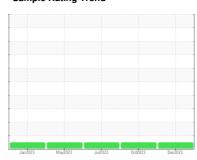


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id **928040**

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

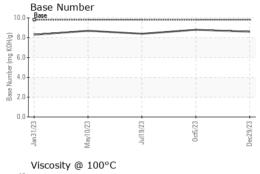
Fluid Condition

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

Sample Date	iAL)		Jan 2023	May2023	Jul2023 Oct2023	Dec2023	
Client Info	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 6159 5639 5044	Sample Number		Client Info		GFL0108400	GFL0084547	GFL0089489
Oil Changed	Sample Date		Client Info		29 Dec 2023	05 Oct 2023	19 Jul 2023
Client Info Changed Changed Changed NORMAL NORMAL NORMAL NORMAL	Machine Age	hrs	Client Info		6159	5639	5044
NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2	Oil Age	hrs	Client Info		6159	5639	0
CONTAMINATION	Oil Changed		Client Info		Changed	Changed	Changed
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water Glycol WC Method WC Method >0.2 NEG NEG NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >110 2 1 5 Chromium ppm ASTM D5185m >4 0 0 <1	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >110 2 1 5 Chromium ppm ASTM D5185m >4 0 0 -1 Nickel ppm ASTM D5185m >2 0 0 0 Silver ppm ASTM D5185m >2 0 -1 0 Aluminum ppm ASTM D5185m >2 0 -1 0 Aluminum ppm ASTM D5185m >2 0 -1 0 Aluminum ppm ASTM D5185m >2 1 1 -1 -1 Lead ppm ASTM D5185m >2 1 1 -1 -1 -1 Lead ppm ASTM D5185m >4 -1 -1 0 0 0 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 <td>Water</td> <td></td> <td>WC Method</td> <td>>0.2</td> <th>NEG</th> <td>NEG</td> <td>NEG</td>	Water		WC Method	>0.2	NEG	NEG	NEG
Chromium	Glycol		WC Method		NEG	NEG	NEG
Chromium	WEAR METAL	.S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>110	2	1	5
Description	Chromium	ppm	ASTM D5185m	>4	0	0	<1
Description	Nickel	ppm	ASTM D5185m	>2	0	0	0
Silver	Titanium		ASTM D5185m		0	0	0
Aluminum	Silver	ppm	ASTM D5185m	>2	0	<1	0
Copper	Aluminum		ASTM D5185m	>25	1	1	<1
Copper	Lead	ppm	ASTM D5185m	>45	<1	0	0
Vanadium	Copper		ASTM D5185m	>85	<1	<1	<1
Vanadium ppm ASTM D5185m 0 0 <1 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 <1 2 0 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 0 Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 966 919 1060 Calcium ppm ASTM D5185m 1070 1043 1024 1164 Phosphorus ppm ASTM D5185m 1270 1227 1215 1320 Sulfur ppm ASTM D5185m 2060 3144 2909 3816 CONTAMINANTS method limit/base <	• •	ppm	ASTM D5185m	>4	<1	<1	0
ADDITIVES	Vanadium		ASTM D5185m		0	0	<1
Boron	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 57 57 66 Manganese ppm ASTM D5185m 0 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 57 57 66 Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 966 919 1060 Calcium ppm ASTM D5185m 1070 1043 1024 1164 Phosphorus ppm ASTM D5185m 1150 1102 946 1110 Zinc ppm ASTM D5185m 1270 1227 1215 1320 Sulfur ppm ASTM D5185m 2060 3144 2909 3816 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 2 2 2 Sodium ppm ASTM D5185m >20 0 <1 0 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >3	Boron	ppm	ASTM D5185m	0	<1	2	0
Manganese ppm ASTM D5185m 0 0 <1 <1 Magnesium ppm ASTM D5185m 1010 966 919 1060 Calcium ppm ASTM D5185m 1070 1043 1024 1164 Phosphorus ppm ASTM D5185m 1150 1102 946 1110 Zinc ppm ASTM D5185m 1270 1227 1215 1320 Sulfur ppm ASTM D5185m 2060 3144 2909 3816 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 2 2 2 Sodium ppm ASTM D5185m >20 0 <1	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium ppm ASTM D5185m 1010 966 919 1060 Calcium ppm ASTM D5185m 1070 1043 1024 1164 Phosphorus ppm ASTM D5185m 1150 1102 946 1110 Zinc ppm ASTM D5185m 1270 1227 1215 1320 Sulfur ppm ASTM D5185m 2060 3144 2909 3816 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 2 2 2 Sodium ppm ASTM D5185m <1	Molybdenum	ppm	ASTM D5185m	60	57	57	66
Calcium ppm ASTM D5185m 1070 1043 1024 1164 Phosphorus ppm ASTM D5185m 1150 1102 946 1110 Zinc ppm ASTM D5185m 1270 1227 1215 1320 Sulfur ppm ASTM D5185m 2060 3144 2909 3816 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 2 2 2 Sodium ppm ASTM D5185m >20 0 <1	Manganese	ppm	ASTM D5185m	0	0	<1	<1
Phosphorus ppm ASTM D5185m 1150 1102 946 1110 Zinc ppm ASTM D5185m 1270 1227 1215 1320 Sulfur ppm ASTM D5185m 2060 3144 2909 3816 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 2 2 2 Sodium ppm ASTM D5185m >30 2 2 2 Potassium ppm ASTM D5185m >20 0 <1	Magnesium	ppm	ASTM D5185m	1010	966	919	1060
Zinc ppm ASTM D5185m 1270 1227 1215 1320 Sulfur ppm ASTM D5185m 2060 3144 2909 3816 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 2 2 2 Sodium ppm ASTM D5185m >20 0 <1	Calcium	ppm	ASTM D5185m	1070	1043	1024	1164
Sulfur ppm ASTM D5185m 2060 3144 2909 3816 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 2 2 2 Sodium ppm ASTM D5185m >20 0 <1	Phosphorus	ppm	ASTM D5185m	1150	1102	946	1110
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 2 2 2 Sodium ppm ASTM D5185m <1	Zinc	ppm	ASTM D5185m	1270	1227	1215	1320
Silicon ppm ASTM D5185m >30 2 2 2 2 Sodium ppm ASTM D5185m <1 1 2 Potassium ppm ASTM D5185m >20 0 <1 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.3 0.3 Nitration Abs/cm *ASTM D7624 >20 7.5 7.4 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 18.4 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.3 14.3 13.7	Sulfur	ppm	ASTM D5185m	2060	3144	2909	3816
Sodium ppm ASTM D5185m <1 1 2 Potassium ppm ASTM D5185m >20 0 <1 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.3 0.3 Nitration Abs/cm *ASTM D7624 >20 7.5 7.4 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 18.4 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.3 14.3 13.7	CONTAMINAN	ITS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 0 <1 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.3 0.3 Nitration Abs/cm *ASTM D7624 >20 7.5 7.4 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 18.4 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.3 14.3 13.7	Silicon	ppm	ASTM D5185m	>30	2	2	2
INFRA-RED	Sodium	ppm	ASTM D5185m		<1	1	2
Soot % % *ASTM D7844 >3 0.5 0.3 0.3 Nitration Abs/cm *ASTM D7624 >20 7.5 7.4 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 18.4 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.3 14.3 13.7	Potassium	ppm	ASTM D5185m	>20	0	<1	0
Nitration Abs/cm *ASTM D7624 >20 7.5 7.4 7.9 Sulfation Abs/.1mm *ASTM D7415 >30 18.9 18.4 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.3 14.3 13.7	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 18.9 18.4 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.3 14.3 13.7	Soot %	%	*ASTM D7844	>3	0.5	0.3	0.3
Sulfation Abs/.1mm *ASTM D7415 >30 18.9 18.4 17.7 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.3 14.3 13.7	Nitration	Abs/cm	*ASTM D7624	>20	7.5	7.4	7.9
Oxidation Abs/.1mm *ASTM D7414 >25 15.3 14.3 13.7	Sulfation						17.7
	FLUID DEGRA	DATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	15.3	14.3	13.7
	Base Number (BN)						

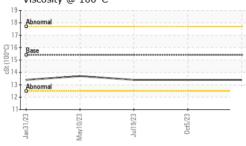


OIL ANALYSIS REPORT

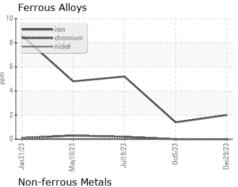


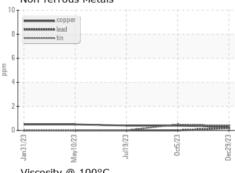
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

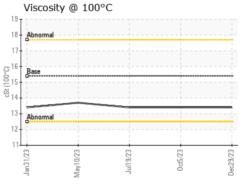
FLUID PROP	ERTIES	method				history2
 Visc @ 100°C	cSt	ASTM D445	15.4	13.4	13.4	13.4

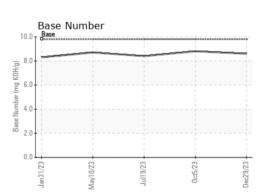


GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number Unique Number : 10819565 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0108400 : 06053616

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

Recieved Diagnosed Diagnostician : Wes Davis

: 08 Jan 2024 : 09 Jan 2024

GFL Environmental - 918 - Hartland HC

630 E Industrial Drive Hartland, WI US 53029

Contact: David McCall david.mccall@gflenv.com T: (262)369-3069

* - 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: GFL918 [WUSCAR] 06053616 (Generated: 01/09/2024 09:40:13) Rev: 1

Submitted By: David McCall