



# CONSTRUCTION EQUIPMENT

SPM633222 VOLVO L220G 12011 - DIESEL ENGINE



**Sample No:** VCP442828  
**Oil Type:** VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3  
**Job No:** SPM633222



## SAMPLE INFORMATION

Sample Number	<b>VCP442828</b>	VCP386455	VCP320140	VCP294976
Sample Date	<b>22 Nov 2023</b>	07 Oct 2022	25 Sep 2021	26 Jun 2021
Machine Hours	<b>21516</b>	19623	18543	18125
Oil Hours	<b>0</b>	0	0	0
Oil Changed	<b>Changed</b>	N/A	N/A	Changed
Sample Status	<b>ABNORMAL</b>	ABNORMAL	SEVERE	SEVERE

**ALTA EQUIPMENT**  
 5985 COURT STREET ROAD  
 SYRACUSE, NY  
 US 13206  
 Contact: JIM STRIGLE  
 JIM.STRIGLE@ALTG.COM  
 T: (315)437-2611  
 F: (315)434-9471

## OIL CONDITION

Visc @ 100°C	cSt	<b>13.7</b>	12.9	13.5	13.9
Base Number (BN)	mg KOH/g	<b>3.9</b>	10.1	---	---
Oxidation (PA)	%	<b>92</b>	90	77	57

## CONTAMINATION

Water	%	<b>NEG</b>	NEG	NEG	NEG
Soot %	%	<b>3</b>	1.8	0.7	1.3
Nitration (PA)	%	<b>108</b>	89	82	74
Sulfation (PA)	%	<b>76</b>	74	66	60
Glycol	%	<b>NEG</b>	NEG	NEG	NEG
Fuel	%	<b>&lt;1.0</b>	<1.0	<1.0	<1.0
Silicon	ppm	<b>10</b>	28	290	114
Sodium	ppm	<b>1</b>	10	8	6
Potassium	ppm	<b>2</b>	9	35	14

## Diagnosis

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. The copper level is abnormal. All other component wear rates are normal. There is an abnormal amount of solids and carbon present in the oil. The BN level is low. The condition of the oil is acceptable for the time in service.

## WEAR METALS

Iron	ppm	<b>90</b>	45	298	82
Copper	ppm	<b>86</b>	31	18	9
Lead	ppm	<b>&lt;1</b>	2	17	5
Tin	ppm	<b>2</b>	4	5	2
Aluminum	ppm	<b>5</b>	5	93	32
Chromium	ppm	<b>2</b>	1	10	4
Molybdenum	ppm	<b>39</b>	46	45	52
Nickel	ppm	<b>&lt;1</b>	1	2	1
Titanium	ppm	<b>&lt;1</b>	<1	4	2
Silver	ppm	<b>0</b>	0	0	<1
Manganese	ppm	<b>1</b>	3	6	2
Vanadium	ppm	<b>0</b>	<1	<1	<1

## ADDITIVES

Calcium	ppm	<b>1544</b>	1798	5165	2324
Magnesium	ppm	<b>461</b>	425	739	795
Zinc	ppm	<b>1006</b>	1138	1088	1069
Phosphorus	ppm	<b>754</b>	883	946	968
Barium	ppm	<b>2</b>	2	0	0
Boron	ppm	<b>11</b>	23	25	20

**Depot:** VOLV00142  
**Unique No:** 10767947  
**Signed:** Jonathan Hester  
**Report Date:** 05 Dec 2023



# CONSTRUCTION EQUIPMENT



## GRAPHS

