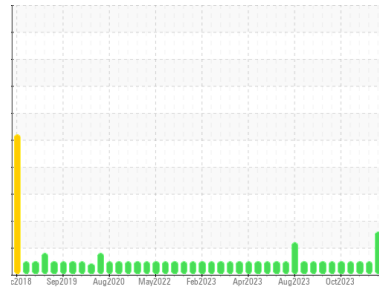




OIL ANALYSIS REPORT

Sample Rating Trend



Area
(16KM0A)
 Machine Id
429049-402451
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation
 We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear
 All component wear rates are normal.

Contamination
 Elemental level of silicon (Si) above normal indicating ingress of dirt/seal material.

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

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	GFL0117155	GFL0114052	GFL0103354
Sample Date	Client Info	22 Apr 2024	05 Apr 2024	02 Jan 2024
Machine Age	hrs	16050	15965	15713
Oil Age	hrs	600	0	0
Oil Changed	Client Info	Changed	Not Changd	Not Changd
Sample Status		ABNORMAL	NORMAL	NORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >3.0	<1.0	<1.0	<1.0
Water	WC Method >0.2	NEG	NEG	NEG
Glycol	WC Method	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >165	6	42	1
Chromium	ppm ASTM D5185m >5	<1	4	0
Nickel	ppm ASTM D5185m >4	0	1	0
Titanium	ppm ASTM D5185m >2	0	<1	<1
Silver	ppm ASTM D5185m >2	0	<1	0
Aluminum	ppm ASTM D5185m >20	1	8	<1
Lead	ppm ASTM D5185m >150	0	<1	<1
Copper	ppm ASTM D5185m >90	2	2	<1
Tin	ppm ASTM D5185m >5	0	1	1
Vanadium	ppm ASTM D5185m	0	<1	<1
Cadmium	ppm ASTM D5185m	0	<1	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	1	0	6
Barium	ppm ASTM D5185m 0	0	0	0
Molybdenum	ppm ASTM D5185m 60	66	59	61
Manganese	ppm ASTM D5185m 0	<1	1	<1
Magnesium	ppm ASTM D5185m 1010	1017	954	944
Calcium	ppm ASTM D5185m 1070	1126	1161	1127
Phosphorus	ppm ASTM D5185m 1150	1076	1052	1060
Zinc	ppm ASTM D5185m 1270	1295	1281	1251
Sulfur	ppm ASTM D5185m 2060	3551	3307	3188

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >35	▲ 49	18	2
Sodium	ppm ASTM D5185m	2	7	2
Potassium	ppm ASTM D5185m >20	0	10	0

INFRA-RED

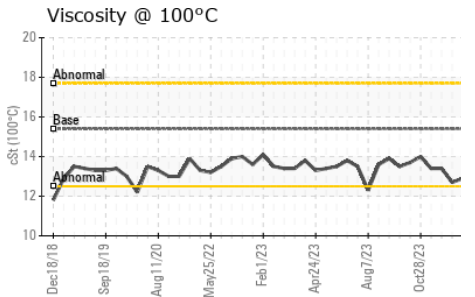
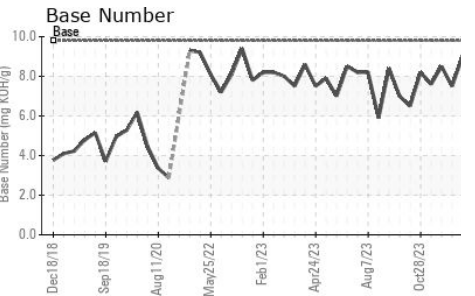
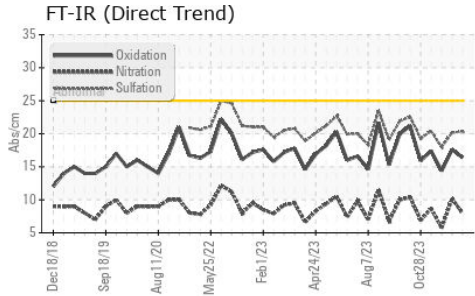
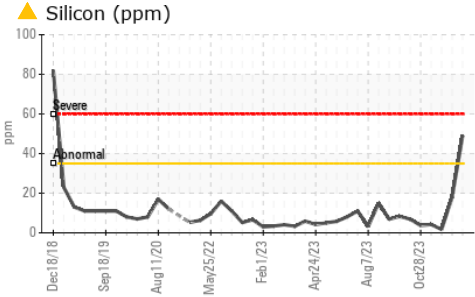
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >7.5	0.2	0.7	0.1
Nitration	Abs/cm *ASTM D7624 >20	7.9	10.2	5.7
Sulfation	Abs/.1mm *ASTM D7415 >30	20.3	20.2	18.0

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	16.4	17.6	14.4
Base Number (BN)	mg KOH/g ASTM D2896 9.8	9.0	7.5	8.5



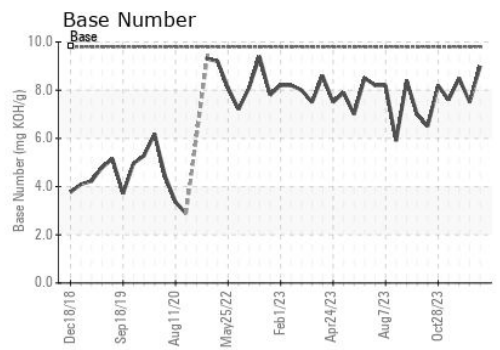
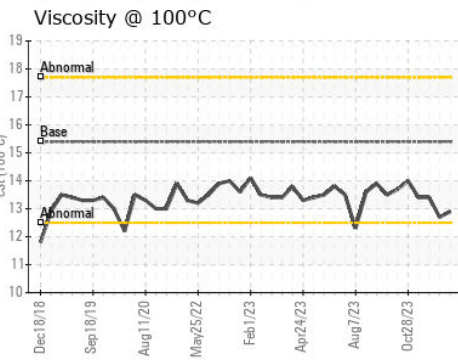
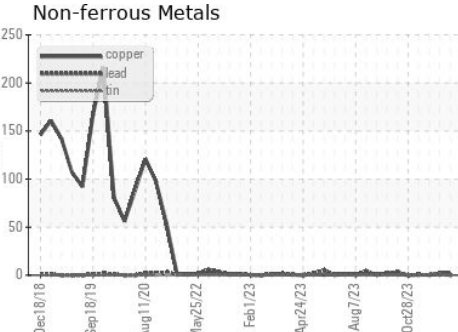
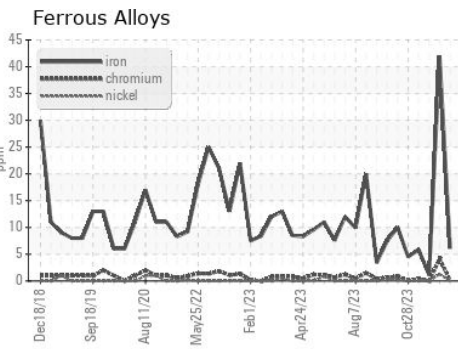
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	12.9	12.7

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0117155 **Received** : 24 Apr 2024
Lab Number : 06158904 **Tested** : 25 Apr 2024
Unique Number : 10994327 **Diagnosed** : 26 Apr 2024 - Jonathan Hester
Test Package : FLEET

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)