

PROBLEM SUMMARY

GFL829 **INTERNATIONAL 225055-310022**

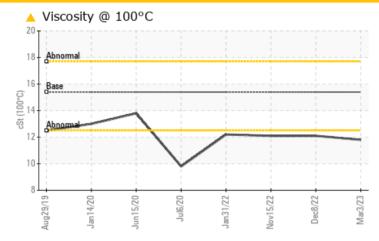
Diesel Engine

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

Sample Rating Trend



COMPONENT CONDITION SUMMARY



RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS								
Sample Status				ATTENTION	ATTENTION	ATTENTION		
Visc @ 100°C	cSt	ASTM D445	15.4	<u> </u>	<u>▲</u> 12.1	<u>▲</u> 12.1		

Customer Id: GFL9999 **Sample No.:** GFL0065552 Lab Number: 05789393 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data: Jonathan Hester +1 919-379-4092 x4092 ihester@wearcheckusa.com

To change component or sample information: Customer Service +1 1-800-237-1369 customerservice@wearcheck.com

RECOMMENDED ACTIONS

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

08 Dec 2022 Diag: Don Baldridge

VISCOSITY



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.



15 Nov 2022 Diag: Don Baldridge

VISCOSITY



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.



31 Jan 2022 Diag: Don Baldridge

VISCOSITY



Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. Tests indicate that there is no fuel present in the oil. There is no indication of any contamination in the oil. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.



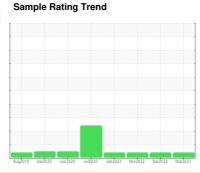


OIL ANALYSIS REPORT

GFL829 **INTERNATIONAL 225055-310022**

Diesel Engine

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





DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

Fuel content negligible. There is no indication of any contamination in the oil.

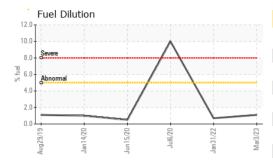
▲ Fluid Condition

The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

SAMPLE INFORI	MATION	method	limit/base	ourropt	hiotoryd	hiotony
	VIATION		IIIIIIVDase	current	history1	history2
Sample Number		Client Info		GFL0065552	GFL0065594	GFL0051315
Sample Date		Client Info		03 Mar 2023	08 Dec 2022	15 Nov 2022
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	250
Oil Changed		Client Info		Not Changd	Changed	Not Changd
Sample Status				ATTENTION	ATTENTION	ATTENTION
CONTAMINAT	ION	method	limit/base	current	history1	history2
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	18	33	29
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	<1
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m		4	6	5
Lead	ppm	ASTM D5185m	>40	<1	<1	<1
Copper	ppm	ASTM D5185m		1	3	2
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Antimony	ppm	ASTM D5185m	710			
Vanadium		ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
	ppm	ASTIVI DOTOSIII		U	U	
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES		memou	IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Current	Thistory	History
Boron	ppm	ASTM D5185m	0	2	17	5
	ppm ppm					
Boron		ASTM D5185m	0	2	17	5
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	2 2	17 0	5
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	2 2 60	17 0 62	5 0 57
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	2 2 60 <1	17 0 62 <1	5 0 57 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	2 2 60 <1 922	17 0 62 <1 849	5 0 57 <1 863
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	2 2 60 <1 922 1115	17 0 62 <1 849 1229	5 0 57 <1 863 1162
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	2 2 60 <1 922 1115 1056	17 0 62 <1 849 1229 1039	5 0 57 <1 863 1162 966
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	2 2 60 <1 922 1115 1056	17 0 62 <1 849 1229 1039 1243	5 0 57 <1 863 1162 966 1210
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	2 2 60 <1 922 1115 1056 1232 2936	17 0 62 <1 849 1229 1039 1243 3876	5 0 57 <1 863 1162 966 1210 3379
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	2 2 60 <1 922 1115 1056 1232 2936	17 0 62 <1 849 1229 1039 1243 3876 history1	5 0 57 <1 863 1162 966 1210 3379 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	2 2 60 <1 922 1115 1056 1232 2936 current	17 0 62 <1 849 1229 1039 1243 3876 history1	5 0 57 <1 863 1162 966 1210 3379 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 Iimit/base >25	2 2 60 <1 922 1115 1056 1232 2936 current 3	17 0 62 <1 849 1229 1039 1243 3876 history1	5 0 57 <1 863 1162 966 1210 3379 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	2 2 60 <1 922 1115 1056 1232 2936 current 3 3	17 0 62 <1 849 1229 1039 1243 3876 history1 3 4	5 0 57 <1 863 1162 966 1210 3379 history2 4 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm	ASTM D5185m	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 >5	2 2 60 <1 922 1115 1056 1232 2936 current 3 3 1 1.1	17 0 62 <1 849 1229 1039 1243 3876 history1 3 4 3 <1.0	5 0 57 <1 863 1162 966 1210 3379 history2 4 7 0 <1.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm	ASTM D5185m	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 >5	2 2 60 <1 922 1115 1056 1232 2936 current 3 3 1 1.1 current 0.1	17 0 62 <1 849 1229 1039 1243 3876 history1 3 4 3 <1.0 history1 0.3	5 0 57 <1 863 1162 966 1210 3379 history2 4 7 0 <1.0 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 >5 limit/base	2 2 60 <1 922 1115 1056 1232 2936 current 3 3 1 1.1 current 0.1 7.0	17 0 62 <1 849 1229 1039 1243 3876 history1 3 4 3 <1.0 history1 0.3 9.5	5 0 57 <1 863 1162 966 1210 3379 history2 4 7 0 <1.0 history2 0.3 9.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7624	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 >5 limit/base >3 >20 >30	2 2 60 <1 922 1115 1056 1232 2936	17 0 62 <1 849 1229 1039 1243 3876 history1 3 <1.0 history1 0.3 9.5 20.5	5 0 57 <1 863 1162 966 1210 3379 history2 4 7 0 <1.0 history2 0.3 9.1 20.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm	ASTM D5185m ASTM D78185m ASTM D7844 *ASTM D7624 *ASTM D7624 *ASTM D7415 method	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 >5 limit/base >3 >20 >30 limit/base	2 2 60 <1 922 1115 1056 1232 2936 current 3 3 1 1.1 current 0.1 7.0 18.4 current	17 0 62 <1 849 1229 1039 1243 3876 history1 3 4 3 <1.0 history1 0.3 9.5 20.5 history1	5 0 57 <1 863 1162 966 1210 3379 history2 4 7 0 <1.0 history2 0.3 9.1 20.0 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7624	0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 >5 limit/base >3 >20 >30	2 2 60 <1 922 1115 1056 1232 2936	17 0 62 <1 849 1229 1039 1243 3876 history1 3 <1.0 history1 0.3 9.5 20.5	5 0 57 <1 863 1162 966 1210 3379 history2 4 7 0 <1.0 history2 0.3 9.1 20.0



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

Fuel Dilution		
12.0		
10.0		
8.0 - Severe	1 / 1	-
Abnormal		
4.0		
2.0-		
0.0		
Aug29/19 Jan14/20	un 15/20 Jul6/20	
Aug2	Jul L	

Base Number

10.0

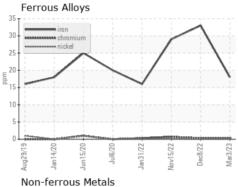
(mg KOH/g)

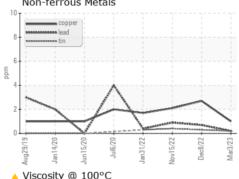
Base

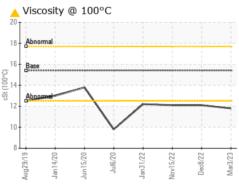
0.0

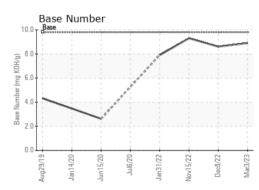
FLUID PROF	ENTIES	memod	IIIIII/Dase	Current	HISTORY	HISTOR
Visc @ 100°C	cSt	ASTM D445	15.4	<u> </u>	<u>▲</u> 12.1	<u>▲</u> 12.1

GRAPHS









GFL Environmental - 9999 - Moved No Longer Used Units



Laboratory Sample No. Lab Number Unique Number : 10374064

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0065552

Received : 05789393

: 13 Mar 2023 : 17 Mar 2023 Diagnosed Diagnostician : Jonathan Hester

Test Package: FLEET (Additional Tests: FuelDilution, PercentFuel)

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)

US

T:

F:

Contact: