



OIL ANALYSIS REPORT

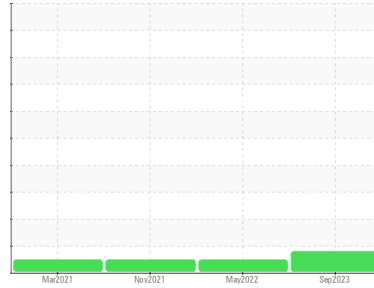
Sample Rating Trend

WEAR

Area
(PA8110)
Machine Id
924001

Component
Diesel Engine
Fluid

PETRO CANADA DURON SHP 15W40 (--- GAL)



DIAGNOSIS

Recommendation

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

Wear

Lead ppm levels are abnormal. Bearing wear is indicated.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			GFL0029315	GFL0029332	GFL0029345
Sample Date	Client Info			06 Sep 2023	06 May 2022	23 Nov 2021
Machine Age	hrs	Client Info		17660	15255	14660
Oil Age	hrs	Client Info		746	595	582
Oil Changed	Client Info			Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method	>5		<1.0	<1.0	<1.0
Glycol	WC Method			NEG	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>110	29	22	22
Chromium	ppm	ASTM D5185(m)	>4	1	<1	1
Nickel	ppm	ASTM D5185(m)	>2	0	<1	<1
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)	>2	0	0	0
Aluminum	ppm	ASTM D5185(m)	>25	2	2	2
Lead	ppm	ASTM D5185(m)	>45	▲ 49	7	6
Copper	ppm	ASTM D5185(m)	>85	2	<1	<1
Tin	ppm	ASTM D5185(m)	>4	<1	<1	<1
Antimony	ppm	ASTM D5185(m)		0	<1	<1
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		0	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	4	10	8
Barium	ppm	ASTM D5185(m)	0	0	0	0
Molybdenum	ppm	ASTM D5185(m)	60	64	61	61
Manganese	ppm	ASTM D5185(m)	0	<1	<1	<1
Magnesium	ppm	ASTM D5185(m)	1010	1060	1042	1049
Calcium	ppm	ASTM D5185(m)	1070	1151	1094	1107
Phosphorus	ppm	ASTM D5185(m)	1150	1113	1095	1075
Zinc	ppm	ASTM D5185(m)	1270	1238	1220	1267
Sulfur	ppm	ASTM D5185(m)	2060	2345	2489	2512
Lithium	ppm	ASTM D5185(m)		<1	0	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>30	6	4	4
Sodium	ppm	ASTM D5185(m)		2	2	2
Potassium	ppm	ASTM D5185(m)	>20	1	2	1

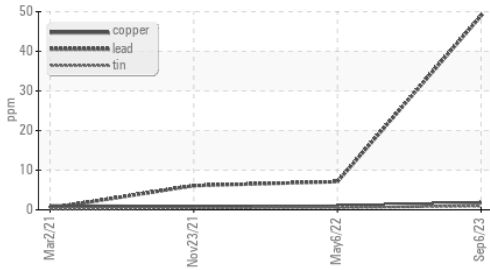
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>3	0.6	0.4	0.2
Nitration	Abs/cm	ASTM D7624*	>20	10.4	9.0	8.5
Sulfation	Abs/.1mm	ASTM D7415*	>30	22.9	23.1	21.6

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	20.4	17.2	16.5



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▲ Non-ferrous Metals

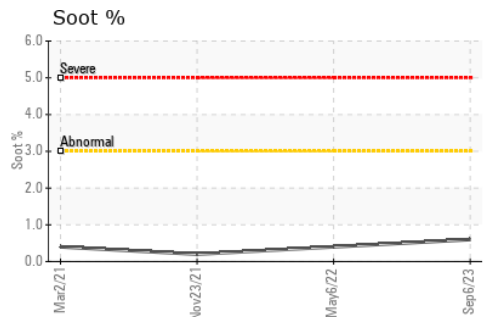
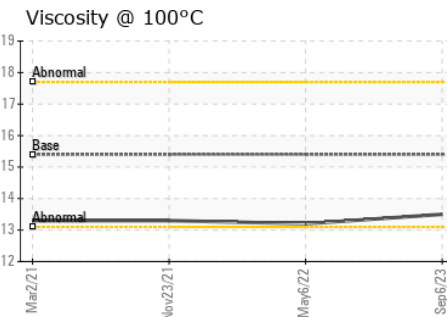
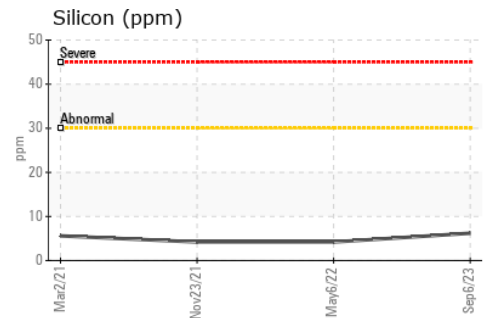
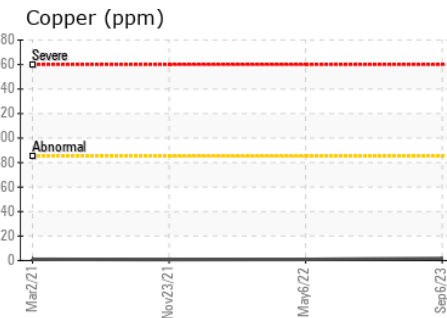
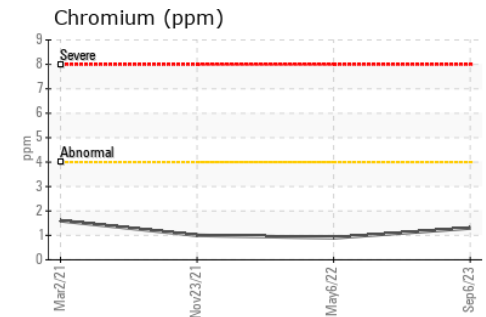
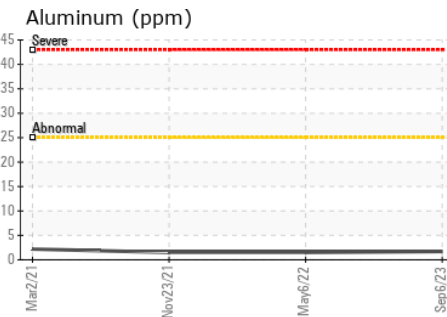
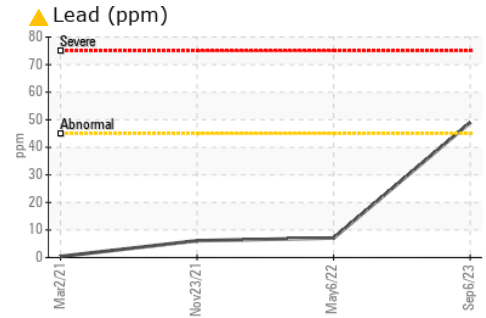
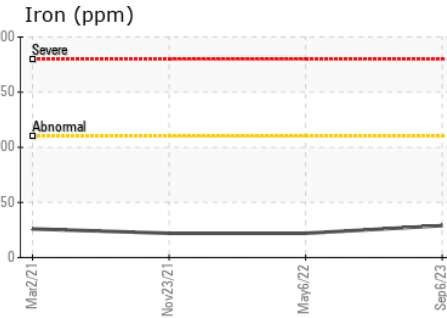
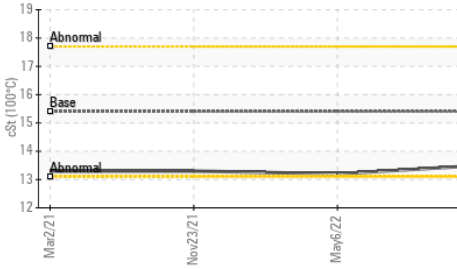


VISUAL	method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	13.5	13.2

GRAPHS

Viscosity @ 100°C



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 571 - Cranbrook Hauling TS LF
Sample No. : GFL0029315 **Received** : 18 Sep 2023 1425 Industrial Road 2
Lab Number : 02583131 **Diagnosed** : 19 Sep 2023 Cranbrook, BC
Unique Number : 5644196 **Diagnostician** : Bill Quesnel CA V1C 5X5
Test Package : MOB 1 **Contact:** Michael Miles
mmiles@gflenv.com

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

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