

OIL ANALYSIS REPORT

NORMAL

Machine Id

MACK 3300 Component Diesel Engine PETRO CANADA DURON SHP 15W40 (10 GAL)

SAMPLE INFORMATION method



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Number		Client Info		GFL0013420	GFL0013436	GFL0007205
Sample Date		Client Info		04 Feb 2021	13 Jan 2021	25 Jun 2020
Machine Age	hrs	Client Info		24506	24737	24054
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Not Changd	Changed
Sample Status				NORMAL	NORMAL	SEVERE
CONTAMINATI	ON	method	limit/base	current	history1	history2
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
WEAR METALS	5	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>120	24	21	67
Chromium	ppm	ASTM D5185m	>20	<1	<1	2
Nickel	ppm	ASTM D5185m	>5	<1	1	1
Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	3	8
Lead	ppm	ASTM D5185m	>40	2	0	13
Copper	ppm	ASTM D5185m	>330	7	8	13
Tin	ppm	ASTM D5185m	>15	0	0	0
Antimony	ppm	ASTM D5185m		0	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		19	23	102
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		63	58	91
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		985	909	719
Calcium	ppm	ASTM D5185m		1156	1093	1441
Phosphorus	ppm	ASTM D5185m		925	930	778
Zinc	ppm	ASTM D5185m		1104	1098	883
Sulfur	ppm	ASTM D5185m		2403	2378	1963
Lithium	ppm	ASTM D5185m				
CONTAMINAN	TS	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	5	5	12
Sodium	ppm	ASTM D5185m		2	2	3
Potassium	ppm	ASTM D5185m	>20	0	13	11
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>4	2.8	2.7	▲ 7.7
Nitration	Abs/cm	*ASTM D7624	>20	8.3	8.2	23.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	23.8	23.5	49.6



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	FLUID DEGRAD	ATION	method	limit/base	current	history1	history2				
4	Oxidation	Abs/.1mm	*ASTM D7414	>25	14	14.2	45				
	Base Number (BN)	mg KOH/g	ASTM D2896		8.4	8.7	▲ 0.0				
1	VISUAL		method	limit/base	current	history1	history2				
1 m	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE				
ł	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE				
/18-	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE				
Maré Oct18	Silt	scalar	*Visual	NONE	NONE	NONE	NONE				
	Debris	scalar	*Visual	NONE	NONE	NONE	NONE				
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE				
	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML				
F	Odor	scalar	*Visual	NORML	NORML	NORML	NORML				
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG				
-M	Free Water	scalar	*Visual		NEG	NEG	NEG				
	FLUID PROPE	RTIES	method	limit/base	current	history1	history2				
/17	Visc @ 100°C	cSt	ASTM D445		14.4	14.3	1 8.5				
Mar8 0ct18	GRAPHS										
	Iron (ppm)			100-	Lead (ppm)						
	Severe			80.	Severe						
A	Abnormal			E 60-	Abnormal						
	100			° 40. 20.			Λ				
1		~~~	\sim				m				
	g18/09 Aar1/10 ay10/11	Sep 1/14	-eb 2/16 Mar8/17 ct18/18		ıg 1 8/09 Aar 1/10 sp 2 7/10	ay 10/11 Sep 1/14 Feb 2/16	Mar8/17				
					Characteristic and Ann	≥ ** _	1 0				
8/17	Aluminum (ppm)				Chromium (pp	im) 					
Mar Oct1	40			40.	Severe						
	E 30 Abnormal			E 30-	Abnormal						
	10			10-							
				0.							
	ug 18/0 Mar1/1 ep 27/1	Sep 1/1	Feb 2/1 Mar8/1		ug 18/0 Mar1/1 ep 27/1	lay10/1 Sep1/1 Feb2/1	Mar8/1				
	⊲				∝ Silicon (ppm)	2	0				
	400 Severe			80	Severe	******					
	300			60·							
	<u>a</u> 200 -			틆 40·	Abnormal						
	100			20.							
	0 60/ 0 1/	14		0.	60/	/14	18				
	Aug 18 Mar1 Sep 27 May1(Sep1	Feb2 Mar6 Oct18		Aug 18 Mar1 Sep 27	May1(Sep1 Feb2	Mar6 Oct18				
	Viscosity @ 100°C				Base Number						
	20 A		100010000	● ● 15.0・ H	110000000000000000000000000000000000000		100000000000000000000000000000000000000				
		~~~	1 1	T 210.0-	-	~~ A					
	Admormal	· ·	1-11	uper CO.	- ~~	- M	$\Gamma$				
	2.10		V V	se Mui		• 4	~~~V				
	54-00 E	4	/16+ /17+	20.0.	-00/ -01/	/11/14	18 19				
	kug18, Mar1, Sep27,	Sep 1,	Feb2, Mar8, Oct18,		Marl, Sep27,	Sep 1, Feb 2,	Mar8. Oct18.				
	4 5 2				4						
Laboratory	· WearCheck USA - 501	Madisor	n Ave Carv	NC 27513	GFI Envi	ronmental - 036 -	North Wilkshoro				
Sample No.	: GFL0013420	Receiv	ved : 08	Feb 2021		- 4	89 Boone Trail				
Lab Number	: 05177281	Teste	<b>d</b> : 09	Feb 2021		Ň	Vilkesboro, NC				
Unique Number	: 9352564	Diagn	<b>osed</b> : 09	Feb 2021 - Don	Baldridge	Operator at a 14	US 28659				
iest Package	. IVIUB 2					Contact: JA	WES KRESGE				

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

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

Certificate L2367

Submitted By: CHARLES CORVIN

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F:

jkresge@gflenv.com