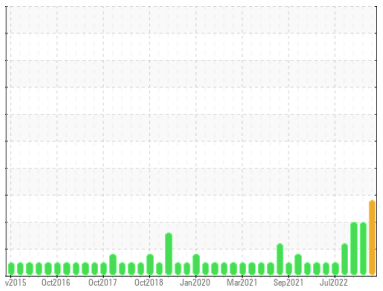
OIL ANALYSIS REPORT

Sample Rating Trend



DEGRADATION

Area
(YA122770)
Machine Id
10566C
Component
Natural Gas Engine
Fluid
PETRO CANADA DURON GEO LD 15W40 (--- GAL)

DIAGNOSIS

Recommendation
The oil is near the end of it`s useful service life, recommend schedule an oil change. Resample at the next service interval to monitor.

Wear
The copper level is marginal. Cylinder, crank, or cam shaft wear is indicated.

Contamination
There is no indication of any contamination in the oil.

Fluid Condition
The BN level is low. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0109720**	GFL0092731	GFL0072344
Sample Date		Client Info		**11 Apr 2024**	13 Dec 2023	17 May 2023
Machine Age	hrs	Client Info		**0**	21277	21277
Oil Age	hrs	Client Info		**0**	232	21277
Oil Changed		Client Info		**N/A**	Not Changd	Changed
Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.1	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	▲ **82**	▲ 67	▲ 72
Chromium	ppm	ASTM D5185m	>4	**4**	3	3
Nickel	ppm	ASTM D5185m	>2	**3**	<1	2
Titanium	ppm	ASTM D5185m		**<1**	0	0
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>9	**4**	3	2
Lead	ppm	ASTM D5185m	>30	**8**	8	13
Copper	ppm	ASTM D5185m	>35	▲ **32**	14	11
Tin	ppm	ASTM D5185m	>4	**2**	1	2
Vanadium	ppm	ASTM D5185m		**<1**	<1	<1
Cadmium	ppm	ASTM D5185m		**<1**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	50	**10**	12	8
Barium	ppm	ASTM D5185m	5	**0**	0	0
Molybdenum	ppm	ASTM D5185m	50	**88**	75	78
Manganese	ppm	ASTM D5185m	0	**2**	2	2
Magnesium	ppm	ASTM D5185m	560	**966**	889	1001
Calcium	ppm	ASTM D5185m	1510	**2082**	1794	1731
Phosphorus	ppm	ASTM D5185m	780	**1295**	1006	1087
Zinc	ppm	ASTM D5185m	870	**1506**	1386	1447
Sulfur	ppm	ASTM D5185m	2040	**3144**	2522	3229

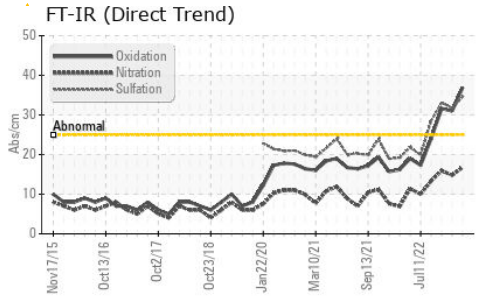
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>+100	**11**	8	10
Sodium	ppm	ASTM D5185m		**8**	6	8
Potassium	ppm	ASTM D5185m	>20	**2**	0	<1

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0.1**	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	**16.8**	14.8	15.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	**34.6**	31.7	33.1

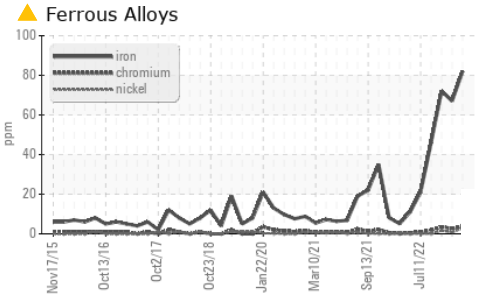
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**36.9**	31.0	31.6
Base Number (BN)	mg KOH/g	ASTM D2896	10.2	▲ **2.0**	▲ 2.7	▲ 2.1

OIL ANALYSIS REPORT

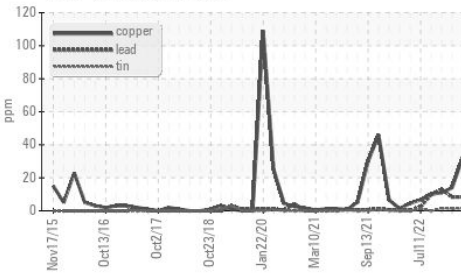
FT-IR (Direct Trend)



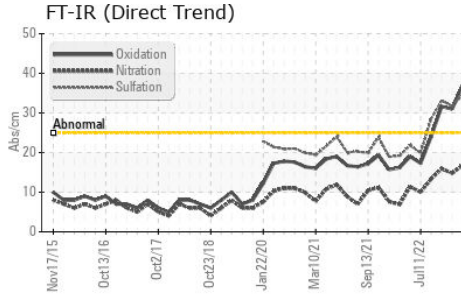
Ferrous Alloys



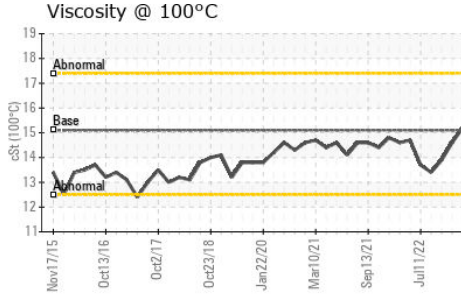
Non-ferrous Metals



FT-IR (Direct Trend)



Viscosity @ 100°C

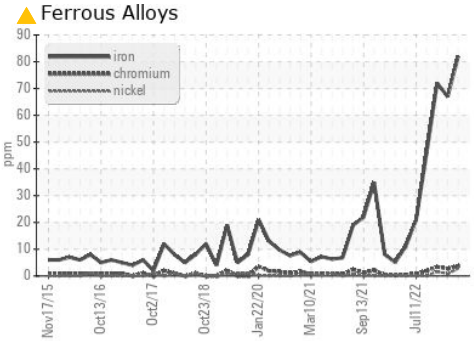


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	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

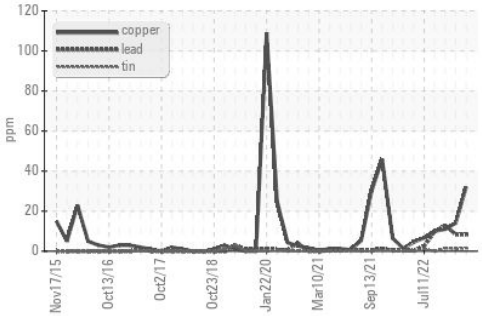
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.1	**15.2**	14.6	13.9

GRAPHS

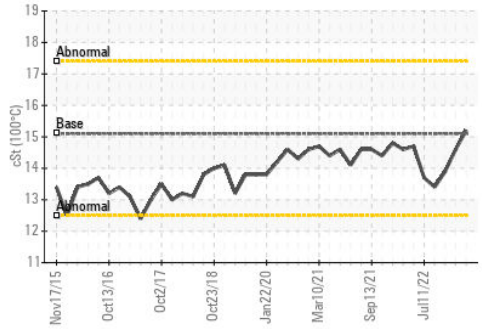
Ferrous Alloys



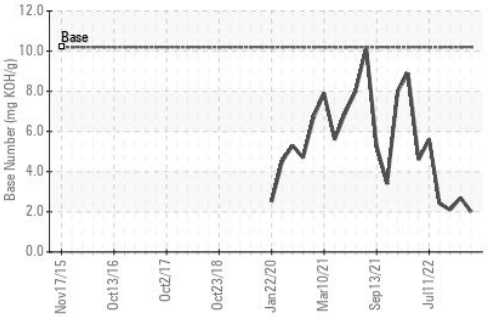
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0109720
Lab Number : 06155068
Unique Number : 10990491
Test Package : FLEET

Received : 19 Apr 2024
Tested : 24 Apr 2024
Diagnosed : 24 Apr 2024 - Jonathan Hester

To discuss this sample report, contact Customer Service at 1-800-237-1369.
** - Denotes test methods that are outside of the ISO 17025 scope of accreditation.*
Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

GFL Environmental - 005 - Wilson/Tri-East(CNG)
2810 Contentnea Road S
Wilson, NC
US 27893-8501
Contact: SPENCER LIGGON
spencer.liggon@gflenv.com
T: (800)207-6618
F:

Report Id: GFL005 [WUSCAR] 06155068 (Generated: 04/24/2024 11:53:18) Rev: 1

Submitted By: See also GFL005,019,119,19DR - SPENCER LIGGON