

# **OIL ANALYSIS REPORT**

Area 166 Machine Id 422088

Component Front Diesel Engine

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

# Sample Rating Trend



# DIAGNOSIS

# Recommendation

Resample at the next service interval to monitor.

### Moor

All component wear rates are normal.

# Contamination

There is no indication of any contamination in the oil.

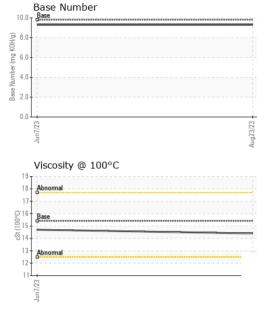
# **Fluid Condition**

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

LIR)			Jun2023	Aug2023		
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0087858	GFL0081189	
Sample Date		Client Info		23 Aug 2023	07 Jun 2023	
Machine Age	hrs	Client Info		13832	600	
Oil Age	hrs	Client Info		600	600	
Oil Changed	1110	Client Info		Not Changd	Changed	
Sample Status				NORMAL	NORMAL	
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel	ION	WC Method	>5	<1.0	<1.0	Historyz
Glycol		WC Method	/5	NEG	NEG	
				MEG		
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	21	98	
Chromium	ppm	ASTM D5185m	>20	<1	<1	
Nickel	ppm	ASTM D5185m	>4	0	<1	
Titanium	ppm	ASTM D5185m		0	0	
Silver	ppm	ASTM D5185m	>3	0	<1	
Aluminum	ppm	ASTM D5185m	>20	4	16	
Lead	ppm	ASTM D5185m	>40	0	3	
Copper	ppm	ASTM D5185m	>330	3	16	
Tin	ppm	ASTM D5185m	>15	<1	<1	
Vanadium	ppm	ASTM D5185m		<1	<1	
Cadmium	ppm	ASTM D5185m		0	0	
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	17	120	
Barium	ppm	ASTM D5185m	0	0	0	
Molybdenum	ppm	ASTM D5185m	60	83	240	
Manganese	ppm	ASTM D5185m	0	<1	2	
Magnesium	ppm					
	ppiii	ASTM D5185m	1010	1033	849	
Calcium	ppm	ASTM D5185m ASTM D5185m	1010	1033 1184	849 1626	
Calcium Phosphorus Zinc	ppm	ASTM D5185m	1070 1150	1184	1626	
Phosphorus	ppm	ASTM D5185m ASTM D5185m	1070	1184 1090	1626 853	
Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	1070 1150 1270	1184 1090 1292	1626 853 1146	
Phosphorus Zinc Sulfur	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	1070 1150 1270 2060	1184 1090 1292 3930	1626 853 1146 3723	
Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	1070 1150 1270 2060 limit/base	1184 1090 1292 3930 current	1626 853 1146 3723 history1	   history2
Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	1070 1150 1270 2060 limit/base	1184 1090 1292 3930 current	1626 853 1146 3723 history1	   history2
Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m ASTM D5185m	1070 1150 1270 2060 limit/base >25	1184 1090 1292 3930 current 5	1626 853 1146 3723 history1 16 7	   history2
Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1070 1150 1270 2060 limit/base >25 >20	1184 1090 1292 3930 current 5 2 0	1626 853 1146 3723 history1 16 7 6	  history2 
Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  METHOD  ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  ASTM D5185m  *ASTM D5185m	1070 1150 1270 2060 limit/base >25 >20 limit/base >3	1184 1090 1292 3930 current 5 2 0 current	1626 853 1146 3723 history1 16 7 6 history1	history2 history2
Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	1070 1150 1270 2060 limit/base >25 >20	1184 1090 1292 3930 current 5 2 0	1626 853 1146 3723 history1 16 7 6	  history2   history2
Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  ASTM D5185m  ASTM D7844 *ASTM D7624 *ASTM D7415	1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20	1184 1090 1292 3930 current 5 2 0 current 0.3 5.8	1626 853 1146 3723 history1 16 7 6 history1 1.8 13.2 26.9	history2 history2 history2
Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAI	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  method *ASTM D5185m  *ASTM D7624 *ASTM D7415  method	1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20 >30 limit/base	1184 1090 1292 3930 current 5 2 0 current 0.3 5.8 18.0	1626 853 1146 3723 history1 16 7 6 history1 1.8 13.2 26.9 history1	history2 history2 history2 history2
Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  ASTM D5185m  Method  *ASTM D7844  *ASTM D7624  *ASTM D7415  Method  *ASTM D7414	1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20 >30 limit/base	1184 1090 1292 3930 current 5 2 0 current 0.3 5.8 18.0	1626 853 1146 3723 history1 16 7 6 history1 1.8 13.2 26.9	history2 history2



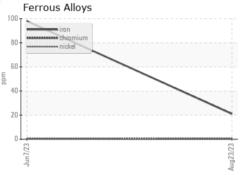
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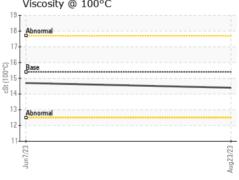
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
Precipitate	scalar	*Visual	NONE	NONE	NONE	
Silt	scalar	*Visual	NONE	NONE	NONE	
Debris	scalar	*Visual	NONE	NONE	NONE	
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
Appearance	scalar	*Visual	NORML	NORML	NORML	
Odor	scalar	*Visual	NORML	NORML	NORML	
<b>Emulsified Water</b>	scalar	*Visual	>0.2	NEG	NEG	
Free Water	scalar	*Visual		NEG	NEG	
	DTIES	mothod	limit/baco	current	history1	history?

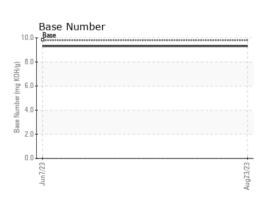
I LOID I HOI L	TTTLO					
Visc @ 100°C	cSt	ASTM D445	15.4	14.4	14.7	

# **GRAPHS**



Non-ferrous Metals	
16 T	
14 copper	
13 secondario in	
12	
10+	
E 8	
6	
4+	
2	
0 +	C.
Jun7/23	23/2
<del>ا</del>	Aug23/23
Viscosity @ 1000C	
Viscosity @ 100°C	







Certificate L2367

Laboratory Sample No. Lab Number Unique Number : 10632384 Test Package : FLEET

: GFL0087858 : 05941772

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

: 05 Sep 2023 : 05 Sep 2023 Diagnostician : Wes Davis

GFL Environmental - 166 - Phenix City

18 Old Brickyard Rd Phenix City, AL US 36869

Contact: DEAN PEACE JR dean.peace@gflenv.com

T:

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)

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