



OIL ANALYSIS REPORT

|                 |        |
|-----------------|--------|
| WEAR            | NORMAL |
| CONTAMINATION   | NORMAL |
| FLUID CONDITION | NORMAL |

Area  
**QUINN HART [7720230]**  
Machine Id  
**VOLVO PENTA A1141921**  
Component  
**Center Diesel Engine**  
Fluid  
**VOLVO VDS-4.5 Premium Motor Oil 15W40 (3 GAL)**

**RECOMMENDATION**

No corrective action is recommended at this time. Resample at the next service interval to monitor.

| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|----------|
| Sample Number  |     | Client Info |           | <b>VPA054008</b>   | VPA045389   | ---      |
| Sample Date    |     | Client Info |           | <b>20 May 2024</b> | 05 Aug 2022 | ---      |
| Machine Age    | hrs | Client Info |           | <b>385</b>         | 178         | ---      |
| Oil Age        | hrs | Client Info |           | <b>0</b>           | 178         | ---      |
| Filter Age     | hrs | Client Info |           | <b>0</b>           | 0           | ---      |
| Oil Changed    |     | Client Info |           | <b>Changed</b>     | Changed     | ---      |
| Filter Changed |     | Client Info |           | <b>Changed</b>     | Changed     | ---      |
| Sample Status  |     |             |           | <b>NORMAL</b>      | NORMAL      | ---      |

**WEAR**

All component wear rates are normal.

|              |        |             |      |              |      |     |
|--------------|--------|-------------|------|--------------|------|-----|
| Iron         | ppm    | ASTM D5185m | >80  | <b>53</b>    | 27   | --- |
| Chromium     | ppm    | ASTM D5185m | >6   | <b>5</b>     | 3    | --- |
| Nickel       | ppm    | ASTM D5185m | >2   | <b>5</b>     | 3    | --- |
| Titanium     | ppm    | ASTM D5185m | >2   | <b>&lt;1</b> | <1   | --- |
| Silver       | ppm    | ASTM D5185m | >2   | <b>0</b>     | 2    | --- |
| Aluminum     | ppm    | ASTM D5185m | >20  | <b>45</b>    | 21   | --- |
| Lead         | ppm    | ASTM D5185m | >95  | <b>4</b>     | 4    | --- |
| Copper       | ppm    | ASTM D5185m | >85  | <b>11</b>    | 14   | --- |
| Tin          | ppm    | ASTM D5185m | >9   | <b>2</b>     | 4    | --- |
| Vanadium     | ppm    | ASTM D5185m |      | <b>0</b>     | 0    | --- |
| White Metal  | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | --- |
| Yellow Metal | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | --- |

**CONTAMINATION**

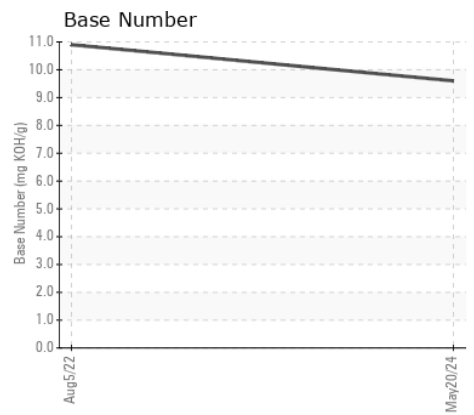
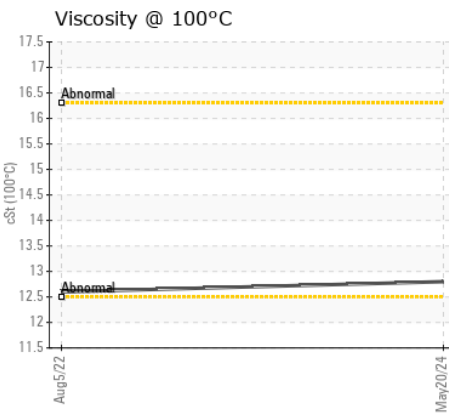
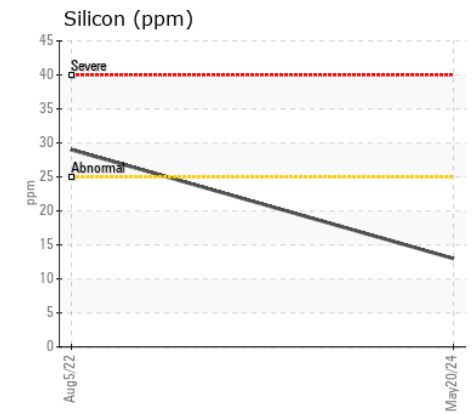
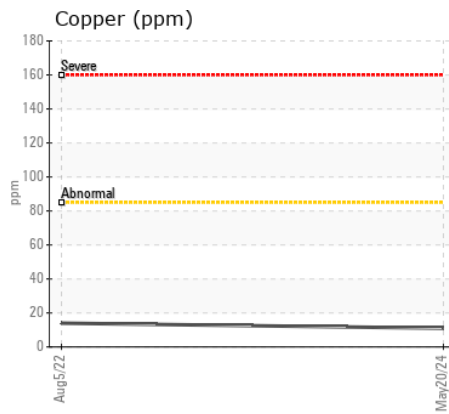
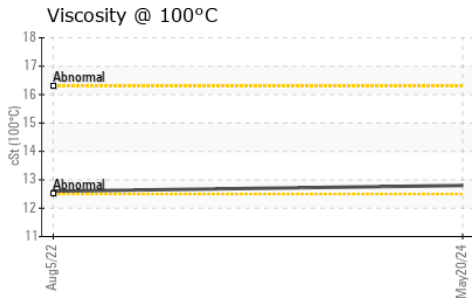
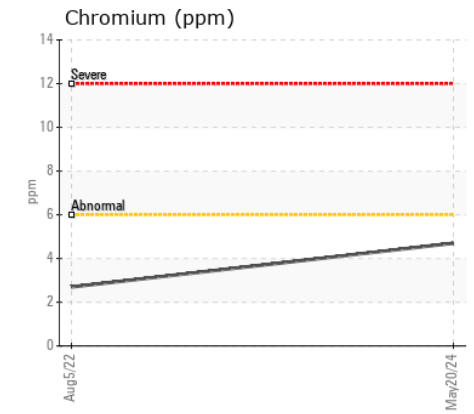
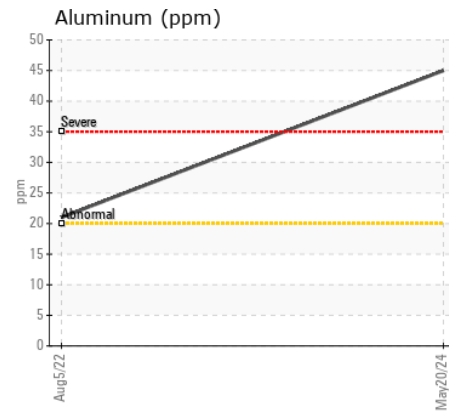
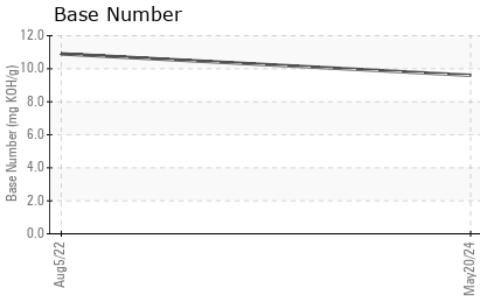
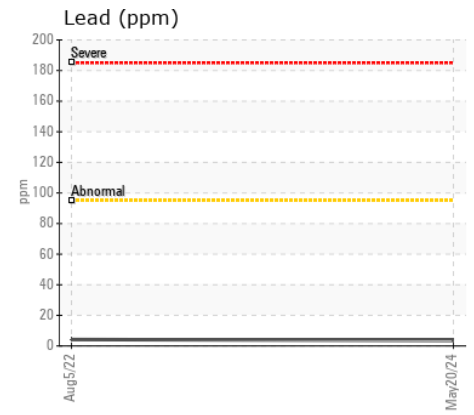
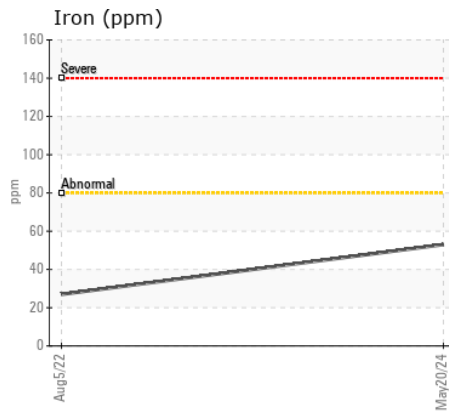
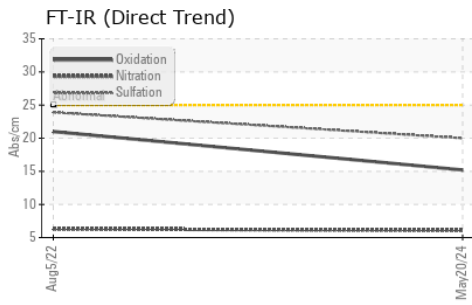
There is no indication of any contamination in the oil.

|                  |          |             |       |                |       |     |
|------------------|----------|-------------|-------|----------------|-------|-----|
| Silicon          | ppm      | ASTM D5185m | >25   | <b>13</b>      | 29    | --- |
| Potassium        | ppm      | ASTM D5185m | >20   | <b>3</b>       | 3     | --- |
| Fuel             |          | WC Method   | >4.0  | <b>&lt;1.0</b> | <1.0  | --- |
| Water            |          | WC Method   | >0.1  | <b>NEG</b>     | NEG   | --- |
| Glycol           |          | WC Method   |       | <b>NEG</b>     | NEG   | --- |
| Soot %           | %        | *ASTM D7844 |       | <b>0.3</b>     | 0.3   | --- |
| Nitration        | Abs/cm   | *ASTM D7624 | >20   | <b>6.1</b>     | 6.3   | --- |
| Sulfation        | Abs/.1mm | *ASTM D7415 | >30   | <b>20.0</b>    | 23.9  | --- |
| Silt             | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | --- |
| Debris           | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | --- |
| Sand/Dirt        | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | --- |
| Appearance       | scalar   | *Visual     | NORML | <b>NORML</b>   | NORML | --- |
| Odor             | scalar   | *Visual     | NORML | <b>NORML</b>   | NORML | --- |
| Emulsified Water | scalar   | *Visual     | >0.1  | <b>NEG</b>     | NEG   | --- |

**FLUID CONDITION**

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

|                  |          |             |     |             |      |     |
|------------------|----------|-------------|-----|-------------|------|-----|
| Sodium           | ppm      | ASTM D5185m |     | <b>3</b>    | 4    | --- |
| Boron            | ppm      | ASTM D5185m |     | <b>12</b>   | 57   | --- |
| Barium           | ppm      | ASTM D5185m |     | <b>0</b>    | 0    | --- |
| Molybdenum       | ppm      | ASTM D5185m |     | <b>57</b>   | 42   | --- |
| Manganese        | ppm      | ASTM D5185m |     | <b>1</b>    | 1    | --- |
| Magnesium        | ppm      | ASTM D5185m |     | <b>882</b>  | 480  | --- |
| Calcium          | ppm      | ASTM D5185m |     | <b>1169</b> | 1583 | --- |
| Phosphorus       | ppm      | ASTM D5185m |     | <b>1045</b> | 929  | --- |
| Zinc             | ppm      | ASTM D5185m |     | <b>1210</b> | 1085 | --- |
| Sulfur           | ppm      | ASTM D5185m |     | <b>3541</b> | 3070 | --- |
| Oxidation        | Abs/.1mm | *ASTM D7414 | >25 | <b>15.2</b> | 21.0 | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896  |     | <b>9.6</b>  | 10.9 | --- |
| Visc @ 100°C     | cSt      | ASTM D445   |     | <b>12.8</b> | 12.6 | --- |



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : VPA054008 **Received** : 29 May 2024  
**Lab Number** : 06193699 **Tested** : 30 May 2024  
**Unique Number** : 11050451 **Diagnosed** : 30 May 2024 - Sean Felton  
**Test Package** : MOB 1 ( Additional Tests: TBN )

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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)