



# CONSTRUCTION EQUIPMENT

## VOLVO EC145EL 314052 - DIESEL ENGINE



**Sample No:** VCP439804  
**Oil Type:** VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3  
**Job No:**



### SAMPLE INFORMATION

Sample Number	<b>VCP439804</b>	VCP408283	VCP359401	VCP344385
Sample Date	<b>08 Jun 2024</b>	01 Jun 2023	03 May 2022	29 Oct 2021
Machine Hours	<b>3995</b>	2501	1470	1001
Oil Hours	<b>0</b>	0	500	500
Oil Changed	<b>Changed</b>	Changed	Changed	Changed
Sample Status	<b>SEVERE</b>	NORMAL	NORMAL	NORMAL

**RIPA AND ASSOCIATES**  
 10149 FISHER AVENUE  
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### OIL CONDITION

Visc @ 100°C	cSt	<b>13.3</b>	12.8	13.2	12.7
Base Number (BN)	mg KOH/g	<b>11.0</b>	11.0	12.1	---
Oxidation (PA)	%	<b>87</b>	85	87	76

### Diagnosis

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We advise that you check for the source of the coolant leak. Check for low coolant level. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. All component wear rates are normal. Test for glycol is positive. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. The oil is no longer serviceable due to the presence of contaminants.



### CONTAMINATION

Water	%	<b>NEG</b>	NEG	NEG	NEG
Soot %	%	<b>0.6</b>	0.5	0.4	0.4
Nitration (PA)	%	<b>87</b>	70	72	66
Sulfation (PA)	%	<b>72</b>	63	65	60
Glycol	%	<b>0.12</b>	NEG	NEG	NEG
Fuel	%	<b>&lt;1.0</b>	<1.0	<1.0	<1.0
Silicon	ppm	<b>26</b>	7	8	11
Sodium	ppm	<b>761</b>	3	3	3
Potassium	ppm	<b>1165</b>	0	4	0



### WEAR METALS

Iron	ppm	<b>38</b>	17	28	71
Copper	ppm	<b>22</b>	2	2	4
Lead	ppm	<b>4</b>	0	2	1
Tin	ppm	<b>6</b>	<1	1	2
Aluminum	ppm	<b>7</b>	6	7	12
Chromium	ppm	<b>3</b>	<1	2	3
Molybdenum	ppm	<b>116</b>	43	37	49
Nickel	ppm	<b>&lt;1</b>	<1	1	2
Titanium	ppm	<b>&lt;1</b>	0	7	<1
Silver	ppm	<b>0</b>	0	0	0
Manganese	ppm	<b>3</b>	<1	<1	1
Vanadium	ppm	<b>0</b>	<1	<1	0



### ADDITIVES

Calcium	ppm	<b>1820</b>	1663	1818	1635
Magnesium	ppm	<b>413</b>	517	527	638
Zinc	ppm	<b>1131</b>	1085	1104	1195
Phosphorus	ppm	<b>1116</b>	890	945	997
Barium	ppm	<b>0</b>	0	0	0
Boron	ppm	<b>48</b>	35	48	27

**Depot:** RIPTAM  
**Unique No:** 11077111  
**Signed:** Don Baldrige  
**Report Date:** 17 Jun 2024



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## GRAPHS

