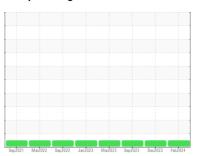


OIL ANALYSIS REPORT

Sample Rating Trend







920054

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

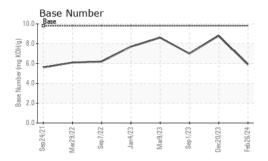
Fluid Condition

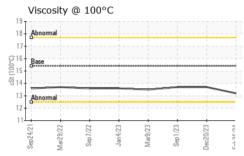
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number Client Info GFL0107719 GFL0107098 GFL0091466 Sample Date Client Info 26 Feb 2024 20 Dec 2023 01 Sep 2023 02 Sep 2023 0	GAL)		Sep2021	Mar2022 Sep2022 Jan20	23 Mar2023 Sep2023 Dec2023	Feb2024	
Client Info	SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Machine Age	Sample Number		Client Info		GFL0107719	GFL0107098	GFL0091464
Oil Age hrs Client Info 600 600 600 600 Oil Changed Client Info N/A Not Changed Changed Changed Sample Status NORMAL A1.0 4.0 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 1.0 1.0 1.0 1.0	Sample Date		Client Info		26 Feb 2024	20 Dec 2023	01 Sep 2023
Colient Info	Machine Age	hrs	Client Info		9696	8116	8670
NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 history2	Oil Age	hrs	Client Info		600	600	600
CONTAMINATION	Oil Changed		Client Info		N/A	Not Changd	Changed
Fuel	Sample Status				NORMAL	NORMAL	NORMAL
Water WC Method >0.2 NEG A Interest of Part Action Action Action Description Action Action Action Action Action	CONTAMINAT	ION	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 ppm ASTM D5185m >4 <1 <1 0 Nickel ppm ASTM D5185m >2 <1	WEAR METAL	.S	method	limit/base	current	history1	history2
Nickel	Iron	ppm	ASTM D5185m	>110	18	10	
Titanium	Chromium	ppm	ASTM D5185m	>4	<1	<1	0
Silver	Nickel	ppm	ASTM D5185m	>2			0
Aluminum	Titanium	ppm	ASTM D5185m		0		0
Lead	Silver	ppm	ASTM D5185m	>2	-		
Copper ppm ASTM D5185m >85 2 <1 2 Tin ppm ASTM D5185m >4 <1	Aluminum	ppm	ASTM D5185m	>25	7	3	6
Tin	Lead	ppm	ASTM D5185m	>45	0	0	
Vanadium ppm ASTM D5185m <1 0 <1 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 0 <1 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 60 61 59 64 Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 1010 1017 927 1033 Calcium ppm ASTM D5185m 1070 1152 1064 1195 Phosphorus ppm ASTM D5185m 1270 1330 1212 1361 Sulfur ppm ASTM D5185m 2060 2772 3237 3239 CONTAMINANTS method limit/base	Copper	ppm	ASTM D5185m	>85	2	<1	2
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 0 <1		ppm		>4			
ADDITIVES	Vanadium	ppm	ASTM D5185m				
Boron	Cadmium	ppm	ASTM D5185m		0	0	0
Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 61 59 64 Manganese ppm ASTM D5185m 0 <1	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 60 61 59 64 Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 1010 1017 927 1033 Calcium ppm ASTM D5185m 1070 1152 1064 1195 Phosphorus ppm ASTM D5185m 1150 1060 1006 1043 Zinc ppm ASTM D5185m 1270 1330 1212 1361 Sulfur ppm ASTM D5185m 2060 2772 3237 3239 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m 20 2 3 4 Sodium ppm ASTM D5185m 20 2 3 1 INFRA-RED method limit/base current history1 history2 Soot % *6 **ASTM D7844 >3	Boron	ppm	ASTM D5185m	0	2	0	<1
Manganese ppm ASTM D5185m 0 <1 0 <1 Magnesium ppm ASTM D5185m 1010 1017 927 1033 Calcium ppm ASTM D5185m 1070 1152 1064 1195 Phosphorus ppm ASTM D5185m 1150 1060 1006 1043 Zinc ppm ASTM D5185m 1270 1330 1212 1361 Sulfur ppm ASTM D5185m 2060 2772 3237 3239 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 3 4 Sodium ppm ASTM D5185m >20 2 3 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.9 0.3 0.6 Nitration Abs/cm *ASTM	Barium	ppm	ASTM D5185m	0	0	0	0
Magnesium ppm ASTM D5185m 1010 1017 927 1033 Calcium ppm ASTM D5185m 1070 1152 1064 1195 Phosphorus ppm ASTM D5185m 1150 1060 1006 1043 Zinc ppm ASTM D5185m 1270 1330 1212 1361 Sulfur ppm ASTM D5185m 2060 2772 3237 3239 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 3 4 Sodium ppm ASTM D5185m 20 2 3 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.9 0.3 0.6 Nitration Abs/cm *ASTM D7624 >20 9.2 6.4 8.2 Sulfation Abs/.1mm	Molybdenum	ppm	ASTM D5185m	60	61	59	64
Calcium ppm ASTM D5185m 1070 1152 1064 1195 Phosphorus ppm ASTM D5185m 1150 1060 1006 1043 Zinc ppm ASTM D5185m 1270 1330 1212 1361 Sulfur ppm ASTM D5185m 2060 2772 3237 3239 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 3 4 Sodium ppm ASTM D5185m 2 0 2 Potassium ppm ASTM D5185m >20 2 3 1 INFRA-RED method limit/base current history1 history2 Soot % "ASTM D7844 >3 0.9 0.3 0.6 Nitration Abs/cm "ASTM D7415 >30 22.4 18.4 20.9 FLUID DEGRADATION "ASTM D7414 >25 <td>Manganese</td> <td>ppm</td> <td>ASTM D5185m</td> <td>0</td> <td><1</td> <td>0</td> <td><1</td>	Manganese	ppm	ASTM D5185m	0	<1	0	<1
Phosphorus ppm ASTM D5185m 1150 1060 1006 1043 Zinc ppm ASTM D5185m 1270 1330 1212 1361 Sulfur ppm ASTM D5185m 2060 2772 3237 3239 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 3 4 Sodium ppm ASTM D5185m 2 0 2 Potassium ppm ASTM D5185m >20 2 3 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.9 0.3 0.6 Nitration Abs/cm *ASTM D7624 >20 9.2 6.4 8.2 Sulfation Abs/.1mm *ASTM D7415 >30 22.4 18.4 20.9 FLUID DEGRADATION method l	Magnesium	ppm	ASTM D5185m	1010	1017	927	1033
Zinc ppm ASTM D5185m 1270 1330 1212 1361 Sulfur ppm ASTM D5185m 2060 2772 3237 3239 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 3 4 Sodium ppm ASTM D5185m 2 0 2 Potassium ppm ASTM D5185m >20 2 3 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.9 0.3 0.6 Nitration Abs/cm *ASTM D7624 >20 9.2 6.4 8.2 Sulfation Abs/.1mm *ASTM D7415 >30 22.4 18.4 20.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D741	Calcium	ppm	ASTM D5185m	1070	1152	1064	1195
Sulfur ppm ASTM D5185m 2060 2772 3237 3239 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 3 4 Sodium ppm ASTM D5185m 2 0 2 Potassium ppm ASTM D5185m >20 2 3 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.9 0.3 0.6 Nitration Abs/cm *ASTM D7624 >20 9.2 6.4 8.2 Sulfation Abs/.1mm *ASTM D7415 >30 22.4 18.4 20.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.2 13.8 16.6	Phosphorus	ppm	ASTM D5185m	1150	1060	1006	1043
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >30 4 3 4 Sodium ppm ASTM D5185m 2 0 2 Potassium ppm ASTM D5185m >20 2 3 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.9 0.3 0.6 Nitration Abs/cm *ASTM D7624 >20 9.2 6.4 8.2 Sulfation Abs/.1mm *ASTM D7415 >30 22.4 18.4 20.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.2 13.8 16.6	Zinc	ppm	ASTM D5185m	1270	1330	1212	1361
Silicon ppm ASTM D5185m >30 4 3 4 Sodium ppm ASTM D5185m 2 0 2 Potassium ppm ASTM D5185m >20 2 3 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.9 0.3 0.6 Nitration Abs/cm *ASTM D7624 >20 9.2 6.4 8.2 Sulfation Abs/.1mm *ASTM D7415 >30 22.4 18.4 20.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.2 13.8 16.6	Sulfur	ppm	ASTM D5185m	2060	2772	3237	3239
Sodium ppm ASTM D5185m 2 0 2 Potassium ppm ASTM D5185m >20 2 3 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.9 0.3 0.6 Nitration Abs/cm *ASTM D7624 >20 9.2 6.4 8.2 Sulfation Abs/.1mm *ASTM D7415 >30 22.4 18.4 20.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.2 13.8 16.6	CONTAMINAN	ITS	method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 2 3 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.9 0.3 0.6 Nitration Abs/cm *ASTM D7624 >20 9.2 6.4 8.2 Sulfation Abs/.1mm *ASTM D7415 >30 22.4 18.4 20.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.2 13.8 16.6	Silicon	ppm	ASTM D5185m	>30	4	3	4
INFRA-RED	Sodium	ppm	ASTM D5185m		2	0	2
Soot % % *ASTM D7844 >3 0.9 0.3 0.6 Nitration Abs/cm *ASTM D7624 >20 9.2 6.4 8.2 Sulfation Abs/.1mm *ASTM D7415 >30 22.4 18.4 20.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.2 13.8 16.6	Potassium	ppm	ASTM D5185m	>20	2	3	1
Nitration Abs/cm *ASTM D7624 >20 9.2 6.4 8.2 Sulfation Abs/.1mm *ASTM D7415 >30 22.4 18.4 20.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.2 13.8 16.6	INFRA-RED		method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 22.4 18.4 20.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.2 13.8 16.6	Soot %	%	*ASTM D7844	>3	0.9	0.3	0.6
FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 18.2 13.8 16.6	Nitration	Abs/cm	*ASTM D7624	>20	9.2	6.4	8.2
Oxidation Abs/.1mm *ASTM D7414 >25 18.2 13.8 16.6	Sulfation	Abs/.1mm	*ASTM D7415	>30	22.4	18.4	20.9
	FLUID DEGRAI	DATION	method	limit/base	current	history1	history2
Base Number (BN) mg KOH/g ASTM D2896 9.8 5.9 8.8 7.0	Oxidation	Abs/.1mm	*ASTM D7414	>25	18.2	13.8	16.6
	Base Number (BN)	mg KOH/g	ASTM D2896	9.8	5.9	8.8	7.0



OIL ANALYSIS REPORT

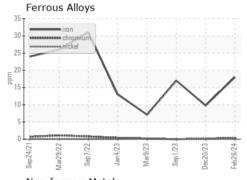


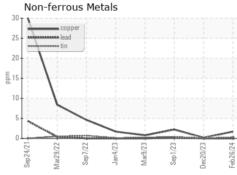


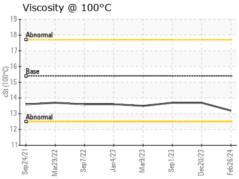
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual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

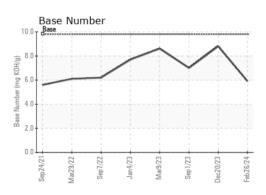
FLUID PROPI	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.2	13.7	13.7

GRAPHS













Laboratory Sample No.

Lab Number : 06106584 Unique Number : 10910081

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0107719

Received **Tested** Diagnosed Test Package : FLEET

: 01 Mar 2024 : 04 Mar 2024 : 04 Mar 2024 - Wes Davis

GFL Environmental - 465 - Pontiac 888 Baldwin Pontiac, MI

US 48340 Contact: Ricky Matthews

rickymathews@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)