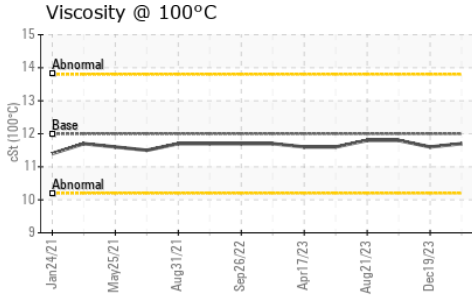
| ADDITIVES  |     | method        | limit/base | current      | history1 | history2 |
|------------|-----|---------------|------------|--------------|----------|----------|
| Boron      | ppm | ASTM D5185(m) | 2          | <b>2</b>     | 3        | 2        |
| Barium     | ppm | ASTM D5185(m) | 0          | <b>0</b>     | 0        | <1       |
| Molybdenum | ppm | ASTM D5185(m) | 50         | <b>66</b>    | 62       | 62       |
| Manganese  | ppm | ASTM D5185(m) | 0          | <b>0</b>     | 0        | 0        |
| Magnesium  | ppm | ASTM D5185(m) | 950        | <b>1026</b>  | 994      | 1013     |
| Calcium    | ppm | ASTM D5185(m) | 1050       | <b>1115</b>  | 1118     | 1122     |
| Phosphorus | ppm | ASTM D5185(m) | 995        | <b>1043</b>  | 1011     | 993      |
| Zinc       | ppm | ASTM D5185(m) | 1180       | <b>1237</b>  | 1199     | 1246     |
| Sulfur     | ppm | ASTM D5185(m) | 2600       | <b>2555</b>  | 2443     | 2221     |
| Lithium    | ppm | ASTM D5185(m) |            | <b>&lt;1</b> | <1       | <1       |

| CONTAMINANTS |     | method        | limit/base | current  | history1 | history2 |
|--------------|-----|---------------|------------|----------|----------|----------|
| Silicon      | ppm | ASTM D5185(m) | >15        | <b>5</b> | 4        | 4        |
| Sodium       | ppm | ASTM D5185(m) |            | <b>2</b> | 1        | 2        |
| Potassium    | ppm | ASTM D5185(m) | >20        | <b>2</b> | <1       | 0        |

| INFRA-RED |         | method      | limit/base | current     | history1 | history2 |
|-----------|---------|-------------|------------|-------------|----------|----------|
| Soot %    | %       | ASTM D7844* | >3         | <b>0.6</b>  | 0.6      | 0.7      |
| Nitration | Abs/cm  | ASTM D7624* | >20        | <b>9.0</b>  | 9.2      | 9.6      |
| Sulfation | Abs.1mm | ASTM D7415* | >30        | <b>20.6</b> | 21.2     | 22.3     |



# OIL ANALYSIS REPORT



### FLUID DEGRADATION

|           | method   | limit/base  | current | history1 | history2 |      |
|-----------|----------|-------------|---------|----------|----------|------|
| Oxidation | Abs./1mm | ASTM D7414* | >25     | 17.0     | 17.3     | 18.5 |

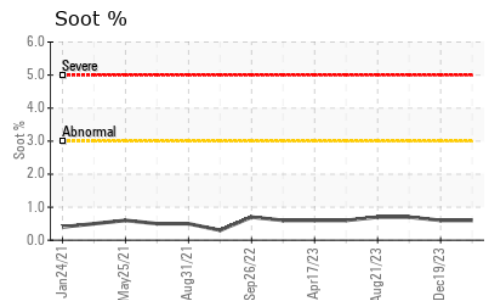
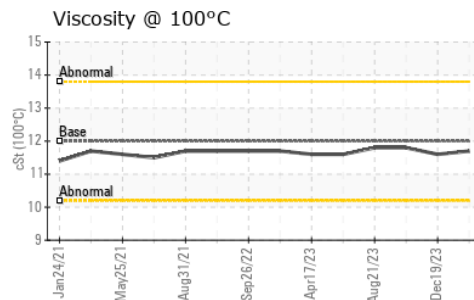
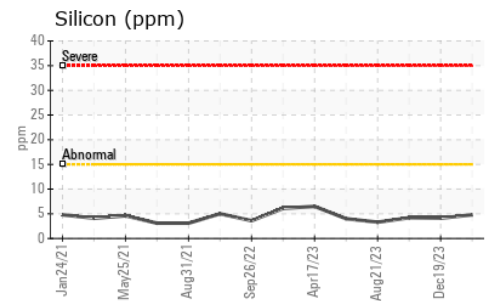
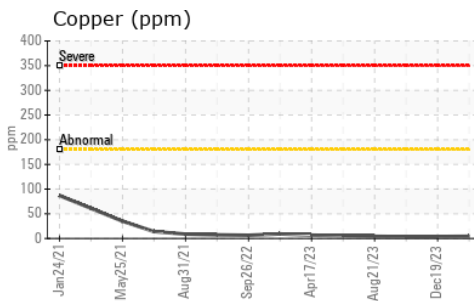
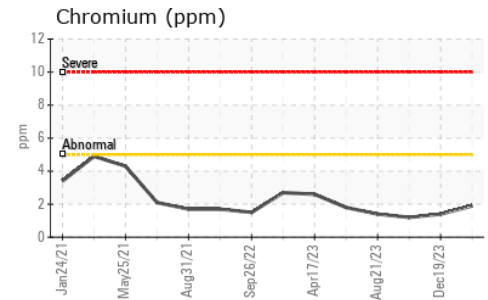
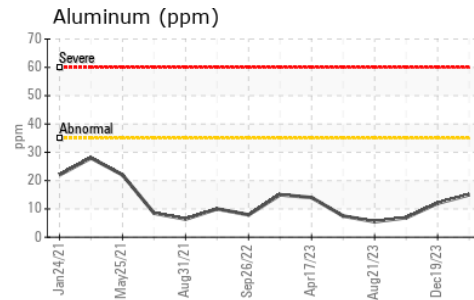
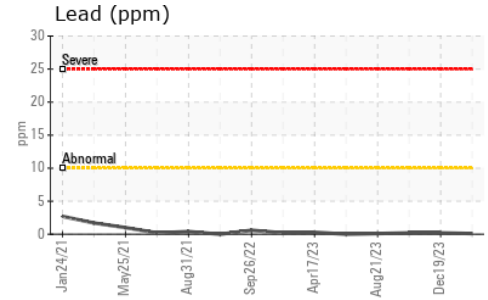
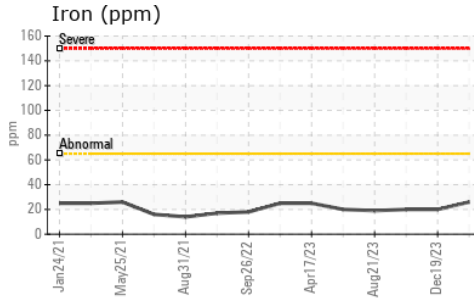
### VISUAL

|                  | method | limit/base | current | history1 | history2 |     |
|------------------|--------|------------|---------|----------|----------|-----|
| Emulsified Water | scalar | Visual*    | >0.2    | 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) | 12.00   | 11.7     | 11.6     | 11.8 |

### GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0904874  
**Lab Number** : 02623222  
**Unique Number** : 5748341  
**Test Package** : MOB 1  
**Received** : 19 Mar 2024  
**Tested** : 19 Mar 2024  
**Diagnosed** : 19 Mar 2024 - Wes Davis

**MANITOULIN TRANSPORT (GARAGE)**  
 1335 SHAWSON DRIVE  
 MISSISSAUGA, ON  
 CA L4W 1C4  
 Contact: Travis Spence  
 tspence@manitoulintransport.com

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.

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