

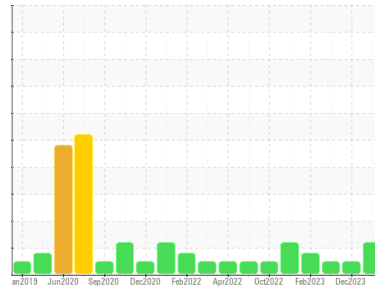


OIL ANALYSIS REPORT



Machine Id
427078-402332
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

Sample Rating Trend



FUEL



DIAGNOSIS

Recommendation

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	GFL0102248	GFL0102273	GFL0056959
Sample Date	Client Info	07 Apr 2024	18 Dec 2023	20 Mar 2023
Machine Age	hrs	0	18732	16924
Oil Age	hrs	600	600	600
Oil Changed	Client Info	Changed	Changed	Changed
Sample Status		ABNORMAL	NORMAL	NORMAL

CONTAMINATION

method	limit/base	current	history1	history2
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 >120	17	6	4
Chromium	ppm	ASTM D5185m >20	<1	0	<1
Nickel	ppm	ASTM D5185m >5	<1	0	0
Titanium	ppm	ASTM D5185m >2	0	0	0
Silver	ppm	ASTM D5185m >2	0	0	0
Aluminum	ppm	ASTM D5185m >20	3	2	2
Lead	ppm	ASTM D5185m >40	2	1	0
Copper	ppm	ASTM D5185m >330	1	<1	<1
Tin	ppm	ASTM D5185m >15	1	<1	<1
Vanadium	ppm	ASTM D5185m	0	0	<1
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m 0	0	1	5
Barium	ppm	ASTM D5185m 0	0	0	0
Molybdenum	ppm	ASTM D5185m 60	59	56	55
Manganese	ppm	ASTM D5185m 0	0	<1	<1
Magnesium	ppm	ASTM D5185m 1010	1006	901	875
Calcium	ppm	ASTM D5185m 1070	1090	985	997
Phosphorus	ppm	ASTM D5185m 1150	1005	928	930
Zinc	ppm	ASTM D5185m 1270	1273	1189	1170
Sulfur	ppm	ASTM D5185m 2060	3016	2436	2820

CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m >25	4	3	4
Sodium	ppm	ASTM D5185m	6	14	36
Potassium	ppm	ASTM D5185m >20	0	<1	2
Fuel	%	ASTM D3524 >3.0	▲ 4.3	<1.0	<1.0

INFRA-RED

method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844 >4	0.8	0.4	0.3
Nitration	Abs/cm	*ASTM D7624 >20	10.2	9.6	7.7
Sulfation	Abs/.1mm	*ASTM D7415 >30	23.0	21.8	18.5

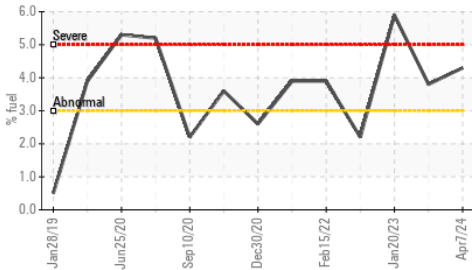
FLUID DEGRADATION

method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414 >25	19.2	17.5	14.6
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	4.8	5.9	8.1

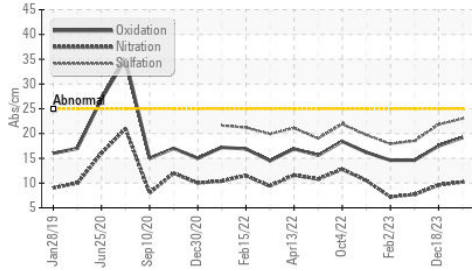


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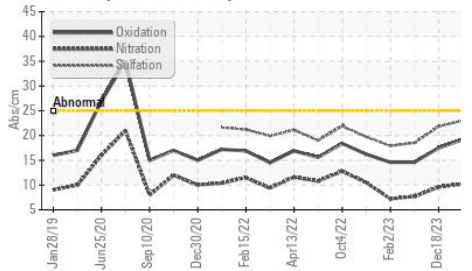
▲ Fuel Dilution



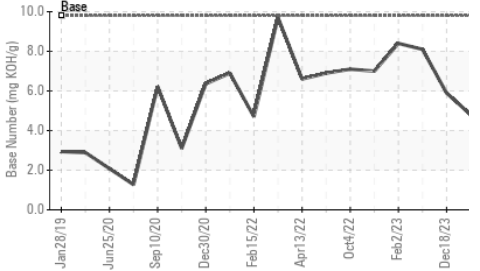
● FT-IR (Direct Trend)



● FT-IR (Direct Trend)



● Base Number

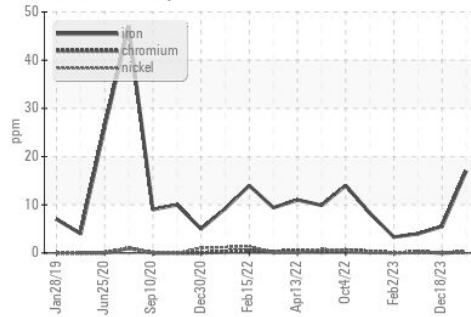


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

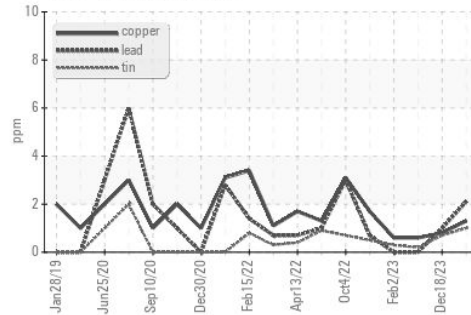
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4 ▲ 12.3	12.8	12.8

GRAPHS

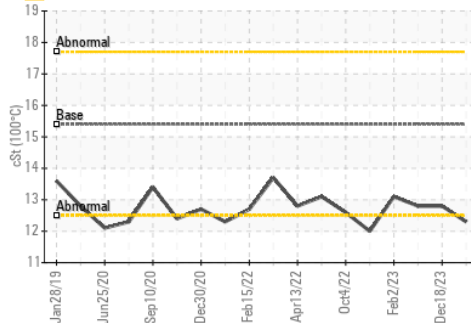
● Ferrous Alloys



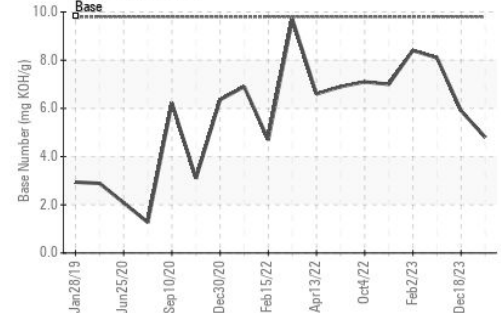
● Non-ferrous Metals



▲ Viscosity @ 100°C



● Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : GFL0102248

Lab Number : 06140855

Unique Number : 10965663

Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel)

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)

Received : 08 Apr 2024

Tested : 10 Apr 2024

Diagnosed : 10 Apr 2024 - Wes Davis

GFL Environmental - 859 - Bay City

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