



McCLUNG-LOGAN
EQUIPMENT COMPANY, INC.

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
VOLVO EC220E 314249

Component
Diesel Engine

Fluid
VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3 (7 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		ML0001332	VCP388530	VCP327655
Sample Date		Client Info		29 Apr 2024	07 Nov 2023	10 Nov 2021
Machine Age	hrs	Client Info		11	1121	557
Oil Age	hrs	Client Info		1588	0	557
Filter Age	hrs	Client Info		1588	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	SEVERE	NORMAL

WEAR

The aluminum level is abnormal. All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	25	62	35
Chromium	ppm	ASTM D5185m	>10	1	3	2
Nickel	ppm	ASTM D5185m	>10	<1	2	5
Titanium	ppm	ASTM D5185m		2	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>10	▲ 24	▲ 34	7
Lead	ppm	ASTM D5185m	>20	<1	0	1
Copper	ppm	ASTM D5185m	>15	2	3	9
Tin	ppm	ASTM D5185m	>10	1	1	3
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

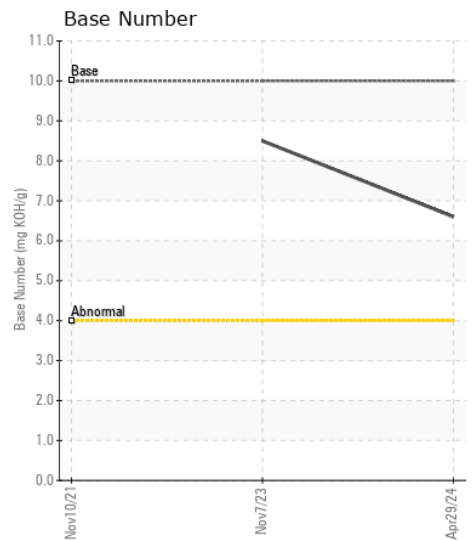
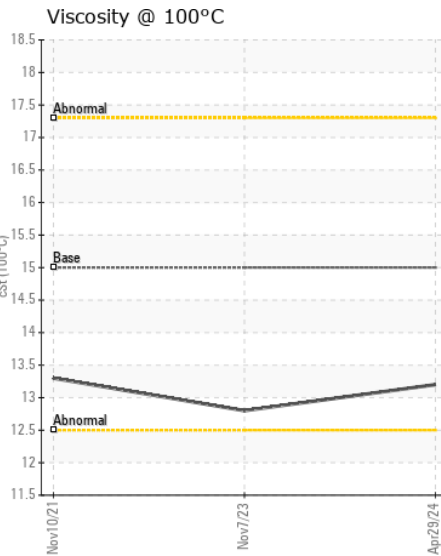
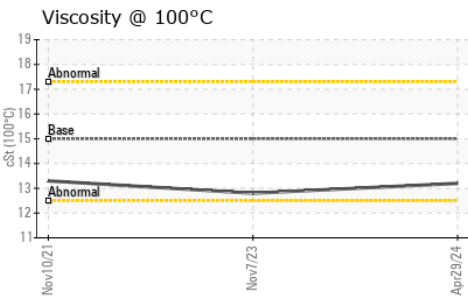
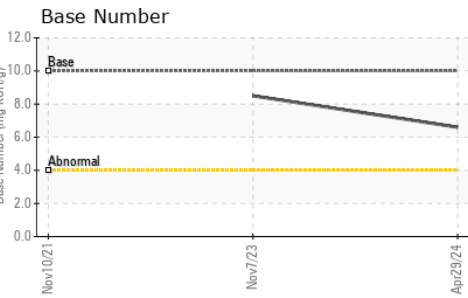
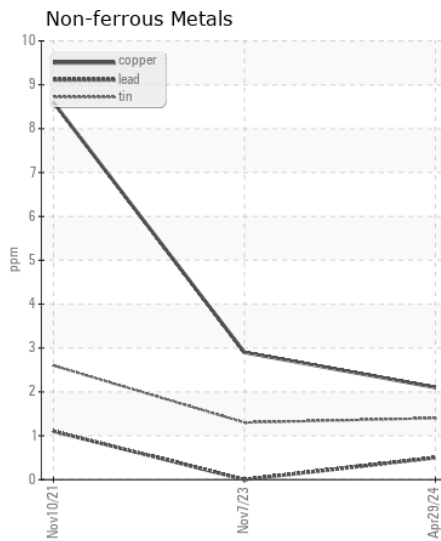
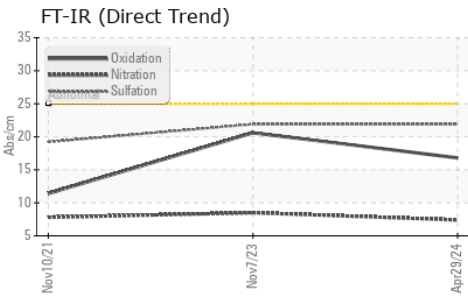
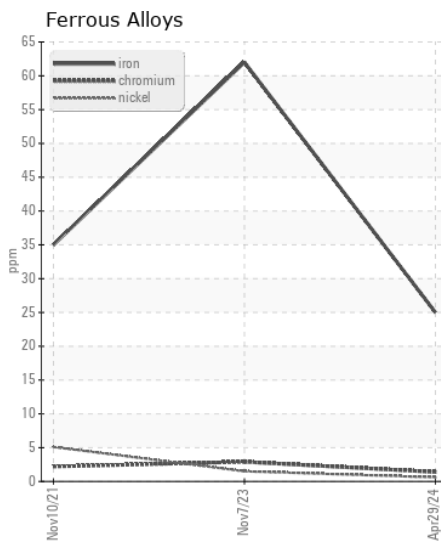
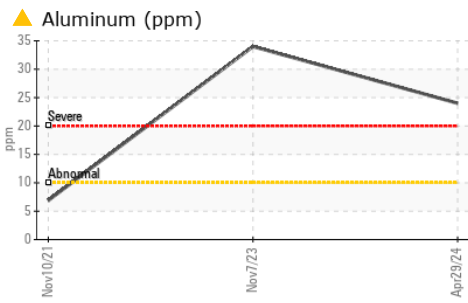
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	14	17	16
Potassium	ppm	ASTM D5185m	>20	2	<1	3
Fuel		WC Method	>6.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.1	0.3	0.1
Nitration	Abs/cm	*ASTM D7624	>20	7.4	8.5	7.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.9	21.9	19.2
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		0	3	3
Boron	ppm	ASTM D5185m	2.5	357	32	9
Barium	ppm	ASTM D5185m	0.0	2	0	0
Molybdenum	ppm	ASTM D5185m	0.7	96	37	7
Manganese	ppm	ASTM D5185m	0.0	<1	1	4
Magnesium	ppm	ASTM D5185m	256	412	471	64
Calcium	ppm	ASTM D5185m	2057	1481	1813	2457
Phosphorus	ppm	ASTM D5185m	935	1078	960	895
Zinc	ppm	ASTM D5185m	1223	1258	1214	1016
Sulfur	ppm	ASTM D5185m	4079	3428	2959	3378
Oxidation	Abs/.1mm	*ASTM D7414	>25	16.8	20.6	11.4
Base Number (BN)	mg KOH/g	ASTM D2896	10	6.6	8.5	---
Visc @ 100°C	cSt	ASTM D445	15.0	13.2	12.8	13.3



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : ML0001332 **Received** : 10 May 2024
Lab Number : 06176447 **Tested** : 13 May 2024
Unique Number : 11022500 **Diagnosed** : 15 May 2024 - Sean Felton
Test Package : CONST (Additional Tests: TBN)

RECYCLE 1
 4700 LAWRENCE ST
 HYATTSVILLE, MD
 US 20781
 Contact: MIKE DESJARDINS
 mdesjarkins@wbwaste.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)