

OIL ANALYSIS REPORT

Sample Rating Trend

GLYCOL

Machine Id

946025

Component Natural Gas Engine Fluid PETRO CANADA DURON GEO LD 15W40 (--- LTR)

DIAGNOSIS

Recommendation

Check for low coolant level. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Sodium and/or potassium levels are high.

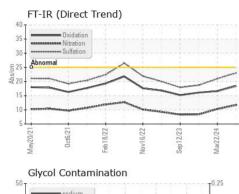
Fluid Condition

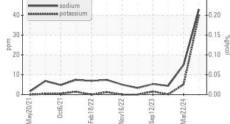
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

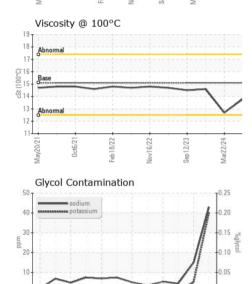
SAMPLE INFORM	/IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0119138	GFL0115500	GFL0106972
Sample Date		Client Info		12 Jul 2024	22 Mar 2024	16 Dec 2023
Machine Age	hrs	Client Info		19993	18830	18270
Oil Age	hrs	Client Info		19433	560	613
Oil Changed		Client Info		Changed	Not Changd	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL
CONTAMINATI	ON	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	15	18	4
Chromium	ppm	ASTM D5185m	>4	<1	0	<1
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>9	5	<1	1
Lead	ppm	ASTM D5185m	>30	2	<1	<1
Copper	ppm	ASTM D5185m	>35	2	<1	<1
Tin	ppm	ASTM D5185m	>4	<1	0	0
Vanadium	ppm	ASTM D5185m		<1	<1	<1
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 7	<mark>history1</mark> 2	<mark>history2</mark> 26
	ppm ppm					
Boron		ASTM D5185m	50	7	2	26
Boron Barium	ppm	ASTM D5185m ASTM D5185m	50 5 50	7 <1	2	26 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50	7 <1 57	2 0 50	26 0 47
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0	7 <1 57 <1	2 0 50 <1	26 0 47 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560	7 <1 57 <1 614	2 0 50 <1 761	26 0 47 0 527
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	7 <1 57 <1 614 1459	2 0 50 <1 761 936	26 0 47 0 527 1422 709 866
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	7 <1 57 <1 614 1459 859	2 0 50 <1 761 936 856	26 0 47 0 527 1422 709
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm 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	7 <1 57 <1 614 1459 859 1060	2 0 50 <1 761 936 856 1004	26 0 47 0 527 1422 709 866
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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	7 <1 57 <1 614 1459 859 1060 2783	2 0 50 <1 761 936 856 1004 2909	26 0 47 0 527 1422 709 866 2301
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	7 <1 57 <1 614 1459 859 1060 2783 current	2 0 50 <1 761 936 856 1004 2909 history1	26 0 47 0 527 1422 709 866 2301 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	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	7 <1 57 <1 614 1459 859 1060 2783 current 4	2 0 50 <1 761 936 856 1004 2909 history1 2	26 0 47 0 527 1422 709 866 2301 history2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	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	7 <1 57 <1 614 1459 859 1060 2783 current 4 4	2 0 50 <1 761 936 856 1004 2909 history1 2 15	26 0 47 0 527 1422 709 866 2301 history2 3 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100	7 <1 57 <1 614 1459 859 1060 2783 <u>current</u> 4 4 43 ▲ 40	2 0 50 <1 761 936 856 1004 2909 history1 2 15 5	26 0 47 0 527 1422 709 866 2301 history2 3 4 4 <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 ppm ppm ppm	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100 	7 <1 57 <1 614 1459 859 1060 2783 current 4 4 43 ▲ 40 current	2 0 50 <1 761 936 856 1004 2909 history1 2 15 5 5 history1	26 0 47 0 527 1422 709 866 2301 history2 3 4 <1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100 	7 <1 57 <1 614 1459 859 1060 2783 current 4 4 4 43 40 current 0.3	2 0 50 <1 761 936 856 1004 2909 history1 2 15 5 history1 1.5	26 0 47 0 527 1422 709 866 2301 history2 3 4 <1 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 TS ppm ppm ppm ppm ppm spm ppm ppm ppm	ASTM D5185m ASTM D5185m	50 5 50 0 560 1510 780 870 2040 limit/base >+100 s20 limit/base	7 <1 57 <1 614 1459 859 1060 2783 current 4 ▲ 43 ▲ 40 current 0.3 11.7	2 0 50 <1 761 936 856 1004 2909 history1 2 15 5 history1 1.5 1.5 10.3	26 0 47 0 527 1422 709 866 2301 history2 3 4 <1 history2 0.1 8.4
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 ppm spm ppm ppm ppm	ASTM D5185m ASTM D5185m	50 50 50 150 1510 780 870 2040 Iimit/base >20 Iimit/base >20 S	7 <1 57 <1 614 1459 859 1060 2783 current 4 4 43 40 current 0.3 11.7 23.0	2 0 50 <1 761 936 856 1004 2909 history1 2 15 5 <u>history1</u> 1.5 10.3 21.0	26 0 47 0 527 1422 709 866 2301 history2 3 4 <1 //



OIL ANALYSIS REPORT







Vov16/22

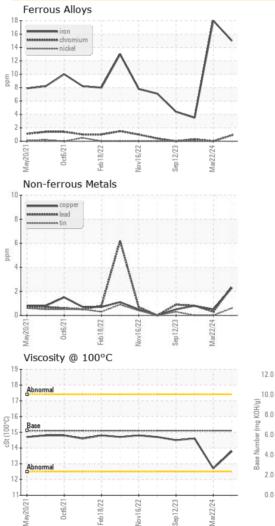
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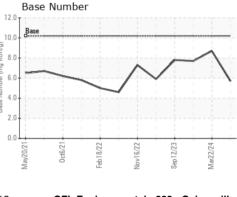
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Sep12/23

Mar22/24

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	13.8	12.7	14.6
GRAPHS						





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 882 - Gainesville Sample No. : GFL0119138 Received : 17 Jul 2024 5002 SW 41st Blvd Lab Number : 06238961 Tested : 19 Jul 2024 Gainesville, FL Unique Number : 11127795 Diagnosed : 19 Jul 2024 - Sean Felton US 32608 Test Package : FLEET (Additional Tests: Glycol) Contact: ROBERT CLARK Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. robert.clark@gflenv.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: F:

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

0.00