

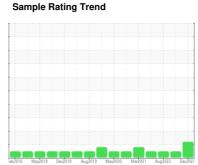
OIL ANALYSIS REPORT



Area 190700] **7980** Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (19 LTR)





DIAGNOSIS

Recommendation

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

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

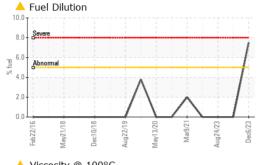
Fluid Condition

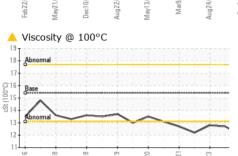
Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2	
Sample Number		Client Info		WC0875105	GFL0094210	GFL0091046	
Sample Date		Client Info		06 Dec 2023	03 Oct 2023	24 Aug 2023	
Machine Age	kms	Client Info		194946	143821	143821	
Oil Age	kms	Client Info		0	0	0	
Oil Changed	KIIIS	Client Info		Changed	Changed	Changed	
		Ciletit IIIIO		ABNORMAL	NORMAL	NORMAL	
Sample Status							
CONTAMINATION	N	method	limit/base	current	history1	history2	
Water		WC Method	>0.2	NEG	NEG	NEG	
Glycol		WC Method		NEG	NEG	NEG	
WEAR METALS		method	limit/base	current	history1	history2	
ron	ppm	ASTM D5185(m)	>80	21	24	50	
Chromium	ppm	ASTM D5185(m)	>5	<1	<1	2	
Nickel	ppm	ASTM D5185(m)	>2	<1	0	<1	
Titanium	ppm	ASTM D5185(m)		0	0	0	
Silver	ppm	ASTM D5185(m)	>3	<1	<1	0	
Aluminum	ppm	ASTM D5185(m)	>30	2	3	7	
Lead	ppm	ASTM D5185(m)	>30	<1	<1	<1	
Copper	ppm	ASTM D5185(m)	>150	<1	2	2	
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	
ADDITIVES							
	ppm	ASTM D5185(m)	0	39	3	6	
Boron	ppm	ASTM D5185(m) ASTM D5185(m)	0	39 <1	3 <1	6	
Boron Barium		. ,					
Boron Barium Molybdenum	ppm	ASTM D5185(m)	0	<1	<1	0	
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185(m) ASTM D5185(m)	0 60	<1 59	<1 57	0 57	
Boron Barium Molybdenum Manganese Magnesium	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 60 0	<1 59 0	<1 57 0	0 57 <1	
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 60 0 1010	<1 59 0 793	<1 57 0 908	0 57 <1 901	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 60 0 1010 1070	<1 59 0 793 1005	<1 57 0 908 1016	0 57 <1 901 989	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	0 60 0 1010 1070 1150	<1 59 0 793 1005 899	<1 57 0 908 1016 973	0 57 <1 901 989 982	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	0 60 0 1010 1070 1150 1270	<1 59 0 793 1005 899 1094	<1 57 0 908 1016 973 1155	0 57 <1 901 989 982 1130	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	0 60 0 1010 1070 1150 1270	<1 59 0 793 1005 899 1094 2312	<1 57 0 908 1016 973 1155 2418	0 57 <1 901 989 982 1130 2329	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	0 60 0 1010 1070 1150 1270 2060	<1 59 0 793 1005 899 1094 2312 <1	<1 57 0 908 1016 973 1155 2418 <1	0 57 <1 901 989 982 1130 2329 <1	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	0 60 0 1010 1070 1150 1270 2060	<1 59 0 793 1005 899 1094 2312 <1 current	<1 57 0 908 1016 973 1155 2418 <1	0 57 <1 901 989 982 1130 2329 <1 history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	0 60 0 1010 1070 1150 1270 2060	<1 59 0 793 1005 899 1094 2312 <1 current	<1 57 0 908 1016 973 1155 2418 <1 history1 4	0 57 <1 901 989 982 1130 2329 <1 history2	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	0 60 0 1010 1070 1150 1270 2060	<1 59 0 793 1005 899 1094 2312 <1 current 5 5	<1 57 0 908 1016 973 1155 2418 <1 history1 4 6	0 57 <1 901 989 982 1130 2329 <1 history2 7 6	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	0 60 0 1010 1070 1150 1270 2060	<1 59 0 793 1005 899 1094 2312 <1 current 5 5 <1	<1 57 0 908 1016 973 1155 2418 <1 history1 4 6 <1	0 57 <1 901 989 982 1130 2329 <1 history2 7 6	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	0 60 0 1010 1070 1150 1270 2060 limit/base >20 >20	<1 59 0 793 1005 899 1094 2312 <1 current 5 5 <1 7.5	<1 57 0 908 1016 973 1155 2418 <1 history1 4 6 <1 <1.0	0 57 <1 901 989 982 1130 2329 <1 history2 7 6 2 <1.0	
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	0 60 0 1010 1070 1150 1270 2060 limit/base >20 >55 limit/base	<1 59 0 793 1005 899 1094 2312 <1 current 5 5 <1 7.5 current	<1 57 0 908 1016 973 1155 2418 <1 history1 4 6 <1 <1.0 history1	0 57 <1 901 989 982 1130 2329 <1 history2 7 6 2 <1.0 history2	



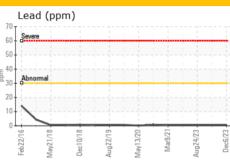
OIL ANALYSIS REPORT

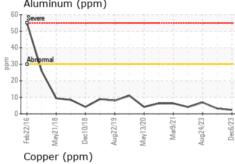


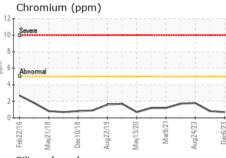


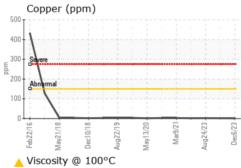
FLUID DEGRADA	ATION	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	17.4	16.3	18.5
VISUAL		method	limit/base	current	history1	history2
Emulsified Water Free Water	scalar	Visual*	>0.2	NEG NEG	NEG NEG	NEG NEG
FLUID PROPERT		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	▲ 12.0	12.7	12.8
GRAPHS						

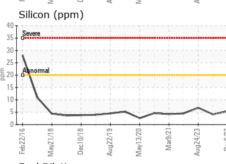
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Feb22/16	21/18	Dec10/18	Aug22/19	May13/20	Mar9/21	Aug24/23	Dec6/23
	May21/			Мау	×	Aug	De
Alur	minum	n (ppm	1)				

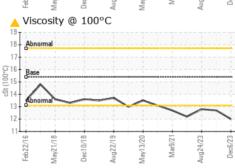


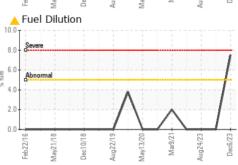














CALA ISO 17025:2017 Accredited

Laboratory Sample No. Lab Number **Unique Number**

: WC0875105 : 02601785 : 5694870

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 Received Diagnosed

: 09 Dec 2023 Diagnostician : Wes Davis **Test Package**: MOB 1 (Additional Tests: FuelDilution, PercentFuel)

: 08 Dec 2023

GFL Environmental - 217 - Aurora 14131 BAYVIEW AVE, AURORA YARD AURORA, ON

CA L4G 0K6 Contact: Mike Havens MHavens@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.

F: (905)713-2445