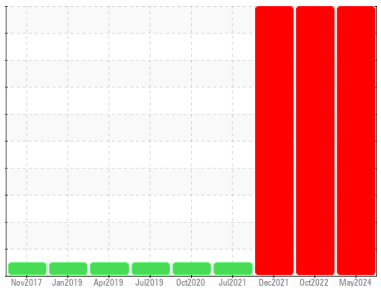
OIL DIAGNOSTICS

OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL

Machine Id
VOLVO A25C HT-3 (S/N 10368)
Component
Diesel Engine
Fluid
PETRO CANADA DURON HP 15W40 (7 GAL)

DIAGNOSIS

Recommendation
We advise that you check for the source of the coolant leak. Check for low coolant level. We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear
Bearing and/or bushing wear is indicated.

Contamination
Sodium and/or potassium levels are high. There is a high concentration of glycol present in the oil. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PCA0104501**	PCA0071908	PCA0059366
Sample Date		Client Info		**29 May 2024**	31 Oct 2022	09 Dec 2021
Machine Age	hrs	Client Info		**22237**	21653	21345
Oil Age	hrs	Client Info		**584**	308	223
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**SEVERE**	SEVERE	SEVERE

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	**<1.0**	<1.0	<1.0
Water		WC Method	>0.2	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>200	**169**	71	57
Chromium	ppm	ASTM D5185m	>20	**3**	1	1
Nickel	ppm	ASTM D5185m	>10	**3**	0	2
Titanium	ppm	ASTM D5185m		**<1**	<1	<1
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>30	**11**	7	11
Lead	ppm	ASTM D5185m	>40	**47**	46	173
Copper	ppm	ASTM D5185m	>20	**162**	171	401
Tin	ppm	ASTM D5185m	>20	**<1**	0	1
Antimony	ppm	ASTM D5185m		**---**	---	2
Vanadium	ppm	ASTM D5185m		**<1**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**0**	0	17
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**292**	116	132
Manganese	ppm	ASTM D5185m		**3**	2	3
Magnesium	ppm	ASTM D5185m		**940**	854	697
Calcium	ppm	ASTM D5185m		**1086**	1051	952
Phosphorus	ppm	ASTM D5185m		**1099**	967	950
Zinc	ppm	ASTM D5185m		**1213**	1157	1065
Sulfur	ppm	ASTM D5185m		**3593**	3502	2670

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	**81**	13	14
Sodium	ppm	ASTM D5185m		**2266**	678	353
Potassium	ppm	ASTM D5185m	>20	**2066**	828	1115
Glycol	%	*ASTM D2982		**0.20**	0.12	0.12

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**1.9**	1.4	1.1
Nitration	Abs/cm	*ASTM D7624	>20	**18.6**	13.6	11.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	**26.4**	24.5	21.2

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**19.2**	19.2	15.5
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	**15.86**	9.98	9.54

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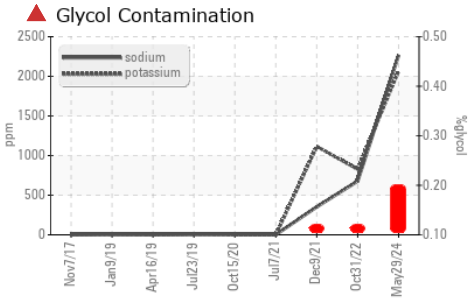
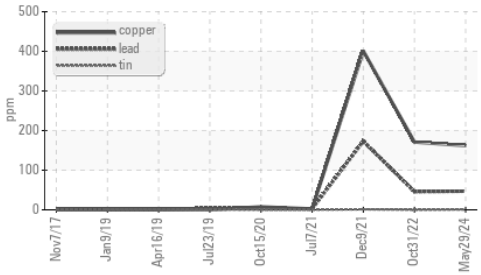
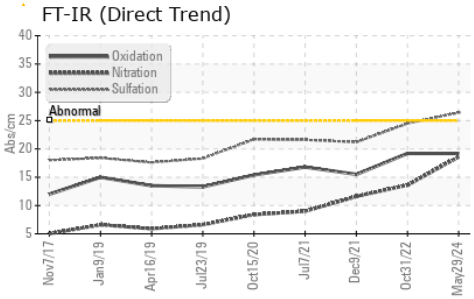
Glycol Contamination



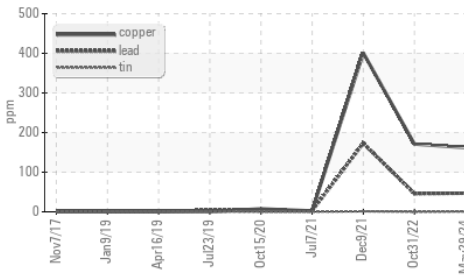
Non-ferrous Metals



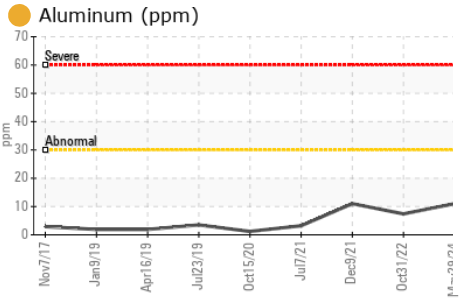
FT-IR (Direct Trend)



Non-ferrous Metals



Aluminum (ppm)

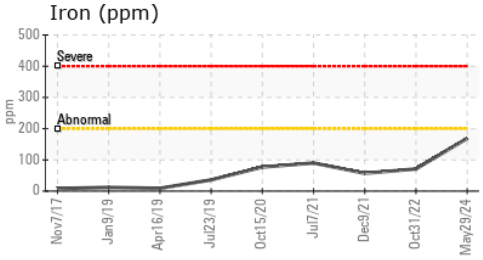


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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
Free Water	scalar	*Visual		**NEG**	NEG	NEG

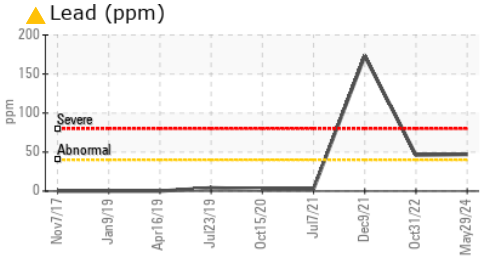
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.6	**15.1**	12.9	13.9

GRAPHS

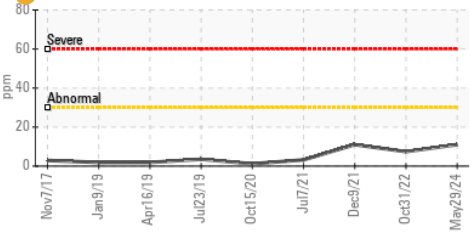
Iron (ppm)



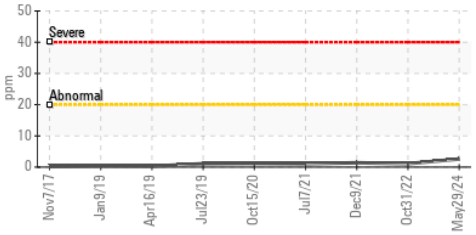
Lead (ppm)



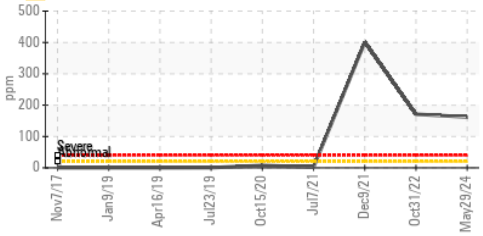
Aluminum (ppm)



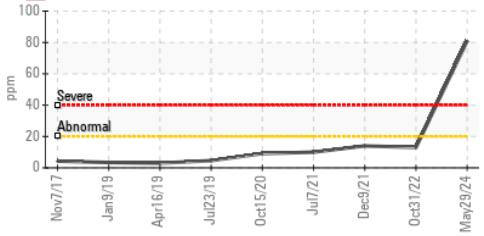
Chromium (ppm)



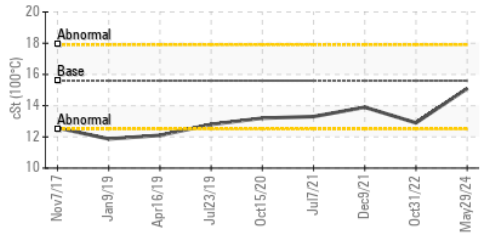
Copper (ppm)



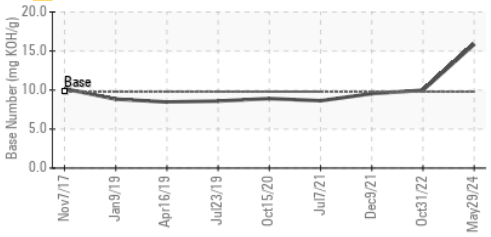
Silicon (ppm)



Viscosity @ 100°C



Base Number



ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0104501
Lab Number : 06201644
Unique Number : 11063767
Test Package : MOB 2

Received : 06 Jun 2024
Tested : 11 Jun 2024
Diagnosed : 11 Jun 2024 - Jonathan Hester

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)

J F PRICE
611 PLEASANT ST
E WEYMOUTH, MA
US 02189
Contact: JOHN LANG
gnalj1970@comcast.net
T: (617)435-7199
F: (781)337-4150

Report Id: JFPEWE [WUSCAR] 06201644 (Generated: 06/11/2024 11:44:53) Rev: 1

Submitted By: JOHN LANG