

## **OIL ANALYSIS REPORT**

#### Sample Rating Trend





Component

Natural Gas Engine

PETRO CANADA DURON GEO LD 15W40 (--- GAL)

### 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.

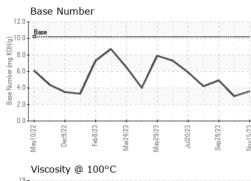


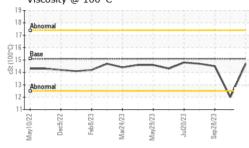


SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0099953	GFL0095101	GFL0090699
Sample Date		Client Info		15 Nov 2023	26 Oct 2023	28 Sep 2023
Machine Age	hrs	Client Info		5826	5714	5541
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				NORMAL	ATTENTION	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Water		WC Method	>0.1	NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	12	29	8
Chromium	ppm	ASTM D5185m	>4	1	1	<1
Nickel	ppm	ASTM D5185m	>2	<1	<1	<1
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>9	3	6	<1
Lead	ppm	ASTM D5185m	>30	12	11	2
Copper	ppm	ASTM D5185m	>35	<1	15	2
Tin	ppm	ASTM D5185m	>4	1	2	<1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	<1
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	50	12	7	11
Barium	ppm	ASTM D5185m	5	0	4	0
Molybdenum	ppm	ASTM D5185m	50	57	51	52
Manganese	ppm	ASTM D5185m		1	4	<1
Magnesium	ppm	ASTM D5185m	560	624	780	553
Calcium	ppm	ASTM D5185m	1510	1698	1147	1633
Phosphorus	ppm	ASTM D5185m	780	762	722	685
Zinc	ppm	ASTM D5185m	870	1038	865	937
Sulfur	ppm	ASTM D5185m	2040	2453	2021	2377
CONTAMINAN	ITS	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>+100	5	79	4
Sodium	ppm	ASTM D5185m		8	8	8
Potassium	ppm	ASTM D5185m	>20	0	8	1
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		0	0	0
Nitration	Abs/cm	*ASTM D7624	>20	11.8	13.0	10.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	24.9	26.9	21.0
FLUID DEGRA		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	20.2	25.3	18.1
				20.2 3.6	25.3 3.0	18.1 4.9



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	VISUAL		method				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
1	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
					NONE		
23	Sand/Dirt	scalar	*Visual *Visual	NONE		NONE	NONE
Sep28/23 Nov15/23	Appearance	scalar scalar		NORML	NORML		
s z	Odor		*Visual	NORML	NORML	NORML	NORML
	Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
	Free Water	scalar	*Visual		NEG	NEG	NEG
	FLUID PROP		method	limit/base	current	history1	history2
51	Visc @ 100°C	cSt	ASTM D445	15.1	14.7	<b>▲</b> 12.0	14.5
$\backslash /$	GRAPHS						
V	Ferrous Alloys						
Sep28/23	25 - iron chromium			Λ			
Sep2	20 nickel			$(\Lambda)$			
	<u>۾</u> 15			-1-			
	10	~	$\sim$				
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	5						
	0	ADD DO TO	Bayer Steep and and Million and and	ar Blanning			
	May10/22 Dec9/22 Feb8/23	Mar24/23 May29/23	Jul20/23 Sep28/23	Nov15/23			
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	S	2 2	Se	Nov			
	N		J. Se	Nov			
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	Non-ferrous Met		r 3	A			
	Non-ferrous Met	als		A			
	Non-ferrous Met	als		A			
	Non-ferrous Met	als	Jui20/23 Sep28/23	Nov15/23 - 200 Nov			
	Non-ferrous Met	als		Novi5/23	Base Numbe	24	
	Non-ferrous Met	als		A	I	24	
	Non-ferrous Meta Non-ferrous Meta Copper Lead Lead Lead Lead Log CZIG Log Reg Viscosity @ 100°	als		EZ(5)000		2 <b>r</b>	
	Non-ferrous Meta Non-ferrous Meta Copper Lead Lead Lead Log CZCR Read Log CZCR Lo	als		EZ(5)000	I	2r	
	Non-ferrous Meta Non-ferrous Meta Copper Lead Lead Lead Log CZCR Read Log CZCR Lo	als		EZ(5)000	I	2r	
	Non-ferrous Meta Non-ferrous Meta Copper Lead Lead Lead Log CZCR Read Log CZCR Lo	als		EZ(5)000	I	2r	
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	Non-ferrous Met	als		EZ/51/00V (0)HO() bul) acquiring account (0)HO() bul) account (0)HO() account (0)HO() bul) account (0)HO() account (0)HO	I	er	
	Non-ferrous Met	als		EZ(5)000	I		
	Non-ferrous Met	als EZI6Z/NeW C	Jui20/23 Sep 28/23	EZISINON (9)HOX DUU 300 (9)HOX DUU 3	Base	$\sim$	
	Non-ferrous Met	als EZI6Z/NeW C	Jui20/23 Sep 28/23	EZISINON (9)HOX DUU 300 (9)HOX DUU 3	Base	$\sim$	8/23
	Non-ferrous Meta Non-ferrous Meta Indiana Copper Indiana Co	als		12.0 (9)HOX BUJ 36.0 (9)HOX BU	Base	Feb 8/23	Jui20/23
	Non-ferrous Met	als	Jui20/23 Sep28/23	12.0 (0)HOX BUD Base Numper Base State (0)HOX BUD BDD CZCSINON (0)HOX BUD BDD CZCSINON (0)HOX BUD CZCSINON (0)HOX BUD (0)HOX	May10/22 Dec3/22	Fab3/23 Mar24/23 May(29/23	
oratory	Non-ferrous Met Non-ferrous Met Non-fe	als EZI6Z <sup>ke</sup> W C 501 Madis	EZU0ZINF EZU0ZINF EZU0ZINF EZU0ZINF EZU0ZINF EZU0ZINF EZU0ZINF EZU0ZINF	12.0 (0)HOX BOL 2.0 (0)HOX BOL 2.0 0.0 Try, NC 27513	May10/22 Dec3/22	EZ19294 EZ19294 EZ19294 EZ19294 EZ19294 EZ19294 EZ19294 EZ19294 EZ19294 EZ19294 EZ19294 EZ19294 EZ19294 EZ19294	ansas City Hauli
oratory ple No.	Non-ferrous Met Non-ferrous Met Non-fe	als EZH57EW C 501 Madia Received	EZU0ZINF EZU0ZINF	12.0 12.0 10.0	May10/22 Dec3/22	EZIPER EZIPER Invironmental - 836 - Ku 7801 Eas	ansas City Haulin st Truman Roa
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To discuss this sample re \* - 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)

Certificate L2367

Contact/Location: See also GFL823, 834, 837, 840 - Robert Hart - GFL836

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