

OIL ANALYSIS REPORT



Machine Id

DT808

Component Diesel Engine

Fluid PETRO CANADA DURON SHP 10W30 (36 QTS)

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.

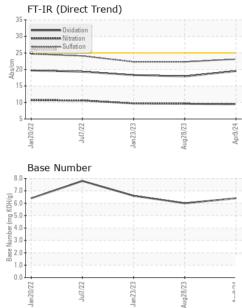
Fluid Condition

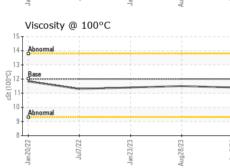
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0091256	PCA0103271	PCA0091225
Sample Date		Client Info		09 Apr 2024	28 Aug 2023	23 Jan 2023
Machine Age	mls	Client Info			102091	76142
Oil Age	mls	Client Info	26783		25949	26227
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	20	23	25
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	6	10	13
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m	>330	2	2	4
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 4	history1 5	history2 4
	ppm ppm	ASTM D5185m				
Boron		ASTM D5185m	2	4	5	4
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0 50	4 0	5 0	4
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	4 0 60	5 0 65	4 0 66
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	4 0 60 <1	5 0 65 <1	4 0 66 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	4 0 60 <1 959	5 0 65 <1 939	4 0 66 <1 920
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	4 0 60 <1 959 1132	5 0 65 <1 939 1295	4 0 66 <1 920 1119
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	4 0 60 <1 959 1132 1037	5 0 65 <1 939 1295 1044	4 0 66 <1 920 1119 971
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	2 0 50 0 950 1050 995 1180	4 0 60 <1 959 1132 1037 1311	5 0 65 <1 939 1295 1044 1306	4 0 66 <1 920 1119 971 1188
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 50 950 1050 995 1180 2600	4 0 60 <1 959 1132 1037 1311 3149	5 0 65 <1 939 1295 1044 1306 3215	4 0 66 <1 920 1119 971 1188 2931
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm 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 50 950 1050 995 1180 2600	4 0 60 <1 959 1132 1037 1311 3149 current	5 0 65 <1 939 1295 1044 1306 3215 history1	4 0 66 <1 920 1119 971 1188 2931 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	4 0 60 <1 959 1132 1037 1311 3149 current 4	5 0 65 <1 939 1295 1044 1306 3215 history1 5	4 0 66 <1 920 1119 971 1188 2931 history2 6
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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	4 0 60 <1 959 1132 1037 1311 3149 current 4 <1	5 0 65 <1 939 1295 1044 1306 3215 history1 5 3	4 0 66 <1 920 1119 971 1188 2931 history2 6 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25 >20	4 0 60 <1 959 1132 1037 1311 3149 current 4 <1 10	5 0 65 <1 939 1295 1044 1306 3215 history1 5 3 3 20	4 0 66 <1 920 1119 971 1188 2931 history2 6 3 27
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 Imit/base >25 >20 Imit/base >3	4 0 60 <1 959 1132 1037 1311 3149 current 4 <1 10 current	5 0 65 <1 939 1295 1044 1306 3215 history1 5 3 20 history1	4 0 66 <1 920 1119 971 1188 2931 history2 6 3 27 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	4 0 60 <1 959 1132 1037 1311 3149 current 4 <1 10 current 0.8	5 0 65 <1 939 1295 1044 1306 3215 history1 5 3 20 history1 0.8	4 0 66 <1 920 1119 971 1188 2931 history2 6 3 27 history2 0.8
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	2 0 50 0 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20	4 0 60 <1 959 1132 1037 1311 3149 current 4 <1 10 current 0.8 9.5 23.1	5 0 65 <1 939 1295 1044 1306 3215 history1 5 3 20 history1 0.8 9.6	4 0 66 <1 920 1119 971 1188 2931 history2 6 3 27 history2 0.8 9.7
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 D7844 *ASTM D7844 *ASTM D7844	2 0 50 0 950 1050 995 1180 2600 imit/base >25 >20 imit/base >3 >20 >30	4 0 60 <1 959 1132 1037 1311 3149 current 4 <1 10 current 0.8 9.5 23.1 current	5 0 65 <1 939 1295 1044 1306 3215 history1 5 3 20 history1 0.8 9.6 22.3 history1	4 0 66 <1 920 1119 971 1188 2931 history2 6 3 27 history2 0.8 9.7 22.3 history2
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	2 0 50 0 950 1050 995 1180 2600 imit/base >25 imit/base >3 >20	4 0 60 <1 959 1132 1037 1311 3149 current 4 <1 10 current 0.8 9.5 23.1	5 0 65 <1 939 1295 1044 1306 3215 history1 5 3 20 history1 0.8 9.6 22.3	4 0 66 <1 920 1119 971 1188 2931 history2 6 3 27 history2 0.8 9.7 22.3



OIL ANALYSIS REPORT





end)		VISUAL		method	limit/base	current	history1	history2	
		White Metal	scalar	*Visual	NONE	NONE	NONE	NONE	
		Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE	
	R a specific case is the second statement	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE	
		Silt	scalar	*Visual	NONE	NONE	NONE	NONE	
		Debris	scalar	*Visual	NONE	NONE	NONE	NONE	
		Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE	
3/23 -	ug28/23 - Apr9/24 -	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML	
Jan 23/23	Aug28/23 Apr9/24	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		method	limit/base	current	history1	history2	
		Visc @ 100°C	cSt	ASTM D445		11.4	11.5	11.4	
		GRAPHS							
		Ferrous Alloys							
		70 iron		·					
Jan 23/23	Aug28/23	60 - chromium							
Jar	Aug	50-							
°C		E 30							
	- -	⁻ 30							
		20							
		10-		 					
				~					
		Jan 20/22 Jul7/22	Jan 23/23	Aug28/23	Apr9/24				
		-		Aug	A				
53	23	Non-ferrous Metal	ls						
Jan 23/23	Aug28/23	copper							
ů.	AL	15 - tin		1					
		<u>ة</u> 10							
		5-							
		5 52	53	23	54				
		Jan 20/22 Jul7/22	Jan 23/23	Aug28/23	Apr9/24				
		ے Viscosity @ 100°C	,	Au					
		¹⁵ T				Base Number			
		14 - Abnormal			7.0	the second s			
		13							
					(B) HOX HOX Buy age age N N N N N N N N N N N N N N N N N N N				
		0 12 - Base			 ສ 4.0				
		8 II							
		10 - Abnormal			8 2.0				
		9 -			1.0				
		5 12	2	53					
		Jan 20/22 Jul7/22	Jan 23/23	Aug28/23	Apr9/24	Jan 20/22 Jul7/22	Jan 23/23	Aug28/23 Apr9/24	
		р Г	Ja	Au	-	e ,	ل م	Au	
4	l oberetaria	WoorChook UCA 50	1 Madie -			KI\4/ \4/1 !!~			
4	Laboratory Sample No.	: WearCheck USA - 50 : PCA0091256	1 Madiso Recei		, NC 27513 8 Apr 2024	NW WHIT		605 RIVER RD	
ANAB	Lab Number		Teste		Apr 2024		PIEDMONT, SC		
TESTING LABORATORY	Unique Number	: 10993757		Diagnosed : 24 Apr 2024 - Wes Davis			US 29673		
Certificate L2367	Test Package	: FLEET	-					James Threatt	
		, contact Customer Servi						@nwwhite.com	
		are outside of the ISO 1 pecifications are based o				rule (ICCM 106		(864)918-4646 F:	
Statements of	comorniny to sp	becilications are based o	n ne siñ	ipie accepta	nce decision	TUIE (JUGIVI TUB:	2012)	F:	

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Submitted By: Under NWWDUN - James Threatt