CONST ASCENDUM

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	SEVERE

Machine Id
VOLVO A45G 13383 (S/N 353441)
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 40 (--- GAL)

RECOMMENDATION

We advise that you check for faulty combustion and a possible overheat condition. We advise that you check the engine tuning and timing. We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We recommend that you drain the oil from the component if this has not already been done. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition. Please specify the brand, type, and viscosity of the oil on your next sample.

WEAR

Iron ppm levels are abnormal. Aluminum and lead ppm levels are noted. Cylinder, crank, or cam shaft wear is indicated.

CONTAMINATION

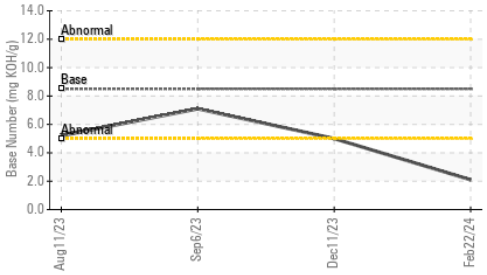
There is an abnormal level of nitration indicated. There is an abnormal level of sulfation indicated. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. High amount of ingressed dirt has caused abrasive wear to the component.

FLUID CONDITION

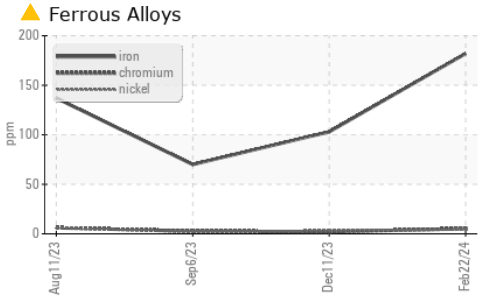
A small degree of oil oxidation was indicated. The low BN value indicates relatively little reserve alkalinity remaining in this oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		ASC0008627	VCP432535	VCP432897
Sample Date		Client Info		22 Feb 2024	11 Dec 2023	06 Sep 2023
Machine Age	hrs	Client Info		2992	2154	1390
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	ABNORMAL	ABNORMAL
Iron	ppm	ASTM D5185m	>100	▲ 182	▲ 103	70
Chromium	ppm	ASTM D5185m	>20	5	2	3
Nickel	ppm	ASTM D5185m	>2	4	3	2
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	● 13	● 8	● 15
Lead	ppm	ASTM D5185m	>40	● 19	3	<1
Copper	ppm	ASTM D5185m	>330	18	24	53
Tin	ppm	ASTM D5185m	>15	8	2	2
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	▲ 53	▲ 42	▲ 47
Potassium	ppm	ASTM D5185m	>20	3	2	3
Fuel		WC Method	>6.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	2.6	1.4	0.6
Nitration	Abs/cm	*ASTM D7624	>20	▲ 20.5	14.6	10.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	▲ 38.3	28.2	22.8
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
Sodium	ppm	ASTM D5185m	>216	3	3	3
Boron	ppm	ASTM D5185m	250	2	11	6
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	75	45	67
Manganese	ppm	ASTM D5185m		2	1	2
Magnesium	ppm	ASTM D5185m	450	1185	614	923
Calcium	ppm	ASTM D5185m	3000	1479	1557	1314
Phosphorus	ppm	ASTM D5185m	1150	1389	886	1107
Zinc	ppm	ASTM D5185m	1350	1603	1171	1365
Sulfur	ppm	ASTM D5185m	4250	3375	2420	3651
Oxidation	Abs/.1mm	*ASTM D7414	>25	▲ 43.5	29.7	19.1
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	▲ 2.1	5.0	7.1
Visc @ 100°C	cSt	ASTM D445	14.4	15.5	12.9	12.9

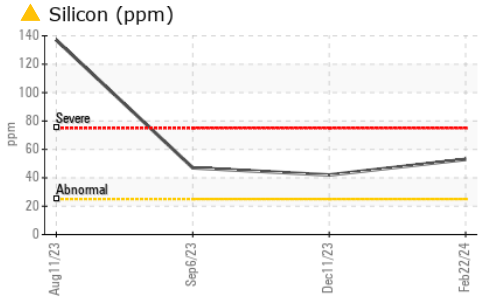
Base Number



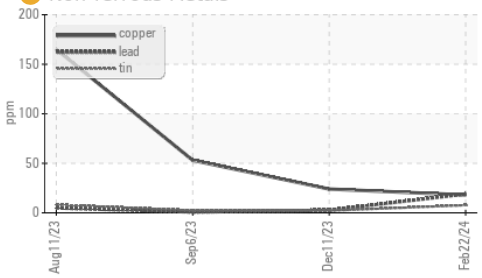
Ferrous Alloys



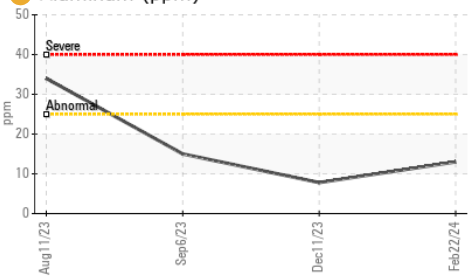
Silicon (ppm)



Non-ferrous Metals



Aluminum (ppm)



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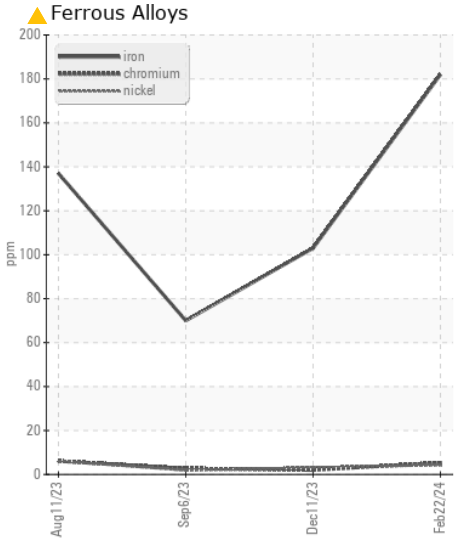
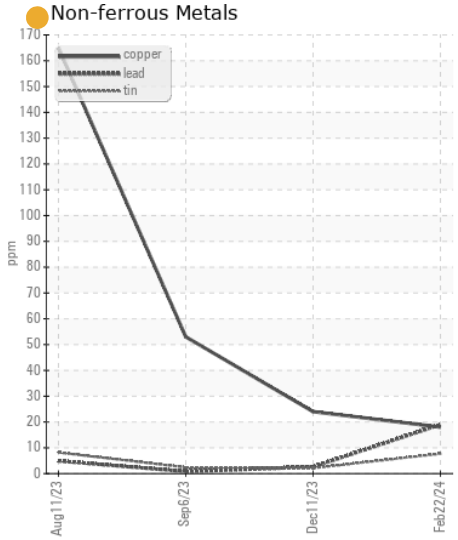
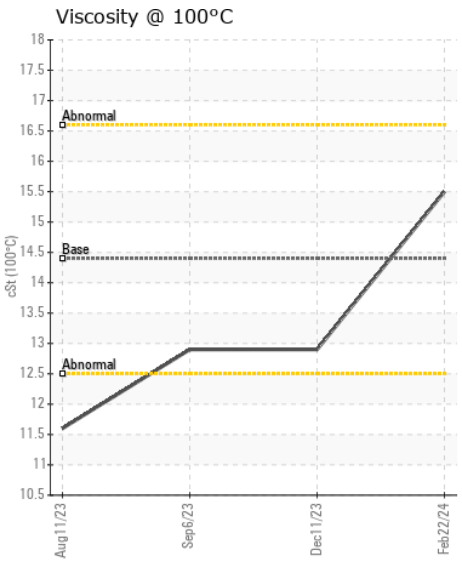


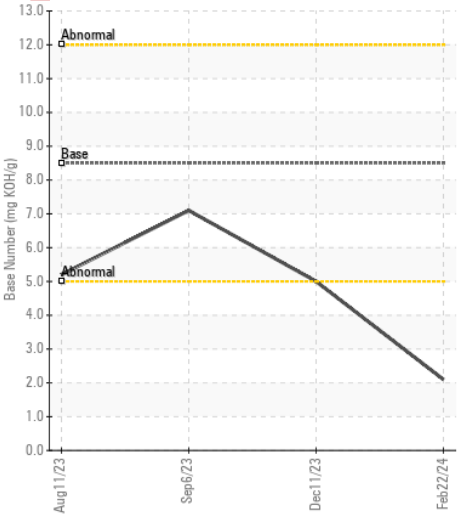
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : ASC0008627
Lab Number : 06121452
Unique Number : 10930285
Test Package : CONST (Additional Tests: TBN)

Received : 18 Mar 2024
Tested : 19 Mar 2024
Diagnosed : 20 Mar 2024 - Angela Borella

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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