



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

Machine Id  
**I4631**  
Component  
**Diesel Engine**  
Fluid  
**DIESEL ENGINE OIL SAE 15W40 (--- QTS)**

### RECOMMENDATION

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

| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2    |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number  |     | Client Info |           | <b>IL0012711</b>   | IL0007042   | IL0007042   |
| Sample Date    |     | Client Info |           | <b>19 Jan 2024</b> | 13 Jun 2022 | 12 May 2022 |
| Machine Age    | mls | Client Info |           | <b>0</b>           | 0           | 0           |
| Oil Age        | mls | Client Info |           | <b>0</b>           | 0           | 17173       |
| Filter Age     | mls | Client Info |           | <b>0</b>           | 0           | 0           |
| Oil Changed    |     | Client Info |           | <b>Changed</b>     | N/A         | Changed     |
| Filter Changed |     | Client Info |           | <b>Changed</b>     | N/A         | Changed     |
| Sample Status  |     |             |           | <b>NORMAL</b>      | NORMAL      | ATTENTION   |

### WEAR

All component wear rates are normal.

|              |        |             |      |              |      |      |
|--------------|--------|-------------|------|--------------|------|------|
| Iron         | ppm    | ASTM D5185m | >100 | <b>16</b>    | 40   | 16   |
| Chromium     | ppm    | ASTM D5185m | >20  | <b>2</b>     | 3    | <1   |
| Nickel       | ppm    | ASTM D5185m | >4   | <b>&lt;1</b> | <1   | <1   |
| Titanium     | ppm    | ASTM D5185m |      | <b>0</b>     | <1   | <1   |
| Silver       | ppm    | ASTM D5185m | >3   | <b>0</b>     | <1   | <1   |
| Aluminum     | ppm    | ASTM D5185m | >20  | <b>42</b>    | 19   | 2    |
| Lead         | ppm    | ASTM D5185m | >40  | <b>&lt;1</b> | 0    | 1    |
| Copper       | ppm    | ASTM D5185m | >330 | <b>1</b>     | 8    | 40   |
| Tin          | ppm    | ASTM D5185m | >15  | <b>&lt;1</b> | 1    | <1   |
| Vanadium     | ppm    | ASTM D5185m |      | <b>&lt;1</b> | 0    | 0    |
| White Metal  | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | NONE |
| Yellow Metal | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | NONE |

### CONTAMINATION

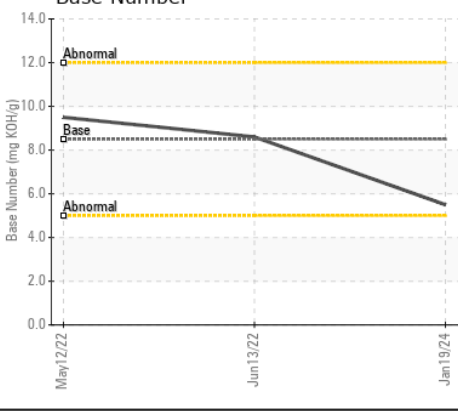
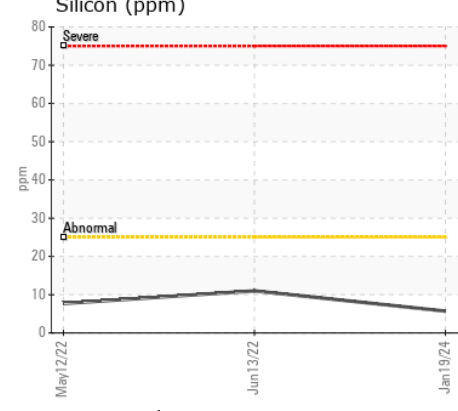
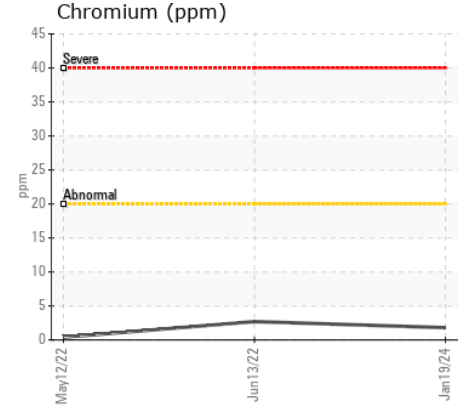
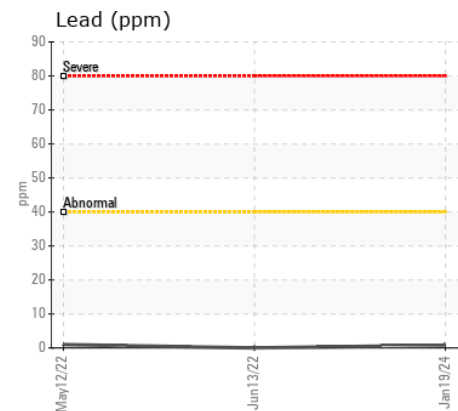
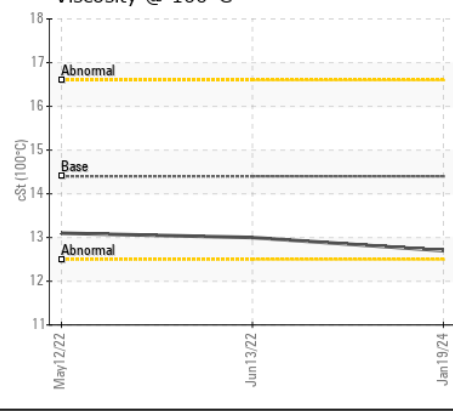
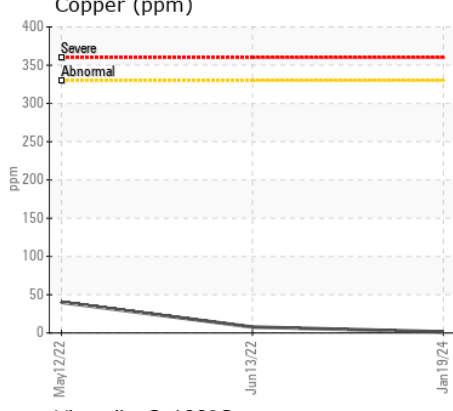
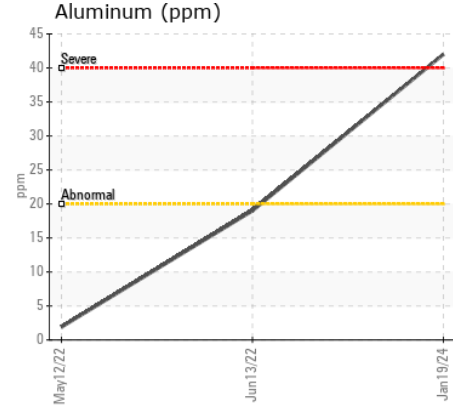
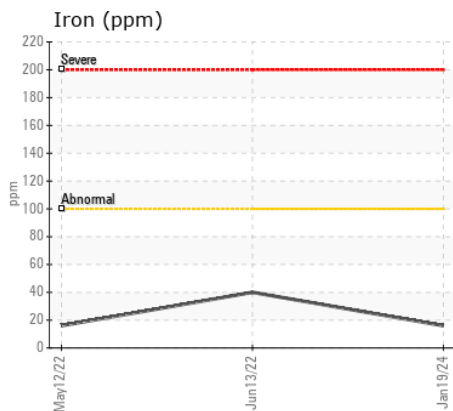
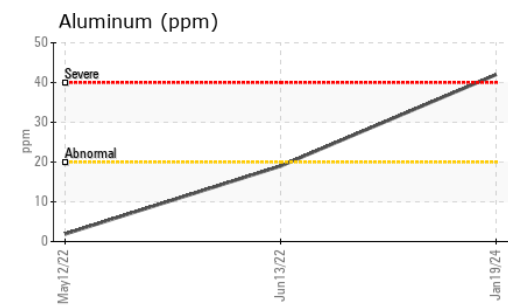
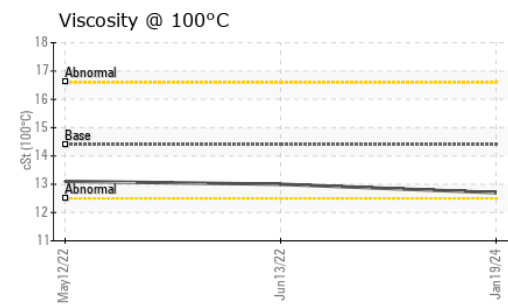
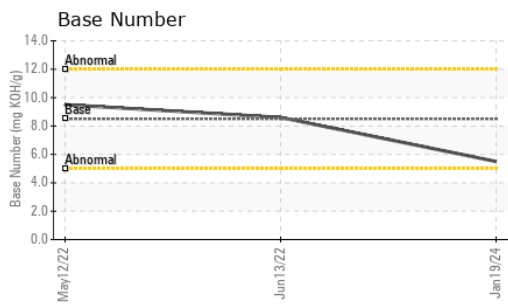
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

|                  |          |             |       |                |       |       |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon          | ppm      | ASTM D5185m | >25   | <b>6</b>       | 11    | 8     |
| Potassium        | ppm      | ASTM D5185m | >20   | <b>70</b>      | 43    | 3     |
| Fuel             |          | WC Method   | >5    | <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   |
| Soot %           | %        | *ASTM D7844 | >3    | <b>0.5</b>     | 0.6   | 0.1   |
| Nitration        | Abs/cm   | *ASTM D7624 | >20   | <b>10.0</b>    | 10.2  | 5.7   |
| Sulfation        | Abs/.1mm | *ASTM D7415 | >30   | <b>19.0</b>    | 22.9  | 17.1  |
| Silt             | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | NONE  |
| Debris           | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | NONE  |
| Sand/Dirt        | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | NONE  |
| Appearance       | scalar   | *Visual     | NORML | <b>NORML</b>   | NORML | NORML |
| Odor             | scalar   | *Visual     | NORML | <b>NORML</b>   | NORML | NORML |
| Emulsified Water | scalar   | *Visual     | >0.2  | <b>NEG</b>     | NEG   | NEG   |

### FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

|                  |          |             |      |              |      |       |
|------------------|----------|-------------|------|--------------|------|-------|
| Sodium           | ppm      | ASTM D5185m | >158 | <b>3</b>     | 5    | ▲ 153 |
| Boron            | ppm      | ASTM D5185m | 250  | <b>72</b>    | 39   | 20    |
| Barium           | ppm      | ASTM D5185m | 10   | <b>0</b>     | 0    | 0     |
| Molybdenum       | ppm      | ASTM D5185m | 100  | <b>111</b>   | 41   | 59    |
| Manganese        | ppm      | ASTM D5185m |      | <b>&lt;1</b> | 2    | <1    |
| Magnesium        | ppm      | ASTM D5185m | 450  | <b>645</b>   | 550  | 771   |
| Calcium          | ppm      | ASTM D5185m | 3000 | <b>1206</b>  | 1608 | 982   |
| Phosphorus       | ppm      | ASTM D5185m | 1150 | <b>752</b>   | 719  | 886   |
| Zinc             | ppm      | ASTM D5185m | 1350 | <b>860</b>   | 898  | 1066  |
| Sulfur           | ppm      | ASTM D5185m | 4250 | <b>3075</b>  | 2284 | 2805  |
| Oxidation        | Abs/.1mm | *ASTM D7414 | >25  | <b>16.3</b>  | 22.3 | 12.5  |
| Base Number (BN) | mg KOH/g | ASTM D2896  | 8.5  | <b>5.5</b>   | 8.6  | 9.5   |
| Visc @ 100°C     | cSt      | ASTM D445   | 14.4 | <b>12.7</b>  | 13.0 | 13.1  |



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : IL0012711 **Received** : 31 Jan 2024  
**Lab Number** : 06075564 **Diagnosed** : 31 Jan 2024  
**Unique Number** : 10857655 **Diagnostician** : Wes Davis  
**Test Package** : MOB1+

**RUSH TRUCK LEASING - SALT LAKE CITY IDEALEASE**  
 964 SOUTH 3800 WEST, BLDG B  
 SALT LAKE CITY, UT  
 US 84104  
 Contact: JAY ALEXANDER  
 AlexanderJ1@RushEnterprises.com  
 T:  
 F: (801)977-9381

Certificate L2367  
 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)