OIL ANALYSIS REPORT

Sample Rating Trend

Aug2021 Apr2022 Oct2022 Mar2023 Aug2023
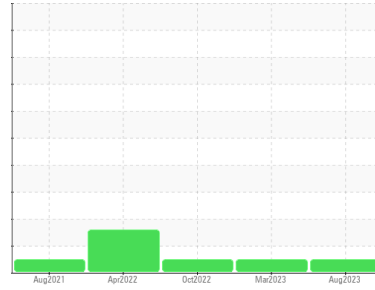
NORMAL

Machine Id
901115
Component
Natural Gas Engine
Fluid
PETRO CANADA DURON GEO LD 15W40 (--- GAL)

DIAGNOSIS

Recommendation
Please note that all wear metal and contaminant levels are being considered accumulative. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using MOB 2 test kits, this testkit includes BN to determine the suitability of the oil for continued use.

Wear
An increase in the copper level is noted. All other 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		**GFL0084059**	GFL0073194	GFL0039162
Sample Date	Client Info		**03 Aug 2023**	07 Mar 2023	05 Oct 2022
Machine Age	hrs	Client Info	**3323**	2360	1755
Oil Age	hrs	Client Info	**600**	600	600
Oil Changed		Client Info	**Changed**	Changed	Changed
Sample Status			**NORMAL**	NORMAL	NORMAL

WEAR METALS

		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>50	**8**	16	14
Chromium	ppm	ASTM D5185(m)	>4	**2**	2	1
Nickel	ppm	ASTM D5185(m)	>2	**0**	<1	<1
Titanium	ppm	ASTM D5185(m)		**1**	9	<1
Silver	ppm	ASTM D5185(m)	>3	**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>9	**1**	2	2
Lead	ppm	ASTM D5185(m)	>30	**3**	1	10
Copper	ppm	ASTM D5185(m)	>35	**54**	16	45
Tin	ppm	ASTM D5185(m)	>4	**<1**	<1	<1
Antimony	ppm	ASTM D5185(m)		**0**	<1	0
Vanadium	ppm	ASTM D5185(m)		**0**	<1	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**	18	9
Barium	ppm	ASTM D5185(m)	5	**<1**	2	0
Molybdenum	ppm	ASTM D5185(m)	50	**48**	49	51
Manganese	ppm	ASTM D5185(m)	0	**1**	4	<1
Magnesium	ppm	ASTM D5185(m)	560	**539**	533	563
Calcium	ppm	ASTM D5185(m)	1510	**1499**	1590	1666
Phosphorus	ppm	ASTM D5185(m)	780	**651**	760	765
Zinc	ppm	ASTM D5185(m)	870	**839**	871	910
Sulfur	ppm	ASTM D5185(m)	2040	**1818**	2034	1973
Lithium	ppm	ASTM D5185(m)		**<1**	2	<1

CONTAMINANTS

		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>+100	**25**	52	8
Sodium	ppm	ASTM D5185(m)		**11**	22	9
Potassium	ppm	ASTM D5185(m)	>20	**<1**	1	1

INFRA-RED

		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*		**0**	0	0
Nitration	Abs/cm	ASTM D7624*	>20	**12.0**	8.5	12.9
Sulfation	Abs/.1mm	ASTM D7415*	>30	**25.2**	20.5	27.1

FLUID DEGRADATION

		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**20.8**	14.6	24.0

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Viscosity @ 40°C

Non-ferrous Metals

Non-ferrous Metals
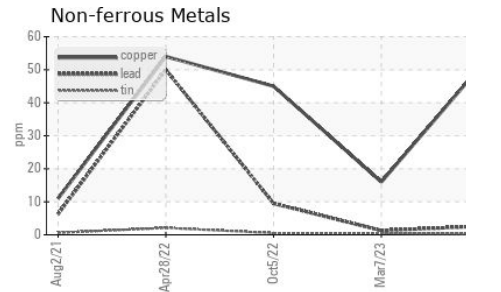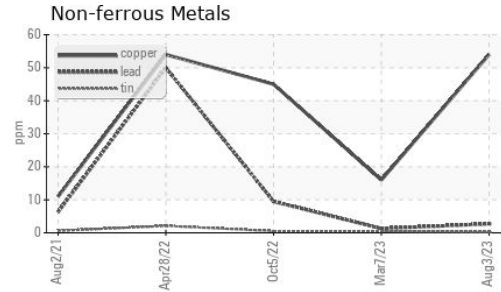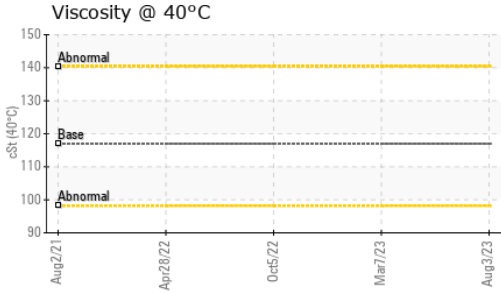
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**NONE**	---	---
Yellow Metal	scalar	Visual*	NONE	**NONE**	---	---
Precipitate	scalar	Visual*	NONE	**NONE**	---	---
Silt	scalar	Visual*	NONE	**NONE**	---	---
Debris	scalar	Visual*	NONE	**NONE**	---	---
Sand/Dirt	scalar	Visual*	NONE	**NONE**	---	---
Appearance	scalar	Visual*	NORML	**NORML**	---	---
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
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 @ 40°C	cSt	ASTM D7279(m)	117.0	**114**	---	---
Visc @ 100°C	cSt	ASTM D7279(m)	15.1	**14.5**	14.6	14.3
Viscosity Index (VI)	Scale	ASTM D2270*	134	**129**	---	---

GRAPHS

Iron (ppm)

Lead (ppm)

Aluminum (ppm)

Chromium (ppm)

Copper (ppm)

Silicon (ppm)

### Viscosity @ 100°C

Additives
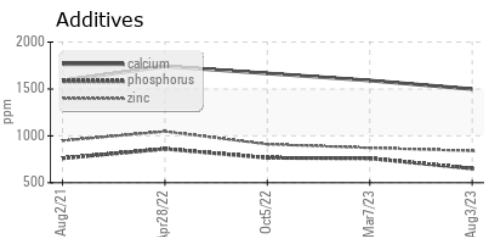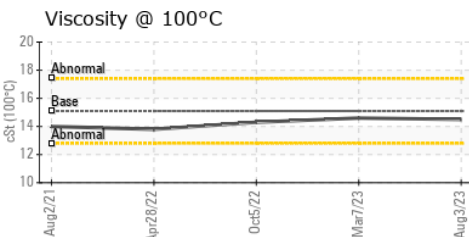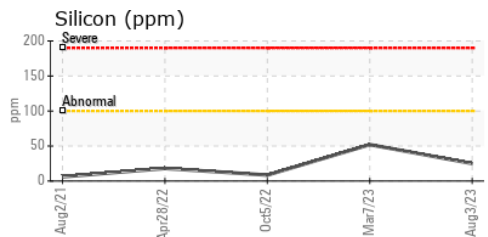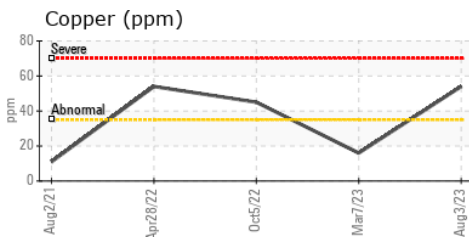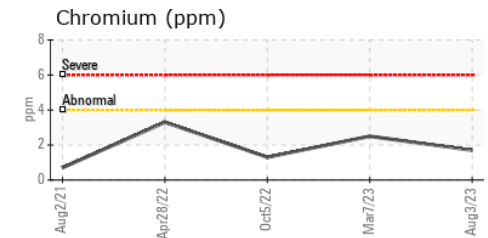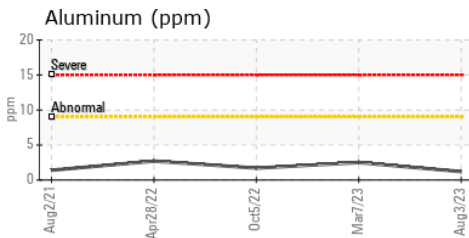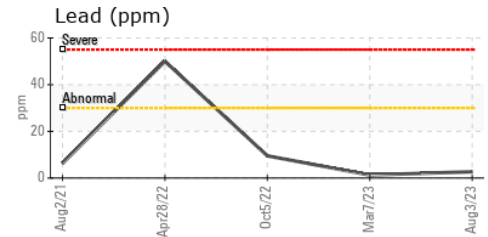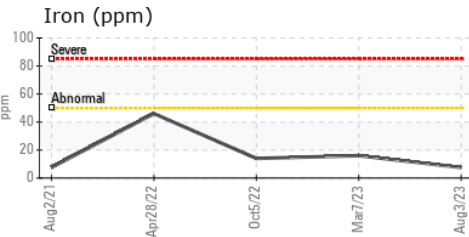
Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **GFL Environmental - 573 - Vancouver Hauling**
Sample No. : GFL0084059 **Received** : 08 Sep 2023 70 Golden Drive,
Lab Number : 02581084 **Diagnosed** : 08 Sep 2023 Coquitlam, BC
Unique Number : 5642149 **Diagnostician** : Kevin Marson CA V3K 6B5
Test Package : MOB 1 (Additional Tests: KV40, VI, Visual) Contact: Catia Klagenberg Alves
To discuss this sample report, contact Customer Service at 1-800-268-2131. cklagenbergalves@gflenv.com
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. T:
Validity of results and interpretation are based on the sample and information as supplied. F:

CALA ISO 17025:2017 Accredited Laboratory

Report Id: GFL573 [WCAMIS] 02581084 (Generated: 09/08/2023 15:45:54) Rev: 1 Contact/Location: Catia Klagenberg Alves - GFL573

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