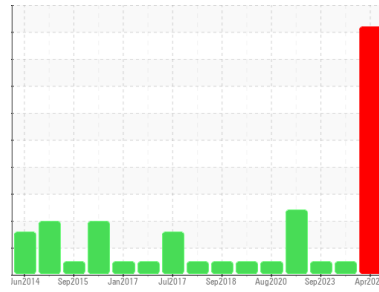


# PROBLEM SUMMARY

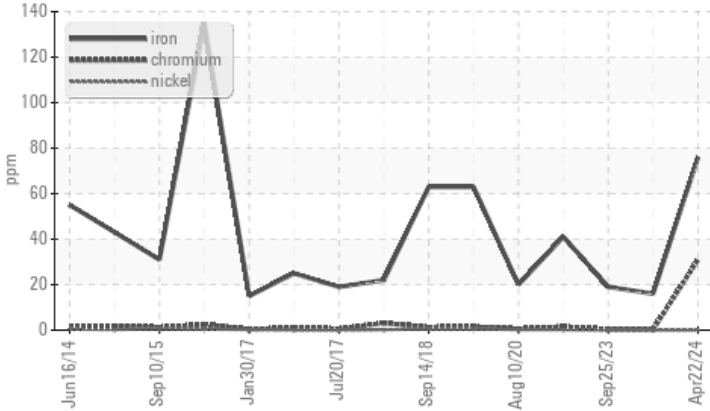
Machine Id  
**FREIGHTLINER M2 EDFYN7858 (S/N 3ALACWDT2EDFYN858)**  
 Component  
**Diesel Engine**  
 Fluid  
**VALVOLINE 15W40 (--- GAL)**

Sample Rating Trend

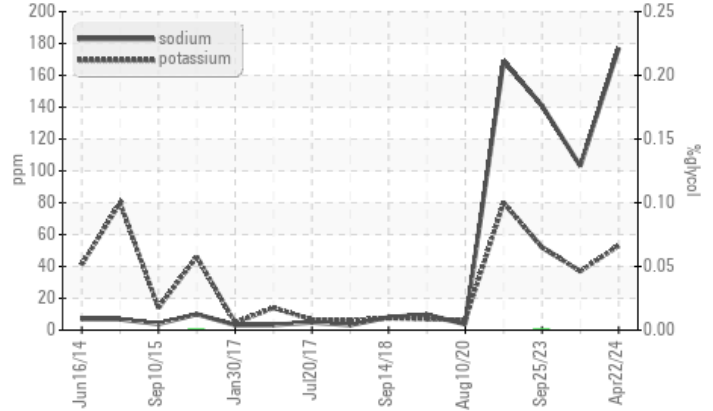


## COMPONENT CONDITION SUMMARY

▲ Ferrous Alloys



▲ Glycol Contamination



## RECOMMENDATION

We advise that you check for possible coolant leak. Check for low coolant level. Oil and filter change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

## PROBLEMATIC TEST RESULTS

| Sample Status |     |             |     | SEVERE | NORMAL | NORMAL |
|---------------|-----|-------------|-----|--------|--------|--------|
| Iron          | ppm | ASTM D5185m | >80 | ▲ 76   | 16     | 19     |
| Chromium      | ppm | ASTM D5185m | >5  | ▲ 31   | <1     | <1     |
| Sodium        | ppm | ASTM D5185m |     | ▲ 177  | 103    | 141    |
| Potassium     | ppm | ASTM D5185m | >20 | ▲ 53   | 37     | 52     |

Customer Id: VOLVO8882  
 Sample No.: ML0000635  
 Lab Number: 06160059  
 Test Package: CONST



To manage this report scan the QR code

To discuss the diagnosis or test data:  
 Jonathan Hester +1 919-379-4092 x4092  
[jhester@wearcheckusa.com](mailto:jhester@wearcheckusa.com)

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

## RECOMMENDED ACTIONS

| Action              | Status | Date | Done By | Description   |
|---------------------|--------|------|---------|---|
| Inspect Wear Source | ---    | ---  | ?       | We advise that you inspect for the source(s) of wear.         |
| Change Fluid        | ---    | ---  | ?       | Oil and filter change at the time of sampling has been noted. |
| Change Filter       | ---    | ---  | ?       | Oil and filter change at the time of sampling has been noted. |
| Resample            | ---    | ---  | ?       | We recommend an early resample to monitor this condition.     |
| Check Glycol Access | ---    | ---  | ?       | We advise that you check for the source of the coolant leak.  |

## HISTORICAL DIAGNOSIS

NORMAL



### 01 Dec 2023 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.

view report



NORMAL



### 25 Sep 2023 Diag: Wes Davis

Resample at the next service interval to monitor. All component wear rates are normal. Test for glycol is negative. 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.

view report



GLYCOL



### 31 Jul 2023 Diag: Jonathan Hester

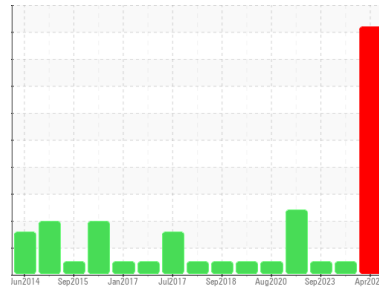
We advise that you check for the source of the coolant leak. Check for low coolant level. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. All component wear rates are normal. Sodium and/or potassium levels are high. The BN result indicates that there is suitable alkalinity remaining in the oil.

view report



# OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id  
**FREIGHTLINER M2 EDFYN7858 (S/N 3ALACWDT2EDFYN858)**  
 Component  
**Diesel Engine**  
 Fluid  
**VALVOLINE 15W40 (--- GAL)**

## DIAGNOSIS

**▲ Recommendation**  
 We advise that you check for possible coolant leak. Check for low coolant level. Oil and filter change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

**▲ Wear**  
 Ring and cylinder wear is indicated.

**▲ Contamination**  
 Sodium and/or potassium levels are high.

**▲ Fluid Condition**  
 The BN result indicates that there is suitable alkalinity remaining in the oil.

| SAMPLE INFORMATION |             | method      | limit/base | current            | history1    | history2    |
|--------------------|-------------|-------------|------------|--------------------|-------------|-------------|
| Sample Number      | Client Info |             |            | <b>ML0000635</b>   | VCP414567   | VCP414544   |
| Sample Date        | Client Info |             |            | <b>22 Apr 2024</b> | 01 Dec 2023 | 25 Sep 2023 |
| Machine Age        | hrs         | Client Info |            | <b>168338</b>      | 12636       | 11462       |
| Oil Age            | hrs         | Client Info |            | <b>168338</b>      | 0           | 0           |
| Oil Changed        | Client Info |             |            | <b>Changed</b>     | N/A         | Changed     |
| Sample Status      |             |             |            | <b>SEVERE</b>      | NORMAL      | NORMAL      |

| CONTAMINATION |           | method | limit/base | current        | history1 | history2 |
|---------------|-----------|--------|------------|----------------|----------|----------|
| Fuel          | WC Method | >5     |            | <b>&lt;1.0</b> | <1.0     | <1.0     |
| Water         | WC Method | >0.2   |            | <b>NEG</b>     | NEG      | NEG      |

| WEAR METALS |     | method      | limit/base | current     | history1 | history2 |
|-------------|-----|-------------|------------|-------------|----------|----------|
| Iron        | ppm | ASTM D5185m | >80        | <b>▲ 76</b> | 16       | 19       |
| Chromium    | ppm | ASTM D5185m | >5         | <b>▲ 31</b> | <1       | <1       |
| Nickel      | ppm | ASTM D5185m | >2         | <b>0</b>    | 0        | 0        |
| Titanium    | ppm | ASTM D5185m |            | <b>0</b>    | <1       | 0        |
| Silver      | ppm | ASTM D5185m | >3         | <b>0</b>    | 0        | 0        |
| Aluminum    | ppm | ASTM D5185m | >30        | <b>9</b>    | 1        | 2        |
| Lead        | ppm | ASTM D5185m | >30        | <b>0</b>    | 0        | <1       |
| Copper      | ppm | ASTM D5185m | >150       | <b>2</b>    | <1       | <1       |
| Tin         | ppm | ASTM D5185m | >5         | <b>0</b>    | 0        | <1       |
| Vanadium    | ppm | ASTM D5185m |            | <b>0</b>    | 0        | <1       |
| Cadmium     | ppm | ASTM D5185m |            | <b>0</b>    | 0        | 0        |

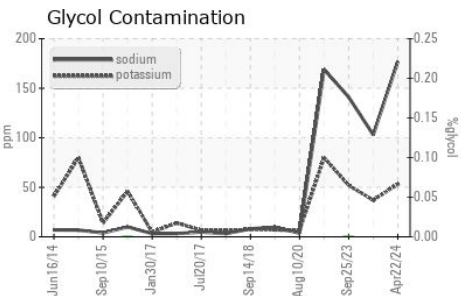
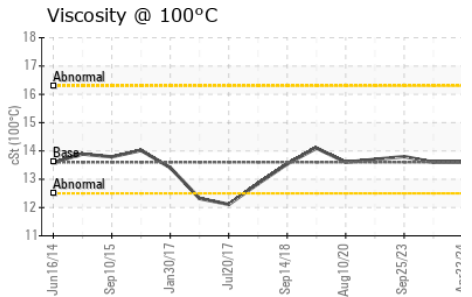
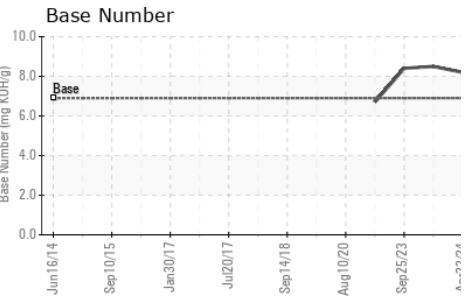
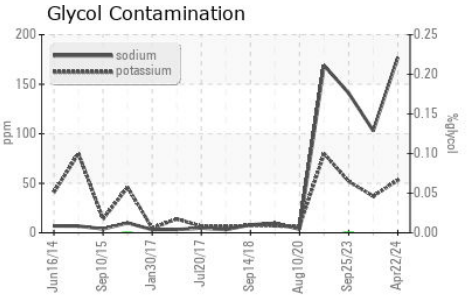
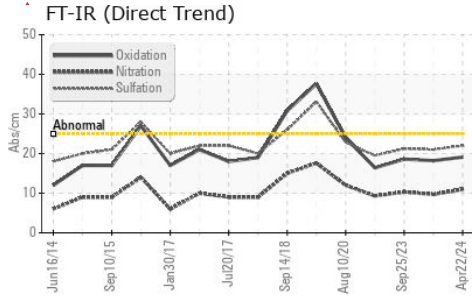
| ADDITIVES  |     | method      | limit/base | current      | history1 | history2 |
|------------|-----|-------------|------------|--------------|----------|----------|
| Boron      | ppm | ASTM D5185m | 39         | <b>21</b>    | 27       | 23       |
| Barium     | ppm | ASTM D5185m | 1          | <b>0</b>     | 0        | 0        |
| Molybdenum | ppm | ASTM D5185m | 49         | <b>57</b>    | 55       | 56       |
| Manganese  | ppm | ASTM D5185m | 1          | <b>&lt;1</b> | 0        | <1       |
| Magnesium  | ppm | ASTM D5185m | 616        | <b>849</b>   | 741      | 822      |
| Calcium    | ppm | ASTM D5185m | 1554       | <b>1361</b>  | 1222     | 1363     |
| Phosphorus | ppm | ASTM D5185m | 899        | <b>816</b>   | 755      | 786      |
| Zinc       | ppm | ASTM D5185m | 1069       | <b>981</b>   | 892      | 981      |
| Sulfur     | ppm | ASTM D5185m | 2624       | <b>3033</b>  | 2464     | 2412     |

| CONTAMINANTS |     | method      | limit/base | current      | history1 | history2 |
|--------------|-----|-------------|------------|--------------|----------|----------|
| Silicon      | ppm | ASTM D5185m | >20        | <b>11</b>    | 5        | 5        |
| Sodium       | ppm | ASTM D5185m |            | <b>▲ 177</b> | 103      | 141      |
| Potassium    | ppm | ASTM D5185m | >20        | <b>▲ 53</b>  | 37       | 52       |
| Glycol       | %   | *ASTM D2982 |            | <b>NEG</b>   | NEG      | 0.0      |

| INFRA-RED |          | method      | limit/base | current     | history1 | history2 |
|-----------|----------|-------------|------------|-------------|----------|----------|
| Soot %    | %        | *ASTM D7844 | >3         | <b>0.9</b>  | 0.6      | 0.6      |
| Nitration | Abs/cm   | *ASTM D7624 | >20        | <b>11.0</b> | 9.7      | 10.3     |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30        | <b>22.0</b> | 21.0     | 21.2     |

| FLUID DEGRADATION |          | method      | limit/base | current     | history1 | history2 |
|-------------------|----------|-------------|------------|-------------|----------|----------|
| Oxidation         | Abs/.1mm | *ASTM D7414 | >25        | <b>19.1</b> | 18.2     | 18.6     |
| Base Number (BN)  | mg KOH/g | ASTM D2896  | 6.9        | <b>8.2</b>  | 8.5      | 8.4      |

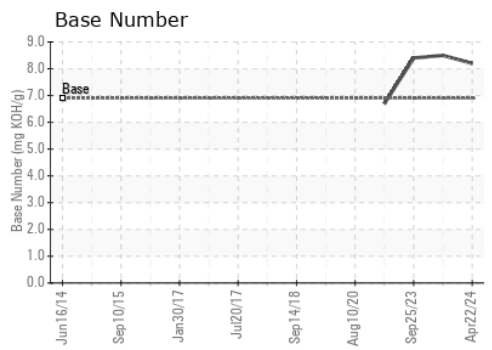
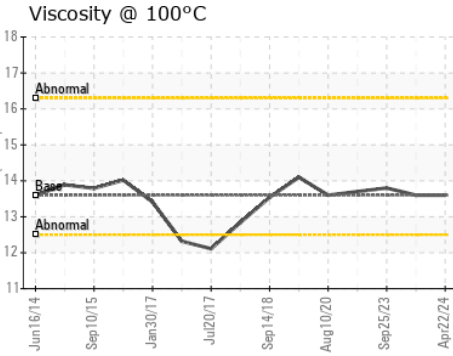
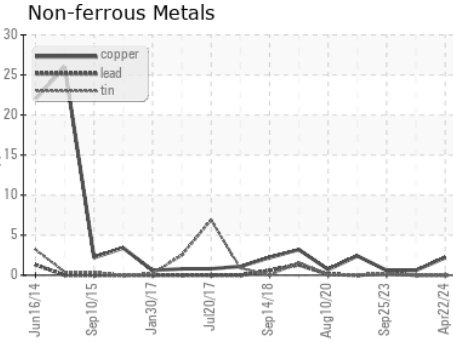
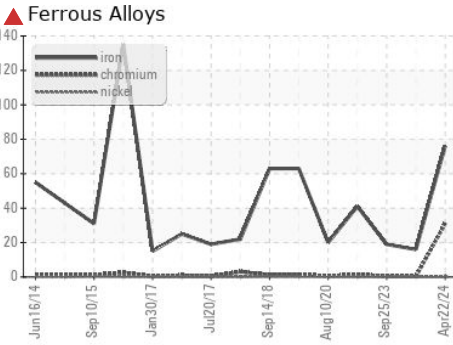
# OIL ANALYSIS REPORT



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

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Visc @ 100°C     | cSt    | ASTM D445  | 13.6    | 13.6     | 13.8     |

**GRAPHS**



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : ML0000635  
**Lab Number** : 06160059  
**Unique Number** : 10995482  
**Test Package** : CONST ( Additional Tests: Glycol, TBN )  
**Received** : 25 Apr 2024  
**Tested** : 30 Apr 2024  
**Diagnosed** : 30 Apr 2024 - Jonathan Hester

**McCLUNG-LOGAN EQUIPMENT CO - RICHMOND**  
 1345 MOUNTAIN ROAD  
 GLEN ALLEN, VA  
 US 23060  
 Contact: KYLE RATLIFF  
 KRATLIFFE@McCLUNG-LOGAN.COM

*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)