



# CONSTRUCTION EQUIPMENT

## VOLVO L110H 631231 - DIESEL ENGINE



**Sample No:** VCP439690  
**Oil Type:** VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3  
**Job No:**



### SAMPLE INFORMATION

Sample Number	<b>VCP439690</b>	VCP432119	VCP428553	VCP392684
Sample Date	<b>20 Feb 2024</b>	08 Nov 2023	02 Oct 2023	28 Apr 2023
Machine Hours	<b>12527</b>	12029	6272	10851
Oil Hours	<b>0</b>	0	0	600
Oil Changed	<b>N/A</b>	Changed	N/A	Changed
Sample Status	<b>NORMAL</b>	NORMAL	NORMAL	NORMAL

### RIPA AND ASSOCIATES

10149 FISHER AVENUE  
TAMPA, FL  
US 33619  
Contact: PM Services  
PMServices@ripaconstruction.com  
T:  
F:



### OIL CONDITION

Visc @ 100°C	cSt	<b>13.3</b>	13.4	14.5	13.0
Base Number (BN)	mg KOH/g	<b>8.7</b>	7.1	6.9	10.3
Oxidation (PA)	%	<b>76</b>	63	78	79

### Diagnosis

Resample at the next service interval to monitor. All 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.



### CONTAMINATION

Water	%	<b>NEG</b>	NEG	NEG	NEG
Soot %	%	<b>0.2</b>	0.2	1.1	0.3
Nitration (PA)	%	<b>71</b>	77	113	65
Sulfation (PA)	%	<b>58</b>	53	66	59
Glycol	%	<b>NEG</b>	NEG	NEG	NEG
Fuel	%	<b>&lt;1.0</b>	<1.0	<1.0	<1.0
Silicon	ppm	<b>11</b>	4	5	5
Sodium	ppm	<b>1</b>	0	0	2
Potassium	ppm	<b>4</b>	3	3	2



### WEAR METALS

Iron	ppm	<b>52</b>	8	17	10
Copper	ppm	<b>2</b>	1	1	<1
Lead	ppm	<b>&lt;1</b>	0	1	<1
Tin	ppm	<b>1</b>	0	<1	1
Aluminum	ppm	<b>4</b>	2	6	4
Chromium	ppm	<b>2</b>	<1	<1	<1
Molybdenum	ppm	<b>40</b>	55	72	47
Nickel	ppm	<b>2</b>	0	<1	<1
Titanium	ppm	<b>&lt;1</b>	0	<1	0
Silver	ppm	<b>0</b>	0	0	0
Manganese	ppm	<b>&lt;1</b>	0	<1	<1
Vanadium	ppm	<b>&lt;1</b>	0	<1	<1



### ADDITIVES

Calcium	ppm	<b>1615</b>	2043	2105	1610
Magnesium	ppm	<b>371</b>	145	181	587
Zinc	ppm	<b>1111</b>	1146	1190	1216
Phosphorus	ppm	<b>915</b>	942	1011	981
Barium	ppm	<b>1</b>	2	3	0
Boron	ppm	<b>45</b>	60	17	28

**Depot:** RIPTAM  
**Unique No:** 10900457  
**Signed:** Wes Davis  
**Report Date:** 28 Feb 2024

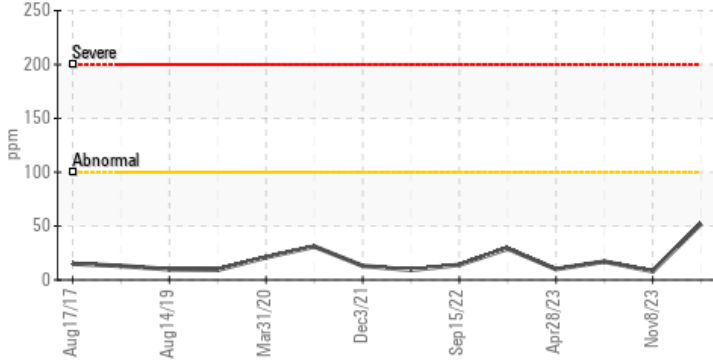


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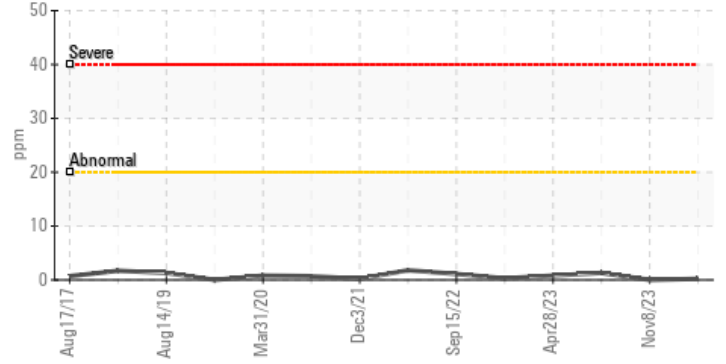


## GRAPHS

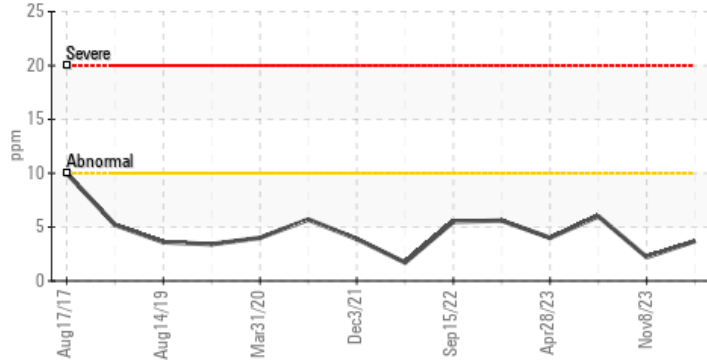
### Iron (ppm)



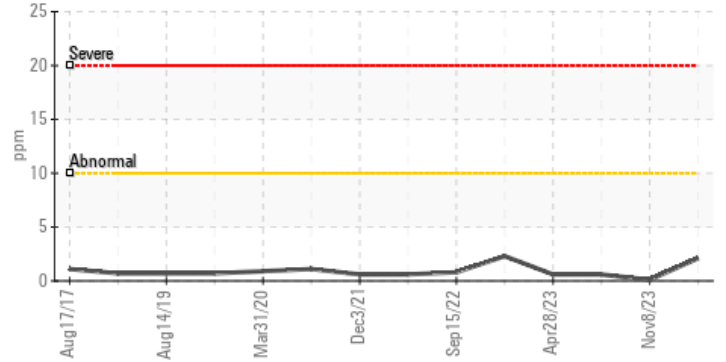
### Lead (ppm)



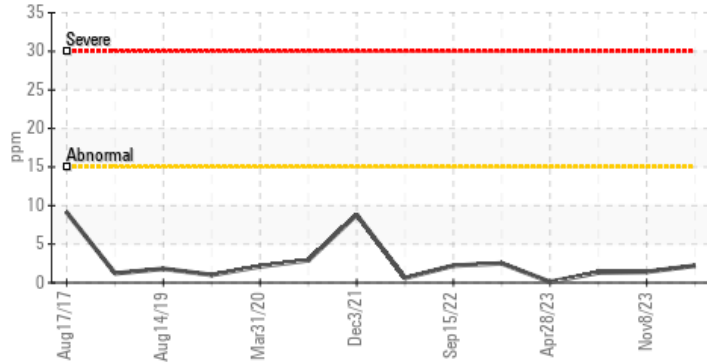
### Aluminum (ppm)



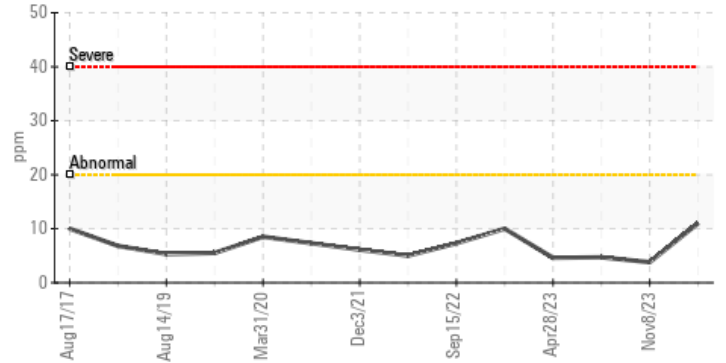
### Chromium (ppm)



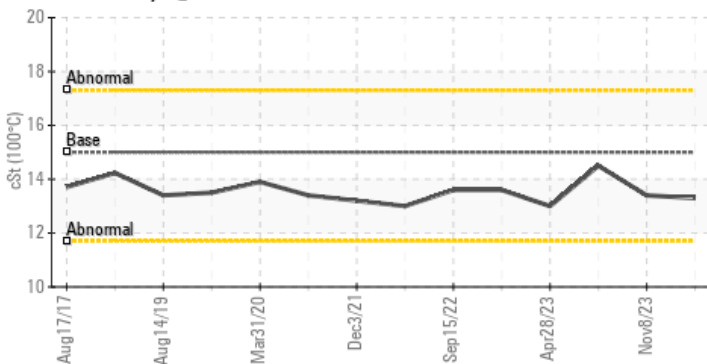
### Copper (ppm)



### Silicon (ppm)



### Viscosity @ 100°C



### Base Number

