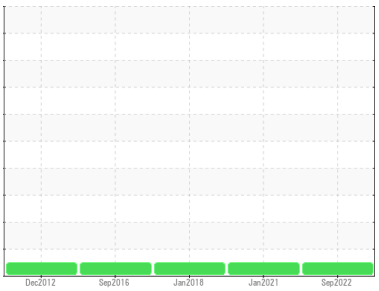
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Area
MARS [136034]
Machine Id
UNIT #2 (S/N 25291510)
Component
Diesel Engine
Fluid
VALVOLINE 15W40 (--- GAL)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor.

Wear
Metal levels are typical for a new component breaking in.

Contamination
There is no indication of any contamination in the oil.

Fluid Condition
The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**CU0017622**	CU0017149	CU0013698
Sample Date		Client Info		**08 Sep 2022**	04 Jan 2021	17 Jan 2018
Machine Age	hrs	Client Info		**334**	304	272
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**NORMAL**	NORMAL	NORMAL

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
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>90	**2**	2	2
Chromium	ppm	ASTM D5185(m)	>20	**0**	0	0
Nickel	ppm	ASTM D5185(m)	>2	**0**	<1	<1
Titanium	ppm	ASTM D5185(m)	>2	**<1**	<1	20
Silver	ppm	ASTM D5185(m)	>2	**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>20	**<1**	<1	1
Lead	ppm	ASTM D5185(m)	>40	**<1**	<1	<1
Copper	ppm	ASTM D5185(m)	>330	**<1**	<1	<1
Tin	ppm	ASTM D5185(m)	>15	**0**	<1	<1
Antimony	ppm	ASTM D5185(m)		**0**	<1	1
Vanadium	ppm	ASTM D5185(m)		**0**	0	<1
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	0	0

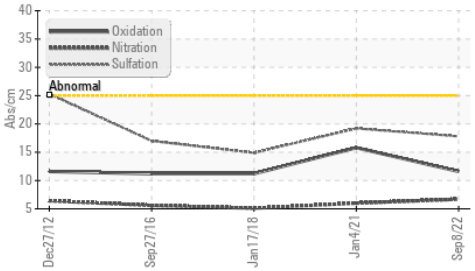
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		**17**	57	<1
Barium	ppm	ASTM D5185(m)		**0**	0	0
Molybdenum	ppm	ASTM D5185(m)		**13**	44	41
Manganese	ppm	ASTM D5185(m)		**<1**	<1	0
Magnesium	ppm	ASTM D5185(m)		**153**	615	961
Calcium	ppm	ASTM D5185(m)		**2036**	1416	1207
Phosphorus	ppm	ASTM D5185(m)		**940**	986	1037
Zinc	ppm	ASTM D5185(m)		**984**	1200	1269
Sulfur	ppm	ASTM D5185(m)		**2926**	2690	2917
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**2**	3	3
Sodium	ppm	ASTM D5185(m)		**2**	4	3
Potassium	ppm	ASTM D5185(m)	>20	**<1**	<1	<1

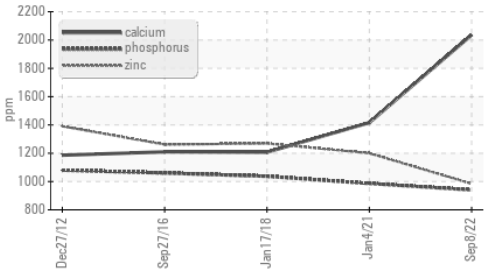
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>6	**0**	0	0
Nitration	Abs/cm	ASTM D7624*	>20	**6.7**	6.0	5.1
Sulfation	Abs/.1mm	ASTM D7415*	>30	**17.8**	19.2	14.9

OIL ANALYSIS REPORT

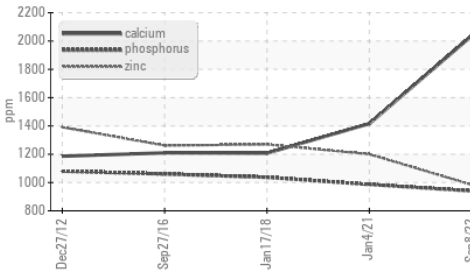
FT-IR (Direct Trend)



Additives



Additives



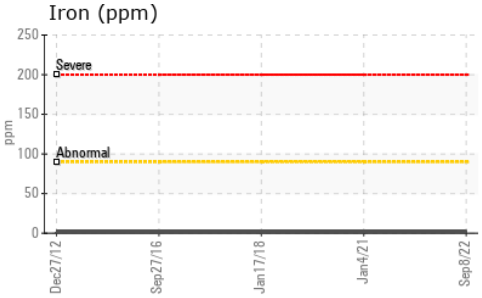
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**11.6**	15.8	11.2

VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

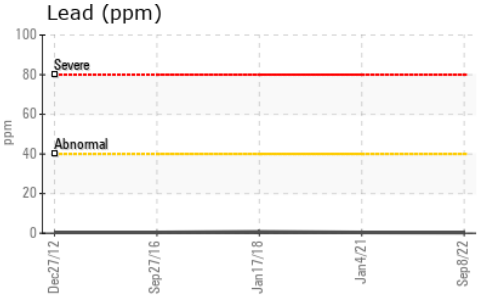
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)		**13.9**	14.0	13.6

GRAPHS

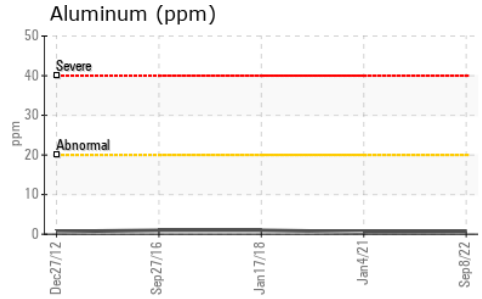
Iron (ppm)



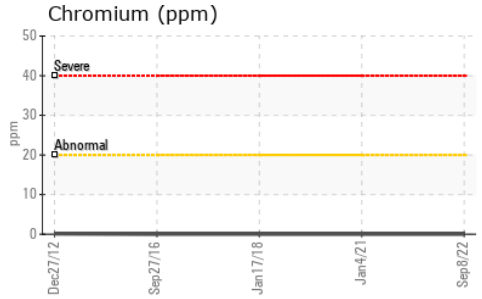
Lead (ppm)



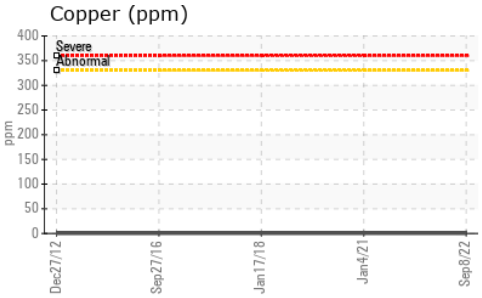
Aluminum (ppm)



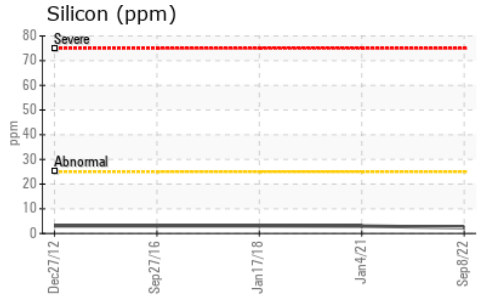
Chromium (ppm)



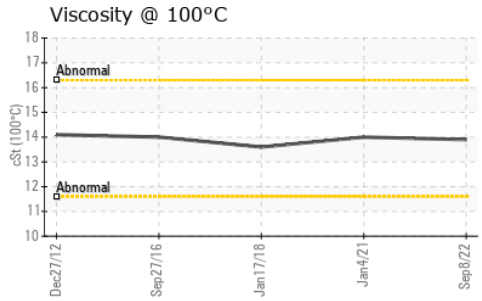
Copper (ppm)



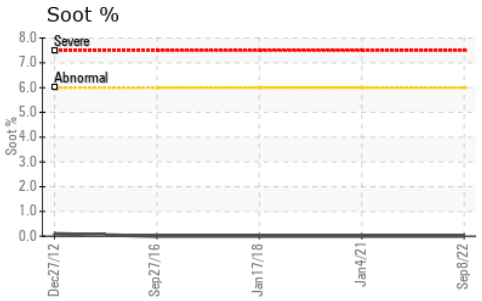
Silicon (ppm)



Viscosity @ 100°C



Soot %



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : CU0017622
Lab Number : 02510464
Unique Number : 5451434
Test Package : MOB 1

Received : 14 Sep 2022
Tested : 14 Sep 2022
Diagnosed : 14 Sep 2022 - Wes Davis

CUMMINS CANADA ULC - GENERATOR DIVISION
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MISSISSAUGA, ON
CA L5T 2A5
Contact: Elisia Johnson
elisia.johnson@cummins.com
T: (905)795-0050
F: (905)795-9252

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.