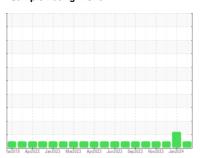


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



927081-260333

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.

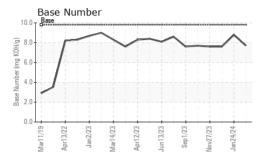
Fluid Condition

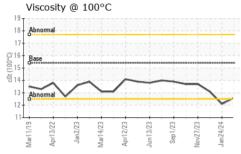
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION method limit/base current history1 history2	GAL)		far2019 Apr20	22 Jan 2023 Mar 2023 Ap	r2023 Jun2023 Sep2023 Nov2023	Jan 2024	
Sample Date	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 19162 18892 18831 Oil Age hrs Client Info N/A 600 700 Oil Changed Client Info N/A Changed Changed Changed Sample Status NoRMAL ABNORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0	Sample Number		Client Info		GFL0109223	GFL0098355	GFL0098320
Oil Age hrs Client Info 150 600 700 Oil Changed Client Info N/A Changed Changed Sample Status NORMAL NORMAL ABNORMAL NORMAL CONTAMINATION method Imilibase current history1 history2 Fuel WC Method >5 <1.0	Sample Date		Client Info		13 Feb 2024	24 Jan 2024	20 Dec 2023
Oil Changed Sample Status Client Info N/A Changed ABNORMAL Changed NORMAL Changed NORMAL NORMAL<	Machine Age	hrs	Client Info		19162	18892	18831
Sample Status	Oil Age	hrs	Client Info		150	600	700
CONTAMINATION	Oil Changed		Client Info		N/A	Changed	Changed
Fuel WC Method >5 <1.0	Sample Status				NORMAL	ABNORMAL	NORMAL
Water WC Method >0.2 NEG NEG NEG Glycol WC Method NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 37 28 7 Chromium ppm ASTM D5185m >20 2 2 <1	CONTAMINAT	ION	method	limit/base	current	history1	history2
Color	Fuel		WC Method	>5	<1.0	▲ 3.9	<1.0
Iron	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 0 Titanium ppm ASTM D5185m >3 0 0 0 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >20 6 4 1 Lead ppm ASTM D5185m >40 0 <1	WEAR METAL	.S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	37	28	7
Titanium	Chromium	ppm	ASTM D5185m	>20	2	2	<1
Silver	Nickel	ppm	ASTM D5185m	>4	0	0	0
Aluminum	Titanium	ppm	ASTM D5185m		0	<1	0
Lead ppm ASTM D5185m >40 0 <1 0 Copper ppm ASTM D5185m >330 <1 <1 2 Tin ppm ASTM D5185m >15 0 <1 <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 0 30 41 <1 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 0 -1 <1 0 Magnesium ppm ASTM D5185m 1070 1419 1456 958 Phosphorus ppm ASTM D5185m 1270 905 894 1164 <td>Silver</td> <td>ppm</td> <td>ASTM D5185m</td> <td>>3</td> <th></th> <td></td> <td></td>	Silver	ppm	ASTM D5185m	>3			
Copper ppm ASTM D5185m >330 <1 <1 2 Tin ppm ASTM D5185m >15 0 <1	Aluminum	ppm	ASTM D5185m	>20	6	4	1
Tin ppm ASTM D5185m >15 0 <1 <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 0 30 41 <1 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 <1 <1 0 Manganese ppm ASTM D5185m 0 <1 <1 0 Magnesium ppm ASTM D5185m 1010 584 578 889 Calcium ppm ASTM D5185m 1070 1419 1456 958 Phosphorus ppm ASTM D5185m 150 772 753 1030 Zinc ppm ASTM D5185m 2060 2399 2538 89	Lead	ppm			0		
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Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 30 41 <1 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 57 54 54 Manganese ppm ASTM D5185m 0 <1 <1 0 Magnesium ppm ASTM D5185m 1010 584 578 889 Calcium ppm ASTM D5185m 1070 1419 1456 958 Phosphorus ppm ASTM D5185m 1270 905 894 1164 Sulfur ppm ASTM D5185m 2060 2399 2538 2893 CONTAMINANTS method limit/base current history1 history2				>15			
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 30 41 <1		ppm			-		
Boron		ppm	ASTM D5185m		0	<1	0
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 57 54 54 Manganese ppm ASTM D5185m 0 <1 <1 0 Magnesium ppm ASTM D5185m 1010 584 578 889 Calcium ppm ASTM D5185m 1070 1419 1456 958 Phosphorus ppm ASTM D5185m 1150 772 753 1030 Zinc ppm ASTM D5185m 1270 905 894 1164 Sulfur ppm ASTM D5185m 2060 2399 2538 2893 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 6 3 Sodium ppm ASTM D5185m 7 6 2 Potassium ppm ASTM D5185m >20	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 57 54 54 Manganese ppm ASTM D5185m 0 <1 <1 0 Magnesium ppm ASTM D5185m 1010 584 578 889 Calcium ppm ASTM D5185m 1070 1419 1456 958 Phosphorus ppm ASTM D5185m 1150 772 753 1030 Zinc ppm ASTM D5185m 1270 905 894 1164 Sulfur ppm ASTM D5185m 2060 2399 2538 2893 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 6 3 Sodium ppm ASTM D5185m >20 0 2 <1							
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Sulfur ppm ASTM D5185m 2060 2399 2538 2893 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 6 3 Sodium ppm ASTM D5185m >20 0 2 <1							
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 6 3 Sodium ppm ASTM D5185m 7 6 2 Potassium ppm ASTM D5185m >20 0 2 <1	-						
Silicon ppm ASTM D5185m >25 8 6 3 Sodium ppm ASTM D5185m 7 6 2 Potassium ppm ASTM D5185m >20 0 2 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.1 0.8 0.7 Nitration Abs/cm *ASTM D7624 >20 10.9 9.0 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 22.5 21.7 19.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 20.9 19.4 15.4							
Sodium ppm ASTM D5185m 7 6 2 Potassium ppm ASTM D5185m >20 0 2 <1						•	
Potassium ppm ASTM D5185m >20 0 2 <1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.1 0.8 0.7 Nitration Abs/cm *ASTM D7624 >20 10.9 9.0 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 22.5 21.7 19.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 20.9 19.4 15.4				>25			
INFRA-RED				00			
Soot % % *ASTM D7844 >3 1.1 0.8 0.7 Nitration Abs/cm *ASTM D7624 >20 10.9 9.0 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 22.5 21.7 19.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 20.9 19.4 15.4		ppm			U		
Nitration Abs/cm *ASTM D7624 >20 10.9 9.0 8.0 Sulfation Abs/.1mm *ASTM D7415 >30 22.5 21.7 19.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 20.9 19.4 15.4							
Sulfation Abs/.1mm *ASTM D7415 >30 22.5 21.7 19.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 20.9 19.4 15.4							
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 20.9 19.4 15.4							
Oxidation Abs/.1mm *ASTM D7414 >25 20.9 19.4 15.4	Sulfation	Abs/.1mm	*ASTM D7415	>30	22.5	21.7	19.8
	FLUID DEGRA	OITAC	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 7.7 8.8 7.6	Oxidation	Abs/.1mm	*ASTM D7414	>25	20.9	19.4	15.4
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	7.7	8.8	7.6



OIL ANALYSIS REPORT

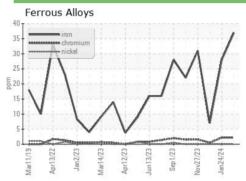


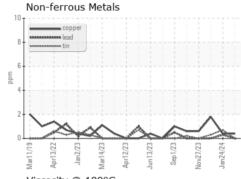


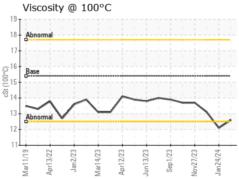
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

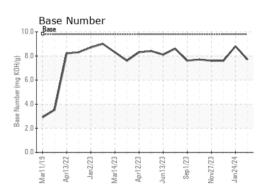
FLUID PROPI	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	12.6	▲ 12.1	13.1

GRAPHS













Certificate L2367

Laboratory Sample No.

Test Package : FLEET

Lab Number : 06092884 Unique Number: 10885737

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0109223 Received **Tested**

: 19 Feb 2024 Diagnosed

: 20 Feb 2024 : 20 Feb 2024 - Don Baldridge

GFL Environmental - 822 - Springfield Hauling

2120 West Bennett Street Springfield, MO US 65807

Contact: Dennis Moore dennis.moore@gflenv.com

T: (417)403-3641

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)

Report Id: GFL822 [WUSCAR] 06092884 (Generated: 02/20/2024 15:57:43) Rev: 1