



CONSTRUCTION EQUIPMENT

TRIPLE M METAL LP MLF-MAR14-022 VOLVO L220H 2461 - DIESEL ENGINE



Sample No: VCP450471
Oil Type: VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3
Job No: MLF-MAR14-022



SAMPLE INFORMATION

| | | | | |
|---------------|--------------------|-------------|-------------|-------------|
| Sample Number | VCP450471 | VCP392082 | VCP380077 | VCP430009 |
| Sample Date | 20 Mar 2024 | 08 Feb 2024 | 04 Dec 2023 | 25 Sep 2023 |
| Machine Hours | 75254 | 24447 | 23552 | 22894 |
| Oil Hours | 1000 | 0 | 0 | 894 |
| Oil Changed | Changed | Changed | Changed | Changed |
| Sample Status | NORMAL | NORMAL | NORMAL | NORMAL |

STRONGCO EQUIPMENT (CE)

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OIL CONDITION

| | | | | | |
|----------------|-----|-------------|------|------|------|
| Visc @ 100°C | cSt | 12.8 | 12.7 | 12.3 | 12.3 |
| Oxidation (PA) | % | 83 | 87 | 84 | 84 |



CONTAMINATION

| | | | | | |
|----------------|-----|----------------|-----|------|------|
| Water | % | NEG | NEG | NEG | NEG |
| Soot % | % | 0 | 0.1 | 0.1 | 0 |
| Nitration (PA) | % | 58 | 63 | 59 | 57 |
| Sulfation (PA) | % | 62 | 64 | 62 | 62 |
| Glycol | % | NEG | NEG | NEG | NEG |
| Fuel | % | <1.0 | 2.1 | <1.0 | <1.0 |
| Silicon | ppm | 2 | 4 | 4 | 4 |
| Sodium | ppm | 6 | 2 | 2 | 3 |
| Potassium | ppm | 6 | <1 | <1 | 0 |

Diagnosis

Resample at the next service interval to monitor. All component wear rates are normal. Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.



WEAR METALS

| | | | | | |
|------------|-----|--------------|----|----|----|
| Iron | ppm | 4 | 7 | 9 | 7 |
| Copper | ppm | 1 | <1 | <1 | <1 |
| Lead | ppm | 0 | <1 | <1 | <1 |
| Tin | ppm | 0 | 0 | 0 | 0 |
| Aluminum | ppm | 2 | 4 | 4 | 3 |
| Chromium | ppm | 0 | <1 | <1 | <1 |
| Molybdenum | ppm | 37 | 38 | 38 | 40 |
| Nickel | ppm | <1 | <1 | 2 | <1 |
| Titanium | ppm | 0 | 0 | 0 | 0 |
| Silver | ppm | 0 | 0 | 0 | <1 |
| Manganese | ppm | 0 | 0 | 0 | 0 |
| Vanadium | ppm | 0 | 0 | 0 | 0 |



ADDITIVES

| | | | | | |
|------------|-----|-------------|------|------|------|
| Calcium | ppm | 1644 | 1655 | 1566 | 1632 |
| Magnesium | ppm | 495 | 482 | 476 | 506 |
| Zinc | ppm | 1024 | 1026 | 1026 | 1057 |
| Phosphorus | ppm | 877 | 892 | 854 | 874 |
| Barium | ppm | 0 | 0 | <1 | <1 |
| Boron | ppm | 30 | 30 | 27 | 24 |

Depot: VOLVO0252
Unique No: 5748801
Signed: Wes Davis
Report Date: 21 Mar 2024

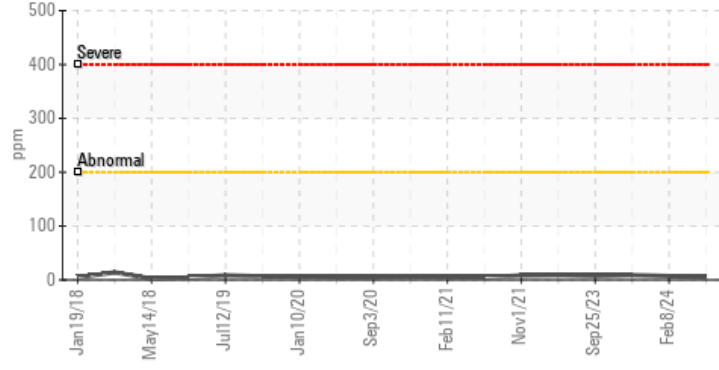


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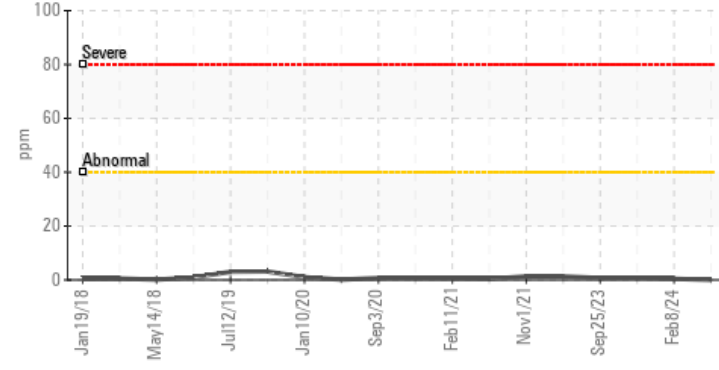


GRAPHS

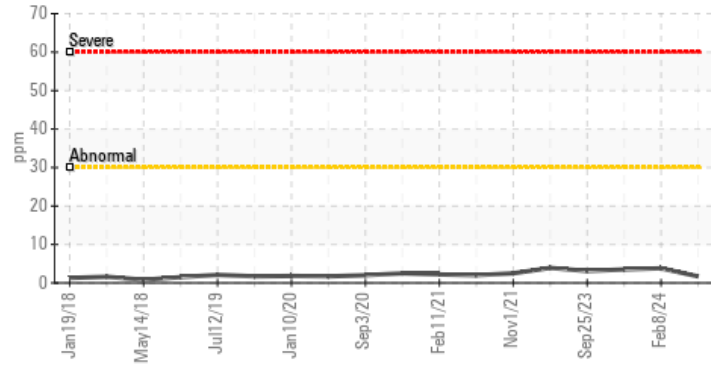
Iron (ppm)



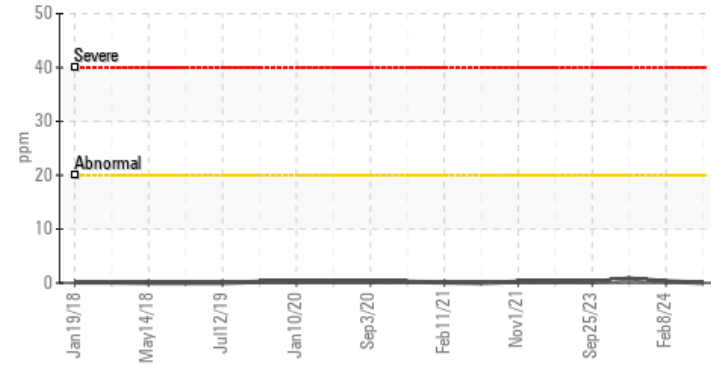
Lead (ppm)



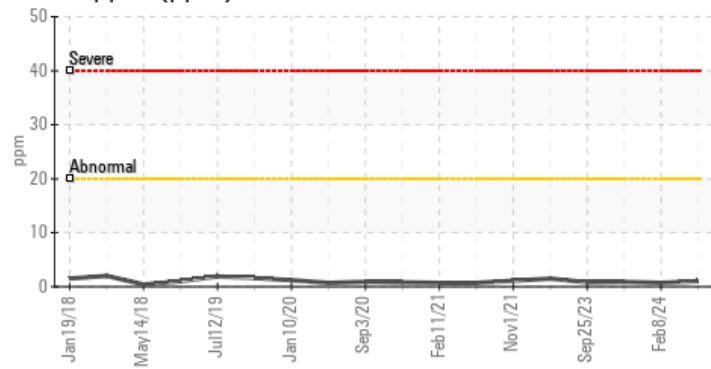
Aluminum (ppm)



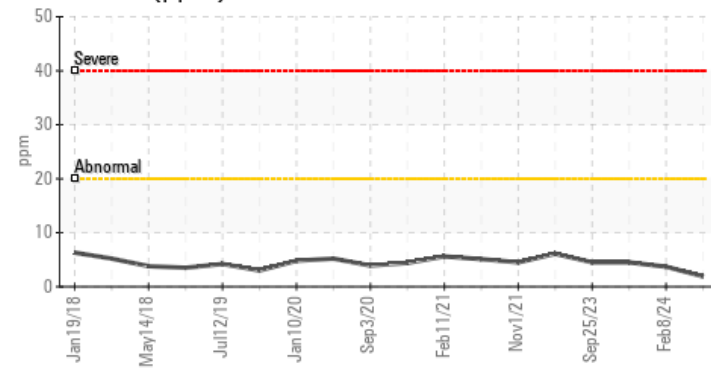
Chromium (ppm)



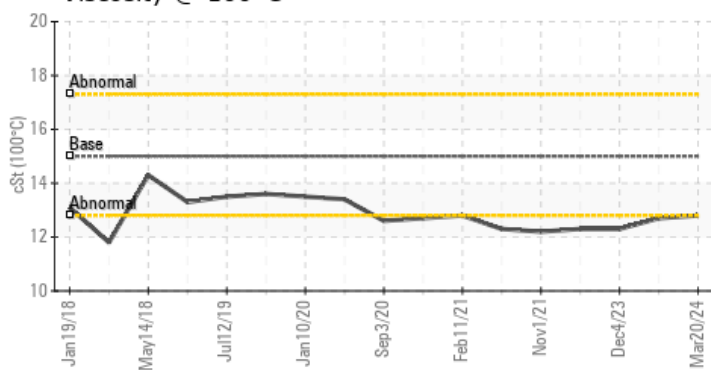
Copper (ppm)



Silicon (ppm)



Viscosity @ 100°C



Soot %

