

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 733021

Component Natural Gas Engine

PETRO CANADA DURON GEO LD 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.

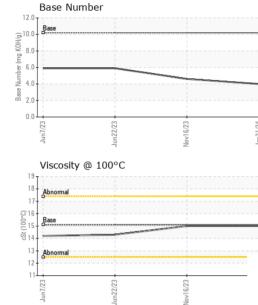
Fluid Condition

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		GFL0092119	GFL0092039	GFL0084594
Sample Date		Client Info		31 Jan 2024	16 Nov 2023	22 Jun 2023
Machine Age	hrs	Client Info		2475	1823	0
Oil Age	hrs	Client Info		0	3981	0
Oil Changed		Client Info		Changed	Changed	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Water		WC Method	>0.1	NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	10	11	27
Chromium	ppm	ASTM D5185m	>4	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>9	2	1	3
Lead	ppm	ASTM D5185m	>30	<1	0	0
Copper	ppm	ASTM D5185m	>35	<1	1	14
Tin	ppm	ASTM D5185m	>4	1	0	1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
//////20		mounou	initia bacoo		· ···otor y ·	J
Boron	ppm	ASTM D5185m	50	11	5	15
	ppm ppm					
Boron		ASTM D5185m	50	11	5	15
Boron Barium	ppm	ASTM D5185m ASTM D5185m	50 5 50	11 0	5 <1	15 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50	11 0 55	5 <1 52	15 0 49
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0	11 0 55 <1	5 <1 52 <1	15 0 49 10
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560	11 0 55 <1 550	5 <1 52 <1 527	15 0 49 10 731
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510	11 0 55 <1 550 1597	5 <1 52 <1 527 1502	15 0 49 10 731 1231
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	50 5 50 0 560 1510 780	11 0 55 <1 550 1597 697	5 <1 52 <1 527 1502 625	15 0 49 10 731 1231 697
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	50 5 50 0 560 1510 780 870	11 0 55 <1 550 1597 697 994	5 <1 52 <1 527 1502 625 929	15 0 49 10 731 1231 697 926
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	50 5 50 0 560 1510 780 870 2040	11 0 55 <1 550 1597 697 994 2525	5 <1 52 <1 527 1502 625 929 2560	15 0 49 10 731 1231 697 926 2806
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	50 5 50 0 560 1510 780 870 2040 limit/base >+100	11 0 55 <1 550 1597 697 994 2525 current	5 <1 52 <1 527 1502 625 929 2560 history1	15 0 49 10 731 1231 697 926 2806 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 ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100	11 0 55 <1 550 1597 697 994 2525 current 5	5 <1 52 <1 527 1502 625 929 2560 history1 5	15 0 49 10 731 1231 697 926 2806 history2 32
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 method ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100	11 0 55 <1 550 1597 697 994 2525 current 5 10 6	5 <1 52 <1 527 1502 625 929 2560 history1 5 9	15 0 49 10 731 1231 697 926 2806 2806 history2 32 3
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	50 5 50 0 560 1510 780 870 2040 limit/base >+100	11 0 55 <1 550 1597 697 994 2525 current 5 10 6	5 <1 52 <1 527 1502 625 929 2560 history1 5 9 9 8	15 0 49 10 731 1231 697 926 2806 history2 32 32 3 10
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 Limit/base >+100 S20 Limit/base	11 0 55 <1 550 1597 697 994 2525 current 5 10 6 2 2525	5 <1 52 <1 527 1502 625 929 2560 history1 5 9 8 8	15 0 49 10 731 1231 697 926 2806 history2 32 3 10 history2
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	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100 limit/base >20	11 0 55 <1 550 1597 697 994 2525 <u>current</u> 5 10 6 <u>current</u> 0	5 <1 52 <1 527 1502 625 929 2560 history1 5 9 8 8 history1 0	15 0 49 10 731 1231 697 926 2806 history2 32 32 3 10 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 ppm ppm	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100 limit/base >20	11 0 55 <1 550 1597 697 994 2525 <u>current</u> 5 10 6 <u>current</u> 0 11.2 21.8	5 <1 52 <1 527 1502 625 929 2560 history1 5 9 8 history1 0 11.1	15 0 49 10 731 1231 697 926 2806 history2 32 32 3 10 history2 0.1 10.9
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 D5185m	50 5 50 0 150 780 870 2040 limit/base >+100 limit/base >20 s 30	11 0 55 <1 550 1597 697 994 2525 <u>current</u> 5 10 6 <u>current</u> 0 11.2 21.8	5 <1 52 <1 527 1502 625 929 2560 history1 5 9 8 8 history1 0 11.1 21.8	15 0 49 10 731 1231 697 926 2806 history2 32 3 10 history2 0.1 10.9 21.1
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 TS ppm ppm ppm ppm ppm ppm ppm ppm ppm pp	ASTM D5185m ASTM D7844 *ASTM D7624	50 5 50 0 560 1510 780 870 2040 limit/base >20 limit/base >20 limit/base >20	11 0 55 <1 550 1597 697 994 2525 current 5 10 6 current 0 11.2 21.8 current	5 <1 52 <1 527 1502 625 929 2560 history1 5 9 8 history1 0 11.1 21.8 history1	15 0 49 10 731 1231 697 926 2806 history2 32 32 3 10 history2 0.1 10.9 21.1



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	>0.1	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	15.1	15.0	15.0	14.3
GRAPHS Ferrous Alloys						
10 Iron						
25 - chromium						
0-						
5						
0						
5						
	******	Z3	24			
Jun7/23 Jun22/23		Nov16/23	Jan 31/24			
Non-ferrous Meta	le	2	<u>ت</u>			
¹⁸ I						
6 - copper						
4 2						
0						
1						
8-	$\langle \rangle$					
6 -						
6 4						
6 4 2 0						
6 4 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		v16.23	n31/24			
Jun7223		Nov16/23	Jan31/24 +			
Viscosity @ 100°C		Nov16/23	47/12/12	Base Number		
Viscosity @ 100°C		Nov16/23	12.0	Base Number		
Viscosity @ 100°C		Nov16/23	12.0	T		
Viscosity @ 100°C		Voor16/23	12.0	T		
Viscosity @ 100°C		Nov16/23	12.0	T		
Viscosity @ 100°C	2	Nov16/23	12.0	T		
Viscosity @ 100°C		Nov16/23	12.0 (PH) (PH) (PH) (PH) (PH) (PH) (PH) (PH)	T		
Viscosity @ 100°C		Nov16/23	12.0 10.0	T		
Viscosity @ 100°C		Nov16/23	12.0 (0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(Base	Jun 22/23	

: 02 Feb 2024

: 05 Feb 2024



Unique Number : 10861077 Diagnostician : Wes Davis Test Package : FLEET Certificate L2367 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)

: GFL0092119

: 06078986

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

Recieved

Diagnosed

Laboratory

Sample No.

Lab Number

8515 Highway 6 South

Contact: Jose Gonzalez

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Houston, TX US 77083

GFL Environmental - 856 - Houston South

T:

F: