

# **OIL ANALYSIS REPORT**

Sample Rating Trend



# Machine Id 713058

#### Component Diesel Engine

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

## DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

#### Contamination

Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

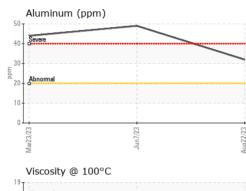
### Fluid Condition

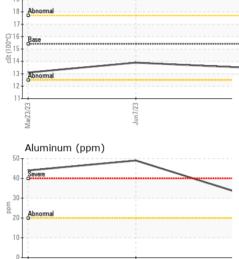
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

AL)		Ma2023 Jun2023 Aug2023				
SAMPLE INFORM	NATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0083467	GFL0083423	GFL0074233
Sample Date		Client Info		22 Aug 2023	07 Jun 2023	23 Mar 2023
Machine Age	hrs	Client Info		2397	2451	1208
Oil Age	hrs	Client Info		2397	2451	1208
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	S .	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>90	14	15	17
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	32	49	44
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	1	1	2
Tin	ppm	ASTM D5185m	>15	<1	0	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	1	17	2
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	63	53	60
Manganese	ppm	ASTM D5185m	0	<1	<1	1
Magnesium	ppm	ASTM D5185m	1010	1021	691	958
Calcium	ppm	ACTU DEVOE			001	550
	ppiii	ASTM D5185m	1070	1209	1595	1194
Phosphorus	ppm	ASTM D5185m ASTM D5185m	1070 1150	1209 1093		
					1595	1194
Zinc	ppm	ASTM D5185m	1150	1093	1595 830	1194 1091
Zinc	ppm ppm ppm	ASTM D5185m ASTM D5185m	1150 1270	1093 1344	1595 830 1045	1194 1091 1269
Zinc Sulfur CONTAMINAN	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m method	1150 1270 2060	1093 1344 3772	1595 830 1045 3007	1194 1091 1269 3054
Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m method	1150 1270 2060 limit/base	1093 1344 3772 current	1595 830 1045 3007 history1	1194 1091 1269 3054 history2
	ppm ppm ppm TS ppm	ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m	1150 1270 2060 limit/base >25	1093 1344 3772 current 4	1595 830 1045 3007 history1 6	1194 1091 1269 3054 history2 7
Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m ASTM D5185m	1150 1270 2060 limit/base >25	1093 1344 3772 current 4 6	1595 830 1045 3007 history1 6 7	1194 1091 1269 3054 history2 7 7 7
Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> ASTM D5185m ASTM D5185m ASTM D5185m	1150 1270 2060 limit/base >25 >20	1093 1344 3772 current 4 6 76	1595 830 1045 3007 history1 6 7 122	1194 1091 1269 3054 history2 7 7 7 111
Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m Method	1150 1270 2060 limit/base >25 >20 limit/base >6	1093 1344 3772 current 4 6 76 current	1595 830 1045 3007 history1 6 7 122 history1	1194 1091 1269 3054 history2 7 7 7 111 history2
Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844	1150 1270 2060 iimit/base >25 >20 iimit/base >6 >20	1093 1344 3772 current 4 6 76 current 0.4	1595 830 1045 3007 history1 6 7 122 history1 0.4	1194 1091 1269 3054 history2 7 7 7 111 history2 0.3
Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm TS ppm ppm ppm ppm % Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7824 *ASTM D7415	1150 1270 2060 iimit/base >25 >20 iimit/base >6 >20	1093 1344 3772 current 4 6 76 current 0.4 8.2	1595 830 1045 3007 history1 6 7 122 history1 0.4 9.8	1194 1091 1269 3054 history2 7 7 7 111 history2 0.3 7.6
Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm TS ppm ppm ppm ppm % Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m *ASTM D7844 *ASTM D7824 *ASTM D7415	1150 1270 2060 <b>limit/base</b> >25 >20 <b>limit/base</b> >6 >20 >20	1093 1344 3772 current 4 6 76 current 0.4 8.2 19.6	1595 830 1045 3007 history1 6 7 122 history1 0.4 9.8 21.0	1194 1091 1269 3054 history2 7 7 7 111 history2 0.3 7.6 19.1



# **OIL ANALYSIS REPORT**





Jun7/23

Mar23/23

VISUAL NONE NONE White Metal \*Visual NONE NONE scalar Yellow Metal NONE NONE NONE NONE scalar \*Visual Precipitate scalar \*Visual NONE NONE NONE NONE Silt scalar \*Visual NONE NONE NONE NONE NONE Debris \*Visual NONE NONE NONE scalar NONE Sand/Dirt scalar \*Visual NONE NONE NONE Aug22/23 NORML Appearance scalar NORML NORML NORML \*Visua Odor NORML NORML NORML scalar \*Visual NORML **Emulsified Water** scalar \*Visual >0.2 NEG NEG NEG Free Water scalar \*Visual NEG NEG NEG **FLUID PROPERTIES** Visc @ 100°C cSt ASTM D445 15.4 13.5 13.9 13.1 GRAPHS Ferrous Alloys 16 ickel 10 Non-ferrous Metals lead mac Viscosity @ 100°C Base Number 19 10.0 (mg KOH/g) (j-001) 15 ぢ 14 4 Base 13 Abnormal 12 11 0.0 Jun7/23 -Aug22/23 Mar23/23 Mar23/23 GFL Environmental - 865 - East Mount Hauling Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. Received : 25 Aug 2023 7213 East Mount Houston Road : GFL0083467 Lab Number : 25 Aug 2023 Houston, TX : 05934759 Diagnosed Unique Number : Wes Davis US 77050 : 10620030 Diagnostician Test Package : FLEET Contact: Saul Castillo To discuss this sample report, contact Customer Service at 1-800-237-1369. saul.castillo@gflenv.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T:

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Certificate L2367

Submitted By: TECHNICIAN ACCOUNT

F: