

OIL ANALYSIS REPORT

Sample Rating Trend





Component **Natural Gas Engine**

PETRO CANADA DURON GEO LD 15W40 (32 QTS)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: B service)

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.

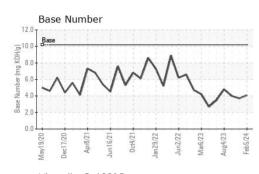


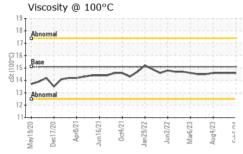


SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0111069	GFL0098531	GFL0098536
Sample Date		Client Info		05 Feb 2024	01 Nov 2023	21 Oct 2023
Machine Age	hrs	Client Info		9261	8516	8469
Oil Age	hrs	Client Info		621	1200	600
Oil Changed		Client Info		N/A	Changed	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	11	14	10
Chromium	ppm	ASTM D5185m	>4	<1	1	1
Nickel	ppm	ASTM D5185m	>2	0	<1	<1
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>9	2	3	3
Lead	ppm	ASTM D5185m	>30	<1	2	<1
Copper	ppm	ASTM D5185m	>35	<1	2	1
Tin	ppm	ASTM D5185m	>4	<1	<1	0
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	50	14	5	<1
Boron Barium	ppm ppm	ASTM D5185m ASTM D5185m	50 5	14 0	5 0	<1 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50	14 0 57	5 0 57	<1 0 58
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0	14 0 57 <1	5 0 57 <1	<1 0 58 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560	14 0 57 <1 565	5 0 57 <1 551	<1 0 58 <1 589
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	14 0 57 <1 565 1540	5 0 57 <1 551 1620	<1 0 58 <1 589 1659
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	14 0 57 <1 565 1540 740	5 0 57 <1 551 1620 612	<1 0 58 <1 589 1659 729
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	14 0 57 <1 565 1540 740 980	5 0 57 <1 551 1620 612 924	<1 0 58 <1 589 1659 729 1009
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	14 0 57 <1 565 1540 740 980 2370	5 0 57 <1 551 1620 612 924 2260	<1 0 58 <1 589 1659 729 1009 2451
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	14 0 57 <1 565 1540 740 980 2370 current	5 0 57 <1 551 1620 612 924 2260 history1	<1 0 58 <1 589 1659 729 1009 2451 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	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	14 0 57 <1 565 1540 740 980 2370 2370 current 13	5 0 57 <1 551 1620 612 924 2260 history1 10	<1 0 58 <1 589 1659 729 1009 2451 history2 9
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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	14 0 57 <1 565 1540 740 980 2370 2370 current 13 6	5 0 57 <1 551 1620 612 924 2260 history1 10 8	<1 0 58 <1 589 1659 729 1009 2451 history2 9 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	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	14 0 57 <1 565 1540 740 980 2370 current 13 6 0	5 0 57 <1 551 1620 612 924 2260 history1 10 8 0	<1 0 58 <1 589 1659 729 1009 2451 history2 9 5 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100	14 0 57 <1 565 1540 740 980 2370 current 13 6 0 0	5 0 57 <1 551 1620 612 924 2260 history1 10 8 0 0 history1	<1 0 58 <1 589 1659 729 1009 2451 history2 9 5 1 1 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 ppm ppm	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100 	14 0 57 <1 565 1540 740 980 2370 2370 <u>current</u> 13 6 0 0 <u>current</u>	5 0 57 <1 551 1620 612 924 2260 history1 10 8 0 0 history1 0	<1 0 58 <1 589 1659 729 1009 2451 history2 9 5 1 1 history2 0
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 s 20 limit/base	14 0 57 <1 565 1540 740 980 2370 current 13 6 0 current 0 0 10.9	5 0 57 <1 551 1620 612 924 2260 history1 10 8 0 history1 0 history1 0	<1 0 58 <1 589 1659 729 1009 2451 history2 9 5 1 1 history2 0 12.2
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 0 560 1510 780 870 2040 limit/base >+100 	14 0 57 <1 565 1540 740 980 2370 2370 <u>current</u> 13 6 0 0 <u>current</u>	5 0 57 <1 551 1620 612 924 2260 history1 10 8 0 0 history1 0 12.0 24.4	<1 0 58 <1 589 1659 729 1009 2451 history2 9 5 1 history2 0 12.2 23.7
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 D7844 *ASTM D7844	50 5 50 0 560 1510 780 870 2040 limit/base >+100 s 20 limit/base	14 0 57 <1 565 1540 740 980 2370 current 13 6 0 current 0 10.9 22.4	5 0 57 <1 551 1620 612 924 2260 history1 10 8 0 history1 0 12.0 24.4 history1	<1 0 58 <1 589 1659 729 1009 2451 history2 9 5 1 history2 0 12.2 23.7 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 ppm ppm	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 imit/base >2040 imit/base >20	14 0 57 <1 565 1540 740 980 2370 current 13 6 0 current 0 10.9 22.4	5 0 57 <1 551 1620 612 924 2260 history1 10 8 0 0 history1 0 12.0 24.4	<1 0 58 <1 589 1659 729 1009 2451 history2 9 5 1 history2 0 12.2 23.7



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	14.6	14.6	14.6
GRAPHS						

Ferrous Alloys 35 30 25 20 15 10 5 0. May19/20 Dec17/20 18/7 Non-ferrous Metals 14 14 lead 10 bpm 8 6 4 2 0 May19/20 C/62me Dec1 Viscosity @ 100°C Base Number 19 12.0 18 10. 17 Base Number (mg KOH/g) ()00015 8 (Ba 6. ぢ 14 4. 13 Abnorma 21 12 11 0.0 Aug4/23 + Feb5/24. Apr8/21 Aug4/23 Feb5/24 May19/20 Dec17/20 0ct4/21 Mar6/23 May19/20 Dec17/20 0ct4/21 lun16/21 Jan 29/22 lun16/21 Jan 29/22 /lar6/23 GFL Environmental - 006 - Wilmington Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. : GFL0111069 Received :07 Feb 2024 3618 US Highway 421 N Lab Number : 06082384 Tested :08 Feb 2024 Wilmington, NC Unique Number : 10869829 Diagnosed : 08 Feb 2024 - Wes Davis US 28401 Test Package : FLEET Contact: Eric Wood eric.wood@gflenv.com

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)

Certificate L2367

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