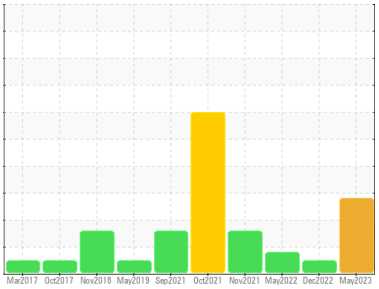
OIL ANALYSIS REPORT

Machine Id
9237
Component
Natural Gas Engine
Fluid
PETRO CANADA DURON GEO LD 15W40 (24 LTR)

Sample Rating Trend



DEGRADATION

DIAGNOSIS

Recommendation

We advise that you check for faulty combustion and a possible overheat condition. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

Chromium and iron ppm levels are abnormal. Cylinder, crank, or cam shaft wear is indicated. Ring wear is indicated.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

A small degree of oil oxidation was indicated. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0081590**	GFL0064281	GFL0044204
Sample Date		Client Info		**29 May 2023**	14 Dec 2022	10 May 2022
Machine Age	hrs	Client Info		**15315**	14363	13084
Oil Age	hrs	Client Info		**1200**	1200	0
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**ABNORMAL**	NORMAL	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		**3**	---	---
Iron	ppm	ASTM D5185(m)	>50	▲ **112**	90	▲ 122
Chromium	ppm	ASTM D5185(m)	>4	▲ **8**	9	11
Nickel	ppm	ASTM D5185(m)	>2	**1**	1	2
Titanium	ppm	ASTM D5185(m)		**<1**	<1	0
Silver	ppm	ASTM D5185(m)	>3	**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>9	**3**	3	5
Lead	ppm	ASTM D5185(m)	>30	**4**	4	14
Copper	ppm	ASTM D5185(m)	>35	**21**	26	34
Tin	ppm	ASTM D5185(m)	>4	**<1**	<1	1
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)	50	**6**	14	8
Barium	ppm	ASTM D5185(m)	5	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	50	**68**	62	90
Manganese	ppm	ASTM D5185(m)	0	**2**	2	2
Magnesium	ppm	ASTM D5185(m)	560	**757**	695	827
Calcium	ppm	ASTM D5185(m)	1510	**1945**	1843	1896
Phosphorus	ppm	ASTM D5185(m)	780	**957**	945	954
Zinc	ppm	ASTM D5185(m)	870	**1128**	1087	1145
Sulfur	ppm	ASTM D5185(m)	2040	**2126**	2068	2149
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>+100	**9**	10	12
Sodium	ppm	ASTM D5185(m)		**15**	10	13
Potassium	ppm	ASTM D5185(m)	>20	**2**	<1	1

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*		**0**	0	0
Nitration	Abs/cm	ASTM D7624*	>20	**14.7**	6.7	15.3
Sulfation	Abs/.1mm	ASTM D7415*	>30	**29.8**	17.7	30.4

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	▲ **27.8**	11.5	27.8

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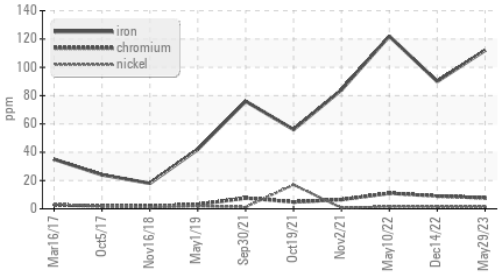
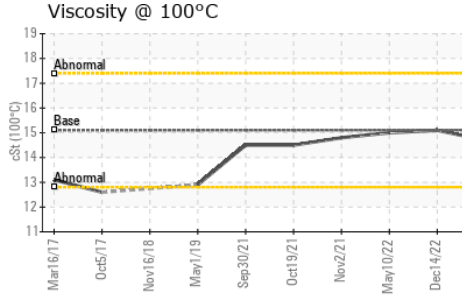
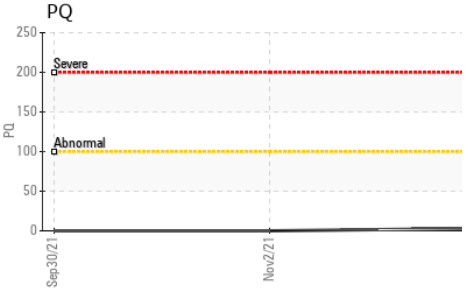
Ferrous Alloys



Viscosity @ 100°C



PQ

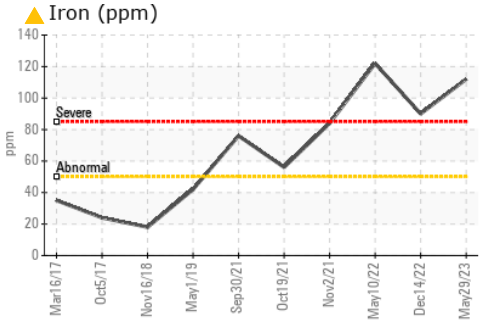


VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.1	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

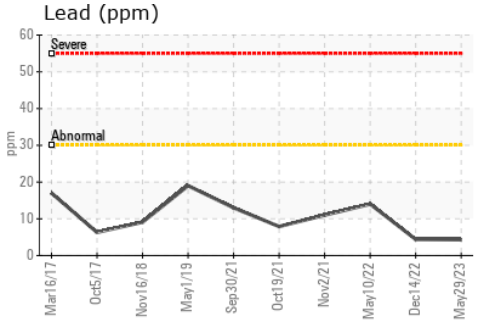
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.1	**14.7**	15.1	15.0

GRAPHS

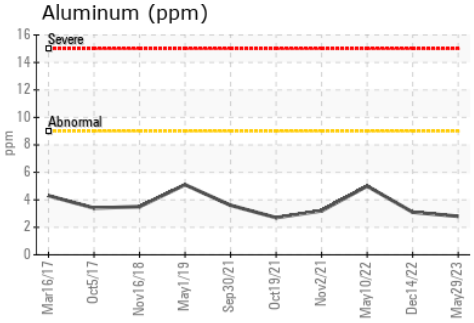
Iron (ppm)



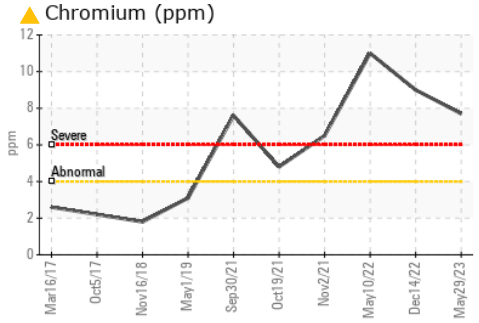
Lead (ppm)



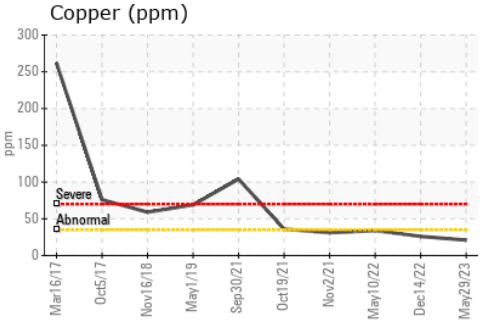
Aluminum (ppm)



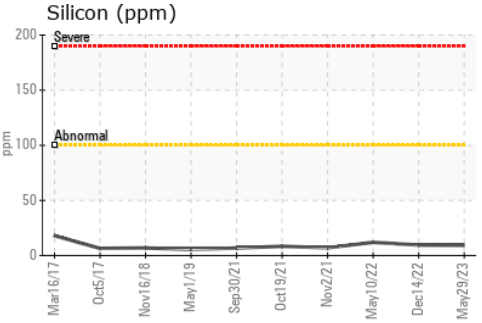
Chromium (ppm)



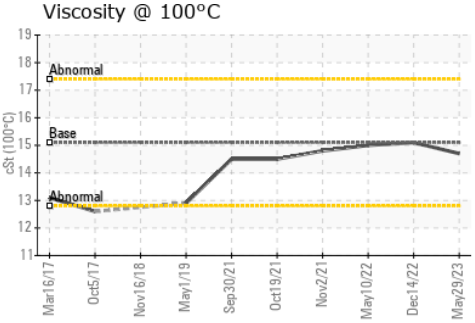
Copper (ppm)



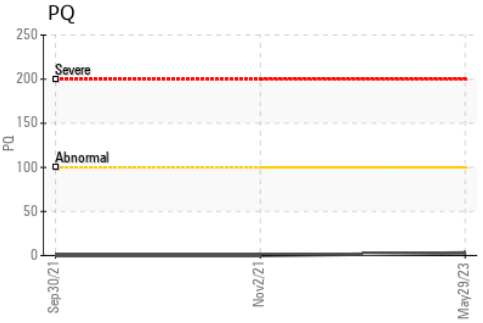
Silicon (ppm)



Viscosity @ 100°C



PQ



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **GFL Environmental - 209 - Hamilton**
Sample No. : GFL0081590 **Received** : 31 May 2023 560 Seaman Street
Lab Number : 02560796 **Diagnosed** : 01 Jun 2023 Stoney Creek, ON
Unique Number : 5581836 **Diagnostician** : Bill Quesnel CA L8E 3X7
Test Package : MOB 1 (Additional Tests: PQ) Contact: Fred Carleton
fred.carleton@gflenv.com
T: (289)925-6693
F: (905)664-9008

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.