

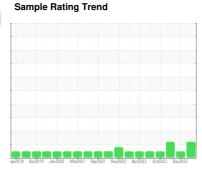
OIL ANALYSIS REPORT



Machine Id 801036 Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (19 LTR)





DIAGNOSIS

Recommendation

Check for low coolant level. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

All component wear rates are normal.

Contamination

Water treatment chemicals present, indicating slow coolant leak. Test for glycol is negative. There is no indication of any contamination in the oil.

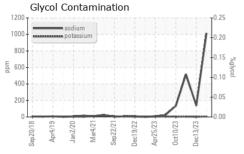
Fluid Condition

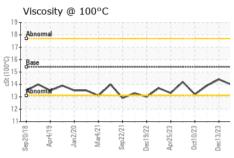
The condition of the oil is acceptable for the time in service (see recommendation).

	9 LTR)	ep2018 Apr20	19 Jan2020 Mar2021 Sep	p2021 Dec2022 Apr2023 Oct2023	Deczoza			
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2		
Sample Number		Client Info		GFL0111729	WC0875108	WC0875111		
Sample Date		Client Info		29 Feb 2024	13 Dec 2023	05 Dec 2023		
Machine Age	hrs	Client Info		11461	120211	10854		
Oil Age	hrs	Client Info		0	120211	352		
Oil Changed		Client Info		Changed	N/A	Changed		
Sample Status				ATTENTION	NORMAL	ATTENTION		
CONTAMINAT	ION	method	limit/base	current	history1	history2		
Fuel		WC Method	>5	<1.0	<1.0	<1.0		
Water		WC Method	>0.2	NEG	NEG	NEG		
WEAR METAL	S	method	limit/base	current	history1	history2		
Iron	ppm	ASTM D5185(m)	>80	49	8	29		
Chromium	ppm	ASTM D5185(m)	>5	1	0	<1		
Nickel	ppm	ASTM D5185(m)	>2	<1	<1	<1		
Titanium	ppm	ASTM D5185(m)		0	0	0		
Silver	ppm	ASTM D5185(m)	>3	0	<1	<1		
Aluminum	ppm	ASTM D5185(m)	>30	4	2	4		
Lead	ppm	ASTM D5185(m)	>30	<1	0	<1		
Copper	ppm	ASTM D5185(m)	>150	2	<1	1		
Tin	ppm	ASTM D5185(m)	>5	0	0	0		
Antimony	ppm	ASTM D5185(m)		0	0	0		
Vanadium	ppm	ASTM D5185(m)		0	0	0		
Beryllium	ppm	ASTM D5185(m)		0	0	0		
Cadmium	ppm	ASTM D5185(m)		0	0	0		
ADDITIVES		method	limit/base	current	history1	history2		
Boron	ppm	ASTM D5185(m)	0	7	23	46		
Barium	ppm	ASTM D5185(m)	0	0	<1	<1		
Molybdenum	ppm							
	PPIII	ASTM D5185(m)	60	60	60	66		
Manganese	ppm	ASTM D5185(m) ASTM D5185(m)	60 0	60 <1	60 0	66 0		
Manganese Magnesium		. ,						
•	ppm	ASTM D5185(m)	0	<1	0	0		
Magnesium	ppm	ASTM D5185(m) ASTM D5185(m)	1010	<1 837	0 907 1025 977	0 789		
Magnesium Calcium Phosphorus Zinc	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 1010 1070 1150 1270	<1 837 1034 808 1080	0 907 1025 977 1176	0 789 1117 940 1166		
Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 1010 1070 1150	<1 837 1034 808 1080 2553	0 907 1025 977 1176 2608	0 789 1117 940 1166 2511		
Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 1010 1070 1150 1270	<1 837 1034 808 1080	0 907 1025 977 1176	0 789 1117 940 1166		
Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 1010 1070 1150 1270	<1 837 1034 808 1080 2553	0 907 1025 977 1176 2608 <1	0 789 1117 940 1166 2511 <1		
Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	0 1010 1070 1150 1270 2060	<1 837 1034 808 1080 2553 <1 current	0 907 1025 977 1176 2608	0 789 1117 940 1166 2511 <1		
Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) method	0 1010 1070 1150 1270 2060	<1 837 1034 808 1080 2553 <1	0 907 1025 977 1176 2608 <1	0 789 1117 940 1166 2511 <1		
Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185(m) MASTM D5185(m) MASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 1010 1070 1150 1270 2060	<1 837 1034 808 1080 2553 <1 current 9 1012 7	0 907 1025 977 1176 2608 <1 history1 4 137	0 789 1117 940 1166 2511 <1 history2 6 517 6		
Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m)	0 1010 1070 1150 1270 2060 limit/base >20	<1 837 1034 808 1080 2553 <1 current 9 1012	0 907 1025 977 1176 2608 <1 history1 4 137	0 789 1117 940 1166 2511 <1 history2 6 517		
Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185(m) MASTM D5185(m) MASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 1010 1070 1150 1270 2060 limit/base >20	<1 837 1034 808 1080 2553 <1 current 9 1012 7	0 907 1025 977 1176 2608 <1 history1 4 137	0 789 1117 940 1166 2511 <1 history2 6 517 6		
Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Glycol	ppm	ASTM D5185(m) MASTM D5185(m) MASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 1010 1070 1150 1270 2060 limit/base >20	<1 837 1034 808 1080 2553 <1 current 9 1012 7 0.0	0 907 1025 977 1176 2608 <1 history1 4 137 1 0.0	0 789 1117 940 1166 2511 <1 history2 6 517 6 0.0		
Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED	ppm	ASTM D5185(m) METHOD ASTM D5185(m) ASTM D7922*	0 1010 1070 1150 1270 2060 limit/base >20 >20	<1 837 1034 808 1080 2553 <1 current 9 1012 7 0.0 current	0 907 1025 977 1176 2608 <1 history1 4 137 1 0.0 history1	0 789 1117 940 1166 2511 <1 history2 6 517 6 0.0 history2		



OIL ANALYSIS REPORT





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		JID DEGRADATION method				limit/base current			ent		histo	ory i	history2									
	Oxida						>25 19.1					1	13.5		17.2							
	VIS	ISUAL method								curre	ent		histo	ry1	history2							
	Emuls	ulsified Water scalar Visual* e Water scalar Visual*				NEG NE						NEG										
	Free \						N	EG		NEG			NEG									
	FLU	FLUID PROPERTIES method sc @ 100°C cSt ASTM D7279(m)					limit/l	oase		curre	ent		histo	ry1	history2							
	Visc @						15.4	15.4 1 4			14.0				13.9							
	GRAPHS																					
		Iron (ppm)										Lead (ppm)										
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		Aluminum (ppm)											Chromium (ppm)									
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	Sep20/18	Apr4/1	Jan2/2(Mar4/21	Sep22/21	Dec19/22	Apr25/23	Oct10/23	Dec13/23		Sep20/18	Apr4/19	Jan2/20	Mar4/2	Sep22/21	Dec19/22	Apr25/23	Oct10/23	Dec13/23			
		Viscosity @ 100°C														ā	A	0	0			
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	18 - Abnor	mai								1000 -			odium otassium					1	0.20			
:St (100°C)										800 - E								1	0.15 🚉			
St (10	15	1							$\overline{}$	튭 600-		1				111	A	1	glycol			



CALA ISO 17025:2017 Accredited Laboratory

Laboratory

Sample No. Lab Number : 02619483 Unique Number : 5736593

: GFL0111729

Test Package : MOB 1 (Additional Tests: Glycol)

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 Received : 04 Mar 2024 **Tested** : 04 Mar 2024

Diagnosed

: 05 Mar 2024 - Kevin Marson

GFL Environmental - 217 - Aurora 14131 BAYVIEW AVE, AURORA YARD AURORA, ON CA L4G 0K6

Contact: Mike Havens MHavens@gflenv.com T:

F: (905)713-2445

To discuss this sample report, contact Customer Service at 1-800-268-2131.

Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. Validity of results and interpretation are based on the sample and information as supplied.

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