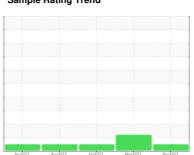


OIL ANALYSIS REPORT

Sample Rating Trend









Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- QTS)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

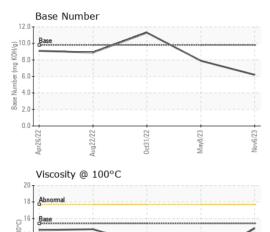
Fluid Condition

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

Cample Date Client Info General State Client Info General State Section Client Info General State Section Client Info General State Client Info General State Client Info Changed Change	14 3111 13W 40 (- G 13)	Apr2022	Aug2022	Oct2022 May2023	Nov2023	
Sample Date Client Info 60 Nov 2023 08 May 2023 31 Oct 2022	SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 6204 5882 5656 Dil Age hrs Client Info 322 226 500 Dil Changed Client Info Changed	Sample Number		Client Info		GFL0097661	GFL0072936	GFL0060734
Dil Age	Sample Date		Client Info		06 Nov 2023	08 May 2023	31 Oct 2022
Client Info	Machine Age	hrs	Client Info		6204	5882	5656
CONTAMINATION method limit/base current history1 history2	Oil Age	hrs	Client Info		322	226 500	
CONTAMINATION method limit/base current history1 history2	Oil Changed		Client Info		Changed	Changed	Changed
Fuel	Sample Status				NORMAL	ABNORMAL	NORMAL
WEAR METALS	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >90 32 29 28 Chromium ppm ASTM D5185m >20 1 2 1 Nickel ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 1 <1	Fuel		WC Method	>3.0	<1.0	<u>^</u> 2.8	<1.0
Chromium	Glycol		WC Method		NEG	NEG	NEG
Chromium	WEAR METAL	S	method	limit/base	current	history1	history2
Chromium	Iron	ppm	ASTM D5185m	>90	32	29	28
Nickel	Chromium		ASTM D5185m	>20	1	2	1
Description	Nickel		ASTM D5185m	>2	<1	<1	<1
Silver	Titanium		ASTM D5185m	>2	0	0	0
Aluminum	Silver		ASTM D5185m	>2	<1	<1	0
Lead	Aluminum		ASTM D5185m	>20	3	5	3
Copper ppm ASTM D5185m >330 2 <1 <1 Tin ppm ASTM D5185m >15 <1	Lead			>40			<1
Standard	Copper			>330	2	<1	<1
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 2 3 4 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 896 962 838 Calcium ppm ASTM D5185m 1070 1066 1048 962 Phosphorus ppm ASTM D5185m 1270 1261 1362 1128 Sulfur ppm ASTM D5185m 2060 2771 4003 2912 CONTAMINANTS method limit/base current history1 <th< td=""><td></td><td></td><td></td><td></td><th><1</th><td></td><td></td></th<>					<1		
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 3 4 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 <1 <1 <1 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 896 962 838 Calcium ppm ASTM D5185m 1070 1066 1048 962 Phosphorus ppm ASTM D5185m 150 1027 1051 912 Zinc ppm ASTM D5185m 270 1261 1362 1128 Sulfur ppm ASTM D5185m 2060 2771 4003 2912 CONTAMINANTS method limit/base current <td></td> <td></td> <td></td> <td></td> <th></th> <td></td> <td></td>							
Barium	Cadmium						
Barium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 55 61 53 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 896 962 838 Calcium ppm ASTM D5185m 1070 1066 1048 962 Phosphorus ppm ASTM D5185m 1150 1027 1051 912 Zinc ppm ASTM D5185m 1270 1261 1362 1128 Sulfur ppm ASTM D5185m 2060 2771 4003 2912 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 8 6 Sodium ppm ASTM D5185m >20 1 4 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7415 <	Boron	ppm	ASTM D5185m	0	2	3	4
Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 896 962 838 Calcium ppm ASTM D5185m 1070 1066 1048 962 Phosphorus ppm ASTM D5185m 1150 1027 1051 912 Zinc ppm ASTM D5185m 1270 1261 1362 1128 Sulfur ppm ASTM D5185m 2060 2771 4003 2912 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 8 6 Sodium ppm ASTM D5185m >25 5 8 6 Sodium ppm ASTM D5185m >20 1 4 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium ppm ASTM D5185m 1010 896 962 838 Calcium ppm ASTM D5185m 1070 1066 1048 962 Phosphorus ppm ASTM D5185m 1150 1027 1051 912 Zinc ppm ASTM D5185m 1270 1261 1362 1128 Sulfur ppm ASTM D5185m 2060 2771 4003 2912 CONTAMINANTS method limit/base current history1 history2 Solicon ppm ASTM D5185m >25 5 8 6 Solicon ppm ASTM D5185m >20 1 4 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 1 0.8 1.6 Nitration Abs/.1mm *ASTM D7415 >30 24.0 22.2 25.3	Molybdenum	ppm	ASTM D5185m	60	55	61	53
Calcium ppm ASTM D5185m 1070 1066 1048 962 Phosphorus ppm ASTM D5185m 1150 1027 1051 912 Zinc ppm ASTM D5185m 1270 1261 1362 1128 Sulfur ppm ASTM D5185m 2060 2771 4003 2912 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 8 6 Sodium ppm ASTM D5185m >20 1 4 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 1 0.8 1.6 Nitration Abs/.1mm *ASTM D7415 >30 24.0 22.2 25.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm	Manganese	ppm	ASTM D5185m	0	<1	<1	<1
Calcium ppm ASTM D5185m 1 070 1066 1048 962 Phosphorus ppm ASTM D5185m 1 150 1027 1 051 912 Zinc ppm ASTM D5185m 1270 1261 1 362 1128 Sulfur ppm ASTM D5185m 2060 2771 4003 2912 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 8 6 Sodium ppm ASTM D5185m >20 1 4 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 1 0.8 1.6 Nitration Abs/.1mm *ASTM D7415 >30 24.0 22.2 25.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidati	-	ppm	ASTM D5185m	1010	896	962	838
Phosphorus ppm ASTM D5185m 1150 1027 1051 912 Zinc ppm ASTM D5185m 1270 1261 1362 1128 Sulfur ppm ASTM D5185m 2060 2771 4003 2912 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 8 6 Sodium ppm ASTM D5185m 5 6 3 Potassium ppm ASTM D5185m >20 1 4 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 1 0.8 1.6 Nitration Abs/cm *ASTM D7624 >20 11.0 12.1 14.3 Sulfation Abs/.1mm *ASTM D7415 >30 24.0 22.2 25.3 FLUID DEGRADATION method limit/base <td>-</td> <td></td> <td>ASTM D5185m</td> <td>1070</td> <th>1066</th> <td>1048</td> <td>962</td>	-		ASTM D5185m	1070	1066	1048	962
Zinc ppm ASTM D5185m 1270 1261 1362 1128 Sulfur ppm ASTM D5185m 2060 2771 4003 2912 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 8 6 Sodium ppm ASTM D5185m 5 6 3 Potassium ppm ASTM D5185m >20 1 4 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 1 0.8 1.6 Nitration Abs/.1mm *ASTM D7624 >20 11.0 12.1 14.3 Sulfation Abs/.1mm *ASTM D7415 >30 24.0 22.2 25.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414	Phosphorus	ppm	ASTM D5185m	1150	1027	1051	912
Sulfur ppm ASTM D5185m 2060 2771 4003 2912 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 8 6 Sodium ppm ASTM D5185m 5 6 3 Potassium ppm ASTM D5185m >20 1 4 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 1 0.8 1.6 Nitration Abs/cm *ASTM D7624 >20 11.0 12.1 14.3 Sulfation Abs/.1mm *ASTM D7415 >30 24.0 22.2 25.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.4 20.7 21.2			ASTM D5185m	1270	1261	1362	1128
Silicon ppm ASTM D5185m >25 5 8 6 Sodium ppm ASTM D5185m 5 6 3 Potassium ppm ASTM D5185m >20 1 4 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 1 0.8 1.6 Nitration Abs/cm *ASTM D7624 >20 11.0 12.1 14.3 Sulfation Abs/.1mm *ASTM D7415 >30 24.0 22.2 25.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.4 20.7 21.2	Sulfur		ASTM D5185m	2060	2771	4003	2912
Sodium ppm ASTM D5185m 5 6 3 Potassium ppm ASTM D5185m >20 1 4 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 1 0.8 1.6 Nitration Abs/cm *ASTM D7624 >20 11.0 12.1 14.3 Sulfation Abs/.1mm *ASTM D7415 >30 24.0 22.2 25.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.4 20.7 21.2	CONTAMINAN	TS	method	limit/base	current	history1	history2
Sodium ppm ASTM D5185m 5 6 3 Potassium ppm ASTM D5185m >20 1 4 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 1 0.8 1.6 Nitration Abs/cm *ASTM D7624 >20 11.0 12.1 14.3 Sulfation Abs/.1mm *ASTM D7415 >30 24.0 22.2 25.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.4 20.7 21.2	Silicon	ppm	ASTM D5185m	>25	5	8	6
Potassium ppm ASTM D5185m >20 1 4 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 1 0.8 1.6 Nitration Abs/cm *ASTM D7624 >20 11.0 12.1 14.3 Sulfation Abs/.1mm *ASTM D7415 >30 24.0 22.2 25.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.4 20.7 21.2	Sodium				5	6	3
Soot % % *ASTM D7844 >6 1 0.8 1.6 Nitration Abs/cm *ASTM D7624 >20 11.0 12.1 14.3 Sulfation Abs/.1mm *ASTM D7415 >30 24.0 22.2 25.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.4 20.7 21.2	Potassium		ASTM D5185m	>20	1	4	0
Nitration Abs/cm *ASTM D7624 >20 11.0 12.1 14.3 Sulfation Abs/.1mm *ASTM D7415 >30 24.0 22.2 25.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.4 20.7 21.2	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 24.0 22.2 25.3 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.4 20.7 21.2	Soot %	%	*ASTM D7844	>6	1	0.8	1.6
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 22.4 20.7 21.2	Nitration	Abs/cm	*ASTM D7624	>20	11.0	12.1	14.3
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30	24.0	22.2	25.3
	FLUID DEGRA	OATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	22.4	20.7	21.2
	Base Number (BN)	mg KOH/g			6.2		



OIL ANALYSIS REPORT

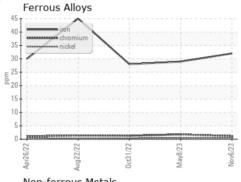


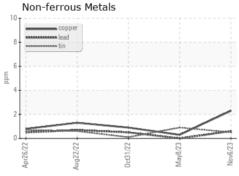
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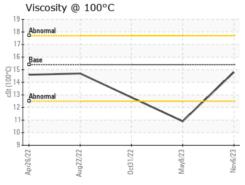
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

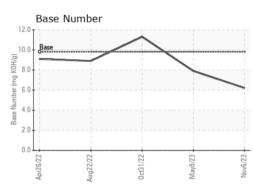
FLUID FNOF		memod			HISTORY	HISTOLY
Visc @ 100°C	cSt	ASTM D445	15.4	14.8	△ 10.9	12.8

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number Test Package : FLEET

Unique Number : 10743101

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

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0097661 Received : 06009339

Diagnosed Diagnostician : Wes Davis

: 16 Nov 2023 : 17 Nov 2023 GFL Environmental - 405 - Arbor Hills

7400 Napier Rd NORTHVILLE, MI US 48168

Contact: John Nahal

jnahal@gflenv.com T:

* - 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)

F: