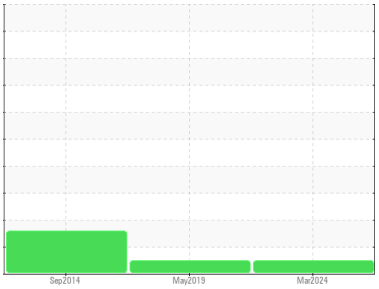
McCLUNG LOGAN EQUIPMENT COMPANY

# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
## VOLVO A30D 74469
Component
**Hydraulic System**
Fluid
**VOLVO SUPER HYDRAULIC OIL 46 (--- GAL)**

## DIAGNOSIS

**Recommendation**
Resample at the next service interval to monitor.

**Wear**
All component wear rates are normal.

**Contamination**
There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

**Fluid Condition**
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **ML0000937** | VCP226898 | VCP167429 |
| Sample Date | | Client Info | | **27 Mar 2024** | 01 May 2019 | 29 Sep 2014 |
| Machine Age | hrs | Client Info | | **7611** | 6008 | 4242 |
| Oil Age | hrs | Client Info | | **1603** | 0 | 0 |
| Oil Changed | | Client Info | | **Changed** | Changed | Changed |
| Sample Status | | | | **NORMAL** | NORMAL | ABNORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Water | | WC Method | >0.1 | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >50 | **2** | 2 | 4 |
| Chromium | ppm | ASTM D5185m | >20 | **0** | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >10 | **0** | 0 | <1 |
| Titanium | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Silver | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | **0** | <1 | 2 |
| Lead | ppm | ASTM D5185m | >20 | **0** | <1 | 0 |
| Copper | ppm | ASTM D5185m | >150 | **2** | 2 | 4 |
| Tin | ppm | ASTM D5185m | >20 | **0** | <1 | 0 |
| Antimony | ppm | ASTM D5185m | | **---** | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | <1 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 14 | **32** | 87 | <1 |
| Barium | ppm | ASTM D5185m | 0.0 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 0.0 | **0** | 1 | <1 |
| Manganese | ppm | ASTM D5185m | 0.0 | **0** | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 2.6 | **158** | 61 | 0 |
| Calcium | ppm | ASTM D5185m | 49 | **1075** | 2691 | 66 |
| Phosphorus | ppm | ASTM D5185m | 354 | **695** | 968 | 348 |
| Zinc | ppm | ASTM D5185m | 419 | **855** | 1170 | 478 |
| Sulfur | ppm | ASTM D5185m | 3719 | **4981** | 7870 | 3828 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >20 | **4** | 9 | 9 |
| Sodium | ppm | ASTM D5185m | | **2** | 0 | 1 |
| Potassium | ppm | ASTM D5185m | >20 | **0** | <1 | 6 |

| FLUID CLEANLINESS | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Particles >4µm | ASTM D7647 | | **1790** | 5265 | 4526 |
| Particles >6µm | ASTM D7647 | >5000 | **329** | 895 | 2465 |
| Particles >14µm | ASTM D7647 | >160 | **20** | 78 | ▲ 420 |
| Particles >21µm | ASTM D7647 | >40 | **4** | 26 | ▲ 141 |
| Particles >38µm | ASTM D7647 | >10 | **0** | 2 | ▲ 21 |
| Particles >71µm | ASTM D7647 | >3 | **0** | 0 | ▲ 2 |
| Oil Cleanliness | ISO 4406 (c) | >--/19/14 | **18/16/11** | 20/17/13 | ▲ 19/18/16 |

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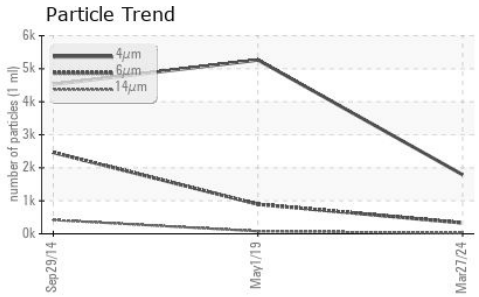
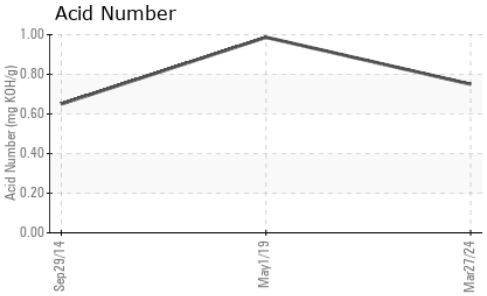
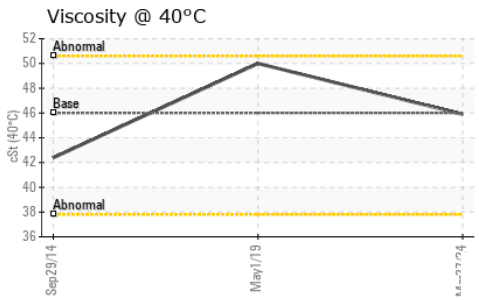
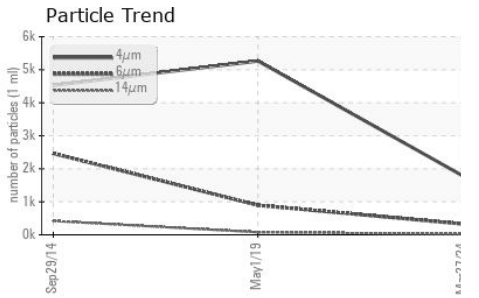


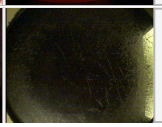



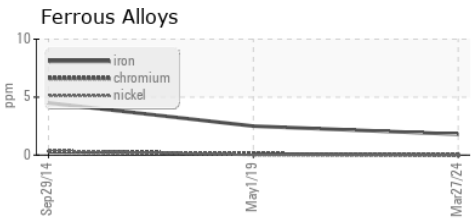

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | | **0.75** | 0.987 | 0.650 |

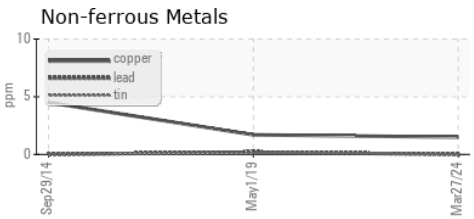
| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | VLITE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Silt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Debris | scalar | *Visual | NONE | **NONE** | NONE | 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 |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

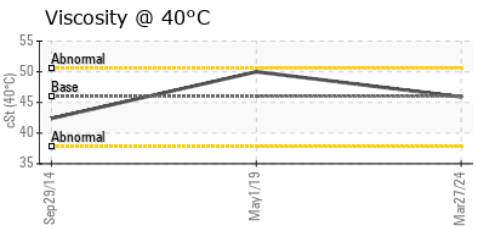
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 46 | **45.9** | 50.0 | 42.39 |

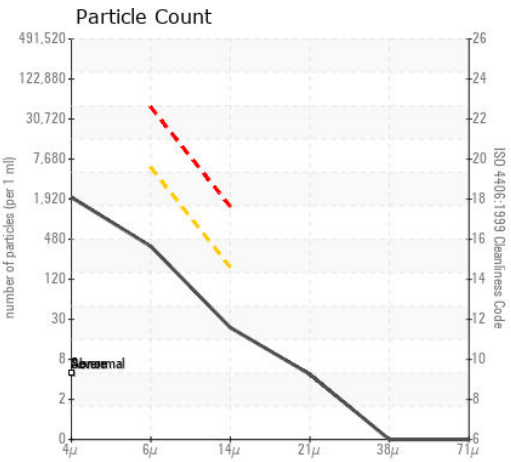
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  |  | *no image* |
| Bottom | | |  |  | *no image* |

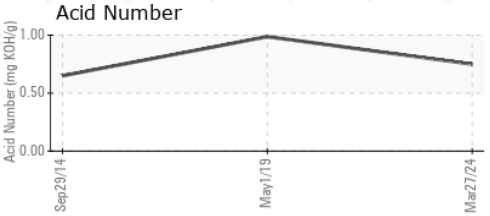
## GRAPHS




**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : ML0000937
**Lab Number** : 06133973
**Unique Number** : 10953438
**Test Package** : CONST

**Received** : 29 Mar 2024
**Tested** : 01 Apr 2024
**Diagnosed** : 03 Apr 2024 - Don Baldridge

Certificate L2367

*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)*


**MCCLUNG-LOGAN EQUIPMENT CO - RICHMOND**
1345 MOUNTAIN ROAD
GLEN ALLEN, VA
US 23060
Contact: KYLE RATLIFFE
KRATLIFFE@MCCLUNG-LOGAN.COM
T:
F: (804)266-1611