



# CONSTRUCTION EQUIPMENT

## 646160 DIPRO CATERPILLAR 972M HLSJ02687 - DIESEL ENGINE



**Sample No:** VCP452308  
**Oil Type:** VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3  
**Job No:** 646160 DIPRO



### SAMPLE INFORMATION

Sample Number	<b>VCP452308</b>	VCP431157	VCP414163	VCP426804
Sample Date	<b>27 Dec 2023</b>	25 Sep 2023	10 Jul 2023	17 Apr 2023
Machine Hours	<b>15831</b>	15087	14435	13394
Oil Hours	<b>500</b>	500	0	1000
Oil Changed	<b>Changed</b>	Changed	N/A	Changed
Sample Status	<b>SEVERE</b>	SEVERE	SEVERE	SEVERE

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### OIL CONDITION

Visc @ 100°C	cSt	<b>▲ 8.85</b>	▲ 7	▲ 6.8	▲ 5.9
Base Number (BN)	mg KOH/g	<b>■ 5.7</b>	▲ 3.6	▲ 1.0	▲ 0.7
Oxidation (PA)	%	<b>96</b>	118	189	222

### Diagnosis

We advise that you check the fuel injection system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. All component wear rates are normal. There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.



### CONTAMINATION

Water	%	<b>NEG</b>	NEG	NEG	NEG
Soot %	%	<b>■ 0.6</b>	■ 0.4	■ 0.7	■ 0.6
Nitration (PA)	%	<b>101</b>	90	135	167
Sulfation (PA)	%	<b>62</b>	69	91	96
Glycol	%	<b>NEG</b>	NEG	NEG	NEG
Fuel	%	<b>● 19.8</b>	● 36.9	● 33.0	● 41.4
Silicon	ppm	<b>■ 4</b>	■ 3	■ 6	■ 8
Sodium	ppm	<b>■ 3</b>	■ 2	■ 4	■ 3
Potassium	ppm	<b>■ &lt;1</b>	■ 0	■ <1	■ 0



### WEAR METALS

Iron	ppm	<b>■ 32</b>	■ 23	■ 51	■ 50
Copper	ppm	<b>■ 2</b>	■ 2	■ 2	■ 1
Lead	ppm	<b>■ &lt;1</b>	■ 2	■ 16	■ 10
Tin	ppm	<b>■ &lt;1</b>	■ <1	■ <1	■ 0
Aluminum	ppm	<b>■ 4</b>	■ <1	■ 5	■ 5
Chromium	ppm	<b>■ 2</b>	■ 1	■ 3	■ 3
Molybdenum	ppm	<b>■ 47</b>	■ 37	■ 35	■ 29
Nickel	ppm	<b>■ 0</b>	■ 0	■ 0	■ 0
Titanium	ppm	<b>■ &lt;1</b>	■ 0	■ 0	■ 0
Silver	ppm	<b>■ 0</b>	■ 0	■ 0	■ 0
Manganese	ppm	<b>■ &lt;1</b>	■ <1	■ <1	■ <1
Vanadium	ppm	<b>&lt;1</b>	<1	0	0



### ADDITIVES

Calcium	ppm	<b>787</b>	628	659	537
Magnesium	ppm	<b>747</b>	■ 591	■ 597	■ 471
Zinc	ppm	<b>■ 951</b>	742	770	611
Phosphorus	ppm	<b>■ 776</b>	588	651	494
Barium	ppm	<b>■ 0</b>	■ 0	■ 0	■ 0
Boron	ppm	<b>■ 0</b>	■ 0	■ <1	■ 0

**Depot:** VOLVO2990  
**Unique No:** 10822405  
**Signed:** Wes Davis  
**Report Date:** 16 Jan 2024



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## GRAPHS

