

# **OIL ANALYSIS REPORT**

Sample Rating Trend

NORMAL



# Component

Diesel Engine

## PETRO CANADA DURON SHP 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

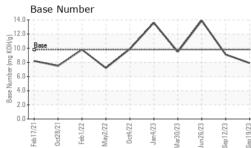
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

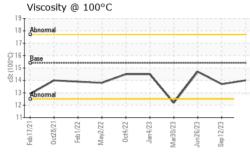
	<b>IATION</b>	method	limit/base	current	history1	history2
Sample Number		Client Info		GFL0046370	GFL0091506	GFL0082736
Sample Date		Client Info		19 Sep 2023	12 Sep 2023	26 Jun 2023
Machine Age	hrs	Client Info		14681	14634	14586
Oil Age	hrs	Client Info		600	600	600
Oil Changed		Client Info		Not Changd	Not Changd	Changed
Sample Status				NORMAL	ATTENTION	SEVERE
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	3.8
Glycol		WC Method		NEG	NEG	0.12
WEAR METALS	5	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	15	14	13
Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	1	1
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	1	15	<1
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	7	6	21
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m	210	0	<1	<1
Cadmium	ppm	ASTM D5185m		0	0	<1
	ppm					
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm		0	40	17	134
Barium	ppm		0	0	0	0
Molybdenum	ppm	ASTM D5185m	60	78	66	109
Manganese	ppm	ASTM D5185m		2	<1	1
Magnesium	ppm	ASTM D5185m	1010	825	931	722
Calcium	ppm	ASTM D5185m	1070	1230	1124	889
Phosphorus	ppm	ASTM D5185m	1150	876	1063	867
Zinc	ppm	ASTM D5185m	1270	1071	1281	1050
Sulfur	ppm	ASTM D5185m	2060	3589	3243	2669
				0000		
CONTAMINAN	ſS	method	limit/base	current	history1	history2
Silicon	rS ppm	ASTM D5185m		current 9	history1 7	24
Silicon Sodium				current	history1	24 ▲ 1612
Silicon	ppm	ASTM D5185m	>25	current 9	history1 7	24
Silicon Sodium	ppm ppm	ASTM D5185m ASTM D5185m	>25	current 9 5	history1 7 ▲ 218	24 ▲ 1612
Silicon Sodium Potassium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	>25 >20 limit/base	current 9 5 10	history1 7 ▲ 218 4	24 ▲ 1612 10
Silicon Sodium Potassium INFRA-RED	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m method	>25 >20 limit/base	current 9 5 10 current	history1 7 ▲ 218 4 history1	24 ▲ 1612 10 history2
Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> *ASTM D7844	>25 >20 limit/base >3	current 9 5 10 current 0.2	history1 7 ▲ 218 4 history1 0.2	24 ▲ 1612 10 history2 0.2
Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> *ASTM D7844 *ASTM D7624	>25 >20 limit/base >3 >20	current   9   5   10   current   0.2   7.4	history1 7 ▲ 218 4 • • • • • • • • • • • • •	24 ▲ 1612 10 history2 0.2 11.6
Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm % Abs/cm Abs/.1mm	ASTM D5185m ASTM D5185m ASTM D5185m <b>method</b> *ASTM D7844 *ASTM D7624 *ASTM D7415	>25 >20 limit/base >3 >20 >30	current   9   5   10   current   0.2   7.4   18.8	history1 7 ▲ 218 4 history1 0.2 6.2 17.8	24 ▲ 1612 10 history2 0.2 11.6 22.0



# **OIL ANALYSIS REPORT**

VISUAL





	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			
					NONE					
3 2	Sand/Dirt	scalar	*Visual	NONE		NONE	NONE			
sep12/23 Sep19/23	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML			
ñ ñ	Odor	scalar	*Visual	NORML	NORML	NORML	NORML			
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG			
	Free Water	scalar	*Visual		NEG	NEG	NEG			
	FLUID PROP	ERTIES	method	limit/base	current	history1	history2			
	Visc @ 100°C	cSt	ASTM D445	15.4	14.0	13.7	14.7			
	GRAPHS									
	Ferrous Alloys									
3	iron									
c7/7 I dae	50 - chromium	$\wedge$								
ō	40	/ `	V							
	E 30	/	$\lambda$							
		_	$\backslash$							
	20									
	10-									
				And and a state of the state of						
	Feb17/21	Oct4/22 - Jan4/23 -	Mar30/23 - Jun26/23 - Seo12/23 -	Sep19/23						
	ਸ਼ਾ ਨੇ ਦੱੱੱ ਦੇ ਸ਼ਾਸ਼ ਡਿੱਡ Non-ferrous Metals									
	Non-ferrous Met		N I S	Se						
	Non-ferrous Met		w ∼ ∞	8						
	25 copper		W 7 8							
	25 copper			e e e e e e e e e e e e e e e e e e e						
	20 20 15			8						
	20 20 15			8						
	20 20 15			8						
	20 20 15 10			8						
	20 20 15			8						
	20 20 15 10 5	als								
	20 20 15 10 5	als								
	25 20 15 10 5 0 15 10 10 5 0 15 10 10 10 10 10 10 10 10 10 10 10 10 10	Oct4/22	Mar30/23							
	25 20 15 10 10 10 10 10 10 10 10 10 10 10 10 10	Oct4/22			Base Number	r				
	25 20 15 10 10 10 10 10 10 10 10 10 10	Oct4/22				r	•			
	25 20 15 10 10 10 10 10 10 10 10 10 10	Oct4/22		5261 Gag 8 14.0 12.0	)	r				
	25 20 15 10 10 10 10 10 10 10 10 10 10	Oct4/22		5261 Gag 8 14.0 12.0	)	r				
	25 20 15 10 10 10 10 10 10 10 10 10 10	Oct4/22		5261 Gag 8 14.0 12.0	Base	r	$\bigwedge$			
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	25 20 15 10 10 10 10 10 10 10 10 10 10	Oct4/22		EZGELGES EZGELGES EXCELLES EXC	Base	r	$\bigwedge$			
	25 20 15 10 5 0 17 10 10 10 10 10 10 10 10 10 10	Oct4/22		5261 Gag 8 14.0 12.0	Base	r				
	25 20 15 10 10 10 10 10 10 10 10 10 10	als ZZ/hptp C	Mar30/23 Jun/26/23	EZIGI Ldas 14.0 (D)HOD Bull 30 8.0 8.0 8.0 8.0 8.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9	Base					
	25 20 15 10 10 10 10 10 10 10 10 10 10	als ZZ/hptp C	Mar30/23 Jun/26/23	EZIGI Ldas 14.0 (D)HOD Bull 30 8.0 8.0 8.0 8.0 8.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9.0 9	Base		28/23			
	25 20 15 10 15 10 10 10 10 10 10 10 10 10 10	Oct4/22		EZZIGI des 14.0 12.0 (D)(HO)() Buil 14.0 12.0 10	Base	May222	ezucen 12623			
	25 20 15 10 10 10 10 10 10 10 10 10 10	als 22/\$100 C C	Mar30/23 Mar	EZU61 Ges EZU61 Ges EZU61 Ges EZU61 Ges EZU61 Ges EZU61 Ges	Feb17/21	May222 Odd/22 Jant/23				
ory	25 20 15 10 10 10 10 10 10 10 10 10 10	als 27/5-0 C 501 Madis	E2/05/am E2/05/am F2/05/	EZCI61 Ges 14.0 12.0 10.0	Feb17/21		- 465 - Pontia			
ory No.	25 20 15 10 10 10 10 10 10 10 10 10 10	als 27/9-0 C 501 Madis Received	E2/05/24 E2/05/24 E2/05/24 E2/07/24 E2/	EZCI61 des EZCI61	Feb17/21	May222 Odd/22 Jant/23	- 465 - Pontia 888 Baldw			
ory No. mber	25 20 15 10 15 10 10 10 10 10 10 10 10 10 10	als 27/H20 C 501 Madia Received Diagnose	E2005mW E2005mW E2005mW E2005mW E2005mW E2005mW E2005mW E2005mW E2005mW E2005mW E2005mW E2005mW E2005mW E2005mW E2005mW	EZCI61 Ges 14.0 12.0 10.0	Feb17/21	May222 Odd/22 Jant/23	- 465 - Pontia 888 Baldw Pontiac, I			
ory No.	25 20 15 10 10 10 10 10 10 10 10 10 10	als 27/9-0 C 501 Madis Received	E2005mW E2005mW E2005mW E2005mW E2005mW E2005mW E2005mW E2005mW E2005mW E2005mW E2005mW E2005mW E2005mW E2005mW E2005mW	EZCI61 Ges 14.0 12.0 14.0 12.0 14.0 12.0 14.0 12.0 10.0	Feb17/21	ZZZ/Mem Environmental				

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)

Certificate L2367

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