



# VOLVO

## OIL ANALYSIS REPORT

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



Machine Id  
**VOLVO L220H 3440**  
Component  
**Diesel Engine**  
Fluid  
**SHELL ROTELLA T3 15W40 (--- GAL)**

### RECOMMENDATION

Resample at the next service interval to monitor.

| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2    |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number  |     | Client Info |           | <b>VCP440504</b>   | VCP440713   | VCP440501   |
| Sample Date    |     | Client Info |           | <b>19 Apr 2024</b> | 05 Apr 2024 | 22 Mar 2024 |
| Machine Age    | hrs | Client Info |           | <b>9005</b>        | 8728        | 8460        |
| Oil Age        | hrs | Client Info |           | <b>277</b>         | 268         | 263         |
| Filter Age     | hrs | Client Info |           | <b>0</b>           | 0           | 0           |
| Oil Changed    |     | Client Info |           | <b>Changed</b>     | Changed     | Changed     |
| Filter Changed |     | Client Info |           | <b>Changed</b>     | Changed     | Changed     |
| Sample Status  |     |             |           | <b>NORMAL</b>      | NORMAL      | NORMAL      |

### WEAR

All component wear rates are normal.

|              |        |             |      |             |      |      |
|--------------|--------|-------------|------|-------------|------|------|
| Iron         | ppm    | ASTM D5185m | >100 | <b>0</b>    | <1   | 1    |
| Chromium     | ppm    | ASTM D5185m | >10  | <b>0</b>    | 0    | 0    |
| Nickel       | ppm    | ASTM D5185m | >10  | <b>0</b>    | 0    | 0    |
| Titanium     | ppm    | ASTM D5185m |      | <b>0</b>    | 0    | 0    |
| Silver       | ppm    | ASTM D5185m | >2   | <b>0</b>    | 0    | 0    |
| Aluminum     | ppm    | ASTM D5185m | >10  | <b>0</b>    | <1   | <1   |
| Lead         | ppm    | ASTM D5185m | >20  | <b>0</b>    | <1   | 0    |
| Copper       | ppm    | ASTM D5185m | >15  | <b>3</b>    | <1   | 0    |
| Tin          | ppm    | ASTM D5185m | >10  | <b>0</b>    | 0    | 0    |
| Vanadium     | ppm    | ASTM D5185m |      | <b>0</b>    | <1   | 0    |
| White Metal  | scalar | *Visual     | NONE | <b>NONE</b> | NONE | NONE |
| Yellow Metal | scalar | *Visual     | NONE | <b>NONE</b> | NONE | NONE |

### CONTAMINATION

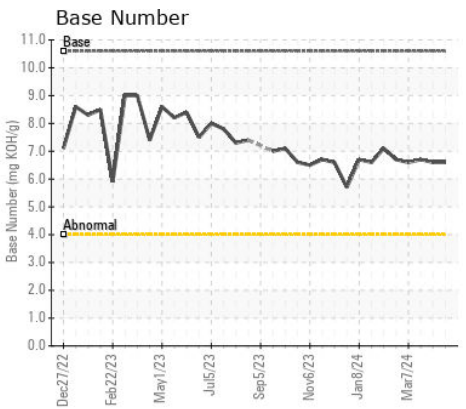
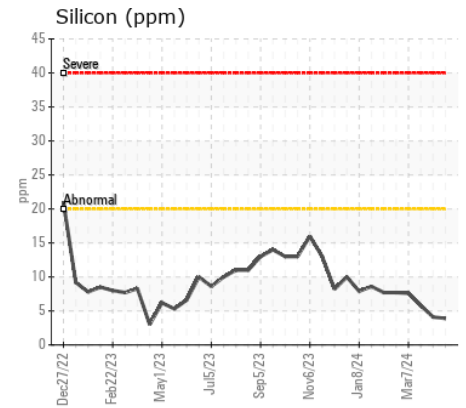
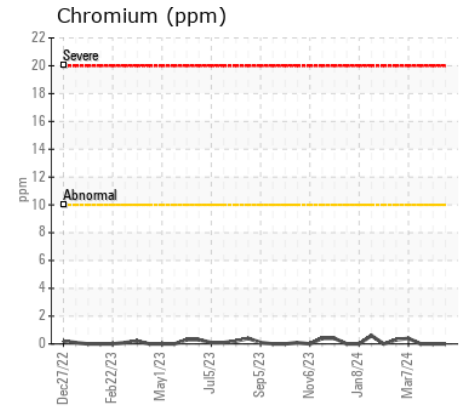
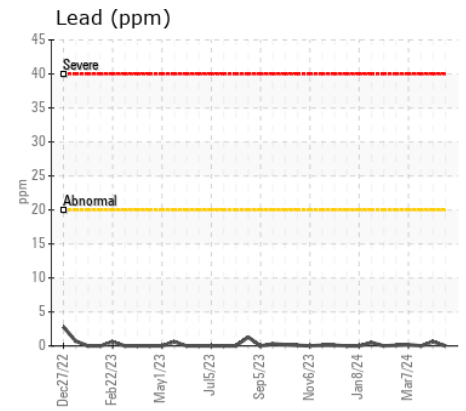
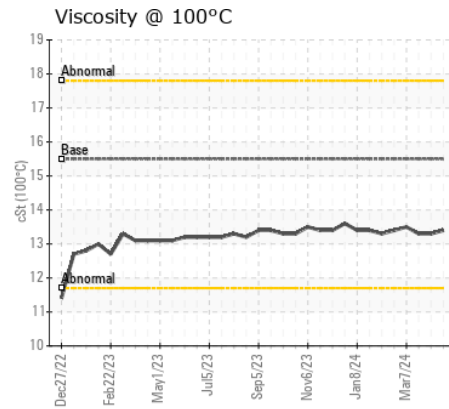
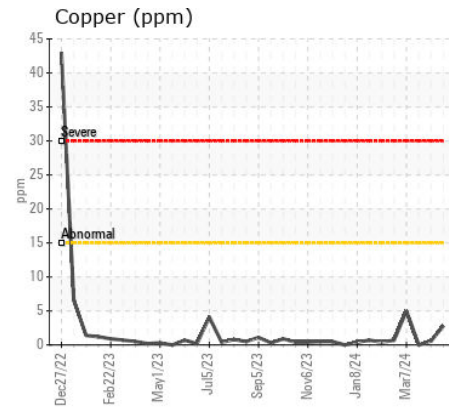
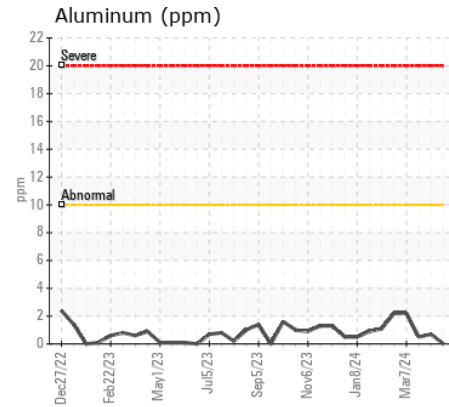
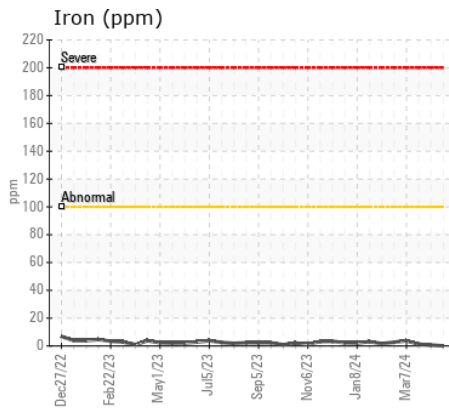
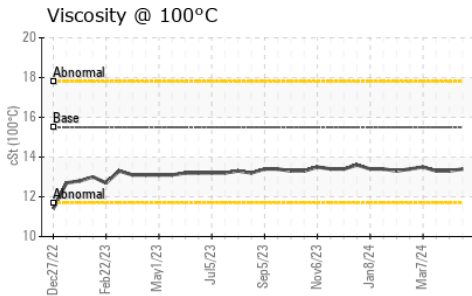
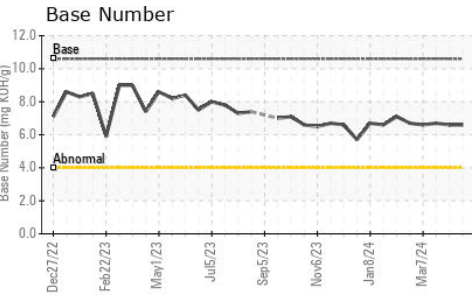
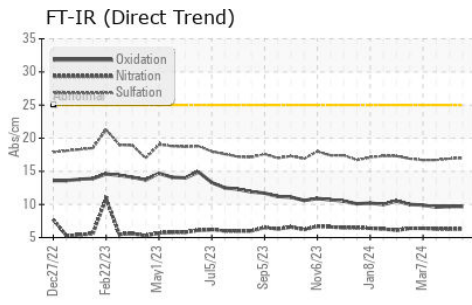
There is no indication of any contamination in the oil.

|                  |          |             |       |                |       |       |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon          | ppm      | ASTM D5185m | >20   | <b>4</b>       | 4     | 6     |
| Potassium        | ppm      | ASTM D5185m | >20   | <b>&lt;1</b>   | <1    | <1    |
| Fuel             |          | WC Method   | >6.0  | <b>&lt;1.0</b> | <1.0  | <1.0  |
| Water            |          | WC Method   | >0.1  | <b>NEG</b>     | NEG   | NEG   |
| Glycol           |          | WC Method   |       | <b>NEG</b>     | NEG   | NEG   |
| Soot %           | %        | *ASTM D7844 | >3    | <b>0.1</b>     | 0.1   | 0.1   |
| Nitration        | Abs/cm   | *ASTM D7624 | >20   | <b>6.3</b>     | 6.3   | 6.3   |
| Sulfation        | Abs/.1mm | *ASTM D7415 | >30   | <b>17.0</b>    | 16.9  | 16.7  |
| 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     | >0.1  | <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>&lt;1</b> | 1    | <1   |
| Boron            | ppm      | ASTM D5185m | 10   | <b>5</b>     | 10   | 12   |
| Barium           | ppm      | ASTM D5185m | 0    | <b>0</b>     | 0    | 0    |
| Molybdenum       | ppm      | ASTM D5185m | 10   | <b>10</b>    | 11   | 13   |
| Manganese        | ppm      | ASTM D5185m |      | <b>0</b>     | 0    | 0    |
| Magnesium        | ppm      | ASTM D5185m | 10   | <b>44</b>    | 56   | 67   |
| Calcium          | ppm      | ASTM D5185m | 2600 | <b>2485</b>  | 2295 | 2491 |
| Phosphorus       | ppm      | ASTM D5185m | 1050 | <b>981</b>   | 899  | 1023 |
| Zinc             | ppm      | ASTM D5185m | 1250 | <b>1184</b>  | 964  | 1173 |
| Sulfur           | ppm      | ASTM D5185m | 3900 | <b>4538</b>  | 3741 | 4815 |
| Oxidation        | Abs/.1mm | *ASTM D7414 | >25  | <b>9.7</b>   | 9.7  | 9.6  |
| Base Number (BN) | mg KOH/g | ASTM D2896  | 10.6 | <b>6.6</b>   | 6.6  | 6.7  |
| Visc @ 100°C     | cSt      | ASTM D445   | 15.5 | <b>13.4</b>  | 13.3 | 13.3 |



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : VCP440504 **Received** : 24 Apr 2024  
**Lab Number** : 06158696 **Tested** : 25 Apr 2024  
**Unique Number** : 10994119 **Diagnosed** : 25 Apr 2024 - Wes Davis  
**Test Package** : MOB 1 ( Additional Tests: TBN )

**COVANTA ENERGY**  
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 ssawyer@woodcomachinery.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)