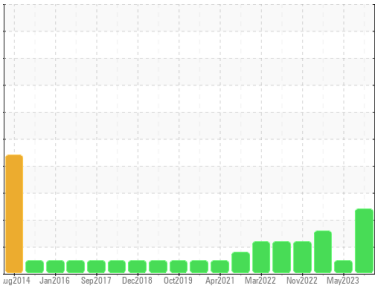
OIL ANALYSIS REPORT

Area
[/]
Machine Id
4474
Component
Diesel Engine
Fluid
PETRO CANADA 15W40 (38 LTR)

Sample Rating Trend



FUEL

DIAGNOSIS

Recommendation
We advise that you check the fuel injection system. 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
There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

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.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0085876**	GFL0081572	GFL0071077
Sample Date		Client Info		**29 Aug 2023**	10 May 2023	08 Mar 2023
Machine Age	hrs	Client Info		**31671**	31065	30210
Oil Age	hrs	Client Info		**600**	600	600
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**SEVERE**	NORMAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>120	**10**	4	7
Chromium	ppm	ASTM D5185(m)	>20	**<1**	0	0
Nickel	ppm	ASTM D5185(m)	>5	**0**	<1	<1
Titanium	ppm	ASTM D5185(m)	>2	**0**	0	0
Silver	ppm	ASTM D5185(m)	>2	**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>20	**<1**	<1	<1
Lead	ppm	ASTM D5185(m)	>40	**3**	1	<1
Copper	ppm	ASTM D5185(m)	>330	**2**	2	3
Tin	ppm	ASTM D5185(m)	>15	**0**	<1	0
Antimony	ppm	ASTM D5185(m)		**<1**	<1	<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)		**2**	2	2
Barium	ppm	ASTM D5185(m)		**0**	0	0
Molybdenum	ppm	ASTM D5185(m)		**56**	56	56
Manganese	ppm	ASTM D5185(m)		**<1**	<1	<1
Magnesium	ppm	ASTM D5185(m)		**919**	916	910
Calcium	ppm	ASTM D5185(m)		**970**	1046	1048
Phosphorus	ppm	ASTM D5185(m)		**985**	1047	1035
Zinc	ppm	ASTM D5185(m)		**1103**	1138	1130
Sulfur	ppm	ASTM D5185(m)		**2415**	2561	2541
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	**2**	2	2
Sodium	ppm	ASTM D5185(m)		**1**	1	1
Potassium	ppm	ASTM D5185(m)	>20	**0**	0	<1
Fuel	%	ASTM D7593*	>3.0	**5.1**	<1.0	4.2

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>5	**0.8**	0.4	0.4
Nitration	Abs/cm	ASTM D7624*	>20	**6.8**	5.8	7.2
Sulfation	Abs/.1mm	ASTM D7415*	>30	**20.3**	18.7	21.3

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**12.9**	13.0	14.5

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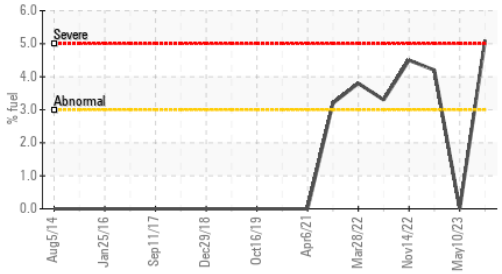
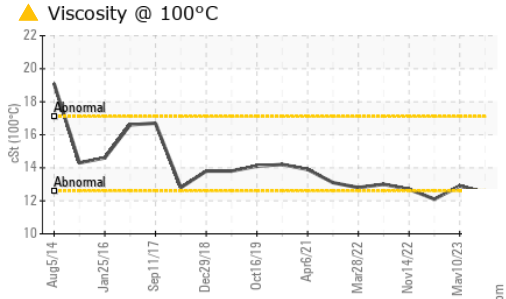
Fuel Dilution



Viscosity @ 100°C

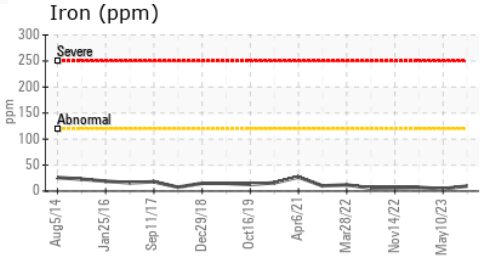


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**VLITE**	---	NONE
Yellow Metal	scalar	Visual*	NONE	**NONE**	---	NONE
Precipitate	scalar	Visual*	NONE	**NONE**	---	NONE
Silt	scalar	Visual*	NONE	**NONE**	---	NONE
Debris	scalar	Visual*	NONE	**NONE**	---	NONE
Sand/Dirt	scalar	Visual*	NONE	**NONE**	---	NONE
Appearance	scalar	Visual*	NORML	**NORML**	---	NORML
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

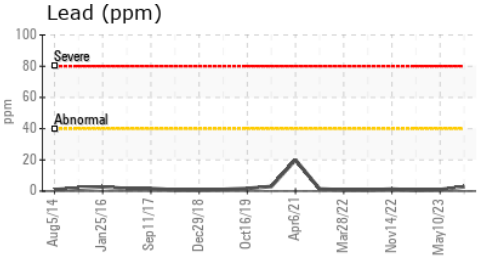
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)		▲ **12.5**	12.9	▲ 12.1

GRAPHS

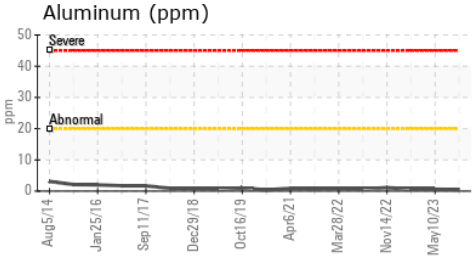
Iron (ppm)



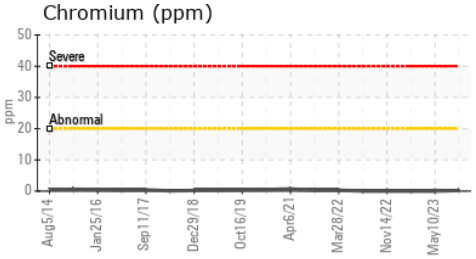
Lead (ppm)



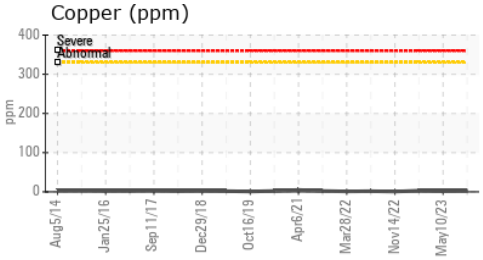
Aluminum (ppm)



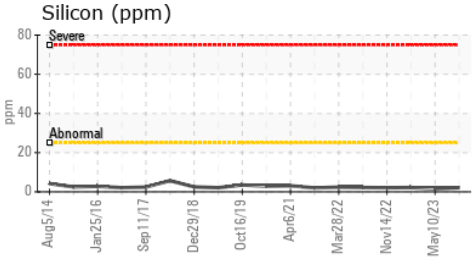
Chromium (ppm)



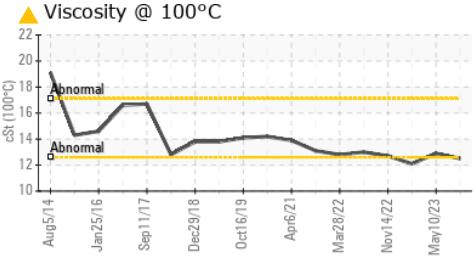
Copper (ppm)



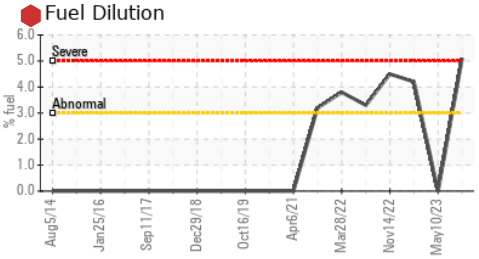
Silicon (ppm)



Viscosity @ 100°C



Fuel Dilution



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **GFL Environmental - 209 - Hamilton**
Sample No. : GFL0085876 **Received** : 31 Aug 2023
Lab Number : 02579586 **Diagnosed** : 01 Sep 2023
Unique Number : 5632646 **Diagnostician** : Wes Davis
Test Package : MOB 1 (Additional Tests: FuelDilution, PercentFuel, Visual)

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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Report Id: GFL209 [WCAMIS] 02579586 (Generated: 09/01/2023 09:34:43) Rev: 1

Submitted By: Fred Carleton