



WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ATTENTION



Machine Id
8983
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (20 LTR)

RECOMMENDATION

We advise that you check the engine tuning and timing. Check for low coolant level. 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		GFL0125799	GFL0104524	GFL0103090
Sample Date		Client Info		31 May 2024	12 Dec 2023	23 Nov 2023
Machine Age	kms	Client Info		182418	182132	181340
Oil Age	kms	Client Info		0	182418	0
Filter Age	kms	Client Info		0	0	0
Oil Changed		Client Info		Changed	N/A	Changed
Filter Changed		Client Info		Changed	N/A	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>90	76	17	41
Chromium	ppm	ASTM D5185(m)	>20	2	<1	2
Nickel	ppm	ASTM D5185(m)	>2	0	<1	<1
Titanium	ppm	ASTM D5185(m)	>2	<1	0	0
Silver	ppm	ASTM D5185(m)	>2	0	<1	<1
Aluminum	ppm	ASTM D5185(m)	>20	8	2	3
Lead	ppm	ASTM D5185(m)	>40	25	<1	2
Copper	ppm	ASTM D5185(m)	>330	11	<1	1
Tin	ppm	ASTM D5185(m)	>15	2	0	<1
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual*	NONE	NONE	---	---
Yellow Metal	scalar	Visual*	NONE	NONE	---	---

CONTAMINATION

There is an abnormal level of nitration indicated. Water treatment chemicals present, indicating slow coolant leak. Test for glycol is negative.

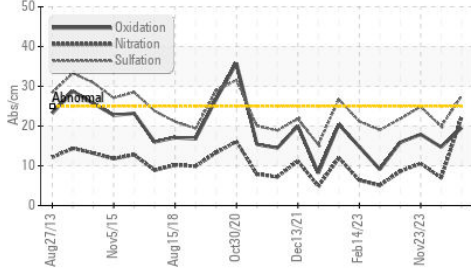
Silicon	ppm	ASTM D5185(m)	>25	21	3	4
Potassium	ppm	ASTM D5185(m)	>20	▲ 46	<1	<1
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	ASTM D7922*		0.0	NEG	NEG
Soot %	%	ASTM D7844*	>6	1	0.7	2.1
Nitration	Abs/cm	ASTM D7624*	>20	▲ 22.3	7.0	10.6
Sulfation	Abs/.1mm	ASTM D7415*	>30	27.6	19.9	24.9
Silt	scalar	Visual*	NONE	NONE	---	---
Debris	scalar	Visual*	NONE	NONE	---	---
Sand/Dirt	scalar	Visual*	NONE	NONE	---	---
Appearance	scalar	Visual*	NORML	NORML	---	---
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG

FLUID CONDITION

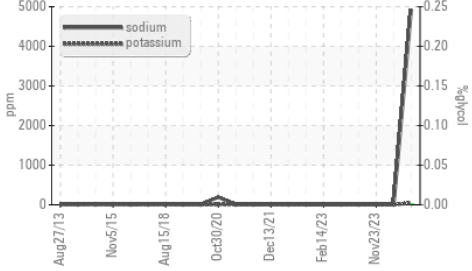
The oil is no longer serviceable due to the presence of contaminants. The condition of the oil is acceptable for the time in service (see recommendation).

Sodium	ppm	ASTM D5185(m)		● 4925	4	6
Boron	ppm	ASTM D5185(m)	0	4	6	2
Barium	ppm	ASTM D5185(m)	0	<1	<1	0
Molybdenum	ppm	ASTM D5185(m)	60	84	61	65
Manganese	ppm	ASTM D5185(m)	0	<1	0	0
Magnesium	ppm	ASTM D5185(m)	1010	853	973	1070
Calcium	ppm	ASTM D5185(m)	1070	921	1061	1184
Phosphorus	ppm	ASTM D5185(m)	1150	916	983	1065
Zinc	ppm	ASTM D5185(m)	1270	1091	1204	1299
Sulfur	ppm	ASTM D5185(m)	2060	2412	2535	2539
Oxidation	Abs/.1mm	ASTM D7414*	>25	19.6	14.7	17.9
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	17.1	14.5	15.8

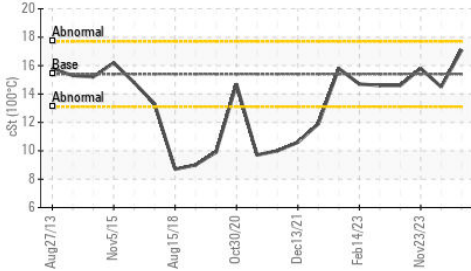
▲ FT-IR (Direct Trend)



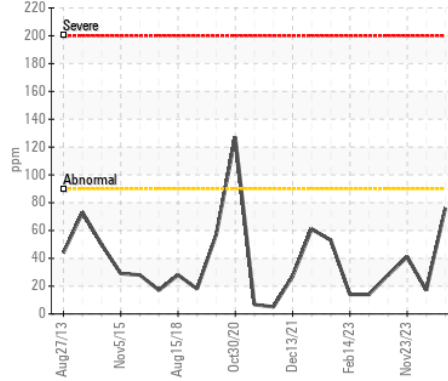
Glycol Contamination



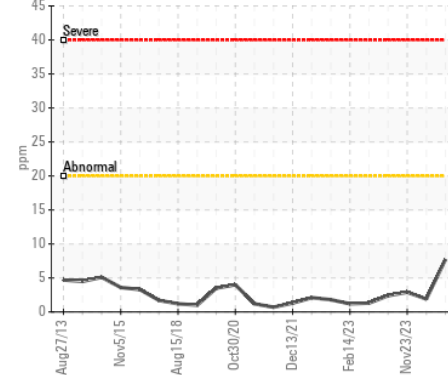
Viscosity @ 100°C



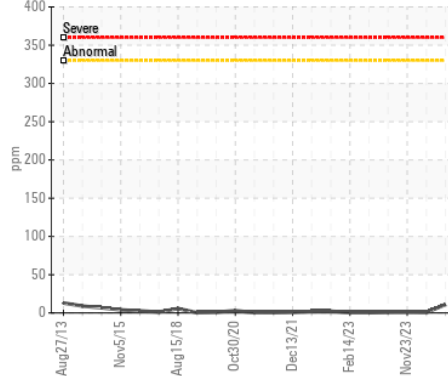
Iron (ppm)



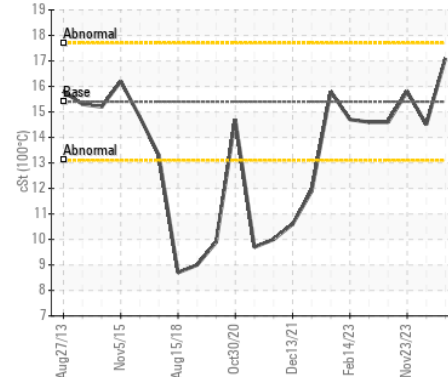
Aluminum (ppm)



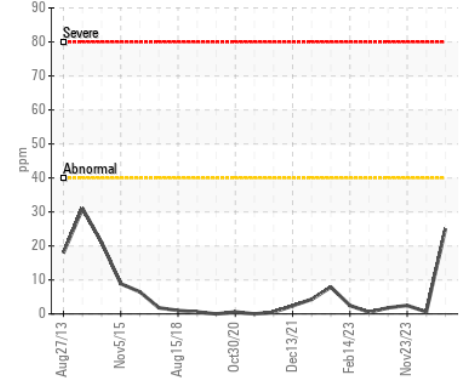
Copper (ppm)



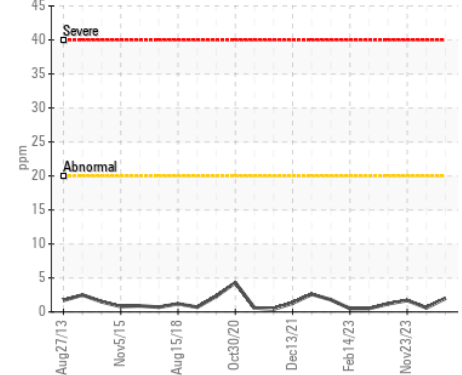
Viscosity @ 100°C



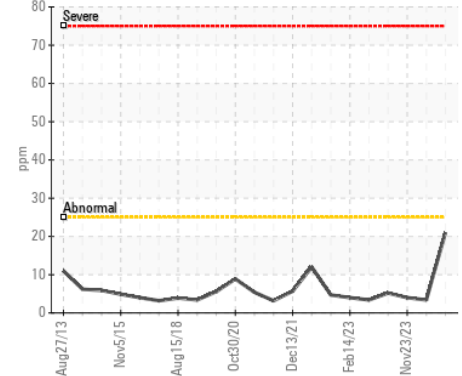
Lead (ppm)



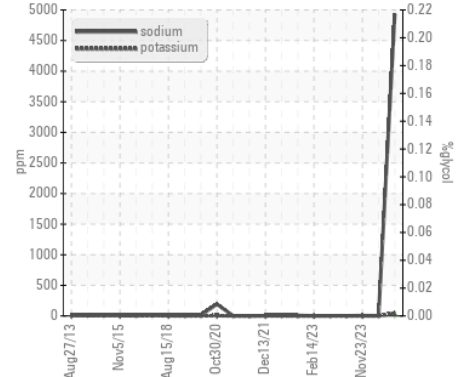
Chromium (ppm)



Silicon (ppm)



▲ Glycol Contamination



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : GFL0125799 **Received** : 13 Jun 2024
Lab Number : 02641578 **Tested** : 19 Jun 2024
Unique Number : 5799117 **Diagnosed** : 19 Jun 2024 - Kevin Marson
Test Package : MOB 1 (Additional Tests: Glycol, Visual)

GFL Environmental - 225 - COT(D2)
 20 Brydon Drive
 Etobicoke, ON
 CA M9W 5R6
 Contact: Rick Philip
 rphilip@gflenv.com
 T: (416)745-8080
 F:

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.