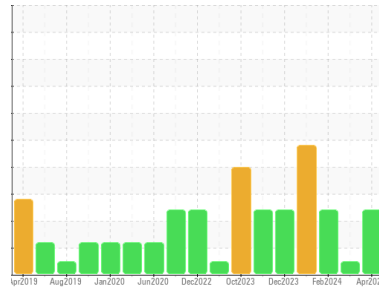




OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL



Area
(29KK9A)
 Machine Id
721020-361648
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

Sodium and/or potassium levels are high. 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 suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			GFL0114069	GFL0114087	GFL0109830
Sample Date	Client Info			16 Apr 2024	18 Mar 2024	16 Feb 2024
Machine Age	hrs	Client Info		29160	29009	28861
Oil Age	hrs	Client Info		0	0	600
Oil Changed	Client Info			Not Chngd	Not Chngd	Changed
Sample Status				ABNORMAL	NORMAL	SEVERE

CONTAMINATION		method	limit/base	current	history1	history2
Water	WC Method		>0.2	NEG	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	37	13	10
Chromium	ppm	ASTM D5185m	>20	1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	7	5	8
Lead	ppm	ASTM D5185m	>40	<1	0	<1
Copper	ppm	ASTM D5185m	>330	<1	0	<1
Tin	ppm	ASTM D5185m	>15	<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	0	3	2
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	61	60	59
Manganese	ppm	ASTM D5185m	0	<1	0	<1
Magnesium	ppm	ASTM D5185m	1010	929	942	913
Calcium	ppm	ASTM D5185m	1070	1149	1176	1043
Phosphorus	ppm	ASTM D5185m	1150	1025	1058	1015
Zinc	ppm	ASTM D5185m	1270	1182	1234	1242
Sulfur	ppm	ASTM D5185m	2060	3485	3672	3029

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	8	5	4
Sodium	ppm	ASTM D5185m		▲ 71	45	31
Potassium	ppm	ASTM D5185m	>20	▲ 59	37	32
Fuel	%	ASTM D3524	>2.0	<1.0	1.5	▲ 5.2
Glycol	%	*ASTM D2982		NEG	NEG	NEG

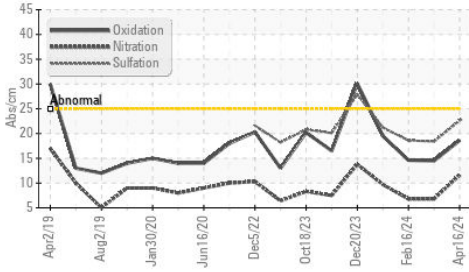
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	0	0.2	0.1
Nitration	Abs/cm	*ASTM D7624	>20	11.6	6.8	6.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.6	18.4	18.6

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	18.6	14.5	14.6
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	3.9	8.7	7.9

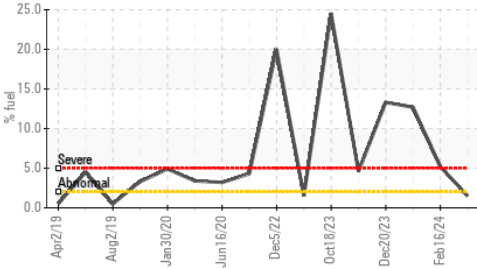


OIL ANALYSIS REPORT

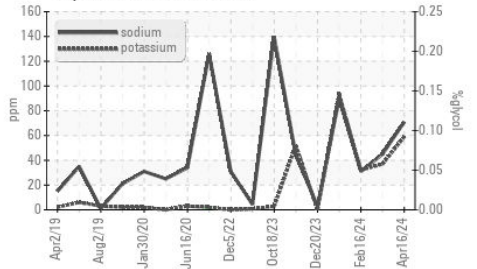
FT-IR (Direct Trend)



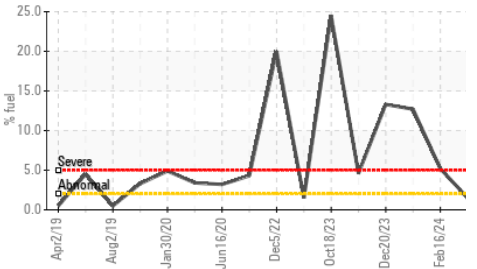
Fuel Dilution



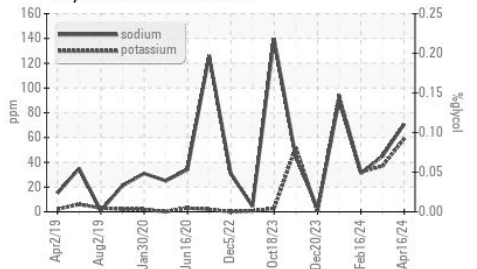
Glycol Contamination



Fuel Dilution



Glycol Contamination

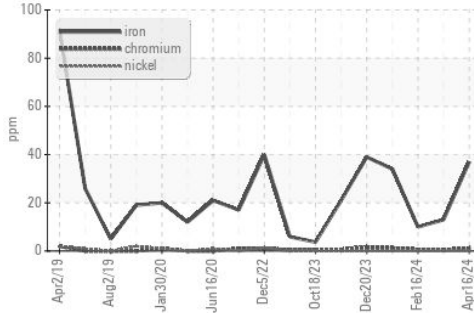


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

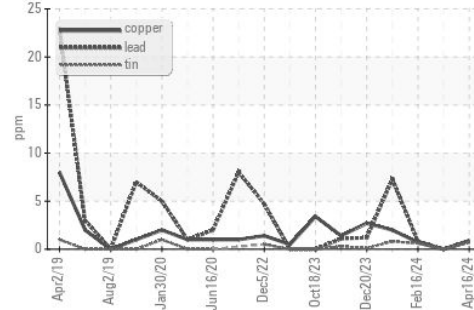
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	12.4	12.1 ▲ 11.2

GRAPHS

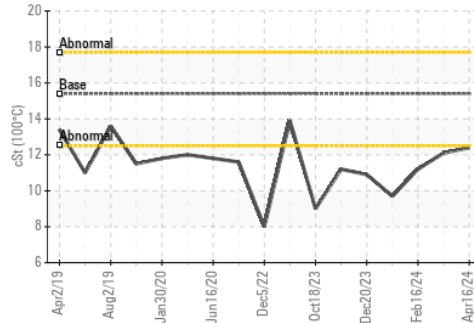
Ferrous Alloys



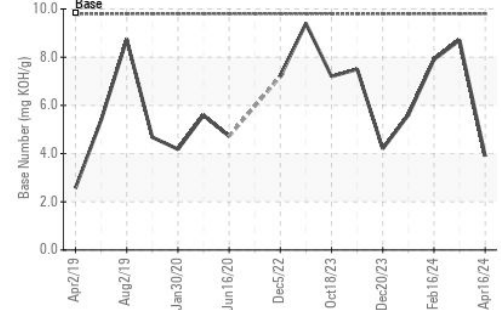
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : GFL0114069

Lab Number : 06154111

Unique Number : 10989534

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

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 : 19 Apr 2024

Tested : 23 Apr 2024

Diagnosed : 23 Apr 2024 - Jonathan Hester

GFL Environmental - 823 - Central Missouri Hauling

24461 Oak Grove Lane

Sedalia, MO

US 65301

Contact: Terry Randolph

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T: (660)631-2116

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