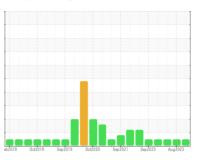


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id **8427** Component **Diesel Engine**

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

DIAGNOSIS

Recommendation

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.

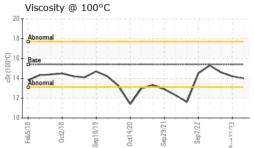
Fluid Condition

The condition of the oil is acceptable for the time in service.

LTR)		eb2018 0	±2018 Sep2019 Oc	2020 Sep2021 Sep2022	Aug2023	
SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0097447	GFL0085683	GFL0077310
Sample Date		Client Info		15 Nov 2023	21 Aug 2023	25 May 2023
Machine Age	hrs	Client Info		493	493	493
Oil Age	hrs	Client Info		493	493	493
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	.S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>100	14	17	15
Chromium	ppm	ASTM D5185(m)	>20	<1	<1	<1
Nickel	ppm	ASTM D5185(m)	>4	0	0	0
Titanium	ppm	ASTM D5185(m)		0	0	<1
Silver	ppm	ASTM D5185(m)	>3	<1	0	0
Aluminum	ppm	ASTM D5185(m)	>20	1	1	2
Lead	ppm	ASTM D5185(m)	>40	0	0	0
Copper	ppm	ASTM D5185(m)		<1	1	<1
Tin	ppm	ASTM D5185(m)	>15	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
ADDITIVES Boron	ppm	method ASTM D5185(m)	limit/base	current 2	history1	history2 6
	ppm				•	
Boron		ASTM D5185(m)	0	2	3	6
Boron Barium	ppm	ASTM D5185(m) ASTM D5185(m)	0	2 0	3	6
Boron Barium Molybdenum	ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 60	2 0 59	3 0 56	6 0 53
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 60 0	2 0 59 0	3 0 56 <1	6 0 53 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 60 0 1010	2 0 59 0 938	3 0 56 <1 930	6 0 53 <1 850
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 60 0 1010 1070 1150	2 0 59 0 938 1050	3 0 56 <1 930 1052	6 0 53 <1 850 1236
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185(m)	0 0 60 0 1010 1070 1150	2 0 59 0 938 1050 998	3 0 56 <1 930 1052 1040	6 0 53 <1 850 1236 1067
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	0 0 60 0 1010 1070 1150 1270	2 0 59 0 938 1050 998 1198	3 0 56 <1 930 1052 1040 1175	6 0 53 <1 850 1236 1067 1197
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	0 0 60 0 1010 1070 1150 1270	2 0 59 0 938 1050 998 1198 2411	3 0 56 <1 930 1052 1040 1175 2492	6 0 53 <1 850 1236 1067 1197 2614
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	0 0 60 0 1010 1070 1150 1270 2060	2 0 59 0 938 1050 998 1198 2411 <1	3 0 56 <1 930 1052 1040 1175 2492 <1	6 0 53 <1 850 1236 1067 1197 2614
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	0 0 60 0 1010 1070 1150 1270 2060	2 0 59 0 938 1050 998 1198 2411 <1	3 0 56 <1 930 1052 1040 1175 2492 <1 history1	6 0 53 <1 850 1236 1067 1197 2614 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	0 0 60 0 1010 1070 1150 1270 2060	2 0 59 0 938 1050 998 1198 2411 <1 current	3 0 56 <1 930 1052 1040 1175 2492 <1 history1	6 0 53 <1 850 1236 1067 1197 2614 <1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	0 0 60 0 1010 1070 1150 1270 2060	2 0 59 0 938 1050 998 1198 2411 <1 current 2	3 0 56 <1 930 1052 1040 1175 2492 <1 history1	6 0 53 <1 850 1236 1067 1197 2614 <1 history2 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	2 0 59 0 938 1050 998 1198 2411 <1 current 2 2	3 0 56 <1 930 1052 1040 1175 2492 <1 history1 3 2 <1	6 0 53 <1 850 1236 1067 1197 2614 <1 history2 2 2 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20	2 0 59 0 938 1050 998 1198 2411 <1 current 2 2 0	3 0 56 <1 930 1052 1040 1175 2492 <1 history1 3 2 <1 history1	6 0 53 <1 850 1236 1067 1197 2614 <1 history2 2 2 <1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185(m)	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	2 0 59 0 938 1050 998 1198 2411 <1 current 2 2 0	3 0 56 <1 930 1052 1040 1175 2492 <1 history1 3 2 <1 history1 0.7	6 0 53 <1 850 1236 1067 1197 2614 <1 history2 2 2 <1 history2 0.8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm	ASTM D5185(m) METHOD ASTM D5185(m) ASTM D7844* ASTM D7624* ASTM D7624*	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base	2 0 59 0 938 1050 998 1198 2411 <1 current 2 2 0 current 0.5 9.6	3 0 56 <1 930 1052 1040 1175 2492 <1 history1 3 2 <1 history1 0.7 11.1	6 0 53 <1 850 1236 1067 1197 2614 <1 history2 2 2 <1 history2 0.8 10.5

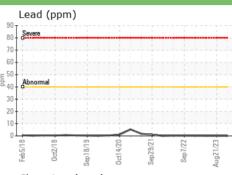


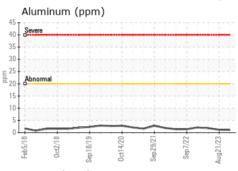
OIL ANALYSIS REPORT

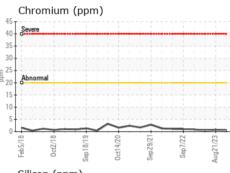


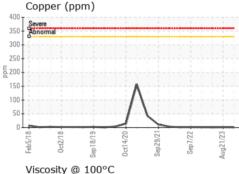
VISUAL		method				history2
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	14.0	14.2	14.6
GRAPHS						

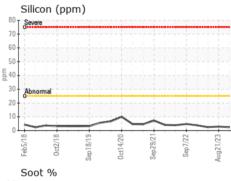
Iron (ppm) 200

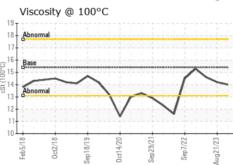


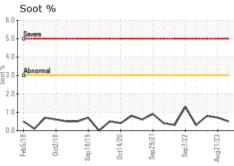














CALA ISO 17025:2017 Accredited Laboratory

Laboratory Sample No. Lab Number **Unique Number** Test Package : MOB 1

: 02597268 : 5682348

: GFL0097447

Received Diagnosed Diagnostician

: 17 Nov 2023 : 17 Nov 2023

: Wes Davis

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 221 - Windsor 905 Tecumseh Road W Windsor, ON CA N8W 4J5

Contact: Rhys Marotte rmarotte@gflenv.com T:

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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