



VOLVO

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	ABNORMAL

Area
[SPM540957 OMNISOURCE]
 Machine Id
SENNEBOGEN 830E 830.0.2031
 Component
Diesel Engine
 Fluid
VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3 (--- GAL)

RECOMMENDATION

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.
 NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		VCP402962	VCP341387	VCP336247
Sample Date		Client Info		12 May 2023	03 Jun 2022	15 Sep 2021
Machine Age	hrs	Client Info		7105	5777	5198
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				SEVERE	NORMAL	ABNORMAL

WEAR

Cylinder, crank, or cam shaft wear is indicated.

Iron	ppm	ASTM D5185m	>100	▲ 115	72	83
Chromium	ppm	ASTM D5185m	>20	5	3	3
Nickel	ppm	ASTM D5185m	>4	2	<1	<1
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	19	5	4
Lead	ppm	ASTM D5185m	>40	2	<1	<1
Copper	ppm	ASTM D5185m	>330	3	2	2
Tin	ppm	ASTM D5185m	>15	<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

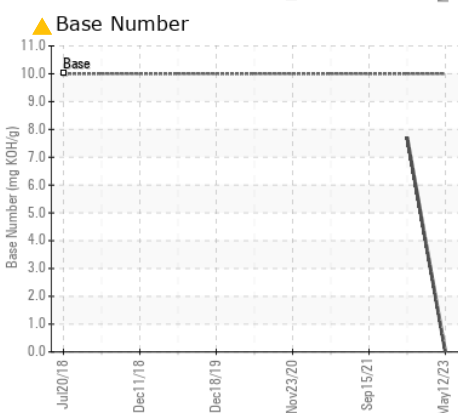
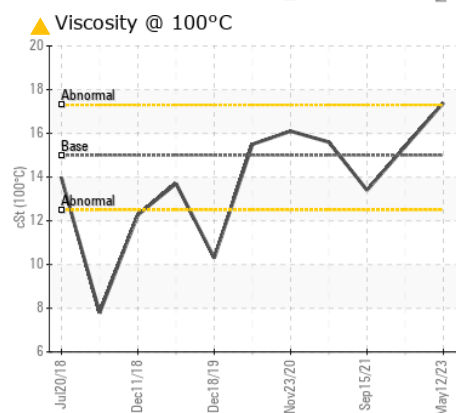
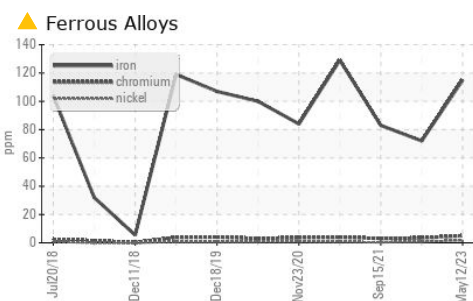
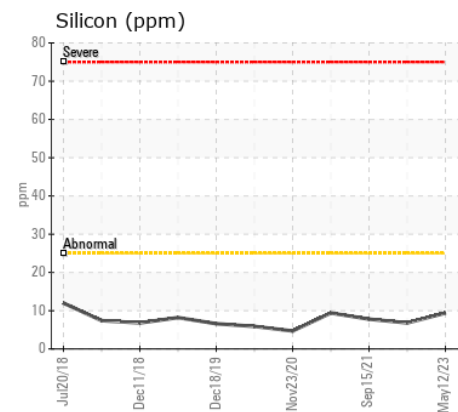
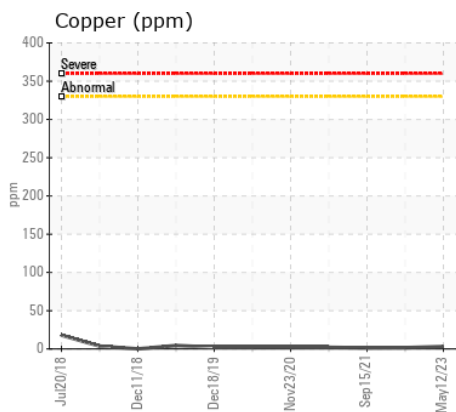
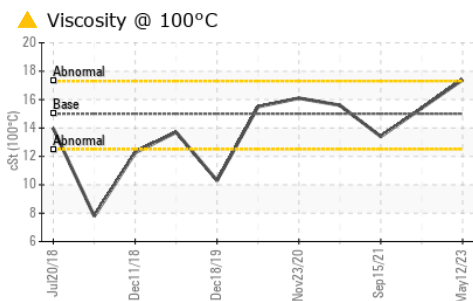
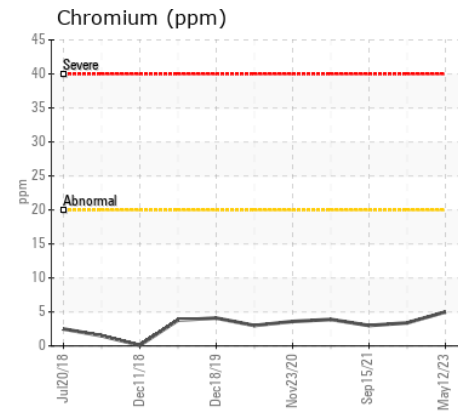
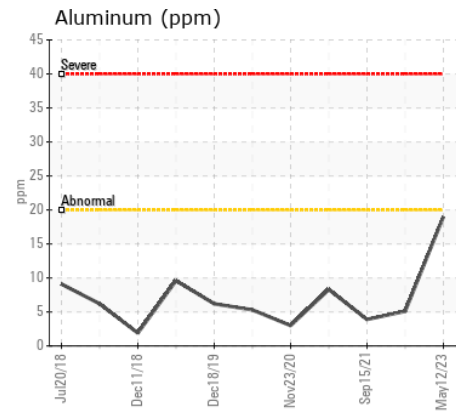
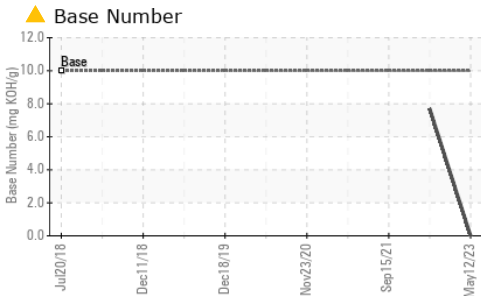
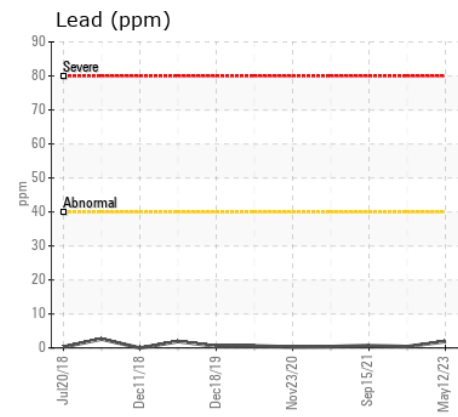
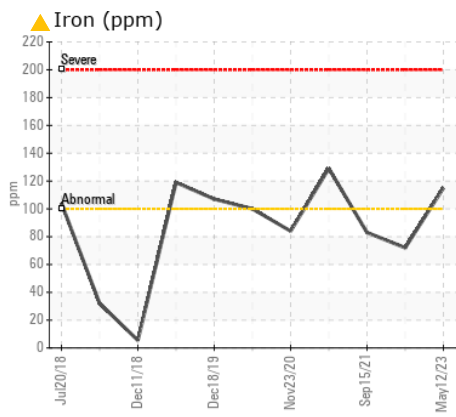
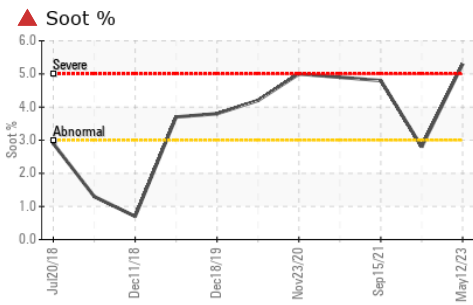
There is an abnormal amount of solids and carbon present in the oil.

Silicon	ppm	ASTM D5185m	>25	9	7	8
Potassium	ppm	ASTM D5185m	>20	17	0	1
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	▲ 5.3	2.8	▲ 4.8
Nitration	Abs/cm	*ASTM D7624	>20	22.4	16.4	18.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	41.1	30.7	35.4
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	>0.2	NEG	NEG	NEG

FLUID CONDITION

The oil viscosity is higher than normal. The BN level is low.

Sodium	ppm	ASTM D5185m		1	2	2
Boron	ppm	ASTM D5185m	2.5	2	14	21
Barium	ppm	ASTM D5185m	0.0	0	0	0
Molybdenum	ppm	ASTM D5185m	0.7	71	61	43
Manganese	ppm	ASTM D5185m	0.0	1	<1	<1
Magnesium	ppm	ASTM D5185m	256	1035	874	554
Calcium	ppm	ASTM D5185m	2057	1234	1382	1580
Phosphorus	ppm	ASTM D5185m	935	1118	994	893
Zinc	ppm	ASTM D5185m	1223	1403	1294	1213
Sulfur	ppm	ASTM D5185m	4079	2799	2774	2403
Oxidation	Abs/.1mm	*ASTM D7414	>25	37.0	26.5	30.5
Base Number (BN)	mg KOH/g	ASTM D2896	10	▲ 0.0	7.7	---
Visc @ 100°C	cSt	ASTM D445	15.0	▲ 17.4	15.4	13.4



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : VCP402962 **Received** : 19 May 2023
Lab Number : 05851681 **Tested** : 23 May 2023
Unique Number : 10481036 **Diagnosed** : 23 May 2023 - Jonathan Hester
Test Package : MOB 1 (Additional Tests: TBN)

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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)