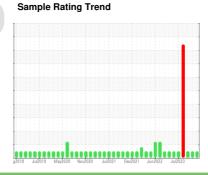


## **OIL ANALYSIS REPORT**

(YA133461) Machine Id 10645C

Component **Natural Gas Engine** 

PETRO CANADA DURON GEO LD 15W40 (36 QTS)





### 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

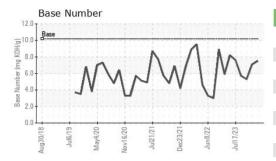
#### **Fluid Condition**

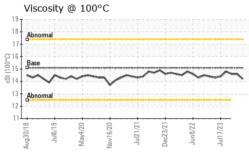
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0098525	GFL0087759	GFL0087774
Sample Date		Client Info		15 Jan 2024	28 Sep 2023	17 Aug 2023
Machine Age	hrs	Client Info		19820	19245	18960
Oil Age	hrs	Client Info		575	1083	798
Oil Changed		Client Info		Not Changd	Changed	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method				
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	11	9	14
Chromium	ppm	ASTM D5185m	>4	<1	2	1
Nickel	ppm	ASTM D5185m	>2	0	<1	0
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>9	1	2	3
Lead	ppm	ASTM D5185m	>30	0	0	<1
Copper	ppm	ASTM D5185m	>35	<1	<1	<1
Tin	ppm	ASTM D5185m	>4	<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 50	current 29	history1 3	history2 6
	ppm					
Boron	• • •	ASTM D5185m	50	29	3	6
Boron Barium	ppm	ASTM D5185m ASTM D5185m	50 5	29 0	3	6
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50	29 0 52	3 0 59	6 0 49
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0	29 0 52 1	3 0 59 <1	6 0 49 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560	29 0 52 1 562	3 0 59 <1 827	6 0 49 <1 506
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510	29 0 52 1 562 1561	3 0 59 <1 827 1256	6 0 49 <1 506 1495
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	50 5 50 0 560 1510 780	29 0 52 1 562 1561 784	3 0 59 <1 827 1256 973	6 0 49 <1 506 1495 666
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	50 5 50 0 560 1510 780 870	29 0 52 1 562 1561 784 933	3 0 59 <1 827 1256 973 1192	6 0 49 <1 506 1495 666 863
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	50 5 50 0 560 1510 780 870 2040	29 0 52 1 562 1561 784 933 2410	3 0 59 <1 827 1256 973 1192 3004	6 0 49 <1 506 1495 666 863 2551
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	50 5 50 0 560 1510 780 870 2040	29 0 52 1 562 1561 784 933 2410 current	3 0 59 <1 827 1256 973 1192 3004 history1	6 0 49 <1 506 1495 666 863 2551 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100	29 0 52 1 562 1561 784 933 2410 current	3 0 59 <1 827 1256 973 1192 3004 history1	6 0 49 <1 506 1495 666 863 2551 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100	29 0 52 1 562 1561 784 933 2410 current 11	3 0 59 <1 827 1256 973 1192 3004 history1 4	6 0 49 <1 506 1495 666 863 2551 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100 >20	29 0 52 1 562 1561 784 933 2410 current 11 4	3 0 59 <1 827 1256 973 1192 3004 history1 4 2 <1	6 0 49 <1 506 1495 666 863 2551 history2 4 6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100 >20 limit/base	29 0 52 1 562 1561 784 933 2410 current 11 4 2	3 0 59 <1 827 1256 973 1192 3004 history1 4 2 <1	6 0 49 <1 506 1495 666 863 2551 history2 4 6 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m  method  *ASTM D5185m  *ASTM D5185m  ASTM D5185m  ASTM D5185m  *ASTM D5185m  *ASTM D5185m  *ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100 >20 limit/base	29 0 52 1 562 1561 784 933 2410 current 11 4 2 current	3 0 59 <1 827 1256 973 1192 3004 history1 4 2 <1 history1	6 0 49 <1 506 1495 666 863 2551 history2 4 6 0 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	ASTM D5185m  Method  ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7614	50 5 50 0 560 1510 780 870 2040 limit/base >+100 >20 limit/base	29 0 52 1 562 1561 784 933 2410 current 11 4 2 current 0 8.0	3 0 59 <1 827 1256 973 1192 3004 history1 4 2 <1 history1 0 8.0	6 0 49 <1 506 1495 666 863 2551 history2 4 6 0 history2 0 10.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m  method  ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m  method  *ASTM D7844  *ASTM D7844  *ASTM D7844  *ASTM D7844	50 5 50 0 560 1510 780 870 2040 limit/base >+100 >20 limit/base >20 >30 limit/base	29 0 52 1 562 1561 784 933 2410 current 11 4 2 current 0 8.0 18.5 current	3 0 59 <1 827 1256 973 1192 3004 history1 4 2 <1 history1 0 8.0 18.9	6 0 49 <1 506 1495 666 863 2551 history2 4 6 0 history2 0 10.2 20.0 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m  Method  ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7614	50 5 50 0 560 1510 780 870 2040 limit/base >+100 >20 limit/base	29 0 52 1 562 1561 784 933 2410 current 11 4 2 current 0 8.0 18.5	3 0 59 <1 827 1256 973 1192 3004 history1 4 2 <1 history1 0 8.0 18.9 history1	6 0 49 <1 506 1495 666 863 2551 history2 4 6 0 history2 0 10.2 20.0



## **OIL ANALYSIS REPORT**



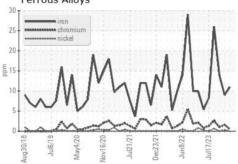


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
<b>Emulsified Water</b>	scalar	*Visual	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

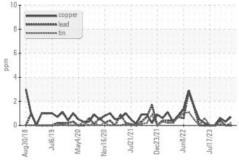
FLUID PROPE	RTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.1	14.2	14.6	14.6

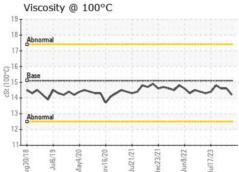
#### **GRAPHS**

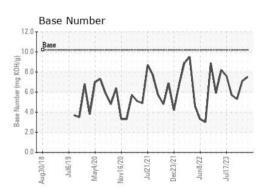
# Ferrous Alloys















Certificate L2367

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

: GFL0098525 : 06062345 : 10833727

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Recieved : 17 Jan 2024 : 18 Jan 2024 Diagnosed

Diagnostician : Wes Davis GFL Environmental - 006 - Wilmington

3618 US Highway 421 N Wilmington, NC US 28401

Contact: Eric Wood eric.wood@gflenv.com T: (717)723-1956

F: (910)762-6880

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)