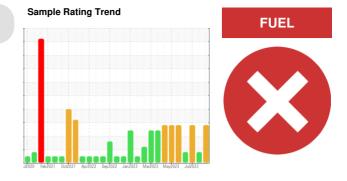


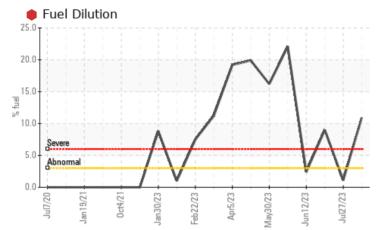
PROBLEM SUMMARY

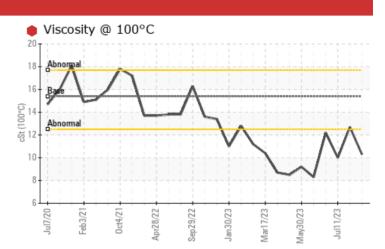


Machine Id 724001

Component Diesel Engine Fluid PETRO CANADA DURON SHP 15W40 (12 QTS)

COMPONENT CONDITION SUMMARY





RECOMMENDATION

We advise that you check the fuel injection system. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS							
Sample Status				SEVERE	MARGINAL	SEVERE	
Fuel	%	ASTM D3524	>3.0	🛑 10.9	▲ 1.1	9.0	
Visc @ 100°C	cSt	ASTM D445	15.4	e 10.3	12.7	• 10.0	

Customer Id: GFL010 Sample No.: GFL0088704 Lab Number: 05938586 Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data: Wes Davis +1 905-569-8600 x223 wesd@wearcheck.ca

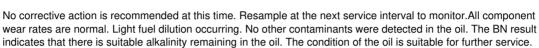
To change component or sample information: Customer Service +1 1-800-237-1369 customerservice@wearcheck.com

RECOMMENDED ACTIONS								
Action	Status	Date	Done By	Description				
Change Fluid			?	We recommend that you drain the oil from the component if this has not already been done.				
Resample			?	We recommend an early resample to monitor this condition.				
Check Fuel/injector System			?	We advise that you check the fuel injection system.				

HISTORICAL DIAGNOSIS



FUEL





11 Jul 2023 Diag: Wes Davis

27 Jul 2023 Diag: Wes Davis



We advise that you check the fuel injection system. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.All component wear rates are normal. There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.



view report

12 Jun 2023 Diag: Wes Davis



No corrective action is recommended at this time. Resample at the next service interval to monitor.All component wear rates are normal. Light fuel dilution occurring. No other contaminants were detected in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.





OIL ANALYSIS REPORT

Sample Rating Trend

FUEL

Machine Id 724001

Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (12 QTS)

DIAGNOSIS

Recommendation

We advise that you check the fuel injection system. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

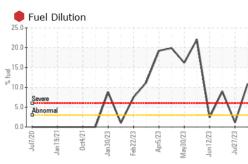
Fluid Condition

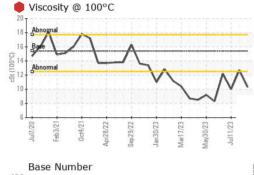
The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

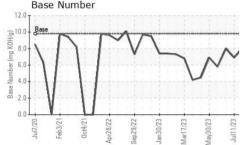
NTS)		JI2020 Feb202	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2022 Jan2023 Mar2023 May2023	Jui2023	
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0088704	GFL0088785	GFL0086133
Sample Date		Client Info		28 Aug 2023	27 Jul 2023	11 Jul 2023
Machine Age	hrs	Client Info		12048	11826	11690
Oil Age	hrs	Client Info		222	1123	987
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				SEVERE	MARGINAL	SEVERE
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	>90	8	2	9
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	<1	4
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	0	0	<1
Tin	ppm	ASTM D5185m	>15	<1	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
	ppm	method ASTM D5185m	limit/base 0	current 10	history1 22	history2 0
Boron	ppm ppm		0		-	
Boron Barium		ASTM D5185m	0	10	22	0
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m	0 0 60	10 0	22 0	0
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	10 0 51	22 0 58	0 0 50
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	10 0 51 <1	22 0 58 0	0 0 50 <1
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	10 0 51 <1 730	22 0 58 0 821	0 0 50 <1 668
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	10 0 51 <1 730 931	22 0 58 0 821 1057	0 0 50 <1 668 924
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm 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	10 0 51 <1 730 931 827	22 0 58 0 821 1057 937	0 0 50 <1 668 924 791
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm 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 1270	10 0 51 <1 730 931 827 1032 3084	22 0 58 0 821 1057 937 1124	0 0 50 <1 668 924 791 968
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	10 0 51 <1 730 931 827 1032 3084	22 0 58 0 821 1057 937 1124 3385	0 0 50 <1 668 924 791 968 2973
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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	10 0 51 <1 730 931 827 1032 3084 current	22 0 58 0 821 1057 937 1124 3385 history1	0 0 50 <1 668 924 791 968 2973 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base	10 0 51 <1 730 931 827 1032 3084 <u>current</u> 2	22 0 58 0 821 1057 937 1124 3385 history1 4	0 0 50 <1 668 924 791 968 2973 kistory2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	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 method ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >25	10 0 51 <1 730 931 827 1032 3084 <u>Current</u> 2 2 2	22 0 58 0 821 1057 937 1124 3385 history1 4 <	0 0 50 <1 668 924 791 968 2973 history2 3 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	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 method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 1010 1070 1150 1270 2060 limit/base >25	10 0 51 <1 730 931 827 1032 3084 Current 2 2 2 1 1 € 10.9	22 0 58 0 821 1057 937 1124 3385 history1 4 <1 0	0 0 50 <1 668 924 791 968 2973 bistory2 3 2 2 2 2 9.0 bistory2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel 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 >20 >20 >3.0	10 0 51 <1 730 931 827 1032 3084 Current 2 2 2 1 1 10.9 € Urrent 0.3	22 0 58 0 821 1057 937 1124 3385 history1 4 <1 0 <▲ 1.1 0 1.1	0 0 50 <1 668 924 791 968 2973 history2 3 2 2 2 2 9.0 history2 0.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	0 0 1010 1070 1150 1270 2060 bimit/base >20 >3.0 bimit/base >6	10 0 51 <1 730 931 827 1032 3084 current 2 2 2 1 1 0.9 10.9	22 0 58 0 821 1057 937 1124 3385 history1 4 <1 0 0 ▲ 1.1 history1	0 0 50 41 668 924 791 968 2973 bistory2 3 2 2 2 9.0 bistory2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	<pre>ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm</pre>	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >20 >3.0 imit/base >20 >3.0	10 0 51 <1 730 931 827 1032 3084 Current 2 2 2 1 1 10.9 € Urrent 0.3	22 0 58 0 821 1057 937 1124 3385 history1 4 <1 0 <▲ 1.1 0 1.1	0 0 50 <1 668 924 791 968 2973 history2 3 2 2 2 2 2 9.0 history2 0.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	<pre>ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm</pre>	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 >20 >3.0 imit/base >20 >3.0	10 0 51 <1 730 931 827 1032 3084 Current 2 2 2 1 1 0.9 Current 0.3 6.8 16.9	22 0 58 0 821 1057 937 1124 3385 history1 4 <1 0 ↓ 1.1 history1 0.1 4.4	0 0 50 <1 668 924 791 968 2973 history2 3 2 2 2 9.0 history2 0.3 7.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	<pre>ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm</pre>	ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >6 >20 >3.0	10 0 51 <1 730 931 827 1032 3084 Current 2 2 2 1 1 0.9 Current 0.3 6.8 16.9	22 0 58 0 821 1057 937 1124 3385 history1 4 <1 0 0 ▲ 1.1 history1 0.1 4.4 15.9	0 0 50 41 668 924 791 968 2973 history2 3 2 2 2 9.0 history2 0.3 7.4 18.3



OIL ANALYSIS REPORT







1		VISUAL		method	limit/base	current	history1	history2
$ \land / $		White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
		Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
/ 1		Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
		Silt	scalar	*Visual	NONE	NONE	NONE	NONE
	$\Lambda \Lambda$	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
	VV							
		Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
+eb 22/23 Apr5/23 May30/23	Jun12/23 Jul27/23	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
He Ma	nr ír	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	RTIES	method	limit/base	current	history1	history2
5		Visc @ 100°C	cSt	ASTM D445	15.4	• 10.3	12.7	• 10.0
N	\mathbb{N}	GRAPHS						
\sim	\sim	Ferrous Alloys						
4 m m		350 iron						
Jan 30/23 Mar1 7/23	v/30	300 - chromium						
Ja Me	Ma	250 -			1.1.1			
	E	200						
	đ	200						
		100-	٨					
\square			Λ					
\sim	$\sim \sim$	50	IL	~				
	/*		13		3			
		Jul7/20 Feb3/21 0ct4/21 Apr28/22	Sep29/22 - Jan30/23 -	Mar17/23 May30/23	22/11/nC			
		10.		Ma	5			
		Non-ferrous Metal	S					
Jan 30/23 Mar 17/23	May30/23 Jul11/23	35 copper]		101 101 101				
Jar Ma	Ma	30 - near lead						
		25-						
	E	20-						
	ad	20-						
		10-		11				
		지 말 한 한 번 한 말 한 말 한	A					
		show 1	1					
			22	E E				
		Jul7/20 Feb3/21 0ct4/21 Apr28/22	Sep29/22 Jan30/23	Mar17/23 May30/23	22/1 UnC			
			S P					
		Viscosity @ 100°C	2	2 2	5	Paca Number		
			2 1711-11	~ 2		Base Number		
		Viscosity @ 100°C	2	2 2	1	2.0		
		Viscosity @ 100°C	с А	M	1		<u> </u>	
	5	Viscosity @ 100°C	Λ	~ <u>v</u>	1	2.0	M	
	13-00-01	Viscosity @ 100°C	Λ,	2 10	1	0.0 Base	~\/_	
	est (100°C)	Viscosity @ 100°C	$\Lambda_{\mathcal{V}}$		1	2.0 0.0 - Base 6.0	~V_	\mathcal{M}
	cst (100°C)	Viscosity @ 100°C	\wedge		1	2.0 0.0 - Base 8.0 -	~V_	v
	(1-00-1) - 450	Viscosity @ 100°C	\wedge		Base Number (mg KOH(g)	2.0 0.0 - Base 6.0	~\/_	M
	eSt (100°C)	Viscosity @ 100°C	\wedge_{\vee}		Base Number (mg KOH(g)	2.0 0.0 - Base 6.0 - 4.0 - 2.0 -	^∕_	M
	cSt (100°C)	Viscosity @ 100°C	\wedge		Base Number (mg KON(g)	2.0 0.0 8.0 4.0 2.0 0.0	123- 123-	(23 (23 (23
	(2-001) 1999	Viscosity @ 100°C	\wedge		Base Number (mg KOH(g)	2.0 0.0 - Base 6.0 - 4.0 - 2.0 -	8ep29/22	Mari 7/23
		Viscosity @ 100°C	Sep29/22	Mar1723	Base Number (mg KOH(g)	2.0 0.0 8.0 4.0 2.0 0.0 0.0 12(kpg) 12		
	poratory	Viscosity @ 100°C	-27/62/dbg -27/62/62/dbg -27/62/d	EZULIEW con Ave., Ca	(0)HOX Buu) Jaquuny aseg	2.0 0.0 8.0 4.0 2.0 0.0 0.0 12(kpg) 12	ronmental - 0	010 - Stockbridg
TAR Sar	poratory mple No.	Viscosity @ 100°C	CZURZUBE 501 Madis Received	CZ/LIJEW CZ/CLIEW Son Ave., Ca Son Ave., Ca	ry, NC 275 Aug 2023	2.0 0.0 8.0 4.0 2.0 0.0 0.0 12(kpg) 12	ronmental - 0 1280 Rum	110 - Stockbridg Creek Parkwa
Sar Lat	poratory mple No. 5 Number	Viscosity @ 100°C	501 Madis Received Diagnose	CZ/LIJEW CZ/LIJEW Son Ave., Ca I : 30 A ed : 01 S	ry, NC 275 Aug 2023 Sep 2023	2.0 0.0 8.0 4.0 2.0 0.0 0.0 12(kpg) 12	ronmental - 0 1280 Rum	1 10 - Stockbridg n Creek Parkwa Stockbridge, G <i>i</i>
Sar Lat	poratory mple No. 5 Number que Number	Viscosity @ 100°C	601 Madis Received Diagnose	con Ave., Ca ician : Wes	ry, NC 275 Aug 2023 Sep 2023 s Davis	2.0 0.0 8.0 4.0 2.0 0.0 0.0 12.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	ronmental - 0 1280 Rum	1 10 - Stockbridg n Creek Parkwa Stockbridge, G <i>i</i> US 3028
Sar Lak Lak Unicate L2367 Tes	poratory mple No. 5 Number que Number st Package	Viscosity @ 100°C	501 Madis Received Diagnost Tests: Fu	con Ave., Ca i : 30 A ed : 01 S ician : Wes elDilution, Po	ry, NC 275 Aug 2023 Sep 2023 s Davis ercentFuel	2.0 0.0 8.0 4.0 2.0 0.0 0.0 12.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	ronmental - 0 1280 Rum Contact: J0	1 10 - Stockbridg n Creek Parkwa Stockbridge, G

Page 4 of 4