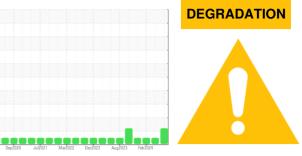


(YA154655)

## **OIL ANALYSIS REPORT**

#### Sample Rating Trend



Fluic PETRO CANADA DURON SHP 15W40 (8 GAL)

## DIAGNOSIS

**Diesel Engine** 

2856C

#### Recommendation

The oil is near the end of it's useful service life, recommend schedule an oil change. Resample at the next service interval to monitor.

## Wear

Area

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

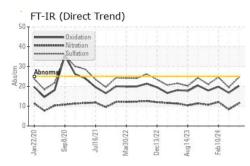
## Fluid Condition

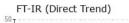
The BN level is low. The condition of the oil is acceptable for the time in service.

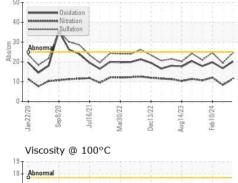
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0116010	GFL0090006	GFL0099838
Sample Date		Client Info		18 Jun 2024	08 Mar 2024	10 Feb 2024
Machine Age	hrs	Client Info		5169	5169	12975
Oil Age	hrs	Client Info		0	0	600
Oil Changed		Client Info		Not Changd	Changed	Not Changd
Sample Status				ABNORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
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	>165	6	4	14
Chromium	ppm	ASTM D5185m	>5	۰ <1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m		2	<1	2
Lead	ppm	ASTM D5185m	>150	3	0	5
Copper	ppm	ASTM D5185m	>90	0	<1	<1
Tin	ppm	ASTM D5185m	>5	<1	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base		history1 28	history2 14
	ppm ppm			current 6 0		
Boron Barium	ppm	ASTM D5185m	0	6	28	14
Boron		ASTM D5185m ASTM D5185m	0 0 60	6 0	28 0	14 9
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	6 0 50	28 0 45	14 9 81
Boron Barium Molybdenum	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	6 0 50 <1	28 0 45 <1	14 9 81 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	6 0 50 <1 592	28 0 45 <1 541	14 9 81 0 851
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	6 0 50 <1 592 1629	28 0 45 <1 541 1476	14 9 81 0 851 2326
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	6 0 50 <1 592 1629 747	28 0 45 <1 541 1476 739	14 9 81 0 851 2326 1004
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	0 0 60 0 1010 1070 1150 1270	6 0 50 <1 592 1629 747 993	28 0 45 <1 541 1476 739 874	14 9 81 0 851 2326 1004 1442
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	0 0 60 1010 1070 1150 1270 2060	6 0 50 <1 592 1629 747 993 2937	28 0 45 <1 541 1476 739 874 2342	14 9 81 0 851 2326 1004 1442 3900
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	0 0 60 1010 1070 1150 1270 2060	6 0 50 <1 592 1629 747 993 2937 current	28 0 45 <1 541 1476 739 874 2342 history1	14 9 81 0 851 2326 1004 1442 3900 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >35	6 0 50 <1 592 1629 747 993 2937 2937 current	28 0 45 <1 541 1476 739 874 2342 history1 4	14 9 81 0 851 2326 1004 1442 3900 history2 9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >35	6 0 50 <1 592 1629 747 993 2937 2937 current 5 7	28 0 45 <1 541 1476 739 874 2342 history1 4 4	14 9 81 0 851 2326 1004 1442 3900 history2 9 9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >35	6 0 50 <1 592 1629 747 993 2937 current 5 7 3	28 0 45 <1 541 1476 739 874 2342 history1 4 4 0	14 9 81 0 851 2326 1004 1442 3900 history2 9 9 9 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >35 	6 0 50 <1 592 1629 747 993 2937 current 5 7 3 2037	28 0 45 <1 541 1476 739 874 2342 history1 4 4 0 history1	14 9 81 0 851 2326 1004 1442 3900 history2 9 9 9 3 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >35 	6 0 50 <1 592 1629 747 993 2937 current 5 7 3 2937 current 0.1	28 0 45 <1 541 1476 739 874 2342 history1 4 4 0 history1 0.1	14 9 81 0 851 2326 1004 1442 3900 history2 9 9 9 3 history2 0.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >35 20 limit/base >20	6 0 50 <1 592 1629 747 993 2937 current 5 7 3 current 3 current 0.1 11.5	28 0 45 <1 541 1476 739 874 2342 history1 4 4 0 history1 0.1 8.4	14 9 81 0 851 2326 1004 1442 3900 history2 9 9 9 3 3 history2 0.1 12.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 0 1010 1070 1150 1270 2060 <b>limit/base</b> >35 20 <b>limit/base</b> >7.5 >20 >30	6 0 50 <1 592 1629 747 993 2937 current 5 7 3 current 0.1 11.5 24.5 current	28 0 45 <1 541 1476 739 874 2342 history1 4 4 0 history1 0.1 8.4 19.5	14 9 81 0 851 2326 1004 1442 3900 history2 9 9 9 3 3 history2 0.1 12.1 24.6 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 imit/base >35 >20 imit/base >7.5 >20 >30	6 0 50 <1 592 1629 747 993 2937 current 5 7 3 2937 current 0.1 11.5 24.5	28 0 45 <1 541 1476 739 874 2342 history1 4 4 4 0 history1 0.1 8.4 19.5 history1	14 9 81 0 851 2326 1004 1442 3900 history2 9 9 9 3 3 history2 0.1 12.1 24.6

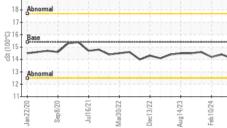


# **OIL ANALYSIS REPORT**



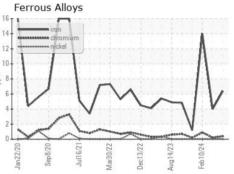




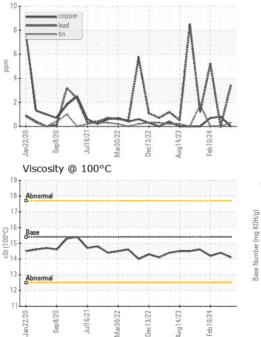


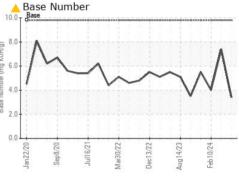
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.4	14.1	14.4	14.2

GRAPHS









Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 018 - Fayetteville Sample No. : GFL0116010 Received : 19 Jun 2024 4621 Marracco Drive Lab Number : 06214464 Tested : 20 Jun 2024 Hope Mills, NC Unique Number : 11087328 Diagnosed : 21 Jun 2024 - Don Baldridge US 28348 Test Package : FLEET Contact: Robert Carter Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. robert.carter@gflenv.com \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: (910)596-1170 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) F:

Report Id: GFL018 [WUSCAR] 06214464 (Generated: 06/21/2024 15:26:59) Rev: 1

Submitted By: CHRIS HALL