

OIL ANALYSIS REPORT

Area (YA133453) [B Service] 3689C Component

Natural Gas Engine Fluid PETRO CANADA DURON GEO LD 15W40 (38 QTS)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

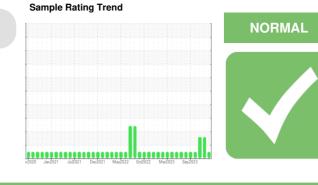
All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

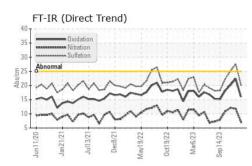
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

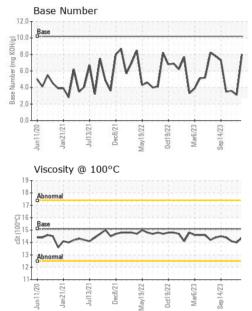


SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0124486	GFL0124484	GFL0111058
Sample Date		Client Info		15 Jul 2024	08 Jul 2024	06 Mar 2024
Machine Age	hrs	Client Info		20950	20929	19762
Oil Age	hrs	Client Info		700	1167	1145
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	ABNORMAL	ABNORMAL
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	13	37	45
Chromium	ppm	ASTM D5185m	>4	2	<u> </u>	<u> </u>
Nickel	ppm	ASTM D5185m	>2	<1	2	2
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>9	4	1 2	1 6
Lead	ppm	ASTM D5185m	>30	0	2	<1
Copper	ppm	ASTM D5185m	>35	6	2	<1
Tin	ppm	ASTM D5185m	>4	0	1	1
Vanadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	ppm	ASTM D5185m		0	<1	0
ADDITIVES			limit/base			history2
ADDITIVES		method	iiniivoase	current	history1	TIIStory2
Boron	ppm	ASTM D5185m	50	39	3	5
	ppm ppm					,
Boron		ASTM D5185m	50	39 0 49	3 0 60	5 0 54
Boron Barium	ppm	ASTM D5185m ASTM D5185m	50 5	39 0	3 0	5
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50	39 0 49	3 0 60	5 0 54
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0	39 0 49 2	3 0 60 1	5 0 54 2
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560	39 0 49 2 566	3 0 60 1 600	5 0 54 2 566 1556 783
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	39 0 49 2 566 1549 851 964	3 0 60 1 600 1760 777 1018	5 0 54 2 566 1556 783 967
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	39 0 49 2 566 1549 851	3 0 60 1 600 1760 777	5 0 54 2 566 1556 783
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	39 0 49 2 566 1549 851 964	3 0 60 1 600 1760 777 1018	5 0 54 2 566 1556 783 967
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	39 0 49 2 566 1549 851 964 2811	3 0 60 1 600 1760 777 1018 2533	5 0 54 2 566 1556 783 967 2348
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	39 0 49 2 566 1549 851 964 2811 current	3 0 60 1 600 1760 777 1018 2533 history1	5 0 54 2 566 1556 783 967 2348 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	39 0 49 2 566 1549 851 964 2811 <u>current</u> 5	3 0 60 1 600 1760 777 1018 2533 history1 6	5 0 54 2 566 1556 783 967 2348 history2 8
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 ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100	39 0 49 2 566 1549 851 964 2811 current 5 6 2	3 0 60 1 600 1760 777 1018 2533 history1 6 7	5 0 54 2 566 1556 783 967 2348 history2 8 8
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	50 5 50 0 560 1510 780 870 2040 limit/base >+100	39 0 49 2 566 1549 851 964 2811 current 5 6 2	3 0 60 1 600 1760 777 1018 2533 history1 6 7 3	5 0 54 2 566 1556 783 967 2348 history2 8 8 8 8 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 >+100	39 0 49 2 566 1549 851 964 2811 current 5 6 2 2	3 0 60 1 600 1760 777 1018 2533 history1 6 7 3 3 history1	5 0 54 2 566 1556 783 967 2348 history2 8 8 8 3 3
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 limit/base >20 limit/base	39 0 49 2 566 1549 851 964 2811 <u>current</u> 5 6 2 2 <u>current</u> 0	3 0 60 1 600 1760 777 1018 2533 history1 6 7 3 history1 0	5 0 54 2 566 1556 783 967 2348 history2 8 8 8 8 3 3 history2 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	39 0 49 2 566 1549 851 964 2811 <i>current</i> 5 6 2 2 <i>current</i> 0 7.2	3 0 60 1 600 1760 777 1018 2533 history1 6 7 3 history1 0 11.8	5 0 54 2 566 1556 783 967 2348 history2 8 8 8 3 history2 0.1 12.1
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 >+100 220 imit/base 220	39 0 49 2 566 1549 851 964 2811 <u>current</u> 5 6 2 2 <u>current</u> 0 7.2 20.4	3 0 60 1 600 1760 777 1018 2533 history1 6 7 3 history1 0 11.8 27.6	5 0 54 2 566 1556 783 967 2348 history2 8 8 8 3 3 history2 0.1 12.1 25.1
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 ppm ppm ppm ppm pp	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415	50 5 50 0 560 1510 780 870 2040 2040 2040 2040 2040 201 201 201 201 201 201 201 201 201 20	39 0 49 2 566 1549 851 964 2811 <i>current</i> 5 6 2 2 <i>current</i> 0 7.2 20.4	3 0 60 1 600 1760 777 1018 2533 history1 6 7 3 history1 0 11.8 27.6 history1	5 0 54 2 566 1556 783 967 2348 history2 8 8 8 3 history2 0.1 12.1 25.1 history2



OIL ANALYSIS REPORT



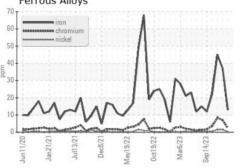


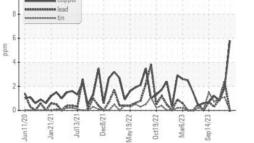
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	14.4	14.0	14.1
GRAPHS						

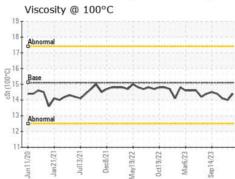
Ferrous Alloys

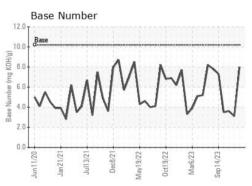
Non-ferrous Metals

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Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 006 - Wilmington Sample No. : GFL0124486 Received : 17 Jul 2024 3618 US Highway 421 N Lab Number : 06238783 Tested : 17 Jul 2024 Wilmington, NC US 28401 Unique Number : 11127617 Diagnosed : 17 Jul 2024 - Wes Davis Test Package : FLEET Contact: Eric Wood Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. eric.wood@gflenv.com T: (717)723-1956 * - 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)

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