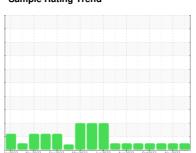


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



166 Machine Id 227070-16

Component Diesel Engine

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

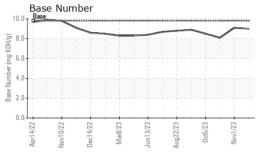
Fluid Condition

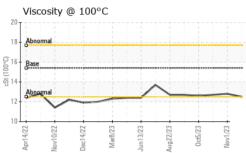
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION method limit/base current history1 history2	GAL)		Apr2022 Nov	2022 Dec2022 Mar2023	Jun2023 Aug2023 Oct2023	Nov2023	
Sample Date	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 17097 354883 16773 Oil Age hrs Client Info 1200 0 0 Oil Changed Client Info Changed NOT Changed NORMAL NORMAL Sample Status WC Method 5 <1.0 <1.0 <1.0 Ward WC Method >5 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG WEAR METALS method Imilibase current history2 Iron ppm ASTM D5185m >100 6 2 15 Chromium ppm ASTM D5185m >10 6 2 15 Chromium ppm ASTM D5185m >20 <1 <1 1 Nickel ppm ASTM D5185m >20 <1 <1 1 Silver ppm ASTM D5185m >20 1 <1 2 Lead ppm	Sample Number		Client Info		GFL0100186	GFL0081206	GFL0091230
Oil Age hrs Client Info Changed Not Changed Changed Changed Not Changed Changed Not Changed Changed Normal Changed Changed Changed Normal Changed Changed Changed Normal Changed Changed Changed Nor	Sample Date		Client Info		11 Dec 2023	01 Nov 2023	11 Oct 2023
Oil Changed Client Info NoRMAL NORMAL NORMAL NORMAL	Machine Age	hrs	Client Info		17097	354883	16773
Sample Status	Oil Age	hrs	Client Info		1200	0	0
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0	Oil Changed		Client Info		Changed	Not Changd	Changed
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water Glycol WC Method >0.2 NEG NEG NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 6 2 15 Chromium ppm ASTM D5185m >20 <1	CONTAMINAT	ION	method	limit/base	current	history1	history2
Silycol WC Method MEG NEG NEG WEAR METALS method limit/base current history1 history2	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 <1 <1 1 Nickel ppm ASTM D5185m >4 0 0 <1	WEAR METAL	.S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>100	6	2	15
Titanium ppm ASTM D5185m 0 0 <1 Silver ppm ASTM D5185m >3 0 <1	Chromium	ppm	ASTM D5185m	>20	<1	<1	1
Silver	Nickel	ppm	ASTM D5185m	>4	0	0	<1
Aluminum ppm ASTM D5185m >20 1 <1 2 Lead ppm ASTM D5185m >40 0 0 <1	Titanium	ppm	ASTM D5185m		0	0	<1
Lead ppm ASTM D5185m >40 0 0 <1 Copper ppm ASTM D5185m >330 <1 0 <1 Tin ppm ASTM D5185m >15 0 0 <1 Vanadium ppm ASTM D5185m <1 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 5 19 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 0 Magnesium ppm ASTM D5185m 0 0 0 0 0 Calcium ppm ASTM D5185m 1070 1086 1091 1122 Phosphorus ppm ASTM D5185m	Silver	ppm	ASTM D5185m	>3	0	<1	0
Copper ppm ASTM D5185m >330 <1 0 <1 Tin ppm ASTM D5185m >15 0 0 <1	Aluminum	ppm	ASTM D5185m	>20	1	<1	2
Tin ppm ASTM D5185m >15 0 0 <1 Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 5 19 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Manganese ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 1070 1086 1091 1122 Phosphorus ppm ASTM D5185m 1150 1065 1069 1070 Zinc ppm ASTM D5185m 2060 2604 3095 3543 CONTAMINANTS method limit/base current history1 <t< td=""><td>Lead</td><td>ppm</td><td>ASTM D5185m</td><td>>40</td><th>0</th><td>0</td><td><1</td></t<>	Lead	ppm	ASTM D5185m	>40	0	0	<1
Vanadium ppm ASTM D5185m <1 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 5 19 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 0 Manganese ppm ASTM D5185m 1010 960 947 943 Calcium ppm ASTM D5185m 1070 1086 1091 1122 Phosphorus ppm ASTM D5185m 1150 1065 1069 1070 Zinc ppm ASTM D5185m 1270 1301 1250 1301 Sulfacion ppm ASTM D5185m 2060 2604 3095 3543 CONTAMINANTS method limit/base<	Copper	ppm	ASTM D5185m	>330	<1	0	<1
Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 5 19 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Manganese ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 1010 960 947 943 Calcium ppm ASTM D5185m 1070 1086 1091 1122 Phosphorus ppm ASTM D5185m 1270 1301 1250 1301 Sulfur ppm ASTM D5185m 2060 2604 3095 3543 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m	Tin	ppm	ASTM D5185m	>15	0		<1
ADDITIVES	Vanadium	ppm	ASTM D5185m		<1	0	0
Boron ppm ASTM D5185m 0 0 5 19 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 59 61 67 Manganese ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 1010 960 947 943 Calcium ppm ASTM D5185m 1070 1086 1091 1122 Phosphorus ppm ASTM D5185m 1270 1301 1250 1301 Sulfur ppm ASTM D5185m 2060 2604 3095 3543 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 5 18 Sodium ppm ASTM D5185m >20 0 0 2 INFRA-RED method limit/base curren	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 59 61 67 Manganese ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 1010 960 947 943 Calcium ppm ASTM D5185m 1070 1086 1091 1122 Phosphorus ppm ASTM D5185m 1150 1065 1069 1070 Zinc ppm ASTM D5185m 1270 1301 1250 1301 Sulfur ppm ASTM D5185m 2060 2604 3095 3543 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 5 18 Sodium ppm ASTM D5185m >20 0 0 2 INFRA-RED method limit/base </th <th>ADDITIVES</th> <th></th> <th>method</th> <th>limit/base</th> <th>current</th> <th>history1</th> <th>history2</th>	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 59 61 67 Manganese ppm ASTM D5185m 0 0 0 0 Magnesium ppm ASTM D5185m 1010 960 947 943 Calcium ppm ASTM D5185m 1070 1086 1091 1122 Phosphorus ppm ASTM D5185m 1150 1065 1069 1070 Zinc ppm ASTM D5185m 1270 1301 1250 1301 Sulfur ppm ASTM D5185m 2060 2604 3095 3543 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 5 18 Sodium ppm ASTM D5185m >20 0 0 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 <td>Boron</td> <td>ppm</td> <td>ASTM D5185m</td> <td>0</td> <th></th> <td></td> <td></td>	Boron	ppm	ASTM D5185m	0			
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Magnesium ppm ASTM D5185m 1010 960 947 943 Calcium ppm ASTM D5185m 1070 1086 1091 1122 Phosphorus ppm ASTM D5185m 1150 1065 1069 1070 Zinc ppm ASTM D5185m 1270 1301 1250 1301 Sulfur ppm ASTM D5185m 2060 2604 3095 3543 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 5 18 Sodium ppm ASTM D5185m >20 0 0 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 7.9 6.6 9.3 Sulfation Abs/.1mm *ASTM D7415 >30 19.5 18.7 20.1 FLUID DEGRADATION							
Calcium ppm ASTM D5185m 1070 1086 1091 1122 Phosphorus ppm ASTM D5185m 1150 1065 1069 1070 Zinc ppm ASTM D5185m 1270 1301 1250 1301 Sulfur ppm ASTM D5185m 2060 2604 3095 3543 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 5 18 Sodium ppm ASTM D5185m >20 0 0 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.1 0.2 Nitration Abs/cm *ASTM D7415 >30 19.5 18.7 20.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm	-	ppm			-		
Phosphorus ppm ASTM D5185m 1150 1065 1069 1070 Zinc ppm ASTM D5185m 1270 1301 1250 1301 Sulfur ppm ASTM D5185m 2060 2604 3095 3543 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 5 18 Sodium ppm ASTM D5185m >20 0 0 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 7.9 6.6 9.3 Sulfation Abs/.1mm *ASTM D7415 >30 19.5 18.7 20.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 15.4 18.6	-						
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Silicon ppm ASTM D5185m >25 6 5 18 Sodium ppm ASTM D5185m <1 1 <1 <1 Potassium ppm ASTM D5185m >20 0 0 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.1 0.1 0.2 Nitration Abs/cm *ASTM D7624 >20 7.9 6.6 9.3 Sulfation Abs/.1mm *ASTM D7415 >30 19.5 18.7 20.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 15.4 18.6				2060	2604		
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Soot % % *ASTM D7844 >3 0.1 0.1 0.2 Nitration Abs/cm *ASTM D7624 >20 7.9 6.6 9.3 Sulfation Abs/.1mm *ASTM D7415 >30 19.5 18.7 20.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 15.4 18.6	Potassium	ppm	ASTM D5185m	>20	0	0	2
Nitration Abs/cm *ASTM D7624 >20 7.9 6.6 9.3 Sulfation Abs/.1mm *ASTM D7415 >30 19.5 18.7 20.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 15.4 18.6	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 19.5 18.7 20.1 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 15.4 18.6	Soot %						
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 15.4 18.6		Abs/cm	*ASTM D7624	>20		6.6	
Oxidation	Sulfation	Abs/.1mm	*ASTM D7415	>30	19.5	18.7	20.1
	FLUID DEGRA	DATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 9.0 9.1 8.1	Oxidation	Abs/.1mm	*ASTM D7414	>25	16.8	15.4	18.6
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	9.0	9.1	8.1



OIL ANALYSIS REPORT

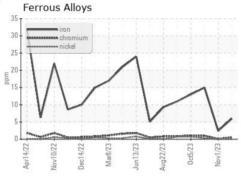


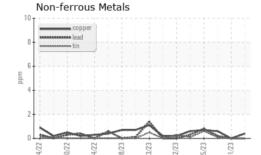


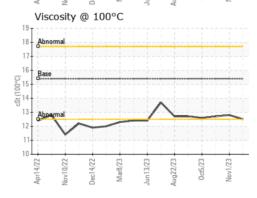
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

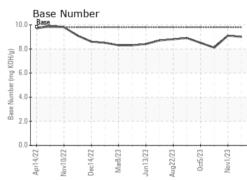
FLUID PROPI	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	12.5	12.8	12.7

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number **Unique Number** Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0100186 : 06034348 : 10789577

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

Received Diagnosed

: 14 Dec 2023 : 15 Dec 2023 Diagnostician : Wes Davis

GFL Environmental - 166 - Phenix City

18 Old Brickyard Rd Phenix City, AL US 36869

Contact: DEAN PEACE JR dean.peace@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: