



# CONSTRUCTION EQUIPMENT

## FLYWAY VOLVO EC220EL 310218 - REAR LEFT FINAL DRIVE



**Sample No:** VCP415279  
**Oil Type:** VOLVO PREMIUM GEAR OIL 85W-140 GL-5  
**Job No:** FLYWAY



### SAMPLE INFORMATION

Sample Number	<b>VCP415279</b>	VCP365545	VCP331562	VCP292915
Sample Date	<b>18 Nov 2023</b>	17 Feb 2023	24 Nov 2021	02 Nov 2020
Machine Hours	<b>0</b>	5055	3927	2888
Oil Hours	<b>0</b>	0	2000	0
Oil Changed	<b>Changed</b>	Changed	Changed	Changed
Sample Status	<b>SEVERE</b>	SEVERE	SEVERE	ABNORMAL

### HIGHWAY EQUIPMENT AND SUPPLY CO

200 BURKHOLDER DR.  
 EPHRATA, PA  
 US 17522

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### OIL CONDITION

Visc @ 40°C	cSt	<b>639</b>	69.1	251	102
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### CONTAMINATION

Water	%	<b>7.07</b>	1.04	NEG	NEG
Silicon	ppm	<b>2544</b>	163	1667	100
Sodium	ppm	<b>41</b>	4	34	3
Potassium	ppm	<b>98</b>	10	162	7



### WEAR METALS

Iron	ppm	<b>6943</b>	2114	3789	330
Copper	ppm	<b>16</b>	6	11	<1
Lead	ppm	<b>1</b>	<1	1	0
Tin	ppm	<b>0</b>	0	<1	0
Aluminum	ppm	<b>345</b>	40	323	26
Chromium	ppm	<b>52</b>	9	33	4
Molybdenum	ppm	<b>8</b>	2	7	<1
Nickel	ppm	<b>8</b>	2	4	<1
Titanium	ppm	<b>43</b>	4	35	2
Silver	ppm	<b>&lt;1</b>	<1	0	<1
Manganese	ppm	<b>41</b>	8	25	2
Vanadium	ppm	<b>1</b>	<1	1	<1



### ADDITIVES

Calcium	ppm	<b>104</b>	46	273	59
Magnesium	ppm	<b>61</b>	9	102	7
Zinc	ppm	<b>21</b>	49	61	11
Phosphorus	ppm	<b>782</b>	1867	1022	1391
Barium	ppm	<b>1</b>	0	1	0
Boron	ppm	<b>74</b>	54	193	278

### Diagnosis

We advise that you check all areas where dirt can enter the system. We advise that you check for the source of water entry. The oil change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition. The iron level is severe. Gear wear is indicated. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. There is a high concentration of water present in the oil. The oil is no longer serviceable due to the presence of contaminants.

**Depot:** INSEPH  
**Unique No:** 10750328  
**Signed:** Sean Felton  
**Report Date:** 21 Nov 2023



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## GRAPHS

