



# CONSTRUCTION EQUIPMENT

## VOLVO L110H 631292 - DIESEL ENGINE



**Sample No:** VCP441658  
**Oil Type:** VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3  
**Job No:**



### SAMPLE INFORMATION

Sample Number	<b>VCP441658</b>	VCP421232	VCP388471	VCP374606
Sample Date	<b>29 Mar 2024</b>	26 Jul 2023	26 Oct 2022	13 Jun 2022
Machine Hours	<b>9103</b>	8611	8154	7686
Oil Hours	<b>0</b>	0	500	1500
Oil Changed	<b>Changed</b>	Not Chngd	Changed	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>12.5</b>	12.5	13.3	12.9
Base Number (BN)	mg KOH/g	<b>9.9</b>	10.6	12.2	12.1
Oxidation (PA)	%	<b>77</b>	80	88	86

### 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>0.3</b>	0.2	0.3	0.3
Nitration (PA)	%	<b>59</b>	57	67	68
Sulfation (PA)	%	<b>58</b>	60	66	65
Glycol	%	<b>NEG</b>	NEG	NEG	NEG
Fuel	%	<b>&lt;1.0</b>	<1.0	<1.0	<1.0
Silicon	ppm	<b>13</b>	5	6	6
Sodium	ppm	<b>2</b>	2	2	1
Potassium	ppm	<b>0</b>	<1	0	<1



### WEAR METALS

Iron	ppm	<b>24</b>	7	11	10
Copper	ppm	<b>4</b>	2	3	1
Lead	ppm	<b>&lt;1</b>	<1	1	<1
Tin	ppm	<b>1</b>	1	1	<1
Aluminum	ppm	<b>11</b>	6	6	6
Chromium	ppm	<b>2</b>	<1	<1	<1
Molybdenum	ppm	<b>45</b>	43	41	40
Nickel	ppm	<b>0</b>	<1	0	0
Titanium	ppm	<b>&lt;1</b>	0	0	<1
Silver	ppm	<b>0</b>	0	0	<1
Manganese	ppm	<b>&lt;1</b>	<1	<1	<1
Vanadium	ppm	<b>0</b>	0	0	0



### ADDITIVES

Calcium	ppm	<b>1669</b>	1629	1734	1636
Magnesium	ppm	<b>487</b>	533	498	456
Zinc	ppm	<b>1118</b>	1170	1123	1103
Phosphorus	ppm	<b>952</b>	950	931	903
Barium	ppm	<b>0</b>	0	0	0
Boron	ppm	<b>50</b>	46	52	38

**Depot:** RIPTAM  
**Unique No:** 11044002  
**Signed:** Don Baldrige  
**Report Date:** 23 May 2024

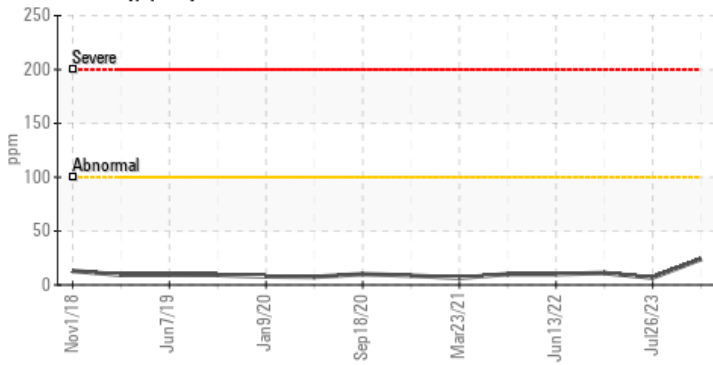


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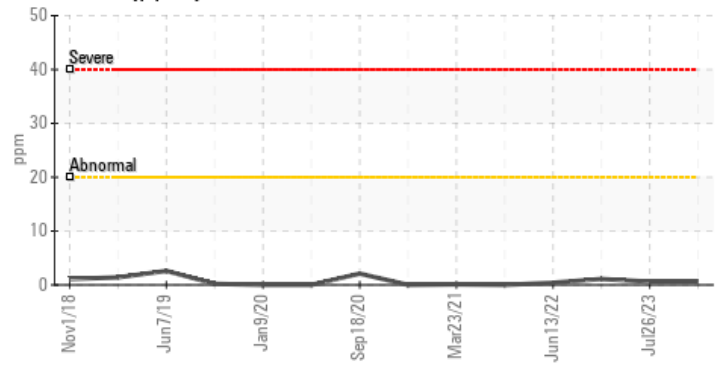


## GRAPHS

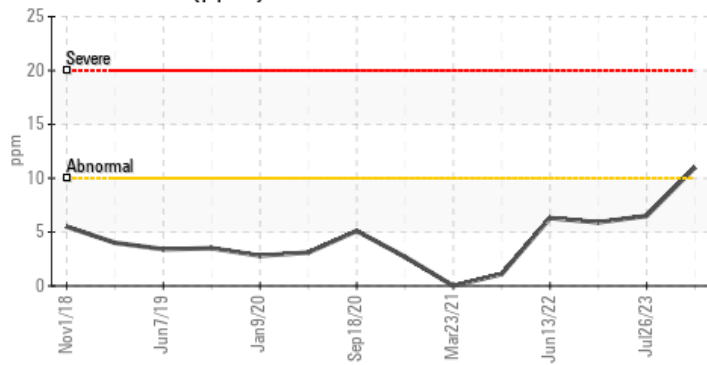
### Iron (ppm)



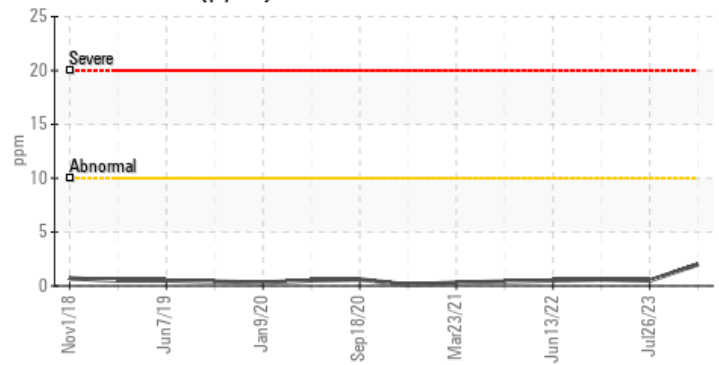
### Lead (ppm)



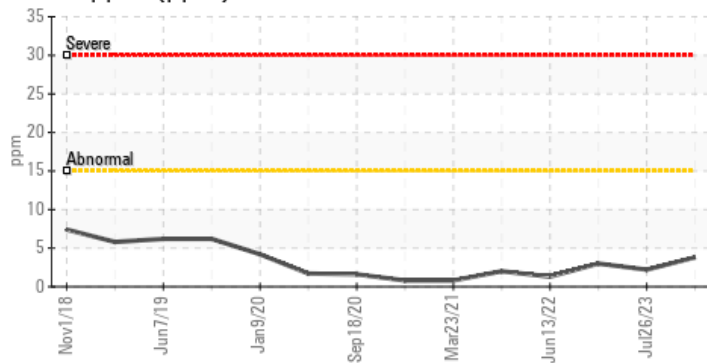
### Aluminum (ppm)



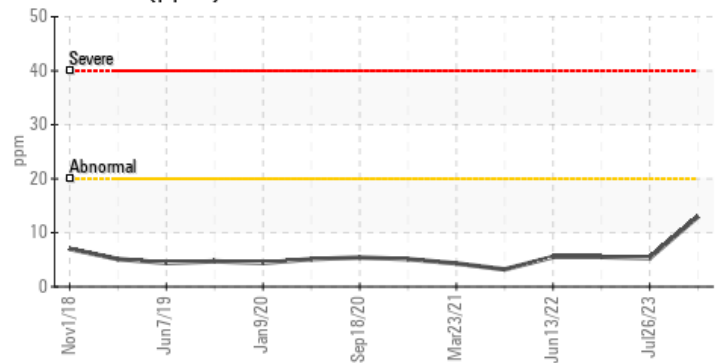
### Chromium (ppm)



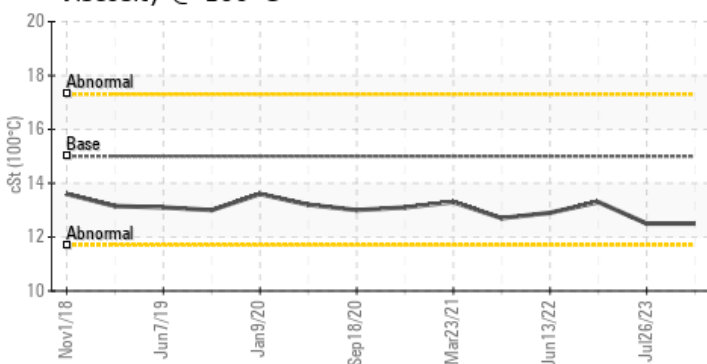
### Copper (ppm)



### Silicon (ppm)



### Viscosity @ 100°C



### Base Number

