

## **OIL ANALYSIS REPORT**

Sample Rating Trend





DT818 Component Diesel Engine Fluid PETRO CANADA DURON SHP 10W30 (36 QTS)

### DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor.

Machine Id

### Wear

Metal levels are typical for a new component breaking in.

#### Contamination

There is no indication of any contamination in the oil.

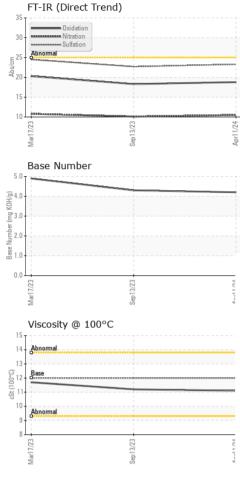
#### Fluid Condition

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

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0113234	PCA0103242	PCA0091249
Sample Date		Client Info		11 Apr 2024	13 Sep 2023	17 Mar 2023
Machine Age	mls	Client Info		78834	51659	26287
Oil Age	mls	Client Info		10000	25372	26287
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	<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	>120	31	31	45
Chromium	ppm	ASTM D5185m	>20	1	2	2
Nickel	ppm	ASTM D5185m	>5	6	2	9
Titanium	ppm	ASTM D5185m	>2	0	0	<1
Silver	ppm	ASTM D5185m	>2	<1	<1	0
Aluminum	ppm	ASTM D5185m	>20	5	8	12
Lead	ppm	ASTM D5185m	>40	0	<1	<1
Copper	ppm	ASTM D5185m	>330	8	38	45
Tin	ppm	ASTM D5185m	>15	2	2	4
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 2	history1 1	history2 13
	ppm ppm					
Boron		ASTM D5185m	2	2	1	13
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0 50	2 0	1 0	13 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	2 0 66	1 0 66	13 0 63
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	2 0 66 1	1 0 66 <1	13 0 63 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	2 0 66 1 976	1 0 66 <1 841	13 0 63 2 456 1743 973
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	2 0 66 1 976 1152	1 0 66 <1 841 1270	13 0 63 2 456 1743
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	2 0 66 1 976 1152 1075	1 0 66 <1 841 1270 917	13 0 63 2 456 1743 973
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 50 950 1050 995 1180	2 0 66 1 976 1152 1075 1320	1 0 66 <1 841 1270 917 1268	13 0 63 2 456 1743 973 1266
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	2 0 66 1 976 1152 1075 1320 3144	1 0 66 <1 841 1270 917 1268 2883	13 0 63 2 456 1743 973 1266 2815
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 ASTM D5185m	2 0 50 950 1050 995 1180 2600	2 0 66 1 976 1152 1075 1320 3144 current	1 0 66 <1 841 1270 917 1268 2883 history1	13 0 63 2 456 1743 973 1266 2815 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 <b>method</b>	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25	2 0 66 1 976 1152 1075 1320 3144 current 9	1 0 66 <1 841 1270 917 1268 2883 history1 9	13 0 63 2 456 1743 973 1266 2815 history2 12
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 <b>method</b> ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25	2 0 66 1 976 1152 1075 1320 3144 current 9 5	1 0 66 <1 841 1270 917 1268 2883 history1 9 5	13 0 63 2 456 1743 973 1266 2815 history2 12 4
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 <b>limit/base</b> >25 >20	2 0 66 1 976 1152 1075 1320 3144 current 9 5 11	1 0 66 <1 841 1270 917 1268 2883 history1 9 5 23	13 0 63 2 456 1743 973 1266 2815 history2 12 4 37
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25 >20 <b>limit/base</b> >20	2 0 66 1 976 1152 1075 1320 3144 <i>current</i> 9 5 11 11 <i>current</i>	1 0 66 <1 841 1270 917 1268 2883 history1 9 5 23 history1	13 0 63 2 456 1743 973 1266 2815 <b>history2</b> 12 4 37 <b>history2</b>
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 <b>limit/base</b> >25 >20 <b>limit/base</b> >20	2 0 66 1 976 1152 1075 1320 3144 <i>current</i> 9 5 11 <i>current</i> 0.8	1 0 66 <1 841 1270 917 1268 2883 history1 9 5 23 history1 0.7	13 0 63 2 456 1743 973 1266 2815 history2 12 4 37 history2 0.6
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 50 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >4 >20	2 0 66 1 976 1152 1075 1320 3144 <i>current</i> 9 5 11 <i>current</i> 0.8 10.5	1 0 66 <1 841 1270 917 1268 2883 history1 9 5 23 history1 0.7 10.1	13 0 63 2 456 1743 973 1266 2815 history2 12 4 37 history2 0.6 10.8
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 <b>imit/base</b> >25 20 <b>imit/base</b> >4 >20 >30	2 0 66 1 976 1152 1075 1320 3144 <i>current</i> 9 5 11 11 <i>current</i> 0.8 10.5 23.3	1 0 66 <1 841 1270 917 1268 2883 history1 9 5 23 history1 0.7 10.1 22.7	13 0 63 2 456 1743 973 1266 2815 <b>history2</b> 12 4 37 <b>history2</b> 0.6 10.8 24.5



# **OIL ANALYSIS REPORT**



)		VISUAL		method	limit/base	current	history1	history2		
		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		
	*****	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE		
Sep 13/23	Apr11/24	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML		
Sep	Apr	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	11.1	11.2	11.7		
		GRAPHS								
		Ferrous Alloys								
3/23	Υ. Γ	40 - iron								
Sep13/23	1 V	35								
		E 25 E 20								
		<sup>2</sup> 20								
		10								
		5	******************************							
		11/23	3/23 -		1/24					
		Mar17	Sep13/23		Apr11/24					
		Non-ferrous Metal	s							
Sep 13/23	NCI 1 F	45 copper								
Sep	V	40 35	-							
		30-								
		E <sup>25</sup> 20								
		i i i i i i i i i i i i i i i i i i i								
		15								
		5-	1							
		0			4					
		ar17/2	Sep13/23		Apr11/2					
		≊ \/i====itr: @ 10000			Ai					
		Viscosity @ 100°C	• ,			Base Number				
		14 Abnormal			5.	0				
		-			⊕ <sup>4.</sup>	0 -				
		13 G 12 Base			KOH					
		0 12 Base	1		B3.	0				
		tg 11-				0				
		10 - Abnormal			(B)(HO) Base Number (mg KOH/g)					
		9-			° 1.	U +				
		84	m							
		Mar17/23	Sep 13/23		Apr11/24	Mar17/23	Sep 13/23			
		W	Sel		Ap	Ma	Sel			
					NO 07540	NNA/ 14/1 II				
	_aboratory Sample No.	: WearCheck USA - 50 : PCA0113234	01 Madison Ave., Cary, NC 27513 NW WHITI Received : 16 Apr 2024					E & CO - ANDERSON DIVISIO 2605 RIVER F		
	ab Number			Tested : 17 Apr 2024				PIEDMONT, S		
	Jnique Number		Diagr		Apr 2024 - W	les Davis		US 296		
	Fest Package		Contact	Contact: James Thre jthreatt@nwwhite.co						
		, contact Customer Serv								

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Submitted By: Under NWWDUN - James Threatt