



CONSTRUCTION EQUIPMENT

JOHN DEERE 650 404213 - DIESEL ENGINE



Sample No: VCP438751
Oil Type: VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3
Job No:



SAMPLE INFORMATION

Sample Number	VCP438751	VCP406794	---	---
Sample Date	13 Apr 2024	28 Jun 2023	---	---
Machine Hours	1893	1581	---	---
Oil Hours	0	0	---	---
Oil Changed	Changed	Changed	---	---
Sample Status	SEVERE	SEVERE	---	---

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OIL CONDITION

Visc @ 100°C	cSt	14.6	15.0	---	---
Base Number (BN)	mg KOH/g	7.3	7.3	---	---
Oxidation (PA)	%	106	108	---	---

Diagnosis

Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. Bearing and/or bushing wear is indicated. Cylinder, crank, or cam shaft wear is indicated. 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	---	---
Soot %	%	1.1	1.2	---	---
Nitration (PA)	%	118	119	---	---
Sulfation (PA)	%	80	83	---	---
Glycol	%	NEG	NEG	---	---
Fuel	%	<1.0	<1.0	---	---
Silicon	ppm	13	10	---	---
Sodium	ppm	9	5	---	---
Potassium	ppm	7	6	---	---



WEAR METALS

Iron	ppm	▲ 85	▲ 61	---	---
Copper	ppm	▲ 114	▲ 95	---	---
Lead	ppm	▲ 172	▲ 149	---	---
Tin	ppm	▲ 5	▲ 4	---	---
Aluminum	ppm	■ 12	■ 7	---	---
Chromium	ppm	■ 4	■ 3	---	---
Molybdenum	ppm	■ 200	163	---	---
Nickel	ppm	■ 2	<1	---	---
Titanium	ppm	<1	<1	---	---
Silver	ppm	■ <1	■ 0	---	---
Manganese	ppm	■ 3	■ 3	---	---
Vanadium	ppm	<1	<1	---	---



ADDITIVES

Calcium	ppm	■ 2898	■ 2216	---	---
Magnesium	ppm	■ 824	■ 618	---	---
Zinc	ppm	■ 1871	■ 1371	---	---
Phosphorus	ppm	■ 1530	■ 1047	---	---
Barium	ppm	■ 0	■ 0	---	---
Boron	ppm	■ 24	■ 23	---	---

Depot: VOLVO0090
Unique No: 10989464
Signed: Don Baldrige
Report Date: 23 Apr 2024



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GRAPHS

