



ASCENDUM

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area

Ascendum Machinery

Machine Id

VOLVO EC380E EX-02 (S/N 310020)

Component

Diesel Engine

Fluid

VOLVO VDS-4.5 Premium Motor Oil 15W40 (--- GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		ASC0009783	ASC0001421	VCP0004478
Sample Date		Client Info		18 Jun 2024	26 Sep 2023	02 Nov 2022
Machine Age	hrs	Client Info		11997	11014	10493
Oil Age	hrs	Client Info		983	521	555
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL

WEAR

The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	14	3	5
Chromium	ppm	ASTM D5185m	>10	1	0	<1
Nickel	ppm	ASTM D5185m	>10	3	0	<1
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>10	2	2	2
Lead	ppm	ASTM D5185m	>20	<1	0	<1
Copper	ppm	ASTM D5185m	>15	▲ 76	1	<1
Tin	ppm	ASTM D5185m	>10	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

There is no indication of any contamination in the oil.

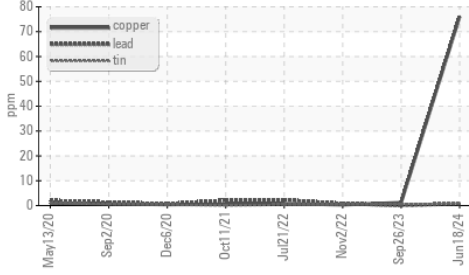
Silicon	ppm	ASTM D5185m	>20	7	6	6
Potassium	ppm	ASTM D5185m	>20	1	0	2
Fuel		WC Method	>6.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.1	0	0.1
Nitration	Abs/cm	*ASTM D7624	>20	9.7	5.1	6.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.4	22.1	21.6
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG

FLUID CONDITION

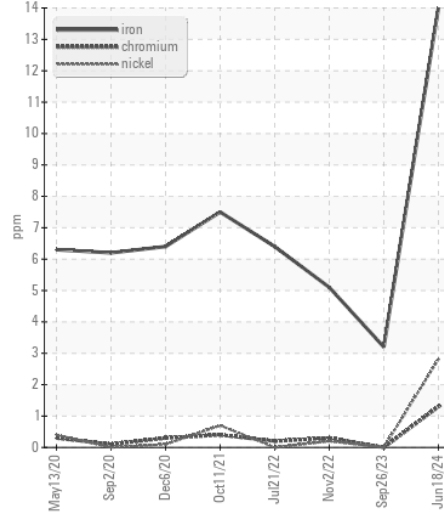
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		<1	2	2
Boron	ppm	ASTM D5185m		20	61	87
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		41	43	35
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		531	533	438
Calcium	ppm	ASTM D5185m		1721	1723	1571
Phosphorus	ppm	ASTM D5185m		968	951	899
Zinc	ppm	ASTM D5185m		1190	1146	1124
Sulfur	ppm	ASTM D5185m		2788	3127	3364
Oxidation	Abs/.1mm	*ASTM D7414	>25	22.9	19.8	17.8
Base Number (BN)	mg KOH/g	ASTM D2896		8.0	11.0	10.4
Visc @ 100°C	cSt	ASTM D445		12.5	12.6	13.3

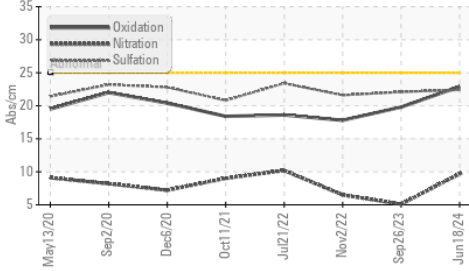
▲ Non-ferrous Metals



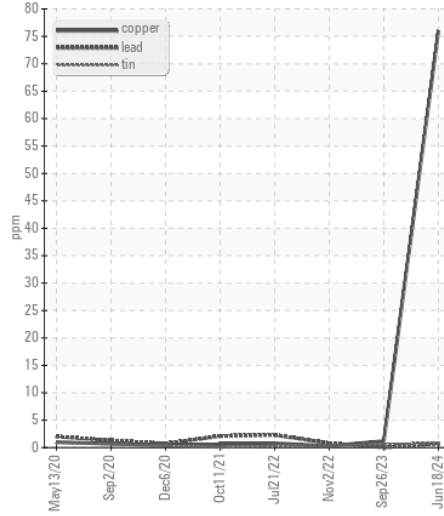
Ferrous Alloys



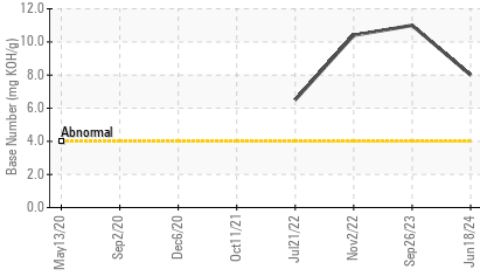
FT-IR (Direct Trend)



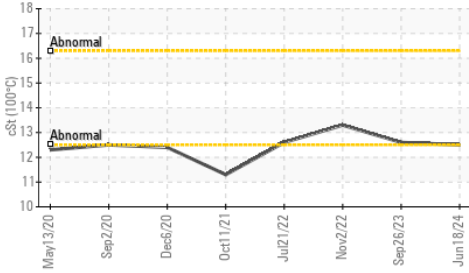
▲ Non-ferrous Metals



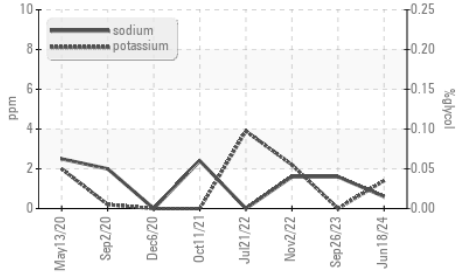
Base Number



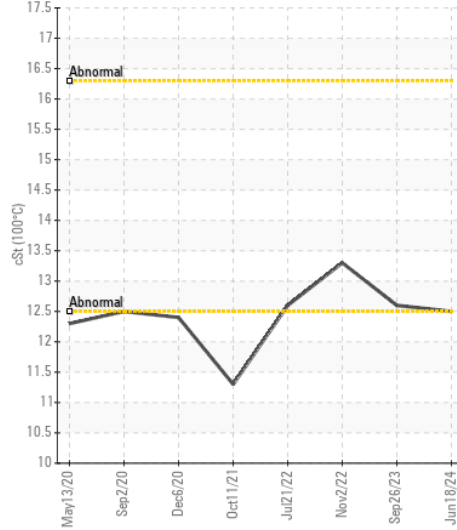
Viscosity @ 100°C



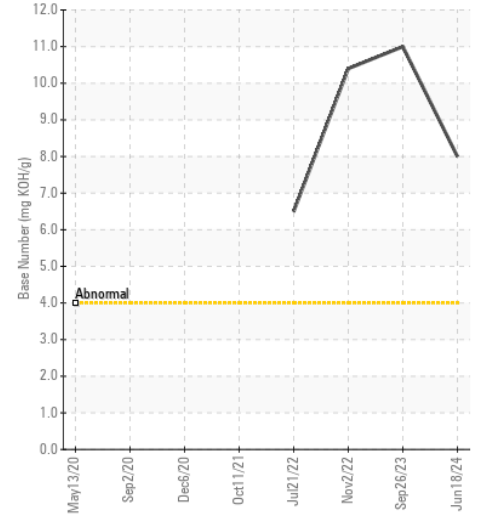
Glycol Contamination



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : ASC0009783
Lab Number : 06216554
Unique Number : 11089418
Test Package : CONST (Additional Tests: Glycol, TBN)

CAROLINA EXCAVATING
 1036 BRANCHVIEW DR, SUITE 106
 CONCORD, NC
 US 28025
 Contact: KEVIN LADGERWOOD
 kevin@carlinaexcavation.com

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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