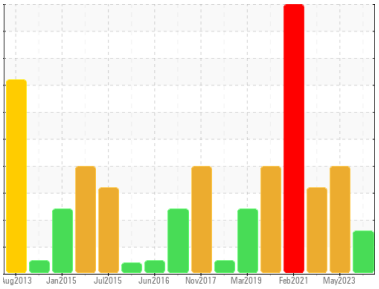
# PROBLEM SUMMARY

Area
**AMR-Cheyenne**
Machine Id
**VOLVO EC460CL 110459**
Component
**Left Final Drive**
Fluid
**VOLVO PREMIUM GEAR OIL 80W-90 GL-5 (2 GAL)**

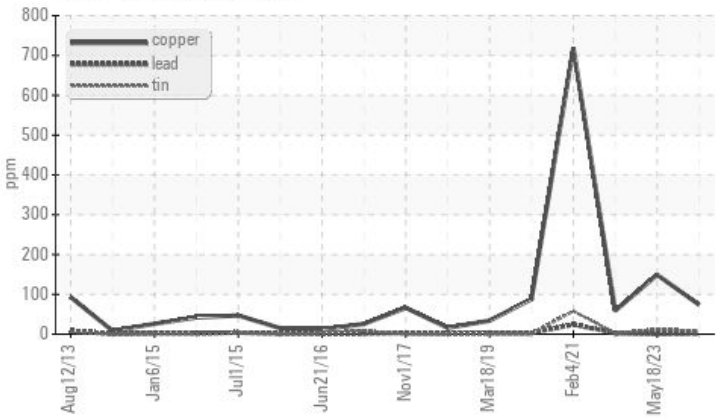
**Sample Rating Trend**



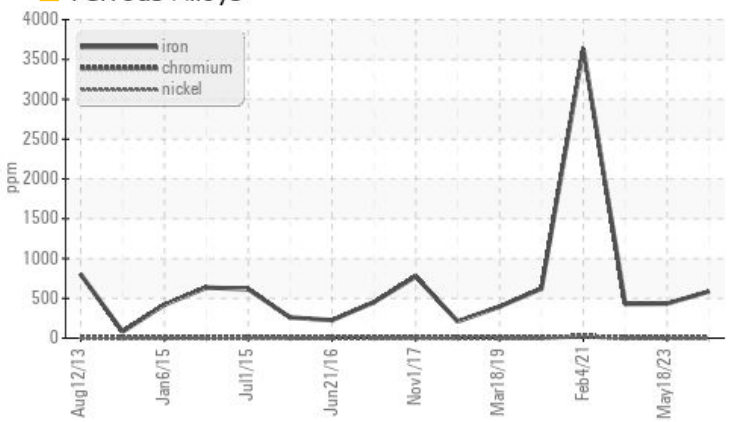

**WEAR**

## COMPONENT CONDITION SUMMARY

▲ Non-ferrous Metals




▲ Ferrous Alloys




## RECOMMENDATION

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

## PROBLEMATIC TEST RESULTS

| Sample Status | | | | **ABNORMAL** | ABNORMAL | ABNORMAL |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >500 | ▲ **587** | 433 | 429 |
| Copper | ppm | ASTM D5185m | >50 | ▲ **74** | ▲ 149 | ▲ 59 |

**Customer Id:** ADVKANKS
**Sample No.:** DJJ0005353
**Lab Number:** 05982135
**Test Package:** MOBCE

*To manage this report scan the QR code*

*To discuss the diagnosis or test data:*
Don Baldridge +1
don.b505@comcast.net

*To change component or sample information:*
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

## RECOMMENDED ACTIONS

*There are no recommended actions for this sample.*

## HISTORICAL DIAGNOSIS

**18 May 2023 Diag: Sean Felton**

DIRT

We advise that you check all areas where dirt can enter the system. Resample at the next service interval to monitor.Bearing and/or bushing wear is indicated. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. The condition of the oil is acceptable for the time in service.

view report

**01 Dec 2022 Diag: Sean Felton**

DIRT

We advise that you check all areas where dirt can enter the system. Resample at the next service interval to monitor.The copper level is abnormal. All other component wear rates are normal. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. The condition of the oil is acceptable for the time in service.

view report

**04 Feb 2021 Diag: Jonathan Hester**

WEAR

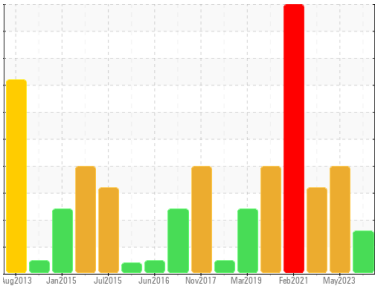
We advise that you check all areas where dirt can enter the system. We advise that you check for the source of water entry. We recommend that you drain the oil from the component if this has not already been done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.Bearing and/or gear wear is indicated. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. There is a high amount of visible silt present in the sample. There is a high concentration of water present in the oil. The oil is no longer serviceable due to the presence of contaminants.

view report

# OIL ANALYSIS REPORT

Area
**AMR-Cheyenne**
Machine Id
**VOLVO EC460CL 110459**
Component
**Left Final Drive**
Fluid
**VOLVO PREMIUM GEAR OIL 80W-90 GL-5 (2 GAL)**

Sample Rating Trend




**WEAR**

## DIAGNOSIS

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

**▲ Wear**
Gear wear is indicated. Bearing and/or bushing wear is indicated.

**Contamination**
There is no indication of any contamination in the oil.

**Fluid Condition**
The condition of the oil is acceptable for the time in service.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **DJJ0005353** | DJJ0019216 | DJJ0002738 |
| Sample Date | | Client Info | | **06 Oct 2023** | 18 May 2023 | 01 Dec 2022 |
| Machine Age | hrs | Client Info | | **14810** | 14362 | 13861 |
| Oil Age | hrs | Client Info | | **0** | 0 | 1000 |
| Oil Changed | | Client Info | | **Not Changd** | Not Changd | Not Changd |
| Sample Status | | | | **ABNORMAL** | ABNORMAL | ABNORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >500 | ▲ **587** | 433 | 429 |
| Chromium | ppm | ASTM D5185m | >10 | **4** | 2 | 3 |
| Nickel | ppm | ASTM D5185m | >10 | **2** | 2 | <1 |
| Titanium | ppm | ASTM D5185m | | **<1** | 2 | 2 |
| Silver | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >25 | **6** | ▲ 19 | ▲ 32 |
| Lead | ppm | ASTM D5185m | >25 | **2** | <1 | 3 |
| Copper | ppm | ASTM D5185m | >50 | ▲ **74** | ▲ 149 | ▲ 59 |
| Tin | ppm | ASTM D5185m | >10 | **7** | ▲ 12 | 2 |
| Antimony | ppm | ASTM D5185m | >5 | **---** | --- | --- |
| Vanadium | ppm | ASTM D5185m | | **<1** | <1 | 0 |
| Cadmium | ppm | ASTM D5185m | | **<1** | 0 | 0 |

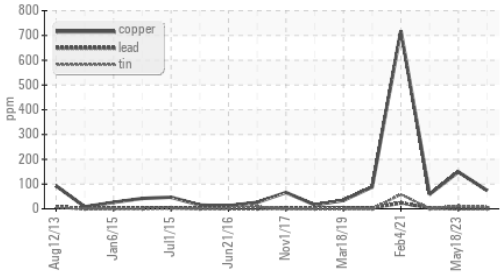
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 379 | **38** | 88 | 90 |
| Barium | ppm | ASTM D5185m | 0.0 | **0** | 0 | <1 |
| Molybdenum | ppm | ASTM D5185m | 0.8 | **0** | <1 | <1 |
| Manganese | ppm | ASTM D5185m | 0.0 | **4** | 3 | 4 |
| Magnesium | ppm | ASTM D5185m | 31 | **2** | 7 | 11 |
| Calcium | ppm | ASTM D5185m | 38 | **56** | 96 | 142 |
| Phosphorus | ppm | ASTM D5185m | 1077 | **2377** | 1722 | 954 |
| Zinc | ppm | ASTM D5185m | 46 | **24** | 43 | 57 |
| Sulfur | ppm | ASTM D5185m | 23526 | **27384** | 18668 | 19556 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >75 | **35** | ▲ 93 | ▲ 117 |
| Sodium | ppm | ASTM D5185m | | **7** | 7 | 10 |
| Potassium | ppm | ASTM D5185m | >20 | **6** | 8 | 10 |

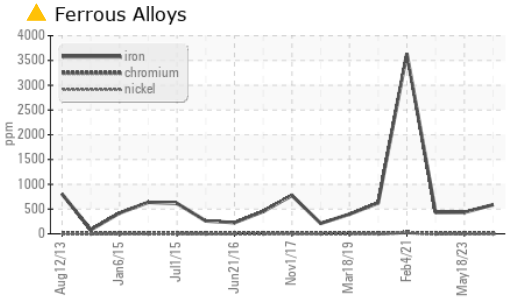
| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | MODER |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| 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 | >0.2 | **NEG** | NEG | NEG |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

# OIL ANALYSIS REPORT

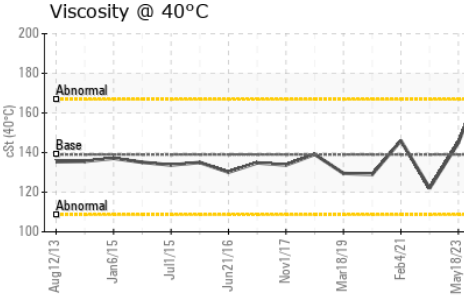
Non-ferrous Metals




Ferrous Alloys




Viscosity @ 40°C

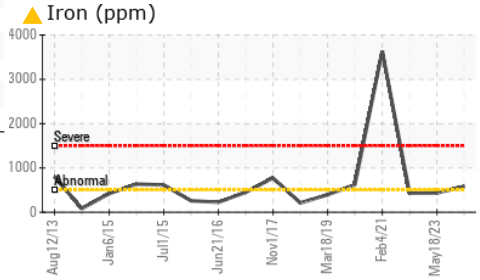



| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 139 | **181** | 145 | 122 |

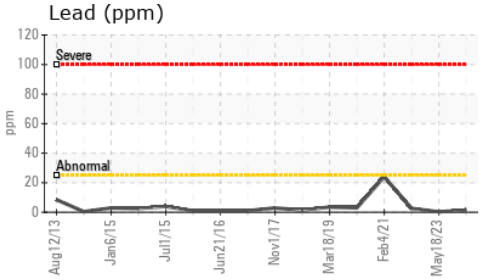
| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | | *no image* | *no image* | *no image* |
| Bottom | | | *no image* | *no image* | *no image* |

## GRAPHS

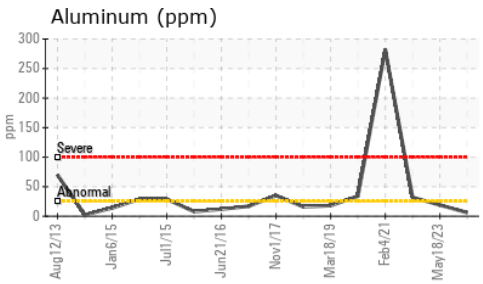
Iron (ppm)



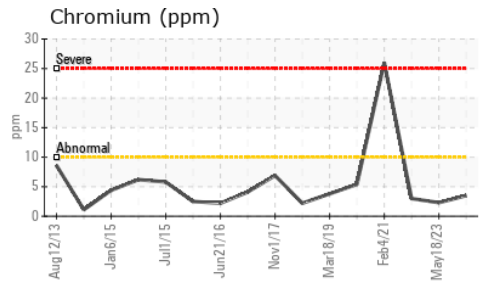

Lead (ppm)



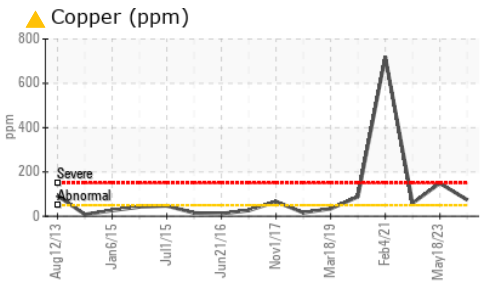

Aluminum (ppm)



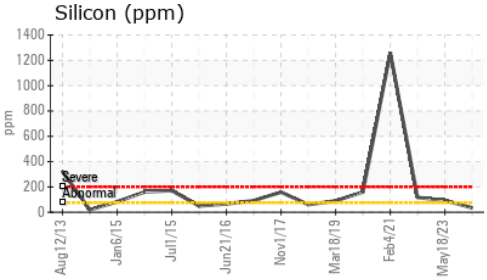

Chromium (ppm)



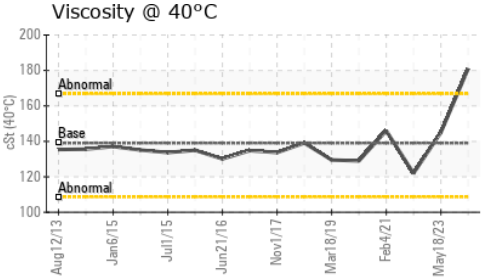

Copper (ppm)



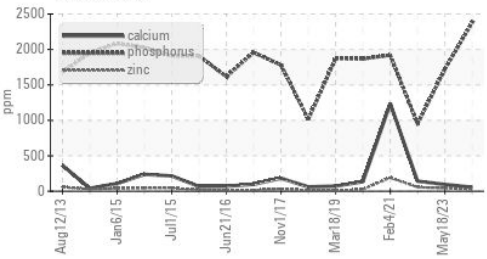

Silicon (ppm)




Viscosity @ 40°C




Additives




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : DJJ0005353
**Lab Number** : 05982135
**Unique Number** : 10699430
**Test Package** : MOBCE

**Received** : 17 Oct 2023
**Diagnosed** : 19 Oct 2023
**Diagnostician** : Don Baldridge

*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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