

OIL ANALYSIS REPORT

Sample Rating Trend



(TFY1477) Machine Id 934058

Component Natural Gas Engine

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Elevated aluminum (AI) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

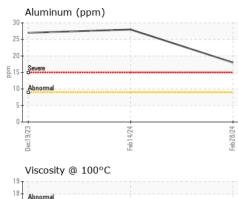
Fluid Condition

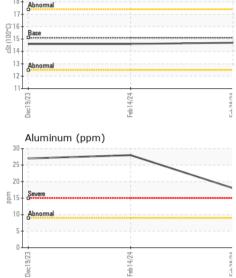
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

GAL)		Dec	2023	Feb2024 Feb20	24	
SAMPLE INFOF	RMATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0114417	GFL0103943	GFL010054
Sample Date		Client Info		28 Feb 2024	14 Feb 2024	19 Dec 2023
Machine Age	hrs	Client Info		1618	1485	1033
Oil Age	hrs	Client Info		0	1485	0
Oil Changed		Client Info		Changed	Not Changd	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ΓION	method	limit/base	current	history1	history2
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method				0.0
WEAR METAL	S	method	limit/base	current	history1	history2
ron	ppm	ASTM D5185m	>50	18	16	18
Chromium	ppm	ASTM D5185m	>4	2	1	1
Nickel	ppm	ASTM D5185m	>2	<1	<1	<1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>9	18	28	27
_ead	ppm	ASTM D5185m	>30	<1	<1	0
Copper	ppm	ASTM D5185m	>35	2	3	3
Tin	ppm	ASTM D5185m	>4	<1	1	2
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
		mounou				,, j
	ppm	ASTM D5185m	50	10	10	10
Boron	ppm ppm					
Boron Barium		ASTM D5185m	50	10	10	10
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m	50 5 50	10 <1	10 0	10 0
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50	10 <1 51	10 0 52	10 0 53
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0	10 <1 51 <1	10 0 52 2	10 0 53 2
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560	10 <1 51 <1 532	10 0 52 2 572	10 0 53 2 570
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 5 50 0 560 1510	10 <1 51 <1 532 1459	10 0 52 2 572 1513	10 0 53 2 570 1431
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	10 <1 51 <1 532 1459 663	10 0 52 2 572 1513 699	10 0 53 2 570 1431 730
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	10 <1 51 <1 532 1459 663 924	10 0 52 2 572 1513 699 915	10 0 53 2 570 1431 730 980 2393
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	10 <1 51 <1 532 1459 663 924 2321	10 0 52 2 572 1513 699 915 2303	10 0 53 2 570 1431 730 980 2393
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	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	10 <1 51 <1 532 1459 663 924 2321 current	10 0 52 2 572 1513 699 915 2303 history1	10 0 53 2 570 1431 730 980 2393 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	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	10 <1 51 <1 532 1459 663 924 2321 current 5	10 0 52 2 572 1513 699 915 2303 history1 11	10 0 53 2 570 1431 730 980 2393 history2 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm VTS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	50 50 00 560 1510 780 870 2040 limit/base >+100	10 <1 51 <1 532 1459 663 924 2321 current 5 7	10 0 52 2 572 1513 699 915 2303 history1 11 6	10 0 53 2 570 1431 730 980 2393 history2 7 4 132
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm VTS	ASTM D5185m ASTM D5185m	50 50 0 560 1510 780 870 2040 limit/base >+100	10 <1 51 <1 532 1459 663 924 2321 current 5 7 50	10 0 52 2 572 1513 699 915 2303 history1 11 6 91	10 0 53 2 570 1431 730 980 2393 history2 7 4 132
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm NTS ppm ppm	ASTM D5185m ASTM D5185m	50 50 0 560 1510 780 870 2040 Iimit/base >+100 >20	10 <1 51 <1 532 1459 663 924 2321 current 5 7 50 current	10 0 52 2 572 1513 699 915 2303 history1 11 6 91 history1	10 0 53 2 570 1431 730 980 2393 history2 7 4 132 history2
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 vtts	ASTM D5185m ASTM D5185m	50 50 00 560 1510 780 870 2040 Iimit/base >+100 20 Iimit/base	10 <1 51 <1 532 1459 663 924 2321 current 5 7 50 current 0	10 0 52 2 572 1513 699 915 2303 history1 11 6 91 11 6 91 history1 0.2	10 0 53 2 570 1431 730 980 2393 history2 7 4 132 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 vTS 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	10 <1 51 <1 532 1459 663 924 2321 current 5 7 50 current 0 10.1	10 0 52 2 572 1513 699 915 2303 history1 11 6 91 history1 0.2 7.1	10 0 53 2 570 1431 730 980 2393 history2 7 4 132 history2 0 10.7 20.4
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 vTS ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	50 50 560 1510 780 870 2040 Iinit/base >+100 \$-20 Iinit/base \$-20	10 <1 51 <1 532 1459 663 924 2321 current 5 7 50 current 0 10.1 21.2	10 0 52 2 572 1513 699 915 2303 history1 11 6 91 11 6 91 0.2 7.1 17.2	10 0 53 2 570 1431 730 980 2393 history2 7 4 132 history2 0 10.7



OIL ANALYSIS REPORT





	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 *Visual	NONE NORML	NONE	NONE	NONE
	Appearance Odor	scalar scalar	*Visual	NORML	NORML NORML	NORML	NORML
	Emulsified Water	scalar	*Visual	>0.1	NORML	NEG	NEG
	Free Water	scalar	*Visual	>0.1	NEG	NEG	NEG
	FLUID PROF		method	limit/base	current	history1	history
	Visc @ 100°C	cSt	ASTM D445		14.7	14.6	14.6
	GRAPHS						
	Ferrous Alloys						
	18 16						
	14 - nickel						
	12						
	E ¹⁰						
	6						
	4						
	2						
		Feb14/24 -		8/24 -			
	Dec19/23	Feb1		Feb28/24			
	Non-ferrous Me	tals					
	10 T						
	copper						
	1						
	copper						
	8 - copper lead						
	copper						
	8 - copper lead						
	8 6 4						
	8 6 4 2 0	24		24			
	8 6 4	Feb14/24		reb28/24			
	8 6 4 2 0	ш.		Feb28/24	Dage Numb	ar.	
	8 6 4 2 0 2 2 0 2 2 0 2 2 0 2 2 0 2 2 0 2 0	ш.		Lep28224	Base Numb	er	
	Red Copper lead	ш.		12.	Base	er	
	Read Viscosity @ 100	ш.		12.	0 Base	er	
	Read Viscosity @ 100	ш.		12.	0 0 Base 0	er	
	Read Viscosity @ 100	ш.		12.	0 0 Base 0	er	
	Viscosity @ 100	ш.		12.	0 0 0 0	er	
	Viscosity @ 100	ш.		12. (0)H (0)H (0)H (0)H (0)H (0)H (0)H (0)H	0 Base	er	
	Viscosity @ 100	ш.		12. 10. 00 H 00 00 H 0	0 Base 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	er	
	Copper lead 4 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	oC		12. 10. (D) HOX 8. 10. 10. 10. 10. 10. 10. 10. 10	0 Base		
	Viscosity @ 100	ш.		12. 10. 00 H 00 00 H 0	0 Base 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	er	
,	Viscosity @ 100	Fabil4/24		12. 10. 10. 10. 10. 10. 10. 10. 10	0 Base 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Feb 14/24	East Mount Ha
_	Copper lead 4 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Fabil4/24		12. 10. 10. 10. 10. 10. 10. 10. 10	0 Base 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
	Viscosity @ 100	°C http://www.second bookstandinger 501 Madisco Recei Teste	ived : 08 ed : 1	12. (0)HOX 00 10. 10. 10. 10. 10. 10. 10. 1	GFL E	+2741 (P44 +2741 (P44 nvironmental - 865 - F	

To discuss this sample repo * - 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

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Submitted By: TECHNICIAN ACCOUNT

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