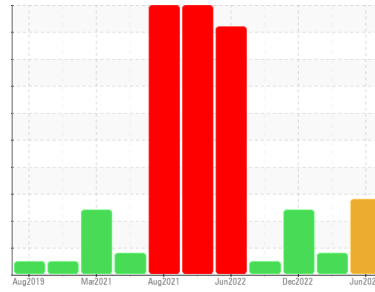




OIL ANALYSIS REPORT

Sample Rating Trend



DIRT



Machine Id
10965
 Component
Diesel Engine
 Fluid

PETRO CANADA DURON SHP 15W40 (10 GAL)

DIAGNOSIS

Recommendation

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

Sodium and/or potassium levels are high. Elemental level of silicon (Si) above normal indicating ingress of seal material. Test for glycol is negative.

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	GFL0104063	GFL0068149	GFL0046496
Sample Date	Client Info	11 Jun 2024	17 May 2023	13 Dec 2022
Machine Age	hrs	15114	14688	14079
Oil Age	hrs	600	600	600
Oil Changed	Client Info	Changed	Changed	Changed
Sample Status		ABNORMAL	MARGINAL	SEVERE

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >5	<1.0	▲ 2.8	▲ 11.4
Water	WC Method >0.2	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >100	55	47	99
Chromium	ppm ASTM D5185m >20	2	2	3
Nickel	ppm ASTM D5185m >4	<1	<1	2
Titanium	ppm ASTM D5185m	<1	<1	<1
Silver	ppm ASTM D5185m >3	0	0	0
Aluminum	ppm ASTM D5185m >20	6	12	9
Lead	ppm ASTM D5185m >40	1	0	2
Copper	ppm ASTM D5185m >330	10	<1	2
Tin	ppm ASTM D5185m >15	4	<1	<1
Vanadium	ppm ASTM D5185m	0	<1	<1
Cadmium	ppm ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	23	9	14
Barium	ppm ASTM D5185m 0	0	0	0
Molybdenum	ppm ASTM D5185m 60	60	62	51
Manganese	ppm ASTM D5185m 0	1	<1	<1
Magnesium	ppm ASTM D5185m 1010	907	1007	777
Calcium	ppm ASTM D5185m 1070	1129	1167	997
Phosphorus	ppm ASTM D5185m 1150	992	1107	841
Zinc	ppm ASTM D5185m 1270	1194	1383	1044
Sulfur	ppm ASTM D5185m 2060	3445	3936	2816

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	▲ 57	19	17
Sodium	ppm ASTM D5185m	24	2	2
Potassium	ppm ASTM D5185m >20	▲ 60	3	2
Glycol	% *ASTM D2982	NEG	NEG	NEG

INFRA-RED

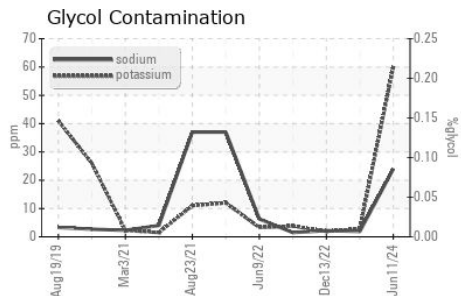
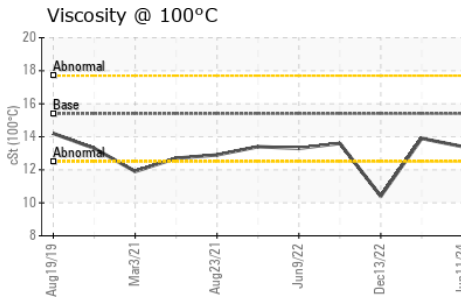
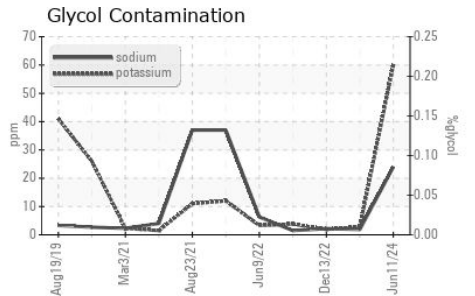
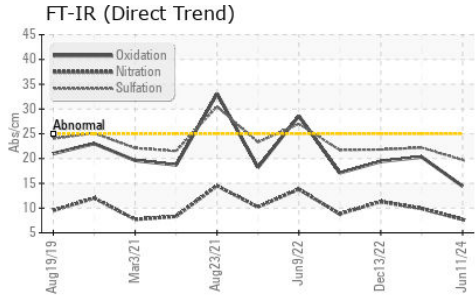
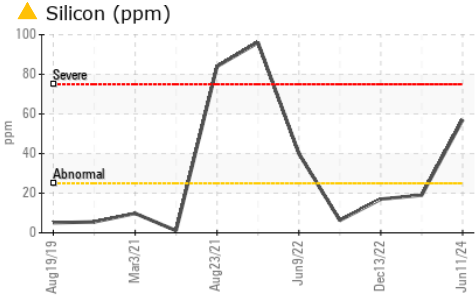
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	0.8	0.5	0.7
Nitration	Abs/cm *ASTM D7624 >20	7.7	9.9	11.3
Sulfation	Abs/.1mm *ASTM D7415 >30	19.7	22.2	21.8

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	14.4	20.3	19.4
Base Number (BN)	mg KOH/g ASTM D2896 9.8	9.0	9.3	9.4



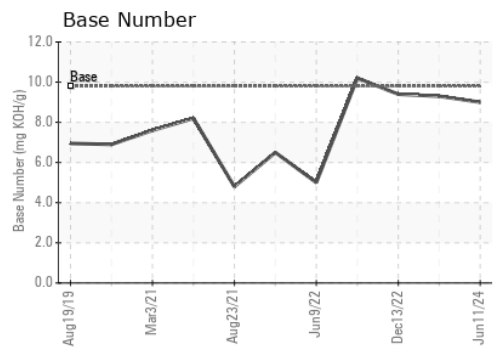
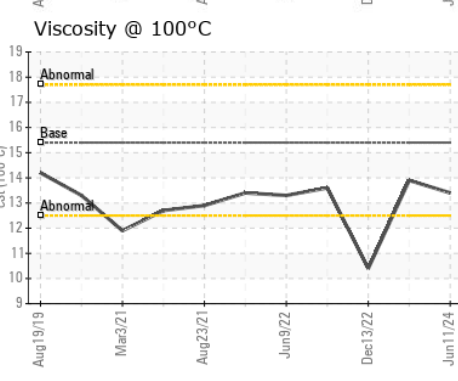
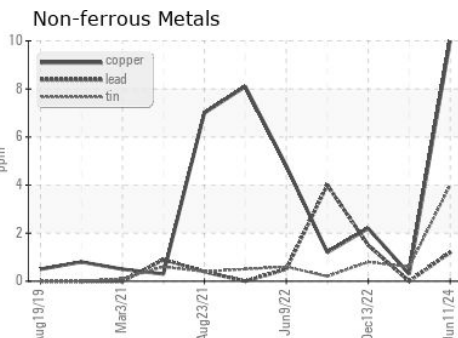
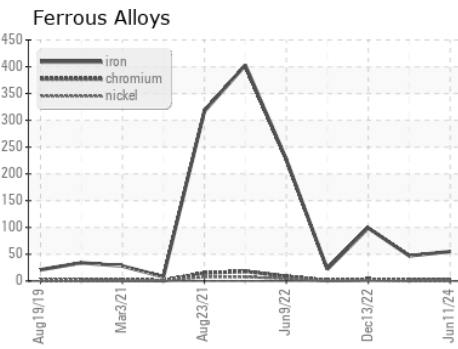
OIL ANALYSIS REPORT



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	13.4	13.9

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0104063
Lab Number : 06214424
Unique Number : 11087288
Test Package : FLEET (Additional Tests: Glycol)
Received : 19 Jun 2024
Tested : 24 Jun 2024
Diagnosed : 24 Jun 2024 - Jonathan Hester

GFL Environmental - 028 - Weldon
 2211 US Highway 301
 Halifax, NC
 US 27839
 Contact: TRAVIS PORCH
 tporch@gflenv.com
 T: (252)532-3344
 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)