

# OIL ANALYSIS REPORT



## ANDERSON JOLLY 7717489 VOLVO PENTA 2071180959 - STARBOARD DIESEL ENGINE

**Sample No:** VPA036235  
**Oil Type:** VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3

### SAMPLE INFORMATION

|               |                    |             |             |     |
|---------------|--------------------|-------------|-------------|-----|
| Sample Number | <b>VPA036235</b>   | VPA025738   | VPA024760   | --- |
| Sample Date   | <b>31 Oct 2023</b> | 23 Dec 2021 | 21 Dec 2018 | --- |
| Machine Hours | <b>943</b>         | 848         | 648         | --- |
| Oil Hours     | <b>0</b>           | 0           | 0           | --- |
| Oil Changed   | <b>N/A</b>         | Changed     | Changed     | --- |
| Sample Status | <b>ATTENTION</b>   | NORMAL      | NORMAL      | --- |

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### OIL CONDITION

|                  |          |               |        |         |     |
|------------------|----------|---------------|--------|---------|-----|
| Visc @ 100°C     | cSt      | <b>▲ 10.2</b> | ■ 13.8 | ■ 14.36 | --- |
| Base Number (BN) | mg KOH/g | <b>■ 7.5</b>  | ■ 8.6  | ---     | --- |
| Oxidation (PA)   | %        | <b>66</b>     | 59     | 53      | --- |

### CONTAMINATION

|                |     |              |       |       |     |
|----------------|-----|--------------|-------|-------|-----|
| Water          | %   | <b>NEG</b>   | NEG   | NEG   | --- |
| Soot %         | %   | <b>■ 0.1</b> | ■ 1.3 | ■ 0.8 | --- |
| Nitration (PA) | %   | <b>38</b>    | 84    | 74    | --- |
| Sulfation (PA) | %   | <b>55</b>    | 58    | 53    | --- |
| Glycol         | %   | <b>NEG</b>   | NEG   | NEG   | --- |
| Fuel           | %   | <b>■ 0.1</b> | <1.0  | <1.0  | --- |
| Silicon        | ppm | <b>■ 19</b>  | ■ 5   | ■ 4   | --- |
| Sodium         | ppm | <b>■ 4</b>   | ■ 3   | ■ 4   | --- |
| Potassium      | ppm | <b>■ 2</b>   | ■ 2   | ■ 6   | --- |

### Diagnosis

Resample at the next service interval to monitor. All component wear rates are normal. Fuel content negligible. There is no indication of any contamination in the oil. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

### WEAR METALS

|            |     |                |      |      |     |
|------------|-----|----------------|------|------|-----|
| Iron       | ppm | <b>■ 13</b>    | ■ 19 | ■ 12 | --- |
| Copper     | ppm | <b>■ 14</b>    | ■ 38 | ■ 24 | --- |
| Lead       | ppm | <b>■ 2</b>     | ■ 6  | ■ 5  | --- |
| Tin        | ppm | <b>■ 1</b>     | ■ <1 | ■ 2  | --- |
| Aluminum   | ppm | <b>■ 6</b>     | ■ 2  | ■ 1  | --- |
| Chromium   | ppm | <b>■ &lt;1</b> | ■ 1  | ■ <1 | --- |
| Molybdenum | ppm | <b>■ 30</b>    | ■ 12 | ■ 4  | --- |
| Nickel     | ppm | <b>■ &lt;1</b> | ■ 6  | ■ 3  | --- |
| Titanium   | ppm | <b>■ 0</b>     | <1   | 0    | --- |
| Silver     | ppm | <b>■ 0</b>     | ■ <1 | ■ 0  | --- |
| Manganese  | ppm | <b>■ &lt;1</b> | ■ <1 | <1   | --- |
| Vanadium   | ppm | <b>0</b>       | <1   | 0    | --- |

### ADDITIVES

|            |     |               |        |        |     |
|------------|-----|---------------|--------|--------|-----|
| Calcium    | ppm | <b>■ 1109</b> | ■ 1290 | ■ 1357 | --- |
| Magnesium  | ppm | <b>■ 322</b>  | 775    | ■ 694  | --- |
| Zinc       | ppm | <b>■ 771</b>  | ■ 899  | ■ 768  | --- |
| Phosphorus | ppm | <b>■ 745</b>  | ■ 739  | ■ 597  | --- |
| Barium     | ppm | <b>■ 0</b>    | ■ 0    | ■ 0    | --- |
| Boron      | ppm | <b>■ 69</b>   | ■ 47   | ■ 72   | --- |

**Depot:** VP99031103  
**Unique No:** 10806366  
**Signed:** Don Baldrige  
**Report Date:** 28 Dec 2023

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## GRAPHS

