



CONSTRUCTION EQUIPMENT

331624 CITY OF TAMPA VOLVO L180H 5423 - DIESEL ENGINE



Sample No: VCP414635
Oil Type: VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3
Job No: 331624 CITY OF TAMPA



SAMPLE INFORMATION

Sample Number	VCP414635	VCP364326	VCP374610	VCP357450
Sample Date	15 Aug 2023	11 Aug 2022	14 Jun 2022	05 Apr 2022
Machine Hours	8689	5393	4707	4314
Oil Hours	500	500	1500	1000
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	ABNORMAL	NORMAL	NORMAL	ABNORMAL

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OIL CONDITION

Visc @ 100°C	cSt	12.8	13.2	13.2	11.3
Base Number (BN)	mg KOH/g	---	11.4	10.5	5.9
Oxidation (PA)	%	89	88	80	61



CONTAMINATION

Soot %	%	0.3	0.2	0.2	0.3
Nitration (PA)	%	84	60	65	83
Sulfation (PA)	%	63	67	63	62
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	0.2
Silicon	ppm	22	8	12	18
Sodium	ppm	2	3	2	2
Potassium	ppm	0	0	1	2

Diagnosis

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. Elemental level of silicon (Si) above normal indicating ingress of seal material. The condition of the oil is acceptable for the time in service.



WEAR METALS

Iron	ppm	9	4	5	14
Copper	ppm	4	2	11	53
Lead	ppm	<1	<1	<1	2
Tin	ppm	<1	<1	<1	2
Aluminum	ppm	2	1	1	2
Chromium	ppm	<1	<1	<1	<1
Molybdenum	ppm	46	42	47	61
Nickel	ppm	0	0	0	<1
Titanium	ppm	0	0	<1	<1
Silver	ppm	0	0	0	<1
Manganese	ppm	<1	<1	<1	<1
Vanadium	ppm	0	0	0	0



ADDITIVES

Calcium	ppm	1773	1795	1562	1527
Magnesium	ppm	544	537	529	344
Zinc	ppm	1141	1200	1138	881
Phosphorus	ppm	930	975	939	737
Barium	ppm	0	0	0	0
Boron	ppm	8	47	28	13

Depot: VOLVO0093
Unique No: 10636122
Signed: Doug Bogart
Report Date: 11 Sep 2023



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GRAPHS

