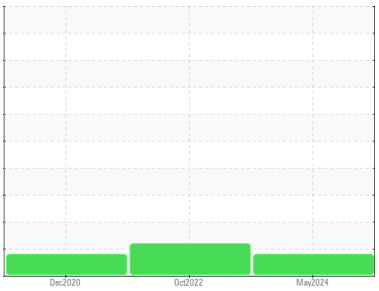
McCLUNG LOGAN EQUIPMENT COMPANY

# OIL ANALYSIS REPORT

Sample Rating Trend




ISO

Area
[W/O 10848]
Machine Id
VOLVO L90H 623915
Component
Hydraulic System
Fluid
CHEVRON HYDRAULIC OIL AW ISO 46 (25 GAL)

## DIAGNOSIS

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

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

**Contamination**
There is a moderate amount of particulates present in the oil.

**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 | | **ML0002188** | VCP390094 | VCP290789 |
| Sample Date | | Client Info | | **28 May 2024** | 13 Oct 2022 | 14 Dec 2020 |
| Machine Age | hrs | Client Info | | **11224** | 8591 | 4845 |
| Oil Age | hrs | Client Info | | **5186** | 0 | 0 |
| Oil Changed | | Client Info | | **Changed** | Not Changd | Changed |
| Sample Status | | | | **ATTENTION** | ABNORMAL | ATTENTION |

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

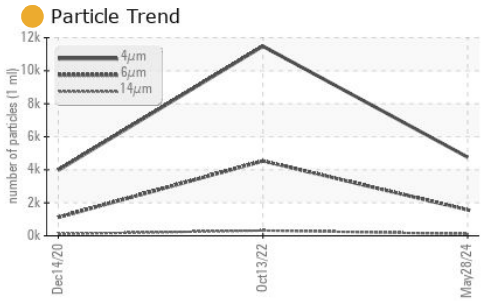
| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >50 | **9** | 7 | 16 |
| Chromium | ppm | ASTM D5185m | >20 | **6** | 5 | 8 |
| Nickel | ppm | ASTM D5185m | >10 | **0** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | **0** | 0 | <1 |
| Silver | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | **<1** | <1 | 0 |
| Lead | ppm | ASTM D5185m | >20 | **<1** | 1 | 4 |
| Copper | ppm | ASTM D5185m | >150 | **3** | 2 | 6 |
| Tin | ppm | ASTM D5185m | >20 | **0** | 0 | <1 |
| Antimony | ppm | ASTM D5185m | | **---** | --- | 0 |
| Vanadium | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

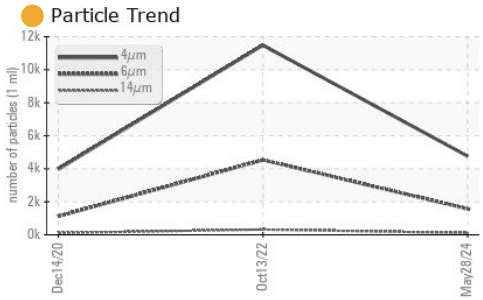
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **2** | 0 | 28 |
| Barium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | **2** | 2 | 8 |
| Manganese | ppm | ASTM D5185m | | **0** | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | | **6** | 9 | 30 |
| Calcium | ppm | ASTM D5185m | | **87** | 78 | 158 |
| Phosphorus | ppm | ASTM D5185m | | **355** | 340 | 363 |
| Zinc | ppm | ASTM D5185m | | **428** | 414 | 449 |
| Sulfur | ppm | ASTM D5185m | | **1608** | 1681 | 2212 |

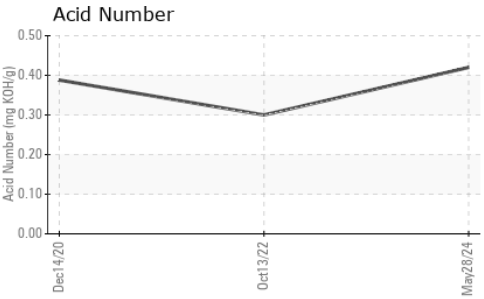
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >20 | **8** | 7 | 18 |
| Sodium | ppm | ASTM D5185m | | **<1** | 0 | <1 |
| Potassium | ppm | ASTM D5185m | >20 | **0** | 0 | <1 |

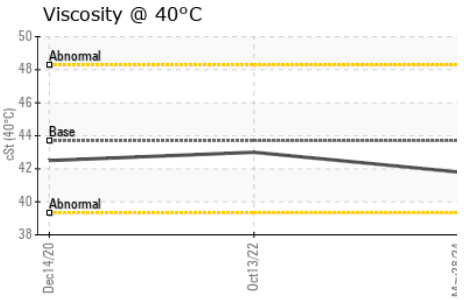
| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | | **4763** | 11485 | 3973 |
| Particles >6µm | | ASTM D7647 | >2500 | **1570** | 4536 | 1121 |
| Particles >14µm | | ASTM D7647 | >80 | **112** | ▲ 321 | 108 |
| Particles >21µm | | ASTM D7647 | >20 | **23** | ▲ 41 | 23 |
| Particles >38µm | | ASTM D7647 | >4 | **1** | 3 | 0 |
| Particles >71µm | | ASTM D7647 | >3 | **0** | 1 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >--/18/13 | **19/18/14** | ▲ 21/19/16 | 19/17/14 |

# OIL ANALYSIS REPORT



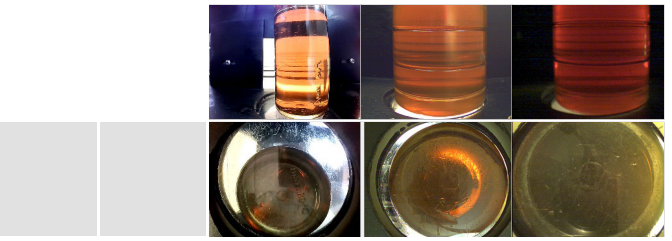




| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | | **0.42** | 0.30 | 0.388 |

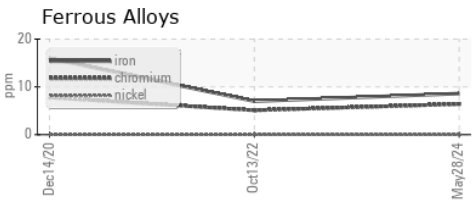
| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

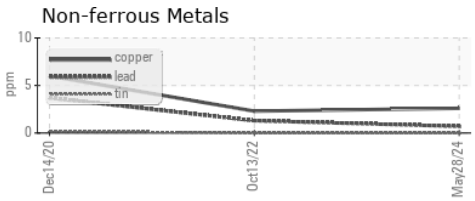
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 43.7 | **41.8** | 43.0 | 42.5 |

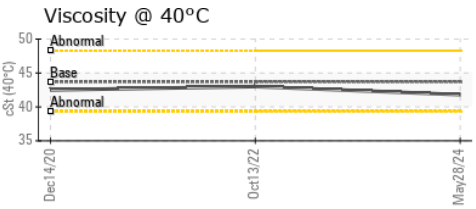
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | | | | |
| Bottom | | | | | |

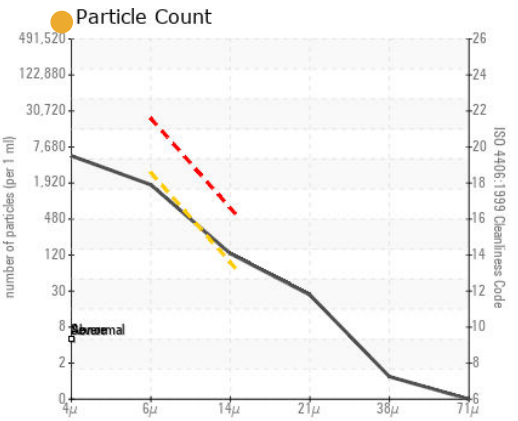


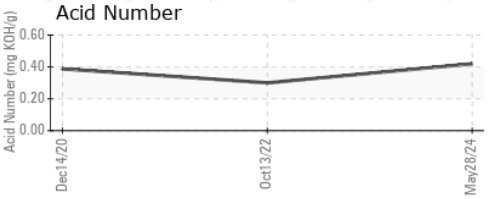
## GRAPHS




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : ML0002188
**Lab Number** : 06196615
**Unique Number** : 11058738
**Test Package** : CONST

**Received** : 31 May 2024
**Tested** : 03 Jun 2024
**Diagnosed** : 03 Jun 2024 - Angela Borella

*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 - BALTIMORE**
4601 WASHINGTON BOULEVARD
BALTIMORE, MD
US 21227
Contact: MARK CIULLA
mciulla@mcclung-logan.com
T: (410)242-6500
F: (410)242-7835