



OIL ANALYSIS REPORT

Sample Rating Trend

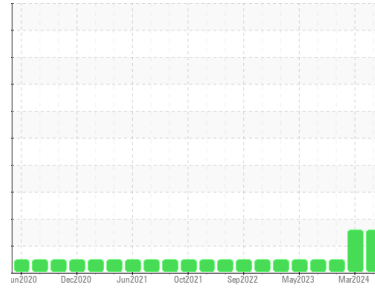
DIRT



Machine Id
829020-1071

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 15W40 (--- LTR)



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 seal material.

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	GFL0116562	GFL0111895	GFL0108331
Sample Date	Client Info	29 Mar 2024	14 Mar 2024	11 Jan 2024
Machine Age	hrs	14334	14224	13925
Oil Age	hrs	13168	13357	13229
Oil Changed	Client Info	Changed	Not Changd	N/A
Sample Status		ABNORMAL	ABNORMAL	NORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >5	<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 >110	18	11	15
Chromium	ppm ASTM D5185m >4	<1	<1	<1
Nickel	ppm ASTM D5185m >2	0	<1	0
Titanium	ppm ASTM D5185m	0	0	<1
Silver	ppm ASTM D5185m >2	0	0	0
Aluminum	ppm ASTM D5185m >25	2	2	1
Lead	ppm ASTM D5185m >45	0	<1	<1
Copper	ppm ASTM D5185m >85	<1	<1	<1
Tin	ppm ASTM D5185m >4	0	<1	<1
Vanadium	ppm ASTM D5185m	<1	0	<1
Cadmium	ppm ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m 0	13	15	12
Barium	ppm ASTM D5185m 0	0	0	0
Molybdenum	ppm ASTM D5185m 60	61	59	61
Manganese	ppm ASTM D5185m 0	<1	0	<1
Magnesium	ppm ASTM D5185m 1010	946	900	972
Calcium	ppm ASTM D5185m 1070	1190	1092	1118
Phosphorus	ppm ASTM D5185m 1150	1032	972	1100
Zinc	ppm ASTM D5185m 1270	1250	1167	1273
Sulfur	ppm ASTM D5185m 2060	3498	3158	3180

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >30	▲ 44	▲ 38	5
Sodium	ppm ASTM D5185m	2	2	3
Potassium	ppm ASTM D5185m >20	<1	<1	0

INFRA-RED

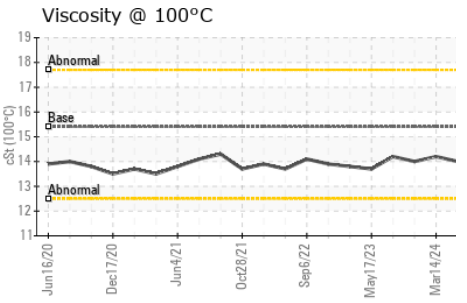
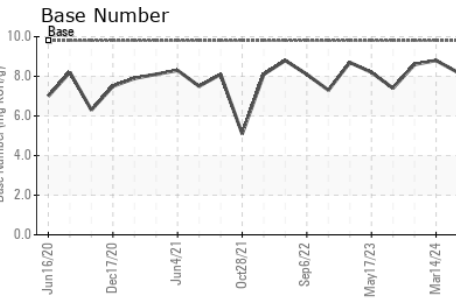
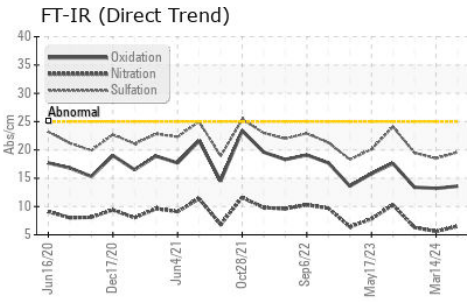
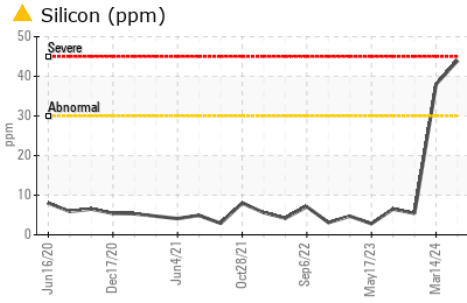
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	1.1	0.6	0.9
Nitration	Abs/cm *ASTM D7624 >20	6.5	5.6	6.3
Sulfation	Abs/.1mm *ASTM D7415 >30	19.6	18.5	19.5

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	13.6	13.2	13.4
Base Number (BN)	mg KOH/g ASTM D2896 9.8	8.2	8.8	8.6



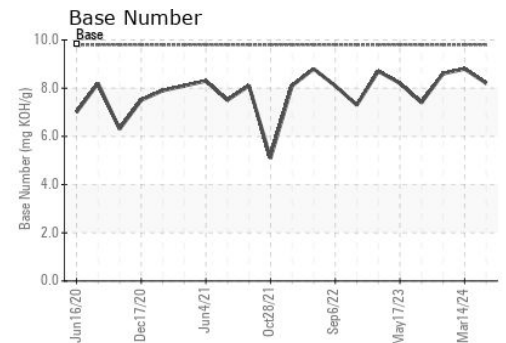
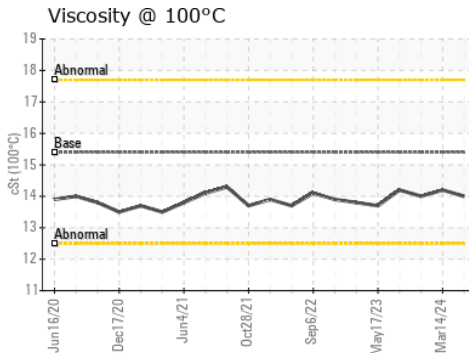
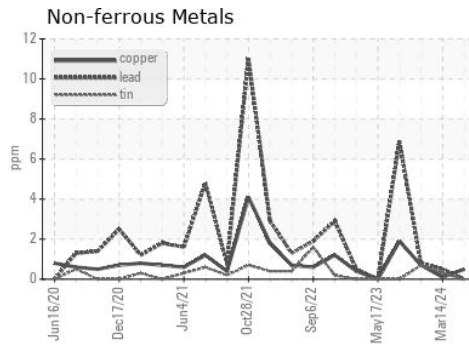
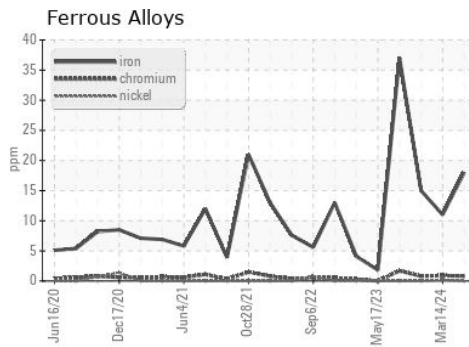
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VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
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	14.0	14.2

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : GFL0116562
 Lab Number : 06136806
 Unique Number : 10956271
 Test Package : FLEET

Received : 02 Apr 2024
 Tested : 03 Apr 2024
 Diagnosed : 04 Apr 2024 - Sean Felton

GFL Environmental - 652 - Fredericksburg Hauling
 10954 Houser Drive
 Fredericksburg, VA
 US 22408
 Contact: WILLIAM MILO
 wmilo@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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