



# OIL ANALYSIS REPORT

|                 |               |
|-----------------|---------------|
| WEAR            | <b>SEVERE</b> |
| CONTAMINATION   | <b>SEVERE</b> |
| FLUID CONDITION | <b>NORMAL</b> |

Area

**[3040]**

Machine Id

**VOLVO EC220EL 314928**

Component

**Front Left Final Drive**

Fluid

**VOLVO PREMIUM GEAR OIL 80W-90 GL-5 (--- GAL)**

## RECOMMENDATION

We advise that you check all areas where dirt can enter the system. We recommend that you drain the oil from the component if this has not already been done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

## WEAR

Gear wear is indicated.

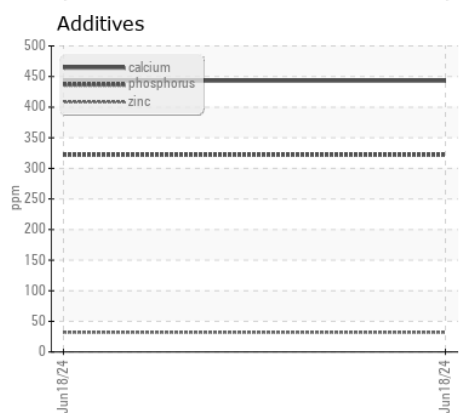
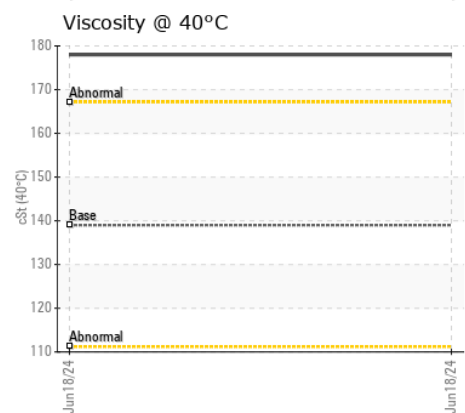
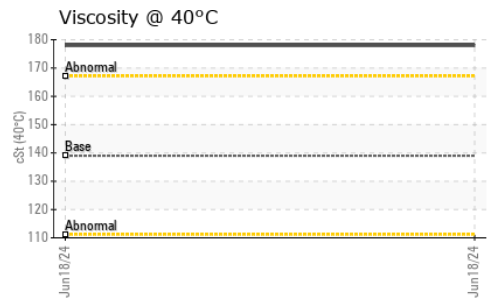
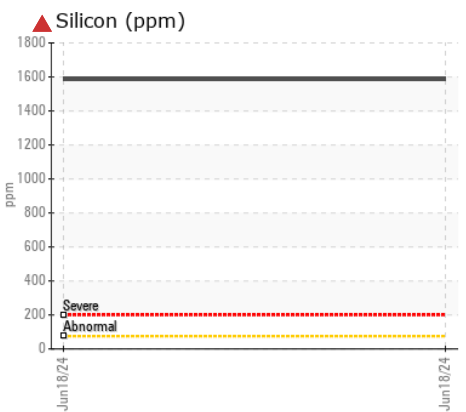
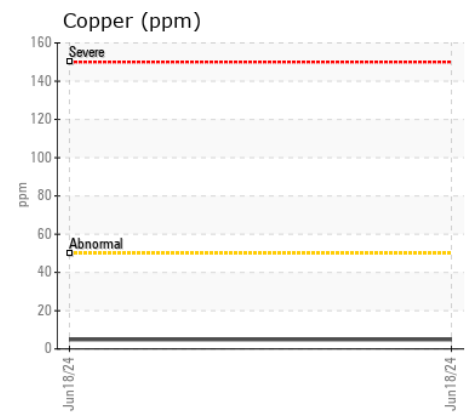
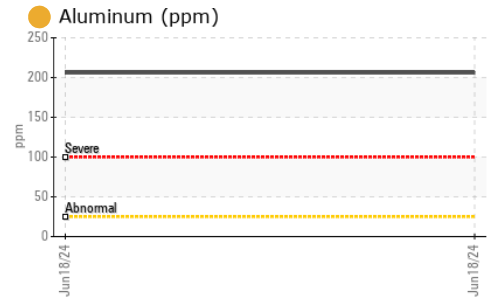
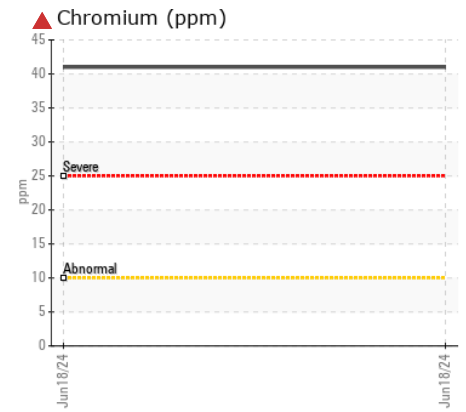
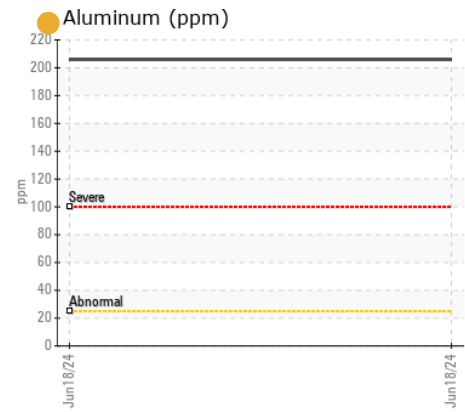
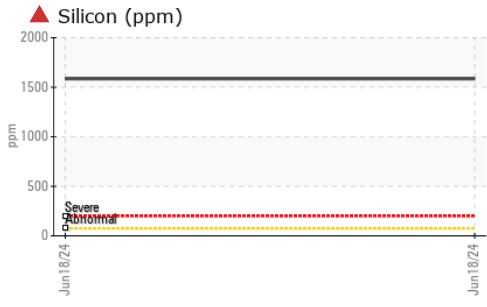
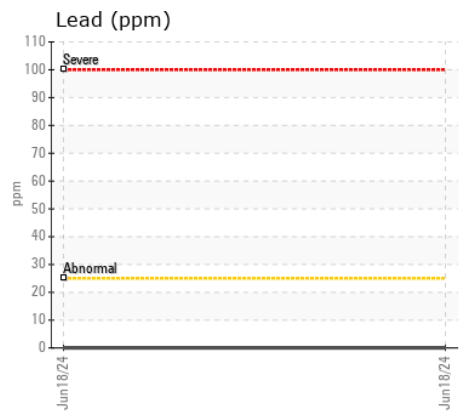
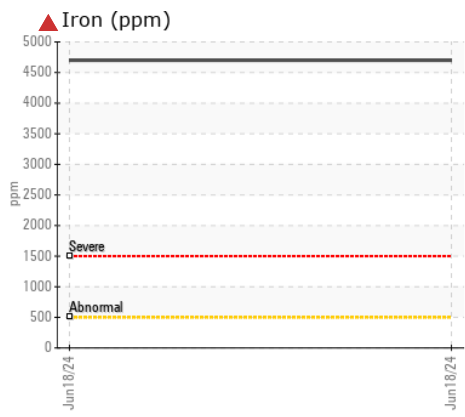
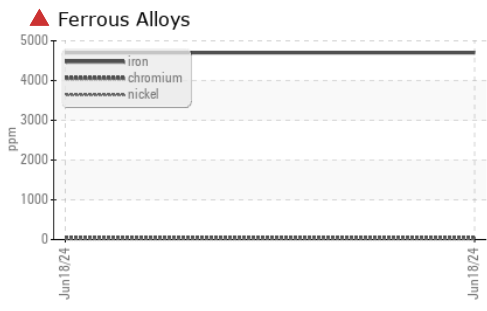
## CONTAMINATION

Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

## FLUID CONDITION

The oil is no longer serviceable due to the presence of contaminants.

| Test             | UOM    | Method      | Limit/Abn | Current            | History1 | History2 |
|------------------|--------|-------------|-----------|--------------------|----------|----------|
| Sample Number    |        | Client Info |           | <b>VCP434878</b>   | ---      | ---      |
| Sample Date      |        | Client Info |           | <b>18 Jun 2024</b> | ---      | ---      |
| Machine Age      | hrs    | Client Info |           | <b>1515</b>        | ---      | ---      |
| Oil Age          | hrs    | Client Info |           | <b>0</b>           | ---      | ---      |
| Filter Age       | hrs    | Client Info |           | <b>0</b>           | ---      | ---      |
| Oil Changed      |        | Client Info |           | <b>Not Chngd</b>   | ---      | ---      |
| Filter Changed   |        | Client Info |           | <b>Not Chngd</b>   | ---      | ---      |
| Sample Status    |        |             |           | <b>SEVERE</b>      | ---      | ---      |
| Iron             | ppm    | ASTM D5185m | >500      | <b>▲ 4700</b>      | ---      | ---      |
| Chromium         | ppm    | ASTM D5185m | >10       | <b>▲ 41</b>        | ---      | ---      |
| Nickel           | ppm    | ASTM D5185m | >10       | <b>▲ 12</b>        | ---      | ---      |
| Titanium         | ppm    | ASTM D5185m |           | <b>▲ 12</b>        | ---      | ---      |
| Silver           | ppm    | ASTM D5185m |           | <b>0</b>           | ---      | ---      |
| Aluminum         | ppm    | ASTM D5185m | >25       | <b>● 206</b>       | ---      | ---      |
| Lead             | ppm    | ASTM D5185m | >25       | <b>0</b>           | ---      | ---      |
| Copper           | ppm    | ASTM D5185m | >50       | <b>5</b>           | ---      | ---      |
| Tin              | ppm    | ASTM D5185m | >10       | <b>0</b>           | ---      | ---      |
| Vanadium         | ppm    | ASTM D5185m |           | <b>&lt;1</b>       | ---      | ---      |
| White Metal      | scalar | *Visual     | NONE      | <b>NONE</b>        | ---      | ---      |
| Yellow Metal     | scalar | *Visual     | NONE      | <b>NONE</b>        | ---      | ---      |
| Silicon          | ppm    | ASTM D5185m | >75       | <b>▲ 1586</b>      | ---      | ---      |
| Potassium        | ppm    | ASTM D5185m | >20       | <b>87</b>          | ---      | ---      |
| Water            |        | WC Method   | >0.2      | <b>NEG</b>         | ---      | ---      |
| Silt             | scalar | *Visual     | NONE      | <b>NONE</b>        | ---      | ---      |
| Debris           | scalar | *Visual     | NONE      | <b>NONE</b>        | ---      | ---      |
| Sand/Dirt        | scalar | *Visual     | NONE      | <b>NONE</b>        | ---      | ---      |
| Appearance       | scalar | *Visual     | NORML     | <b>NORML</b>       | ---      | ---      |
| Odor             | scalar | *Visual     | NORML     | <b>NORML</b>       | ---      | ---      |
| Emulsified Water | scalar | *Visual     | >0.2      | <b>NEG</b>         | ---      | ---      |
| Sodium           | ppm    | ASTM D5185m |           | <b>43</b>          | ---      | ---      |
| Boron            | ppm    | ASTM D5185m | 379       | <b>8</b>           | ---      | ---      |
| Barium           | ppm    | ASTM D5185m | 0.0       | <b>3</b>           | ---      | ---      |
| Molybdenum       | ppm    | ASTM D5185m | 0.8       | <b>5</b>           | ---      | ---      |
| Manganese        | ppm    | ASTM D5185m | 0.0       | <b>48</b>          | ---      | ---      |
| Magnesium        | ppm    | ASTM D5185m | 31        | <b>106</b>         | ---      | ---      |
| Calcium          | ppm    | ASTM D5185m | 38        | <b>443</b>         | ---      | ---      |
| Phosphorus       | ppm    | ASTM D5185m | 1077      | <b>322</b>         | ---      | ---      |
| Zinc             | ppm    | ASTM D5185m | 46        | <b>32</b>          | ---      | ---      |
| Sulfur           | ppm    | ASTM D5185m | 23526     | <b>18494</b>       | ---      | ---      |
| Visc @ 40°C      | cSt    | ASTM D445   | 139       | <b>178</b>         | ---      | ---      |



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : VCP434878  
**Lab Number** : 06221587  
**Unique Number** : 11099784  
**Test Package** : MOB 1  
**Received** : 26 Jun 2024  
**Tested** : 27 Jun 2024  
**Diagnosed** : 28 Jun 2024 - Jonathan Hester

**LEONARDS CONTRACTING**  
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 MADISON HEIGHTS, MI  
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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)