

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

Area (P8253B) Machine Id 849001- 101296

Component Natural Gas Engine

PETRO CANADA DURON GEO LD 15W40 (7 GAL)

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.

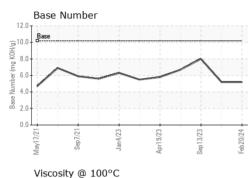
Fluid Condition

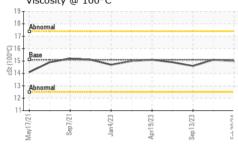
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0081088	GFL0081076	GFL0081123
Sample Date		Client Info		20 Feb 2024	20 Dec 2023	13 Sep 2023
Machine Age	hrs	Client Info		12650	12240	11560
Oil Age	hrs	Client Info		1200	690	1200
Oil Changed		Client Info		Changed	Not Changd	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	9	32	5
Chromium	ppm	ASTM D5185m	>4	<1	2	<1
Nickel	ppm	ASTM D5185m	>2	<1	<1	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>9	2	3	<1
Lead	ppm	ASTM D5185m	>30	<1	0	<1
Copper	ppm	ASTM D5185m	>35	0	0	<1
Tin	ppm	ASTM D5185m	>4	<1	0	<1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	<1
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	limit/base	current	history1 13	history2 193
	ppm ppm					
Boron		ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50	12	13	193
Boron Barium	ppm	ASTM D5185m ASTM D5185m	50 5 50	12 0	13 0	193 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50	12 0 53	13 0 58	193 0 60
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0	12 0 53 <1	13 0 58 <1	193 0 60 <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	12 0 53 <1 546	13 0 58 <1 577	193 0 60 <1 507
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	12 0 53 <1 546 1601	13 0 58 <1 577 1659	193 0 60 <1 507 1583
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	12 0 53 <1 546 1601 755	13 0 58 <1 577 1659 806	193 0 60 <1 507 1583 880
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	12 0 53 <1 546 1601 755 999	13 0 58 <1 577 1659 806 1041	193 0 60 <1 507 1583 880 1056
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 50 0 560 1510 780 870 2040 Iimit/base	12 0 53 <1 546 1601 755 999 2360	13 0 58 <1 577 1659 806 1041 2499	193 0 60 <1 507 1583 880 1056 3309
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 0 560 1510 780 870 2040 Iimit/base	12 0 53 <1 546 1601 755 999 2360 current	13 0 58 <1 577 1659 806 1041 2499 history1	193 0 60 <1 507 1583 880 1056 3309 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	12 0 53 <1 546 1601 755 999 2360 current 4	13 0 58 <1 577 1659 806 1041 2499 history1 9	193 0 60 <1 507 1583 880 1056 3309 history2 5
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 ASTM D5185m	50 5 50 0 560 1510 780 870 2040 Limit/base >+100	12 0 53 <1 546 1601 755 999 2360 Current 4 6	13 0 58 <1 577 1659 806 1041 2499 history1 9 55	193 0 60 <1 507 1583 880 1056 3309 history2 5 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 50 0 560 1510 780 870 2040 limit/base >+100	12 0 53 <1 546 1601 755 999 2360 current 4 6 5	13 0 58 <1 577 1659 806 1041 2499 history1 9 55 12	193 0 60 <1 507 1583 880 1056 3309 history2 5 5 5 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	50 50 0 560 1510 780 870 2040 2040 >+100 >20 20 }	12 0 53 <1 546 1601 755 999 2360 current 4 6 5	13 0 58 <1 577 1659 806 1041 2499 history1 9 55 12 history1	193 0 60 <1 507 1583 880 1056 3309 history2 5 5 5 4 4
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	ASTM D5185m ASTM D5185m	50 50 0 560 1510 780 870 2040 2040 >+100 >20 20 }	12 0 53 <1 546 1601 755 999 2360 <u>current</u> 4 6 5 5 <u>current</u> 0	13 0 58 <1 577 1659 806 1041 2499 history1 9 55 12 history1 0	193 0 60 <1 507 1583 880 1056 3309 history2 5 5 5 4 4 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 50 00 560 1510 780 870 2040 Iimit/base >+100 20 Iimit/base	12 0 53 <1 546 1601 755 999 2360 <u>current</u> 4 6 5 <u>current</u> 0 10.9	13 0 58 <1 577 1659 806 1041 2499 history1 9 55 12 history1 0 11.4	193 0 60 <1 507 1583 880 1056 3309 history2 5 5 5 4 history2 0 6.0
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 TS ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	50 50 0 560 1510 780 870 2040 2040 >+100 >20 20 imit/base >20 >30 imit/base	12 0 53 <1 546 1601 755 999 2360 current 4 6 5 current 0 10.9 22.8	13 0 58 <1 577 1659 806 1041 2499 history1 9 55 12 history1 0 11.4 22.8 history1	193 0 60 <1 507 1583 880 1056 3309 history2 5 5 5 4 history2 0 6.0 18.7 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 50 560 1510 780 870 2040 Iinit/base >+100 	12 0 53 <1 546 1601 755 999 2360 <u>current</u> 4 6 5 5 <u>current</u> 0 10.9 22.8	13 0 58 <1 577 1659 806 1041 2499 history1 9 55 12 history1 0 11.4 22.8	193 0 60 <1 507 1583 880 1056 3309 history2 5 5 5 4 4 history2 0 6.0 18.7

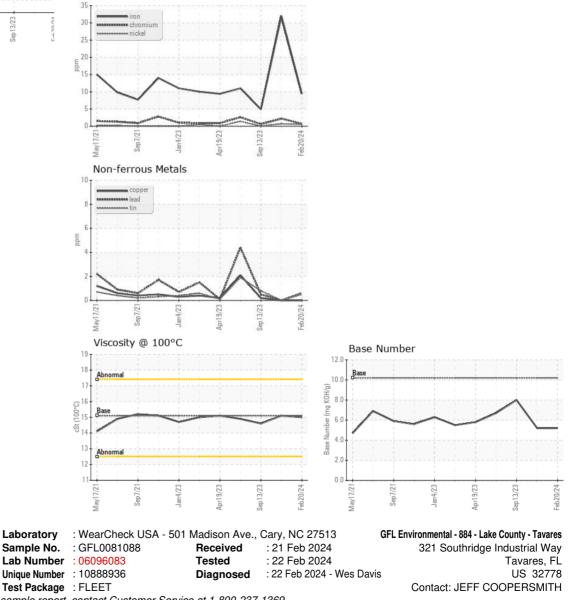


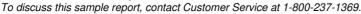
OIL ANALYSIS REPORT





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	15.0	15.1	14.6
GRAPHS						
Ferrous Alloys						





* - 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