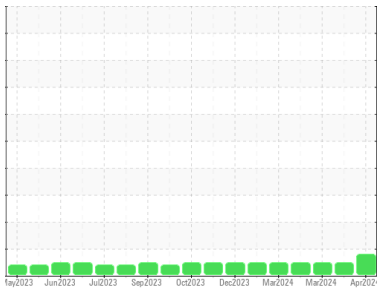
OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Machine Id
433005
Component
Natural Gas Engine
Fluid
PETRO CANADA DURON GEO LD 15W40 (--- GAL)

DIAGNOSIS

Recommendation
No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear
Cylinder, crank, or cam shaft wear is indicated. All other component wear rates are normal.

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

Fluid Condition
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**GFL0117163**	GFL0117201	GFL0114009
Sample Date		Client Info		**24 Apr 2024**	02 Apr 2024	28 Mar 2024
Machine Age	hrs	Client Info		**2840**	2861	2646
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**Not Changd**	Not Changd	Not Changd
Sample Status				**ABNORMAL**	NORMAL	NORMAL

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	▲ **62**	3	8
Chromium	ppm	ASTM D5185m	>4	**3**	0	<1
Nickel	ppm	ASTM D5185m	>2	**1**	<1	<1
Titanium	ppm	ASTM D5185m		**<1**	0	<1
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>9	**6**	3	2
Lead	ppm	ASTM D5185m	>30	**2**	1	1
Copper	ppm	ASTM D5185m	>35	**1**	<1	3
Tin	ppm	ASTM D5185m	>4	**1**	<1	<1
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	50	**7**	13	26
Barium	ppm	ASTM D5185m	5	**<1**	0	0
Molybdenum	ppm	ASTM D5185m	50	**61**	48	52
Manganese	ppm	ASTM D5185m	0	**1**	<1	<1
Magnesium	ppm	ASTM D5185m	560	**554**	535	547
Calcium	ppm	ASTM D5185m	1510	**1796**	1533	1551
Phosphorus	ppm	ASTM D5185m	780	**782**	762	685
Zinc	ppm	ASTM D5185m	870	**1029**	966	946
Sulfur	ppm	ASTM D5185m	2040	**3020**	2934	2534

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>+100	**19**	6	15
Sodium	ppm	ASTM D5185m		**10**	5	2
Potassium	ppm	ASTM D5185m	>20	**<1**	1	3

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0.1**	0	0
Nitration	Abs/cm	*ASTM D7624	>20	**11.7**	9.9	9.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	**23.1**	20.3	20.6

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**19.0**	17.2	18.0
Base Number (BN)	mg KOH/g	ASTM D2896	10.2	**3.4**	5.1	5.9

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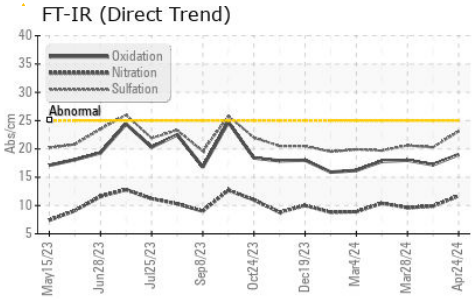
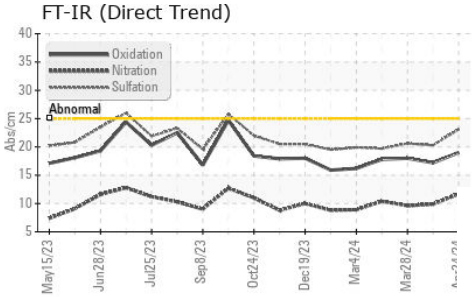
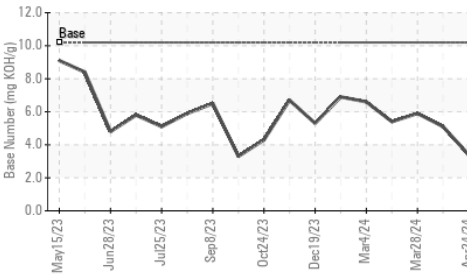
FT-IR (Direct Trend)



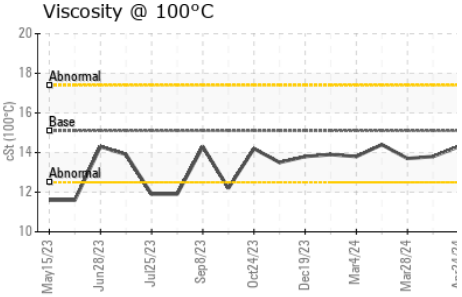
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C

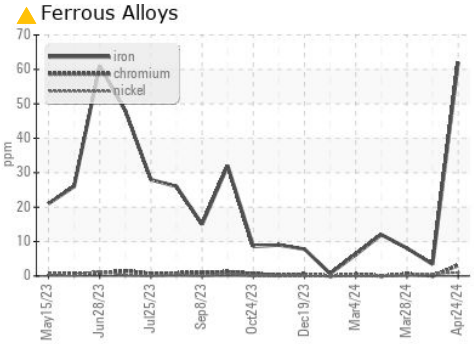


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

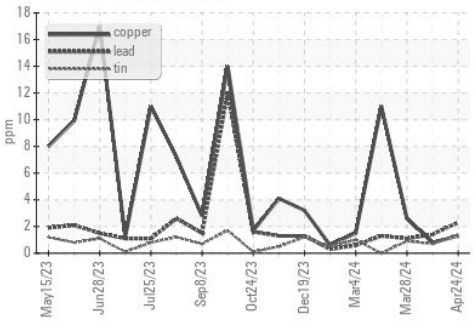
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.1	**14.3**	13.8	13.7

GRAPHS

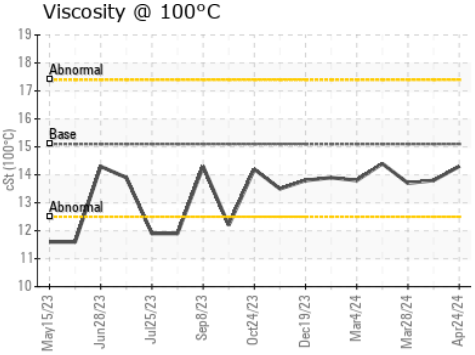
Ferrous Alloys



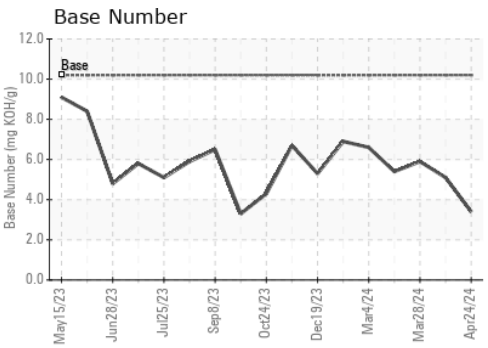
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0117163
Lab Number : 06161223
Unique Number : 10996646
Test Package : FLEET

Received : 26 Apr 2024
Tested : 26 Apr 2024
Diagnosed : 29 Apr 2024 - Don Baldridge

GFL Environmental - 836 - Kansas City Hauling
7801 East Truman Road
Kansas City, MO
US 64126
Contact: Loyce Stewart
loyce.stewart@gflenv.com
T:
F:

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)