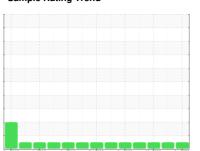


OIL ANALYSIS REPORT

Sample Rating Trend









801040 **Diesel Engine**

PETRO CANADA DURO

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Metal levels are typical for a new component breaking in.

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 oil.

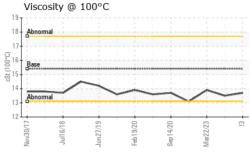
Fluid Condition

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

ON SHP 15W40 (25 LTR)								
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2		
Sample Number		Client Info		GFL0094222	GFL0081970	GFL0077217		
Sample Date		Client Info		08 Sep 2023	29 May 2023	22 Mar 2023		
Machine Age	kms	Client Info		79298	79298	79298		
Oil Age	kms	Client Info		0	0	551		
Oil Changed		Client Info		Changed	Changed	Changed		
Sample Status				NORMAL	NORMAL	NORMAL		
CONTAMINAT	ION	method	limit/base	current	history1	history2		
Fuel		WC Method	>5	<1.0	<1.0	<1.0		
Glycol		WC Method		NEG	NEG	NEG		
WEAR METAL	S	method	limit/base	current	history1	history2		
Iron	ppm	ASTM D5185(m)	>80	27	18	39		
Chromium	ppm	ASTM D5185(m)	>5	<1	<1	1		
Nickel	ppm	ASTM D5185(m)	>2	<1	<1	<1		
Titanium	ppm	ASTM D5185(m)		0	<1	<1		
Silver	ppm	ASTM D5185(m)	>3	0	0	0		
Aluminum	ppm	ASTM D5185(m)		17	5	5		
Lead	ppm	ASTM D5185(m)	>30	0	0	<1		
Copper	ppm	ASTM D5185(m)		2	1	2		
Tin	ppm	ASTM D5185(m)	>5	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)	0	3	6	13		
Barium	ppm	ASTM D5185(m)	0	0	0	0		
Molybdenum	ppm	ASTM D5185(m)	60	59	59	57		
Manganese	ppm	ASTM D5185(m)	0	<1	<1	<1		
Magnesium	ppm	ASTM D5185(m)	1010	932	920	839		
Calcium	ppm	ASTM D5185(m)	1070	1021	1088	1243		
Phosphorus	ppm	ASTM D5185(m)	1150	1020	1052	1039		
Zinc	ppm	ASTM D5185(m)	1270	1182	1157	1182		
Sulfur	ppm	ASTM D5185(m)	2060	2460	2525	2507		
Lithium	ppm	ASTM D5185(m)		<1	<1	<1		
CONTAMINAN		method	limit/base	current	history1	history2		
Silicon	ppm	ASTM D5185(m)	>20	4	4	6		
Sodium	ppm	ASTM D5185(m)		8	5	5		
Potassium	ppm	ASTM D5185(m)	>20	38	6	3		
INFRA-RED		method	limit/base	current	history1	history2		
Soot %	%	ASTM D7844*	>3	0.7	0.4	0.6		
Nitration	Abs/cm	ASTM D7624*	>20	10.7	9.9	11.0		
Sulfation	Abs/.1mm	ASTM D7415*	>30	21.7	20.1	25.7		
FLUID DEGRA	OITAC	method	limit/base	current	history1	history2		
Oxidation	Abs/.1mm	ASTM D7414*	>25	17.6	16.8	19.6		



OIL ANALYSIS REPORT



VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG
FLUID PROPE	RTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	13.7	13.5	13.9
GRAPHS						

Vis	c @ 100°C	;	cSt	ASTM	D7279(m)	15.4	1	13.7		13.5		13.9	
G	RAPHS												
Ir	on (ppm)						Lе 70 т	ad (pp	m)				
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80 - A	bnormal						E 40 - At						
I							30 - 0	onormal					-
20 -			\		1		10						
و ا							0	\					
Nov30/17	Jul16/18	Jun27/19	Feb19/20	Sep14/20	Mar22/23	Sep8/23	Nov30/17	Jul16/18	Jun27/19	Feb19/20	Sep14/20	Mar22/23	Sep8/23
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40 -							8 -						
E 30 - A	bnormal						E G AL	onormal					
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0/17	Jul16/18 +	Jun27/19 +	Feb19/20	Sep14/20-	Mar22/23 -	Sep8/23 -	0/17	Jul16/18 +	Jun27/19 -	Feb19/20 -	Sep14/20-	Mar22/23 -	Sep8/23
Nov30/17			Feb	Sep1	Mar2	Sep	Nov30/17			Feb1	Sep1	Mar2	Sep
450 T	opper (pp	m)					Si 40 T	licon (p	pm)				
400							35 - Se	vere					
350 - S	vere						25						
E 250 - 200 -	\							normal					
150 - A	bnormal						15	1					
100							10	/					
م ا	-	6	- 0	0	23	- 23	0		6	- 0	00	- 2	- 22
Nov30/17	Jul16/18	Jun27/19	Feb19/20	Sep14/20	Mar22/23	Sep8/23	Nov30/17	Jul16/18	Jun27/19	Feb19/20	Sep14/20	Mar22/23	Sep8/23
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19 T							6.0						
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13 - 0							0.0			~			and the same of th
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CALA ISO 17025:2017 Accredited Laboratory

Laboratory Sample No. Lab Number Unique Number : 5643546 Test Package : MOB 1

: 02582481

: GFL0094222

Received Diagnosed Diagnostician : Wes Davis

: 14 Sep 2023 : 14 Sep 2023

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 217 - Aurora 14131 BAYVIEW AVE, AURORA YARD AURORA, ON

CA L4G 0K6 Contact: Mike Havens MHavens@gflenv.com

F: (905)713-2445

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.