



CONSTRUCTION EQUIPMENT

SW-27111-2 CASTLE VA VOLVO EC210BLC 16751 - DIESEL ENGINE



Sample No: VCP414463
Oil Type: VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3
Job No: SW-27111-2 CASTLE VA



SAMPLE INFORMATION

Sample Number	VCP414463	VCP423015	VCP378659	VCP348859
Sample Date	29 Nov 2023	10 Jul 2023	13 Oct 2022	08 Mar 2022
Machine Hours	2580	1938	1348	827
Oil Hours	630	500	500	500
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	NORMAL	NORMAL	ATTENTION	ABNORMAL

ARNOLD MACHINERY COMPANY
 2975 WEST 2100 SOUTH
 SALT LAKE CITY, UT
 US 84119
 Contact: TONY PAYAN
 tpayan@arnoldmachinery.com
 T: (801)972-4000
 F: (801)975-9434



OIL CONDITION

Visc @ 100°C	cSt	12.8	12.8	12.8	11.7
Base Number (BN)	mg KOH/g	8.7	9.4	11.0	10.5
Oxidation (PA)	%	69	69	75	92

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 acceptable for the time in service.



CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.5	0.4	0.4	0.2
Nitration (PA)	%	68	68	73	73
Sulfation (PA)	%	58	57	62	66
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	3.3	6.7
Silicon	ppm	5	6	6	8
Sodium	ppm	0	0	1	1
Potassium	ppm	2	2	0	1



WEAR METALS

Iron	ppm	13	14	12	10
Copper	ppm	<1	<1	1	<1
Lead	ppm	<1	<1	<1	<1
Tin	ppm	0	<1	<1	<1
Aluminum	ppm	1	2	2	3
Chromium	ppm	<1	<1	<1	<1
Molybdenum	ppm	68	63	52	39
Nickel	ppm	0	<1	0	0
Titanium	ppm	0	0	0	0
Silver	ppm	0	0	0	0
Manganese	ppm	0	<1	<1	<1
Vanadium	ppm	0	0	0	0



ADDITIVES

Calcium	ppm	1115	1290	1230	1615
Magnesium	ppm	825	709	820	475
Zinc	ppm	1068	1020	1148	1119
Phosphorus	ppm	842	861	953	916
Barium	ppm	2	0	0	0
Boron	ppm	59	73	17	56

Depot: VOLVO8770
Unique No: 10776014
Signed: Don Baldrige
Report Date: 07 Dec 2023



CONSTRUCTION EQUIPMENT



GRAPHS

