

# OIL ANALYSIS REPORT



**IAN PORTER DANIEL/502243 VOLVO PENTA 2006035536 - CENTER RIGHT DIESEL ENGINE**

**Sample No:** VPA059642  
**Oil Type:** VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3

## SAMPLE INFORMATION

|               |                    |             |             |             |
|---------------|--------------------|-------------|-------------|-------------|
| Sample Number | <b>VPA059642</b>   | VPA048324   | VPA048326   | VPA037124   |
| Sample Date   | <b>01 Jan 2024</b> | 23 Mar 2022 | 23 Mar 2022 | 20 Jan 2022 |
| Machine Hours | <b>1048</b>        | 869         | 830         | 0           |
| Oil Hours     | <b>0</b>           | 0           | 0           | 40          |
| Oil Changed   | <b>Changed</b>     | N/A         | N/A         | N/A         |
| Sample Status | <b>NORMAL</b>      | NORMAL      | NORMAL      | NORMAL      |

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## OIL CONDITION

|                  |          |             |      |      |      |
|------------------|----------|-------------|------|------|------|
| Visc @ 100°C     | cSt      | <b>13.5</b> | 13.9 | 14.0 | 14.1 |
| Base Number (BN) | mg KOH/g | <b>9.5</b>  | 11.3 | 11.1 | 10.7 |
| Oxidation (PA)   | %        | <b>66</b>   | 61   | 60   | 76   |

## CONTAMINATION

|                |     |                |      |      |      |
|----------------|-----|----------------|------|------|------|
| Water          | %   | <b>NEG</b>     | NEG  | NEG  | NEG  |
| Soot %         | %   | <b>0.2</b>     | 0.1  | 0    | 0.1  |
| Nitration (PA) | %   | <b>61</b>      | 44   | 41   | 50   |
| Sulfation (PA) | %   | <b>57</b>      | 56   | 56   | 57   |
| Glycol         | %   | <b>NEG</b>     | NEG  | NEG  | NEG  |
| Fuel           | %   | <b>&lt;1.0</b> | <1.0 | <1.0 | <1.0 |
| Silicon        | ppm | <b>5</b>       | 3    | 2    | 8    |
| Sodium         | ppm | <b>1</b>       | <1   | <1   | 2    |
| Potassium      | ppm | <b>2</b>       | <1   | <1   | <1   |

## Diagnosis

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.

## WEAR METALS

|            |     |              |    |    |    |
|------------|-----|--------------|----|----|----|
| Iron       | ppm | <b>7</b>     | 2  | 1  | 0  |
| Copper     | ppm | <b>8</b>     | <1 | <1 | <1 |
| Lead       | ppm | <b>2</b>     | 0  | 0  | <1 |
| Tin        | ppm | <b>&lt;1</b> | 0  | 0  | <1 |
| Aluminum   | ppm | <b>1</b>     | 0  | 0  | 3  |
| Chromium   | ppm | <b>&lt;1</b> | <1 | 0  | <1 |
| Molybdenum | ppm | <b>57</b>    | 56 | 56 | 41 |
| Nickel     | ppm | <b>&lt;1</b> | 0  | 0  | 0  |
| Titanium   | ppm | <b>0</b>     | 0  | 0  | <1 |
| Silver     | ppm | <b>0</b>     | 0  | 0  | 0  |
| Manganese  | ppm | <b>&lt;1</b> | 0  | 0  | <1 |
| Vanadium   | ppm | <b>0</b>     | 0  | 0  | <1 |

## ADDITIVES

|            |     |             |      |      |      |
|------------|-----|-------------|------|------|------|
| Calcium    | ppm | <b>1090</b> | 1188 | 1170 | 1468 |
| Magnesium  | ppm | <b>918</b>  | 960  | 980  | 613  |
| Zinc       | ppm | <b>1230</b> | 1255 | 1274 | 947  |
| Phosphorus | ppm | <b>1047</b> | 1045 | 1067 | 803  |
| Barium     | ppm | <b>0</b>    | 0    | 0    | <1   |
| Boron      | ppm | <b>11</b>   | 9    | 7    | 55   |

**Depot:** VP794951  
**Unique No:** 10836346  
**Signed:** Angela Borella  
**Report Date:** 22 Jan 2024

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# VOLVO PENTA

## GRAPHS

