



ASCENDUM

OIL ANALYSIS REPORT

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



Machine Id
VOLVO A45G 353451
Component
Diesel Engine
Fluid
VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3 (--- GAL)

RECOMMENDATION

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

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | ASC0010191 | ASC0006409 | VCP434505 |
| Sample Date | | Client Info | | 15 Apr 2024 | 29 Dec 2023 | 07 Sep 2023 |
| Machine Age | hrs | Client Info | | 1442 | 1442 | 969 |
| Oil Age | hrs | Client Info | | 1442 | 473 | 468 |
| Filter Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | N/A | Changed | Changed |
| Filter Changed | | Client Info | | N/A | Changed | Changed |
| Sample Status | | | | ABNORMAL | NORMAL | NORMAL |

WEAR

Valve wear is indicated.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >100 | 17 | 12 | 12 |
| Chromium | ppm | ASTM D5185m | >20 | 1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >2 | ▲ 7 | 1 | 2 |
| Titanium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | <1 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >25 | 3 | 2 | 3 |
| Lead | ppm | ASTM D5185m | >40 | 1 | 0 | 1 |
| Copper | ppm | ASTM D5185m | >330 | 4 | 4 | 24 |
| Tin | ppm | ASTM D5185m | >15 | 2 | 1 | 2 |
| Vanadium | ppm | ASTM D5185m | | <1 | 0 | <1 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

There is no indication of any contamination in the oil.

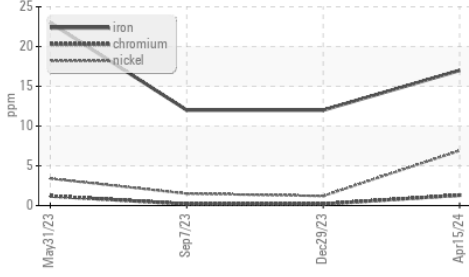
| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >25 | 8 | 6 | 9 |
| Potassium | ppm | ASTM D5185m | >20 | 2 | 0 | <1 |
| Fuel | | WC Method | >6.0 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | 0.4 | 0.4 | 0.4 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 7.4 | 7.5 | 7.3 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 18.3 | 18.2 | 20.8 |
| 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 |

FLUID CONDITION

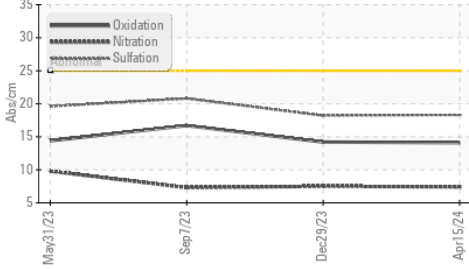
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| | | | | | | |
|------------------|----------|-------------|------|-------------|------|------|
| Sodium | ppm | ASTM D5185m | | 0 | <1 | 2 |
| Boron | ppm | ASTM D5185m | 2.5 | 6 | 5 | 24 |
| Barium | ppm | ASTM D5185m | 0.0 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 0.7 | 83 | 57 | 57 |
| Manganese | ppm | ASTM D5185m | 0.0 | 1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 256 | 1237 | 867 | 694 |
| Calcium | ppm | ASTM D5185m | 2057 | 1431 | 1080 | 1589 |
| Phosphorus | ppm | ASTM D5185m | 935 | 1334 | 936 | 1005 |
| Zinc | ppm | ASTM D5185m | 1223 | 1633 | 1216 | 1251 |
| Sulfur | ppm | ASTM D5185m | 4079 | 4336 | 3191 | 3707 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 14.1 | 14.2 | 16.7 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10 | 7.9 | 8.1 | 9.0 |
| Visc @ 100°C | cSt | ASTM D445 | 15.0 | 12.4 | 12.6 | 12.5 |

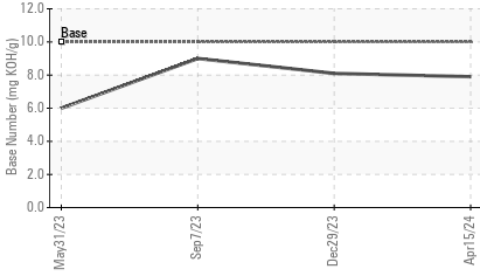
▲ Ferrous Alloys



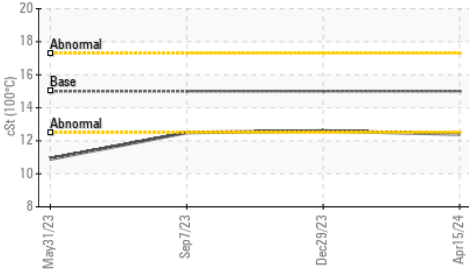
FT-IR (Direct Trend)



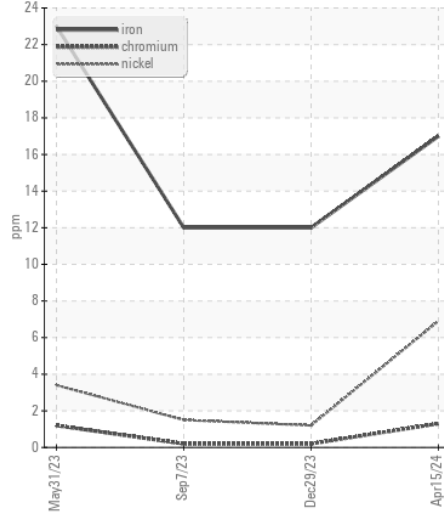
Base Number



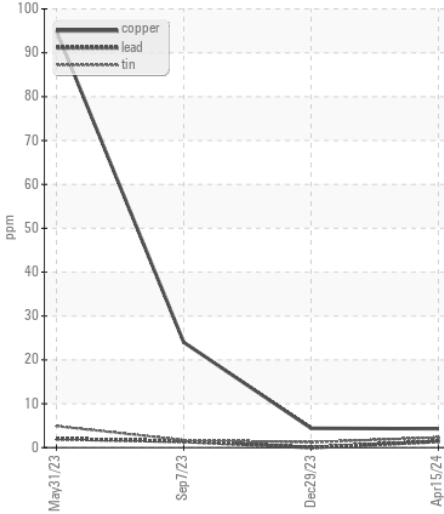
Viscosity @ 100°C



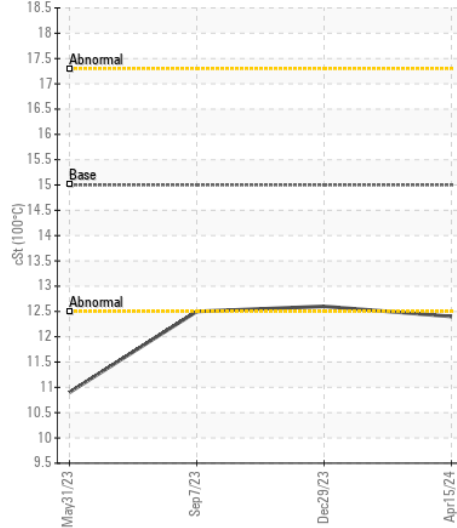
▲ Ferrous Alloys



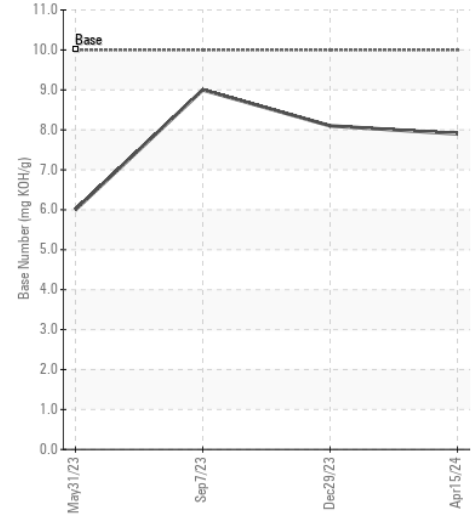
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : ASC0010191

Lab Number : 06157173

Unique Number : 10992596

Test Package : CONST (Additional Tests: TBN)

Received : 23 Apr 2024

Tested : 24 Apr 2024

Diagnosed : 25 Apr 2024 - Jonathan Hester

117 - ASCENDUM MACHINERY INC - GREENVILLE

2002 N GREENE ST

GREENVILLE, NC

US 27834

Contact: BRANDON JENKINS

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T:

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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