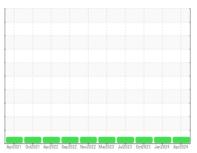


OIL ANALYSIS REPORT

Sample Rating Trend









Machine Id
653M
Component
Diesel Engine
Fluid

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

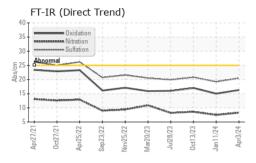
Fluid Condition

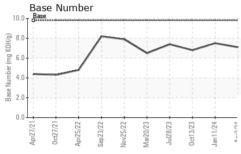
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

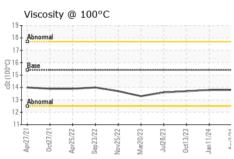
Sample Date		, , , , , , , , , , , , , , , , , , ,					
Sample Date	SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 11063 10437 9849 Oil Age hrs Client Info 600 600 600 Oil Changed Client Info Changed Changed Changed Changed Changed Changed Changed NORMAL 1.0 4.1 1.0 4.1 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 </td <td>Sample Number</td> <td></td> <td>Client Info</td> <td></td> <th>GFL0116917</th> <td>GFL0107690</td> <td>GFL0096582</td>	Sample Number		Client Info		GFL0116917	GFL0107690	GFL0096582
Oil Age hrs Client Info 600 600 600 600 Oil Changed Sample Status Client Info Changed Changed Changed Changed Changed NORMAL NORMAL NORMAL NORM	Sample Date		Client Info		03 Apr 2024	11 Jan 2024	13 Oct 2023
Client Info Changed Changed NORMAL NORMAL NORMAL NORMAL	Machine Age	hrs	Client Info		11063	10437	9849
NORMAL NORMAL NORMAL CONTAMINATION method minit/base current history1 history2	Oil Age	hrs	Client Info		600		600
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 >120 13 12 10 Chromium ppm ASTM D5185m >20 0 <1 <1 Nickel ppm ASTM D5185m >5 0 <1 <1 Silver ppm ASTM D5185m >2 0 0 <1 Silver ppm ASTM D5185m >20 1 2 3 Lead ppm ASTM D5185m >20 1 2 3 Lead ppm ASTM D5185m >40 0 0 <1 <1 Copper ppm ASTM D5185m >15 0 <1 <1 <1 Vanadium ppm ASTM D5185m 0 <1 <1 <1 Vanadium ppm ASTM D5185m	CONTAMINAT	ION	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
	Glycol		WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 0 <1 <1 Nickel ppm ASTM D5185m >5 0 <1	WEAR METAL	S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>120	13	12	10
Description	Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Silver	Nickel	ppm	ASTM D5185m	>5	0	<1	<1
Aluminum ppm ASTM D5185m >20 1 2 3 Lead ppm ASTM D5185m >40 0 0 <1	Titanium	ppm	ASTM D5185m	>2	0	0	<1
Lead	Silver	ppm	ASTM D5185m	>2	0	0	0
Copper ppm ASTM D5185m >330 <1 1 3 Tin ppm ASTM D5185m >15 0 <1	Aluminum	ppm	ASTM D5185m	>20	1	2	3
Tin	Lead	ppm	ASTM D5185m	>40	0	0	<1
Vanadium ppm ASTM D5185m 0 <1 <1 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 <1 <1 2 Barium ppm ASTM D5185m 0 0 0 <1 0 Molybdenum ppm ASTM D5185m 0 0 0 <1 0 Manganese ppm ASTM D5185m 0 0 <1 0 Magnesium ppm ASTM D5185m 1010 1066 1019 930 Calcium ppm ASTM D5185m 1070 1188 1062 1096 Phosphorus ppm ASTM D5185m 1270 1375 1294 1263 Sulfur ppm ASTM D5185m 2060 3652 2951 2758 CONTAMINANTS method limit/base curre	Copper	ppm	ASTM D5185m	>330	<1	1	3
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 <1	Tin	ppm	ASTM D5185m	>15	0	<1	<1
ADDITIVES	Vanadium	ppm	ASTM D5185m		0	<1	<1
Boron ppm ASTM D5185m 0 0 0 0 0 0 0 0	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 0 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 62 60 62 Manganese ppm ASTM D5185m 0 0 <1 0 Magnesium ppm ASTM D5185m 1010 1066 1019 930 Calcium ppm ASTM D5185m 1070 1188 1062 1096 Phosphorus ppm ASTM D5185m 1150 1096 1058 935 Zinc ppm ASTM D5185m 1270 1375 1294 1263 Sulfur ppm ASTM D5185m 2060 3652 2951 2758 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 6 3 Sodium ppm ASTM D5185m >20 <1 <1 2 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >4	Boron	ppm	ASTM D5185m	0	<1	<1	2
Manganese ppm ASTM D5185m 0 0 <1 0 Magnesium ppm ASTM D5185m 1010 1066 1019 930 Calcium ppm ASTM D5185m 1070 1188 1062 1096 Phosphorus ppm ASTM D5185m 1150 1096 1058 935 Zinc ppm ASTM D5185m 1270 1375 1294 1263 Sulfur ppm ASTM D5185m 2060 3652 2951 2758 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 6 3 Sodium ppm ASTM D5185m >25 3 6 3 Potassium ppm ASTM D5185m >20 <1 <1 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 <td>Barium</td> <td>ppm</td> <td>ASTM D5185m</td> <td>0</td> <th>0</th> <td>0</td> <td><1</td>	Barium	ppm	ASTM D5185m	0	0	0	<1
Magnesium ppm ASTM D5185m 1010 1066 1019 930 Calcium ppm ASTM D5185m 1070 1188 1062 1096 Phosphorus ppm ASTM D5185m 1150 1096 1058 935 Zinc ppm ASTM D5185m 1270 1375 1294 1263 Sulfur ppm ASTM D5185m 2060 3652 2951 2758 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 6 3 Sodium ppm ASTM D5185m >20 <1 <1 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.8 0.5 0.7 Nitration Abs/cm *ASTM D7624 >20 8.3 7.5 8.6 Sulfation Abs/.1mm *ASTM	Molybdenum	ppm	ASTM D5185m	60	62	60	62
Calcium ppm ASTM D5185m 1070 1188 1062 1096 Phosphorus ppm ASTM D5185m 1150 1096 1058 935 Zinc ppm ASTM D5185m 1270 1375 1294 1263 Sulfur ppm ASTM D5185m 2060 3652 2951 2758 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 6 3 Sodium ppm ASTM D5185m >20 <1	Manganese	ppm	ASTM D5185m	0	0	<1	0
Phosphorus ppm ASTM D5185m 1 150 1096 1058 935 Zinc ppm ASTM D5185m 1270 1375 1294 1263 Sulfur ppm ASTM D5185m 2060 3652 2951 2758 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 6 3 Sodium ppm ASTM D5185m >20 <1	Magnesium	ppm	ASTM D5185m	1010	1066	1019	930
Zinc ppm ASTM D5185m 1270 1375 1294 1263 Sulfur ppm ASTM D5185m 2060 3652 2951 2758 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 6 3 Sodium ppm ASTM D5185m >20 <1	Calcium	ppm	ASTM D5185m	1070	1188	1062	1096
Sulfur ppm ASTM D5185m 2060 3652 2951 2758 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 6 3 Sodium ppm ASTM D5185m >20 <1	Phosphorus	ppm	ASTM D5185m	1150	1096	1058	935
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 6 3 Sodium ppm ASTM D5185m 3 7 9 Potassium ppm ASTM D5185m >20 <1	Zinc	ppm	ASTM D5185m	1270	1375	1294	1263
Silicon ppm ASTM D5185m >25 3 6 3 Sodium ppm ASTM D5185m 3 7 9 Potassium ppm ASTM D5185m >20 <1 <1 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.8 0.5 0.7 Nitration Abs/cm *ASTM D7624 >20 8.3 7.5 8.6 Sulfation Abs/.1mm *ASTM D7415 >30 20.5 19.2 20.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 15.0 17.0	Sulfur	ppm	ASTM D5185m	2060	3652	2951	2758
Sodium ppm ASTM D5185m 3 7 9 Potassium ppm ASTM D5185m >20 <1 <1 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.8 0.5 0.7 Nitration Abs/cm *ASTM D7624 >20 8.3 7.5 8.6 Sulfation Abs/.1mm *ASTM D7415 >30 20.5 19.2 20.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 15.0 17.0	CONTAMINAN	TS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 <1 <1 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.8 0.5 0.7 Nitration Abs/cm *ASTM D7624 >20 8.3 7.5 8.6 Sulfation Abs/.1mm *ASTM D7415 >30 20.5 19.2 20.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 15.0 17.0	Silicon	ppm	ASTM D5185m	>25	3	6	3
INFRA-RED	Sodium	ppm	ASTM D5185m		3	7	9
Soot % % *ASTM D7844 >4 0.8 0.5 0.7 Nitration Abs/cm *ASTM D7624 >20 8.3 7.5 8.6 Sulfation Abs/.1mm *ASTM D7415 >30 20.5 19.2 20.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 15.0 17.0	Potassium	ppm	ASTM D5185m	>20	<1	<1	2
Nitration Abs/cm *ASTM D7624 >20 8.3 7.5 8.6 Sulfation Abs/.1mm *ASTM D7415 >30 20.5 19.2 20.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 15.0 17.0	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 20.5 19.2 20.8 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 15.0 17.0	Soot %	%	*ASTM D7844	>4	0.8	0.5	0.7
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.3 15.0 17.0	Nitration	Abs/cm	*ASTM D7624	>20	8.3	7.5	8.6
Oxidation Abs/.1mm *ASTM D7414 >25 16.3 15.0 17.0	Sulfation	Abs/.1mm					
	FLUID DEGRA	OITAC	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	16.3	15.0	17.0



OIL ANALYSIS REPORT



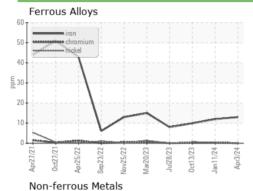


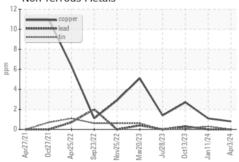


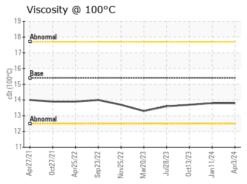
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

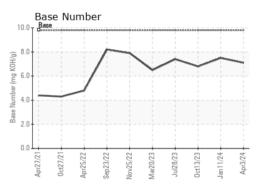
FLUID PROPERTIES		method				history2	
Visc @ 100°C	cSt	ASTM D445	15.4	13.8	13.8	13.7	

GRAPHS













Certificate 12367

Laboratory Sample No. Lab Number : 06139701 Unique Number : 10964509

: GFL0116917

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

: 05 Apr 2024 : 06 Apr 2024 : 06 Apr 2024 - Wes Davis GFL Environmental - 465 - Pontiac 888 Baldwin Pontiac, MI US 48340 Contact: Ricky Matthews rickymathews@gflenv.com

Test Package : FLEET 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.

T: (586)825-9514

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012) Report Id: GFL465 [WUSCAR] 06139701 (Generated: 04/06/2024 04:44:02) Rev: 1