

OIL ANALYSIS REPORT





Machine Id 2227032

Component Diesel Engine

PETRO CANADA DURON SHP 10W30 (--- QTS)

DIAGNOSIS

Recommendation

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

🔺 Wear

Exhaust valve wear is indicated.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

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

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0094598	PCA0094590	PCA0052347
Sample Date		Client Info		23 Dec 2023	27 Sep 2023	12 Jun 2023
Machine Age	mls	Client Info		100688	67605	29601
Oil Age	mls	Client Info		33083	38544	29601
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	ABNORMAL
		method	limit/base	current	history1	history2
			-		1.0	1.0
Fuel		WC Wethod	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	27	40	37
Chromium	ppm	ASTM D5185m	>20	1	1	<1
Nickel	ppm	ASTM D5185m	>4	<u> </u>	3	1
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	4	12	23
Lead	ppm	ASTM D5185m	>40	2	3	6
Copper	ppm	ASTM D5185m	>330	23	94	4 348
Tin	ppm	ASTM D5185m	>15	2	3	4
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	<1
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	2	6	4	84
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	50	66	84	113
Manganese	ppm	ASTM D5185m	0	1	2	5
Magnesium	ppm	ASTM D5185m	950	872	880	692
Calcium	ppm	ASTM D5185m	1050	1106	1137	1373
Phosphorus	ppm	ASTM D5185m	995	892	845	651
Zinc	ppm	ASTM D5185m	1180	1103	1127	798
Sulfur	ppm	ASTM D5185m	2600	2489	2532	2331
CONTAMINAN	TS	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	5	11	32
Sodium	ppm	ASTM D5185m		2	2	5
Potassium	ppm	ASTM D5185m	>20	10	51	60
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	0.6	0.6	0.4
Nitration	Abs/cm	*ASTM D7624	>20	9.8	10.7	11.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.0	22.4	22.9
FLUID DEGRAL	ATION	method	limit/base	current	history1	history2
	ATION	method *ASTM D7414	limit/base	current	history1	history2
Contemporary Conte	Abs/.1mm	*ASTM D7414	limit/base	current 18.2	history1 19.6 4.6	history2 22.5 7.6



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	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
an Dalay State States	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
3/23	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Dec2	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
	Free Water	scalar	*Visual		NEG	NEG	NEG
	FLUID PROPE	RTIES	method	limit/base	current	history1	history2
	Visc @ 100°C	cSt	ASTM D445	12.00	11.0	10.5	9.9
	GRAPHS						
	Ferrous Alloys						
	35 - iron						
	30 - nickel			/			
	25-						
	<u>틈</u> 20 -						
	15-						
	10		1 - B. S. S. S. W. W. S.	Marine Marine			
	5		a second and a second				
	5/23	1/23 -		3/23			
	Jun 12	Sep27		Dec23			
	Non-ferrous Meta	ls					
	³⁵⁰						
	300 - Lead						
	250						
F	200						
Ida	150						
	100-						
	100						
	50			<u> </u>			
		7/23		3/23			
	100 50 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Sep27/23		Dec23/23			
	100 50 0 EZZ IIII Viscosity @ 100°0	C) Sep27/23		Dec23/23	Base Number		
	100 50 0 Viscosity @ 100° 15	Sep27/23		Dec23333	Base Number		
	100 50 0 50 0 50 0 50 0 50 0 50 0 50 0	Sep27/23		0.8 0.7 0.7	Base Number		
2	100 50 0 Viscosity @ 100°0	C Sep21/23		0.8 0.0 0.0 0.0 0.0 0.0	Base Number		
100001	100 50 0 EZZ 10 Viscosity @ 100°0 50 0 Viscosity @ 100°0 50 0 EZZ 10 0 EZZ 10 0 0 EZZ 10 0 0 EZZ 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	CD Sep 27/23		8.0 7.0 (100 K00/10) 8.0 7.0 100 K00/10 100 K00/10 1000	Base Number		
1990UU V	100 50 0 EZZING Viscosity @ 100°0 15 14 Abnomal 13 14 2010 10 10 10 10 10 10 10 10 10	C Sep 21/23		8.0 7.0 (b)HOX 5.0 1 4.0 3.0	Base Number		
	100 50 0 EXECUTE Viscosity @ 100°0 15 14 Abnormal 13 10 Abnormal	C Sep 27/23		8.0 7.0 (6,0,0) (6,0,0	Base Number		
Landou i vo-	100 50 0 EXECUTE Viscosity @ 100°C 15 14 Abnormal 10 9 Abnormal	C Sep 27/23		8.0 7.0 00000000000000000000000000000000	Base Number		
	100 50 0 E227 100 100 100 100 100 100 100 10	0 Sep21/23		8.0 7.0 (b(HOX) b(0) 888 80 (mupter 80 80 80 80 80 80 80 80 80 80 80 80 80	Base Number		
	100 50 0 Viscosity @ 100° Viscosity @ 100° 50 0 0 0 0 0 0 0 0 0 0 0 0 0	21/23		8.0 7.0 (b)(HOX bu) 4.0 8898 Mmupe 8988 0 1.0 800 800 800 800 800 800 800 800 800 8	Base Number		
1990 QUANT	100 50 0 EZZIUG Viscosity @ 100°0 Abnomal 10 10 10 10 10 10 10 10 10 10	Sep27/23 Sep27/23		8.0 7.0 (b)HOX fb01 9888 1.0 0.0 1.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Base Number	Sep21723	
aboratory Sample No. .ab Number Inique Number est Package	100 50 0 Viscosity @ 100°0 15 14 30 10 15 14 30 10 15 14 30 10 15 14 30 10 10 15 14 30 10 10 10 10 10 10 10 10 10 1	501 Madia Recieved Diagnosi	son Ave., Ca d : 08 ed : 09 tician : Sea	EU(CC00 0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0	Base Number	DUE FARMS - N WAS Contact:	VASHINGTO P.O. BOX 5 SHINGTON, US 475 DEREK RY/

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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Contact/Location: DEREK RYAN - PERWAS