

Machine Id
201043
Component
Diesel Engine
Fluid
PETRO CANADA DURON XL SYN BLEND 15W40 (--- GAL)

RECOMMENDATION

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

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0117345	GFL0099610	GFL0091617
Sample Date		Client Info		18 May 2024	30 Jan 2024	20 Sep 2023
Machine Age	hrs	Client Info		404287	10036	8985
Oil Age	hrs	Client Info		0	550	0
Filter Age	hrs	Client Info		0	550	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	MARGINAL

WEAR

Aluminum ppm levels are abnormal. Piston wear is indicated.

Iron	ppm	ASTM D5185(m)	>100	18	17	6
Chromium	ppm	ASTM D5185(m)	>20	<1	<1	0
Nickel	ppm	ASTM D5185(m)	>4	0	0	0
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)	>3	0	0	<1
Aluminum	ppm	ASTM D5185(m)	>20	▲ 32	5	1
Lead	ppm	ASTM D5185(m)	>40	4	6	2
Copper	ppm	ASTM D5185(m)	>330	1	<1	<1
Tin	ppm	ASTM D5185(m)	>15	<1	<1	0
Vanadium	ppm	ASTM D5185(m)		0	0	0

CONTAMINATION

There is no indication of any contamination in the oil.

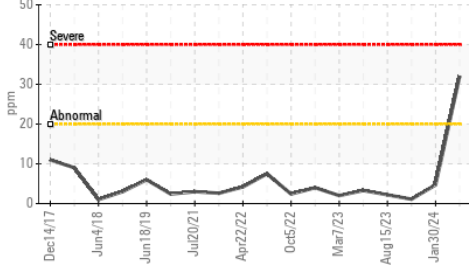
Silicon	ppm	ASTM D5185(m)	>25	10	12	6
Potassium	ppm	ASTM D5185(m)	>20	3	4	0
Fuel		WC Method	>5	<1.0	<1.0	▲ 2.7
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	ASTM D7844*	>3	1.6	1.5	0.7
Nitration	Abs/cm	ASTM D7624*	>20	14.0	13.3	9.6
Sulfation	Abs/.1mm	ASTM D7415*	>30	25.9	24.6	20.9
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG

FLUID CONDITION

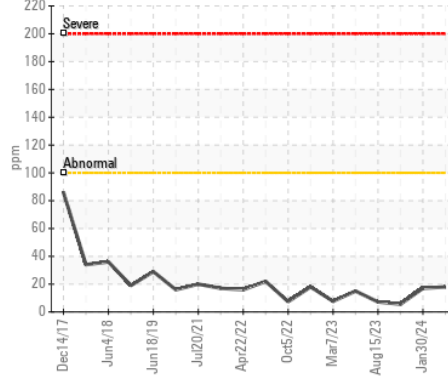
The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Sodium	ppm	ASTM D5185(m)		3	2	2
Boron	ppm	ASTM D5185(m)	1	2	2	2
Barium	ppm	ASTM D5185(m)	1	0	0	<1
Molybdenum	ppm	ASTM D5185(m)	60	58	57	57
Manganese	ppm	ASTM D5185(m)	1	<1	0	0
Magnesium	ppm	ASTM D5185(m)	1010	935	927	923
Calcium	ppm	ASTM D5185(m)	1070	1052	1117	1093
Phosphorus	ppm	ASTM D5185(m)	1150	976	998	998
Zinc	ppm	ASTM D5185(m)	1270	1171	1174	1170
Sulfur	ppm	ASTM D5185(m)	2060	2314	2627	2539
Oxidation	Abs/.1mm	ASTM D7414*	>25	25.7	23.7	19.0
Base Number (BN)	mg KOH/g	ASTM D2896*	9.6	7.33	8.65	8.60
Visc @ 100°C	cSt	ASTM D7279(m)	15.5	13.5	13.7	13.0

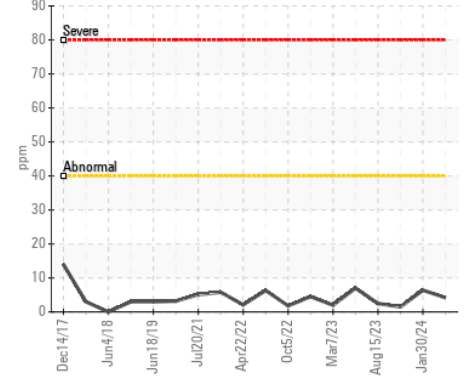
▲ Aluminum (ppm)



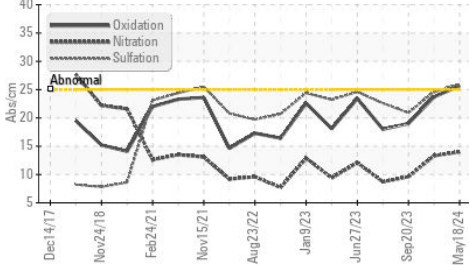
Iron (ppm)



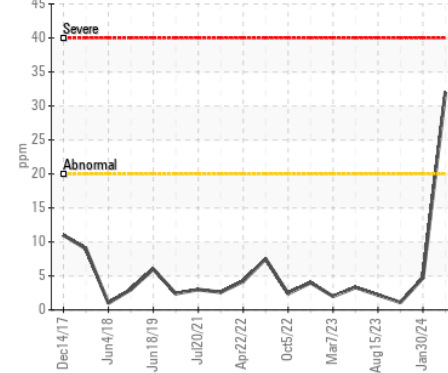
Lead (ppm)



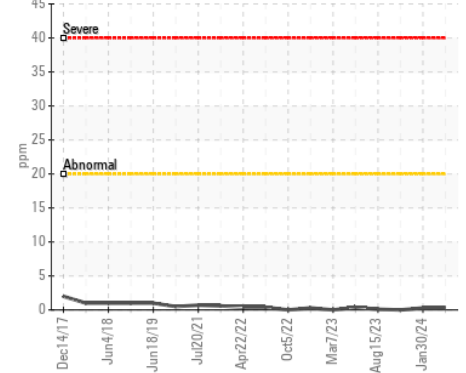
FT-IR (Direct Trend)



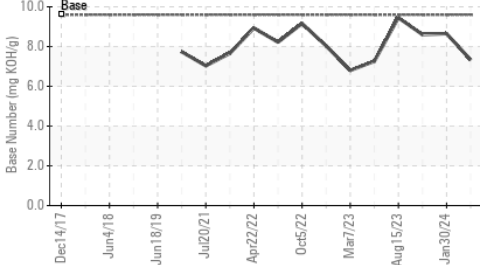
▲ Aluminum (ppm)



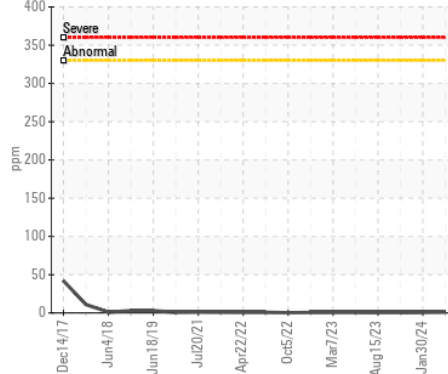
Chromium (ppm)



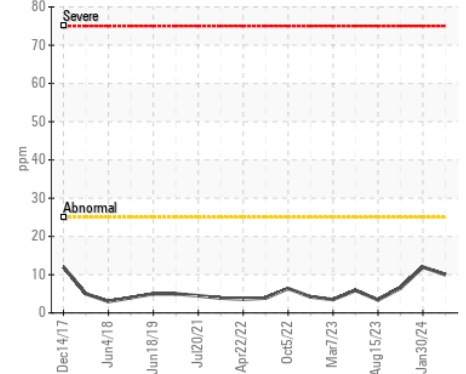
Base Number



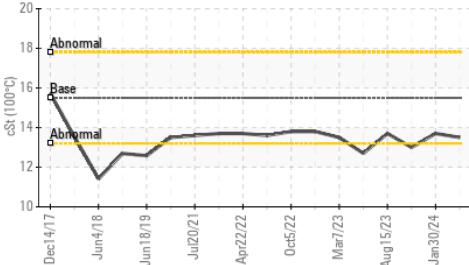
Copper (ppm)



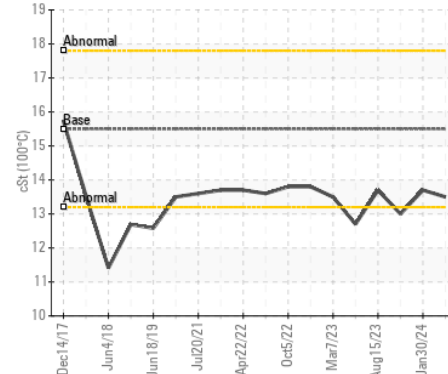
Silicon (ppm)



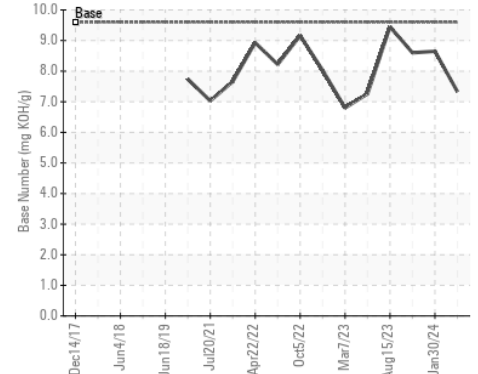
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : GFL0117345
Lab Number : 02637854
Unique Number : 5787016
Test Package : MOB 2

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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.