

# OIL ANALYSIS REPORT



**MANCHESTER 30 RIGHT AG R823699M VOLVO PENTA 2013934556 - VARIABLE SPEED - STARBOARD DIESEL ENGINE**

**Sample No:** VPA060855  
**Oil Type:** VOLVO PENTA SAE 15W40

## SAMPLE INFORMATION

|               |                    |             |             |     |
|---------------|--------------------|-------------|-------------|-----|
| Sample Number | <b>VPA060855</b>   | VPA043950   | VPA0048402  | --- |
| Sample Date   | <b>10 May 2024</b> | 15 Sep 2023 | 06 Oct 2022 | --- |
| Machine Hours | <b>393</b>         | 301         | 204         | --- |
| Oil Hours     | <b>82</b>          | 97          | 204         | --- |
| Oil Changed   | <b>N/A</b>         | N/A         | N/A         | --- |
| Sample Status | <b>ATTENTION</b>   | ATTENTION   | ATTENTION   | --- |

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## OIL CONDITION

|                  |          |             |      |      |     |
|------------------|----------|-------------|------|------|-----|
| Visc @ 100°C     | cSt      | <b>12.3</b> | 12.1 | 12.1 | --- |
| Base Number (BN) | mg KOH/g | <b>10.1</b> | 10.3 | 11.1 | --- |
| Oxidation (PA)   | %        | <b>74</b>   | 71   | 61   | --- |

## CONTAMINATION

|                |     |                |      |     |     |
|----------------|-----|----------------|------|-----|-----|
| Water          | %   | <b>NEG</b>     | NEG  | NEG | --- |
| Soot %         | %   | <b>0.1</b>     | 0    | 0.1 | --- |
| Nitration (PA) | %   | <b>41</b>      | 44   | 51  | --- |
| Sulfation (PA) | %   | <b>58</b>      | 57   | 55  | --- |
| Glycol         | %   | <b>NEG</b>     | NEG  | NEG | --- |
| Fuel           | %   | <b>&lt;1.0</b> | <1.0 | 1.7 | --- |
| Silicon        | ppm | <b>7</b>       | 8    | 17  | --- |
| Sodium         | ppm | <b>3</b>       | 2    | 0   | --- |
| Potassium      | ppm | <b>2</b>       | 2    | 3   | --- |

## Diagnosis

No corrective action is recommended at this time. Resample at the next service interval to monitor. Metal levels are typical for a new component breaking in. 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>4</b>     | 4  | 9  | --- |
| Copper     | ppm | <b>3</b>     | 2  | 9  | --- |
| Lead       | ppm | <b>0</b>     | 0  | <1 | --- |
| Tin        | ppm | <b>&lt;1</b> | <1 | 1  | --- |
| Aluminum   | ppm | <b>2</b>     | <1 | 1  | --- |
| Chromium   | ppm | <b>0</b>     | 0  | <1 | --- |
| Molybdenum | ppm | <b>43</b>    | 45 | 59 | --- |
| Nickel     | ppm | <b>0</b>     | 0  | 0  | --- |
| Titanium   | ppm | <b>0</b>     | 0  | 0  | --- |
| Silver     | ppm | <b>0</b>     | 0  | 0  | --- |
| Manganese  | ppm | <b>1</b>     | <1 | 1  | --- |
| Vanadium   | ppm | <b>0</b>     | 0  | 0  | --- |

## ADDITIVES

|            |     |             |      |      |     |
|------------|-----|-------------|------|------|-----|
| Calcium    | ppm | <b>1601</b> | 1605 | 1117 | --- |
| Magnesium  | ppm | <b>531</b>  | 618  | 983  | --- |
| Zinc       | ppm | <b>896</b>  | 1007 | 1315 | --- |
| Phosphorus | ppm | <b>782</b>  | 821  | 1076 | --- |
| Barium     | ppm | <b>0</b>    | 0    | 0    | --- |
| Boron      | ppm | <b>75</b>   | 60   | 1    | --- |

**Depot:** VP153549  
**Unique No:** 11042524  
**Signed:** Jonathan Hester  
**Report Date:** 23 May 2024

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**VOLVO  
PENTA**

## GRAPHS

