



OIL ANALYSIS REPORT

Sample Rating Trend

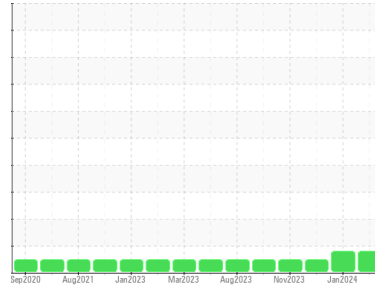
WEAR



Machine Id
920088-205328

Component
Diesel Engine

Fluid
PETRO CANADA DURON SHP 15W40 (12 GAL)



DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

Valve wear is indicated. All other component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

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		GFL0109158	GFL0109151	GFL0098336
Sample Date	Client Info		08 Feb 2024	25 Jan 2024	29 Nov 2023
Machine Age	hrs	Client Info	9788	9659	9342
Oil Age	hrs	Client Info	700	317	700
Oil Changed	Client Info		Changed	N/A	Changed
Sample Status			ABNORMAL	ABNORMAL	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	22	18	10
Chromium	ppm	ASTM D5185m >5	▲ 6	▲ 7	<1
Nickel	ppm	ASTM D5185m >4	0	<1	0
Titanium	ppm	ASTM D5185m >2	0	<1	0
Silver	ppm	ASTM D5185m >2	0	0	0
Aluminum	ppm	ASTM D5185m >20	4	2	1
Lead	ppm	ASTM D5185m >150	0	<1	0
Copper	ppm	ASTM D5185m >90	0	<1	0
Tin	ppm	ASTM D5185m >5	0	<1	0
Vanadium	ppm	ASTM D5185m	<1	0	0
Cadmium	ppm	ASTM D5185m	0	<1	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	<1	<1	0
Barium	ppm	ASTM D5185m 0	0	0	3
Molybdenum	ppm	ASTM D5185m 60	58	57	60
Manganese	ppm	ASTM D5185m 0	<1	<1	0
Magnesium	ppm	ASTM D5185m 1010	991	934	870
Calcium	ppm	ASTM D5185m 1070	1032	961	972
Phosphorus	ppm	ASTM D5185m 1150	1106	977	945
Zinc	ppm	ASTM D5185m 1270	1288	1200	1132
Sulfur	ppm	ASTM D5185m 2060	3148	3110	3185

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >35	4	4	2
Sodium	ppm	ASTM D5185m	2	0	1
Potassium	ppm	ASTM D5185m >20	9	8	4

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >7.5	0.7	0.6	0.6
Nitration	Abs/cm	*ASTM D7624 >20	6.5	6.0	7.0
Sulfation	Abs/.1mm	*ASTM D7415 >30	18.4	18.0	18.5

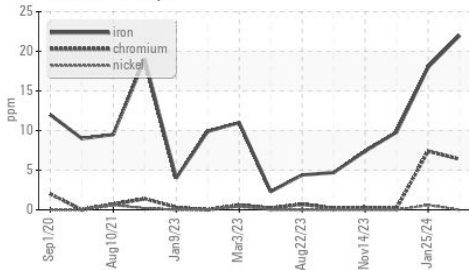
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	13.0	12.8	13.7
Base Number (BN)	mg KOH/g	ASTM D2896 9.8	8.4	8.6	8.3

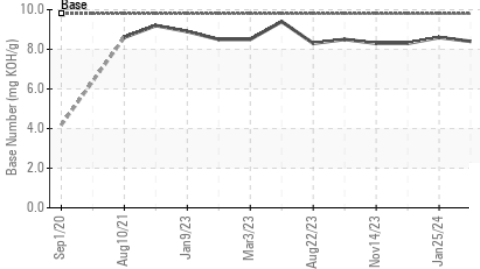


OIL ANALYSIS REPORT

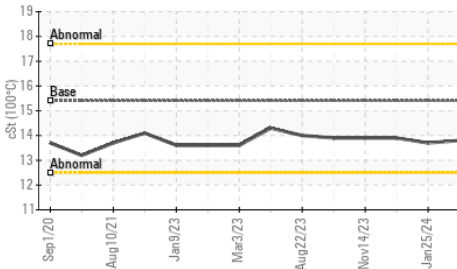
▲ Ferrous Alloys



Base Number



Viscosity @ 100°C

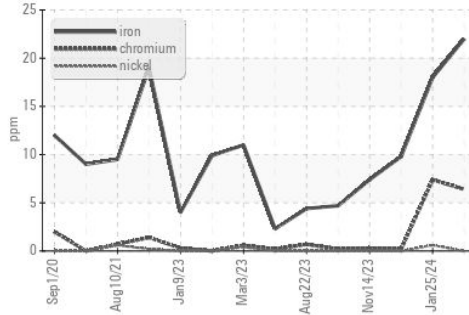


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

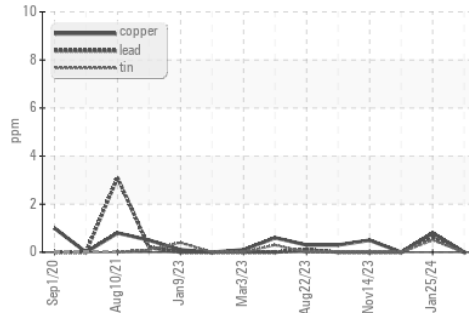
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.8	13.7

GRAPHS

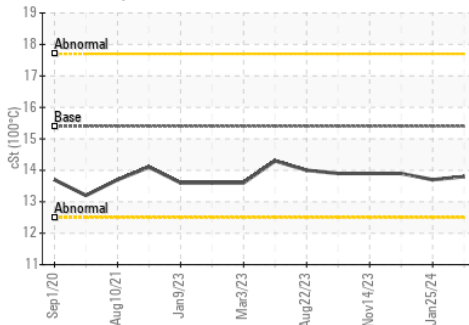
▲ Ferrous Alloys



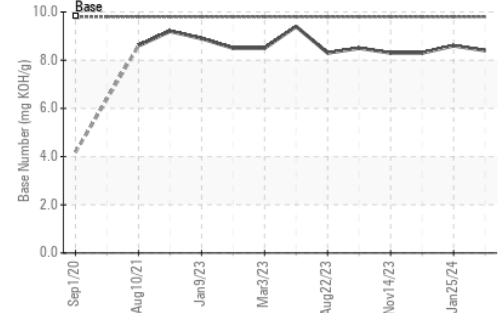
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0109158
Lab Number : 06092661
Unique Number : 10885514
Test Package : FLEET

Received : 19 Feb 2024
Tested : 20 Feb 2024
Diagnosed : 20 Feb 2024 - Don Baldrige

GFL Environmental - 822 - Springfield Hauling
 2120 West Bennett Street
 Springfield, MO
 US 65807

Contact: Dennis Moore
 dennis.moore@gflenv.com
 T: (417)403-3641

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)