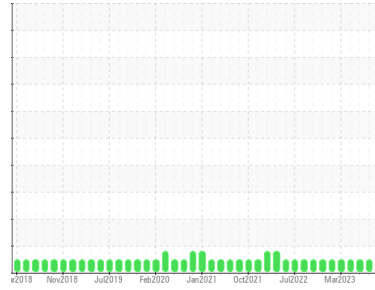




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Machine Id  
**CUMMINS 229**

Component  
**Rear Diesel Engine**

Fluid  
**ESSO XD-3 EXTRA 15W40 (--- GAL)**

## DIAGNOSIS

### Recommendation

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

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

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			<b>WC0866562</b>	WC0816410	WC0816571
Sample Date	Client Info			<b>23 Oct 2023</b>	16 Aug 2023	05 Jul 2023
Machine Age	kms	Client Info		<b>0</b>	0	0
Oil Age	kms	Client Info		<b>10970</b>	8636	10202
Oil Changed	Client Info			<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method	>3.0		<b>&lt;1.0</b>	<1.0	<1.0
Glycol	WC Method			<b>NEG</b>	0.0	0.0

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>90	<b>13</b>	9	9
Chromium	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185(m)	>2	<b>&lt;1</b>	<1	<1
Titanium	ppm	ASTM D5185(m)	>2	<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)	>2	<b>&lt;1</b>	0	<1
Aluminum	ppm	ASTM D5185(m)	>20	<b>3</b>	2	2
Lead	ppm	ASTM D5185(m)	>40	<b>&lt;1</b>	0	0
Copper	ppm	ASTM D5185(m)	>330	<b>6</b>	5	7
Tin	ppm	ASTM D5185(m)	>15	<b>0</b>	0	0
Antimony	ppm	ASTM D5185(m)		<b>0</b>	0	0
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Beryllium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Cadmium	ppm	ASTM D5185(m)		<b>0</b>	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		<b>77</b>	98	78
Barium	ppm	ASTM D5185(m)		<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185(m)		<b>&lt;1</b>	3	11
Manganese	ppm	ASTM D5185(m)		<b>0</b>	0	<1
Magnesium	ppm	ASTM D5185(m)		<b>16</b>	41	156
Calcium	ppm	ASTM D5185(m)	3780	<b>2150</b>	2166	2054
Phosphorus	ppm	ASTM D5185(m)	1370	<b>875</b>	1010	1048
Zinc	ppm	ASTM D5185(m)	1500	<b>1049</b>	1163	1167
Sulfur	ppm	ASTM D5185(m)	3800	<b>2758</b>	2901	2855
Lithium	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	<1

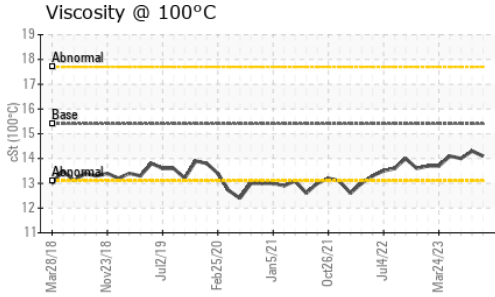
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	<b>6</b>	6	7
Sodium	ppm	ASTM D5185(m)	>192	<b>18</b>	20	31
Potassium	ppm	ASTM D5185(m)	>20	<b>8</b>	9	12

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>6	<b>0.4</b>	0.3	0.3
Nitration	Abs/cm	ASTM D7624*	>20	<b>9.8</b>	9.0	9.1
Sulfation	Abs/.1mm	ASTM D7415*	>30	<b>25.7</b>	25.0	24.1

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	<b>24.9</b>	22.7	22.6



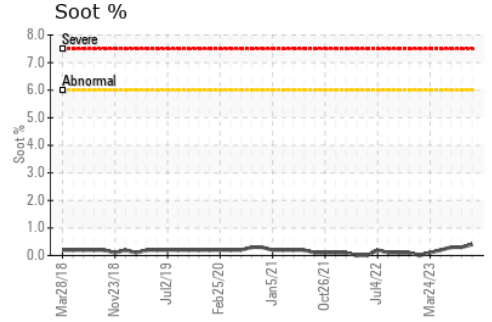
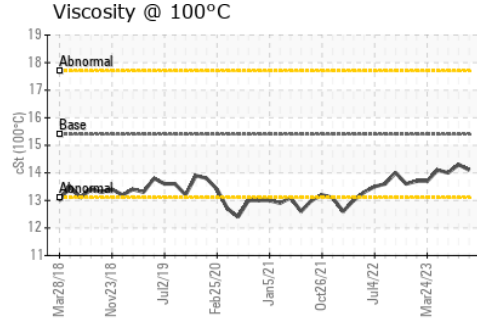
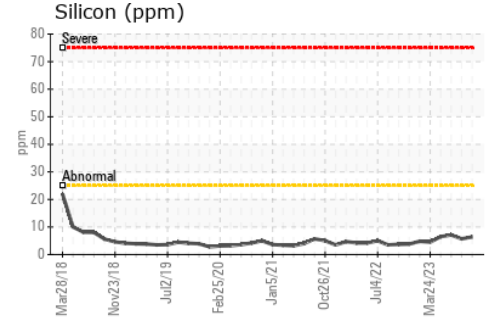
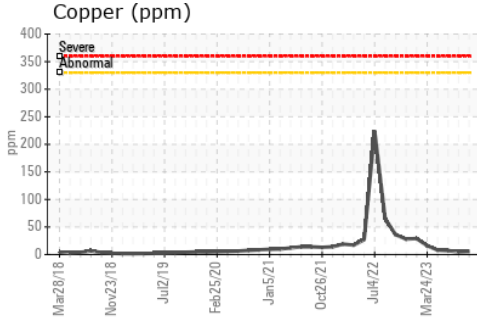
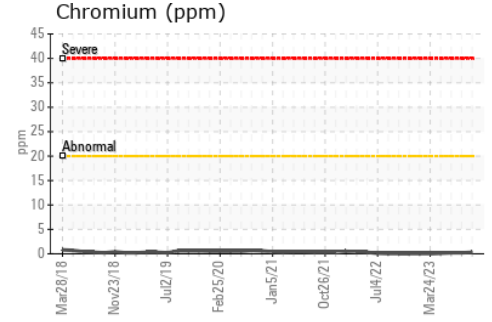
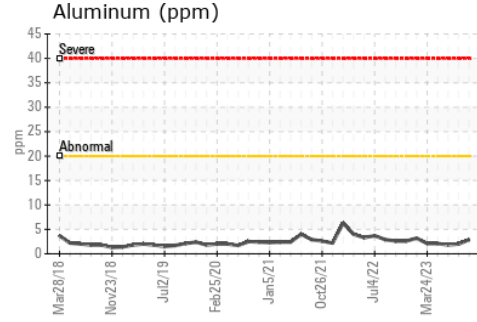
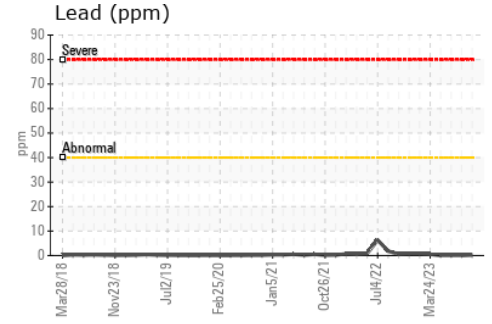
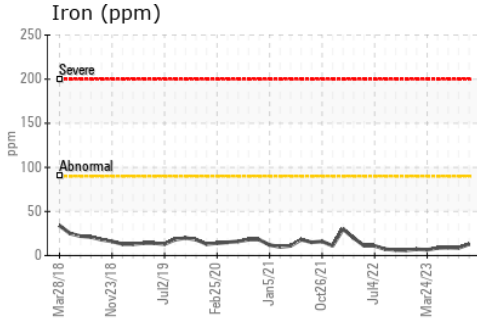
# OIL ANALYSIS REPORT



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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	14.1	14.3

## GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0866562 **Received** : 30 Oct 2023  
**Lab Number** : 02592591 **Diagnosed** : 30 Oct 2023  
**Unique Number** : 5669670 **Diagnostician** : Wes Davis  
**Test Package** : MOB 1

**CITY OF THUNDER BAY**  
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 CA P7B 2Z8  
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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.