

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Component **Natural Gas Engine**

PETRO CANADA DURON GEO LD 15W40 (29 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.

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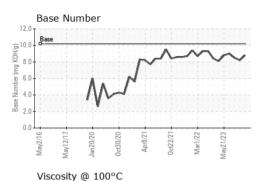


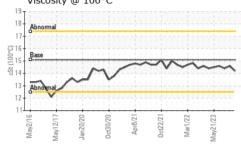
v2016 Mav2017 Jan2020 0ct2020 Apr2021 0ct2021 Mav2022 Mav2023

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0112934	GFL0079602	GFL0088553
Sample Date		Client Info		21 Mar 2024	03 Oct 2023	22 Aug 2023
Machine Age	hrs	Client Info		12396	12396	12396
Oil Age	hrs	Client Info		1	169	577
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	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	5	4	5
Chromium	ppm	ASTM D5185m	>4	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>3	0	<1	0
Aluminum	ppm	ASTM D5185m		2	<1	1
Lead	ppm	ASTM D5185m	>30	<1	<1	0
Copper	ppm	ASTM D5185m	>35	1	<1	<1
Tin	ppm	ASTM D5185m	>4	<1	<1	0
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	<1	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 50	current 66	history1 32	history2 35
	ppm ppm					
Boron		ASTM D5185m	50	66	32	35
Boron Barium	ppm	ASTM D5185m ASTM D5185m	50 5 50	66 0	32 0	35 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50	66 0 67	32 0 50	35 0 50
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0	66 0 67 <1	32 0 50 <1	35 0 50 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780	66 0 67 <1 587 1378 770	32 0 50 <1 670 1704 829	35 0 50 <1 552 1494 765
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	66 0 67 <1 587 1378	32 0 50 <1 670 1704 829 1051	35 0 50 <1 552 1494 765 932
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	66 0 67 <1 587 1378 770	32 0 50 <1 670 1704 829	35 0 50 <1 552 1494 765
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	66 0 67 <1 587 1378 770 934	32 0 50 <1 670 1704 829 1051	35 0 50 <1 552 1494 765 932
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	66 0 67 <1 587 1378 770 934 2645	32 0 50 <1 670 1704 829 1051 2983	35 0 50 <1 552 1494 765 932 2675
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	50 5 50 0 560 1510 780 870 2040 limit/base	66 0 67 <1 587 1378 770 934 2645 current	32 0 50 <1 670 1704 829 1051 2983 history1	35 0 50 <1 552 1494 765 932 2675 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	50 5 50 0 560 1510 780 870 2040 limit/base >+100	66 0 67 <1 587 1378 770 934 2645 current 9	32 0 50 <1 670 1704 829 1051 2983 history1 6	35 0 50 <1 552 1494 765 932 2675 history2 11
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 ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100	66 0 67 <1 587 1378 770 934 2645 <u>current</u> 9 3	32 0 50 <1 670 1704 829 1051 2983 history1 6 4	35 0 50 <1 552 1494 765 932 2675 history2 11 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	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	50 5 50 0 560 1510 780 870 2040 limit/base >+100	66 0 67 <1 587 1378 770 934 2645 <u>current</u> 9 3 2	32 0 50 <1 670 1704 829 1051 2983 history1 6 4 2	35 0 50 <1 552 1494 765 932 2675 history2 11 3 2
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 ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100 	66 0 67 <1 587 1378 770 934 2645 <u>current</u> 9 3 2 2	32 0 50 <1 670 1704 829 1051 2983 history1 6 4 2 2 history1	35 0 50 <1 552 1494 765 932 2675 history2 11 3 2 2 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 >20 limit/base	66 0 67 <1 587 1378 770 934 2645 <u>current</u> 9 3 2 2 2 <u>current</u> 0	32 0 50 <1 670 1704 829 1051 2983 history1 6 4 2 2 history1 0	35 0 50 <1 552 1494 765 932 2675 history2 11 3 2 2 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 >20 limit/base	66 0 67 <1 587 1378 770 934 2645 <i>current</i> 9 3 2 2 2 <i>current</i> 0 5.4	32 0 50 <1 670 1704 829 1051 2983 history1 6 4 2 2 history1 0 6.7	35 0 50 <1 552 1494 765 932 2675 history2 11 3 2 2 history2 0 6.9
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 1510 780 870 2040 limit/base >20 limit/base >20 limit/base	66 0 67 <1 587 1378 770 934 2645 <u>current</u> 9 3 2 2 <u>current</u> 0 5.4 18.7	32 0 50 <1 670 1704 829 1051 2983 history1 6 4 2 2 history1 0 6.7 18.2	35 0 50 <1 552 1494 765 932 2675 history2 11 3 2 2 history2 0 6.9 18.3

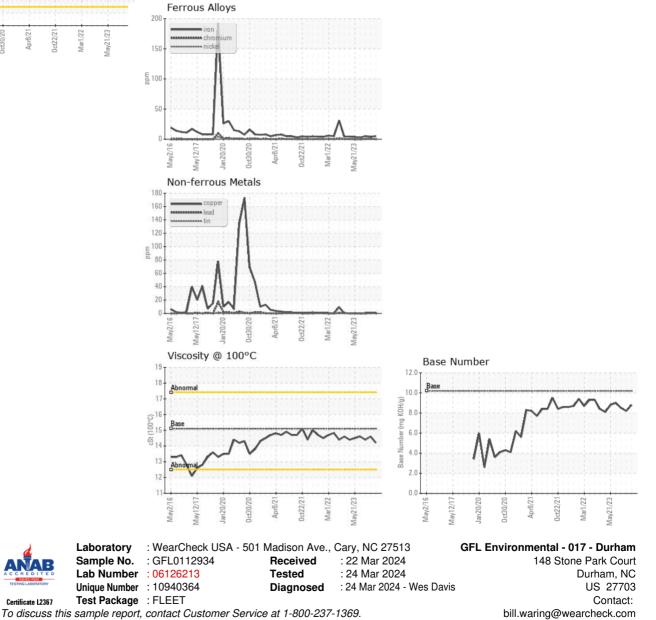


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VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*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	14.2	14.6	14.4
GRAPHS						



* - 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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