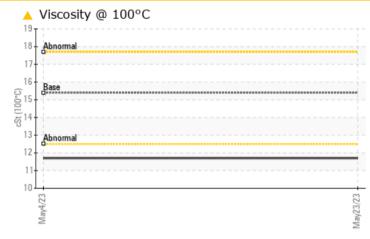




## Machine Id 713028

Component Diesel Engine Fluid PETRO CANADA DURON SHP 15W40 (--- GAL)

## COMPONENT CONDITION SUMMARY



## RECOMMENDATION

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

PROBLEMATIC	C TEST	<b>RESULT</b>	S			
Sample Status				ATTENTION	ATTENTION	
Visc @ 100°C	cSt	ASTM D445	15.4	<u> </u>	<b>11.7</b>	

Customer Id: GFL821 Sample No.: GFL0076801 Lab Number: 05861641 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data: Sean Felton +1 919-379-4092 sfelton@wearcheckusa.com

*To change component or sample information:* Customer Service +1 1-800-237-1369 <u>customerservice@wearcheck.com</u> There are no recommended actions for this sample.

#### **HISTORICAL DIAGNOSIS**

#### 04 May 2023 Diag: Jonathan Hester

VISCOSITY



No corrective action is recommended at this time. Resample at the next service interval to monitor. Metal levels are typical for a new component breaking in. Fuel content negligible. 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**

Sample Rating Trend



# Machine Id 713028

Component

Diesel Engine

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

## DIAGNOSIS

#### A Recommendation

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

#### Wear

Metal levels are typical for a new component breaking in.

#### Contamination

There is no indication of any contamination in the oil.

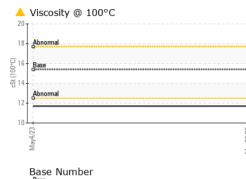
### Fluid Condition

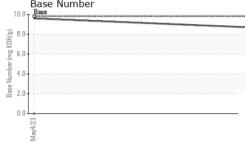
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

SAMPLE INFORM	<b>IATION</b>	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0076801	GFL0076845	
Sample Date		Client Info		23 May 2023	04 May 2023	
Machine Age	hrs	Client Info		278	180	
Oil Age	hrs	Client Info		200	180	
Oil Changed		Client Info		Not Changd	Not Changd	
Sample Status				ATTENTION	ATTENTION	
CONTAMINATIO	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	0.9	
Glycol		WC Method	20	NEG	NEG	
WEAR METALS			line it /le e e e			la interne O
	)	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	24	17	
Chromium	ppm	ASTM D5185m	>20	<1	<1	
Nickel	ppm	ASTM D5185m	>4	0	<1	
Titanium	ppm	ASTM D5185m		0	0	
Silver	ppm	ASTM D5185m	>3	<1	<1	
Aluminum	ppm	ASTM D5185m	>20	2	2	
Lead	ppm	ASTM D5185m	>40	0	<1	
Copper	ppm	ASTM D5185m	>330	12	10	
Tin	ppm	ASTM D5185m	>15	<1	<1	
Vanadium	ppm	ASTM D5185m		0	<1	
Vanaulum	pp			•		
Cadmium	ppm	ASTM D5185m		0	0	
			limit/base			history2
Cadmium		ASTM D5185m	limit/base 0	0	0	
Cadmium ADDITIVES Boron	ppm	ASTM D5185m method		0 current	0 history1	
Cadmium ADDITIVES	ppm ppm	ASTM D5185m method ASTM D5185m	0	0 current 42	0 history1 42	history2
Cadmium ADDITIVES Boron Barium	ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	0	0 current 42 2	0 history1 42 2	history2
Cadmium ADDITIVES Boron Barium Molybdenum	ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	0 current 42 2 45	0 history1 42 2 43	history2  
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	0 current 42 2 45 5	0 history1 42 2 43 5	history2   
Cadmium ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	0 current 42 2 45 5 852	0 history1 42 2 43 5 846	history2   
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	0 current 42 2 45 5 852 1233	0 history1 42 2 43 5 846 1197	history2     
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	0 current 42 2 45 5 852 1233 750	0 history1 42 2 43 5 846 1197 748	history2     
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	0 current 42 2 45 5 852 1233 750 920	0 history1 42 2 43 5 846 1197 748 923	history2       
Cadmium ADDITIVES Boron Barium Molybdenum Maganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	0 current 42 2 45 5 852 1233 750 920 2825	0 history1 42 2 43 5 846 1197 748 923 2927	history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT	ppm ppm 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 1010 1070 1150 1270 2060	0 current 42 2 45 5 852 1233 750 920 2825 current	0 history1 42 2 43 5 846 1197 748 923 2927 history1	history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon	ppm ppm ppm 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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060	0 current 42 2 45 5 852 1233 750 920 2825 current 15	0 history1 42 2 43 5 846 1197 748 923 2923 2927 history1 15	history2 history2 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium	ppm ppm ppm 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 ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 Iimit/base >25	0 current 42 2 45 5 852 1233 750 920 2825 current 15 6	0 history1 42 2 43 5 846 1197 748 923 2927 history1 15 5	history2 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25	0 current 42 2 45 5 852 1233 750 920 2825 current 15 6 2	0 history1 42 2 43 5 846 1197 748 923 2927 history1 15 5 2	history2 history2 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25	0 current 42 2 45 5 852 1233 750 920 2825 current 15 6 2 current	0 history1 42 2 43 5 846 1197 748 923 2927 history1 15 5 2 2 history1	history2 history2 history2 history2 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3	0 current 42 2 45 5 852 1233 750 920 2825 current 15 6 2 current 0.3	0 history1 42 2 43 5 846 1197 748 923 2927 history1 15 5 2 2 history1 0.2	history2 history2 history2 history2 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3 >20	0 current 42 2 45 5 852 1233 750 920 2825 current 15 6 2 current 0.3 10.0	0 history1 42 2 43 5 846 1197 748 923 2927 history1 15 5 2 2 history1 0.2 8.6	history2 history2 history2 history2 history2 history2 history2 history2 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANT Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 <b>Iimit/base</b> >25 <b>S</b> 3 >20 >3 >20	0 current 42 2 45 5 852 1233 750 920 2825 current 15 6 2 current 0.3 10.0 21.1	0 history1 42 2 43 5 846 1197 748 923 2927 history1 15 5 2 2 history1 0.2 8.6 21.0	history2                        history2            history2            history2            history2            history2

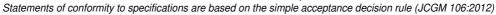


## **OIL ANALYSIS REPORT**





	VISUAL		method	limit/base	current	history1	history2
	White Metal	scalar	*Visual	NONE	NONE	NONE	
1	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	
	Precipitate	scalar	*Visual	NONE	NONE	NONE	
	Silt	scalar	*Visual	NONE	NONE	NONE	
	Debris	scalar	*Visual	NONE	NONE	NONE	
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	
May23/23	Appearance	scalar	*Visual	NORML	NORML	NORML	
May	Odor	scalar	*Visual	NORML	NORML	NORML	
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	
	Free Water	scalar	*Visual		NEG	NEG	
	FLUID PROPE	RTIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	15.4	<b>11.7</b>	<b>11.7</b>	
	GRAPHS						
	Ferrous Alloys						
	25 iron						
	20 - nickel						
	15- E						
	10						
	5						
	0						
	May4/23			May23/23			
				May			
	Non-ferrous Meta	ls					
	12 copper						
	10 - economic lead						
	8-						
	E 6-						
	4						
	2-						
				~			
	0			y23/23			
	0 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9			May23/23			
	0			2	Base Numbe	r	
	Viscosity @ 100°C			CZ/CZ/ReW		r	
	<sup>0</sup> <sup>E22</sup> / <sup>5/4</sup> <sup>E02</sup> / <sup>5/4</sup> <sup>W</sup> <sup>W</sup> <sup>10</sup> <sup>10</sup> <sup>10</sup>			≥ 10.0	Base	r	
	Viscosity @ 100°C			≥	Base	r	
	Viscosity @ 100°C			≥	Base	r	
	Viscosity @ 100°C			≥	- Base	r	
	Viscosity @ 100°C			N (DHO) (DHO	Base	r	
	Viscosity @ 100°C			≥	Base	r	
	Viscosity @ 100°C			> 10.0 (0)HOX Bu) Jaquin 4.0 Bu) Jaquin 4.0 Bu Jaquin 4.0	Base	r	
	Viscosity @ 100°C			> 10.0 (0)HOX Bu) Jaquin 4.0 Bu) Jaquin 4.0 Bu Jaquin 4.0	Base	r 	
	Viscosity @ 100°C			N (0)HOX 00 but 39 but 39 but 39 but 39 but 4.0 2.0	Base	r	
	Viscosity @ 100°C	2	on Ave Ca	N 10.0 (6)HOX 6.0 but but but but but but but but but but	Base		Ozarks Hauli
Laboratory Sample No.	Viscosity @ 100°C	2		N 10.0 (6)HOX 6.0 but baquing see 2.0 EZ/EZ/EW	Base	vironmental - 821 -	
Laboratory Sample No. Lab Number	Viscosity @ 100°C	501 Madise Received Diagnose	:01. d:02.	N 10.0 (0)HOX Bull 36.0 10.	Base	vironmental - 821 -	24 Olath Dri Lebanon, N
Laboratory Sample No. Lab Number Unique Number	Viscosity @ 100°C	501 Madise Received	:01. d:02.	N 10.0 (0)HOX 60.0 1000 60.0	Base	nvironmental - 821 - 339	24 Olath Dri Lebanon, N US 655
Laboratory Sample No. Lab Number Unique Number Test Package	Viscosity @ 100°C	501 Madis Received Diagnose Diagnosti	:01. d:02. cian:Sea	2 10.0 (0)HOX Bull 30 6.0 bull 30 6.0 bull 30 6.0 control 4.0 control 4.0 cont	Base	nvironmental - 821 - 339	24 Olath Dri Lebanon, N US 655 anden Johns



Contact/Location: GFL821, GFL824 and GFL829 - Landen Johnson - GFL821