



Machine Id
913178
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0064676	GFL0074667	---
Sample Date		Client Info		08 May 2023	14 Apr 2023	---
Machine Age	hrs	Client Info		350	171	---
Oil Age	hrs	Client Info		179	171	---
Filter Age	hrs	Client Info		0	0	---
Oil Changed		Client Info		Changed	Changed	---
Filter Changed		Client Info		Changed	Changed	---
Sample Status				ABNORMAL	ABNORMAL	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	36	29	---
Chromium	ppm	ASTM D5185m	>20	0	<1	---
Nickel	ppm	ASTM D5185m	>4	1	2	---
Titanium	ppm	ASTM D5185m		0	0	---
Silver	ppm	ASTM D5185m	>3	0	<1	---
Aluminum	ppm	ASTM D5185m	>20	5	2	---
Lead	ppm	ASTM D5185m	>40	0	<1	---
Copper	ppm	ASTM D5185m	>330	33	23	---
Tin	ppm	ASTM D5185m	>15	2	3	---
Vanadium	ppm	ASTM D5185m		0	0	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

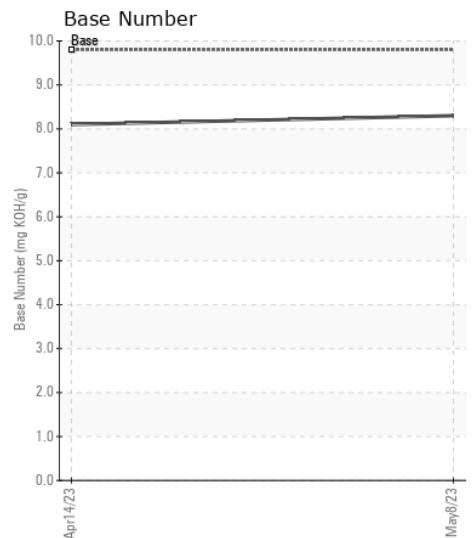
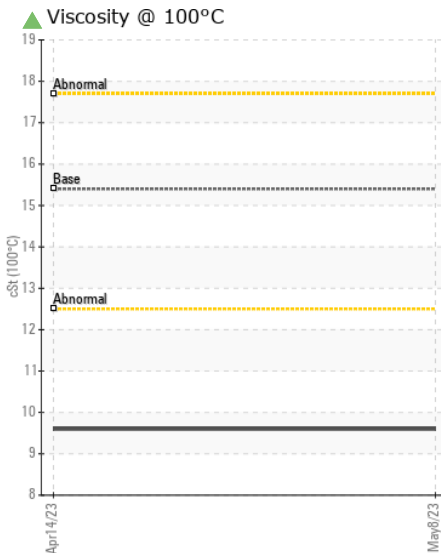
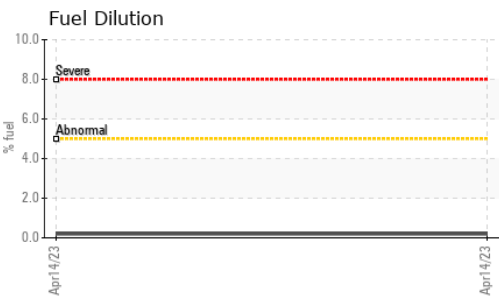
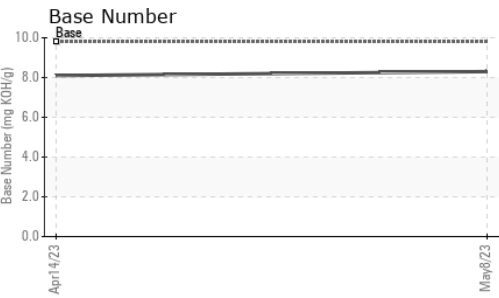
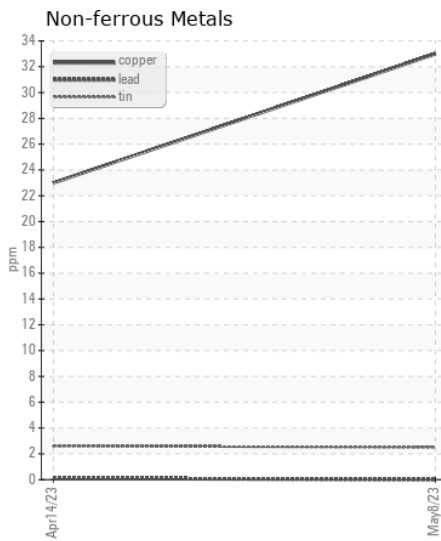
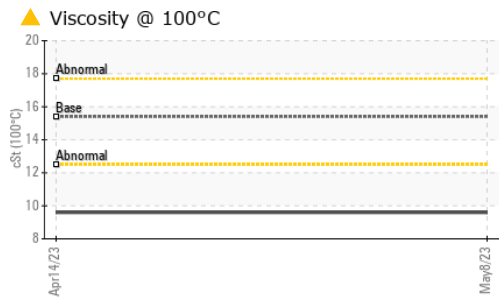
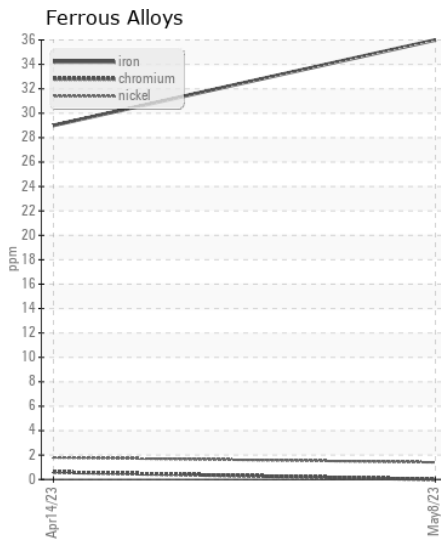
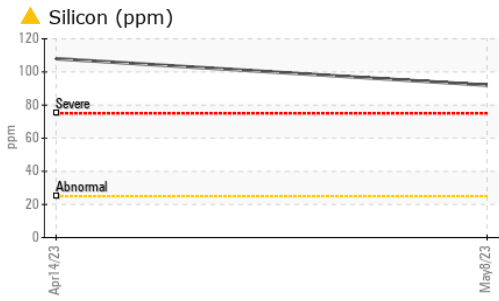
Elemental level of silicon (Si) above normal indicating ingress of seal material.

Silicon	ppm	ASTM D5185m	>25	▲ 92	▲ 108	---
Potassium	ppm	ASTM D5185m	>20	12	12	---
Fuel	%	ASTM D3524	>5	<1.0	0.2	---
Water		WC Method	>0.2	NEG	NEG	---
Glycol		WC Method		NEG	NEG	---
Soot %	%	*ASTM D7844	>3	0.3	0.1	---
Nitration	Abs/cm	*ASTM D7624	>20	9.4	7.1	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	25.8	24.1	---
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	---

FLUID CONDITION

The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Sodium	ppm	ASTM D5185m		5	5	---
Boron	ppm	ASTM D5185m	0	261	418	---
Barium	ppm	ASTM D5185m	0	0	0	---
Molybdenum	ppm	ASTM D5185m	60	131	127	---
Manganese	ppm	ASTM D5185m	0	4	4	---
Magnesium	ppm	ASTM D5185m	1010	705	631	---
Calcium	ppm	ASTM D5185m	1070	1565	1462	---
Phosphorus	ppm	ASTM D5185m	1150	726	698	---
Zinc	ppm	ASTM D5185m	1270	908	847	---
Sulfur	ppm	ASTM D5185m	2060	2666	2362	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	23.4	20.8	---
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.3	8.1	---
Visc @ 100°C	cSt	ASTM D445	15.4	▲ 9.6	▲ 9.6	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0064676 **Received** : 11 May 2023
Lab Number : 05844846 **Diagnosed** : 15 May 2023
Unique Number : 10468953 **Diagnostician** : Don Baldrige
Test Package : FLEET (Additional Tests: FuelDilution)

GFL Environmental - 814 - Little Rock Hauling
 4005 Hwy 161 N.
 Little Rock, AR
 US 72117
 Contact: Brad Koenig
 bkoenig@gflenv.com

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)