

OIL ANALYSIS REPORT

Sample Rating Trend







Machine Id DT642 Component

Diesel Engine

PETRO CANADA DURON SHP 10W30 (--- 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.

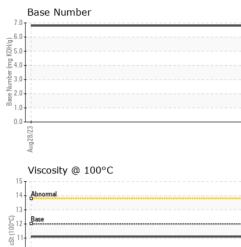
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0101873		
Sample Date		Client Info		28 Aug 2023		
Machine Age	mls	Client Info		0		
Oil Age	mls	Client Info		0		
Oil Changed		Client Info		N/A		
Sample Status				NORMAL		
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0		
Glycol		WC Method		NEG		
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	7		
Chromium	ppm	ASTM D5185m	>20	0		
Nickel	ppm	ASTM D5185m	>4	0		
Titanium	ppm	ASTM D5185m		0		
Silver	ppm	ASTM D5185m	>3	<1		
Aluminum	ppm	ASTM D5185m	>20	4		
Lead	ppm	ASTM D5185m	>40	0		
Copper	ppm	ASTM D5185m	>330	2		
Tin	ppm	ASTM D5185m	>15	0		
Vanadium	ppm	ASTM D5185m		0		
Cadmium	ppm	ASTM D5185m		0		
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 2	current 5	history1	history2
	ppm ppm					
Boron		ASTM D5185m	2	5		
Boron Barium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0	5 0		
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	5 0 61		
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	5 0 61 <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	5 0 61 <1 965		
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	5 0 61 <1 965 1079	 	
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	5 0 61 <1 965 1079 1038	 	
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	5 0 61 <1 965 1079 1038 1289		
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	5 0 61 <1 965 1079 1038 1289 2866		
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	5 0 61 <1 965 1079 1038 1289 2866 current	 history1	 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 ASTM D5185m	2 0 50 950 1050 995 1180 2600	5 0 61 <1 965 1079 1038 1289 2866 current 3	 history1	 history2
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 ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	5 0 61 <1 965 1079 1038 1289 2866 <u>current</u> 3 2	 history1	 history2
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	5 0 61 <1 965 1079 1038 1289 2866 current 3 2 2 7	 history1 	 history2
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 imit/base >25 -20 imit/base	5 0 61 <1 965 1079 1038 1289 2866 current 3 2 2 7 current	 history1 history1	 history2 history2
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 ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	5 0 61 <1 965 1079 1038 1289 2866 <u>current</u> 3 2 2 7 <i>current</i> 0.5	 history1 history1 	 history2 history2
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	5 0 61 <1 965 1079 1038 1289 2866 <i>current</i> 3 2 2 7 <i>current</i> 0.5 9.8	 history1 history1 	 history2 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 D7844 *ASTM D7844 *ASTM D7844	2 0 50 0 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20 >30	5 0 61 <1 965 1079 1038 1289 2866 <i>current</i> 3 2 2 7 <i>current</i> 0.5 9.8 20.5 <i>current</i>	 history1 history1 history1	 history2 history2 history2 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 50 950 1050 995 1180 2600 imit/base >25 imit/base >3 >20	5 0 61 <1 965 1079 1038 1289 2866 <u>current</u> 3 2 2 7 <u>current</u> 0.5 9.8 20.5	 history1 history1 history1 history1	 history2 history2 history2



10 Abnormal 9 8 Aug28/23

OIL ANALYSIS REPORT

VISUAL



	VISUAL		methou	iiiiii/base	Current	history i	mstoryz
	White Metal	scalar	*Visual	NONE	NONE		
	Yellow Metal		*Visual	NONE	NONE		
	Precipitate	scalar	*Visual	NONE	NONE		
	Silt		*Visual	NONE	NONE		
	Debris		*Visual	NONE	NONE		
		scalar					
	_ Sand/Dirt	scalar	*Visual	NONE	NONE		
Aug28/23	Appearance	scalar	*Visual	NORML	NORML		
Au	Odor	scalar	*Visual	NORML	NORML		
	Emulsified Water	scalar	*Visual	>0.2	NEG		
	Free Water	scalar	*Visual		NEG		
	FLUID PROP	FRTIES	method	limit/base	current	history1	history
	Visc @ 100°C	cSt	ASTM D445		11.1		
	GRAPHS						
	Ferrous Alloys						
	10 _T						
	iron						
	8 - nickel						
	6						
	E C						
	4						
	2-						
	0	******		*****			
	8/23			8/23			
	Aug28/23			Aug28/23			
	Non-ferrous Met	als		-			
	¹⁰ T						
	copper						
	8 - management tin						
	6 -						
	udd						
	4-						
	2-						
	0						
	8/23			8/23			
	Aug28/23			Aug28/23			
	⊲ Viscosity @ 100°	Ċ		-			
	¹⁵ T			7.	Base Number		
	14 - Abnormal			6.			
	13-						
				T KOL			
	0 12 Base 0 12		******	(B),HOX Bay Namper Base Reg	0		
	ê 11.			9q m	0		
	S			2	0		
	10			g Z.	0 -		
	-						
	10 - Abnormal			1.	0		
	10 9 8			1.	0		
	10 9 8			1.	0		
	10 - Abnormal			1.	0		
Laboratory	Abnormal 9 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	501 Madis	on Ave Ca	.1. 0. Wing28/23	Aug28/23	ITE & CO - BEAL	JFORT DIVISI
Laboratory Sample No.	10 9 8	501 Madis		.1. 0. Wing28/23	3 NW WH	ITE & CO - BEAL 1491 YENMAS	
	BearCheck USA -		: 31 (1. 	3 NW WH	1491 YENMAS	SEE HIGHW
Sample No. Lab Number Unique Number	: WearCheck USA - : PCA0101873 : 05994193 r : 10722553	Received	l :31 (ed :01 l	ry, NC 2751 Doct 2023	3 NW WH	1491 YENMAS	SEE HIGHW ARNVILLE, S
Sample No. Lab Number Unique Number ficate 12367 Test Package	: WearCheck USA - : PCA0101873 : 05994193 or : 10722553 e : FLEET	Received Diagnose Diagnosti	ed : 31 (ed : 01 l ician : We	ry, NC 2751 Dct 2023 Nov 2023 s Davis	3 NW WH	1491 YENMASS V Contact: VINC	SEE HIGHW ARNVILLE, S US 299 ENT BULLO
Sample No. Lab Number Unique Number	: WearCheck USA - : PCA0101873 : 05994193 or : 10722553 e : FLEET ; contact Customer Ser	Received Diagnose Diagnosti	l : 31 (ed : 01 l ician : We 00-237-1369	ry, NC 2751 Dct 2023 Nov 2023 s Davis	3 NW WH	1491 YENMASS V	SEE HIGHW/ ARNVILLE, S US 299 ENT BULLO