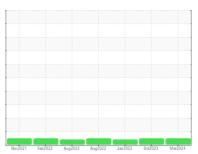


OIL ANALYSIS REPORT

Sample Rating Trend







Machine Id 411017 Component **Diesel Engine**

PETRO CANADA 10W30 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the

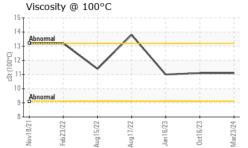
Fluid Condition

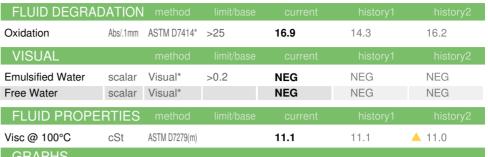
The condition of the oil is acceptable for the time in service.

		1302021				
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0110648	GFL0064787	GFL0064765
Sample Date		Client Info		23 Mar 2024	16 Oct 2023	16 Jan 2023
Machine Age	hrs	Client Info		7026	6030	4439
Oil Age	hrs	Client Info		600	600	600
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<1.0	<1.0	1
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	3	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>120	17	8	19
Chromium	ppm	ASTM D5185(m)	>20	0	0	<1
Nickel	ppm	ASTM D5185(m)	>15	2	<1	2
Titanium	ppm	ASTM D5185(m)	>2	0	0	<1
Silver	ppm	ASTM D5185(m)	>3	0	<1	0
Aluminum	ppm	ASTM D5185(m)	>20	1	2	3
Lead	ppm	ASTM D5185(m)	>40	<1	<1	2
Copper	ppm	ASTM D5185(m)	>330	2	1	4
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)		6	23	14
Barium	ppm	ASTM D5185(m)		0	<1	0
Molybdenum	ppm	ASTM D5185(m)		69	85	82
Manganese	ppm	ASTM D5185(m)		0	0	<1
Magnesium	ppm	ASTM D5185(m)		627	101	95
Calcium	ppm	ASTM D5185(m)		1435	2047	2117
Phosphorus	ppm	ASTM D5185(m)		874	957	1014
Zinc	ppm	ASTM D5185(m)		1160	1162	1146
Sulfur	ppm	ASTM D5185(m)		2474	2892	2909
Lithium	ppm	ASTM D5185(m)		<1	<1	<1
CONTAMINAN	TS	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>25	1	3	4
Sodium	ppm	ASTM D5185(m)		3	2	2
Potassium	ppm	ASTM D5185(m)	>20	2	<1	3
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>4	0.4	0.2	0.3
Nitration	Abs/cm	ASTM D7624*	>20	10.3	9.7	11.0
Sulfation	Abs/.1mm	ASTM D7415*	>30	21.9	19.7	24.0



OIL ANALYSIS REPORT





Visc @ 100°C	cSt	ASTM D7279(m)			11.1		11.1		<u> </u>		
GRAPHS											
Iron (ppm)					Lea	d (ppm)				
300 Severe					100 Seve	ere					
200					-				 		
Abnormal					E GO Abn	ormal					
100									! !		
50					20						
Nov18/21- Feb23/22-	7/22 +	6/23	0ct16/23	3/24	8/21	Feb23/22 -	5/22	7/22 -	6/23	Oct16/23 -	3/24
Nov18/21 Feb23/22 Aug15/22	Aug17/22	Jan16/23	Oct1	Mar23/24	Nov18/2		Aug15/22	Aug17/22	Jan 16/23	Oct1	Mar23/24
Aluminum (ppm)					Ch	romium	(ppm)				
Severe		*******			40 - Seve	ere			!		
30					30						
Abnormal	-				E	ormal			!		
10					10						
			_		0						_
Nov18/21- Feb23/22 -	Aug17/22	Jan 16/23	Oct16/23	Mar23/24	Nov18/21	Feb23/22	Aug15/22	Aug17/22 -	Jan 16/23	Oct16/23	Mar23/24
	Aug	Jar	ő	Ma				Aug	Jar	ő	Ma
Copper (ppm)					80 T Seve	con (pp	III <i>)</i>				
Severe 350 Abnormal		***************************************			70						
250					50-						
150					8 40 - Abn	ormal					
100					20						
0	2			44	0	2	2	2			4
Nov18/21 Feb23/22 Aug15/22	Aug17/22.	Jan16/23	Oct16/23	Mar23/24	Nov18/2	Feb23/22	Aug15/22	Aug17/22	Jan 16/23	Oct16/23	Mar23/24
Viscosity @ 100°0		,		~		ot %	4	A	,		_
15					7.0 Seve	ere :	1				
Abnormal 13	\wedge				5.0						
(5,001) 83 11					3.0 - Abn	ormal					
10+					2.0						
9 - Abnormal					1.0						
3/21	722	/Z3	,723	1/24	0.0	/22	/22	122	/Z3 -	/Z3 -	124
Nov18/21-	Aug17/22	Jan16/23	Oct16/23	Mar23/24	Nov18/2	Feb23/22	Aug15/22	Aug17/22 -	Jan16/23	Oct16/23	Mar23/24



CALA ISO 17025:2017 Accredited Laboratory

Laboratory Sample No.

Lab Number : 02624830 Unique Number : 5749949

: GFL0110648

Test Package : MOB 1

Received : 27 Mar 2024 **Tested**

: 27 Mar 2024 Diagnosed

: 27 Mar 2024 - Wes Davis

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 213 - Kitchener 16 Centennial Road, Kitchener Yard Kitchener, ON

CA N2B 3G1 Contact: Keith Zehr kzehr@gflenv.com T: (226)751-4416 F: x:

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.