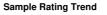


OIL ANALYSIS REPORT





Machine Id 749003

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.

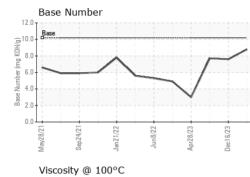
Fluid Condition

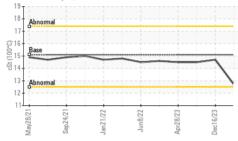
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

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SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0115480	GFL0106958	GFL0089712
Sample Date		Client Info		22 Mar 2024	16 Dec 2023	08 Sep 2023
Machine Age	hrs	Client Info		12860	12216	11476
Oil Age	hrs	Client Info		644	740	983
Oil Changed		Client Info		Changed	Changed	Changed
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	21	0	4
Chromium	ppm	ASTM D5185m	>4	0	0	0
Nickel	ppm	ASTM D5185m	>2	<1	<1	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>9	2	2	<1
Lead	ppm	ASTM D5185m	>30	<1	0	0
Copper	ppm	ASTM D5185m	>35	<1	<1	<1
Tin	ppm	ASTM D5185m	>4	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 4	history1 21	history2 27
	ppm ppm					
Boron		ASTM D5185m	50	4	21	27
Boron Barium	ppm	ASTM D5185m ASTM D5185m	50 5	4 0	21 0	27 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50	4 0 59	21 0 47	27 0 51
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0	4 0 59 <1	21 0 47 <1	27 0 51 <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 <1 881	21 0 47 <1 579	27 0 51 <1 595
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 <1 881 1059	21 0 47 <1 579 1442	27 0 51 <1 595 1656
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 <1 881 1059 1039	21 0 47 <1 579 1442 800	27 0 51 <1 595 1656 792
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 <1 881 1059 1039 1239	21 0 47 <1 579 1442 800 974	27 0 51 <1 595 1656 792 984
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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 <1 881 1059 1039 1239 3403	21 0 47 <1 579 1442 800 974 2478	27 0 51 <1 595 1656 792 984 2975
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	4 0 59 <1 881 1059 1039 1239 3403 current	21 0 47 <1 579 1442 800 974 2478 history1	27 0 51 <1 595 1656 792 984 2975 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	4 0 59 <1 881 1059 1039 1239 3403 <u>current</u> 3	21 0 47 <1 579 1442 800 974 2478 history1 2	27 0 51 <1 595 1656 792 984 2975 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 method ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100	4 0 59 <1 881 1059 1039 1239 3403 current 3 18	21 0 47 <1 579 1442 800 974 2478 history1 2 2 2	27 0 51 <1 595 1656 792 984 2975 history2 3 5
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	4 0 59 <1 881 1059 1039 1239 3403 current 3 18 9	21 0 47 <1 579 1442 800 974 2478 history1 2 2 2 0	27 0 51 <1 595 1656 792 984 2975 history2 3 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	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >20 limit/base	4 0 59 <1 881 1059 1039 1239 3403 current 3 18 9 2 current	21 0 47 <1 579 1442 800 974 2478 history1 2 2 2 0 history1	27 0 51 <1 595 1656 792 984 2975 history2 3 5 <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 TS	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >20 limit/base	4 0 59 <1 881 1059 1039 1239 3403 <u>current</u> 3 18 9 <u>current</u> 1.5	21 0 47 <1 579 1442 800 974 2478 history1 2 2 2 0 history1 0	27 0 51 <1 595 1656 792 984 2975 history2 3 5 <1 +istory2 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 2040 2040 >+100 >20 Limit/base	4 0 59 <1 881 1059 1039 1239 3403 current 3 18 9 current 1.5 10.3	21 0 47 <1 579 1442 800 974 2478 history1 2 2 2 0 history1 0 8.4	27 0 51 <1 595 1656 792 984 2975 history2 3 5 <1 history2 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 ppm ppm ppm	ASTM D5185m ASTM D5185m	50 50 50 150 1510 780 870 2040 imit/base >+100 \$-20 imit/base >20	4 0 59 <1 881 1059 1039 1239 3403 <u>current</u> 3 18 9 <u>current</u> 1.5 10.3 20.6	21 0 47 <1 579 1442 800 974 2478 history1 2 2 2 0 history1 0 8.4 18.5	27 0 51 <1 595 1656 792 984 2975 history2 3 5 <1 kistory2 0.1 8.1 18.2
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 D7844 *ASTM D7624	50 5 50 0 560 1510 780 870 2040 2040 2040 2040 2040 2040 20 20 20 20 20 20 20 20 20 20 20 20 20	4 0 59 <1 881 1059 1039 1239 3403 <i>current</i> 3 18 9 <i>current</i> 1.5 10.3 20.6	21 0 47 <1 579 1442 800 974 2478 history1 2 2 2 2 0 history1 0 8.4 18.5 history1	27 0 51 <1 595 1656 792 984 2975 history2 3 5 <1 history2 0.1 8.1 18.2 history2

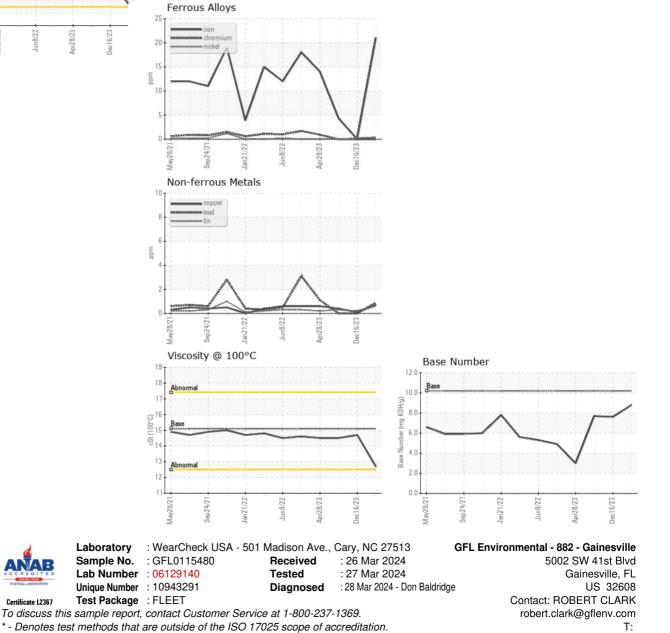


OIL ANALYSIS REPORT





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	12.7	14.7	14.5
GRAPHS						



Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Certificate L2367

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