

OIL ANALYSIS REPORT



Machine Id **65** Component **Diesel Engine** Fluid **PETRO CANADA DURON HP 15W40 (--- GAL)**

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Wear

Metal levels are typical for a new component breaking in.

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 INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0867985	WC0850970	WC0740542
Sample Date		Client Info		23 May 2024	08 Mar 2024	11 Aug 2023
Machine Age	mls	Client Info		55169	49999	39116
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	J	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	22	13	21
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	10	6	9
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	1	1	4
Tin	ppm	ASTM D5185m	>15	<1	0	<1
Vanadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	ppm	ASTM D5185m		0	0	0
Cadmium ADDITIVES	ppm	ASTM D5185m method	limit/base	0 current	0 history1	0 history2
Cadmium ADDITIVES Boron	ppm ppm	ASTM D5185m method ASTM D5185m	limit/base	0 current 6	0 history1 10	0 history2 10
Cadmium ADDITIVES Boron Barium	ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	limit/base	0 current 6 0	0 history1 10 0	0 history2 10 0
Cadmium ADDITIVES Boron Barium Molybdenum	ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 current 6 0 60	0 history1 10 0 59	0 history2 10 0 66
Cadmium ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 current 6 0 60 <1	0 history1 10 0 59 <1	0 history2 10 0 66 <1
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 current 6 0 60 <1 845	0 history1 10 0 59 <1 805	0 history2 10 0 66 <1 750
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 current 6 0 60 <1 845 1145	0 history1 10 0 59 <1 805 1115	0 history2 10 0 66 <1 750 1394
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 current 6 0 60 <1 845 1145 968	0 history1 10 0 59 <1 805 1115 968	0 history2 10 0 66 <1 750 1394 994
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 current 6 0 60 <1 845 1145 968 1211	0 history1 10 0 59 <1 805 1115 968 1112	0 history2 10 0 66 <1 750 1394 994 1233
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 current 6 0 60 <1 845 1145 968 1211 3374	0 history1 10 0 59 <1 805 1115 968 1112 3343	0 history2 10 0 66 <1 750 1394 994 1233 3598
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 current 6 0 60 <1 845 1145 968 1211 3374 current	0 history1 10 0 59 <1 805 1115 968 1112 3343 history1	0 history2 10 0 66 <1 750 1394 994 1233 3598 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	0 current 6 0 60 <1 845 1145 968 1211 3374 current 8	0 history1 10 0 59 <1 805 1115 968 1112 3343 history1 5	0 history2 10 0 66 <1 750 1394 994 1233 3598 history2 8
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m	limit/base limit/base >25	0 current 6 0 60 <1 845 1145 968 1211 3374 current 8 2	0 history1 10 0 59 <1 805 1115 968 1112 3343 history1 5 2	0 history2 10 0 66 <1 750 1394 994 1233 3598 history2 8 2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	limit/base	0 current 6 0 60 <1 845 1145 968 1211 3374 current 8 2 9	0 history1 10 0 59 <1 805 1115 968 1112 3343 history1 5 2 2 10	0 history2 10 0 66 <1 750 1394 994 1233 3598 history2 8 2 2 12
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base limit/base >25 >20 limit/base	0 current 6 0 60 <1 845 1145 968 1211 3374 current 8 2 9 current	0 history1 10 0 59 <1 805 1115 968 1112 3343 history1 5 2 10 history1	0 history2 10 0 66 <1 750 1394 994 1233 3598 history2 8 2 12 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	limit/base	0 current 6 0 60 <1 845 1145 968 1211 3374 current 8 2 9 current 0.4	0 history1 10 0 59 <1 805 1115 968 1112 3343 history1 5 2 10 history1 0.3	0 history2 10 0 66 <1 750 1394 994 1233 3598 history2 8 2 12 12 history2 0.2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m ASTM D5185m	limit/base 	0 current 6 0 60 <1 845 1145 968 1211 3374 current 8 2 9 current 0.4 10.3	0 history1 10 0 59 <1 805 1115 968 1112 3343 history1 5 2 10 5 2 10 history1 0.3 8.3	0 history2 10 0 66 <1 750 1394 994 1233 3598 history2 8 2 12 8 2 12 history2 0.2 9.0
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base	0 current 6 0 60 <1 845 1145 968 1211 3374 current 8 2 9 current 0.4 10.3 21.0	0 history1 10 0 59 <1 805 1115 968 1112 3343 history1 5 2 10 5 2 10 0.3 8.3 19.0	0 history2 10 0 66 <1 750 1394 994 1233 3598 history2 8 2 12 8 2 12 0.2 9.0 19.7
Cadmium ADDITIVES Boron Barium Molybdenum Maganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m ASTM D5185	limit/base 	0 current 6 0 60 <1 845 1145 968 1211 3374 current 8 2 9 current 0.4 10.3 21.0 current	0 history1 10 0 59 <1 805 1115 968 1112 3343 history1 5 2 10 5 2 10 history1 0.3 8.3 19.0 history1	0 history2 10 0 66 <1 750 1394 994 1233 3598 history2 8 2 12 8 2 12 history2 0.2 9.0 19.7 history2
Cadmium ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7415	limit/base limit/base >25 >20 limit/base >3 >20 >30 limit/base >25	0 current 6 0 60 <1 845 1145 968 1211 3374 current 8 2 9 current 0.4 10.3 21.0 current 18.3	0 history1 10 0 59 <1 805 1115 968 1112 3343 history1 5 2 10 5 2 10 history1 0.3 8.3 19.0 history1 16.0	0 history2 10 0 66 <1 750 1394 994 1233 3598 history2 8 2 12 8 2 12 history2 0.2 9.0 19.7 history2 17.4



OIL ANALYSIS REPORT





I)		VISUAL		method	limit/base	current	history1	history2	2	
		White Metal	scalar	*Visual	NONE	NONE	NONE	NONE		
		Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE		
	and and and and and an a state of a	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE		
		Silt	scalar	*Visual	NONE	NONE	NONE	NONE		
		Debris	scalar	*Visual	NONE	NONE	NONE	NONE		
A A A A A A A A A A A A A A A A A A A	TELL PRODUCTION CONTRACTOR	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE		
1/23 -	8/24 -	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML		
Aug1	Mar May2	Odor	scalar	*Visual	NORML	NORML	NORML	NORML		
		Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG		
		Free Water	scalar	*Visual		NEG	NEG	NEG		
		FLUID PROPER	TIES	method	limit/base	current	history1	history2	2	
		Visc @ 100°C	cSt	ASTM D445	15.6	12.8	12.9	12.5		
		GRAPHS								
		Iron (ppm)			10	Lead (ppm)				
23	24	200 - Severe	1	1	8	Severe	1	1		
ug11/	Mar8/	_ 150 -			_ 6	0-				
A	14	Abnormal			^{ld} 4	Abnormal				
		50-			2	0-				
		0				o L			_	
		t24/22 pr5/23	11/23	ar8/24	/23/24	t24/22 pr5/23	11/23	ar8/24	10000	
		A	Aug	Ň	May	A, Oct	Aug	Ň	Mar	
		Aluminum (ppm)			51	Chromium (p	om)			
		40 - Severe	1	i I	4	Severe		i 1		
		_ 30 -			3	D-				
1/23 -	6/24 A C C	Abnormal		1	년 2	Abnormal				
Aug1	Mar Mar	10			1	0-				
						0			_	
		t24/22 pr5/23	J11/23	ar8/24	/23/24	t24/22 pr5/23	11/23	ar8/24	20150	
			Aug	M	May	A Oc	Aug	N	Man	
		Copper (ppm)	Silicon (ppm)							
		300			6	0-				
		E 200-		1	E 4			1		
		4200 -			id	Abnormal	1			
		100		1	2	D				
			23	24	24	53 52	23	24 +-	100	
		0ct24/	/11/	Mar8/	/lay23/	0ct24/ Apr5/	/11/	Mar8/	100000	
	Viscosity @ 100°C	ব		2						
	20 Abnormal		I	10. P	0 - Base					
		2 10 Para			X N		<u> </u>		-	
					E 6.	0				
		Abnormal	1		N N N	0				
		10			Base Base					
		4/22	1/23 -	8/24 -	3/24	4/22 -	1/23 -	8/24 -	104	
		Oct2	Aug 1	Mari	May2	Oct2 Apr	Aug1	Mar	Mav7	
	Laboratory Sample No. Lab Number Unique Number	: WearCheck USA - 50 : WC0867985 : 06198594 : 11060717	01 Madiso Recei Teste Diagr	n Ave., Cary ived : 03 id : 04	v, NC 27513 3 Jun 2024 4 Jun 2024 4 Jun 2024 - W	ANSON	I CO SCHOOL 89 BO WA	BUS GARAG GGAN CUT F DESBORO, 1 US 281	GI RI N(
tificate L2367	Test Package	: MOB 1 (Additional Tests: TBN) Contact: MAT								
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Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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Contact/Location: MATT POWELL - ANSWAD

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