



CONSTRUCTION EQUIPMENT

23-06 VOLVO EC220 310415 - DIESEL ENGINE



Sample No: VCP421786
Oil Type: DIESEL ENGINE OIL SAE 40
Job No: 23-06



SAMPLE INFORMATION

Sample Number	VCP421786	VCP180780	VCP182315	---
Sample Date	08 May 2024	28 Apr 2021	02 Oct 2019	---
Machine Hours	2677	1766	488	---
Oil Hours	110	565	488	---
Oil Changed	Changed	Changed	Changed	---
Sample Status	ABNORMAL	NORMAL	NORMAL	---

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OIL CONDITION

Visc @ 100°C	cSt	13.6	14.5	13.5	---
Base Number (BN)	mg KOH/g	7.1	---	---	---
Oxidation (PA)	%	49	58	54	---

Diagnosis

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. We recommend an early resample to monitor this condition. Piston, ring and cylinder 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	NEG	---
Soot %	%	0.2	0.2	0.1	---
Nitration (PA)	%	73	79	58	---
Sulfation (PA)	%	52	60	49	---
Glycol	%	NEG	NEG	NEG	---
Fuel	%	<1.0	<1.0	<1.0	---
Silicon	ppm	14	12	21	---
Sodium	ppm	2	4	4	---
Potassium	ppm	3	2	4	---



WEAR METALS

Iron	ppm	▲ 114	31	56	---
Copper	ppm	5	2	10	---
Lead	ppm	<1	<1	<1	---
Tin	ppm	1	<1	1	---
Aluminum	ppm	▲ 13	5	16	---
Chromium	ppm	2	1	4	---
Molybdenum	ppm	25	18	21	---
Nickel	ppm	2	<1	5	---
Titanium	ppm	<1	<1	0	---
Silver	ppm	<1	0	0	---
Manganese	ppm	1	<1	5	---
Vanadium	ppm	<1	0	0	---



ADDITIVES

Calcium	ppm	2011	2080	2003	---
Magnesium	ppm	248	282	173	---
Zinc	ppm	1124	1073	986	---
Phosphorus	ppm	951	969	844	---
Barium	ppm	<1	0	<1	---
Boron	ppm	6	6	3	---

Depot: GLOPLE
Unique No: 11085932
Signed: Don Baldrige
Report Date: 20 Jun 2024

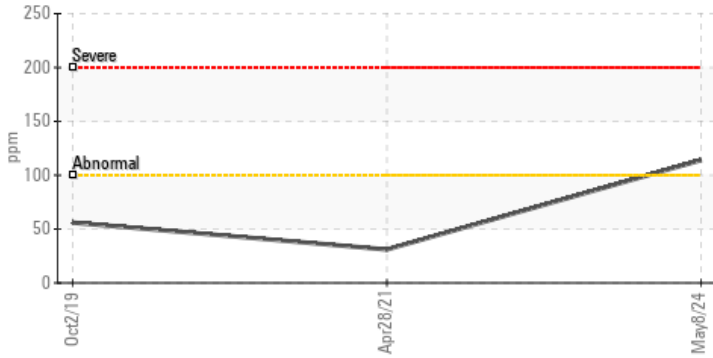


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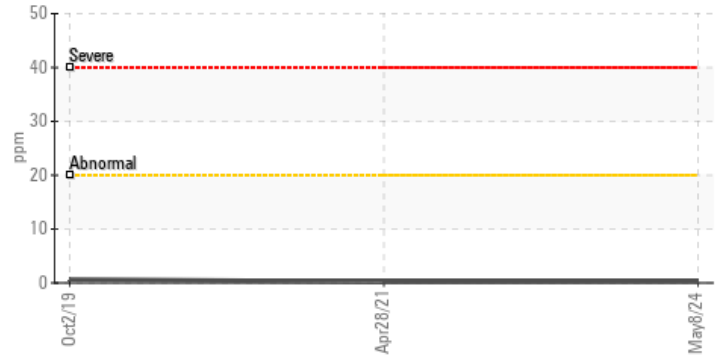


GRAPHS

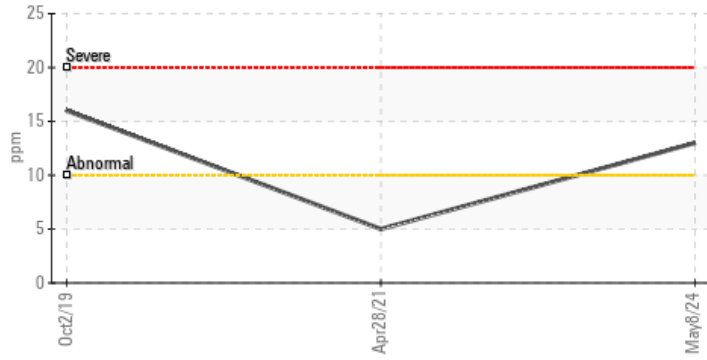
▲ Iron (ppm)



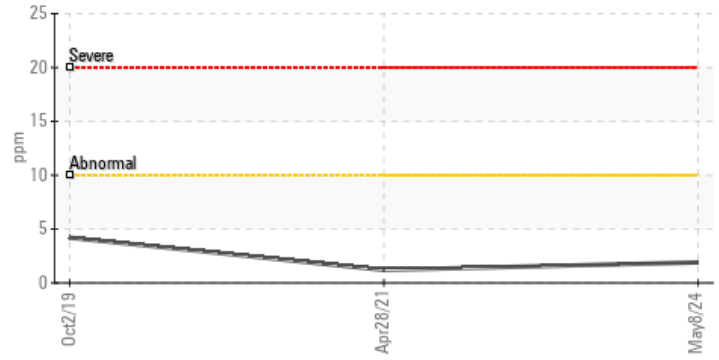
Lead (ppm)



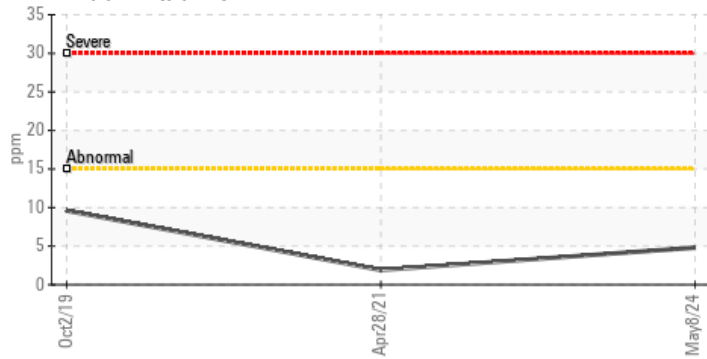
▲ Aluminum (ppm)



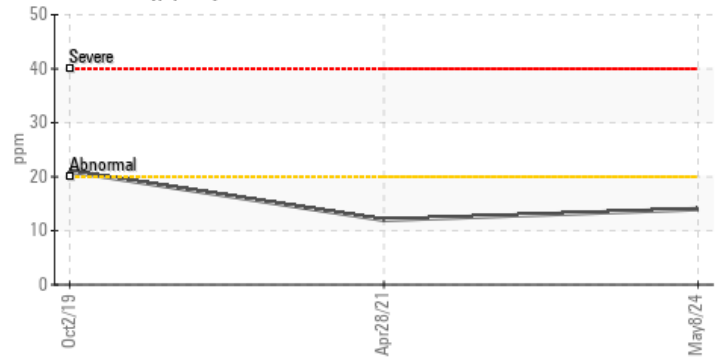
Chromium (ppm)



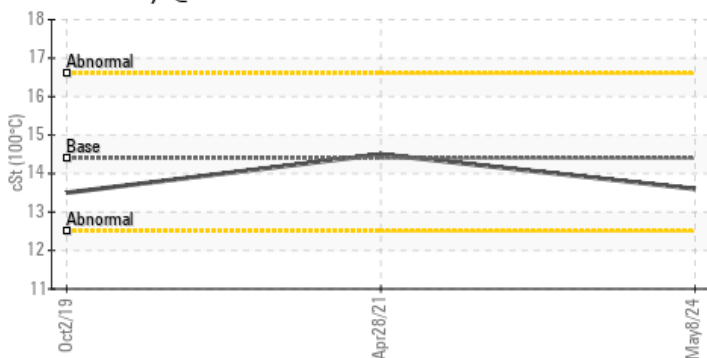
Copper (ppm)



Silicon (ppm)



Viscosity @ 100°C



Base Number

