

OIL ANALYSIS REPORT

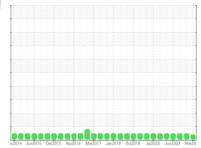
Sample Rating Trend



Area **52000 series** Navistar 52599

Diesel Engine

PETRO CANADA DURON SHP 10W30 (40 LTR)





DIAGNOSIS

Recommendation

Confirm the source of the lubricant being utilized for top-up/fill. 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.

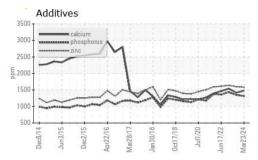
Fluid Condition

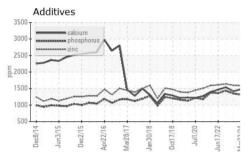
Viscosity of sample indicates oil is within SAE 40 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION method limit/base current history1 history2												
SAMPLE INFORM	IATION	method	limit/base	history1	history2							
Sample Number		Client Info		WC0899644	WC0805715	WC0748782						
Sample Date		Client Info		23 Mar 2024	10 Sep 2023	17 Nov 2022						
Machine Age	mls	Client Info		602206	586247	547352						
Oil Age	mls	Client Info		15962	20614	21422						
Oil Changed		Client Info		Changed	Changed	Changed						
Sample Status				ABNORMAL	NORMAL	NORMAL						
CONTAMINATION	J	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		method	limit/base	current	history1	history2						
Iron	ppm	ASTM D5185(m)	>90	33	30	29						
Chromium	ppm	ASTM D5185(m)	>20	1	1	1						
Nickel	ppm	ASTM D5185(m)	>2	0	0	0						
Titanium	ppm	ASTM D5185(m)	>2	0	0	<1						
Silver	ppm	ASTM D5185(m)	>2	0	<1	0						
Aluminum	ppm	ASTM D5185(m)	>20	2	1	2						
Lead	ead ppm		>40	3	3	5						
Copper ppm		ASTM D5185(m)	>330	1	1	<1						
Tin	ppm	ASTM D5185(m)	>15	0	0	<1						
Antimony	ppm	ASTM D5185(m)		0	0	<1						
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	5	4	3						
Barium	ppm	ASTM D5185(m)	0	0	<1	0						
Molybdenum	ppm	ASTM D5185(m)	50	81	81	80						
Manganese	ppm	ASTM D5185(m)	0	0	0	<1						
Magnesium	ppm	ASTM D5185(m)	950	1295	1312	1305						
Calcium	ppm	ASTM D5185(m)	1050	1476	1417	1539						
Phosphorus	ppm	ASTM D5185(m)	995	1314	1348	1434						
Zinc	ppm	ASTM D5185(m)	1180	1582	1597	1637						
Sulfur	ppm	ASTM D5185(m)	2600	2756	2800	2952						
Lithium	ppm	ASTM D5185(m)		<1	<1	<1						
CONTAMINANTS		method	limit/base	current	history1	history2						
Silicon	ppm	ASTM D5185(m)	>25	4	5	4						
Sodium	ppm	ASTM D5185(m)		4	3	2						
Potassium	ppm	ASTM D5185(m)	>20	2	<1	0						
INFRA-RED		method	limit/base	current	history1	history2						
Soot %	%	ASTM D7844*	>6	0.8	0.7	0.6						
Nitration	Abs/cm	ASTM D7624*	>20	15.6	14.7	13.7						
Sulfation	Abs/.1mm	ASTM D7415*	>30	31.4	30.4	29.7						



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FLUID DEGRADA	ATION	method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	ASTM D7414*	>25	31.1	29.0	26.1	
VISUAL		method	limit/base	current	history1	history2	
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG	
Free Water	scalar	Visual*		NEG	NEG	NEG	
FLUID PROPERT	method	limit/base	current	history1	history2		
Visc @ 100°C	cSt	ASTM D7279(m)	12.00	15.0	14.7	14.9	

Tron (ppm) Lead (ppm) 120 12	Visc @ 100°C		CS	St	AST	M D7279	9(m)	12.00	<u> </u>		14.7			14.9							
250		GRAP	HS																		
200		Iron (p	pm)								120	Lea	ıd (p	pm)							
Sever Strict St		Severe														A					
Aluminum (ppm) Aluminum (ppm) Chromium (ppm) Silicon (ppm)												Seve	re			Λ.					
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Aluminum (ppm) Chromium (ppm) Chromium (ppm) Chromium (ppm) Surgard Abnormal Copper (ppm) Silicon (ppm)	100	Abnormal										Abno	ormal			1					
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Aluminum (ppm) Chromium (ppm) Severe Abnormal Copper (ppm) Copper (ppm) Silicon (ppm) Sil		3/14+	1/12	1,16	8/17 +	- N18	1/18	1/20	1/22	3/24	0.	41/2	3/15	2/15	91/2	11/8	81/0	81//	1/20	1/22	3/24
50		Jun	Dec	Apr2	Mar2	Jan3(Octl	13	Jun1	Mar23		Dec	Jul	Dec	Apr22	Mar2	Jan3(Octl		Jun	Mar2;
Severe 400 Seve	50-	Aluminum (ppm) Chromium (ppm) 50 T																			
30		Severe										Seve	re								
Abnormal		IIII.									30.										
10	mdd	Abnormal							Н		mdd	Abno	ormal								
Copper (ppm) Silicon (ppm) Silicon (ppm) Silicon (ppm) Silicon (ppm) Silicon (ppm) Sovere Jan 301 2021 PR 201 201 PR 201 PR 201 201 PR 20												H									
### Viscosity @ 100°C Severe		\wedge		-	~	_				_						_	_			_	
Copper (ppm) Silicon (ppm) Solution So		ec8/14 m3/15	ec2/15	22/16	r28/17	30/18	t17/18	ul1/20	17/22	123/24		ec8/14	m3/15	ec2/15	22/16	r28/17	30/18	t17/18	ul1/20	17/22	123/24
400 Severe 80 Severe 8					Ma	Jar	0	7	Jur	Ma						Ma	Jar	0	7	Jul	Ma
Soot % S	⁴⁰⁰ T	Severe	r (ppr	n)					80			ppm)					7			
250 150 150 150 150 150 150 150 1		Abnormal																			
150	250										50	+++									
100		Till.										Abne	ormal								
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Viscosity @ 100°C Soot % 8.0 7.0 6.0 9.5 4.0 3.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8	10	1		-	1							V	\sim	-		~		\sim			
Viscosity @ 100°C Soot % 8.0 7.0 6.0 8.0 7.0 8.0 9.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8.0 8		Dec8/14 Jun3/15	Jec2/15	pr22/16	ar28/1	an30/18	ct17/18	Jul1/20	m17/22	ar23/24		Jec8/14	Jun3/15)ec2/15	pr22/16	ar28/1	an30/18	ct17/18	Jul1/20	m17/22	ar23/24
20 8.0 Severe 7.0 Abnormal						ñ	0		7	Σ					A	≥	-5	0		Ť	Σ
6.0 Abnormal 6.0 Abnormal 8.5.0 8.5.0 8.5.0 9.4.0 3.0	²⁰ T																				*****
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	इं 12-	Base		*****		*****					3.0										
10 - Abnormal 2.0 1.0	10	Abnormal		-			-		-			111								111	
8		15	15	91	17	00	- 10	20	22	24		4	12	15	91	17		() () () () () ()	30 -	\ 22	74
Dec8/14 Jun3/15 Dec2/15 Apr22/16 Mar28/17 Jan30/18 Jun17/22 Dec8/14 Jun3/15 Dec2/15 Mar28/17 Jan30/18 Jun17/22 Mar23/24 Mar23/24		Dec8/ Jun3/	Dec2/	Apr22/	Mar28)	Jan30/	0ct17/	Jul1/	Jun17/	Mar23/		Dec8/	Jun3/	Dec2/	Apr22/	Mar28,	Jan30/	0ct17/	Jul1/	Jun17/	Mar23/



CALA ISO 17025:2017 Accredited Laboratory

Laboratory Sample No.

Lab Number : 02626383 Unique Number : 5759515

Test Package : MOB 1

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 MANITOULIN TRANSPORT (GARAGE) : WC0899644

Received **Tested** Diagnosed

: 03 Apr 2024

: 03 Apr 2024 : 03 Apr 2024 - Kevin Marson 1335 SHAWSON DRIVE

MISSISSAUGA, ON CA L4W 1C4

Contact: Travis Spence tspence@manitoulintransport.com

F: (905)564-6361

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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