



# CONSTRUCTION EQUIPMENT

5809HO VOLVO ECR355EL 310191 - DIESEL ENGINE



**Sample No:** VCP452211  
**Oil Type:** VOLVO VDS-4.5 Premium Motor Oil 15W40  
**Job No:** 5809HO



## SAMPLE INFORMATION

Sample Number	<b>VCP452211</b>	VCP405952	VCP366146	VCP350001
Sample Date	<b>09 Feb 2024</b>	20 Sep 2023	16 Sep 2022	29 Mar 2022
Machine Hours	<b>3809</b>	3368	2172	1561
Oil Hours	<b>500</b>	0	0	500
Oil Changed	<b>Changed</b>	Changed	Changed	Changed
Sample Status	<b>NORMAL</b>	ABNORMAL	NORMAL	NORMAL

**PENNSYLVANIA SUPPLY**  
 833 PAXTON STREET  
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 US 17104  
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## OIL CONDITION

Visc @ 100°C	cSt	<b>13.2</b>	11.4	12.6	12.5
Base Number (BN)	mg KOH/g	<b>8.9</b>	5.9	11.2	11.5
Oxidation (PA)	%	<b>98</b>	61	84	80



## CONTAMINATION

Water	%	<b>NEG</b>	NEG	NEG	NEG
Soot %	%	<b>0.2</b>	0.2	0.2	0.2
Nitration (PA)	%	<b>60</b>	77	70	69
Sulfation (PA)	%	<b>69</b>	54	63	62
Glycol	%	<b>NEG</b>	NEG	NEG	NEG
Fuel	%	<b>&lt;1.0</b>	0.5	<1.0	<1.0
Silicon	ppm	<b>9</b>	23	12	13
Sodium	ppm	<b>0</b>	4	<1	5
Potassium	ppm	<b>3</b>	5	7	9



## WEAR METALS

Iron	ppm	<b>9</b>	12	21	18
Copper	ppm	<b>5</b>	462	4	5
Lead	ppm	<b>2</b>	6	<1	<1
Tin	ppm	<b>1</b>	2	2	1
Aluminum	ppm	<b>2</b>	<1	5	3
Chromium	ppm	<b>&lt;1</b>	0	1	<1
Molybdenum	ppm	<b>34</b>	85	52	43
Nickel	ppm	<b>&lt;1</b>	<1	0	0
Titanium	ppm	<b>&lt;1</b>	0	<1	<1
Silver	ppm	<b>&lt;1</b>	0	0	<1
Manganese	ppm	<b>&lt;1</b>	2	<1	<1
Vanadium	ppm	<b>&lt;1</b>	0	<1	0



## ADDITIVES

Calcium	ppm	<b>1299</b>	2213	1784	1934
Magnesium	ppm	<b>412</b>	52	557	532
Zinc	ppm	<b>883</b>	1285	1183	1221
Phosphorus	ppm	<b>938</b>	1005	993	1026
Barium	ppm	<b>0</b>	0	0	0
Boron	ppm	<b>37</b>	45	34	42

## 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.

**Depot:** PENHAR  
**Unique No:** 10885090  
**Signed:** Wes Davis  
**Report Date:** 19 Feb 2024



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## VOLVO GRAPHS

