



Machine Id
MACK 2388
Component
Front Diesel Engine
Fluid
PETRO CANADA DURON SHP 10W30 (38 LTR)

RECOMMENDATION

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		PC0078642	PC0068447	PC0060488
Sample Date		Client Info		21 Feb 2024	11 May 2023	05 Dec 2022
Machine Age	hrs	Client Info		47840	46066	45275
Oil Age	hrs	Client Info		966	791	792
Filter Age	hrs	Client Info		966	791	792
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				SEVERE	SEVERE	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>120	53	30	31
Chromium	ppm	ASTM D5185(m)	>20	3	2	2
Nickel	ppm	ASTM D5185(m)	>5	<1	<1	<1
Titanium	ppm	ASTM D5185(m)	>2	0	<1	<1
Silver	ppm	ASTM D5185(m)	>2	0	0	0
Aluminum	ppm	ASTM D5185(m)	>20	2	2	2
Lead	ppm	ASTM D5185(m)	>40	1	1	1
Copper	ppm	ASTM D5185(m)	>330	3	10	13
Tin	ppm	ASTM D5185(m)	>15	0	<1	<1
Vanadium	ppm	ASTM D5185(m)		0	0	0

CONTAMINATION

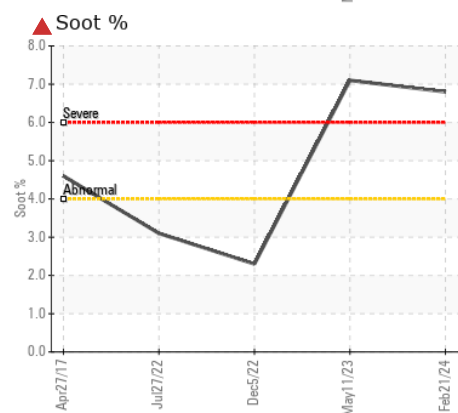
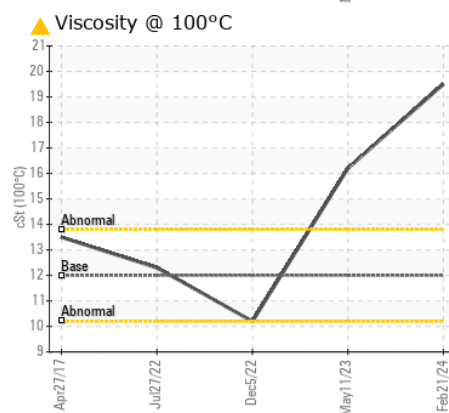
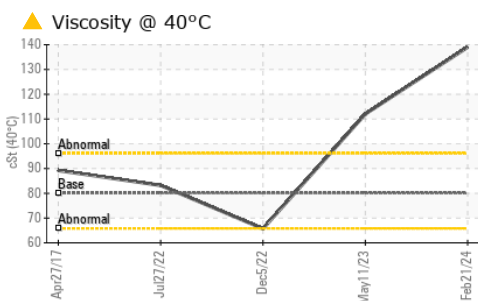
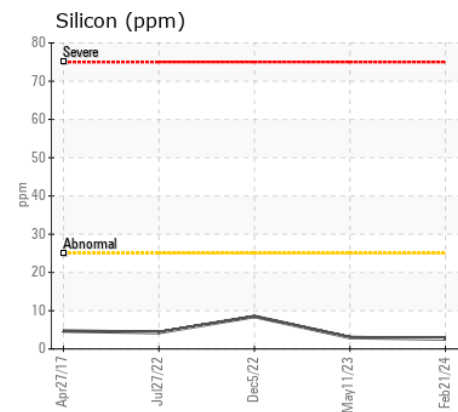
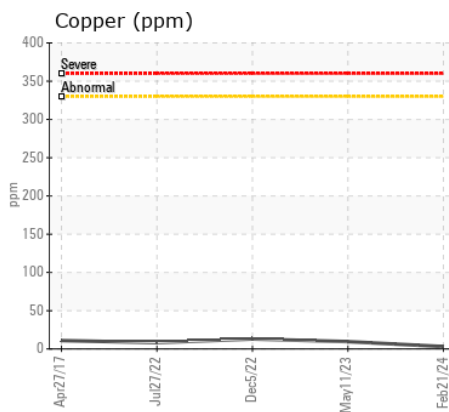
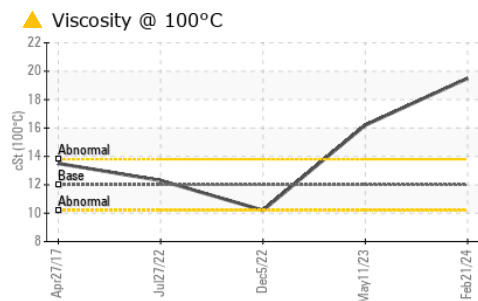
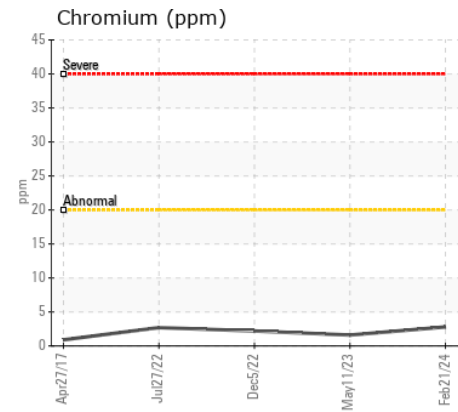
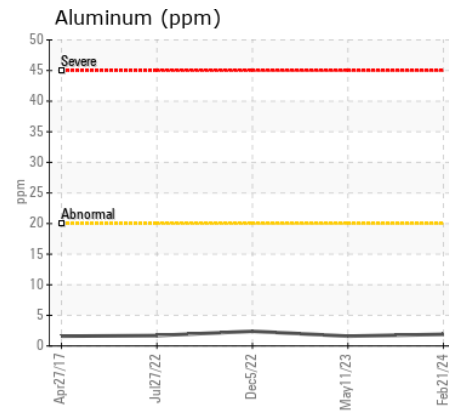
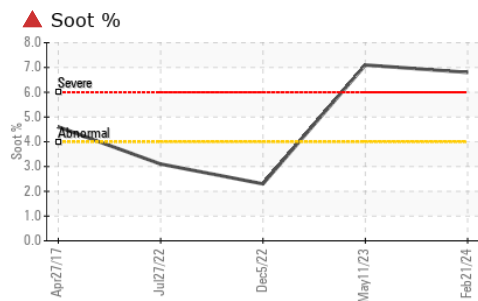
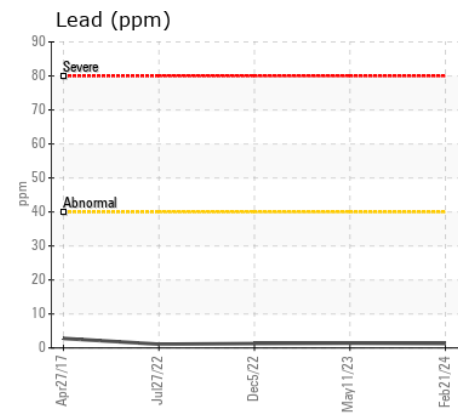
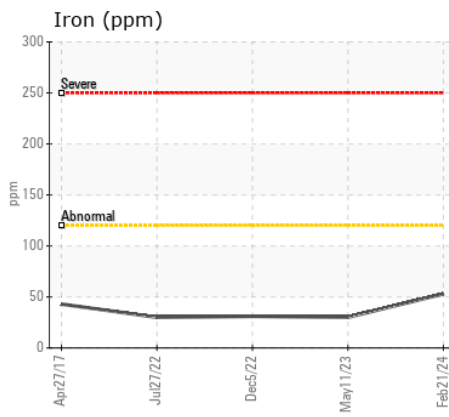
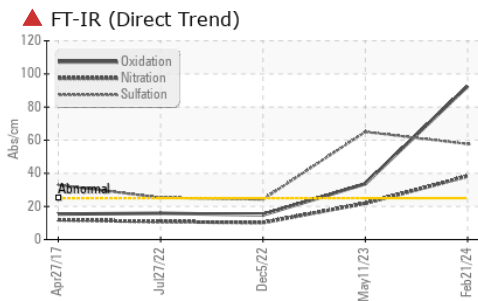
There is an abnormal amount of solids and carbon present in the oil.

Silicon	ppm	ASTM D5185(m)	>25	3	3	8
Potassium	ppm	ASTM D5185(m)	>20	0	<1	2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	ASTM D7844*	>4	▲ 6.8	▲ 7.1	2.3
Nitration	Abs/cm	ASTM D7624*	>20	38.3	21.9	10.2
Sulfation	Abs/.1mm	ASTM D7415*	>30	57.7	65.0	24.2
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG

FLUID CONDITION

The oil viscosity is higher than normal. The oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185(m)		2	3	21
Boron	ppm	ASTM D5185(m)	2	2	3	10
Barium	ppm	ASTM D5185(m)	0	0	0	2
Molybdenum	ppm	ASTM D5185(m)	50	59	60	55
Manganese	ppm	ASTM D5185(m)	0	<1	<1	<1
Magnesium	ppm	ASTM D5185(m)	950	959	978	874
Calcium	ppm	ASTM D5185(m)	1050	1059	1115	1000
Phosphorus	ppm	ASTM D5185(m)	995	949	1059	983
Zinc	ppm	ASTM D5185(m)	1180	1151	1182	1087
Sulfur	ppm	ASTM D5185(m)	2600	2285	2509	2442
Oxidation	Abs/.1mm	ASTM D7414*	>25	92.6	33.7	14.9
Visc @ 40°C	cSt	ASTM D7279(m)	80.1	▲ 139	▲ 112	65.7
Visc @ 100°C	cSt	ASTM D7279(m)	12.00	▲ 19.5	▲ 16.2	10.2
Viscosity Index (VI)	Scale	ASTM D2270*	144	160	155	141



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0078642 **Received** : 16 Apr 2024
Lab Number : 02629119 **Tested** : 16 Apr 2024
Unique Number : 5762251 **Diagnosed** : 16 Apr 2024 - Wes Davis
Test Package : MOB 1 (Additional Tests: KV40, VI)

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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.