



VOLVO

OIL ANALYSIS REPORT

| | |
|-----------------|------------------|
| WEAR | NORMAL |
| CONTAMINATION | ABNORMAL |
| FLUID CONDITION | ATTENTION |



Area

[578187]

Machine Id

VOLVO L220H 3197

Component

Hydraulic System

Fluid

VOLVO SUPER HYDRAULIC OIL 46 (--- GAL)

RECOMMENDATION

No corrective action is recommended at this time. The filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | VCP430328 | VCP405634 | VCP359859 |
| Sample Date | | Client Info | | 20 Jun 2024 | 28 Mar 2023 | 20 Jun 2022 |
| Machine Age | hrs | Client Info | | 9053 | 6366 | 4933 |
| Oil Age | hrs | Client Info | | 0 | 0 | 0 |
| Filter Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | Not Changed | Not Changed | Not Changed |
| Filter Changed | | Client Info | | Changed | Not Changed | N/A |
| Sample Status | | | | ABNORMAL | ATTENTION | ABNORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >50 | 14 | 11 | 9 |
| Chromium | ppm | ASTM D5185m | >20 | 2 | 1 | <1 |
| Nickel | ppm | ASTM D5185m | >10 | <1 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | <1 | <1 | <1 |
| Silver | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 4 | 3 | 2 |
| Lead | ppm | ASTM D5185m | >20 | <1 | 2 | 2 |
| Copper | ppm | ASTM D5185m | >150 | 4 | 4 | 4 |
| Tin | ppm | ASTM D5185m | >20 | <1 | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

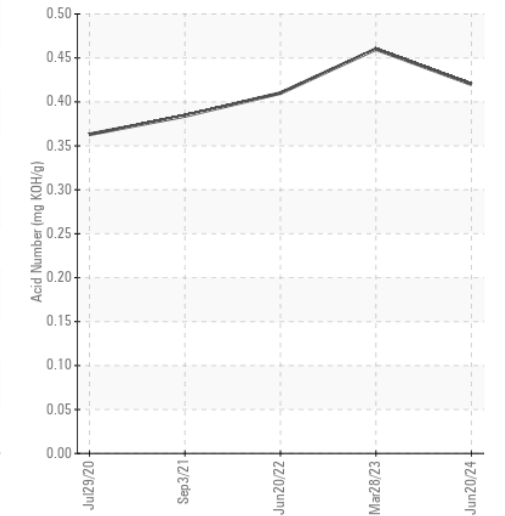
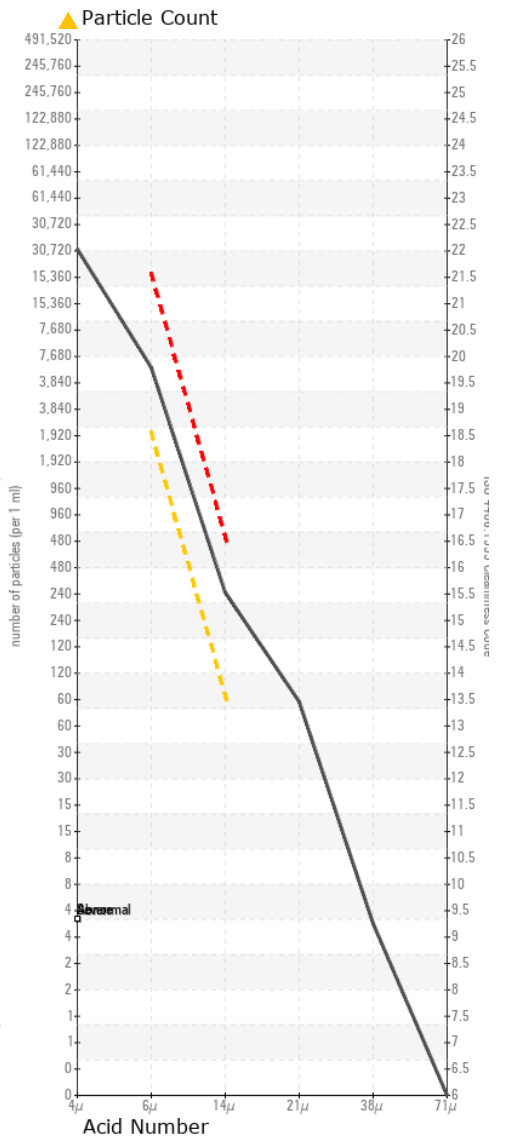
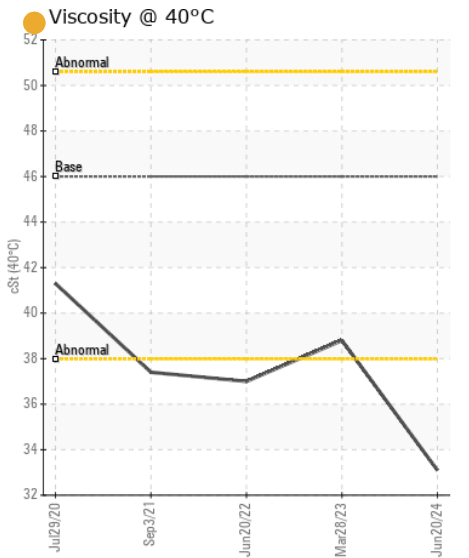
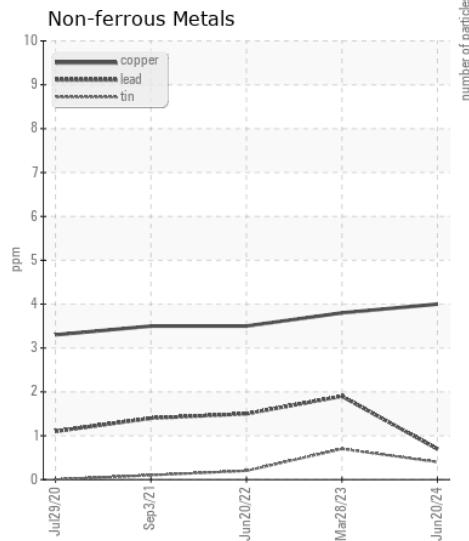
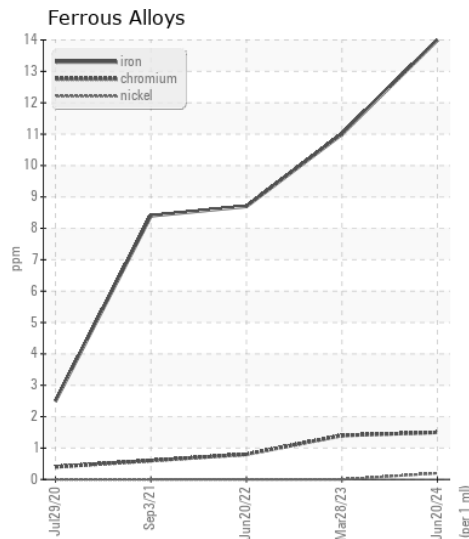
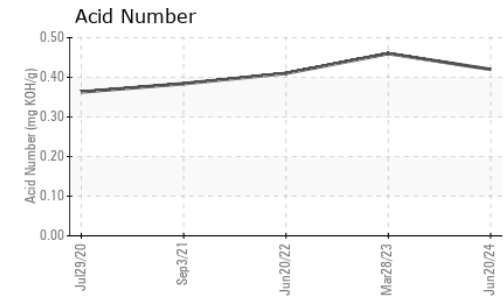
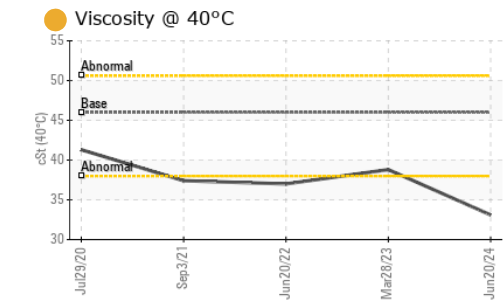
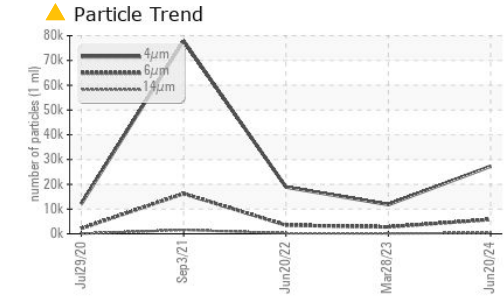
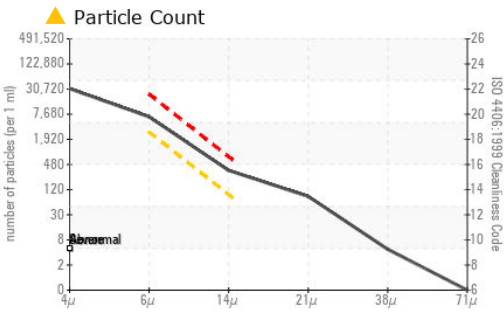
There is a high amount of particulates present in the oil.

| | | | | | | |
|------------------|--------|--------------|----------|-------------------|------------|------------|
| Silicon | ppm | ASTM D5185m | >20 | 10 | 8 | 4 |
| Potassium | ppm | ASTM D5185m | >20 | 4 | 2 | 2 |
| Water | | WC Method | >0.1 | NEG | NEG | NEG |
| Particles >4µm | | ASTM D7647 | | 27289 | 11796 | 18878 |
| Particles >6µm | | ASTM D7647 | >2500 | ▲ 5788 | ● 2764 | ▲ 3473 |
| Particles >14µm | | ASTM D7647 | >80 | ▲ 305 | ● 152 | ▲ 214 |
| Particles >21µm | | ASTM D7647 | >20 | ▲ 73 | ● 30 | ▲ 36 |
| Particles >38µm | | ASTM D7647 | >4 | 4 | 1 | 2 |
| Particles >71µm | | ASTM D7647 | >3 | 0 | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >-/18/13 | ▲ 22/20/15 | ● 21/19/14 | ▲ 21/19/15 |
| Silt | scalar | *Visual | NONE | NONE | NONE | NONE |
| Debris | scalar | *Visual | NONE | LIGHT | LIGHT | NONE |
| Sand/Dirt | scalar | *Visual | NONE | NONE | NONE | NONE |
| Appearance | scalar | *Visual | NORML | NORML | NORML | NORML |
| Odor | scalar | *Visual | NORML | NORML | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.1 | NEG | NEG | NEG |

FLUID CONDITION

Viscosity of sample indicates oil is within ISO 32 range, advise investigate. Confirm oil type. The AN level is acceptable for this fluid.

| | | | | | | |
|------------------|----------|-------------|------|--------------|------|------|
| Sodium | ppm | ASTM D5185m | | 4 | 3 | 0 |
| Boron | ppm | ASTM D5185m | 14 | 2 | 1 | 4 |
| Barium | ppm | ASTM D5185m | 0.0 | 0 | <1 | 0 |
| Molybdenum | ppm | ASTM D5185m | 0.0 | 0 | <1 | <1 |
| Manganese | ppm | ASTM D5185m | 0.0 | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 2.6 | 10 | 4 | 3 |
| Calcium | ppm | ASTM D5185m | 49 | 177 | 143 | 126 |
| Phosphorus | ppm | ASTM D5185m | 354 | 379 | 386 | 324 |
| Zinc | ppm | ASTM D5185m | 419 | 473 | 468 | 429 |
| Sulfur | ppm | ASTM D5185m | 3719 | 2804 | 2847 | 2162 |
| Acid Number (AN) | mg KOH/g | ASTM D8045 | | 0.42 | 0.46 | 0.41 |
| Visc @ 40°C | cSt | ASTM D445 | 46 | 33.1 | 38.8 | 37.0 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : VCP430328
Lab Number : 06218098
Unique Number : 11096295
Test Package : MOB 2
Received : 24 Jun 2024
Tested : 25 Jun 2024
Diagnosed : 25 Jun 2024 - Don Baldrige

CALLANAN
 RT 32 677 FLATBUSH RD
 EAST KINGSTON, NY
 US 12401
 Contact:

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)

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F: