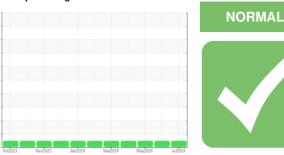


OIL ANALYSIS REPORT

Sample Rating Trend





713010
Component
Diesel Engine

PETRO CANADA DURON UHP 5W30 (--- 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

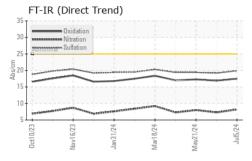
Fluid Condition

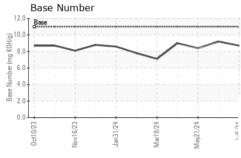
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

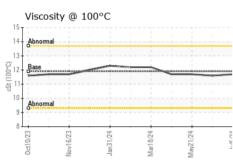
Sample Date Client Info 05 Jul 2024 12 Jun 2024 21 May 2 Machine Age hrs Client Info 3098 2951 2801 2801 Client Info 297 150 2661 2801 Client Info 297 150 2661 Client Info 297 150 2661 Client Info 297 150 2661 Client Info Not Changd Not Changd NoRMAL	SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 3098 2951 2801 Oil Age hrs Client Info 297 150 2661 Oil Changed Client Info Not Changd Not Changd Changed Sample Status Description NoRMAL NORMAL NORMAL NORMAL CONTAMINATION method Imitibase current history1 history1 Fuel WC Method >3.0 <1.0	Sample Number		Client Info		GFL0122864	GFL0122799	GFL0122815
Oil Age hrs Client Info 297 150 2661 Oil Changed Sample Status Client Info Not Changed Not Changed C	Sample Date		Client Info		05 Jul 2024	12 Jun 2024	21 May 2024
Oil Changed Sample Status Client Info Not Changd NORMAL Not Changd NORMAL Changed NORMAL Changed NORMAL Changed NORMAL Changed NORMAL Changed NORMAL	Machine Age	hrs	Client Info		3098	2951	2801
NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history1 history1 history1 water wc Method vo.2 NEG NE		hrs	Client Info		297	150	2661
NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history1 history1 history1 water wc Method vo.2 NEG NE	Oil Changed		Client Info		Not Changd	Not Changd	Changed
Fuel WC Method S3.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1					NORMAL	NORMAL	NORMAL
Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >120 10 3 5 Chromium ppm ASTM D5185m >20 <1	CONTAMINATI	ON	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 <1	WEAR METALS	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>120	10	3	5
Nickel ppm ASTM D5185m >5 2 1 1 Titanium ppm ASTM D5185m >2 <1	Chromium	ppm	ASTM D5185m	>20	<1	0	0
Description	Nickel		ASTM D5185m	>5	2	1	1
Silver ppm ASTM D5185m >2 0 0 <1 Aluminum ppm ASTM D5185m >20 4 2 2 Lead ppm ASTM D5185m >40 0 0 <1 Copper ppm ASTM D5185m >330 4 1 2 Tin ppm ASTM D5185m >15 <1 <1 <1 <1 Vanadium ppm ASTM D5185m o <1 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 0 ADDITIVES method limit/base current history1 history1 history1 Boron ppm ASTM D5185m 0 25 40 37 Barium ppm ASTM D5185m 0 0 0 0 0 Manganesium ppm ASTM D5185m 0 0 <1 <1 <1 Calcium <td>Titanium</td> <td></td> <td>ASTM D5185m</td> <td>>2</td> <th><1</th> <td>0</td> <td>0</td>	Titanium		ASTM D5185m	>2	<1	0	0
Aluminum							
Lead ppm ASTM D5185m >40 0 0 <1 Copper ppm ASTM D5185m >33.0 4 1 2 Tin ppm ASTM D5185m >15 <1 <1 <1 <1 Vanadium ppm ASTM D5185m <1 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 25 40 37 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 0 Magnesium ppm ASTM D5185m 0 0 <1 <1 Calcium ppm ASTM D5185m 160 1077 1055 1017 Zinc ppm ASTM D5185m				>20			
Copper ppm ASTM D5185m >330 4 1 2 Tin ppm ASTM D5185m >15 <1					0		
Tin		• •					
Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 25 40 37 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1160 1086 1153 1152 Calcium ppm ASTM D5185m 820 891 860 840 Phosphorus ppm ASTM D5185m 1260 1259 1304 1297 Sulfur ppm ASTM D5185m 1260 1259 1304 1297 Sulfur ppm ASTM D5185m >25 5 4					-		
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 25 40 37 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 <1		• •		7.10			
ADDITIVES method limit/base current history1 history1 Boron ppm ASTM D5185m 0 25 40 37 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 64 56 55 56 Manganese ppm ASTM D5185m 0 0 <1							
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 64 56 55 56 Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1160 1086 1153 1152 Calcium ppm ASTM D5185m 820 891 860 840 Phosphorus ppm ASTM D5185m 1160 1077 1055 1017 Zinc ppm ASTM D5185m 1260 1259 1304 1297 Sulfur ppm ASTM D5185m 3000 3075 3976 3798 CONTAMINANTS method limit/base current history1 history2 Nitration Abs/cm *ASTM D7844 >4 0.2 0.1 0.2 Nitration A	ADDITIVES		method	limit/base	current	history1	history2
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Molybdenum ppm ASTM D5185m 64 56 55 56 Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1160 1086 1153 1152 Calcium ppm ASTM D5185m 820 891 860 840 Phosphorus ppm ASTM D5185m 1160 1077 1055 1017 Zinc ppm ASTM D5185m 1260 1259 1304 1297 Sulfur ppm ASTM D5185m 3000 3075 3976 3798 CONTAMINANTS method limit/base current history1 history1 history1 Silicon ppm ASTM D5185m >25 5 4 9 Sodium ppm ASTM D5185m >20 9 5 3 INFRA-RED method limit/base current history1 history1 Soot % %	Barium		ASTM D5185m	0	0	0	0
Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1160 1086 1153 1152 Calcium ppm ASTM D5185m 820 891 860 840 Phosphorus ppm ASTM D5185m 1160 1077 1055 1017 Zinc ppm ASTM D5185m 1260 1259 1304 1297 Sulfur ppm ASTM D5185m 3000 3075 3976 3798 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 5 4 9 Sodium ppm ASTM D5185m >20 9 5 3 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >4 0.2 0.1 0.2 Nitration Abs/cm *ASTM D78	Molvbdenum				56	55	56
Magnesium ppm ASTM D5185m 1160 1086 1153 1152 Calcium ppm ASTM D5185m 820 891 860 840 Phosphorus ppm ASTM D5185m 1160 1077 1055 1017 Zinc ppm ASTM D5185m 1260 1259 1304 1297 Sulfur ppm ASTM D5185m 3000 3075 3976 3798 CONTAMINANTS method limit/base current history1 history1 Silicon ppm ASTM D5185m >25 5 4 9 Sodium ppm ASTM D5185m >20 9 5 3 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >4 0.2 0.1 0.2 Nitration Abs/cm *ASTM D7624 >20 8.2 7.3 8.0 Sulfation Abs/.1mm *ASTM D741	-	• • • • • • • • • • • • • • • • • • • •	ASTM D5185m	0	0		<1
Calcium ppm ASTM D5185m 820 891 860 840 Phosphorus ppm ASTM D5185m 1160 1077 1055 1017 Zinc ppm ASTM D5185m 1260 1259 1304 1297 Sulfur ppm ASTM D5185m 3000 3075 3976 3798 CONTAMINANTS method limit/base current history1 history1 history1 Silicon ppm ASTM D5185m >25 5 4 9 Sodium ppm ASTM D5185m >20 9 5 3 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >4 0.2 0.1 0.2 Nitration Abs/.1mm *ASTM D7624 >20 8.2 7.3 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 19.2 19.4 FLUID DEGRADATION	•				1086	1153	1152
Phosphorus ppm ASTM D5185m 1160 1077 1055 1017 Zinc ppm ASTM D5185m 1260 1259 1304 1297 Sulfur ppm ASTM D5185m 3000 3075 3976 3798 CONTAMINANTS method limit/base current history1 history Silicon ppm ASTM D5185m >25 5 4 9 Sodium ppm ASTM D5185m >20 9 5 3 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >4 0.2 0.1 0.2 Nitration Abs/cm *ASTM D7624 >20 8.2 7.3 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 19.2 19.4 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm							
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Silicon ppm ASTM D5185m >25 5 4 9 Sodium ppm ASTM D5185m 4 4 5 Potassium ppm ASTM D5185m >20 9 5 3 INFRA-RED method limit/base current history1 history1 history1 Soot % % *ASTM D7844 >4 0.2 0.1 0.2 Nitration Abs/cm *ASTM D7624 >20 8.2 7.3 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 19.2 19.4 FLUID DEGRADATION method limit/base current history1 history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 17.5 16.9 17.3	CONTAMINAN	TS	method	limit/base	current	history1	history2
Sodium ppm ASTM D5185m 4 4 5 Potassium ppm ASTM D5185m >20 9 5 3 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >4 0.2 0.1 0.2 Nitration Abs/cm *ASTM D7624 >20 8.2 7.3 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 19.2 19.4 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 17.5 16.9 17.3			ASTM D5185m	>25	5	4	9
Potassium ppm ASTM D5185m >20 9 5 3 INFRA-RED method limit/base current history1 history1 Soot % % *ASTM D7844 >4 0.2 0.1 0.2 Nitration Abs/cm *ASTM D7624 >20 8.2 7.3 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 19.2 19.4 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 17.5 16.9 17.3							
Soot % % *ASTM D7844 >4 0.2 0.1 0.2 Nitration Abs/cm *ASTM D7624 >20 8.2 7.3 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 19.2 19.4 FLUID DEGRADATION method limit/base current history1 history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 17.5 16.9 17.3				>20			
Nitration Abs/cm *ASTM D7624 >20 8.2 7.3 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 19.2 19.4 FLUID DEGRADATION method limit/base current history1 history1 history Oxidation Abs/.1mm *ASTM D7414 >25 17.5 16.9 17.3	INFRA-RED		method	limit/base	current	history1	history2
Nitration Abs/cm *ASTM D7624 >20 8.2 7.3 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 19.2 19.4 FLUID DEGRADATION method limit/base current history1 history1 history Oxidation Abs/.1mm *ASTM D7414 >25 17.5 16.9 17.3	Soot %	%	*ASTM D7844	>4	0.2	0.1	0.2
Sulfation Abs/.1mm *ASTM D7415 >30 19.9 19.2 19.4 FLUID DEGRADATION method limit/base current history1 history1 Oxidation Abs/.1mm *ASTM D7414 >25 17.5 16.9 17.3							
Oxidation Abs/.1mm *ASTM D7414 >25 17.5 16.9 17.3							
	FLUID DEGRAD	ATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	17.5	16.9	17.3
DOSE INCLUDED LONG MOUNT MOUNT DECORA I L. U 6.7	Base Number (BN)	mg KOH/g	ASTM D2896	11.0	8.7	9.2	8.4



OIL ANALYSIS REPORT



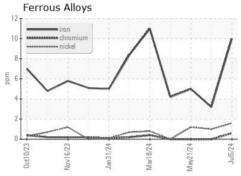


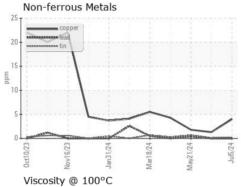


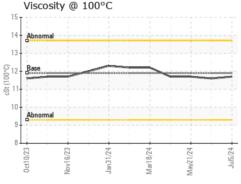
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

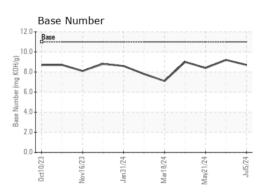
FLUID PROP	EKIIES	method	iimit/base		nistory i	nistoryz
Visc @ 100°C	cSt	ASTM D445	11.9	11.7	11.6	11.7

GRAPHS













Certificate 12367

Sample No.

: GFL0122864 Lab Number : 06234721 Unique Number : 11123555

To discuss this sample report, contact Customer Service at 1-800-237-1369.

Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received **Tested**

: 12 Jul 2024 : 15 Jul 2024 Diagnosed

: 15 Jul 2024 - Wes Davis

GFL Environmental - 837 - Harrison TS

22820 S State Route 291 Harrisonville, MO

US 64701 Contact: SARA PATRICK spatrick@gflenv.com

* - 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) T:

F: