



WEAR	SEVERE
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
731120
 Component
Natural Gas Engine
 Fluid
PETRO CANADA DURON GEO LD 15W40 (--- GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0120163	GFL0117167	GFL0114003
Sample Date		Client Info		22 May 2024	14 May 2024	04 Apr 2024
Machine Age	hrs	Client Info		2496	7450	7184
Oil Age	hrs	Client Info		1200	0	0
Filter Age	hrs	Client Info		1200	0	0
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Filter Changed		Client Info		Changed	Not Changd	Not Changd
Sample Status				SEVERE	NORMAL	NORMAL

WEAR

Piston, ring and cylinder wear is indicated.

Iron	ppm	ASTM D5185m	>50	▲ 54	10	6
Chromium	ppm	ASTM D5185m	>4	▲ 4	<1	<1
Nickel	ppm	ASTM D5185m	>2	2	<1	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>3	<1	<1	0
Aluminum	ppm	ASTM D5185m	>9	▲ 43	6	4
Lead	ppm	ASTM D5185m	>30	12	18	2
Copper	ppm	ASTM D5185m	>35	5	13	8
Tin	ppm	ASTM D5185m	>4	2	3	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

There is no indication of any contamination in the oil.

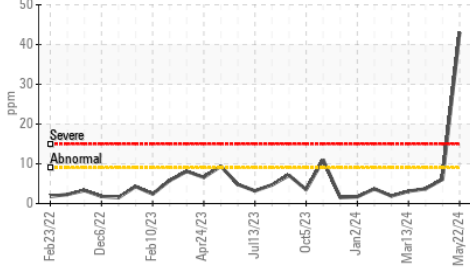
Silicon	ppm	ASTM D5185m	>+100	13	4	7
Potassium	ppm	ASTM D5185m	>20	21	2	0
Water		WC Method	>0.1	NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.1	0	0
Nitration	Abs/cm	*ASTM D7624	>20	12.1	11.1	10.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	28.2	22.2	21.1
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	LIGHT
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

FLUID CONDITION

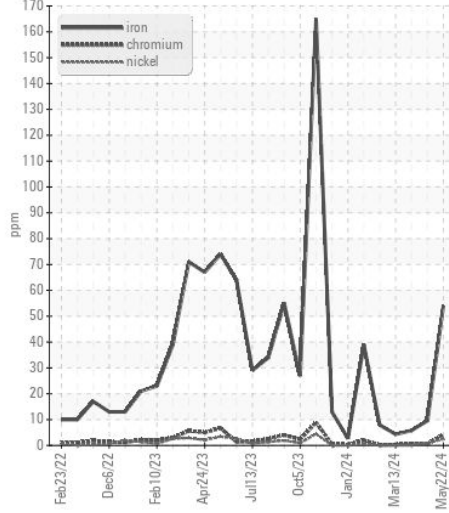
The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Sodium	ppm	ASTM D5185m		5	<1	3
Boron	ppm	ASTM D5185m	50	9	5	10
Barium	ppm	ASTM D5185m	5	0	0	0
Molybdenum	ppm	ASTM D5185m	50	66	52	51
Manganese	ppm	ASTM D5185m	0	4	<1	<1
Magnesium	ppm	ASTM D5185m	560	738	515	583
Calcium	ppm	ASTM D5185m	1510	1913	1569	1688
Phosphorus	ppm	ASTM D5185m	780	935	740	824
Zinc	ppm	ASTM D5185m	870	1199	991	1022
Sulfur	ppm	ASTM D5185m	2040	3102	2854	3080
Oxidation	Abs/.1mm	*ASTM D7414	>25	24.4	18.8	17.7
Base Number (BN)	mg KOH/g	ASTM D2896	10.2	3.1	3.6	4.8
Visc @ 100°C	cSt	ASTM D445	15.1	14.5	14.2	13.8

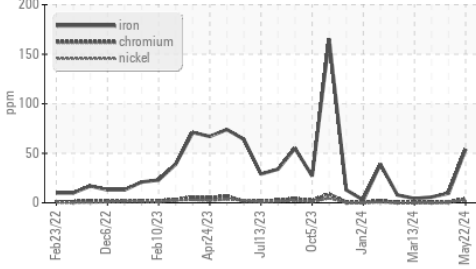
▲ Aluminum (ppm)



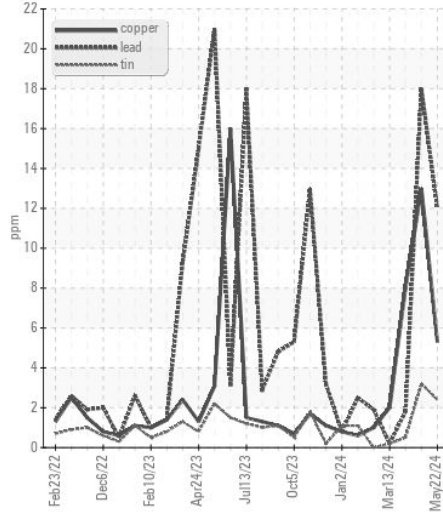
▲ Ferrous Alloys



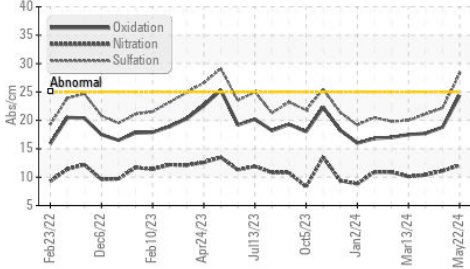
▲ Ferrous Alloys



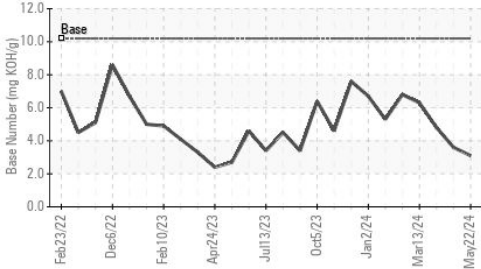
Non-ferrous Metals



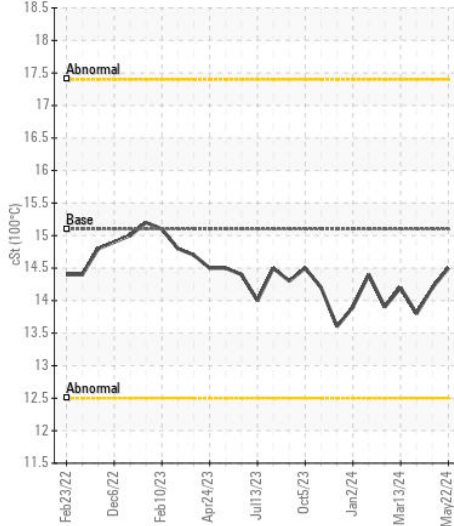
FT-IR (Direct Trend)



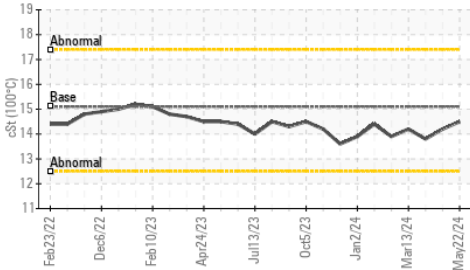
Base Number



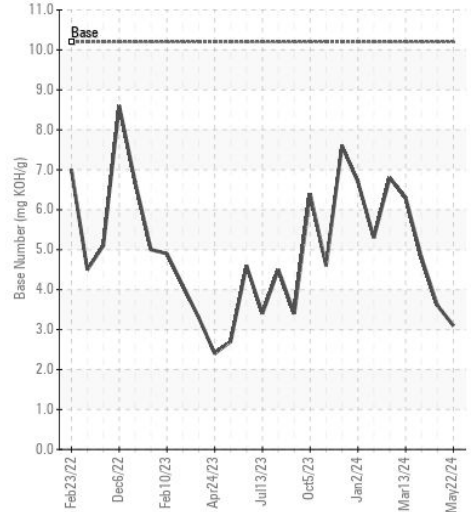
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0120163
Lab Number : 06190239
Unique Number : 11046991
Test Package : FLEET

Received : 24 May 2024
Tested : 30 May 2024
Diagnosed : 30 May 2024 - Jonathan Hester

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

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)

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F: