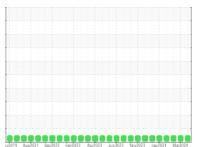


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id **929088-205308**

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.

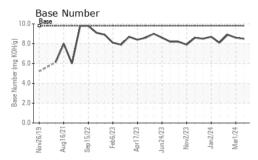
Fluid Condition

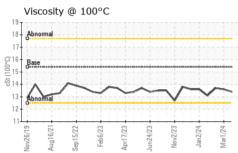
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION method limit/bass current history1 history2	PACI) Nug2021 Sng2022 Fnb2023 Ang2023 Jun2023 Nov2023 Jun2024 Mus2024						
Sample Date	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Date	Sample Number		Client Info		GFL0109134	GFL0109178	GFL0109226
Machine Age hrs Client Info 14198 12578 12426 Oil Age hrs Client Info NA Not Changd <			Client Info		19 Mar 2024	01 Mar 2024	10 Feb 2024
Oil Changed Sample Status Client Info N/A Not Changd NORMAL NOR		hrs	Client Info		14198	12578	12426
Sample Status	Oil Age	hrs	Client Info		150	700	700
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0	Oil Changed		Client Info		N/A	Not Changd	Not Changd
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water Glycol WC Method Glycol NEG NEG NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 7 3 3 Chromium ppm ASTM D5185m >20 <1 0 0 Nickel ppm ASTM D5185m >4 <1 0 0 Silver ppm ASTM D5185m >4 <1 0 0 Silver ppm ASTM D5185m >40 2 <1 <1 Silver ppm ASTM D5185m >40 2 <1 <1 Lead ppm ASTM D5185m >40 2 <1 <1 Copper ppm ASTM D5185m >15 1 0 0 Vanadium ppm ASTM D5185m >15 1 0 <1 Cadmium ppm ASTM D5185m 0 9 2	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>5	<1.0	<1.0	<1.0
Iron	Water		WC Method	>0.2	NEG	NEG	NEG
Iron	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 <1 0 0 Nickel ppm ASTM D5185m >4 <1	WEAR METAL	.S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	7	3	3
Titanium	Chromium	ppm	ASTM D5185m	>20	<1	0	0
Silver	Nickel	ppm	ASTM D5185m	>4	<1	0	0
Altuminum ppm ASTM D5185m >20 3 <1 <1 Lead ppm ASTM D5185m >40 2 <1	Titanium	ppm	ASTM D5185m		<1	0	0
Lead ppm ASTM D5185m >40 2 <1 <1 Copper ppm ASTM D5185m >330 <1 0 0 Tin ppm ASTM D5185m >15 1 0 0 Vanadium ppm ASTM D5185m <1 0 <1 Cadmium ppm ASTM D5185m <1 0 <1 Cadmium ppm ASTM D5185m 0 9 2 <1 Boron ppm ASTM D5185m 0 9 2 <1 Barium ppm ASTM D5185m 0 1 0 0 Molybdenum ppm ASTM D5185m 0 1 0 0 Magnesium ppm ASTM D5185m 0 <1 <1 0 Magnesium ppm ASTM D5185m 1010 931 850 1025 Calcium ppm ASTM D5185m 1070 1184 941 1074 <t< td=""><td>Silver</td><td>ppm</td><td>ASTM D5185m</td><td>>3</td><th>0</th><td>0</td><td>0</td></t<>	Silver	ppm	ASTM D5185m	>3	0	0	0
Copper ppm ASTM D5185m >330 <1 0 0 Tin ppm ASTM D5185m >15 1 0 0 Vanadium ppm ASTM D5185m <1	Aluminum	ppm	ASTM D5185m	>20	3	<1	<1
Tin ppm ASTM D5185m >15 1 0 0 Vanadium ppm ASTM D5185m <1 0 <1 Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 9 2 <1	Lead	ppm			2	<1	<1
Vanadium ppm ASTM D5185m <1 0 <1 Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 9 2 <1 Barium ppm ASTM D5185m 0 1 0 0 Molybdenum ppm ASTM D5185m 0 64 50 60 Manganese ppm ASTM D5185m 1010 931 850 1025 Calcium ppm ASTM D5185m 1070 1184 941 1074 Phosphorus ppm ASTM D5185m 1150 1092 948 1115 Zinc ppm ASTM D5185m 1270 1247 1140 1323 Sulfur ppm ASTM D5185m 2060 3440 3169 3330 CONTAMINANTS method limit/base current history1	Copper	ppm	ASTM D5185m	>330	<1	0	0
Cadmium ppm ASTM D5185m <1 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 9 2 <1	Tin	ppm	ASTM D5185m	>15	1	0	0
ADDITIVES	Vanadium	ppm	ASTM D5185m		<1	0	<1
Boron ppm ASTM D5185m 0 9 2 <1	Cadmium	ppm	ASTM D5185m		<1	0	0
Barium ppm ASTM D5185m 0 1 0 0 Molybdenum ppm ASTM D5185m 60 64 50 60 Manganese ppm ASTM D5185m 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 64 50 60 Manganese ppm ASTM D5185m 0 <1 <1 0 Magnesium ppm ASTM D5185m 1010 931 850 1025 Calcium ppm ASTM D5185m 1070 1184 941 1074 Phosphorus ppm ASTM D5185m 1150 1092 948 1115 Zinc ppm ASTM D5185m 1270 1247 1140 1323 Sulfur ppm ASTM D5185m 2060 3440 3169 3330 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 2 3 Sodium ppm ASTM D5185m >20 8 0 0 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >3 </td <td>Boron</td> <td>ppm</td> <td>ASTM D5185m</td> <td>0</td> <th>9</th> <td></td> <td></td>	Boron	ppm	ASTM D5185m	0	9		
Manganese ppm ASTM D5185m 0 <1 <1 0 Magnesium ppm ASTM D5185m 1010 931 850 1025 Calcium ppm ASTM D5185m 1070 1184 941 1074 Phosphorus ppm ASTM D5185m 1150 1092 948 1115 Zinc ppm ASTM D5185m 1270 1247 1140 1323 Sulfur ppm ASTM D5185m 2060 3440 3169 3330 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 2 3 Sodium ppm ASTM D5185m >20 8 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 6.3 5.6 5.0 Sulfation Abs/.1mm *ASTM		ppm	ASTM D5185m				
Magnesium ppm ASTM D5185m 1010 931 850 1025 Calcium ppm ASTM D5185m 1070 1184 941 1074 Phosphorus ppm ASTM D5185m 1150 1092 948 1115 Zinc ppm ASTM D5185m 1270 1247 1140 1323 Sulfur ppm ASTM D5185m 2060 3440 3169 3330 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 2 3 Sodium ppm ASTM D5185m >20 8 0 0 INFRA-RED method limit/base current history1 history2 Soot % "ASTM D7844 >3 0.3 0.2 0.1 Nitration Abs/cm "ASTM D7415 >30 18.3 17.8 17.4 FLUID DEGRADATION "ASTM D7414 >25	•	ppm					
Calcium ppm ASTM D5185m 1070 1184 941 1074 Phosphorus ppm ASTM D5185m 1150 1092 948 1115 Zinc ppm ASTM D5185m 1270 1247 1140 1323 Sulfur ppm ASTM D5185m 2060 3440 3169 3330 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 2 3 Sodium ppm ASTM D5185m >20 8 0 0 Potassium ppm ASTM D5185m >20 8 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 6.3 5.6 5.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 17.8 17.4 FLUID DEGRADATION limit/	-	ppm	ASTM D5185m				
Phosphorus ppm ASTM D5185m 1150 1092 948 1115 Zinc ppm ASTM D5185m 1270 1247 1140 1323 Sulfur ppm ASTM D5185m 2060 3440 3169 3330 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 2 3 Sodium ppm ASTM D5185m >20 8 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 6.3 5.6 5.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 17.8 17.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/	-	ppm	ASTM D5185m				
Zinc ppm ASTM D5185m 1270 1247 1140 1323 Sulfur ppm ASTM D5185m 2060 3440 3169 3330 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 2 3 Sodium ppm ASTM D5185m >20 8 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 6.3 5.6 5.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 17.8 17.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7 13.7 12.9		ppm					
Sulfur ppm ASTM D5185m 2060 3440 3169 3330 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 2 3 Sodium ppm ASTM D5185m >20 8 0 0 Potassium ppm ASTM D5185m >20 8 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 6.3 5.6 5.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 17.8 17.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7 13.7 12.9							
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 4 2 3 Sodium ppm ASTM D5185m 11 2 2 Potassium ppm ASTM D5185m >20 8 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 6.3 5.6 5.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 17.8 17.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7 13.7 12.9							
Silicon ppm ASTM D5185m >25 4 2 3 Sodium ppm ASTM D5185m 11 2 2 Potassium ppm ASTM D5185m >20 8 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 6.3 5.6 5.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 17.8 17.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7 13.7 12.9			ASTM D5185m	2060	3440	3169	3330
Sodium ppm ASTM D5185m 11 2 2 Potassium ppm ASTM D5185m >20 8 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 6.3 5.6 5.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 17.8 17.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7 13.7 12.9		ITS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 8 0 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 6.3 5.6 5.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 17.8 17.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7 13.7 12.9				>25			
INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.3 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 6.3 5.6 5.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 17.8 17.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7 13.7 12.9		ppm					
Soot % % *ASTM D7844 >3 0.3 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 6.3 5.6 5.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 17.8 17.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7 13.7 12.9	Potassium	ppm	ASTM D5185m	>20	8	0	0
Nitration Abs/cm *ASTM D7624 >20 6.3 5.6 5.0 Sulfation Abs/.1mm *ASTM D7415 >30 18.3 17.8 17.4 FLUID DEGRADATION method limit/base current current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7 13.7 12.9	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 18.3 17.8 17.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7 13.7 12.9	Soot %	%	*ASTM D7844	>3	0.3		0.1
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.7 13.7 12.9	Nitration	Abs/cm	*ASTM D7624	>20	6.3	5.6	5.0
Oxidation Abs/.1mm *ASTM D7414 >25 13.7 13.7 12.9	Sulfation	Abs/.1mm	*ASTM D7415	>30	18.3	17.8	17.4
	FLUID DEGRAI	DATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 8.5 8.6 8.9	Oxidation	Abs/.1mm	*ASTM D7414	>25	13.7	13.7	12.9
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.5	8.6	8.9



OIL ANALYSIS REPORT

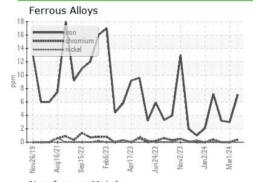


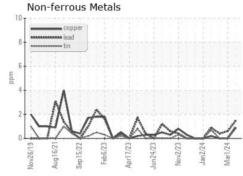


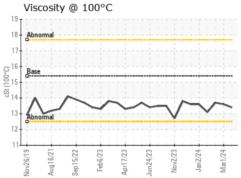
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

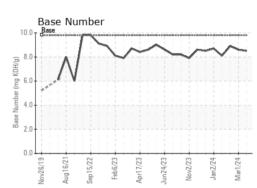
FLUID PROPI	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.4	13.6	13.7

GRAPHS













Certificate L2367

Laboratory Sample No.

Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0109134 Lab Number : 06128606

Unique Number : 10942757

Received : 25 Mar 2024 **Tested** Diagnosed

: 26 Mar 2024 : 26 Mar 2024 - Wes Davis

GFL Environmental - 822 - Springfield Hauling

2120 West Bennett Street

Springfield, MO US 65807

T: (417)403-3641

Contact: Dennis Moore dennis.moore@gflenv.com

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)