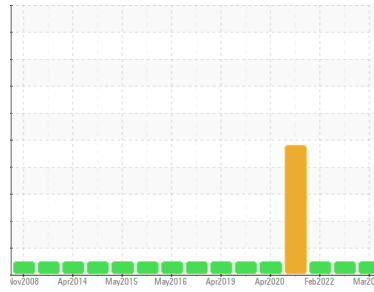




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area

Boat Deck

Machine Id

VOLVO D4 300A-D G5-83111 (S/N 2004031582)

Component

Diesel Engine

Fluid

VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3 (10 LTR)

DIAGNOSIS

Recommendation

Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

Additive levels indicate the addition of a different brand, or type of oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0700683	WC0700670	WC0490576
Sample Date	Client Info		04 Mar 2023	10 Sep 2022	06 Feb 2022
Machine Age	hrs	Client Info	1019	957	864
Oil Age	hrs	Client Info	62	93	164
Oil Changed	Client Info		Not Chngd	Changed	Changed
Sample Status			NORMAL	NORMAL	NORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>4.0	<1.0	<1.0	<1.0
Water	WC Method	>0.1	NEG	NEG	NEG
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185(m)	>80	5	5	4
Chromium	ppm	ASTM D5185(m)	>6	0	0	0
Nickel	ppm	ASTM D5185(m)	>2	<1	<1	<1
Titanium	ppm	ASTM D5185(m)	>2	<1	<1	0
Silver	ppm	ASTM D5185(m)	>2	0	0	0
Aluminum	ppm	ASTM D5185(m)	>20	1	1	<1
Lead	ppm	ASTM D5185(m)	>95	<1	<1	<1
Copper	ppm	ASTM D5185(m)	>85	<1	2	2
Tin	ppm	ASTM D5185(m)	>9	<1	<1	<1
Antimony	ppm	ASTM D5185(m)		0	<1	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		0	0	0

ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185(m)	2.5	2	4	12
Barium	ppm	ASTM D5185(m)	0.0	0	0	0
Molybdenum	ppm	ASTM D5185(m)	0.7	58	57	51
Manganese	ppm	ASTM D5185(m)	0.0	<1	<1	<1
Magnesium	ppm	ASTM D5185(m)	256	942	916	865
Calcium	ppm	ASTM D5185(m)	2057	1089	1024	875
Phosphorus	ppm	ASTM D5185(m)	935	1016	1022	1071
Zinc	ppm	ASTM D5185(m)	1223	1088	1095	1017
Sulfur	ppm	ASTM D5185(m)	4079	2693	2650	2799
Lithium	ppm	ASTM D5185(m)		<1	<1	0

CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m)	>25	4	4	5
Sodium	ppm	ASTM D5185(m)		3	3	3
Potassium	ppm	ASTM D5185(m)	>20	0	0	2

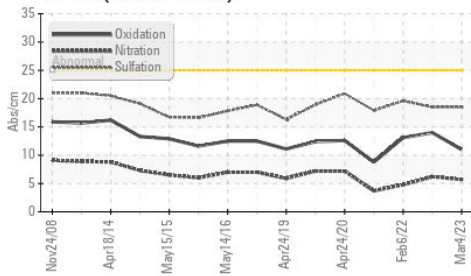
INFRA-RED

	method	limit/base	current	history1	history2	
Soot %	%	ASTM D7844*		0	0	0
Nitration	Abs/cm	ASTM D7624*	>20	5.7	6.2	4.8
Sulfation	Abs/.1mm	ASTM D7415*	>30	18.5	18.5	19.6

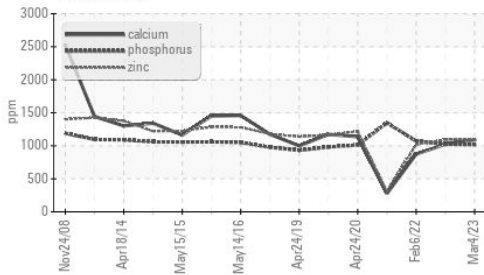


OIL ANALYSIS REPORT

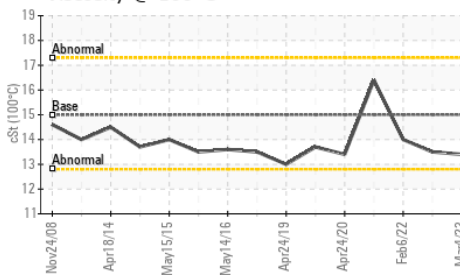
FT-IR (Direct Trend)



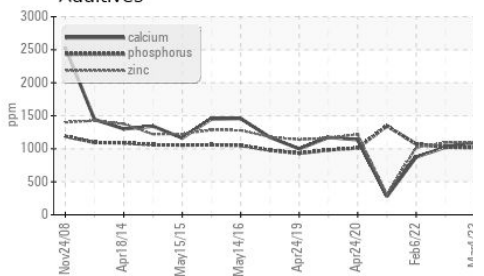
Additives



Viscosity @ 100°C



Additives



FLUID DEGRADATION method limit/base current history1 history2

Oxidation	Abs/.1mm	ASTM D7414*	>25	11.0	14.0	13.1
Base Number (BN)	mg KOH/g	ASTM D2896*	10	9.24	8.70	8.30

VISUAL method limit/base current history1 history2

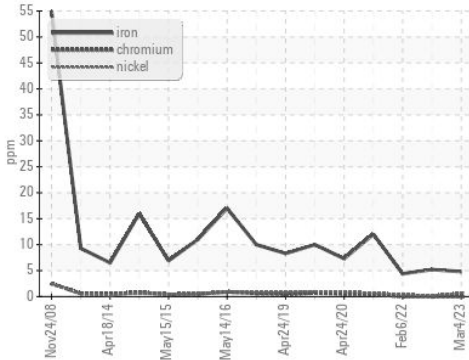
Emulsified Water	scalar	Visual*	>0.1	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG

FLUID PROPERTIES method limit/base current history1 history2

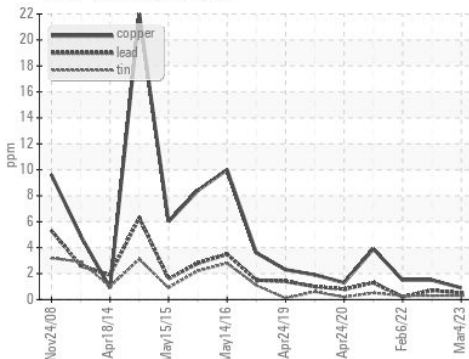
Visc @ 100°C	cSt	ASTM D7279(m)	15.0	13.4	13.5	14.0
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GRAPHS

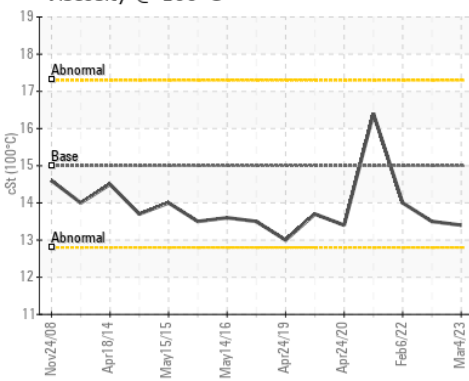
Ferrous Alloys



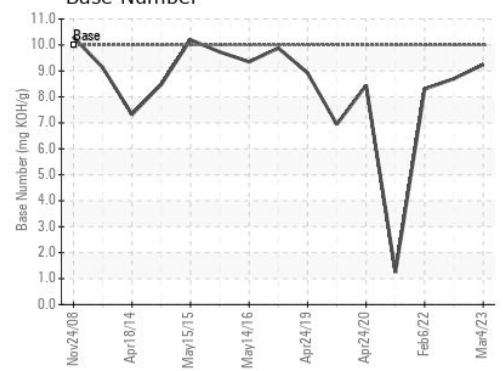
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0700683
Lab Number : 02550794
Unique Number : 5555804
Test Package : MAR 2

CANADIAN COAST GUARD
 CCGS GRIFFON, PO BOX 1000, 401 KING ST.W
 Prescott, ON
 CA K6V 5T3
 Contact: Laurie Bosley
 Laurie.Bosley@dfo-mpo.gc.ca

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

T:
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