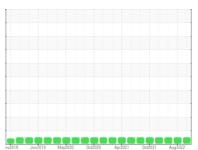


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



51000 series Machine Id Navistar 51859

Component **Diesel Engine**

PETRO CANADA DURON SHP 10W30 (40 LTR)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the

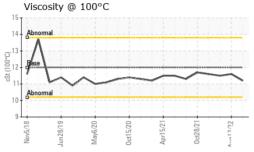
Fluid Condition

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

LTR)		ov2018 Ju	in2019 May2020 Oc	t2020 Apr2021 Oct2021	Aug2022	
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0848059	WC0720956	WC0695790
Sample Date		Client Info		11 Oct 2023	17 Aug 2022	25 May 2022
Machine Age	mls	Client Info		748401	643686	0
Oil Age	mls	Client Info		30951	0	30088
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	١	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>90	42	27	31
Chromium	ppm	ASTM D5185(m)	>20	4	1	2
Nickel	ppm	ASTM D5185(m)	>2	0	<1	<1
Titanium	ppm	ASTM D5185(m)	>2	0	<1	0
Silver	ppm	ASTM D5185(m)	>2	<1	0	0
Aluminum	ppm	ASTM D5185(m)	>20	15	2	3
Lead	ppm	ASTM D5185(m)	>40	3	4	4
Copper	ppm	ASTM D5185(m)	>330	2	<1	1
Tin	ppm	ASTM D5185(m)	>15	<1	<1	<1
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)	2	2	3	5
Barium	ppm	ASTM D5185(m)	0	<1	0	0
Molybdenum	ppm	ASTM D5185(m)	50	60	63	67
Manganese	ppm	ASTM D5185(m)	0	<1	<1	<1
Magnesium	ppm	ASTM D5185(m)	950	969	1030	1132
Calcium	ppm	ASTM D5185(m)	1050	1042	1233	1212
Phosphorus Zinc	ppm	ASTM D5185(m) ASTM D5185(m)	995 1180	958	1055 1299	1159
Sulfur	ppm	ASTM D5185(III) ASTM D5185(m)		1203 2312	2475	1389 2493
Lithium	ppm	ASTM D5185(m)	2000	<1	<1	<1
	ppm	()	12 - 24 //			
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	8	4	4
Sodium	ppm	ASTM D5185(m)	00	10	2	2
Potassium	ppm	ASTM D5185(m)	>20	18	<1	2
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>6	0.8	0.2	0.3
Nitration	Abs/cm	ASTM D7624*	>20	10.2	11.5	11.5
Sulfation	Abs/.1mm	ASTM D7415*	>30	22.9	26.0	26.0
FLUID DEGRADA	TION	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	19.5	23.5	22.4



OIL ANALYSIS REPORT



VISUAL		method				history2
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	12.00	11.2	11.6	11.5
GRAPHS						
T ()				1 1 ()		

Visc @ 100°C	cSt	ASTM D7279(m)	12.00	11.2	11.6	11.5	
GRAPHS							
Iron (ppm)				Lead (ppm)			
S-mars				80 Severe			
200 Severe				70			
150 -				Abnormal			
100 - Abnormal				30 - 40 - Abnormal			
50				20			
			~	0	-		
Nov5/18 Jun28/19	Oct15/20	Apr15/21.	Aug17/22	Nov5/18	May6/20	Apr15/21	Aug17/22
≥ ⅓ ≥ Aluminum (ppm		₹ 0	Au	≥ ⊰ Chromium (Ø 0	Au
45	, 		-1-1-	45 7	(bbill)		-1-1-
40 - Severe				40 - Severe			
30				30			
E 25 Abpormal				Abnormal			
15			1	15			
5	~~			5			
Nov5/18 +	Oct15/20 -	Apr15/21-	Aug17/22 -	Nov5/18 -	May6/20	Apr15/21	Aug17/22
	Octl	Apri	Augl	7		Apr	Augl
Copper (ppm)				Silicon (ppm	1)		
350 - Abnormal				70			
250				50+			
E 200				E 40			
150				30 - Abnormal			
50				10-			
0 8	20	212	22	0	- OZ	12	72
Nov5/18 Jun28/19 May6/20	Oct15/20	Apr15/21 0ct28/21	Aug17/22	Nov5/18 Jun28/19	May6/20 Oct15/20	Apr15/21 0ct28/21	Aug17/22
Viscosity @ 100°	,C		4	Soot %			4
15				8.0 Severe			
14 - Abnormal				6.0 - Abnormal			
13 Pase				5.0			
11 TO		<i>_</i> ~~	~	3.0			
Abnormal				2.0			
				0.0		~	/
n28/19 - n38/20 -	:15/20	pr15/21.	g17/22	0.05/18 n28/19	ay6/20 -	pr15/21-	g17/22



CALA ISO 17025:2017 Accredited Laboratory

Laboratory Sample No. Lab Number Unique Number : 5658532 Test Package : MOB 1

: WC0848059 : 02589466

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

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 MANITOULIN TRANSPORT (GARAGE) Received Diagnosed

: 17 Oct 2023 Diagnostician : Wes Davis

: 17 Oct 2023

1335 SHAWSON DRIVÉ MISSISSAUGA, ON CA L4W 1C4 Contact: Travis Spence

tspence@manitoulintransport.com

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)564-6361