



# CONSTRUCTION EQUIPMENT

## VLS VOLVO EC200EL 314328 - DIESEL ENGINE



**Sample No:** VCP370475  
**Oil Type:** VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3  
**Job No:** VLS



### SAMPLE INFORMATION

Sample Number	<b>VCP370475</b>	VCP339263	VCP366372	VCP366366
Sample Date	<b>14 Dec 2022</b>	10 Oct 2022	15 Aug 2022	08 Aug 2022
Machine Hours	<b>4051</b>	3645	3328	3284
Oil Hours	<b>500</b>	500	0	500
Oil Changed	<b>Changed</b>	Changed	Not Changd	Changed
Sample Status	<b>SEVERE</b>	SEVERE	SEVERE	SEVERE

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### OIL CONDITION

Visc @ 100°C	cSt	<b>▲ 12.2</b>	■ 12.6	■ 12.8	■ 12.8
Base Number (BN)	mg KOH/g	<b>■ 10.5</b>	■ 7.2	■ 11.1	■ 9.8
Oxidation (PA)	%	<b>93</b>	99	85	107



### CONTAMINATION

Soot %	%	<b>■ 0.5</b>	■ 0.4	■ 0.2	■ 0.8
Nitration (PA)	%	<b>76</b>	65	53	101
Sulfation (PA)	%	<b>68</b>	70	66	74
Glycol	%	<b>NEG</b>	NEG	NEG	NEG
Fuel	%	<b>▲ 2.6</b>	<1.0	<1.0	<1.0
Silicon	ppm	<b>● 54</b>	● 72	▲ 28	● 152
Sodium	ppm	<b>■ 3</b>	■ 3	■ 2	■ 3
Potassium	ppm	<b>■ 0</b>	■ 1	■ <1	■ 2



### WEAR METALS

Iron	ppm	<b>■ 53</b>	▲ 142	■ 17	■ 50
Copper	ppm	<b>■ 5</b>	■ 7	■ <1	■ 3
Lead	ppm	<b>■ 1</b>	■ <1	■ <1	■ 2
Tin	ppm	<b>● 129</b>	● 256	● 80	● 120
Aluminum	ppm	<b>● 78</b>	● 91	▲ 8	▲ 53
Chromium	ppm	<b>■ 9</b>	▲ 15	■ 1	■ 5
Molybdenum	ppm	<b>■ 44</b>	■ 44	■ 39	■ 40
Nickel	ppm	<b>■ 6</b>	■ 9	■ <1	■ 2
Titanium	ppm	<1	<1	0	<1
Silver	ppm	<b>■ 0</b>	0	0	0
Manganese	ppm	<b>■ 1</b>	■ 2	■ <1	■ <1
Vanadium	ppm	<1	<1	0	<1



### ADDITIVES

Calcium	ppm	<b>■ 1759</b>	■ 1774	■ 1577	■ 1570
Magnesium	ppm	<b>■ 507</b>	■ 491	■ 443	■ 488
Zinc	ppm	<b>■ 1177</b>	■ 1186	■ 1059	■ 1078
Phosphorus	ppm	<b>■ 921</b>	■ 891	■ 890	■ 850
Barium	ppm	<b>■ 0</b>	■ 2	■ 0	■ 0
Boron	ppm	<b>■ 27</b>	■ 20	■ 48	■ 18

### 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. The aluminum level is severe. The tin level is severe. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. Light fuel dilution occurring. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

**Depot:** VOLVO4596  
**Unique No:** 10258628  
**Signed:** Jonathan Hester  
**Report Date:** 20 Dec 2022



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## GRAPHS

