

### **PROBLEM SUMMARY**

## Sample Rating Trend



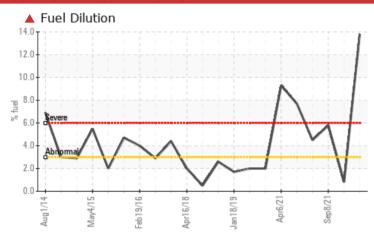


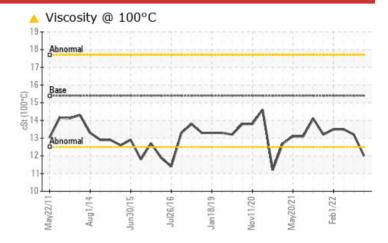
# (YA105012) FREIGHTLINER 10031-720090

**Diesel Engine** 

PETRO CANADA DURON SHP 15W40 (--- QTS)

### **COMPONENT CONDITION SUMMARY**





### RECOMMENDATION

We advise that you check the fuel injection system. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

| PROBLEMATIC TEST RESULTS |     |            |      |             |        |        |  |  |  |
|--------------------------|-----|------------|------|-------------|--------|--------|--|--|--|
| Sample Status            |     |            |      | SEVERE      | NORMAL | NORMAL |  |  |  |
| Fuel                     | %   | ASTM D3524 | >3.0 | <b>13.8</b> | <1.0   | <1.0   |  |  |  |
| Visc @ 100°C             | cSt | ASTM D445  | 15.4 | <b>12.0</b> | 13.2   | 13.5   |  |  |  |

Customer Id: GFL004 **Sample No.:** GFL0128319 Lab Number: 06239797 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data: Wes Davis +1 905-569-8600 x223 wesd@wearcheck.ca

To change component or sample information: Customer Service +1 1-800-237-1369 customerservice@wearcheck.com

| RECOMMENDED ACTIONS           |        |      |         |   |  |  |  |
|-------------------------------|--------|------|---------|---|--|--|--|
| Action                        | Status | Date | Done By | Description   |  |  |  |
| Change Fluid                  |        |      | ?       | We recommend that you drain the oil from the component if this has not already been done. |  |  |  |
| Resample                      |        |      | ?       | We recommend an early resample to monitor this condition.                                 |  |  |  |
| Check Fuel/injector<br>System |        |      | ?       | We advise that you check the fuel injection system.                                       |  |  |  |

### HISTORICAL DIAGNOSIS

### 17 Jul 2023 Diag: Wes Davis

NORMAL

Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.



### NORMAL

### 18 Jun 2022 Diag: Jonathan Hester



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.





# **OIL ANALYSIS REPORT**



# (YA105012) FREIGHTLINER 10031-720090

**Diesel Engine** 

PETRO CANADA DURON SHP 15W40 (--- QTS)





### **DIAGNOSIS**

### Recommendation

We advise that you check the fuel injection system. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

### Wear

All component wear rates are normal.

### Contamination

There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

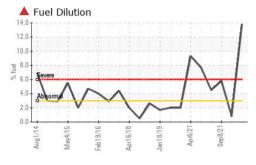
### Fluid Condition

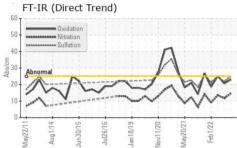
The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

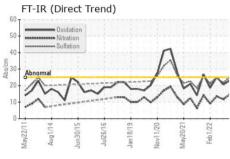
| SAMPLE INFORMATION         method         limit/base         current         history1         history2           Sample Number         Client Info         GFL0128319         GFL0072229         GFL0049635           Sample Date         Client Info         28790         87976         25074           Oil Age         hrs         Client Info         0         26716         0           Oil Changed         Client Info         N/A         Changed         Changed           Sample Status         SEVERE         NORMAL         NORMAL         NORMAL           CONTAMINATION         method         Imitibase         current         history1         history2           Water         WC Method         >0.2         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM 05858n         >90         42         26         44           Chromium         ppm         ASTM 05858n         >20         2         1         3           Nickel         ppm         ASTM 05858n         >2         0         0         <1           Aluminum         ppm         ASTM 058   | N SHP 15W40 (                                     | ,                  |   |                                |                                |                                 |                                 |
|---|---|--------------------|---|--------------------------------|--------------------------------|---------------------------------|---------------------------------|
| Sample Date   | SAMPLE INFOR                                      | MATION             | method  | limit/base                     | current                        | history1                        | history2                        |
| Machine Age         hrs         Client Info         28790         87976         25074           Dil Age         hrs         Client Info         0         26716         0           Dil Changed         Client Info         N/A         Changed         Changed           Sample Status         SEVERE         NORMAL         NORMAL           CONTAMINATION         method         Imitibase         current         history1         history2           Water         WC Method         >0.2         NEG         NEG         NEG           Glycol         WC Method         Imitibase         current         history1         history2           Iron         ppm         ASTM 05185m         >0.2         NEG         NEG         NEG           WEAR METALS         method         Imitibase         current         history1         history2           Iron         ppm         ASTM 05185m         >0         2         1         3           Chromium         ppm         ASTM 05185m         >2         <1   | Sample Number                                     |                    | Client Info   |                                | GFL0128319                     | GFL0072229                      | GFL0049635                      |
| Oil Age         hrs         Client Info         N/A         Changed         Changed Changed           Coil Changed Sample Status         Client Info         N/A         Changed         Changed Changed           Sample Status         SEVERE         NORMAL         NORMAL         NORMAL           Water         WC Method         >0.2.2         NEG         NEG         NEG           Water         WC Method         NEG         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >90         42         26         44           Chromium         ppm         ASTM D5185m         >20         2         1         3           Nickel         ppm         ASTM D5185m         >20         2         1         3           Silver         ppm         ASTM D5185m         >20         3         4         3           Lead         ppm         ASTM D5185m         >300         2         2         4           Copper   | Sample Date                                       |                    | Client Info   |                                | 10 Jul 2024                    | 17 Jul 2023                     | 18 Jun 2022                     |
| Dil Changed   Client Info   | Machine Age                                       | hrs                | Client Info   |                                | 28790                          | 87976                           | 25074                           |
| Sevent    Sev | Oil Age   | hrs                | Client Info   |                                | 0                              | 26716                           | 0                               |
| CONTAMINATION         method         limit/base         current         history1         history2           Water         WC Method         >0.2         NEG         NEG         NEG           Glycol         WC Method         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >90         42         26         44           Chromium         ppm         ASTM D5185m         >20         2         1         3           Nickel         ppm         ASTM D5185m         >20         2         1         0           Silver         ppm         ASTM D5185m         >20         3         4         3           Aluminum         ppm         ASTM D5185m         >20         3         4         3           Lead         ppm         ASTM D5185m         >20         3         4         3           Copper         ppm         ASTM D5185m         >30         2         2         4           Tin         ppm         ASTM D5185m         0         0         0         0           Cadrium   | Oil Changed                                       |                    | Client Info   |                                | N/A                            | Changed                         | Changed                         |
| Water         WC Method         >0.2         NEG         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >90         42         26         44           Chromium         ppm         ASTM D5185m         >20         2         1         3           Nickel         ppm         ASTM D5185m         >2         <1         <1         0         <1           Silver         ppm         ASTM D5185m         >2         <1         0         <1         <1         0         <1           Aluminum         ppm         ASTM D5185m         >2         <1         0         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1         <1  | Sample Status                                     |                    |   |                                | SEVERE                         | NORMAL                          | NORMAL                          |
| Glycol         WC Method         NEG         NEG         NEG           WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >90         42         26         44           Chromium         ppm         ASTM D5185m         >20         2         1         3           Nickel         ppm         ASTM D5185m         >2         0         0         <1  | CONTAMINAT  | ION                | method  | limit/base                     | current                        | history1                        | history2                        |
| WEAR METALS         method         limit/base         current         history1         history2           Iron         ppm         ASTM D5185m         >90         42         26         1         3           Chromium         ppm         ASTM D5185m         >20         2         1         3           Nickel         ppm         ASTM D5185m         >2         <1  | Water   |                    | WC Method   | >0.2                           | NEG                            | NEG                             | NEG                             |
| Concording   Popm   ASTM D5185m   Popm   Popm   ASTM D5185m   Popm   Popm   ASTM D5185m   Popm   Popm   ASTM D5185m   Popm   Popm    | Glycol  |                    | WC Method   |                                | NEG                            | NEG                             | NEG                             |
| Chromium         ppm         ASTM D5185m         >20         2         1         3           Nickel         ppm         ASTM D5185m         >2         <1         <1         0           Titianium         ppm         ASTM D5185m         >2         <1         <1         0           Siliver         ppm         ASTM D5185m         >2         <1         0         <1           Aluminum         ppm         ASTM D5185m         >2         <1         0         <1           Aluminum         ppm         ASTM D5185m         >40         0         0         <1           Copper         ppm         ASTM D5185m         >40         0         0         <1           Copper         ppm         ASTM D5185m         >330         2         2         4           Tin         ppm         ASTM D5185m         0         0         0         0         0           Caddium         ppm         ASTM D5185m         0         4         12         6           Boron         ppm         ASTM D5185m         0         4         12         6           Boron         ppm         ASTM D5185m         0         0         0  | WEAR METAL  | S                  | method  | limit/base                     | current                        | history1                        | history2                        |
| Silver  | ron   | ppm                | ASTM D5185m   | >90                            | 42                             | 26                              | 44                              |
| Description   | Chromium  | ppm                | ASTM D5185m   | >20                            | 2                              | 1                               | 3                               |
| Silver  | Nickel  | ppm                | ASTM D5185m   | >2                             | <1                             | <1                              | 0                               |
| Aluminum ppm ASTM D5185m >20 3 4 3 Lead ppm ASTM D5185m >40 0 0 <1 Copper ppm ASTM D5185m >330 2 2 2 4 Tin ppm ASTM D5185m >15 0 <1 <1 Vanadium ppm ASTM D5185m >15 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 <1 <1 <1  Calcium ppm ASTM D5185m 1010 787 792 855 Calcium ppm ASTM D5185m 1070 917 1105 1089 Phosphorus ppm ASTM D5185m 1070 917 1105 1089 Phosphorus ppm ASTM D5185m 1270 1077 1144 1189 Sulfur ppm ASTM D5185m 2060 2945 3033 2737  CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 20 2 2 4 Fuel % ASTM D5185m >20 20 2 2 2 4 Fuel % ASTM D5185m >20 20 2 2 2 4 Fuel % ASTM D5185m >20 25.1 21.7 24.7 Fuel DEGRADATION method limit/base current history1 history2   | Titanium  | ppm                | ASTM D5185m   | >2                             | 0                              | 0                               | <1                              |
| Lead         ppm         ASTM D5185m         >40         0         0         <1           Copper         ppm         ASTM D5185m         >330         2         2         4           Tin         ppm         ASTM D5185m         >15         0         <1         <1           Vanadium         ppm         ASTM D5185m         0         0         0         0           Cadmium         ppm         ASTM D5185m         0         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         4         12         6           Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         0         0         4         12         6           Barium         ppm         ASTM D5185m         0         0         <1         <1         1           Magnesium         ppm         ASTM D5185m         1010         787         792         855           Zinc         ppm         ASTM D5185m         1270 <t< td=""><td>Silver</td><td>ppm</td><td>ASTM D5185m</td><td>&gt;2</td><td>&lt;1</td><td>0</td><td>&lt;1</td></t<>   | Silver  | ppm                | ASTM D5185m   | >2                             | <1                             | 0                               | <1                              |
| Copper         ppm         ASTM D5185m         >330         2         2         4           Vanadium         ppm         ASTM D5185m         >15         0         <1   | Aluminum  | ppm                | ASTM D5185m   | >20                            | 3                              | 4                               | 3                               |
| Vanadium  | _ead  | ppm                | ASTM D5185m   | >40                            | 0                              | 0                               | <1                              |
| Vanadium         ppm         ASTM D5185m         0         0         0           Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         4         12         6           Barium         ppm         ASTM D5185m         0         0         0         0         0           Molybdenum         ppm         ASTM D5185m         0         0         0         0         0           Manganese         ppm         ASTM D5185m         0         0         <1         <1           Magnesium         ppm         ASTM D5185m         1010         787         792         855           Calcium         ppm         ASTM D5185m         1070         917         1105         1089           Phosphorus         ppm         ASTM D5185m         1270         1077         1144         1189           Sulfur         ppm         ASTM D5185m         2060         2945         3033         2737           CONTAMINANTS         method         limit/base         current <td>Copper</td> <td>ppm</td> <td>ASTM D5185m</td> <td>&gt;330</td> <td>2</td> <td>2</td> <td>4</td>  | Copper  | ppm                | ASTM D5185m   | >330                           | 2                              | 2                               | 4                               |
| Vanadium         ppm         ASTM D5185m         0         0         0           Cadmium         ppm         ASTM D5185m         0         0         0           ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         4         12         6           Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         0         0         -1         -1           Manganese         ppm         ASTM D5185m         0         0         -1         -1           Magnesium         ppm         ASTM D5185m         1070         917         1105         1089           Phosphorus         ppm         ASTM D5185m         1070         917         1105         1089           Phosphorus         ppm         ASTM D5185m         1270         1077         1144         1189           Sulfur         ppm         ASTM D5185m         2060         2945         3033         2737           CONTAMINANTS         method         limit/base         current         history1  | Tin   | ppm                | ASTM D5185m   | >15                            | 0                              | <1                              | <1                              |
| ADDITIVES         method         limit/base         current         history1         history2           Boron         ppm         ASTM D5185m         0         4         12         6           Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         0         0         <1   | /anadium  | ppm                | ASTM D5185m   |                                | 0                              | 0                               | 0                               |
| Boron   | Cadmium   | ppm                | ASTM D5185m   |                                | 0                              | 0                               | 0                               |
| Barium         ppm         ASTM D5185m         0         0         0         0           Molybdenum         ppm         ASTM D5185m         60         49         57         62           Manganese         ppm         ASTM D5185m         0         0         <1  | ADDITIVES   |                    | method  | limit/base                     | current                        | history1                        | history2                        |
| Molybdenum         ppm         ASTM D5185m         60         49         57         62           Manganese         ppm         ASTM D5185m         0         0         <1   | Boron   | ppm                | ASTM D5185m   | 0                              | 4                              | 12                              | 6                               |
| Manganese         ppm         ASTM D5185m         0         0         <1         <1           Magnesium         ppm         ASTM D5185m         1010         787         792         855           Calcium         ppm         ASTM D5185m         1070         917         1105         1089           Phosphorus         ppm         ASTM D5185m         1150         876         926         967           Zinc         ppm         ASTM D5185m         1270         1077         1144         1189           Sulfur         ppm         ASTM D5185m         2060         2945         3033         2737           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         8         8         8           Sodium         ppm         ASTM D5185m         >20         2         2         4           Fuel         %         ASTM D5185m         >20         2         2         4           Fuel         %         ASTM D5185m         >20         2         2         4           Fuel         %         ASTM D5185m         >20 <t< td=""><td>Barium</td><td>ppm</td><td>ASTM D5185m</td><td>0</td><td>0</td><td>0</td><td>0</td></t<>   | Barium  | ppm                | ASTM D5185m   | 0                              | 0                              | 0                               | 0                               |
| Magnesium         ppm         ASTM D5185m         1010         787         792         855           Calcium         ppm         ASTM D5185m         1070         917         1105         1089           Phosphorus         ppm         ASTM D5185m         1150         876         926         967           Zinc         ppm         ASTM D5185m         1270         1077         1144         1189           Sulfur         ppm         ASTM D5185m         2060         2945         3033         2737           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         8         8         8           Sodium         ppm         ASTM D5185m         >20         2         2         4           Fuel         %         ASTM D544         >6  | Molybdenum  | ppm                | ASTM D5185m   | 60                             | 49                             | 57                              | 62                              |
| Calcium         ppm         ASTM D5185m         1070         917         1105         1089           Phosphorus         ppm         ASTM D5185m         1150         876         926         967           Zinc         ppm         ASTM D5185m         1270         1077         1144         1189           Sulfur         ppm         ASTM D5185m         2060         2945         3033         2737           CONTAMINANTS         method         limit/base         current         history1         history2           CONTAMINANTS         method         limit/base         current         history1         history2           Golium         ppm         ASTM D5185m         >25         8         8         8           Sodium         ppm         ASTM D5185m         >20         2         2         4           Fuel         %         ASTM D5185m         >20         2         2         4           Fuel         %         ASTM D3524         >3.0         13.8         <1.0  | Manganese   | ppm                | ASTM D5185m   | 0                              | 0                              | <1                              | <1                              |
| Phosphorus         ppm         ASTM D5185m         1150         876         926         967           Zinc         ppm         ASTM D5185m         1270         1077         1144         1189           Sulfur         ppm         ASTM D5185m         2060         2945         3033         2737           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         8         8         8           Sodium         ppm         ASTM D5185m         7         6         9         9           Potassium         ppm         ASTM D5185m         >20         2         2         4           Fuel         %         ASTM D5185m         >20         2         2         4           Fuel         %         ASTM D5185m         >20         2         2         4           Fuel         %         ASTM D3524         >3.0         13.8         <1.0  | Magnesium   | ppm                | ASTM D5185m   | 1010                           | 787                            | 792                             | 855                             |
| Zinc         ppm         ASTM D5185m         1270         1077         1144         1189           Sulfur         ppm         ASTM D5185m         2060         2945         3033         2737           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         8         8         8           Sodium         ppm         ASTM D5185m         7         6         9           Potassium         ppm         ASTM D5185m         >20         2         2         4           Fuel         %         ASTM D3524         >3.0         ▲ 13.8         <1.0  | Calcium   | ppm                | ASTM D5185m   | 1070                           | 917                            | 1105                            | 1089                            |
| Sulfur         ppm         ASTM D5185m         2060         2945         3033         2737           CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         8         8         8           Sodium         ppm         ASTM D5185m         7         6         9           Potassium         ppm         ASTM D5185m         >20         2         2         4           Fuel         %         ASTM D3524         >3.0         13.8         <1.0   | Phosphorus  | ppm                | ASTM D5185m   | 1150                           | 876                            | 926                             | 967                             |
| CONTAMINANTS         method         limit/base         current         history1         history2           Silicon         ppm         ASTM D5185m         >25         8         8         8           Sodium         ppm         ASTM D5185m         7         6         9           Potassium         ppm         ASTM D5185m         >20         2         2         4           Fuel         %         ASTM D3524         >3.0         13.8         <1.0  | Zinc  | ppm                | ASTM D5185m   | 1270                           | 1077                           | 1144                            | 1189                            |
| Silicon       ppm       ASTM D5185m       >25       8       8       8         Sodium       ppm       ASTM D5185m       7       6       9         Potassium       ppm       ASTM D5185m       >20       2       2       4         Fuel       %       ASTM D3524       >3.0       13.8       <1.0       <1.0         INFRA-RED       method       limit/base       current       history1       history2         Soot %       %       *ASTM D7844       >6       2.3       0.7       0.9         Nitration       Abs/cm       *ASTM D7624       >20       14.7       11.7       13.5         Sulfation       Abs/.1mm       *ASTM D7415       >30       25.1       21.7       24.7         FLUID DEGRADATION       method       limit/base       current       history1       history2         Oxidation       Abs/.1mm       *ASTM D7414       >25       23.0       20.7       25.1  | Sulfur  | ppm                | ASTM D5185m   | 2060                           | 2945                           | 3033                            | 2737                            |
| Sodium         ppm         ASTM D5185m         7         6         9           Potassium         ppm         ASTM D5185m         >20         2         2         4           Fuel         %         ASTM D3524         >3.0         ▲ 13.8         <1.0   | CONTAMINAN  | ITS                | method  | limit/base                     | current                        | history1                        | history2                        |
| Potassium         ppm         ASTM D5185m         >20         2         2         4           Fuel         %         ASTM D3524         >3.0         ▲ 13.8         <1.0         <1.0           INFRA-RED         method         limit/base         current         history1         history2           Soot %         %         *ASTM D7844         >6         2.3         0.7         0.9           Nitration         Abs/cm         *ASTM D7624         >20         14.7         11.7         13.5           Sulfation         Abs/.1mm         *ASTM D7415         >30         25.1         21.7         24.7           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         23.0         20.7         25.1   | Silicon   | ppm                | ASTM D5185m   | >25                            | 8                              | 8                               | 8                               |
| Fuel % ASTM D3524 >3.0 ▲ 13.8 <1.0 <1.0  INFRA-RED method limit/base current history1 history2  Soot % % *ASTM D7844 >6 2.3 0.7 0.9  Nitration Abs/cm *ASTM D7624 >20 14.7 11.7 13.5  Sulfation Abs/.1mm *ASTM D7415 >30 25.1 21.7 24.7  FLUID DEGRADATION method limit/base current history1 history2  Oxidation Abs/.1mm *ASTM D7414 >25 23.0 20.7 25.1   | Sodium  | ppm                | ASTM D5185m   |                                | 7                              | 6                               | 9                               |
| INFRA-RED   | Potassium   | ppm                | ASTM D5185m   | >20                            | 2                              | 2                               | 4                               |
| Soot %         %         *ASTM D7844 >6         2.3         0.7         0.9           Nitration         Abs/cm         *ASTM D7624 >20         14.7         11.7         13.5           Sulfation         Abs/.1mm         *ASTM D7415 >30         25.1         21.7         24.7           FLUID DEGRADATION         method         limit/base         current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414 >25         23.0         20.7         25.1   | Fuel  | %                  | ASTM D3524  | >3.0                           | <b>13.8</b>                    | <1.0                            | <1.0                            |
| Nitration         Abs/cm         *ASTM D7624         >20         14.7         11.7         13.5           Sulfation         Abs/.1mm         *ASTM D7415         >30         25.1         21.7         24.7           FLUID DEGRADATION method limit/base current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         23.0         20.7         25.1   |   |                    |   | limit/bass                     | current                        | historv1                        | history2                        |
| Nitration         Abs/cm         *ASTM D7624         >20         14.7         11.7         13.5           Sulfation         Abs/.1mm         *ASTM D7415         >30         25.1         21.7         24.7           FLUID DEGRADATION method limit/base current         history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         23.0         20.7         25.1   |   |                    | method  | IIIIII/base                    |                                | /                               |                                 |
| Sulfation         Abs/.1mm         *ASTM D7415         >30         25.1         21.7         24.7           FLUID DEGRADATION method limit/base current history1         history2           Oxidation         Abs/.1mm         *ASTM D7414         >25         23.0         20.7         25.1   | INFRA-RED   | %                  |   |                                |                                |                                 |                                 |
| Oxidation   | INFRA-RED<br>Soot %                               |                    | *ASTM D7844   | >6                             | 2.3                            | 0.7                             | 0.9                             |
|   | INFRA-RED<br>Soot %<br>Nitration                  | Abs/cm             | *ASTM D7844<br>*ASTM D7624                          | >6<br>>20                      | 2.3<br>14.7                    | 0.7<br>11.7                     | 0.9<br>13.5                     |
|   | INFRA-RED Soot % Nitration Sulfation              | Abs/cm<br>Abs/.1mm | *ASTM D7844<br>*ASTM D7624<br>*ASTM D7415           | >6<br>>20<br>>30               | 2.3<br>14.7<br>25.1            | 0.7<br>11.7<br>21.7             | 0.9<br>13.5<br>24.7             |
|   | INFRA-RED Soot % Nitration Sulfation FLUID DEGRAI | Abs/cm<br>Abs/.1mm | *ASTM D7844<br>*ASTM D7624<br>*ASTM D7415<br>method | >6<br>>20<br>>30<br>limit/base | 2.3<br>14.7<br>25.1<br>current | 0.7<br>11.7<br>21.7<br>history1 | 0.9<br>13.5<br>24.7<br>history2 |

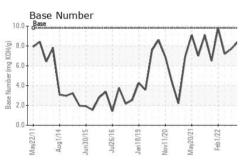


### **OIL ANALYSIS REPORT**





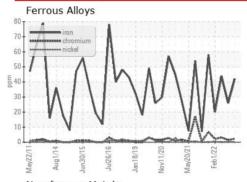


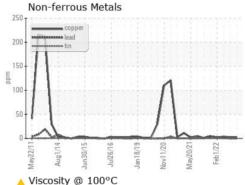


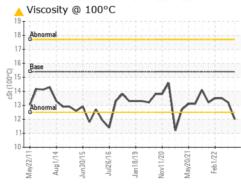
| VISUAL                  |        | method  | limit/base | current | history1 | history2 |
|-------------------------|--------|---------|------------|---------|----------|----------|
| White Metal             | scalar | *Visual | NONE       | NONE    | NONE     | NONE     |
| Yellow Metal            | scalar | *Visual | NONE       | NONE    | NONE     | NONE     |
| Precipitate             | scalar | *Visual | NONE       | NONE    | NONE     | NONE     |
| Silt                    | scalar | *Visual | NONE       | NONE    | NONE     | NONE     |
| Debris                  | scalar | *Visual | NONE       | NONE    | NONE     | NONE     |
| Sand/Dirt               | scalar | *Visual | NONE       | NONE    | NONE     | NONE     |
| Appearance              | scalar | *Visual | NORML      | NORML   | NORML    | NORML    |
| Odor                    | scalar | *Visual | NORML      | NORML   | NORML    | NORML    |
| <b>Emulsified Water</b> | scalar | *Visual | >0.2       | NEG     | NEG      | NEG      |
| Free Water              | scalar | *Visual |            | NEG     | NEG      | NEG      |

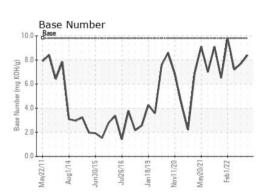
| FLUID PROP   | ERTIES | method    | limit/base | current  | history1 | history2 |
|--------------|--------|-----------|------------|----------|----------|----------|
| Visc @ 100°C | cSt    | ASTM D445 | 15.4       | <u> </u> | 13.2     | 13.5     |

### **GRAPHS**













Laboratory Sample No.

: GFL0128319 Lab Number : 06239797 Unique Number : 11128631

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 17 Jul 2024 **Tested** Diagnosed

: 19 Jul 2024 : 19 Jul 2024 - Wes Davis

427 Roberts Road Newport, NC US 28570 Contact: Marquis Williams

Test Package: FLEET (Additional Tests: FuelDilution, PercentFuel) Certificate 12367 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)

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F: (252)223-6010