



CONSTRUCTION EQUIPMENT

SWA320051 COASTAL WA VOLVO EC220 314140 - DIESEL ENGINE



Sample No: VCP412586
Oil Type: VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3
Job No: SWA320051 COASTAL WA



SAMPLE INFORMATION

Sample Number	VCP412586	VCP321301	VCP314960	VCP290271
Sample Date	26 Jul 2023	10 Aug 2021	20 Mar 2021	19 Nov 2020
Machine Hours	3879	2421	1067	503
Oil Hours	0	0	0	0
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	ABNORMAL	ABNORMAL	ABNORMAL	NORMAL

ALTA EQUIPMENT COMPANY

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OIL CONDITION

Visc @ 100°C	cSt	13.4	13.3	12.9	13.4
Base Number (BN)	mg KOH/g	9.2	---	---	---
Oxidation (PA)	%	90	92	92	53



CONTAMINATION

Soot %	%	0.2	0.2	0.2	0.1
Nitration (PA)	%	78	76	75	68
Sulfation (PA)	%	63	66	68	56
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	▲ 36	▲ 41	▲ 24	14
Sodium	ppm	4	3	3	3
Potassium	ppm	<1	0	7	3



WEAR METALS

Iron	ppm	64	16	13	24
Copper	ppm	2	2	2	11
Lead	ppm	<1	1	1	1
Tin	ppm	<1	1	4	3
Aluminum	ppm	▲ 28	5	5	0
Chromium	ppm	2	1	1	1
Molybdenum	ppm	52	45	36	10
Nickel	ppm	<1	0	2	5
Titanium	ppm	<1	<1	<1	<1
Silver	ppm	0	0	0	0
Manganese	ppm	1	<1	<1	4
Vanadium	ppm	<1	0	<1	0



ADDITIVES

Calcium	ppm	1849	1871	1836	2083
Magnesium	ppm	561	553	525	153
Zinc	ppm	1220	1201	1071	1026
Phosphorus	ppm	964	1002	899	910
Barium	ppm	0	0	<1	<1
Boron	ppm	32	27	21	10

Diagnosis

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. We recommend an early resample to monitor this condition. Aluminum ppm levels are noted. All other component wear rates are normal. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

Depot: VOLVO0095
Unique No: 10577376
Signed: Doug Bogart
Report Date: 31 Jul 2023



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GRAPHS

