



CONSTRUCTION EQUIPMENT

3688BS VOLVO A40F 12323 - DIESEL ENGINE



Sample No: VCP402095
Oil Type: VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3
Job No: 3688BS



SAMPLE INFORMATION

Sample Number	VCP402095	VCE226039	---	---
Sample Date	20 Jul 2023	28 Jan 2014	---	---
Machine Hours	9360	260	---	---
Oil Hours	20	0	---	---
Oil Changed	Not Chngd	Not Chngd	---	---
Sample Status	NORMAL	NORMAL	---	---

PENNSY SUPPLY
 200 BURKHOLDER DRIVE
 EPHRATA, PA
 US 17522
 Contact: TYLER MADENFORD

OIL CONDITION

Visc @ 100°C	cSt	13.8	10.63	---	---
Base Number (BN)	mg KOH/g	9.5	---	---	---
Oxidation (PA)	%	49	56	---	---

T: (717)859-2132
 F:

Diagnosis

Resample at the next service interval to monitor. All component wear rates are normal. The wear metal levels do not reflect the reported failure. 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 suitable for further service.

CONTAMINATION

Soot %	%	0.1	0.1	---	---
Nitration (PA)	%	43	58	---	---
Sulfation (PA)	%	46	47	---	---
Glycol	%	NEG	NEG	---	---
Fuel	%	<1.0	<1.0	---	---
Silicon	ppm	4	25	---	---
Sodium	ppm	6	5	---	---
Potassium	ppm	3	5	---	---

WEAR METALS

Iron	ppm	10	14	---	---
Copper	ppm	<1	20	---	---
Lead	ppm	<1	1	---	---
Tin	ppm	<1	0	---	---
Aluminum	ppm	4	2	---	---
Chromium	ppm	<1	<1	---	---
Molybdenum	ppm	51	39	---	---
Nickel	ppm	<1	2	---	---
Titanium	ppm	3	<1	---	---
Silver	ppm	0	0	---	---
Manganese	ppm	<1	3	---	---
Vanadium	ppm	0	0	---	---

ADDITIVES

Calcium	ppm	1338	1215	---	---
Magnesium	ppm	871	776	---	---
Zinc	ppm	1278	986	---	---
Phosphorus	ppm	1044	835	---	---
Barium	ppm	0	0	---	---
Boron	ppm	16	47	---	---

Depot: PENEPH
Unique No: 10587686
Signed: Doug Bogart
Report Date: 06 Aug 2023

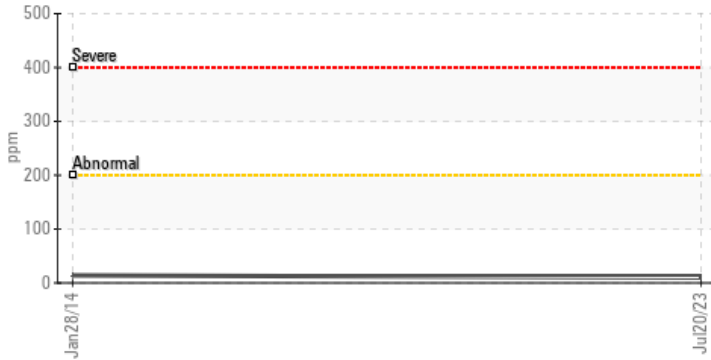


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GRAPHS

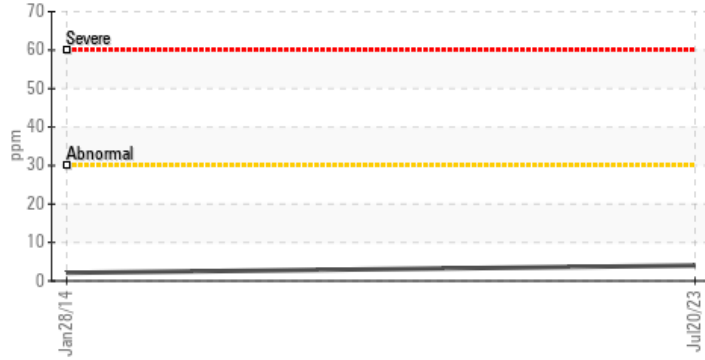
Iron (ppm)



Lead (ppm)



Aluminum (ppm)



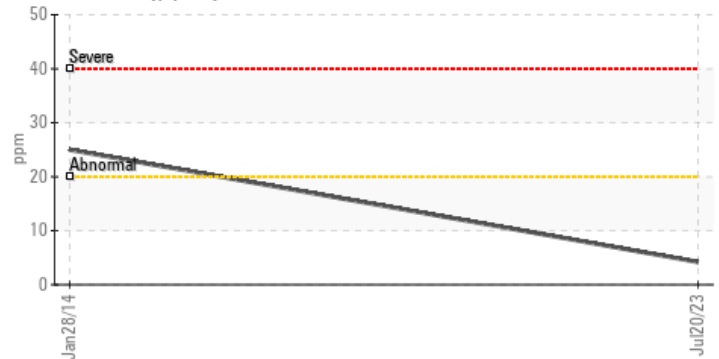
Chromium (ppm)



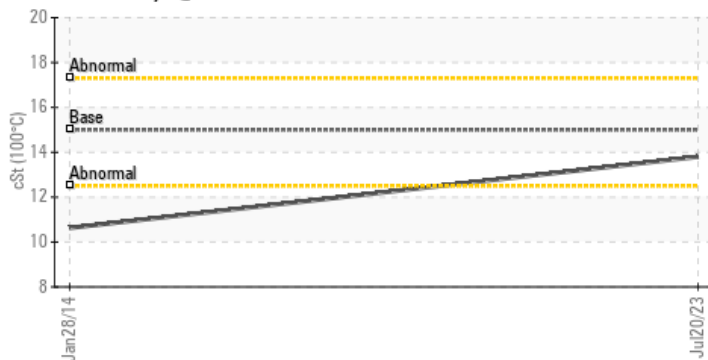
Copper (ppm)



Silicon (ppm)



Viscosity @ 100°C



Base Number

