MOB I

VOLVO

OIL ANALYSIS REPORT

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

Area
**[662069]**
Machine Id
**VOLVO A35F 10350**
Component
**Diesel Engine**
Fluid
**VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3 (--- GAL)**

## RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

## WEAR

All component wear rates are normal.

## CONTAMINATION

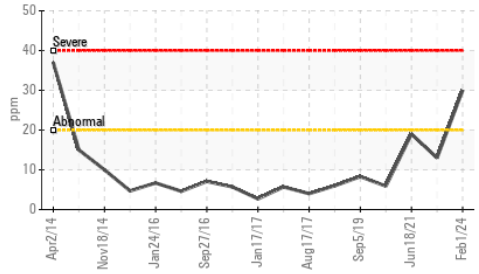
Fuel content negligible. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

## FLUID CONDITION

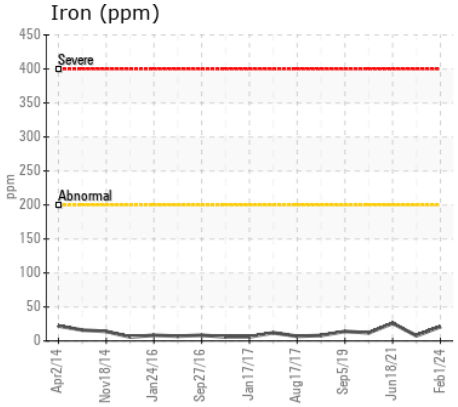
The oil viscosity is lower than normal. Confirm oil type.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | VCP441874 | VCP400005 | VCP310933 |
| Sample Date | | Client Info | | 01 Feb 2024 | 12 Jul 2023 | 18 Jun 2021 |
| Machine Age | hrs | Client Info | | 12432 | 12035 | 11179 |
| Oil Age | hrs | Client Info | | 500 | 0 | 500 |
| Filter Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | Changed | N/A | Changed |
| Filter Changed | | Client Info | | Changed | Not Changd | Changed |
| Sample Status | | | | ABNORMAL | NORMAL | ABNORMAL |
| Iron | ppm | ASTM D5185m | >200 | 21 | 8 | 26 |
| Chromium | ppm | ASTM D5185m | >20 | 2 | <1 | 1 |
| Nickel | ppm | ASTM D5185m | >10 | 2 | 0 | 1 |
| Titanium | ppm | ASTM D5185m | | 1 | <1 | <1 |
| Silver | ppm | ASTM D5185m | >2 | 0 | 0 | <1 |
| Aluminum | ppm | ASTM D5185m | >30 | ● 16 | 6 | 15 |
| Lead | ppm | ASTM D5185m | >40 | 1 | 1 | 2 |
| Copper | ppm | ASTM D5185m | >20 | 7 | 2 | ▲ 25 |
| Tin | ppm | ASTM D5185m | >20 | 1 | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | <1 | <1 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Silicon | ppm | ASTM D5185m | >20 | ▲ 30 | 13 | 19 |
| Potassium | ppm | ASTM D5185m | >20 | 3 | 6 | 2 |
| Fuel | % | ASTM D3524 | >3.0 | 0.8 | 0.3 | 0.8 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | 0.1 | 0.1 | 0.4 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 8.3 | 6.9 | 9 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 18.0 | 18.7 | 23.8 |
| 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 |
| Sodium | ppm | ASTM D5185m | | 3 | 2 | 3 |
| Boron | ppm | ASTM D5185m | 2.5 | 56 | 86 | 60 |
| Barium | ppm | ASTM D5185m | 0.0 | 1 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 0.7 | 74 | 61 | 40 |
| Manganese | ppm | ASTM D5185m | 0.0 | 1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 256 | 177 | 193 | 544 |
| Calcium | ppm | ASTM D5185m | 2057 | 1941 | 1972 | 1582 |
| Phosphorus | ppm | ASTM D5185m | 935 | 964 | 961 | 930 |
| Zinc | ppm | ASTM D5185m | 1223 | 1165 | 1158 | 1014 |
| Sulfur | ppm | ASTM D5185m | 4079 | 4002 | 4229 | 2604 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 13.8 | 14.5 | 20.4 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10 | 7.7 | 8.5 | --- |
| Visc @ 100°C | cSt | ASTM D445 | 15.0 | ● 12.2 | 13.6 | ● 12.2 |

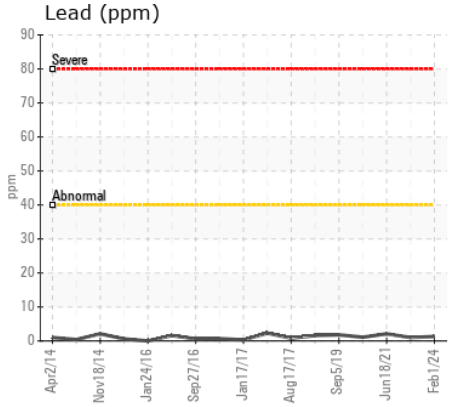
Silicon (ppm)



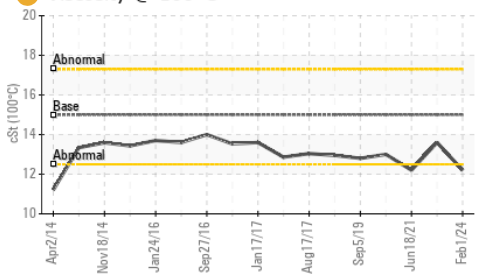

Iron (ppm)



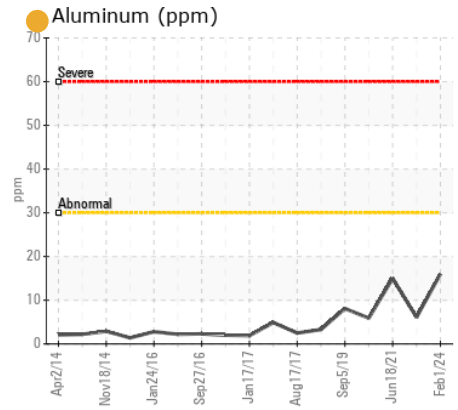

Lead (ppm)



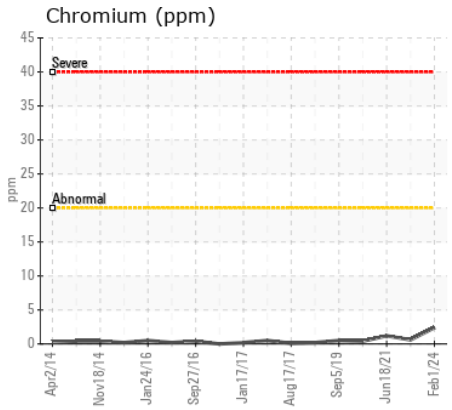

Viscosity @ 100°C



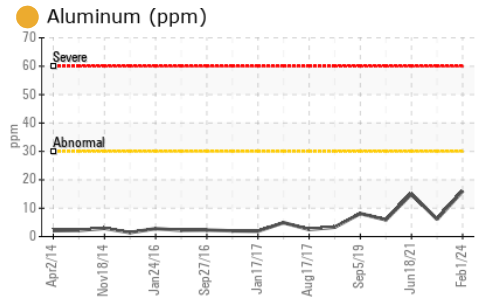

Aluminum (ppm)



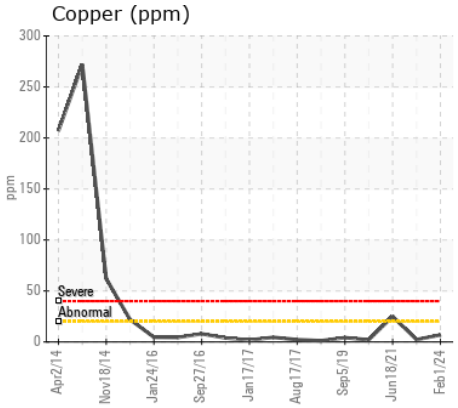

Chromium (ppm)



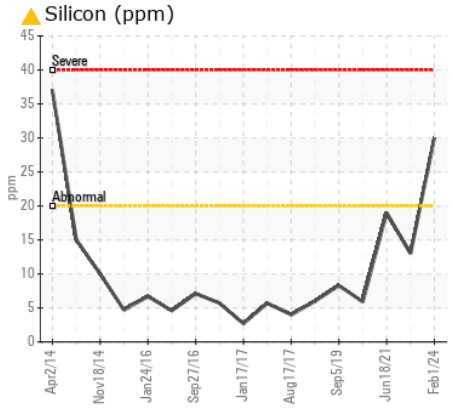

Aluminum (ppm)



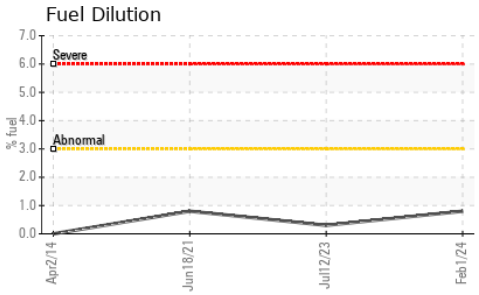

Copper (ppm)



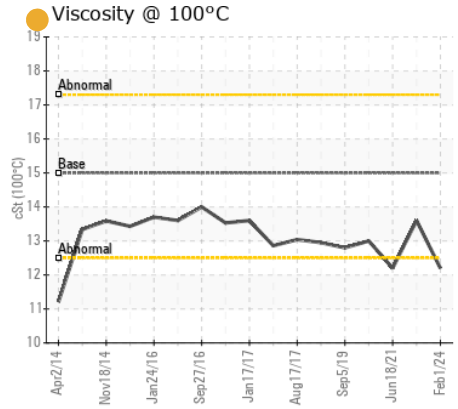

Silicon (ppm)



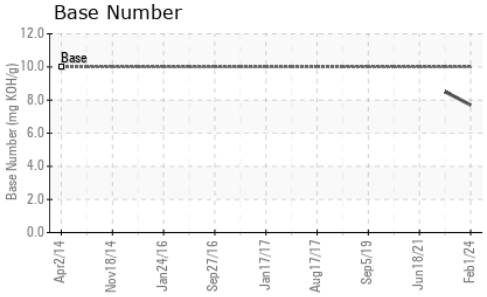

Fuel Dilution



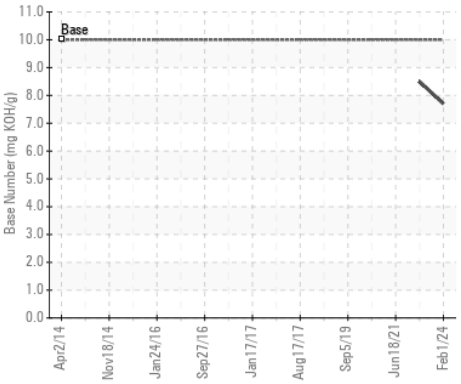

Viscosity @ 100°C




Base Number




Base Number




**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : VCP441874
**Lab Number** : 06102682
**Unique Number** : 10900912
**Test Package** : MOB 1 ( Additional Tests: FuelDilution, PercentFuel, TBN )

**Received** : 28 Feb 2024
**Tested** : 04 Mar 2024
**Diagnosed** : 04 Mar 2024 - Jonathan Hester

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)*

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