



# OIL ANALYSIS REPORT

|                 |               |
|-----------------|---------------|
| WEAR            | <b>NORMAL</b> |
| CONTAMINATION   | <b>NORMAL</b> |
| FLUID CONDITION | <b>NORMAL</b> |

Machine Id  
**54395**  
 Component  
**Diesel Engine**  
 Fluid  
**SHELL ROTELLA T 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>WC0883132</b>   | WC0883155   | WC0795921   |
| Sample Date    |     | Client Info |           | <b>08 May 2024</b> | 21 Nov 2023 | 30 Aug 2023 |
| Machine Age    | mls | Client Info |           | <b>0</b>           | 340293      | 324056      |
| Oil Age        | mls | Client Info |           | <b>25000</b>       | 25000       | 25000       |
| Filter Age     | mls | Client Info |           | <b>0</b>           | 25000       | 0           |
| Oil Changed    |     | Client Info |           | <b>N/A</b>         | Changed     | Changed     |
| Filter Changed |     | Client Info |           | <b>N/A</b>         | Changed     | Changed     |
| Sample Status  |     |             |           | <b>NORMAL</b>      | NORMAL      | NORMAL      |

## WEAR

All component wear rates are normal.

|              |        |             |      |              |      |      |
|--------------|--------|-------------|------|--------------|------|------|
| Iron         | ppm    | ASTM D5185m | >100 | <b>23</b>    | 14   | 20   |
| Chromium     | ppm    | ASTM D5185m | >20  | <b>2</b>     | <1   | 1    |
| Nickel       | ppm    | ASTM D5185m | >4   | <b>&lt;1</b> | 0    | 0    |
| Titanium     | ppm    | ASTM D5185m |      | <b>&lt;1</b> | 0    | 0    |
| Silver       | ppm    | ASTM D5185m | >3   | <b>&lt;1</b> | 0    | 0    |
| Aluminum     | ppm    | ASTM D5185m | >20  | <b>11</b>    | 5    | 6    |
| Lead         | ppm    | ASTM D5185m | >40  | <b>&lt;1</b> | 0    | 0    |
| Copper       | ppm    | ASTM D5185m | >330 | <b>5</b>     | 3    | 5    |
| Tin          | ppm    | ASTM D5185m | >15  | <b>&lt;1</b> | 0    | 0    |
| 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

There is no indication of any contamination in the oil.

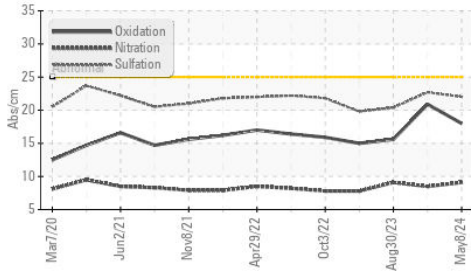
|                  |          |             |       |                |       |       |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon          | ppm      | ASTM D5185m | >25   | <b>8</b>       | 6     | 5     |
| Potassium        | ppm      | ASTM D5185m | >20   | <b>4</b>       | 2     | 2     |
| 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>0.7</b>     | 0.5   | 0.6   |
| Nitration        | Abs/cm   | *ASTM D7624 | >20   | <b>9.1</b>     | 8.5   | 9.1   |
| Sulfation        | Abs/.1mm | *ASTM D7415 | >30   | <b>22.0</b>    | 22.7  | 20.4  |
| 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

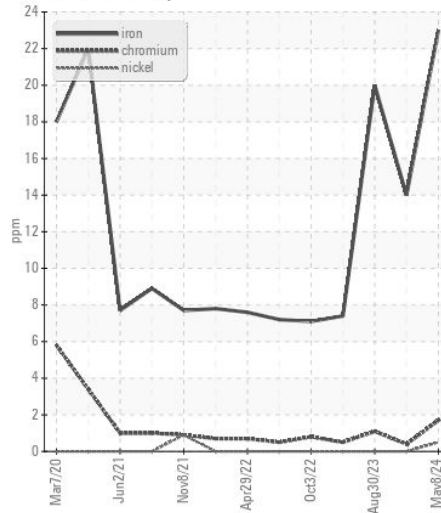
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

|                  |          |             |      |              |      |      |
|------------------|----------|-------------|------|--------------|------|------|
| Sodium           | ppm      | ASTM D5185m |      | <b>1</b>     | 0    | <1   |
| Boron            | ppm      | ASTM D5185m | 316  | <b>61</b>    | 24   | 6    |
| Barium           | ppm      | ASTM D5185m | 0.0  | <b>0</b>     | 0    | 0    |
| Molybdenum       | ppm      | ASTM D5185m | 1.2  | <b>73</b>    | 46   | 61   |
| Manganese        | ppm      | ASTM D5185m |      | <b>&lt;1</b> | 0    | <1   |
| Magnesium        | ppm      | ASTM D5185m | 24   | <b>677</b>   | 626  | 977  |
| Calcium          | ppm      | ASTM D5185m | 2292 | <b>1287</b>  | 1590 | 1177 |
| Phosphorus       | ppm      | ASTM D5185m | 1064 | <b>915</b>   | 796  | 978  |
| Zinc             | ppm      | ASTM D5185m | 1160 | <b>1199</b>  | 1003 | 1300 |
| Sulfur           | ppm      | ASTM D5185m | 4996 | <b>2922</b>  | 2928 | 3609 |
| Oxidation        | Abs/.1mm | *ASTM D7414 | >25  | <b>18.0</b>  | 20.9 | 15.6 |
| Base Number (BN) | mg KOH/g | ASTM D2896  | 10.1 | <b>6.7</b>   | 9.2  | 8.0  |
| Visc @ 100°C     | cSt      | ASTM D445   | 15.7 | <b>13.6</b>  | 14.1 | 13.8 |

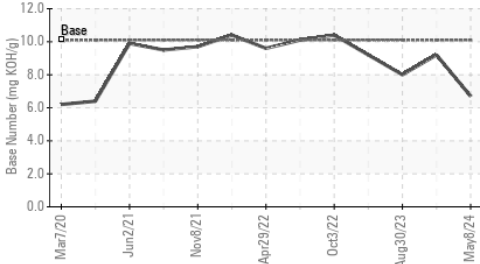
**FT-IR (Direct Trend)**



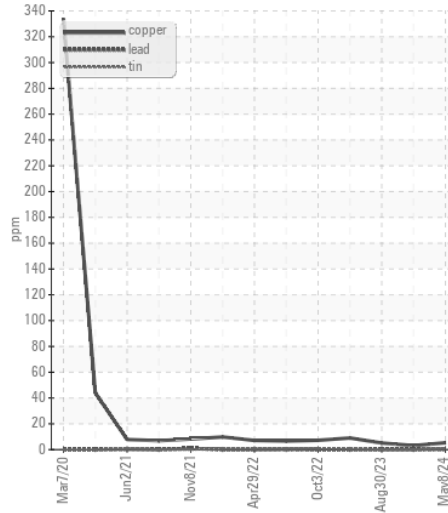
**Ferrous Alloys**



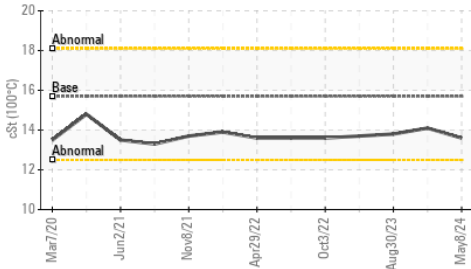
**Base Number**



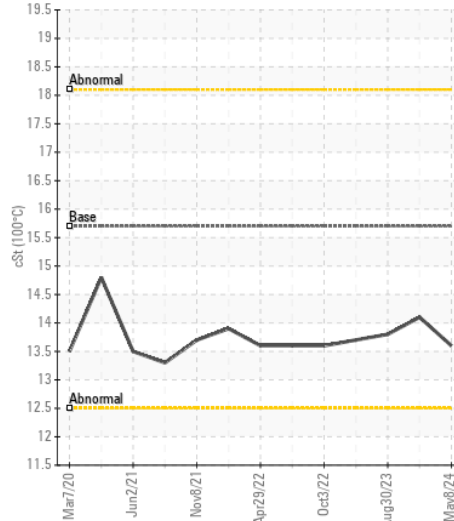
**Non-ferrous Metals**



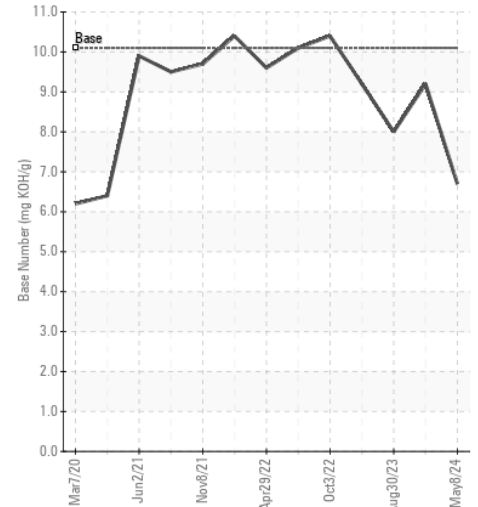
**Viscosity @ 100°C**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0883132  
**Lab Number** : 06188526  
**Unique Number** : 11045278  
**Test Package** : FLEET

**Received** : 22 May 2024  
**Tested** : 24 May 2024  
**Diagnosed** : 24 May 2024 - Wes Davis

**SALEM NATIONALEASE CORPORATION**  
 198 PARK PLAZA DRIVE  
 WINSTON SALEM, NC  
 US 27105

Contact: Audrey Hopkins  
 Audrey.Hopkins@salemcorp.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)

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F: x: