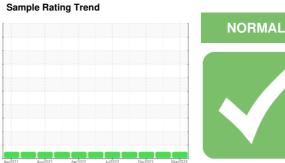


OIL ANALYSIS REPORT

J....





Machine Id
4676M
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

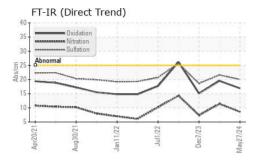
Fluid Condition

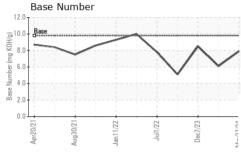
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

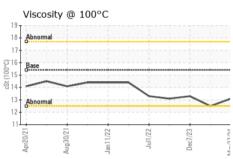
Sample Number Client Info Tist Tist	N 3HP 13W40 (GAL)	Aprzuzi	Augzuzi Janzuzz	JUIZUZZ DeczUZ3	May2024	
Sample Date	SAMPLE INFOR	RMATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 15117 13740 13	Sample Number		Client Info		GFL0122526	GFL0108889	GFL010566
Dil Age	Sample Date		Client Info		27 May 2024	24 Feb 2024	07 Dec 2023
Coli Changed Changed Changed Changed NORMAL	Machine Age	hrs	Client Info		15117	13740	13740
NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2	Oil Age	hrs	Client Info		13740	13740	13579
CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0	Oil Changed		Client Info		Not Changd	Changed	Changed
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water WC Method >0.2 NEG NEG NEG Glycol WC Method Imitibase Current history1 history2 WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >80 16 21 8 Chromium ppm ASTM D5185m >5 0 1 <1 Nickel ppm ASTM D5185m >2 0 <1 0 Silver ppm ASTM D5185m >30 0 0 0 Silver ppm ASTM D5185m >30 0 0 0 Aluminum ppm ASTM D5185m >30 0 0 0 Copper ppm ASTM D5185m >30 0 <1 <1 Tin ppm ASTM D5185m >5 0 <1 0 Vanadium ppm ASTM D5185m 0 0 <1 0 </td <td>CONTAMINA</td> <td>TION</td> <td>method</td> <td>limit/base</td> <td>current</td> <td>history1</td> <td>history2</td>	CONTAMINA	TION	method	limit/base	current	history1	history2
WEAR METALS	Fuel		WC Method	>5	<1.0	<1.0	<1.0
WEAR METALS	Water		WC Method	>0.2	NEG	NEG	NEG
Irron	Glycol		WC Method		NEG	NEG	NEG
Chromium	WEAR METAI	LS	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>80	16	21	8
Description	Chromium	ppm	ASTM D5185m	>5	0	1	<1
Silver	Nickel	ppm	ASTM D5185m	>2	0	<1	0
Silver	Titanium	ppm	ASTM D5185m		0	<1	0
Aluminum	Silver		ASTM D5185m	>3	0	0	0
Lead	Aluminum		ASTM D5185m	>30	1	2	<1
Tin	Lead		ASTM D5185m	>30	0	0	0
Tin	Copper	- ' '	ASTM D5185m	>150	0	<1	<1
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 1 2 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 0 0 0 Manganese ppm ASTM D5185m 0 0 <1 0 Magnesium ppm ASTM D5185m 1070 1003 1034 1016 Phosphorus ppm ASTM D5185m 1270 1165 1206 1188 Sulfur ppm ASTM D5185m 2060 3014 3043 3248 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 6 <th< td=""><td></td><td></td><td></td><td></td><td>0</td><td></td><td></td></th<>					0		
Cadmium ppm ASTM D5185m 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 1 2 0 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 56 56 54 Manganese ppm ASTM D5185m 0 0 <1	Vanadium		ASTM D5185m		0	0	0
Boron ppm ASTM D5185m 0 1 2 0 0 0 0 0 0 0 0 0	Cadmium		ASTM D5185m		0	<1	0
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 56 56 54 Manganese ppm ASTM D5185m 0 0 <1 0 Magnesium ppm ASTM D5185m 1010 861 888 907 Calcium ppm ASTM D5185m 1070 1003 1034 1016 Phosphorus ppm ASTM D5185m 1150 928 1002 880 Zinc ppm ASTM D5185m 1270 1165 1206 1188 Sulfur ppm ASTM D5185m 2060 3014 3043 3248 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 6 3 Sodium ppm ASTM D5185m >20 0 3 0 INFRA-RED method limit/base <t< td=""><td>ADDITIVES</td><td></td><td>method</td><td>limit/base</td><td>current</td><td>history1</td><td>history2</td></t<>	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 56 56 54 Manganese ppm ASTM D5185m 0 0 <1 0 Magnesium ppm ASTM D5185m 1010 861 888 907 Calcium ppm ASTM D5185m 1070 1003 1034 1016 Phosphorus ppm ASTM D5185m 1150 928 1002 880 Zinc ppm ASTM D5185m 1270 1165 1206 1188 Sulfur ppm ASTM D5185m 2060 3014 3043 3248 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 6 3 Sodium ppm ASTM D5185m >20 4 6 3 Sodium ppm ASTM D5185m >20 0 3 0 INFRA-RED method limit/base	Boron	ppm	ASTM D5185m	0	1	2	0
Manganese ppm ASTM D5185m 0 <1 0 Magnesium ppm ASTM D5185m 1010 861 888 907 Calcium ppm ASTM D5185m 1070 1003 1034 1016 Phosphorus ppm ASTM D5185m 1150 928 1002 880 Zinc ppm ASTM D5185m 1270 1165 1206 1188 Sulfur ppm ASTM D5185m 2060 3014 3043 3248 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 6 3 Sodium ppm ASTM D5185m 9 41 2 Potassium ppm ASTM D5185m 9 41 2 Potassium ppm ASTM D5185m 9 41 2 Soot % % *ASTM D7844 >3 0.4 0.6 0.3	Barium	ppm	ASTM D5185m	0	0	0	0
Manganese ppm ASTM D5185m 0 0 <1 0 Magnesium ppm ASTM D5185m 1010 861 888 907 Calcium ppm ASTM D5185m 1070 1003 1034 1016 Phosphorus ppm ASTM D5185m 1150 928 1002 880 Zinc ppm ASTM D5185m 1270 1165 1206 1188 Sulfur ppm ASTM D5185m 2060 3014 3043 3248 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 6 3 Sodium ppm ASTM D5185m 9 41 2 Potassium ppm ASTM D5185m 9 41 2 Potassium ppm ASTM D5185m 9 41 2 Soot % % *ASTM D7844 >3 0.4 0.6	Molybdenum	ppm	ASTM D5185m	60	56	56	54
Magnesium ppm ASTM D5185m 1010 861 888 907 Calcium ppm ASTM D5185m 1070 1003 1034 1016 Phosphorus ppm ASTM D5185m 1150 928 1002 880 Zinc ppm ASTM D5185m 1270 1165 1206 1188 Sulfur ppm ASTM D5185m 2060 3014 3043 3248 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 6 3 Sodium ppm ASTM D5185m >20 0 3 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.6 0.3 Nitration Abs/cm *ASTM D7624 >20 8.6 11.4 7.4 Sulfation Abs/.1mm *ASTM D741	-		ASTM D5185m	0	0	<1	0
Calcium ppm ASTM D5185m 1070 1003 1034 1016 Phosphorus ppm ASTM D5185m 1150 928 1002 880 Zinc ppm ASTM D5185m 1270 1165 1206 1188 Sulfur ppm ASTM D5185m 2060 3014 3043 3248 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 6 3 Sodium ppm ASTM D5185m 9 41 2 Potassium ppm ASTM D5185m >20 0 3 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 8.6 11.4 7.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.0 21.6 18.6 FLUID DEGRADATION *ASTM D7414	-	ppm	ASTM D5185m	1010	861	888	907
Phosphorus ppm ASTM D5185m 1150 928 1002 880 Zinc ppm ASTM D5185m 1270 1165 1206 1188 Sulfur ppm ASTM D5185m 2060 3014 3043 3248 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 6 3 Sodium ppm ASTM D5185m 9 41 2 Potassium ppm ASTM D5185m >20 0 3 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.6 0.3 Nitration Abs/cm *ASTM D7624 >20 8.6 11.4 7.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.0 21.6 18.6 FLUID DEGRADATION *ASTM D7414	Calcium		ASTM D5185m	1070	1003	1034	1016
Zinc ppm ASTM D5185m 1270 1165 1206 1188 Sulfur ppm ASTM D5185m 2060 3014 3043 3248 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 6 3 Sodium ppm ASTM D5185m 9 41 2 Potassium ppm ASTM D5185m >20 0 3 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.6 0.3 Nitration Abs/cm *ASTM D7624 >20 8.6 11.4 7.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.0 21.6 18.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D	Phosphorus				928	1002	880
Sulfur ppm ASTM D5185m 2060 3014 3043 3248 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 4 6 3 Sodium ppm ASTM D5185m 9 41 2 Potassium ppm ASTM D5185m >20 0 3 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.6 0.3 Nitration Abs/cm *ASTM D7624 >20 8.6 11.4 7.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.0 21.6 18.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.9 19.5 15.1	Zinc		ASTM D5185m	1270	1165	1206	1188
Silicon ppm ASTM D5185m >20 4 6 3 Sodium ppm ASTM D5185m 9 41 2 Potassium ppm ASTM D5185m >20 0 3 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.6 0.3 Nitration Abs/cm *ASTM D7624 >20 8.6 11.4 7.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.0 21.6 18.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.9 19.5 15.1	Sulfur			2060	3014	3043	3248
Sodium ppm ASTM D5185m 9 41 2 Potassium ppm ASTM D5185m >20 0 3 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.6 0.3 Nitration Abs/cm *ASTM D7624 >20 8.6 11.4 7.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.0 21.6 18.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.9 19.5 15.1	CONTAMINA	NTS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 0 3 0 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.4 0.6 0.3 Nitration Abs/cm *ASTM D7624 >20 8.6 11.4 7.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.0 21.6 18.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.9 19.5 15.1	Silicon	ppm	ASTM D5185m	>20	4	6	3
INFRA-RED	Sodium	ppm	ASTM D5185m		9	41	2
Soot % % *ASTM D7844 >3 0.4 0.6 0.3 Nitration Abs/cm *ASTM D7624 >20 8.6 11.4 7.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.0 21.6 18.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.9 19.5 15.1	Potassium	ppm	ASTM D5185m	>20	0	3	0
Nitration Abs/cm *ASTM D7624 >20 8.6 11.4 7.4 Sulfation Abs/.1mm *ASTM D7615 >30 20.0 21.6 18.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.9 19.5 15.1	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 20.0 21.6 18.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.9 19.5 15.1	Soot %	%	*ASTM D7844	>3	0.4	0.6	0.3
Sulfation Abs/.1mm *ASTM D7415 >30 20.0 21.6 18.6 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.9 19.5 15.1	Nitration	Abs/cm	*ASTM D7624	>20	8.6	11.4	7.4
Oxidation Abs/.1mm *ASTM D7414 >25 16.9 19.5 15.1		Abs/.1mm	*ASTM D7415	>30			
	FLUID DEGRA	ADATION	method	limit/base	current	history1	history2
	Oxidation	Abs/.1mm	*ASTM D7414	>25	16.9	19.5	15.1
					7.9	6.1	



OIL ANALYSIS REPORT



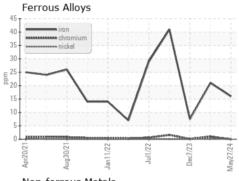


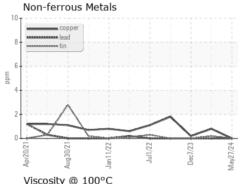


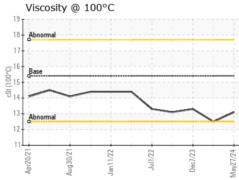
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

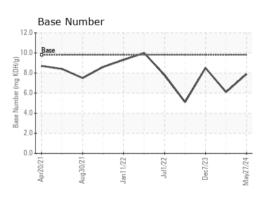
FLUID PROPE	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.1	12.5	13.3

GRAPHS









GFL Environmental - 415 - Michigan East





Certificate 12367

Sample No.

: GFL0122526 Lab Number : 06195199 Unique Number : 11057322 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 30 May 2024

Tested : 31 May 2024 Diagnosed

: 31 May 2024 - Wes Davis

Contact: Frank Wolak fwolak@gflenv.com T: (586)825-9514

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) Report Id: GFL415 [WUSCAR] 06195199 (Generated: 05/31/2024 11:55:45) Rev: 1

Submitted By: Frank Wolak

6200 Elmridge

Sterling Heights, MI US 48313