



Machine Id
714030
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We recommend that you drain the oil and perform a filter service on this component if not already done. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		GFL0102253	---	---
Sample Date		Client Info		23 Jun 2024	---	---
Machine Age	hrs	Client Info		0	---	---
Oil Age	hrs	Client Info		0	---	---
Filter Age	hrs	Client Info		0	---	---
Oil Changed		Client Info		N/A	---	---
Filter Changed		Client Info		N/A	---	---
Sample Status				SEVERE	---	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	35	---	---
Chromium	ppm	ASTM D5185m	>20	2	---	---
Nickel	ppm	ASTM D5185m	>4	2	---	---
Titanium	ppm	ASTM D5185m		<1	---	---
Silver	ppm	ASTM D5185m	>3	1	---	---
Aluminum	ppm	ASTM D5185m	>20	18	---	---
Lead	ppm	ASTM D5185m	>40	1	---	---
Copper	ppm	ASTM D5185m	>330	259	---	---
Tin	ppm	ASTM D5185m	>15	4	---	---
Vanadium	ppm	ASTM D5185m		<1	---	---
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---

CONTAMINATION

Fuel content negligible. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

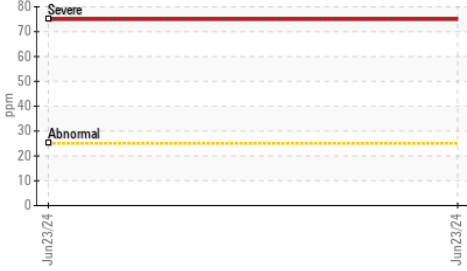
Silicon	ppm	ASTM D5185m	>25	75	---	---
Potassium	ppm	ASTM D5185m	>20	45	---	---
Fuel	%	ASTM D3524	>5	0.2	---	---
Water		WC Method	>0.2	NEG	---	---
Glycol		WC Method		NEG	---	---
Soot %	%	*ASTM D7844	>3	0.4	---	---
Nitration	Abs/cm	*ASTM D7624	>20	10.3	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	23.7	---	---
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	---	---
Emulsified Water	scalar	*Visual	>0.2	NEG	---	---

FLUID CONDITION

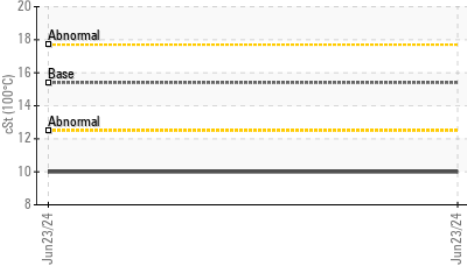
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type. The oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185m		2	---	---
Boron	ppm	ASTM D5185m	0	168	---	---
Barium	ppm	ASTM D5185m	0	2	---	---
Molybdenum	ppm	ASTM D5185m	60	127	---	---
Manganese	ppm	ASTM D5185m	0	5	---	---
Magnesium	ppm	ASTM D5185m	1010	703	---	---
Calcium	ppm	ASTM D5185m	1070	1438	---	---
Phosphorus	ppm	ASTM D5185m	1150	704	---	---
Zinc	ppm	ASTM D5185m	1270	862	---	---
Sulfur	ppm	ASTM D5185m	2060	2354	---	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	22.4	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	7.3	---	---
Visc @ 100°C	cSt	ASTM D445	15.4	10.0	---	---

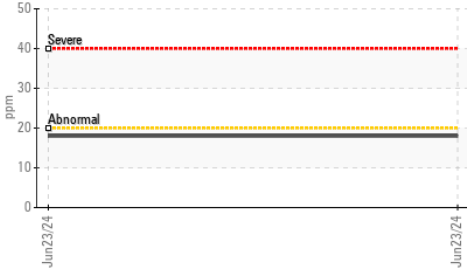
▲ Silicon (ppm)



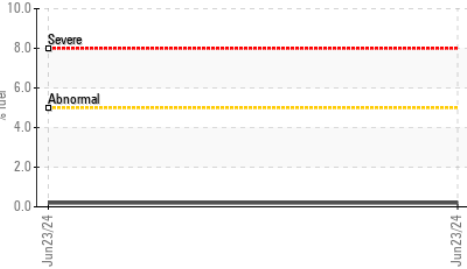
● Viscosity @ 100°C



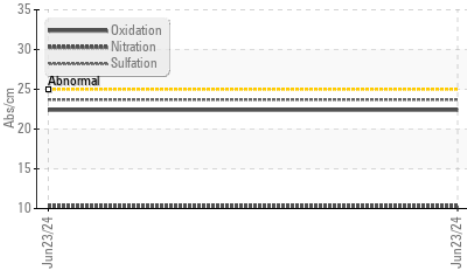
● Aluminum (ppm)



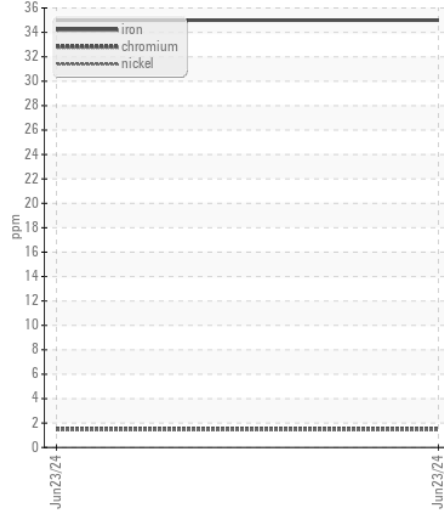
Fuel Dilution



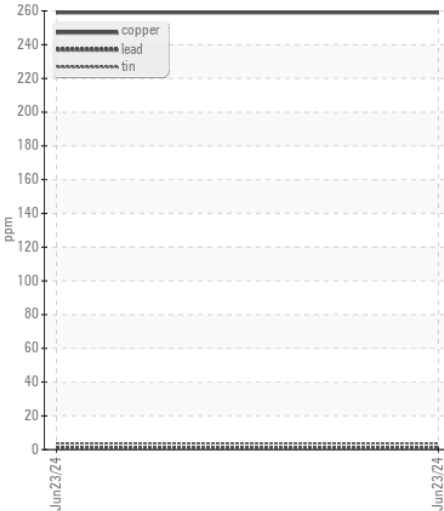
FT-IR (Direct Trend)



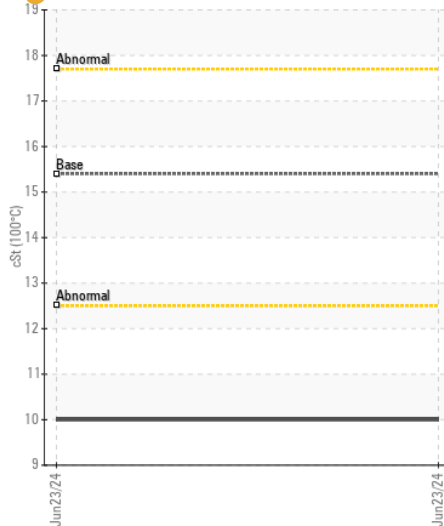
Ferrous Alloys



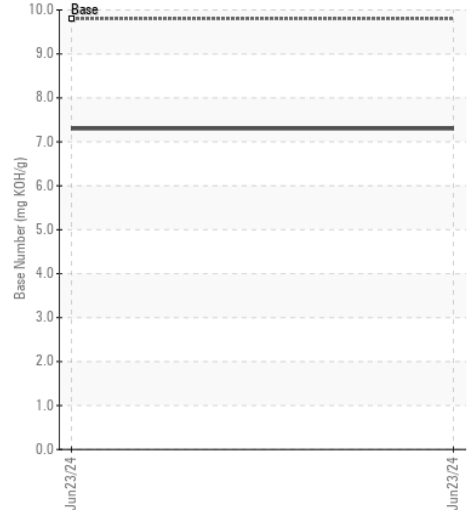
Non-ferrous Metals



● Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : GFL0102253

Lab Number : 06217893

Unique Number : 11096090

Test Package : FLEET (Additional Tests: FuelDilution, PercentFuel)

Received : 24 Jun 2024

Tested : 26 Jun 2024

Diagnosed : 27 Jun 2024 - Jonathan Hester

GFL Environmental - 859 - Bay City

700 Avenue F

Bay City, TX

US 77414

Contact: JONATHON BROWN

jonathon.brown@gflenv.com

T:

F:

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)