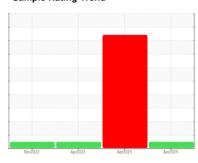


OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id 946007

Natural Gas Engine

PETRO CANADA DURON GEO LD 15W40 (

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: re sample)

Wear

All component wear rates are normal.

Contamination

No evidence of coolant present in the oil. There is no indication of any contamination in the oil.

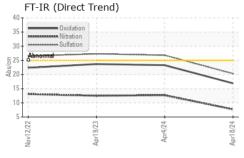
Fluid Condition

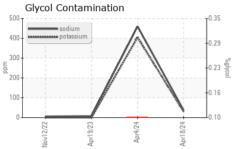
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

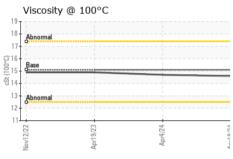
SAMPLE INFORMATION method limit/bass current history1 history2 Sample Number Client Info GFL0113954 GFL0108392 GFL0071262 Sample Date Client Info 18 Apr 2024 40 Apr 2024 19 Apr 2023 Machine Age hrs Client Info 18 365 18312 16027 Oil Changed Client Info 53 18312 16027 Oil Changed Client Info Not Changd Not Changd Not Changd Sample Status NCRMAL NEG NEG NEG WEAR WEG Web Imitibase current history1 history2 Water WC Method >0.1 NEG NEG NEG NEG WEAR METALS method Imitibase current history1 history2 Iron ppm ASTM 05185n >50 5 28 12 Chromium ppm ASTM 05185n >2 0 2 0 Titanium	GAL)		Nov202	2 Apr2023	Apr2024 A	or2024	
Sample Date Client Info 18 Apr 2024 0.4 Apr 2024 19 Apr 2023 Machine Age hrs Client Info 18365 18312 16027 Oil Age hrs Client Info Not Change 16027 Not Changed Not Changed <t< th=""><th>SAMPLE INFOR</th><th>MATION</th><th>method</th><th>limit/base</th><th>current</th><th>history1</th><th>history2</th></t<>	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 18365 18312 16027 Oil Age hrs Client Info 53 18312 16027 Oil Changed Sample Status Client Info Not Changd NoRMAL SEVERE NOT Changd NoRMAL CONTAMINATION method limit/base current history1 history2 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 5 28 12 Chromium ppm ASTM D5185m >4 <1	Sample Number		Client Info		GFL0113954	GFL0108392	GFL0071262
Machine Age hrs Client Info 18365 18312 16027 Oil Age hrs Client Info 53 18312 16027 Oil Changed Sample Status Client Info Not Changd NoRMAL SEVERE NOT Changd NoRMAL CONTAMINATION method limit/base current history1 history2 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 5 28 12 Chromium ppm ASTM D5185m >4 <1	Sample Date		Client Info		18 Apr 2024	04 Apr 2024	19 Apr 2023
Colient Info	Machine Age	hrs	Client Info		18365	18312	16027
Oil Changed Sample Status Client Info Not Changd NORMAL Changed SEVERE Not Changed NORMAL CONTAMINATION method limit/base current history1 history2 Water WC Method >0.1 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 5 28 12 Chromium ppm ASTM D5185m >4 <1 3 2 Nickel ppm ASTM D5185m >4 <1 3 2 Nickel ppm ASTM D5185m >3 0 <1 <1 Alluminum ppm ASTM D5185m >9 1 3 3 Lead ppm ASTM D5185m >3 <1 1 1 0 Copper ppm ASTM D5185m >3 <1 2 <1 Tin ppm ASTM D5185m 5 0	Oil Age	hrs	Client Info		53	18312	16027
NORMAL SEVERE NORMAL CONTAMINATION method limit/base current history1 history2	-		Client Info		Not Changd	Changed	Not Changd
Water WC Method >0.1 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >50 5 28 12 Chromium ppm ASTM D5185m >2 0 2 0 Nickel ppm ASTM D5185m >2 0 2 0 Silver ppm ASTM D5185m >3 0 0 0 0 Aluminum ppm ASTM D5185m >3 0 0 0 0 Aluminum ppm ASTM D5185m >30 1 11 10 Copper ppm ASTM D5185m >30 1 11 10 Copper ppm ASTM D5185m >4 0 2 <1 2 Tin ppm ASTM D5185m 0 0 <1 0 Cadmium ppm ASTM D5185m 50 <t< td=""><td>-</td><td></td><td></td><td></td><th>NORMAL</th><td></td><td>NORMAL</td></t<>	-				NORMAL		NORMAL
WEAR METALS	CONTAMINAT	ION	method	limit/base	current	history1	history2
Tron	Water		WC Method	>0.1	NEG	NEG	NEG
Chromium ppm ASTM D5185m >4 <1 3 2 Nickel ppm ASTM D5185m >2 0 2 0 Titanium ppm ASTM D5185m >2 0 2 0 Siliver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >30 1 11 10 Copper ppm ASTM D5185m >30 1 11 10 Copper ppm ASTM D5185m >4 0 2 <1	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>50	5	28	12
Silver	Chromium	ppm	ASTM D5185m	>4	<1	3	2
Silver	Nickel	ppm	ASTM D5185m	>2	0	2	0
Aluminum ppm ASTM D5185m >9 1 3 3 3 Lead ppm ASTM D5185m >30 1 111 10 Copper ppm ASTM D5185m >35 <1 2 <1 Tin ppm ASTM D5185m >4 0 2 <1 Vanadium ppm ASTM D5185m 0 <1 0 <1 0 Cadmium ppm ASTM D5185m 0 <1 0 Cadmium ppm ASTM D5185m 50 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 50 0 0 0 Molybdenum ppm ASTM D5185m 50 0 0 0 Molybdenum ppm ASTM D5185m 50 51 94 57 Manganese ppm ASTM D5185m 50 51 94 57 Manganese ppm ASTM D5185m 50 51 94 57 Manganese ppm ASTM D5185m 50 580 835 603 Calcium ppm ASTM D5185m 1510 1595 2481 1861 Phosphorus ppm ASTM D5185m 1510 1595 2481 1861 Zinc ppm ASTM D5185m 780 753 996 760 Zinc ppm ASTM D5185m 2040 2657 3708 2705 CONTAMINANTS method limit/base current history1 history2 Sulfur ppm ASTM D5185m >+100 7 14 4 Sodium ppm ASTM D5185m >20 30 △405 0 Glycol % 'ASTM D5885m >20 30 △405 0 Glycol % 'ASTM D2882	Titanium	ppm	ASTM D5185m		0	<1	<1
Lead ppm ASTM D5185m >30 1 11 10 Copper ppm ASTM D5185m >35 <1 2 <1 Tin ppm ASTM D5185m >4 0 2 <1 Vanadium ppm ASTM D5185m 0 <1 0 Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 50 40 24 15 Barium ppm ASTM D5185m 50 51 94 57 Barium ppm ASTM D5185m 50 51 94 57 Manganese ppm ASTM D5185m 50 51 94 57 Manganese ppm ASTM D5185m 50 580 835 603 Calcium ppm ASTM D5185m 780 753 996 760	Silver	ppm	ASTM D5185m	>3	0	0	0
Copper	Aluminum	ppm	ASTM D5185m	>9	1	3	3
Trin	Lead	ppm	ASTM D5185m	>30	1	11	10
Vanadium ppm ASTM D5185m 0 <1 0 Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 50 40 24 15 Barium ppm ASTM D5185m 50 0 0 0 Molybdenum ppm ASTM D5185m 50 51 94 57 Manganese ppm ASTM D5185m 50 51 94 57 Magnesium ppm ASTM D5185m 560 580 835 603 Calcium ppm ASTM D5185m 780 753 996 760 Zinc ppm ASTM D5185m 870 914 1438 1027 Sulfur ppm ASTM D5185m 2040 2657 3708 2705 CONTAMINANTS method limit/base current history1 <th< td=""><td>Copper</td><td>ppm</td><td>ASTM D5185m</td><td>>35</td><th><1</th><td>2</td><td><1</td></th<>	Copper	ppm	ASTM D5185m	>35	<1	2	<1
Vanadium ppm ASTM D5185m 0 <1 0 Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 50 40 24 15 Barium ppm ASTM D5185m 50 0 0 0 Molybdenum ppm ASTM D5185m 50 51 94 57 Manganese ppm ASTM D5185m 0 <1 2 <1 Magnesium ppm ASTM D5185m 560 580 835 603 Calcium ppm ASTM D5185m 780 753 996 760 Zinc ppm ASTM D5185m 870 914 1438 1027 Sulfur ppm ASTM D5185m 2040 2657 3708 2705 CONTAMINANTS method limit/base current history1 h	Tin	ppm	ASTM D5185m	>4	0	2	<1
ADDITIVES	Vanadium		ASTM D5185m		0	<1	0
Boron	Cadmium	ppm	ASTM D5185m		0	<1	0
Barium ppm ASTM D5185m 5 0 0 0 Molybdenum ppm ASTM D5185m 50 51 94 57 Manganese ppm ASTM D5185m 50 51 94 57 Magnesium ppm ASTM D5185m 560 580 835 603 Calcium ppm ASTM D5185m 1510 1595 2481 1861 Phosphorus ppm ASTM D5185m 780 753 996 760 Zinc ppm ASTM D5185m 870 914 1438 1027 Sulfur ppm ASTM D5185m 2040 2657 3708 2705 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 7 14 4 Sodium ppm ASTM D5185m >20 30 405 0 Glycol % *ASTM D5185m	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 50 51 94 57 Manganese ppm ASTM D5185m 0 <1 2 <1 Magnesium ppm ASTM D5185m 560 580 835 603 Calcium ppm ASTM D5185m 1510 1595 2481 1861 Phosphorus ppm ASTM D5185m 780 753 996 760 Zinc ppm ASTM D5185m 870 914 1438 1027 Sulfur ppm ASTM D5185m 2040 2657 3708 2705 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 7 14 4 Sodium ppm ASTM D5185m >20 30 405 0 Glycol % *ASTM D5185m >20 30 405 0 Glycol % *ASTM D588m <t< td=""><td>Boron</td><td>ppm</td><td>ASTM D5185m</td><td>50</td><th>40</th><td>24</td><td>15</td></t<>	Boron	ppm	ASTM D5185m	50	40	24	15
Manganese ppm ASTM D5185m 0 <1 2 <1 Magnesium ppm ASTM D5185m 560 580 835 603 Calcium ppm ASTM D5185m 1510 1595 2481 1861 Phosphorus ppm ASTM D5185m 780 753 996 760 Zinc ppm ASTM D5185m 870 914 1438 1027 Sulfur ppm ASTM D5185m 2040 2657 3708 2705 CONTAMINANTS method limit/base current history1 history2 CONTAMINANTS method limit/base current history1 history2 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 7 14 4 Socition ppm ASTM D5185m >20 30 405 0 Glycol	Barium	ppm	ASTM D5185m	5	0	0	0
Magnesium ppm ASTM D5185m 560 580 835 603 Calcium ppm ASTM D5185m 1510 1595 2481 1861 Phosphorus ppm ASTM D5185m 780 753 996 760 Zinc ppm ASTM D5185m 870 914 1438 1027 Sulfur ppm ASTM D5185m 2040 2657 3708 2705 CONTAMINANTS method limit/base current history1 history2 Solicon ppm ASTM D5185m >+100 7 14 4 <	Molybdenum	ppm	ASTM D5185m	50	51	94	57
Calcium ppm ASTM D5185m 1510 1595 2481 1861 Phosphorus ppm ASTM D5185m 780 753 996 760 Zinc ppm ASTM D5185m 870 914 1438 1027 Sulfur ppm ASTM D5185m 2040 2657 3708 2705 CONTAMINANTS method limit/base current history1 history2 Solicon ppm ASTM D7845 >20 30 405 0 0 Glycol % *ASTM D7844 0.1 0.1 0 1	Manganese	ppm	ASTM D5185m	0	<1	2	<1
Phosphorus ppm ASTM D5185m 780 753 996 760 Zinc ppm ASTM D5185m 870 914 1438 1027 Sulfur ppm ASTM D5185m 2040 2657 3708 2705 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 7 14 4 Sodium ppm ASTM D5185m >20 30 460 8 Potassium ppm ASTM D5185m >20 30 405 0 Glycol % *ASTM D585m 0.1 0.1 0 Soot % % *ASTM D7844 0.1 0.1	Magnesium	ppm	ASTM D5185m	560	580	835	603
Zinc ppm ASTM D5185m 870 914 1438 1027 Sulfur ppm ASTM D5185m 2040 2657 3708 2705 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 7 14 4 Sodium ppm ASTM D5185m 37 460 8 Potassium ppm ASTM D5185m >20 30 405 0 Glycol % *ASTM D5185m >20 30 405 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 0.1 0 Nitration Abs/cm *ASTM D7624 >20 7.7 12.7 12.5 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 26.8 27.3 FLUID DEGRADATION method l	Calcium	ppm	ASTM D5185m	1510	1595	2481	1861
Sulfur ppm ASTM D5185m 2040 2657 3708 2705 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 7 14 4 Sodium ppm ASTM D5185m 37 460 8 Potassium ppm ASTM D5185m >20 30 405 0 Glycol % *ASTM D2982 0.10 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 0.1 0 Nitration Abs/cm *ASTM D7624 >20 7.7 12.7 12.5 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 26.8 27.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.9	Phosphorus	ppm	ASTM D5185m	780	753	996	760
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >+100 7 14 4 Sodium ppm ASTM D5185m 37 ▲ 460 8 Potassium ppm ASTM D5185m >20 30 ▲ 405 0 Glycol % *ASTM D2982 ▲ 0.10 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 0.1 0 Nitration Abs/cm *ASTM D7624 >20 7.7 12.7 12.5 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 26.8 27.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.9 23.3 23.7	Zinc	ppm	ASTM D5185m	870	914	1438	1027
Silicon ppm ASTM D5185m >+100 7 14 4 Sodium ppm ASTM D5185m 37 460 8 Potassium ppm ASTM D5185m >20 30 405 0 Glycol % *ASTM D2982 0.10 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 0.1 0 Nitration Abs/cm *ASTM D7624 >20 7.7 12.7 12.5 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 26.8 27.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.9 23.3 23.7	Sulfur	ppm	ASTM D5185m	2040	2657	3708	2705
Sodium ppm ASTM D5185m 37 ▲ 460 8 Potassium ppm ASTM D5185m >20 30 ▲ 405 0 Glycol % *ASTM D2982 ▲ 0.10 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 0.1 0 Nitration Abs/cm *ASTM D7624 >20 7.7 12.7 12.5 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 26.8 27.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.9 23.3 23.7	CONTAMINAN	ITS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 30 ▲ 405 0 Glycol % *ASTM D2982 ▲ 0.10 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 0.1 0.1 0 Nitration Abs/cm *ASTM D7624 >20 7.7 12.7 12.5 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 26.8 27.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.9 23.3 23.7	Silicon	ppm	ASTM D5185m	>+100	7	14	4
Soot %	Sodium	ppm	ASTM D5185m		37	460	8
INFRA-RED	Potassium	ppm	ASTM D5185m	>20	30	4 05	0
Soot % % *ASTM D7844 0.1 0.1 0 Nitration Abs/cm *ASTM D7624 >20 7.7 12.7 12.5 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 26.8 27.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.9 23.3 23.7	Glycol	%	*ASTM D2982			▲ 0.10	
Nitration Abs/cm *ASTM D7624 >20 7.7 12.7 12.5 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 26.8 27.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.9 23.3 23.7	INFRA-RED		method	limit/base	current	history1	history2
Nitration Abs/cm *ASTM D7624 >20 7.7 12.7 12.5 Sulfation Abs/.1mm *ASTM D7415 >30 20.3 26.8 27.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.9 23.3 23.7	Soot %	%	*ASTM D7844		0.1	0.1	0
Sulfation Abs/.1mm *ASTM D7415 >30 20.3 26.8 27.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.9 23.3 23.7	Nitration	Abs/cm	*ASTM D7624	>20		12.7	12.5
Oxidation							
	FLUID DEGRA	NOITAC	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	16.9	23.3	23.7
		mg KOH/g	ASTM D2896	10.2	7.3	3.8	3.3

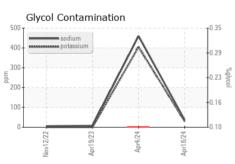


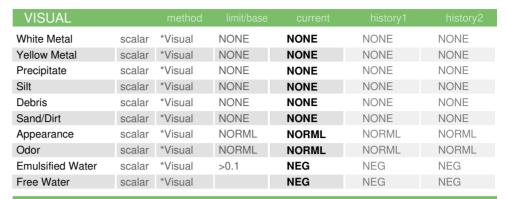
OIL ANALYSIS REPORT





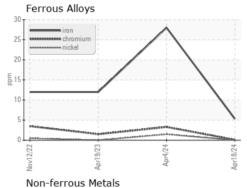


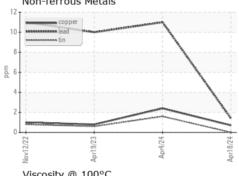


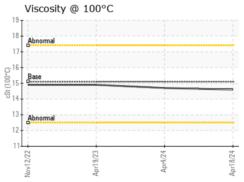


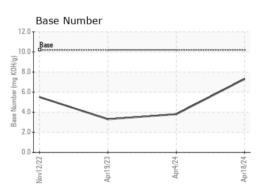
FLUID PROPI	ERITES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.1	14.6	14.7	14.9

GRAPHS













Laboratory Sample No. Lab Number : 06158772 Unique Number : 10994195

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0113954

Received : 24 Apr 2024 **Tested**

: 26 Apr 2024 Diagnosed

: 26 Apr 2024 - Jonathan Hester

Muskego, WI US 53150 Contact: Brian Schlomann brian.schlomann@gflenv.com T: (262)510-4586

W144 S6400 College Ct.

GFL Environmental - 932 - Muskego HC

Test Package : FLEET Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369.

 st - 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)