

OIL ANALYSIS REPORT



Machine Id

L-7 Component Diesel Engine Fluid PETRO CANADA DURON HP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: 250 Hr $\rm pm$)

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

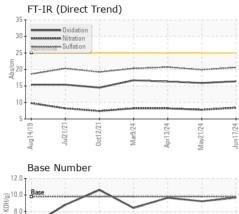
Fluid Condition

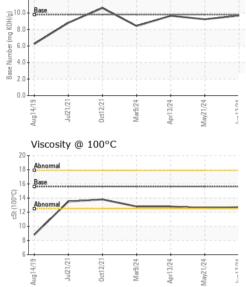
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0123738	PCA0123719	PCA0123787
Sample Date		Client Info		17 Jun 2024	21 May 2024	13 Apr 2024
Machine Age	hrs	Client Info		42098	41847	41594
Oil Age	hrs	Client Info		251	253	0
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	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 METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	19	20	33
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	<1	0	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	1	4
Lead	ppm	ASTM D5185m	>40	1	0	2
Copper	ppm	ASTM D5185m	>330	10	20	23
Tin	ppm	ASTM D5185m	>15	<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	<1
Cadmium	ppm	ASTM D5185m		<1	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 2	history1 1	history2 0
	ppm ppm		limit/base			
Boron		ASTM D5185m	limit/base	2	1	0
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	2 0	1 0	0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 54	1 0 53	0 0 58
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 54 <1	1 0 53 <1	0 0 58 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 54 <1 833	1 0 53 <1 862	0 0 58 <1 922
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 54 <1 833 1238	1 0 53 <1 862 1176	0 0 58 <1 922 1319
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 54 <1 833 1238 1034	1 0 53 <1 862 1176 1019	0 0 58 <1 922 1319 1085
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 54 <1 833 1238 1034 1263	1 0 53 <1 862 1176 1019 1211	0 0 58 <1 922 1319 1085 1271
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		2 0 54 <1 833 1238 1034 1263 3309	1 0 53 <1 862 1176 1019 1211 3015	0 0 58 <1 922 1319 1085 1271 3705 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 54 <1 833 1238 1034 1263 3309 current 4 2	1 0 53 <1 862 1176 1019 1211 3015 history1	0 0 58 <1 922 1319 1085 1271 3705 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 54 <1 833 1238 1034 1263 3309 current 4	1 0 53 <1 862 1176 1019 1211 3015 history1 3	0 0 58 <1 922 1319 1085 1271 3705 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	limit/base	2 0 54 <1 833 1238 1034 1263 3309 current 4 2 2 2 current	1 0 53 <1 862 1176 1019 1211 3015 history1 3 <1	0 0 58 <1 922 1319 1085 1271 3705 history2 4 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	limit/base >25 >20	2 0 54 <1 833 1238 1034 1263 3309 current 4 2 2 2 current 0.5	1 0 53 <1 862 1176 1019 1211 3015 history1 3 <1 0 history1 0.3	0 0 58 <1 922 1319 1085 1271 3705 history2 4 2 0 history2 0.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base	2 0 54 <1 833 1238 1034 1263 3309 current 4 2 2 2 current	1 0 53 <1 862 1176 1019 1211 3015 history1 3 <1 0 history1 0.3 7.8	0 0 58 <1 922 1319 1085 1271 3705 history2 4 2 0 history2 0.5 8.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3	2 0 54 <1 833 1238 1034 1263 3309 current 4 2 2 2 current 0.5	1 0 53 <1 862 1176 1019 1211 3015 history1 3 <1 0 history1 0.3	0 0 58 <1 922 1319 1085 1271 3705 history2 4 2 0 history2 0.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3 >20	2 0 54 <1 833 1238 1034 1263 3309 current 4 2 2 2 current 0.5 8.4	1 0 53 <1 862 1176 1019 1211 3015 history1 3 <1 0 history1 0.3 7.8	0 0 58 <1 922 1319 1085 1271 3705 history2 4 2 0 history2 0.5 8.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	Imit/base >25 >20 Imit/base >3 >20 >30	2 0 54 <1 833 1238 1034 1263 3309 current 4 2 2 2 current 0.5 8.4 20.6	1 0 53 <1 862 1176 1019 1211 3015 history1 3 <1 0 history1 0.3 7.8 19.9	0 0 58 <1 922 1319 1085 1271 3705 history2 4 2 0 history2 0.5 8.2 20.7



OIL ANALYSIS REPORT





d)		VISUAL		method	limit/base	current	history1	history2		
		White Metal	scala	ar *Visual	NONE	NONE	NONE	NONE		
		Yellow Metal	scala	ar *Visual	NONE	NONE	NONE	NONE		
	and Providence	Precipitate	scala	ar *Visual	NONE	NONE	NONE	NONE		
		Silt	scala	ar *Visual	NONE	NONE	NONE	NONE		
		Debris	scala	ar *Visual	NONE	NONE	NONE	NONE		
¹⁰ 000/00/00/00000000000000000000000000		Sand/Dirt	scala	ar *Visual	NONE	NONE	NONE	NONE		
Mar9/24 - Apr13/24 - May21/24 -	Jun17/24	Appearance	scala	ar *Visual	NORML	NORML	NORML	NORML		
Mar9/24 Apr13/24 May21/24	Jun1	Odor	scala	ar *Visual	NORML	NORML	NORML	NORML		
		Emulsified Wat	er scala	ar *Visual	>0.2	NEG	NEG	NEG		
		Free Water	scala	ar *Visual		NEG	NEG	NEG		
		FLUID PR	OPERTIE	S method	limit/base	current	history1	history2		
		Visc @ 100°C	cSt	ASTM D44	5 15.6	12.7	12.6	12.8		
		GRAPHS								
	21	Iron (ppm)			10	Lead (ppm)				
24		Severe	1 1	1 1	10	Savara				
Mar9/24 Apr13/24 May21/24	5									
A N	1	Abnormal			und 4	Abaranal				
		50 -			2					
		0								
		Aug14/19 - Jul21/21-	0ct12/21	Apr13/24 May21/24	Jun17/24	Aug14/19 - Jul21/21	0ct12/21 Mar9/24	Apr13/24 May21/24		
		Augʻ	0ct Ma	Apri Mavž	Jun	Augi	0ct Ma	Apr'		
		Aluminum (p	pm)		5	Chromium (p	opm)			
		40 Severe	1 1	1 1	5	Sminn				
	und d	30 -			<u>ال</u> م	0-				
Mar9/24 Apr13/24 May21/24	Acres 4	20 - Abnormal			^d 2	0 - Abnormal				
M Api May	1	10			1	0				
		21 31 31 0	21-	24	4	51	21	24		
		Aug14/19 - Jul21/21-	0ct12/21 Mar9/24	Apr13/24 May21/24	Jun17/24	Aug14/19 - Jul21/21	0ct12/21 Mar9/24	Apr13/24 May21/24		
				A M	ĥ	silicon (ppm)		A M -		
	80		·)				,			
	60	00				0				
		\mathbf{N}								
	봅.40				E.4	Abnormal				
	20	00			2	0				
			4	4 4	4		+ +	+ + v		
		Aug14/19 Jul21/21	0ct12/21 Mar9/24	Apr13/24 May21/24	Jun17/24	Aug14/19 Jul21/21	0ct12/21 Mar9/24	Apr13/24 May21/24		
				Ap	'nſ			Ap Ma		
		Viscosity @ 1	.00°C			Base Numbe	r			
		Abnormal		, , , , , , , , , , , , , , , , , , ,	(^B /H)	Base	\sim			
	() ()	15 - Base			(D) 10. 8. 9. 6. 9. 9. 8. 9. 9. 8. 9. 9. 9. 9. 9. 9. 9. 9. 9. 9. 9. 9. 9.	0				
	cSt (100°C)	Abnormal			. e.	0				
	-8 I				1 4. N 2	0				
		5	_		0.	0				
		Aug14/19	0ct12/21 Mar9/24	Apr13/24 May21/24	Jun17/24	Aug14/19 Jul21/21	0ct12/21 Mar9/24	Apr13/24 May21/24		
		Aug	0ct Ma	Apr	Jun	Aug	Ma Ma	May		
Laboratory Sample No		: WearCheck USA - 501 Madiso : PCA0123738 Recei				SCRAP I	P METAL SERVICES (SMS Mill Services LLC			
	pie No. ∶⊦ Number ∶0			eceived : 01 Jul 2024 ested : 02 Jul 2024			1500 COMMERCIAL AVE MINGO JUNCTION, OF			
150/ICC (7025	Number : 1			Diagnosed : 02 Jul 2024 Diagnosed : 02 Jul 2024 - Don Baldridge			Mintedo	US 4393		
	Package : N		_ 10		200-237-1369.			Contact: FRANK NALLY		
Certificate L2367 Test	r uonugo . n					fnally@scrapmetalservices.com				

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Submitted By: TIM RANDOLPH Page 2 of 2