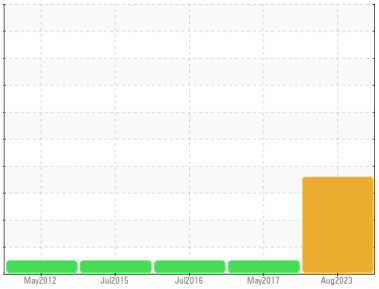
OIL ANALYSIS REPORT

Sample Rating Trend



FUEL

Machine Id
2010 FREIGHTLINER 30038 A/L 421
Component
Front Diesel Engine
Fluid
CASTROL HYPURON 15W40 (22 LTR)

DIAGNOSIS

Recommendation

We advise that you check the fuel injection system. Check for low coolant level. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

There is a high amount of fuel present in the oil. Water treatment chemicals present, indicating slow coolant leak. Tests confirm the presence of fuel in the oil. Test for glycol is negative.

Fluid Condition

Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants. 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		**PC0075284**	AP104639	AP102818
Sample Date		Client Info		**10 Aug 2023**	18 May 2017	13 Jul 2016
Machine Age	mths	Client Info		**0**	140895	127895
Oil Age	mths	Client Info		**6**	0	0
Oil Changed		Client Info		**N/A**	Changed	Changed
Sample Status				**SEVERE**	NORMAL	NORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>90	**29**	19	24
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**	<1	<1
Silver	ppm	ASTM D5185(m)	>2	**<1**	<1	<1
Aluminum	ppm	ASTM D5185(m)	>20	**2**	3	3
Lead	ppm	ASTM D5185(m)	>40	**<1**	6	8
Copper	ppm	ASTM D5185(m)	>330	**2**	4	9
Tin	ppm	ASTM D5185(m)	>15	**0**	<1	<1
Antimony	ppm	ASTM D5185(m)		**0**	1	2
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)		**6**	30	26
Barium	ppm	ASTM D5185(m)		**0**	<1	<1
Molybdenum	ppm	ASTM D5185(m)		**67**	<1	<1
Manganese	ppm	ASTM D5185(m)		**0**	<1	<1
Magnesium	ppm	ASTM D5185(m)		**874**	10	12
Calcium	ppm	ASTM D5185(m)		**944**	2433	2619
Phosphorus	ppm	ASTM D5185(m)		**858**	982	1051
Zinc	ppm	ASTM D5185(m)		**1050**	1216	1307
Sulfur	ppm	ASTM D5185(m)		**2320**	3262	3412
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**8**	7	8
Sodium	ppm	ASTM D5185(m)		▲ **206**	4	3
Potassium	ppm	ASTM D5185(m)	>20	**25**	4	3
Fuel	%	ASTM D7593*	>3.0	● **7.9**	<1.0	<1.0
Glycol	%	ASTM D7922*		**0.0**	NEG	NEG

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>6	**0.6**	0.5	0.6
Nitration	Abs/cm	ASTM D7624*	>20	**12.3**	11.6	12.1
Sulfation	Abs/.1mm	ASTM D7415*	>30	**24.1**	27.3	28.1

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**24.0**	22.0	24.1

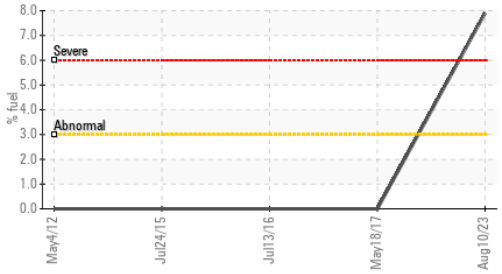
OIL ANALYSIS REPORT

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

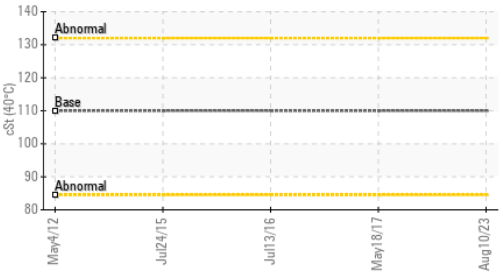
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	110	**85.4**	---	---
Visc @ 100°C	cSt	ASTM D7279(m)	15.0	▲ **12.4**	14.9	15.7
Viscosity Index (VI)	Scale	ASTM D2270*	140	**141**	---	---

GRAPHS

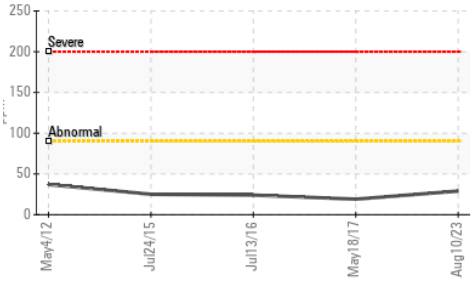
Fuel Dilution



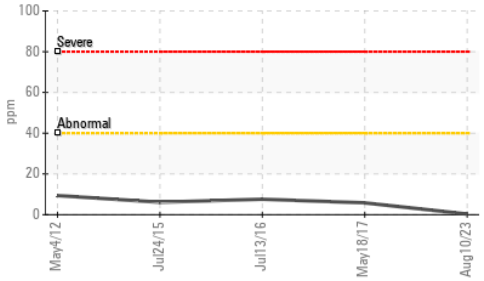
Viscosity @ 40°C



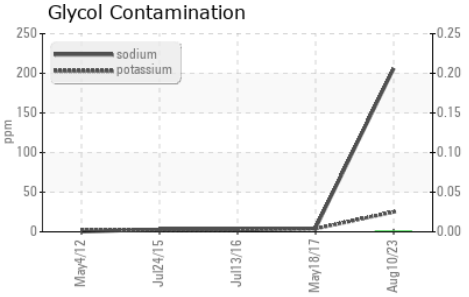
Iron (ppm)



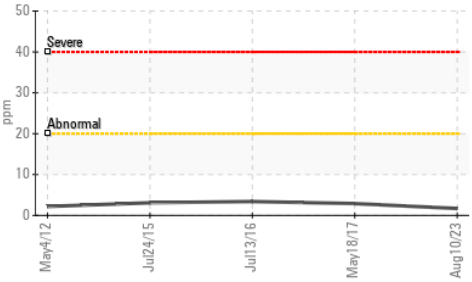
Lead (ppm)



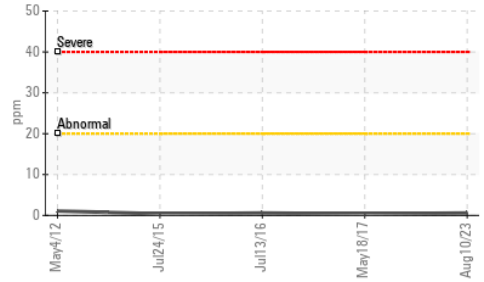
Glycol Contamination



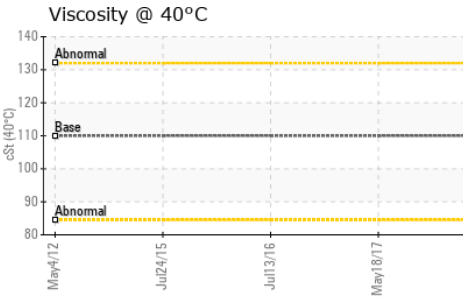
Aluminum (ppm)



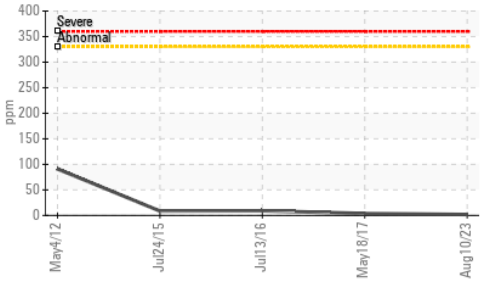
Chromium (ppm)



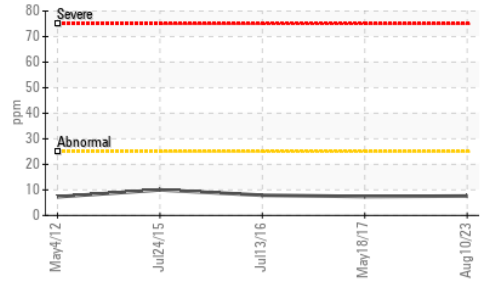
Viscosity @ 40°C



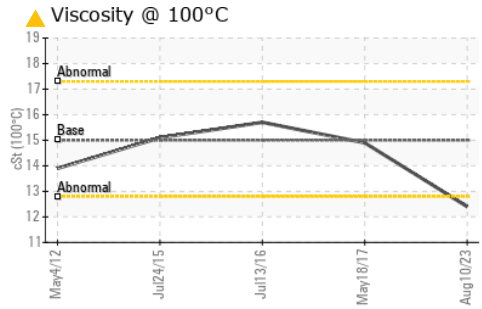
Copper (ppm)



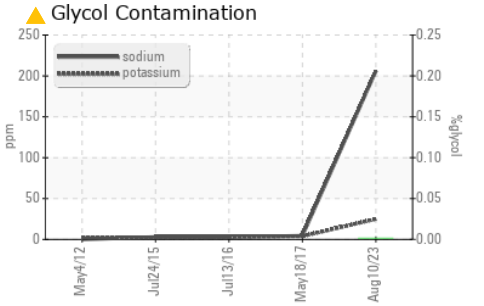
Silicon (ppm)



▲ Viscosity @ 100°C



▲ Glycol Contamination



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0075284 **Received** : 06 Nov 2023
Lab Number : 02594131 **Diagnosed** : 08 Nov 2023
Unique Number : 5671210 **Diagnostician** : Wes Davis
Test Package : MOB 1 (Additional Tests: FuelDilution, Glycol, KV40, PercentFuel, VI)

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.

TORONTO FIRE SERVICES
40 TORYORK DRIVE
TORONTO, ON
CA M9L 1X6
Contact: Antonio Rodrigues
antonio.rodrigues@tonroto.ca
T:
F: (416)338-9207