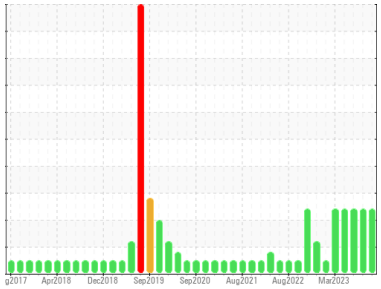
OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL

Machine Id
CUMMINS 178
Component
Rear Diesel Engine
Fluid
ESSO XD-3 EXTRA 15W40 (--- GAL)

DIAGNOSIS

Recommendation
Check for low coolant level. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear
All component wear rates are normal.

Contamination
Water treatment chemicals present, indicating slow coolant leak. Test for glycol is negative.

Fluid Condition
The condition of the oil is acceptable for the time in service (see recommendation).

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0816354**	WC0816420	WC0816565
Sample Date		Client Info		**06 Oct 2023**	15 Aug 2023	19 Jun 2023
Machine Age	kms	Client Info		**0**	0	0
Oil Age	kms	Client Info		**11019**	8779	9780
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL

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

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>90	**36**	28	29
Chromium	ppm	ASTM D5185(m)	>20	**<1**	<1	<1
Nickel	ppm	ASTM D5185(m)	>2	**<1**	<1	<1
Titanium	ppm	ASTM D5185(m)	>2	**0**	0	0
Silver	ppm	ASTM D5185(m)	>2	**<1**	0	0
Aluminum	ppm	ASTM D5185(m)	>20	**3**	3	3
Lead	ppm	ASTM D5185(m)	>40	**1**	<1	<1
Copper	ppm	ASTM D5185(m)	>330	**4**	4	4
Tin	ppm	ASTM D5185(m)	>15	**0**	0	0
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)		**40**	37	27
Barium	ppm	ASTM D5185(m)		**<1**	0	0
Molybdenum	ppm	ASTM D5185(m)		**1**	5	15
Manganese	ppm	ASTM D5185(m)		**0**	<1	<1
Magnesium	ppm	ASTM D5185(m)		**24**	62	200
Calcium	ppm	ASTM D5185(m)	3780	**2284**	2125	1916
Phosphorus	ppm	ASTM D5185(m)	1370	**806**	863	905
Zinc	ppm	ASTM D5185(m)	1500	**1016**	1014	1078
Sulfur	ppm	ASTM D5185(m)	3800	**2966**	2965	2801
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

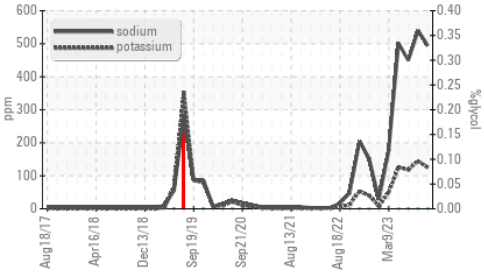
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**13**	10	8
Sodium	ppm	ASTM D5185(m)	>192	▲ **494**	▲ 540	▲ 450
Potassium	ppm	ASTM D5185(m)	>20	▲ **125**	▲ 145	▲ 118
Glycol	%	ASTM D7922*		**0.0**	0.0	0.0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>6	**0.6**	0.4	0.4
Nitration	Abs/cm	ASTM D7624*	>20	**12.2**	11.0	11.0
Sulfation	Abs/.1mm	ASTM D7415*	>30	**30.9**	28.9	28.2

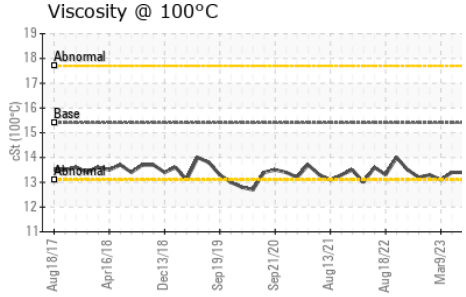
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**29.4**	26.6	26.7

OIL ANALYSIS REPORT

Glycol Contamination



Viscosity @ 100°C

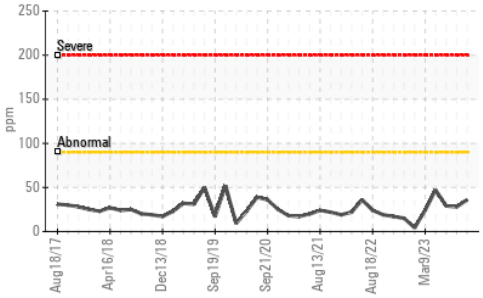


VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

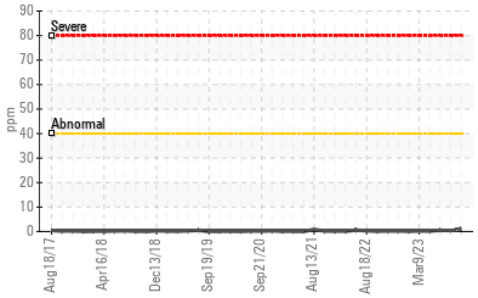
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	**14.3**	13.9	13.4

GRAPHS

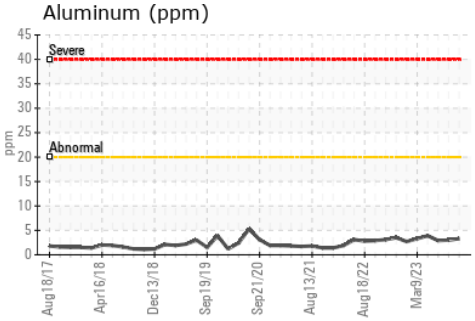
Iron (ppm)



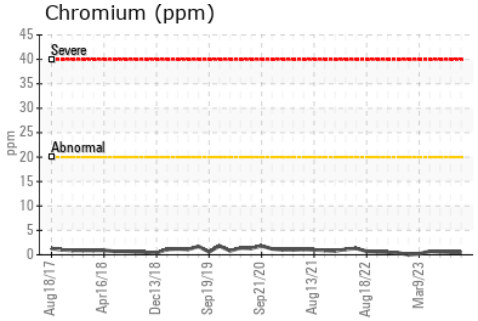
Lead (ppm)



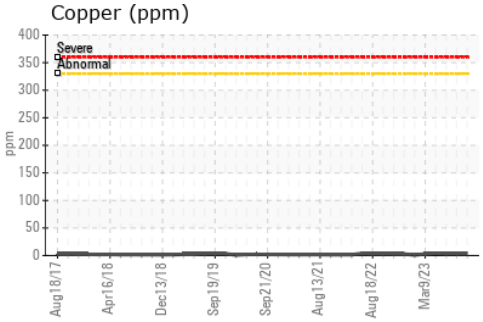
Aluminum (ppm)



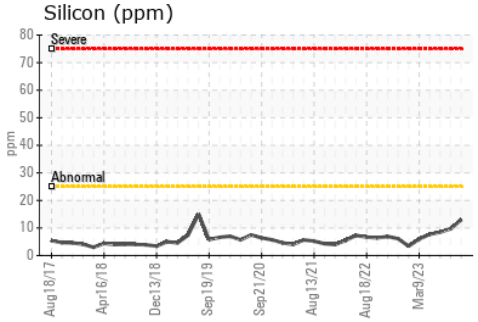
Chromium (ppm)



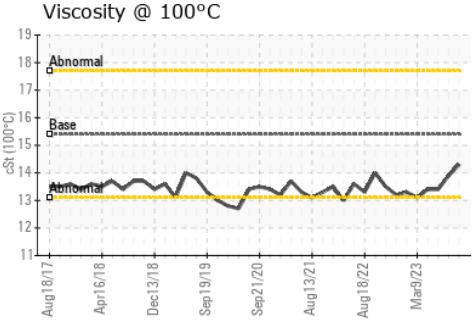
Copper (ppm)



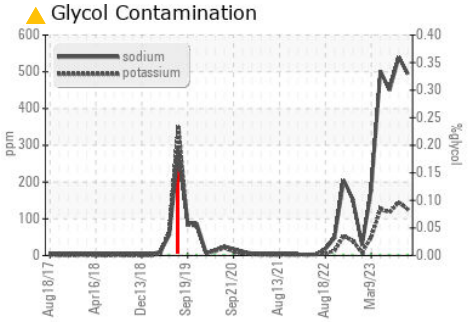
Silicon (ppm)



Viscosity @ 100°C



Glycol Contamination



ISO 17025:2017 Accredited Laboratory

Laboratory	: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9		
Sample No.	: WC0816354	**Received**	: 19 Oct 2023
Lab Number	: 02590231	**Diagnosed**	: 19 Oct 2023
Unique Number	: 5659297	**Diagnostician**	: Kevin Marson
Test Package	: MOB 1 (Additional Tests: Glycol)		

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.

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