



Component Diesel Engine Fluid PETRO CANADA DURON SHP 15W40 (7 GAL)

Machine Id 10648

COMPONENT CONDITION SUMMARY





RECOMMENDATION

We advise that you check the fuel injection system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

PROBLEMATIC	CTEST	RESULT	S			
Sample Status				SEVERE	SEVERE	ABNORMAL
Fuel	%	ASTM D3524	>3.0	🛑 11.1	1 9.7	<1.0
Visc @ 100°C	cSt	ASTM D445	15.4	e 10.6	9 .6	13.2

Customer Id: GFL015 Sample No.: GFL0091192 Lab Number: 06000235 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		
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



08 Jun 2023 Diag: Don Baldridge

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. 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. 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

06 Apr 2022 Diag: Jonathan Hester



We advise that you check for the source of the coolant leak. Check for low coolant level. We recommend an early resample to monitor this condition. The aluminum level is abnormal. All other component wear rates are normal. Sodium and/or potassium levels remain high. The BN result indicates that there is suitable alkalinity remaining in the oil.

09 Dec 2021 Diag: Jonathan Hester

alkalinity remaining in the oil.





We advise that you check for the source of the coolant leak. Check for low coolant level. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.All component wear rates are normal. Sodium and/or potassium levels are high. The BN result indicates that there is suitable

view report





OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id 10648

Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (7 GAL)

DIAGNOSIS

Recommendation

We advise that you check the fuel injection system. The oil change at the time of sampling has been noted. 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.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0091192	GFL0082200	GFL0049273
Sample Date		Client Info		31 Oct 2023	08 Jun 2023	06 Apr 2022
Machine Age	hrs	Client Info		55535	633	12567
Oil Age	hrs	Client Info		1467	633	12567
Oil Changed		Client Info		Changed	Changed	Not Changd
Sample Status				SEVERE	SEVERE	ABNORMAL
CONTAMINAT	ON	method	limit/base	current	historv1	historv2
Chucol		WC Mathad		NEC	NEC	NEC
Giycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>75	41	116	15
Chromium	ppm	ASTM D5185m	>5	2	5	1
Nickel	ppm	ASTM D5185m	>4	<1	<1	<1
Titanium	ppm	ASTM D5185m	>2	<1	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	2	7	A 37
Lead	ppm	ASTM D5185m	>25	<1	<1	2
Copper	ppm	ASTM D5185m	>100	2	42	4
Tin	ppm	ASTM D5185m	>4	<1	<1	3
Antimony	ppm	ASTM D5185m				
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 7	history1 15	history2 15
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	limit/base 0 0	current 7 5	history1 15 0	history2 15 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60	current 7 5 57	history1 15 0 45	history2 15 0 109
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0	current 7 5 57 <1	history1 15 0 45 1	history2 15 0 109 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0 1010	current 7 5 57 <1 664	history1 15 0 45 1 606	history2 15 0 109 <1 871
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0 1010 1070	current 7 5 57 <1 664 933	history1 15 0 45 1 606 857	history2 15 0 109 <1 871 1073
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150	current 7 5 57 <1 664 933 827	history1 15 0 45 1 606 857 718	history2 15 0 109 <1 871 1073 1038
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150 1270	current 7 5 57 <1 664 933 827 945	history1 15 0 45 1 606 857 718 901	history2 15 0 109 <1 871 1073 1038 1128
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150 1270 2060	current 7 5 57 <1 664 933 827 945 2640	history1 15 0 45 1 606 857 718 901 2338	history2 15 0 109 <1 871 1073 1038 1128 2714
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base	current 7 5 57 <1 664 933 827 945 2640 current	history1 15 0 45 1 606 857 718 901 2338 history1	history2 15 0 109 <1 871 1073 1038 1128 2714 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	current 7 5 57 <1 664 933 827 945 2640 current 7	history1 15 0 45 1 606 857 718 901 2338 history1 19	history2 15 0 109 <1 871 1073 1038 1128 2714 history2 10
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	current 7 5 57 <1 664 933 827 945 2640 current 7 7 7 7	history1 15 0 45 1 606 857 718 901 2338 history1 19 22	history2 15 0 109 <1 871 1073 1038 1128 2714 history2 10 ▲ 388
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	current 7 5 57 <1 664 933 827 945 2640 current 7 10	history1 15 0 45 1 606 857 718 901 2338 history1 19 22 25	history2 15 0 109 <1 871 1073 1038 1128 2714 history2 10 ▲ 388 ▲ 509
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >20 >3.0	current 7 5 57 <1 664 933 827 945 2640 current 7 7 10 11.1	history1 15 0 45 1 606 857 718 901 2338 19 19 22 25 ■ 19.7	history2 15 0 109 <1 871 1073 1038 1128 2714 history2 10 ▲ 388 ▲ 509 <1.0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	method ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base >20 >3.0 limit/base	current 7 5 57 <1 664 933 827 945 2640 current 7 10 11.1 current	history1 15 0 45 1 606 857 718 901 2338 history1 19 22 25 19.7 history1	history2 15 0 109 <1 871 1073 1038 1128 2714 history2 10 ▲ 388 ▲ 509 <1.0 history2
ADDITIVES 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	method ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >6	current 7 5 57 <1 664 933 827 945 2640 current 7 10 11.1 current 0.5	history1 15 0 45 1 606 857 718 901 2338 history1 19 22 25 19.7 history1 1.6	history2 15 0 109 <1 871 1073 1038 1128 2714 history2 10 ▲ 388 ▲ 509 <1.0 history2 0.3
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >6 >20	current 7 5 57 <1 664 933 827 945 2640 current 7 10 11.1 current 0.5 11.1	history1 15 0 45 1 606 857 718 901 2338 history1 19 22 25 19.7 history1 1.6 1.3.7	history2 15 0 109 <1 871 1073 1038 1128 2714 bistory2 10 ▲ 388 ▲ 509 <1.0 bistory2 0.3 9.8
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base >20 >3.0 limit/base >6 >20 >30	current 7 5 57 <1 664 933 827 945 2640 current 7 7 10 11.1 current 0.5 11.1 21.2	history1 15 0 45 1 606 857 718 901 2338 history1 19 22 25 19.7 history1 1.6 13.7 25.8	history2 15 0 109 <1 871 1073 1038 1128 2714 Nistory2 10 ▲ 388 ▲ 509 <1.0 Nistory2 0.3 9.8 20.5
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAT	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 0 0 60 0 1010 1070 1150 1270 2060 limit/base >20 >3.0 limit/base >6 >20 >3.0	current 7 5 57 <1 664 933 827 945 2640 current 7 10 11.1 current 0.5 11.1 21.2	history1 15 0 45 1 606 857 718 901 2338 history1 19 22 25 19.7 19.7 19 22 25 19.7 history1 1.6 13.7 25.8 history1	history2 15 0 109 <1 871 1073 1038 1128 2714 bistory2 10 ▲ 388 ▲ 509 <1.0 bistory2 0.3 9.8 20.5 bistory2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE	ppm ppm ppm ppm ppm ppm ppm ppm ppm % TS ppm ppm % % Abs/cm Abs/.1mm	method ASTM D5185m ASTM D7844 *ASTM D7415 method	limit/base 0 0 0 0 0 1010 1070 1150 1270 2060 limit/base >20 >3.0 limit/base >20 >3.0 limit/base >20 3.0 limit/base >20 3.0	current 7 5 57 <1 664 933 827 945 2640 current 7 7 10 11.1 current 0.5 11.1 21.2 current	history1 15 0 45 1 606 857 718 901 2338 history1 19 22 25 19.7 history1 1.6 13.7 25.8 history1	history2 15 0 109 <1 871 1073 1038 1128 2714 Nistory2 10 ▲ 388 ▲ 509 <1.0 History2 0.3 9.8 20.5 history2 15.0
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D7844 *ASTM D7415 method *ASTM D7414	limit/base 0 0 0 60 0 1010 1070 1150 1270 2060 limit/base >20 >3.0 limit/base >6 >20 >30 limit/base >20 >30	current 7 5 57 <1 664 933 827 945 2640 current 7 7 10 11.1 current 0.5 11.1 21.2 current 19.4 5.7	history1 15 0 45 1 606 857 718 901 2338 history1 19 22 25 19.7 history1 1.6 13.7 25.8 history1	history2 15 0 109 <1 871 1073 1038 1128 2714 Nistory2 10 ▲ 388 ▲ 509 <1.0 ► 10 ▲ 388 ▲ 509 <1.0 ► 10 ► 10



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
1	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
/19- 1/23- /23-	Appearance	scalar	*Visual	NORMI	NORMI	NORMI	NORMI
Jan 29 Apré Jun 8	Odor	scalar	*Visual	NORMI	NORMI	NORMI	NORMI
-	Emulsified Water	scalar	*Vieual	>0.2	NEG	NEG	NEG
	Endisilied Water	scalar	*Vieual	20.2	NEG	NEG	NEG
	Fiee Walei	Scalal	VISUAI		NEG	NEG	NEG
\wedge	FLUID PROPE	RTIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	15.4	10.6	9.6	13.2
<u> </u>	GRAPHS						
	Ferrous Alloys						
21- 22- 23-	iron						
lan 29. Apr9. Jun 8,	500 - nickel						
7	400-						
	Ē 300-						
\wedge	200						
	200						
	100		\wedge \land				
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\sim	26/18 29/18 29/18	29/21	sc9/21 or6/22	31/23			
\sim	Juni Jani	Jan Aj	Ju Ap	Oct			
V	Non-ferrous Meta	ls					
n29/21 pr9/21 pr6/22 n8/23	300 Copper 1	1 1	I I I				
Jar Ar Ju	250						
	200						
	Euro						
	ā 150						
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	20 19 19 19 19 19 19 10 10 10 10 10 10 10 10 10 10	/21- /21-	/21. 22 -	53			
	lun26, 0ct29, Jan29,	Jan 29 Apr9	Dec9 Apr6, Jun8,	0ct31			
	→ Viscosity @ 100°C	Ś		0			
	20 T	-		12	Base Numbe	r	
				12			\wedge
				10 5	.0 - Base	A	
	16 Base			NOH S	.0-	/ \/	·····
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	ka Abnormal			umbe		()	
	12			V 4		()	
	10-		\sim	~ [°] 2	.0		
	8	_	_	0	.0	V	
	6/18 9/19 3/20	^{29/21}	6/22	1/23	6/18 . 81/9	3/20 29/21	6/22
	Jun2 Jan2 Jul	Janź Api	Apr	0ct3	Jun2 Oct2 Jan2	Jul Jan2 Apri Dec	Apr Juni Oct3
Laboratory	: WearCheck USA - 5	501 Madi	son Ave., Ca	ry, NC 2751	3 GFL E	nvironmental - 0	15 - Columbia
ANAB Sample No.	: GFL0091192	Received	d :07	Nov 2023		780	U Farrow Road
Lab Number	: U6UUU235 • 10728595	Diagnos	ed :08 tician :Wo	NOV 2023 s Davis			Columpia, SC
Certificate 12367 Test Package	ELEFT (Additional)	Tests: Pe	ercentFuel)	5 Davis		Contact: NOF	I MATTHEWS
To discuss this sample report.	contact Customer Serv	rice at 1-8	300-237-1369	Э.		nmatthews	jr@gflenv.com
* - Denotes test methods that	are outside of the ISO 1	7025 scc	pe of accred	litation.		T:	(803)935-0249

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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Submitted By: NOEL MATTHEWS

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