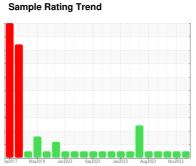


OIL ANALYSIS REPORT

DT s



NORMAL



Machine Id 10695 Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- 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

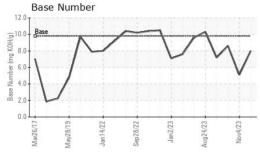
Fluid Condition

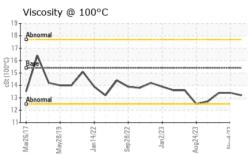
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION method limit/bass current history1 history2	GAL)		lar2017 Mi	ay2019 Jan2022 Se	p2022 Jan2023 Aug2023	Nov2023	
Sample Date	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 0 0 0 Oil Age hrs Client Info 0 0 0 Oil Changed Client Info Not Changd Not Cha	Sample Number		Client Info		GFL0089649	GFL0089632	GFL0089581
Oil Age hrs Client Info Not Changd Not Changd Not Changd	Sample Date		Client Info		01 Dec 2023	04 Nov 2023	27 Oct 2023
Oil Changed Client Info Not Changd NORMAL NORMAL NORMAL NORMAL	Machine Age	hrs	Client Info		0	0	0
CONTAMINATION	Oil Age	hrs	Client Info		0	0	0
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0	Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water WC Method >0.2 NEG NEG NEG Glycol WC Method Imit/base current history1 history2 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 35 33 12 Chromium ppm ASTM D5185m >20 2 2 1 Nickel ppm ASTM D5185m >4 0 0 <1 Silver ppm ASTM D5185m >4 0 0 0 Silver ppm ASTM D5185m >20 7 21 4 Lead ppm ASTM D5185m >40 0 0 <1 Copper ppm ASTM D5185m >15 0 0 <1 Vanadium ppm ASTM D5185m 0 0 0 <1 Vanadium ppm ASTM D5185m 0 6 4 10	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>5	<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 2 2 1 Nickel ppm ASTM D5185m >4 0 0 <1 Titanium ppm ASTM D5185m >4 0 0 <1 Silver ppm ASTM D5185m >20 7 21 4 Aluminum ppm ASTM D5185m >20 7 21 4 Lead ppm ASTM D5185m >20 7 21 4 Lead ppm ASTM D5185m >330 3 3 2 Tin ppm ASTM D5185m >15 0 0 <1 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 6 4 10 Barium ppm ASTM D5185m 0 6 4 10 Barium ppm ASTM D5185m 0 6 4 10	WEAR METAL	.S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	35	33	12
Titanium	Chromium	ppm	ASTM D5185m	>20		2	1
Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >20 7 21 4 Lead ppm ASTM D5185m >40 0 0 <1	Nickel	ppm	ASTM D5185m	>4	0	0	<1
Aluminum ppm ASTM D5185m >20 7 21 4 Lead ppm ASTM D5185m >40 0 0 <1 Copper ppm ASTM D5185m >330 3 3 2 Tin ppm ASTM D5185m >15 0 0 <1 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Boron ppm ASTM D5185m 0 6 4 10 Barium ppm ASTM D5185m 0 3 0 0 Molybdenum ppm ASTM D5185m 0 3 0 0 Magnesium ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1070 1082 1027 976 Calcium ppm ASTM D5185m 1070 1082 1216	Titanium	ppm	ASTM D5185m		<1	0	<1
Lead ppm ASTM D5185m >40 0 0 <1	Silver	ppm	ASTM D5185m	>3		0	
Copper ppm ASTM D5185m >330 3 2 Tin ppm ASTM D5185m >15 0 0 <1 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 6 4 10 Barium ppm ASTM D5185m 0 3 0 0 Molybdenum ppm ASTM D5185m 0 3 0 0 Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 798 896 801 Calcium ppm ASTM D5185m 1070 1082 1027 976 Phosphorus ppm ASTM D5185m 1270 1082 1216	Aluminum	ppm	ASTM D5185m	>20	7	21	4
Tin ppm ASTM D5185m >15 0 0 <1	Lead	ppm	ASTM D5185m				
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 6 4 10 Barium ppm ASTM D5185m 0 3 0 0 Molybdenum ppm ASTM D5185m 60 59 62 54 Manganese ppm ASTM D5185m 1010 798 896 801 Calcium ppm ASTM D5185m 1010 798 896 801 Calcium ppm ASTM D5185m 1070 1082 1027 976 Phosphorus ppm ASTM D5185m 1270 1082 1216 1071 Sulfur ppm ASTM D5185m 2060 3057 2539 2580 CONTAMINANTS method limit/base current history1	Copper	ppm		>330			
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 6 4 10 Barium ppm ASTM D5185m 0 0 classes 54 Magnesium ppm ASTM D5185m 0 0 classes ppm ASTM D5185m 1010 798 896 801 Calcium ppm ASTM D5185m 1070 1082 1027 976 Phosphorus ppm ASTM D5185m 1270 1082 1216 1071 Sulfur ppm <th< th=""><th></th><th></th><th></th><th>>15</th><th></th><th></th><th></th></th<>				>15			
ADDITIVES		ppm					
Boron		ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 3 0 0 Molybdenum ppm ASTM D5185m 60 59 62 54 Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 798 896 801 Calcium ppm ASTM D5185m 1070 1082 1027 976 Phosphorus ppm ASTM D5185m 1150 869 923 942 Zinc ppm ASTM D5185m 1270 1082 1216 1071 Sulfur ppm ASTM D5185m 2060 3057 2539 2580 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 17 8 9 Sodium ppm ASTM D5185m 20 2 47 2 INFRA-RED method limit/base <th>ADDITIVES</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>	ADDITIVES						
Molybdenum ppm ASTM D5185m 60 59 62 54 Manganese ppm ASTM D5185m 0 0 <1	Boron	ppm					
Manganese ppm ASTM D5185m 0 0 <1		ppm	ASTM D5185m	0	_		
Magnesium ppm ASTM D5185m 1010 798 896 801 Calcium ppm ASTM D5185m 1070 1082 1027 976 Phosphorus ppm ASTM D5185m 1150 869 923 942 Zinc ppm ASTM D5185m 1270 1082 1216 1071 Sulfur ppm ASTM D5185m 2060 3057 2539 2580 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 17 8 9 Sodium ppm ASTM D5185m >20 2 47 2 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >3 0.2 1 0.1 Nitration Abs/cm *ASTM D7624 >20 6.9 10.2 5.3 Sulfation Abs/.1mm *ASTM D7415	•						
Calcium ppm ASTM D5185m 1070 1082 1027 976 Phosphorus ppm ASTM D5185m 1150 869 923 942 Zinc ppm ASTM D5185m 1270 1082 1216 1071 Sulfur ppm ASTM D5185m 2060 3057 2539 2580 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 17 8 9 Sodium ppm ASTM D5185m >20 2 47 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 1 0.1 Nitration Abs/.1mm *ASTM D7624 >20 6.9 10.2 5.3 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 23.6 17.4 FLUID DEGRADATION <	•	ppm			-		
Phosphorus ppm ASTM D5185m 1150 869 923 942 Zinc ppm ASTM D5185m 1270 1082 1216 1071 Sulfur ppm ASTM D5185m 2060 3057 2539 2580 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 17 8 9 Sodium ppm ASTM D5185m >20 2 47 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 1 0.1 Nitration Abs/cm *ASTM D7624 >20 6.9 10.2 5.3 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 23.6 17.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.	-						
Zinc ppm ASTM D5185m 1270 1082 1216 1071 Sulfur ppm ASTM D5185m 2060 3057 2539 2580 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 17 8 9 Sodium ppm ASTM D5185m 20 2 47 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 1 0.1 Nitration Abs/cm *ASTM D7624 >20 6.9 10.2 5.3 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 23.6 17.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.1 18.4 13.3		ppm					
Sulfur ppm ASTM D5185m 2060 3057 2539 2580 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 17 8 9 Sodium ppm ASTM D5185m >20 4 1 5 Potassium ppm ASTM D5185m >20 2 47 2 INFRA-RED method limit/base current history1 history2 Soot % % 'ASTM D7844 >3 0.2 1 0.1 Nitration Abs/cm 'ASTM D7624 >20 6.9 10.2 5.3 Sulfation Abs/.1mm 'ASTM D7415 >30 17.9 23.6 17.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm 'ASTM D7414 >25 14.1 18.4 13.3							
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 17 8 9 Sodium ppm ASTM D5185m 4 1 5 Potassium ppm ASTM D5185m >20 2 47 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 1 0.1 Nitration Abs/cm *ASTM D7624 >20 6.9 10.2 5.3 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 23.6 17.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.1 18.4 13.3	-						
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Potassium ppm ASTM D5185m >20 2 47 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 1 0.1 Nitration Abs/cm *ASTM D7624 >20 6.9 10.2 5.3 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 23.6 17.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.1 18.4 13.3				>25			
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.2 1 0.1 Nitration Abs/cm *ASTM D7624 >20 6.9 10.2 5.3 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 23.6 17.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.1 18.4 13.3				00			
Soot % % *ASTM D7844 >3 0.2 1 0.1 Nitration Abs/cm *ASTM D7624 >20 6.9 10.2 5.3 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 23.6 17.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.1 18.4 13.3		ppm					
Nitration Abs/cm *ASTM D7624 >20 6.9 10.2 5.3 Sulfation Abs/.1mm *ASTM D7415 >30 17.9 23.6 17.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.1 18.4 13.3							
Sulfation Abs/.1mm *ASTM D7415 >30 17.9 23.6 17.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.1 18.4 13.3							
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.1 18.4 13.3							
Oxidation Abs/.1mm *ASTM D7414 >25 14.1 18.4 13.3					17.9		
		DATION		limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 8.0 5.1 8.6							
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.0	5.1	8.6



OIL ANALYSIS REPORT

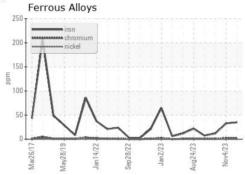


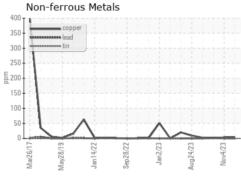


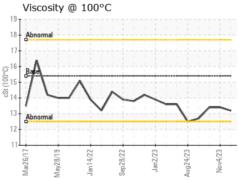
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

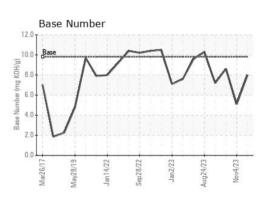
FLUID PROPERTIES		method				history2	
Visc @ 100°C	cSt	ASTM D445	15.4	13.2	13.4	13.4	

GRAPHS













Certificate L2367

Laboratory Sample No.

Lab Number Unique Number : 10776053 Test Package : FLEET

: GFL0089649 : 06026262

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 06 Dec 2023

Diagnosed : 07 Dec 2023 Diagnostician : Wes Davis

GFL Environmental - 732 - Thomaston Hauling

2616 Waynmansville Road Thomaston, GA US 30286

Contact: Michael Taft

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

* - 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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F: