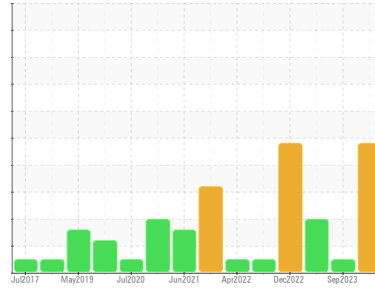




OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL



Area
3000 Series
 Machine Id
Freightliner 3220

Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (26 LTR)

DIAGNOSIS

Recommendation

We advise that you check for the source of the coolant leak. 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

Test for glycol is positive. There is a light concentration of glycol present in the oil.

Fluid Condition

The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0886679	WC0805712	WC0837240
Sample Date	Client Info		19 Dec 2023	07 Sep 2023	17 Jul 2023
Machine Age	mls	Client Info	235206	227300	224023
Oil Age	mls	Client Info	11183	3277	17116
Oil Changed	Client Info		Changed	Changed	Changed
Sample Status			ABNORMAL	NORMAL	ABNORMAL

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 D5185(m)	>75	28	19	▲ 79
Chromium	ppm	ASTM D5185(m)	>5	<1	<1	3
Nickel	ppm	ASTM D5185(m)	>4	<1	0	<1
Titanium	ppm	ASTM D5185(m)	>2	0	0	<1
Silver	ppm	ASTM D5185(m)	>2	0	0	<1
Aluminum	ppm	ASTM D5185(m)	>15	8	9	16
Lead	ppm	ASTM D5185(m)	>25	3	<1	6
Copper	ppm	ASTM D5185(m)	>100	2	1	7
Tin	ppm	ASTM D5185(m)	>4	0	0	<1
Antimony	ppm	ASTM D5185(m)		0	0	<1
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)	0	4	2	4
Barium	ppm	ASTM D5185(m)	0	0	0	0
Molybdenum	ppm	ASTM D5185(m)	60	67	60	82
Manganese	ppm	ASTM D5185(m)	0	0	<1	<1
Magnesium	ppm	ASTM D5185(m)	1010	907	924	995
Calcium	ppm	ASTM D5185(m)	1070	1078	1087	1103
Phosphorus	ppm	ASTM D5185(m)	1150	950	1015	1018
Zinc	ppm	ASTM D5185(m)	1270	1130	1155	1205
Sulfur	ppm	ASTM D5185(m)	2060	2589	2582	2369
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

CONTAMINANTS

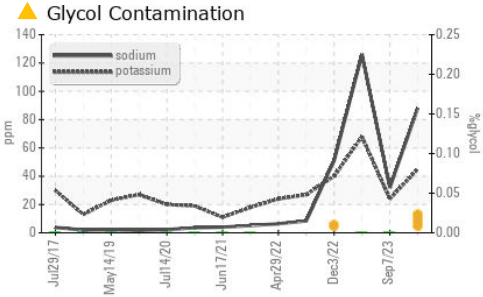
	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m)	>25	7	4	8
Sodium	ppm	ASTM D5185(m)		▲ 88	32	126
Potassium	ppm	ASTM D5185(m)	>20	▲ 45	24	▲ 68
Glycol	%	ASTM D7922*		▲ 0.029	0.0	0.0

INFRA-RED

	method	limit/base	current	history1	history2	
Soot %	%	ASTM D7844*	>6	0.5	0.3	1.2
Nitration	Abs/cm	ASTM D7624*	>20	10.3	8.6	16.7
Sulfation	Abs/1mm	ASTM D7415*	>30	22.1	20.0	30.2



OIL ANALYSIS REPORT

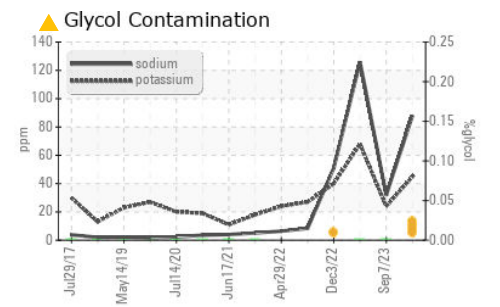
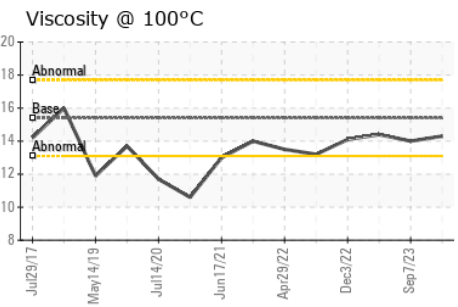
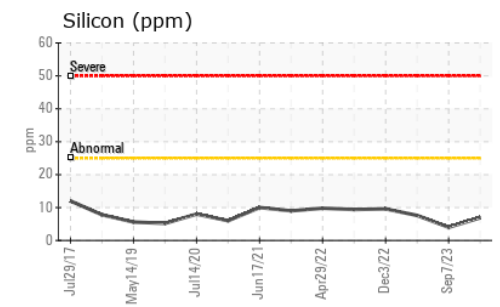
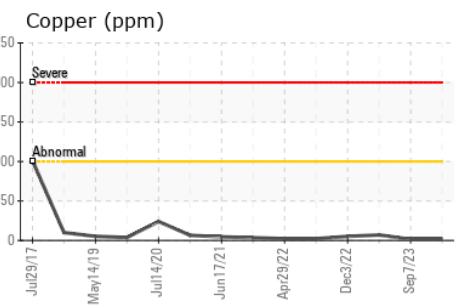
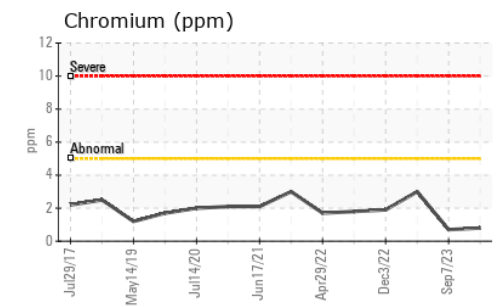
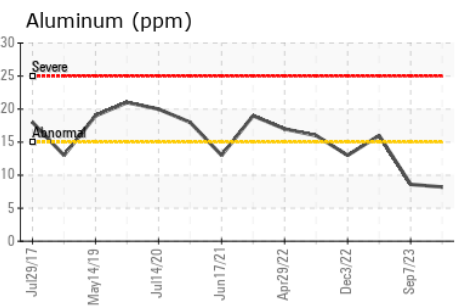
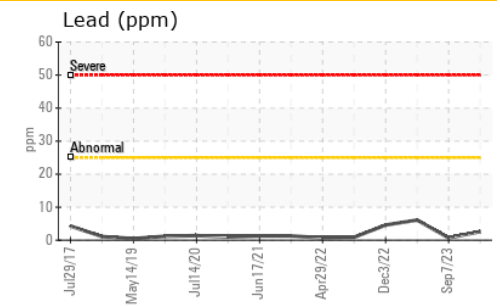
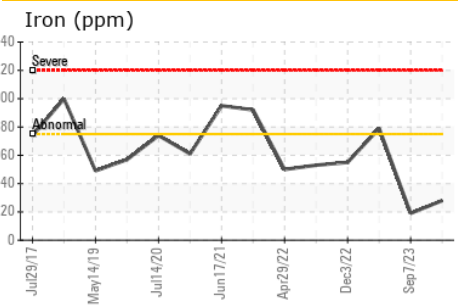
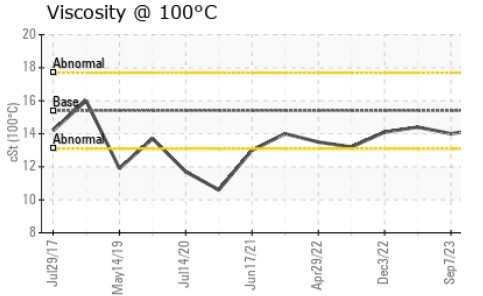


FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs./1mm	ASTM D7414*	>25	18.6	16.2	29.2

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)	15.4	14.3	14.0	14.4

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **MANITOU LIN TRANSPORT (GARAGE)**
Sample No. : WC0886679 **Received** : 28 Dec 2023 1335 SHAWSON DRIVE
Lab Number : **02605507** **Diagnosed** : 29 Dec 2023 MISSISSAUGA, ON
Unique Number : 5698592 **Diagnostician** : Wes Davis CA L4W 1C4
Test Package : MOB 1 (Additional Tests: Glycol) Contact: Travis Spence

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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