

OIL ANALYSIS REPORT

Sample Rating Trend

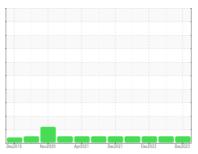




GFL035
Machine Id
814000
Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (38 QTS)





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

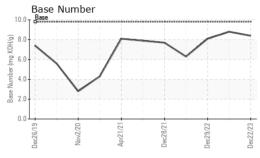
Fluid Condition

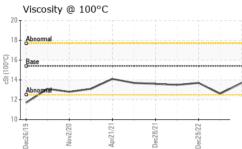
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sample Date Client Info 22 Dec 2023 21 Jun 2023 28 Machine Age hrs Client Info 13168 13168 13 Oil Age hrs Client Info 600 600 600 Oil Changed Client Info Changed Changed Client Info Oil Changed Client Info Changed Changed Client Info Oil Changed Client Info Changed Changed Client Info Changed Changed Changed Client Info Changed Changed Changed Client Info Changed Current history1 Fuge NEG NEG NEG NEG NEG NEG NEG Current h	le Date ne Age h			GFL0102306	GFL0071552	GFL0061672
Machine Age hrs Client Info 13168 13168 13168 13 Oil Age hrs Client Info 600 600 60 60 Oil Changed Client Info Changed Changed Client Info Changed Changed Client Info Sample Status Normal No	ne Age h	Client Info				G1 20001072
Oil Age hrs Client Info 600 600 600 Oil Changed Client Info Changed Changed Clanged Allow Clanged Meg NEG Current NEG Current NEG Sheg		OHOTIC IIIIO		22 Dec 2023	21 Jun 2023	29 Dec 2022
Oil Changed Sample Status Client Info Changed NORMAL Changed NORMAL Clamped NORMAL Company Compa	a la	hrs Client Info		13168	13168	13168
Sample Status NORMAL NO 1.0 <t< th=""><th>e</th><th>hrs Client Info</th><th></th><th>600</th><th>600</th><th>600</th></t<>	e	hrs Client Info		600	600	600
CONTAMINATION method limit/base current history1 Fuel WC Method >3.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG Glycol WC Method NEG NEG WEAR METALS method limit/base current history1 Iron ppm ASTM D5185m >120 2 6 Chromium ppm ASTM D5185m >20 0 2 Nickel ppm ASTM D5185m >20 0 2 Nickel ppm ASTM D5185m >2 0 2 Silver ppm ASTM D5185m >2 0 1 Aluminum ppm ASTM D5185m >20 <1 6 Lead ppm ASTM D5185m >30 3 3 Copper ppm ASTM D5185m >15 0 2 Vanadium ppm ASTM D5185m 0 1 <t< th=""><th>anged</th><th>Client Info</th><th></th><th>Changed</th><th>Changed</th><th>Changed</th></t<>	anged	Client Info		Changed	Changed	Changed
Fuel WC Method >3.0 <1.0	le Status			NORMAL	NORMAL	NORMAL
Water WC Method >0.2 NEG NEG Glycol WC Method NEG NEG WEAR METALS method limit/base current history1 Iron ppm ASTM D5185m >120 2 6 Chromium ppm ASTM D5185m >20 0 2 Nickel ppm ASTM D5185m >15 0 1 Titanium ppm ASTM D5185m >2 0 2 Silver ppm ASTM D5185m >3 0 1 Aluminum ppm ASTM D5185m >20 <1 6 Lead ppm ASTM D5185m >40 0 5 Copper ppm ASTM D5185m >330 3 3 Tin ppm ASTM D5185m >15 0 2 Vanadium ppm ASTM D5185m 0 1 1 Cadmium ppm ASTM D5185m 0 2	NTAMINATIO	N method	limit/base	current	history1	history2
Glycol WC Method NEG NEG WEAR METALS method limit/base current history1 Iron ppm ASTM D5185m >120 2 6 Chromium ppm ASTM D5185m >20 0 2 Nickel ppm ASTM D5185m >15 0 1 Titanium ppm ASTM D5185m >2 0 2 Silver ppm ASTM D5185m >3 0 1 Aluminum ppm ASTM D5185m >20 <1		WC Method	>3.0	<1.0	<1.0	<1.0
WEAR METALS method limit/base current history1 Iron ppm ASTM D5185m >120 2 6 Chromium ppm ASTM D5185m >20 0 2 Nickel ppm ASTM D5185m >15 0 1 Titanium ppm ASTM D5185m >2 0 2 Silver ppm ASTM D5185m >3 0 1 Aluminum ppm ASTM D5185m >20 <1		WC Method	>0.2	NEG	NEG	NEG
Iron ppm ASTM D5185m >120 2 6 Chromium ppm ASTM D5185m >20 0 2 Nickel ppm ASTM D5185m >15 0 1 Titanium ppm ASTM D5185m >2 0 2 Silver ppm ASTM D5185m >3 0 1 Aluminum ppm ASTM D5185m >20 <1 6 Lead ppm ASTM D5185m >40 0 5 Copper ppm ASTM D5185m >330 3 3 Tin ppm ASTM D5185m >15 0 2 Vanadium ppm ASTM D5185m 0 1 Cadmium ppm ASTM D5185m 0 2 ADDITIVES method limit/base current history1 Boron ppm ASTM D5185m 0 2 6 Barium ppm ASTM D5185m 0 <th< td=""><td>I</td><td>WC Method</td><td></td><th>NEG</th><td>NEG</td><td>NEG</td></th<>	I	WC Method		NEG	NEG	NEG
Chromium ppm ASTM D5185m >20 0 2 Nickel ppm ASTM D5185m >15 0 1 Titanium ppm ASTM D5185m >2 0 2 Silver ppm ASTM D5185m >3 0 1 Aluminum ppm ASTM D5185m >20 <1 6 Lead ppm ASTM D5185m >40 0 5 Copper ppm ASTM D5185m >330 3 3 Tin ppm ASTM D5185m 0 2 Vanadium ppm ASTM D5185m 0 1 Cadmium ppm ASTM D5185m 0 2 ADDITIVES method limit/base current history1 Boron ppm ASTM D5185m 0 2 6 Barium ppm ASTM D5185m 0 0 18 Molybdenum ppm ASTM D5185m 0 46	AR METALS	method	limit/base	current	history1	history2
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Titanium ppm ASTM D5185m >2 0 2 Silver ppm ASTM D5185m >3 0 1 Aluminum ppm ASTM D5185m >20 <1	nium p	opm ASTM D5185m	>20	0	2	<1
Silver ppm ASTM D5185m >3 0 1 Aluminum ppm ASTM D5185m >20 <1 6 Lead ppm ASTM D5185m >40 0 5 Copper ppm ASTM D5185m >330 3 3 Tin ppm ASTM D5185m >15 0 2 Vanadium ppm ASTM D5185m 0 1 Cadmium ppm ASTM D5185m 0 2 ADDITIVES method limit/base current history1 Boron ppm ASTM D5185m 0 2 6 Barium ppm ASTM D5185m 0 0 18 Molybdenum ppm ASTM D5185m 60 46 47	р	opm ASTM D5185m	>15	0	1	0
Silver ppm ASTM D5185m >3 0 1 Aluminum ppm ASTM D5185m >20 <1 6 Lead ppm ASTM D5185m >40 0 5 Copper ppm ASTM D5185m >330 3 3 Tin ppm ASTM D5185m >15 0 2 Vanadium ppm ASTM D5185m 0 1 Cadmium ppm ASTM D5185m 0 2 ADDITIVES method limit/base current history1 Boron ppm ASTM D5185m 0 2 6 Barium ppm ASTM D5185m 0 0 18 Molybdenum ppm ASTM D5185m 60 46 47	um p	opm ASTM D5185m	>2	0	2	0
Aluminum ppm ASTM D5185m >20 <1 6 Lead ppm ASTM D5185m >40 0 5 Copper ppm ASTM D5185m >330 3 3 Tin ppm ASTM D5185m >15 0 2 Vanadium ppm ASTM D5185m 0 1 1 Cadmium ppm ASTM D5185m 0 2 2 ADDITIVES method limit/base current history1 Boron ppm ASTM D5185m 0 2 6 Barium ppm ASTM D5185m 0 0 18 Molybdenum ppm ASTM D5185m 60 46 47			>3	0	1	0
Lead ppm ASTM D5185m >40 0 5 Copper ppm ASTM D5185m >330 3 3 Tin ppm ASTM D5185m >15 0 2 Vanadium ppm ASTM D5185m 0 1 Cadmium ppm ASTM D5185m 0 2 ADDITIVES method limit/base current history1 Boron ppm ASTM D5185m 0 2 6 Barium ppm ASTM D5185m 0 0 18 Molybdenum ppm ASTM D5185m 60 46 47		•	>20	<1	6	2
Copper ppm ASTM D5185m >330 3 3 Tin ppm ASTM D5185m >15 0 2 Vanadium ppm ASTM D5185m 0 1 Cadmium ppm ASTM D5185m 0 2 ADDITIVES method limit/base current history1 Boron ppm ASTM D5185m 0 2 6 Barium ppm ASTM D5185m 0 0 18 Molybdenum ppm ASTM D5185m 60 46 47				0		0
Tin ppm ASTM D5185m >15 0 2 Vanadium ppm ASTM D5185m 0 1 Cadmium ppm ASTM D5185m 0 2 ADDITIVES method limit/base current history1 Boron ppm ASTM D5185m 0 2 6 Barium ppm ASTM D5185m 0 0 18 Molybdenum ppm ASTM D5185m 60 46 47			>330	3	3	5
Vanadium ppm ASTM D5185m 0 1 Cadmium ppm ASTM D5185m 0 2 ADDITIVES method limit/base current history1 Boron ppm ASTM D5185m 0 2 6 Barium ppm ASTM D5185m 0 0 18 Molybdenum ppm ASTM D5185m 60 46 47				0		<1
Cadmium ppm ASTM D5185m 0 2 ADDITIVES method limit/base current history1 Boron ppm ASTM D5185m 0 2 6 Barium ppm ASTM D5185m 0 0 18 Molybdenum ppm ASTM D5185m 60 46 47				0	1	0
Boron ppm ASTM D5185m 0 2 6 Barium ppm ASTM D5185m 0 0 18 Molybdenum ppm ASTM D5185m 60 46 47				0	2	0
Barium ppm ASTM D5185m 0 0 18 Molybdenum ppm ASTM D5185m 60 46 47	DITIVES	method	limit/base	current	history1	history2
Barium ppm ASTM D5185m 0 0 18 Molybdenum ppm ASTM D5185m 60 46 47	р	opm ASTM D5185m	0	2	6	6
	n p	opm ASTM D5185m	0	0	18	0
Manganese ppm ASTM D5185m 0 0	denum p	opm ASTM D5185m	60	46	47	61
		•	0	0	2	<1
Magnesium ppm ASTM D5185m 1010 847 671			1010	847	671	897
Calcium ppm ASTM D5185m 1070 979 813			1070	979	813	1073
Phosphorus ppm ASTM D5185m 1150 855 755			1150	855	755	1043
Zinc ppm ASTM D5185m 1270 1105 911			1270	1105	911	1143
Sulfur ppm ASTM D5185m 2060 2840 2758			2060	2840	2758	3480
CONTAMINANTS method limit/base current history1	NTAMINANTS	S method	limit/base	current	history1	history2
Silicon ppm ASTM D5185m >25 2 5	n p	opm ASTM D5185m	>25	2	5	5
Sodium ppm ASTM D5185m 2 4						3
Potassium ppm ASTM D5185m >20 0 8			>20	0	8	3
INFRA-RED method limit/base current history1	RA-RED	method	limit/base	current	history1	history2
Soot %	% %	% *ASTM D7844	>4	0.2	0.3	0.3
Nitration Abs/cm *ASTM D7624 >20 7.2 8.8	on A	Abs/cm *ASTM D7624	>20	7.2	8.8	9.9
			>30	17.4	18.4	19.2
		ATION method	limit/base	current	history1	history2
Sulfation Abs/.1mm *ASTM D7415 >30 17.4 18.4	JID DEGRA <u>DA</u>					
Sulfation Abs/.1mm *ASTM D7415 >30 17.4 18.4	-	Abs/.1mm *ASTM D7414	>25	14.4	15.0	16.0



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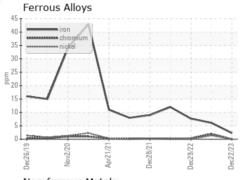


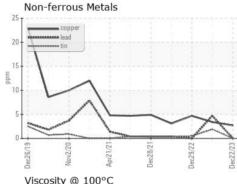


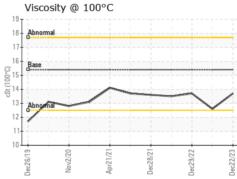
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

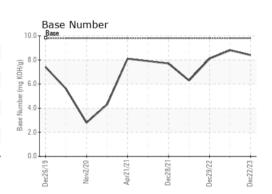
FLUID PROPE	ERTIES	method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	13.7	12.6	13.7

GRAPHS













Certificate L2367

Laboratory Sample No. Lab Number

Unique Number : 10805189 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0102306 : 06044581

Recieved Diagnosed Diagnostician : Wes Davis

: 26 Dec 2023 : 27 Dec 2023 GFL Environmental - 035 - Greensboro

1236 Elon Place High Point, NC US 27263

Contact: JORGE COSTA jorge.costa@gflenv.com T: (336)668-3712

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)