



# CONSTRUCTION EQUIPMENT

13322 STANLEY VOLVO A45G 342399 - DIESEL ENGINE



**Sample No:** VCP434913  
**Oil Type:** SHELL HDU MLTGRADE 15W40  
**Job No:** 13322 STANLEY



## SAMPLE INFORMATION

Sample Number	<b>VCP434913</b>	VCP368490	VCP354328	VCP314532
Sample Date	<b>05 Sep 2023</b>	29 Nov 2022	21 Jun 2022	29 Apr 2021
Machine Hours	<b>7362</b>	6131	5619	4145
Oil Hours	<b>500</b>	500	0	0
Oil Changed	<b>Changed</b>	Changed	Changed	Changed
Sample Status	<b>ABNORMAL</b>	ABNORMAL	ABNORMAL	NORMAL

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## OIL CONDITION

Visc @ 100°C	cSt	<b>12.8</b>	12.9	12.9	12.9
Base Number (BN)	mg KOH/g	<b>5.5</b>	7.4	7.3	---
Oxidation (PA)	%	<b>61</b>	79	79	81

## CONTAMINATION

Soot %	%	<b>0.8</b>	0.5	0.4	0.4
Nitration (PA)	%	<b>88</b>	94	85	88
Sulfation (PA)	%	<b>57</b>	62	60	62
Glycol	%	<b>NEG</b>	NEG	NEG	NEG
Fuel	%	<b>&lt;1.0</b>	<1.0	<1.0	<1.0
Silicon	ppm	<b>7</b>	10	▲ 27	2
Sodium	ppm	<b>3</b>	3	3	2
Potassium	ppm	<b>1</b>	0	0	<1

## WEAR METALS

Iron	ppm	<b>19</b>	14	24	8
Copper	ppm	<b>14</b>	85	189	2
Lead	ppm	<b>3</b>	<1	2	1
Tin	ppm	<b>2</b>	2	3	<1
Aluminum	ppm	<b>4</b>	2	2	2
Chromium	ppm	<b>&lt;1</b>	<1	1	<1
Molybdenum	ppm	<b>85</b>	53	49	50
Nickel	ppm	<b>▲ 5</b>	▲ 8	▲ 8	<1
Titanium	ppm	<b>&lt;1</b>	0	<1	<1
Silver	ppm	<b>0</b>	0	<1	0
Manganese	ppm	<b>&lt;1</b>	<1	1	<1
Vanadium	ppm	<b>&lt;1</b>	0	0	0

## ADDITIVES

Calcium	ppm	<b>2197</b>	1246	1337	1329
Magnesium	ppm	<b>145</b>	785	712	784
Zinc	ppm	<b>1173</b>	839	870	929
Phosphorus	ppm	<b>898</b>	723	702	797
Barium	ppm	<b>0</b>	0	0	0
Boron	ppm	<b>13</b>	25	34	36

## Diagnosis

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor. Valve wear is indicated. All other component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

**Depot:** VOLVO8882  
**Unique No:** 10642236  
**Signed:** Don Baldrige  
**Report Date:** 12 Sep 2023



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## GRAPHS

