

OIL ANALYSIS REPORT

Sample Rating Trend

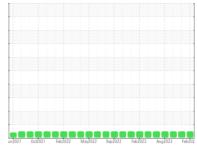
NORMAL

Plymouth & Brockton

Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (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.

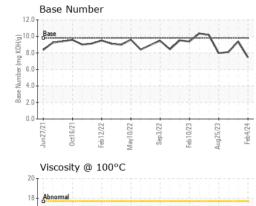
Fluid Condition

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

CAMPLE INFO		un2021 Oct	limait/le e e	22 Sep2022 Feb2023 Aug20		hiete		
SAMPLE INFOR	RIVIATION		limit/base	current	history1	history2		
Sample Number		Client Info		PCA0110056	PCA0104402	PCA0104678		
Sample Date				04 Feb 2024	28 Dec 2023	08 Nov 2023		
3-		Client Info		287161	275738	262758		
Oil Age			Client Info		1200	24000		
Oil Changed		Client Info		Changed	Not Changd	Changed		
Sample Status	tatus			NORMAL	NORMAL	NORMAL		
CONTAMINA	TION	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 METAI	LS	method	limit/base	current	history1	history2		
Iron	ppm	ASTM D5185m	>90	21	9	16		
Chromium	ppm	ASTM D5185m	>20	1	<1	1		
Nickel	ppm	ASTM D5185m	>2	0	0	0		
Titanium	ppm	ASTM D5185m	>2	1	1	0		
Silver	ppm	ASTM D5185m	>2	0	0	0		
Aluminum	ppm	ASTM D5185m	>20	2	2	2		
Lead		ASTM D5185m	>40	0	0	0		
			>330	<1	2	0		
Copper Tin	ppm	ASTM D5185m				<1		
	ppm	ASTM D5165III	>15	0	0			
Vanadium				0	0	0		
Cadmium	ppm	ASTM D5185m		0	0	0		
ADDITIVES		method	limit/base	current	history1	history2		
Boron	ppm	ASTM D5185m	0	8	6	3		
Barium	ppm	ASTM D5185m	0	3	0	0		
Molybdenum	ppm	ASTM D5185m	60	62	58	59		
Manganese	ppm	ASTM D5185m	0	0	<1	<1		
Magnesium	ppm	ASTM D5185m	1010	852	864	947		
Calcium	ppm	ASTM D5185m	1070	1048	998	1115		
Phosphorus	ppm	ASTM D5185m	1150	929	948	1038		
Zinc	ppm	ASTM D5185m	1270	1130	1165	1292		
Sulfur	ppm	ASTM D5185m	2060	3051	2851	3012		
CONTAMINA	NTS	method	limit/base	current	history1	history2		
Silicon	ppm	ASTM D5185m	>25	4	2	4		
Sodium	ppm	ASTM D5185m		0	0	<1		
Potassium	ppm	ASTM D5185m	>20	2	0	0		
INFRA-RED		method	limit/base	current	history1	history2		
Soot %	%	*ASTM D7844	>6	3.4	1.8	2.3		
Nitration	Abs/cm	*ASTM D7624	>20	11.3	8.4	10.3		
Sulfation	Abs/.1mm	*ASTM D7415	>30	25.3	20.8	23.6		
FLUID DEGRA	DATION	method	limit/base	current	history1	history2		
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.8	13.6	16.4		
Base Number (BN)		ASTM D2896		7.45	9.39	8.11		
Dasc Hamber (DIN)	mg Norrg	7.0 TWI D2000	0.0	7.70	0.00	0.11		



OIL ANALYSIS REPORT



VISUAL		method				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
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
ELLUD DDODE	DTIES					

20 T 7 7 7	LOSILY	7777	-1-1-1				
18 - Abno	ormal						
16 - Base		***************************************					
16 - Base	ormal	_	-		\-	~~	~
12-7							
10 12/2	6/21	2/22)/22	3/22	1/23	5/23	101
Jun2	0ct16/	Feb12/	May10	Sep3/2	Feb 10	Aug25/2	Lah

	FLUID PROPERTIES		method limit/bas			/base	e current			history1			history2				
	Visc @ 100°C cSt		ASTM D445 15.4				14.2			13.8		14.2					
	GRAPHS																
25		Iron (ppm)					100,				d (ppr	n)					
200 E 150	Savere	Covere					80 - 8		е								
	0								Edd 40								
¹ 10	T	nal							- 40 20	Abno	IIIIai						
							\sim	_	0								
	Jun27/21	Oct16/2	Feb12/22	May10/22	Sep3/22	Feb 10/23	Aug25/23	Feb4/24		Jun27/2	Oct16/21	Feb12/22	May10/22	Sep3/22	Feb 10/23	Aug25/23	Feb4/24
			ت (ppr			4 A				Chromium (ppm)							
5	O		m	im				TT	50 40		3-3-3	T	in				TT
	1									Ĭ	1						
mdd 2	O - Abnormal						30 - 1	3 - Almontal									
1	0								10								
	Jun27/21	0ct16/21-	Feb12/22	May10/22 -	Sep3/22	Feb 10/23	Aug25/23	Feb4/24	Ü	Jun27/21	0ct16/21-	Feb12/22	May10/22	Sep3/22 -	Feb10/23	Aug25/23	Feb4/24
	-			Мау	Š	윤	Aug	2					May	Š	물	Aug	æ
40		oer (p	ppm)		7-7-7				80		on (p	pm)					
30	0	IIdi							60								
튭 20	0								툆 40	Abno	rmal						
10	0-								20	4							
	0 12/	3/21	1/22	1/22	1/22	//Z3	/23	Feb4/24	0	12/2	3/21	1/22	727/	1/22	1/23	,723	Feb4/24
	Jun27/21	Oct16/21	Feb 12/22	May10/22	Sep3/22	Feb 10/23	Aug25/23	Feb4		Jun27/21	Oct16/2	Feb 12/22	May10/22	Sep3/22	Feb10/23	Aug25/23	Feb4
2		Viscosity @ 100°C									Base Number						
18 ()_001	1	mal							(B/H0.0	Base			~			1	_
	Onnanna								0.8 gar 6.0								
±53 1	Abnon	mal	_			$\overline{}$			4.0								
1	0		2	2	2		6	4	8 2.0 0.0			2	2	2		23	4
	Jun27/21	0ct16/21	Feb 12/22	May10/22	Sep3/22	Feb10/23	Aug25/23	Feb4/24		Jun27/21	Oct16/21	Feb12/22	May10/22	Sep3/22	Feb 10/23	Aug25/23	Feb4/24
	31565		334.56	~		200	4			-		_	2		_	4	





Certificate L2367

Laboratory

Sample No.

Lab Number : 06094383 Unique Number : 10887236 Test Package : MOB 2

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : PCA0110056 Received

: 20 Feb 2024 Tested : 21 Feb 2024 Diagnosed

: 21 Feb 2024 - Wes Davis

US 02360 Contact: Donald Pelpquin Dpeloquin@P-B.com T: (508)732-6039

PLYMOUTH & BROCKTON

8 INDUSTRIAL PARK RD

PLYMOUTH, MA

F: (508)732-6091

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)