



CONSTRUCTION EQUIPMENT

SW-32988-2 CASTLE VA VOLVO A40G 340313 - DIESEL ENGINE



Sample No: VCP446578
Oil Type: VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3
Job No: SW-32988-2 CASTLE VA



SAMPLE INFORMATION

Sample Number	VCP446578	VCP441953	VCP412189	VCP419291
Sample Date	17 Apr 2024	15 Nov 2023	11 Sep 2023	26 Jun 2023
Machine Hours	17899	17580	17019	16501
Oil Hours	300	490	519	500
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	MARGINAL	NORMAL	NORMAL	NORMAL

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OIL CONDITION

Visc @ 100°C	cSt	▲ 12.3	■ 12.6	■ 12.5	■ 12.7
Base Number (BN)	mg KOH/g	■ 8.9	■ 8.9	■ 9.2	■ 9.8
Oxidation (PA)	%	51	53	55	61

Diagnosis

No corrective action is recommended at this time. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. Light fuel dilution occurring. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil.



CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	■ 0.5	■ 0.1	■ 0.1	■ 0.2
Nitration (PA)	%	53	49	47	53
Sulfation (PA)	%	49	50	50	54
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	■ 0.3	<1.0	<1.0	<1.0
Silicon	ppm	■ 3	■ 2	■ 2	■ 3
Sodium	ppm	■ 2	■ 2	■ 2	■ 1
Potassium	ppm	■ 0	■ 0	■ <1	■ 1



WEAR METALS

Iron	ppm	■ 4	■ 2	■ 2	■ 5
Copper	ppm	■ 4	■ <1	■ <1	■ 1
Lead	ppm	■ <1	■ 0	■ 0	■ 0
Tin	ppm	■ <1	■ 0	■ <1	■ <1
Aluminum	ppm	■ 2	■ <1	■ <1	■ 1
Chromium	ppm	■ 0	■ 0	■ 0	■ <1
Molybdenum	ppm	■ 63	■ 59	■ 63	■ 64
Nickel	ppm	■ 0	■ 0	■ 0	■ 0
Titanium	ppm	<1	<1	<1	0
Silver	ppm	■ 0	■ 0	■ 0	■ 0
Manganese	ppm	■ <1	■ <1	■ <1	■ <1
Vanadium	ppm	<1	<1	<1	0



ADDITIVES

Calcium	ppm	■ 1273	■ 1019	■ 1226	■ 1195
Magnesium	ppm	■ 864	■ 938	■ 1083	■ 950
Zinc	ppm	■ 1262	■ 1226	■ 1368	■ 1325
Phosphorus	ppm	■ 1073	■ 1106	■ 1108	■ 1068
Barium	ppm	■ 0	■ 0	■ 0	■ 0
Boron	ppm	■ 25	■ 8	■ 5	■ 24

Depot: VOLVO8770
Unique No: 11003252
Signed: Jonathan Hester
Report Date: 01 May 2024



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GRAPHS

