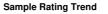


## **OIL ANALYSIS REPORT**



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## Machine Id 426086

Component **Natural Gas Engine** 

PETRO CANADA DURON GEO LD 15W40 (--- LTR)

## 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.

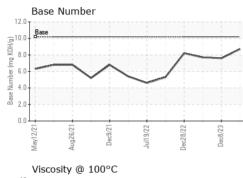
## Fluid Condition

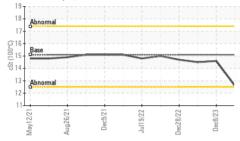
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0115503	GFL0094228	GFL0089728
Sample Date		Client Info		22 Mar 2024	08 Dec 2023	07 Sep 2023
Machine Age	hrs	Client Info		70775	70605	70067
Oil Age	hrs	Client Info		170	538	52964
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	ION	method	limit/base	current	history1	history2
Water		WC Method	>0.1	NEG	NEG	NEG
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	20	5	5
Chromium	ppm	ASTM D5185m	>4	0	<1	<1
Nickel	ppm	ASTM D5185m	>2	<1	<1	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>9	2	1	2
Lead	ppm	ASTM D5185m	>30	1	<1	<1
Copper	ppm	ASTM D5185m	>35	<1	<1	<1
Tin	ppm	ASTM D5185m	>4	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	<1	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES		methou	inniv base	current	nistory i	113tory2
Boron	ppm	ASTM D5185m	50	4	26	27
	ppm ppm					
Boron		ASTM D5185m	50	4	26	27
Boron Barium	ppm	ASTM D5185m ASTM D5185m	50 5 50	4 0	26 11	27 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50	4 0 59	26 11 50	27 0 50
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0	4 0 59 <1	26 11 50 <1	27 0 50 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	4 0 59 <1 874	26 11 50 <1 545	27 0 50 1 619
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	4 0 59 <1 874 1054	26 11 50 <1 545 1481	27 0 50 1 619 1596
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	4 0 59 <1 874 1054 1035	26 11 50 <1 545 1481 761	27 0 50 1 619 1596 810
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	4 0 59 <1 874 1054 1035 1234	26 11 50 <1 545 1481 761 926	27 0 50 1 619 1596 810 1028
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	4 0 59 <1 874 1054 1035 1234 3379	26 11 50 <1 545 1481 761 926 2639	27 0 50 1 619 1596 810 1028 3203
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 50 50 560 1510 780 870 2040 >+100	4 0 59 <1 874 1054 1035 1234 3379 current	26 11 50 <1 545 1481 761 926 2639 history1	27 0 50 1 619 1596 810 1028 3203 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 <b>method</b>	50 5 50 0 560 1510 780 870 2040 2040 2040 2040	4 0 59 <1 874 1054 1035 1234 3379 current 3	26 11 50 <1 545 1481 761 926 2639 history1 3	27 0 50 1 619 1596 810 1028 3203 history2 3
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 ASTM D5185m	50 5 50 0 560 1510 780 870 2040 2040 2040 2040	4 0 59 <1 874 1054 1035 1234 3379 current 3 17	26 11 50 <1 545 1481 761 926 2639 history1 3 4	27 0 50 1 619 1596 810 1028 3203 history2 3 4
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 <b>limit/base</b> >+100	4 0 59 <1 874 1054 1035 1234 3379 current 3 17 10	26 11 50 <1 545 1481 761 926 2639 history1 3 4 3	27 0 50 1 619 1596 810 1028 3203 history2 3 4 3
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 >20 Limit/base	4 0 59 <1 874 1054 1035 1234 3379 current 3 17 10 current	26 11 50 <1 545 1481 761 926 2639 history1 3 4 3 4 3	27 0 50 1 619 1596 810 1028 3203 history2 3 4 3 3 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 ppm ppm ppm	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 2040 2040 >+100 >20 20 imit/base	4 0 59 <1 874 1054 1035 1234 3379 <u>current</u> 3 17 10 <u>current</u> 1.5	26 11 50 <1 545 1481 761 926 2639 history1 3 4 3 4 3 <i>h</i> istory1 0	27 0 50 1 619 1596 810 1028 3203 history2 3 4 3 3 4 3 3 4 3 3 4 3 3 1 4 3 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 2040 2040 >+100 >20 20 imit/base	4 0 59 <1 874 1054 1035 1234 3379 current 3 17 10 current 1.5 10.3	26 11 50 <1 545 1481 761 926 2639 history1 3 4 3 4 3 history1 0 8.4	27 0 50 1 619 1596 810 1028 3203 history2 3 4 3 4 3 <i>history2</i> 0.1 8.1
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 TS ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	50 50 560 1510 780 870 2040 imit/base >+100 imit/base >20 30 imit/base	4 0 59 <1 874 1054 1035 1234 3379 <u>current</u> 3 17 10 <u>current</u> 1.5 10.3 20.6	26 11 50 <1 545 1481 761 926 2639 history1 3 4 3 4 3 <b>history1</b> 0 8.4 18.5	27 0 50 1 619 1596 810 1028 3203 history2 3 4 3 3 4 3 <b>history2</b> 0.1 8.1 18.3
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 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 <b>imit/base</b> >20 <b>imit/base</b> >20 <b>imit/base</b> >20	4 0 59 <1 874 1054 1035 1234 3379 current 3 17 10 current 1.5 10.3 20.6	26 11 50 <1 545 1481 761 926 2639 history1 3 4 3 4 3 history1 0 8.4 18.5 history1	27 0 50 1 619 1596 810 1028 3203 history2 3 4 3 3 4 3 3 history2 0.1 8.1 18.3 history2

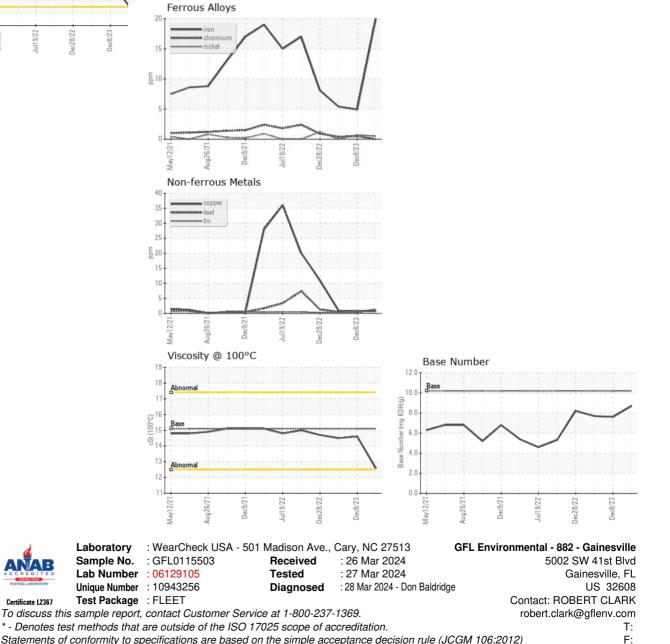


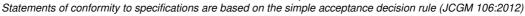
# **OIL ANALYSIS REPORT**





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	12.6	14.6	14.5
GRAPHS						





Certificate L2367