

# **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id

#### TM7070 Component Diesel Engine Fluid PETRO CANADA DURON SHP 10W30 (--- QTS)

# DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

## Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

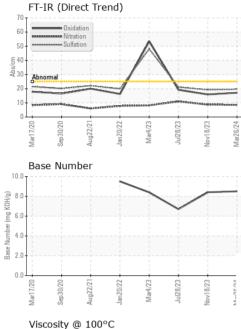
#### Fluid Condition

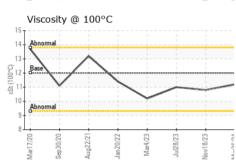
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0120685	PCA0113363	PCA0102994
Sample Date		Client Info		26 Mar 2024	18 Nov 2023	28 Jul 2023
Machine Age	mls	Client Info		281453	0	269015
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	N/A	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	30	30	50
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	<1	0
Titanium	ppm	ASTM D5185m	27	0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	4	6	6
Lead	ppm	ASTM D5185m	>40	0	0	0
Copper	ppm	ASTM D5185m		2	1	1
Tin	ppm	ASTM D5185m	>15	0	0	<1
Vanadium	ppm	ASTM D5185m	210	0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES	pp	method	limit/bass	-	-	-
ADDITIVES		method				history2
Boron	ppm	ASTM D5185m	2	4	16	5
Barium	ppm ppm	ASTM D5185m ASTM D5185m	0	0	0	0
	ppm ppm	ASTM D5185m ASTM D5185m	0 50	0 65	0 61	0 67
Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0	0 65 <1	0 61 <1	0 67 <1
Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950	0 65 <1 989	0 61 <1 858	0 67 <1 990
Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950 1050	0 65 <1 989 1338	0 61 <1 858 1191	0 67 <1 990 1202
Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950 1050 995	0 65 <1 989 1338 1151	0 61 <1 858 1191 1023	0 67 <1 990 1202 1038
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180	0 65 <1 989 1338 1151 1371	0 61 <1 858 1191 1023 1262	0 67 <1 990 1202 1038 1338
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	0 50 0 950 1050 995 1180 2600	0 65 <1 989 1338 1151	0 61 <1 858 1191 1023 1262 3068	0 67 <1 990 1202 1038 1338 3414
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	0 50 0 950 1050 995 1180 2600	0 65 <1 989 1338 1151 1371 3896 current	0 61 <1 858 1191 1023 1262 3068 history1	0 67 <1 990 1202 1038 1338 3414 history2
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	0 50 0 950 1050 995 1180 2600	0 65 <1 989 1338 1151 1371 3896 current 4	0 61 <1 858 1191 1023 1262 3068 history1 5	0 67 <1 990 1202 1038 1338 3414 <b>history2</b> 4
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 <b>method</b> ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600	0 65 <1 989 1338 1151 1371 3896 current 4 <1	0 61 <1 858 1191 1023 1262 3068 history1 5 2	0 67 <1 990 1202 1038 1338 3414 history2
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600	0 65 <1 989 1338 1151 1371 3896 current 4	0 61 <1 858 1191 1023 1262 3068 history1 5	0 67 <1 990 1202 1038 1338 3414 history2 4 3 8
Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm	ASTM D5185m ASTM D5185m	0 50 0 950 1050 995 1180 2600 <i>limit/base</i> >25 >20	0 65 <1 989 1338 1151 1371 3896 current 4 <1 2 current	0 61 <1 858 1191 1023 1262 3068 history1 5 2 7 7 history1	0 67 <1 990 1202 1038 1338 3414 history2 4 3 8 8 history2
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	0 50 0 950 1050 995 1180 2600 <i>limit/base</i> >25 >20 <i>limit/base</i>	0 65 <1 989 1338 1151 1371 3896 current 4 <1 2 2 current 0.4	0 61 <1 858 1191 1023 1262 3068 history1 5 2 7 7 history1 0.4	0 67 <1 990 1202 1038 1338 3414 history2 4 3 8 8 history2 0.6
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	0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >25 >20 <b>imit/base</b> >3 >20	0 65 <1 989 1338 1151 1371 3896 <u>current</u> 4 <1 2 <u>current</u> 0.4 8.6	0 61 <1 858 1191 1023 1262 3068 history1 5 2 7 7 history1 0.4 8.7	0 67 <1 990 1202 1038 1338 3414 history2 4 3 8 kistory2 0.6 11.0
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	0 50 0 950 1050 995 1180 2600 <i>limit/base</i> >25 >20 <i>limit/base</i>	0 65 <1 989 1338 1151 1371 3896 current 4 <1 2 2 current 0.4	0 61 <1 858 1191 1023 1262 3068 history1 5 2 7 7 history1 0.4	0 67 <1 990 1202 1038 1338 3414 history2 4 3 8 8 history2 0.6
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	0 50 0 950 1050 995 1180 2600 <b>imit/base</b> >25 >20 <b>imit/base</b> >3 >20	0 65 <1 989 1338 1151 1371 3896 <u>current</u> 4 <1 2 <u>current</u> 0.4 8.6	0 61 <1 858 1191 1023 1262 3068 history1 5 2 7 7 history1 0.4 8.7	0 67 <1 990 1202 1038 1338 3414 history2 4 3 8 kistory2 0.6 11.0
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	0 50 0 950 1050 995 1180 2600 imit/base >25 >20 imit/base >3 >20 >30	0 65 <1 989 1338 1151 1371 3896 <u>current</u> 4 <1 2 <u>current</u> 0.4 8.6 19.6	0 61 <1 858 1191 1023 1262 3068 history1 5 2 7 7 history1 0.4 8.7 19.2	0 67 <1 990 1202 1038 1338 3414 history2 4 3 8 <u>history2</u> 0.6 11.0 21.1



# **OIL ANALYSIS REPORT**





	VISUAL		method	limit/bas	se	current		hist	tory1		history	y2		
	White Metal	scalar	*Visual	NONE	Ν	ONE		NON	E	Ν	IONE			
	Yellow Metal	scalar	*Visual	NONE	Ν	ONE		NON	E	Ν	IONE			
	Precipitate	scalar	*Visual	NONE	N	ONE		NON	E	Ν	IONE			
	Silt	scalar	*Visual	NONE	Ν	ONE		NONE		IONE				
	Debris	scalar	*Visual	NONE	Ν	ONE		NON	E	Ν	NONE			
	Sand/Dirt	scalar	*Visual	NONE	N	ONE		NON	E	Ν	IONE			
Juizo/23 - Nov18/23 - Mar26/24 -	Appearance	scalar	*Visual	NORML	Ν	ORML		NOR	ML	Ν	IORML			
Juiz Nov1 Mar2	Odor	scalar	*Visual	NORML	N	ORML		NOR	ML	Ν	IORML	_		
	Emulsified Water	scalar	*Visual	>0.2	N	EG		NEG		Ν	IEG			
	Free Water	scalar	*Visual		N	EG		NEG		Ν	IEG			
	FLUID PROPE	RTIES	method	limit/bas	se	current		hist	tory1		history	y2		
	Visc @ 100°C	cSt	ASTM D445	12.00	1	1.2		10.8		1	1.0			
	GRAPHS													
	Iron (ppm)				Lea 100 T :	ad (ppm	)							
0/23 8/23	200 - Severe				80 - Sev	ere								
62/02/UL 8/23 л.с. эсл.	E 150 - Abnormal				60 40 Abr									
	100 - Abnormal				40 - 4	ormal			l I			-		
	50	/			20-									
	20 10	23	/23	124	20 to	/20	121	22	/23	/23	/23	124		
	Mar17/20 Sep30/20 Aug22/21	Jan zu/ zz Mar4/23	Jul28/23 Nov18/23	Mar26/24	Mar17/20	Sep30/20	Aug22/21	Jan20/22	Mar4/23	Jul28/23	Nov18/23	Mar26/24		
	Aluminum (ppm)				Ch	romium	(ppi	m)						
	50 Severe				50 Sev									
	40 - Severe			1	+0									
23	Abnormal				20 - Abn	ormal								
Nov18/23														
~ ~ ~					10									
	Mar17/20 - Sep30/20 - Aug22/21 -	Jan 20/22 - Mar4/23 -	Jul28/23 - Nov18/23 -	Mar26/24 -	Mar17/20	Sep30/20 -	Aug22/21.	Jan20/22 -	Mar4/23 -	Jul28/23 -	Nov18/23 -	Mar26/24 -		
	Mar.	Ma	Jul	Mari				Jan	Ma	յոր	Nov	Mari		
	Copper (ppm)					con (pp	m)							
	Abnormal					ere								
	300-				60-									
	<u>특</u> 200				특 40 - Abr	- In the second								
	100-				20-	ormal								
	0				ol		-					-		
	Mar17/20 Sep30/20 Aug22/21	Jan z U/ z z . Mar4/23 .	Jul28/23 Nov18/23	Mar26/24	Mar17/20	Sep30/20 -	Aug22/21	Jan 20/22	Mar4/23	Jul28/23	Nov18/23	Mar26/24		
		M	uL Nov	Ma				Jar	M	որ	Nov	Ma		
	Viscosity @ 100°C				10.0 T	se Num	ber							
	Abnormal			(P/HO	8.0-			_	-		_			
	D-00 Base			(ma K	6.0					$\sim$				
	(0.001) 12 12			mber	4.0									
	10 Abnormal	$\sim$		Base Number (ma KOH/a)	2.0									
		1 10			0.0		21	2				4		
	Mar17/20 Sep30/20 Aug22/21	Jan z U/ 22 Mar4/23	Jul28/23 Nov18/23	Mar26/24	Mar17/20	Sep30/20 -	Aug22/21	Jan 20/22	Mar4/23	Jul28/23	Nov18/23	Mar26/24		
	M.: Se		n on	W	M	Se	AL	٩	2	Ļ	Nc	M		
	W 0 1100 -			NG 6== -										
Laboratory Sample No.	: WearCheck USA - 50 <sup>-</sup> : PCA0120685	I Madiso <b>Rece</b> i					MIL	LER T						
Lab Number		d : 09				39 INDUSTRIAL AVE HASBROUCK HEIGHTS, NJ								
	r : 06142708 Tested : 09 Apr 2024 r : 10967516 Diagnosed : 09 Apr 2024 - Wes Davis							HASBROUCK HEIGHTS, NJ						



Unique Number : 10967516 Diagnosed : 09 Apr 2024 - Wes Davis Test Package : MOB 1 (Additional Tests: TBN) Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation. Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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