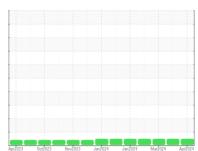


# **OIL ANALYSIS REPORT**

## Sample Rating Trend









Area
(27KM1B)
Machine Id
413116
Component
Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- QTS)

# DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

#### Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil

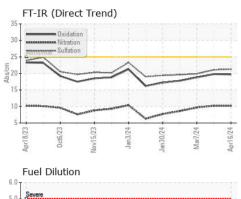
#### **Fluid Condition**

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

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0118759	GFL0114182	GFL0108036
Sample Date		Client Info		16 Apr 2024	10 Apr 2024	07 Mar 2024
Machine Age	hrs	Client Info		2869	2833	2699
Oil Age	hrs	Client Info		1863	1827	1821
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
						· · · · · ·
Iron	ppm	ASTM D5185m	>120	15	14	10
Chromium	ppm	ASTM D5185m	>20	<1	<1	0
Nickel	ppm	ASTM D5185m	>15	<1	1	<1
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	4	3	2
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	15	16	13
Tin	ppm	ASTM D5185m	>15	1	<1	0
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVEC.			15			h:-t0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	current 18	history1 18	nistory2 22
	ppm					
Boron		ASTM D5185m	0	18	18	22
Boron Barium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	18 0	18	22
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	18 0 59	18 0 56	22 0 55
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	18 0 59 <1	18 0 56 <1	22 0 55 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	18 0 59 <1 1075	18 0 56 <1 1038	22 0 55 <1 1113
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	18 0 59 <1 1075 839	18 0 56 <1 1038 838	22 0 55 <1 1113 853
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	18 0 59 <1 1075 839 1028	18 0 56 <1 1038 838 995	22 0 55 <1 1113 853 1047
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	18 0 59 <1 1075 839 1028 1238	18 0 56 <1 1038 838 995 1181	22 0 55 <1 1113 853 1047 1283
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	18 0 59 <1 1075 839 1028 1238 3646	18 0 56 <1 1038 838 995 1181 3530	22 0 55 <1 1113 853 1047 1283 3865
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	18 0 59 <1 1075 839 1028 1238 3646 current	18 0 56 <1 1038 838 995 1181 3530 history1	22 0 55 <1 1113 853 1047 1283 3865 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	18 0 59 <1 1075 839 1028 1238 3646 current	18 0 56 <1 1038 838 995 1181 3530 history1	22 0 55 <1 1113 853 1047 1283 3865 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base	18 0 59 <1 1075 839 1028 1238 3646 current 4	18 0 56 <1 1038 838 995 1181 3530 history1 3	22 0 55 <1 1113 853 1047 1283 3865 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	18 0 59 <1 1075 839 1028 1238 3646 current 4 5 10	18 0 56 <1 1038 838 995 1181 3530 history1 3 7 27	22 0 55 <1 1113 853 1047 1283 3865 history2 4 3 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0	18 0 59 <1 1075 839 1028 1238 3646 current 4 5 10 <1.0	18 0 56 <1 1038 838 995 1181 3530 history1 3 7 27 <1.0	22 0 55 <1 1113 853 1047 1283 3865 history2 4 3 6 <1.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0	18 0 59 <1 1075 839 1028 1238 3646 current 4 5 10 <1.0 current 0.3	18 0 56 <1 1038 838 995 1181 3530 history1 3 7 27 <1.0	22 0 55 <1 1113 853 1047 1283 3865 history2 4 3 6 <1.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0	18 0 59 <1 1075 839 1028 1238 3646 current 4 5 10 <1.0	18 0 56 <1 1038 838 995 1181 3530 history1 3 7 27 <1.0 history1 0.3	22 0 55 <1 1113 853 1047 1283 3865 history2 4 3 6 <1.0 history2 0.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 >3.0 limit/base	18 0 59 <1 1075 839 1028 1238 3646  current 4 5 10 <1.0  current 0.3 10.2	18 0 56 <1 1038 838 995 1181 3530 history1 3 7 27 <1.0 history1 0.3 10.2	22 0 55 <1 1113 853 1047 1283 3865 history2 4 3 6 <1.0 history2 0.2 9.7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m ASTM D78185m ASTM D78124  *ASTM D7844 *ASTM D7624 *ASTM D76125  method	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >4 >20 >30 limit/base	18 0 59 <1 1075 839 1028 1238 3646 current 4 5 10 <1.0 current 0.3 10.2 21.3 current	18 0 56 <1 1038 838 995 1181 3530 history1 3 7 27 <1.0 history1 0.3 10.2 21.1 history1	22 0 55 <1 1113 853 1047 1283 3865 history2 4 3 6 <1.0 history2 0.2 9.7 19.9 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m ASTM D7845 *ASTM D7844 *ASTM D7624 *ASTM D76145	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >4 >20 >30	18 0 59 <1 1075 839 1028 1238 3646 current 4 5 10 <1.0 current 0.3 10.2 21.3	18 0 56 <1 1038 838 995 1181 3530 history1 3 7 27 <1.0 history1 0.3 10.2 21.1	22 0 55 <1 1113 853 1047 1283 3865 history2 4 3 6 <1.0 history2 0.2 9.7 19.9



### **OIL ANALYSIS REPORT**

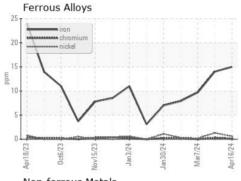


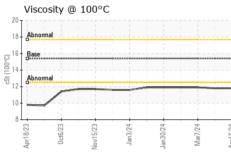
VISUAL		method				history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
<b>Emulsified Water</b>	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID DDODE	DTIES		11 11 11			

FLUID PROPE	RHES	method			history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	11.8	11.8	11.9

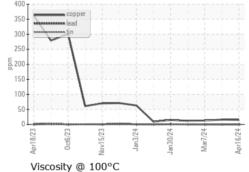
# 4 ( 2.0 0.0







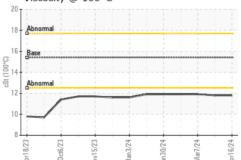
Non-ferrous Metals

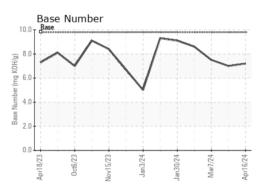




Fuel Dilution

6.0









Sample No.

: GFL0118759 Lab Number : 06156797 Unique Number : 10992220

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 22 Apr 2024 **Tested** 

: 23 Apr 2024 Diagnosed : 23 Apr 2024 - Jonathan Hester

GFL Environmental - 836 - Kansas City Hauling

7801 East Truman Road Kansas City, MO US 64126 Contact: Loyce Stewart

loyce.stewart@gflenv.com

Test Package : FLEET ( Additional Tests: FuelDilution ) Certificate 12367 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)

Report Id: GFL836 [WUSCAR] 06156797 (Generated: 04/23/2024 17:29:06) Rev: 1

Submitted By: JEREMY BROWN

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