



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id
VOLVO SD-116DX 001785 (S/N 199019)
 Component
Hydraulic System
 Fluid
CASTROL DUAL RANGE HV HYD OIL ISO 46 (23 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. We were unable to perform a particle count due to a high concentration of particles present in this sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0856176	WC0700988	WC0463859
Sample Date		Client Info		02 Jul 2024	15 Aug 2022	08 Jul 2020
Machine Age	hrs	Client Info		3903	3039	3039
Oil Age	hrs	Client Info		864	1500	500
Filter Age	hrs	Client Info		300	554	500
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>20	4	4	6
Chromium	ppm	ASTM D5185m	>10	<1	0	<1
Nickel	ppm	ASTM D5185m	>10	<1	0	<1
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m		<1	0	0
Aluminum	ppm	ASTM D5185m	>10	2	<1	<1
Lead	ppm	ASTM D5185m	>10	1	0	<1
Copper	ppm	ASTM D5185m	>75	2	2	2
Tin	ppm	ASTM D5185m	>10	<1	<1	0
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	VLITE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

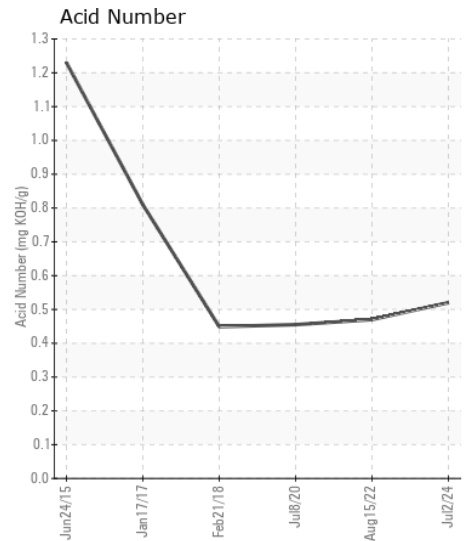
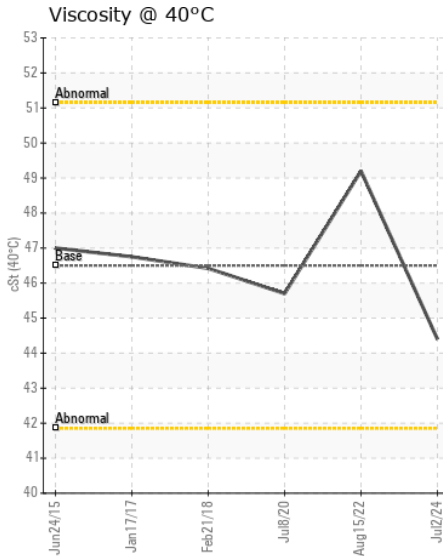
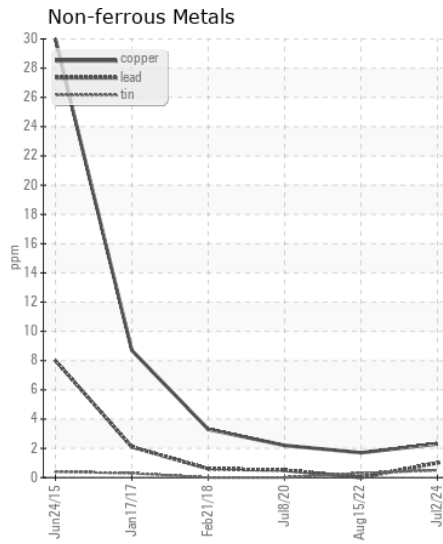
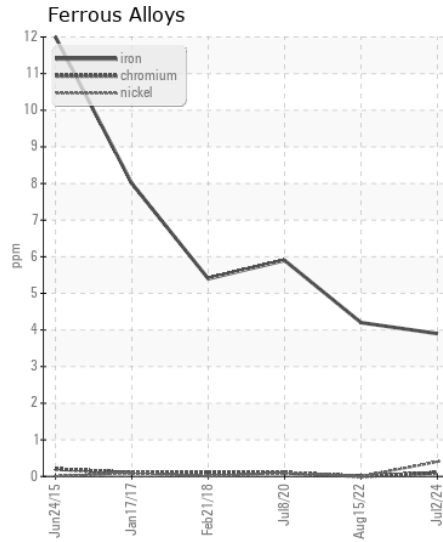
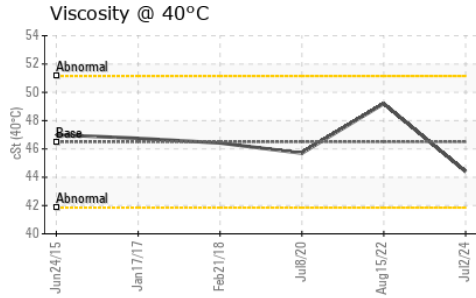
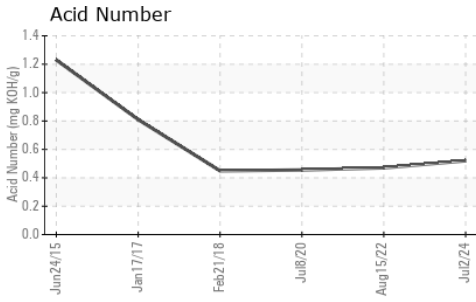
Moderate concentration of visible dirt/debris present in the oil.

Silicon	ppm	ASTM D5185m	>20	2	<1	1
Potassium	ppm	ASTM D5185m	>20	2	0	<1
Water		WC Method	>0.1	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>5000	---	---	▲ 58639
Particles >6µm		ASTM D7647	>1300	---	---	▲ 19782
Particles >14µm		ASTM D7647	>160	---	---	▲ 726
Particles >21µm		ASTM D7647	>40	---	---	▲ 69
Particles >38µm		ASTM D7647	>10	---	---	8
Particles >71µm		ASTM D7647	>3	---	---	2
Oil Cleanliness		ISO 4406 (c)	>19/17/14	---	---	▲ 23/21/17
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	▲ MODER	▲ MODER	LIGHT
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 AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		0	<1	<1
Boron	ppm	ASTM D5185m		12	3	2
Barium	ppm	ASTM D5185m		<1	0	0
Molybdenum	ppm	ASTM D5185m		10	1	1
Manganese	ppm	ASTM D5185m		<1	0	<1
Magnesium	ppm	ASTM D5185m		94	16	13
Calcium	ppm	ASTM D5185m		359	203	240
Phosphorus	ppm	ASTM D5185m		428	348	388
Zinc	ppm	ASTM D5185m		522	418	465
Sulfur	ppm	ASTM D5185m		1382	1099	1673
Acid Number (AN)	mg KOH/g	ASTM D8045		0.52	0.47	0.455
Visc @ 40°C	cSt	ASTM D445	46.5	44.4	49.2	45.7



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : WC0856176

Lab Number : 06231435

Unique Number : 11114928

Test Package : CONST

Received : 09 Jul 2024

Tested : 10 Jul 2024

Diagnosed : 10 Jul 2024 - Don Baldrige

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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)