



CONSTRUCTION EQUIPMENT

VOLVO ECR145E 311282 - DIESEL ENGINE



Sample No: VCP437096
Oil Type: VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3
Job No:



SAMPLE INFORMATION

Sample Number	VCP437096	VCP398981	VCP326236	VCP285980
Sample Date	23 Feb 2024	29 Dec 2022	18 Oct 2021	01 Sep 2020
Machine Hours	3505	3019	0	1869
Oil Hours	0	500	1500	500
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	SEVERE	NORMAL	NORMAL	NORMAL

RIPA AND ASSOCIATES

10149 FISHER AVENUE
 TAMPA, FL
 US 33619
 Contact: PM Services
 PMServices@ripaconstruction.com
 T:
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OIL CONDITION

Visc @ 100°C	cSt	▲ 8.6	■ 13.1	■ 13.2	■ 13.4
Base Number (BN)	mg KOH/g	■ 9.4	■ 8.3	---	---
Oxidation (PA)	%	71	52	85	61

Diagnosis

We advise that you check the fuel injection system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. Aluminum ppm levels are abnormal. Piston wear is indicated. There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable as a result of the abnormal and/or severe wear.



CONTAMINATION

Water	%	NEG	NEG	NEG	■ 0.11
Soot %	%	■ 0.3	■ 0.2	■ 0.4	■ 0.4
Nitration (PA)	%	65	61	76	83
Sulfation (PA)	%	53	48	63	56
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	▲ 12.8	<1.0	<1.0	<1.0
Silicon	ppm	■ 7	■ 6	■ 11	■ 9
Sodium	ppm	■ 2	■ 2	■ 3	■ 3
Potassium	ppm	■ 0	■ <1	■ 0	■ 3



WEAR METALS

Iron	ppm	■ 52	■ 17	■ 54	■ 45
Copper	ppm	■ 2	■ 1	■ 4	■ 5
Lead	ppm	■ 0	■ 0	■ <1	■ 0
Tin	ppm	■ 0	■ <1	■ 1	■ 0
Aluminum	ppm	▲ 17	■ 5	■ 10	■ 8
Chromium	ppm	■ 2	■ <1	■ 2	■ 2
Molybdenum	ppm	■ 46	■ 76	■ 36	■ 10
Nickel	ppm	■ 0	■ 0	■ 0	■ <1
Titanium	ppm	0	0	<1	<1
Silver	ppm	■ 0	■ 0	0	0
Manganese	ppm	■ <1	■ <1	■ <1	■ <1
Vanadium	ppm	0	0	0	0



ADDITIVES

Calcium	ppm	■ 1563	■ 1827	■ 1632	■ 1489
Magnesium	ppm	■ 473	■ 338	■ 510	735
Zinc	ppm	■ 1047	■ 1183	■ 1047	■ 869
Phosphorus	ppm	■ 879	■ 1004	■ 895	■ 741
Barium	ppm	■ 0	■ 0	■ 0	■ 0
Boron	ppm	■ 31	■ 51	■ 40	■ 44

Depot: RIPTAM
Unique No: 10995435
Signed: Wes Davis
Report Date: 29 Apr 2024



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GRAPHS

