



# CONSTRUCTION EQUIPMENT

## VOLVO L110H 631239 - DIESEL ENGINE



**Sample No:** VCP407844  
**Oil Type:** VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3  
**Job No:**



### SAMPLE INFORMATION

Sample Number	<b>VCP407844</b>	VCP381372	VCP390705	VCP336906
Sample Date	<b>27 Jun 2023</b>	09 Feb 2023	25 Oct 2022	18 Nov 2021
Machine Hours	<b>9267</b>	8759	8302	7089
Oil Hours	<b>500</b>	500	500	1500
Oil Changed	<b>Changed</b>	Changed	Changed	Changed
Sample Status	<b>ABNORMAL</b>	NORMAL	NORMAL	NORMAL

### RIPA AND ASSOCIATES

10149 FISHER AVENUE  
 TAMPA, FL  
 US 33619  
 Contact: ROBERT TURNER  
 rturner@ripatampa.com  
 T:  
 F:



### OIL CONDITION

Visc @ 100°C	cSt	<b>▲ 11.6</b>	■ 12.7	■ 13.2	■ 13.3
Base Number (BN)	mg KOH/g	■ <b>10.1</b>	■ 10.1	■ 11.7	■ 10.6
Oxidation (PA)	%	<b>78</b>	82	91	80

### Diagnosis

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. Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.



### CONTAMINATION

Soot %	%	■ <b>0.2</b>	■ 0.3	■ 0.4	■ 0.3
Nitration (PA)	%	<b>66</b>	63	80	71
Sulfation (PA)	%	<b>58</b>	61	65	60
Glycol	%	<b>NEG</b>	NEG	NEG	NEG
Fuel	%	<b>▲ 3.7</b>	<1.0	<1.0	<1.0
Silicon	ppm	■ <b>3</b>	■ 3	■ 6	■ 5
Sodium	ppm	■ <b>2</b>	■ <1	■ 3	■ 4
Potassium	ppm	■ <b>2</b>	■ 2	■ 0	■ 0



### WEAR METALS

Iron	ppm	■ <b>3</b>	■ 12	■ 16	■ 10
Copper	ppm	■ <b>4</b>	■ 1	■ 2	■ 1
Lead	ppm	■ <b>0</b>	■ <1	■ <1	■ <1
Tin	ppm	■ <b>0</b>	■ <1	■ <1	■ <1
Aluminum	ppm	■ <b>6</b>	■ 7	■ 11	■ 5
Chromium	ppm	■ <b>0</b>	■ <1	■ <1	■ <1
Molybdenum	ppm	■ <b>50</b>	■ 45	■ 43	■ 47
Nickel	ppm	■ <b>0</b>	■ <1	■ 0	■ <1
Titanium	ppm	<b>0</b>	<1	<1	<1
Silver	ppm	■ <b>0</b>	■ 0	0	<1
Manganese	ppm	■ <b>0</b>	■ <1	■ <1	■ <1
Vanadium	ppm	<b>0</b>	<1	0	0



### ADDITIVES

Calcium	ppm	■ <b>2008</b>	■ 1659	■ 1766	■ 1767
Magnesium	ppm	■ <b>543</b>	■ 485	■ 531	■ 456
Zinc	ppm	■ <b>1284</b>	■ 1122	■ 1147	■ 1094
Phosphorus	ppm	■ <b>1082</b>	■ 917	■ 945	■ 926
Barium	ppm	■ <b>12</b>	■ 2	■ 0	■ 0
Boron	ppm	■ <b>61</b>	■ 32	■ 26	■ 32

**Depot:** RIPTAM  
**Unique No:** 10551660  
**Signed:** Doug Bogart  
**Report Date:** 13 Jul 2023



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## GRAPHS

