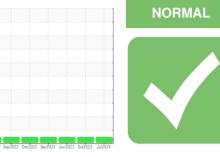


OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id **516817** 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

Metal levels are typical for a new component breaking in.

Contamination

There is no indication of any contamination in the oil.

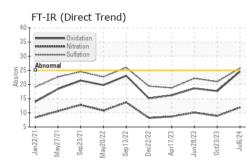
Fluid Condition

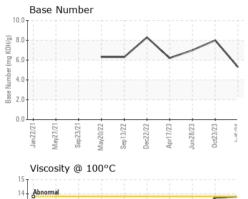
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

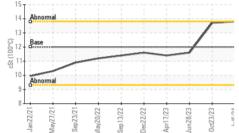
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0128941	PCA0110435	PCA0101307
Sample Date		Client Info		06 Jul 2024	23 Oct 2023	28 Jun 2023
Machine Age	mls	Client Info		14139	115738	109500
Oil Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	Not Changd	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	41	18	35
Chromium	ppm	ASTM D5185m	>20	2	<1	2
Nickel	ppm	ASTM D5185m	>4	0	<1	1
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>3	0	<1	0
Aluminum	ppm	ASTM D5185m	>20	10	5	11
Lead	ppm	ASTM D5185m	>40	0	<1	0
Copper	ppm	ASTM D5185m	>330	37	34	75
Tin	ppm	ASTM D5185m	>15	<1	1	2
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	<1	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base 2	current	history1 20	history2 7
	ppm ppm					
Boron		ASTM D5185m	2	11	20	7
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0 50	11 0	20 0	7 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	11 0 51	20 0 51	7 0 56
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	11 0 51 1	20 0 51 <1	7 0 56 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	11 0 51 1 660	20 0 51 <1 617	7 0 56 1 867
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	11 0 51 1 660 1550	20 0 51 <1 617 1424	7 0 56 1 867 1159
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	11 0 51 1 660 1550 999	20 0 51 <1 617 1424 982	7 0 56 1 867 1159 891
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	11 0 51 1 660 1550 999 1229	20 0 51 <1 617 1424 982 1208	7 0 56 1 867 1159 891 1117
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 0 950 1050 995 1180 2600	11 0 51 1 660 1550 999 1229 2871	20 0 51 <1 617 1424 982 1208 2844	7 0 56 1 867 1159 891 1117 2143
Boron 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 ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	11 0 51 1 660 1550 999 1229 2871 current	20 0 51 <1 617 1424 982 1208 2844 history1	7 0 56 1 867 1159 891 1117 2143 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	2 0 50 0 950 1050 995 1180 2600 limit/base	11 0 51 1 660 1550 999 1229 2871 2871 current 5	20 0 51 <1 617 1424 982 1208 2844 history1 4	7 0 56 1 867 1159 891 1117 2143 history2 4
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	11 0 51 1 660 1550 999 1229 2871 2871 current 5 4 9 9 287	20 0 51 <1 617 1424 982 1208 2844 history1 4 0 8 8 history1	7 0 56 1 867 1159 891 1117 2143 history2 4 2 13 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	11 0 51 1 660 1550 999 1229 2871 2871 5 2871 5 4 9 9 2871 1	20 0 51 <1 617 1424 982 1208 2844 history1 4 0 8 history1 0.5	7 0 56 1 867 1159 891 1117 2143 history2 4 2 13 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 TS 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> >3 >20	11 0 51 1 660 1550 999 1229 2871 <i>current</i> 5 4 9 <i>current</i> 1 1	20 0 51 <1 617 1424 982 1208 2844 history1 4 0 8 <u>history1</u> 0.5 8.9	7 0 56 1 867 1159 891 1117 2143 history2 4 2 13 history2 0.8 10.1
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	11 0 51 1 660 1550 999 1229 2871 2871 5 2871 5 4 9 9 2871 1	20 0 51 <1 617 1424 982 1208 2844 history1 4 0 8 history1 0.5	7 0 56 1 867 1159 891 1117 2143 history2 4 2 13 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 50 950 1050 995 1180 2600 <i>imit/base</i> >25 >20 <i>imit/base</i> >3 >20	11 0 51 1 660 1550 999 1229 2871 <i>current</i> 5 4 9 <i>current</i> 1 1	20 0 51 <1 617 1424 982 1208 2844 history1 4 0 8 <u>history1</u> 0.5 8.9	7 0 56 1 867 1159 891 1117 2143 history2 4 2 13 history2 0.8 10.1
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	11 0 51 1 660 1550 999 1229 2871 current 5 4 9 current 1 1 11.9 25.8	20 0 51 <1 617 1424 982 1208 2844 history1 4 0 8 8 history1 0.5 8.9 21.0	7 0 56 1 867 1159 891 1117 2143 history2 4 2 13 history2 0.8 10.1 22.2
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 TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 0 50 0 950 1050 995 1180 2600 imit/base >25 20 >20 >30 >30 imit/base	11 0 51 1 660 1550 999 1229 2871 <i>current</i> 5 4 9 <i>current</i> 1 1.1.9 25.8 <i>current</i>	20 0 51 <1 617 1424 982 1208 2844 history1 4 0 8 history1 0.5 8.9 21.0 history1	7 0 56 1 867 1159 891 1117 2143 history2 4 2 13 history2 0.8 10.1 22.2 history2



OIL ANALYSIS REPORT







				Provide Barrier		1.	le la second
	VISUAL		method	limit/base	current	history1	history2
	White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
	Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
-1	Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
~	Silt	scalar	*Visual	NONE	NONE	NONE	NONE
and a little way on the state of the state o	Debris	scalar	*Visual	NONE	NONE	NONE	NONE
the second se	Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Jun28/23 0ct23/23 Jul6/24	Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Juni, Jr	Odor	scalar	*Visual	NORML	NORML	NORML	NORML
	Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
	Free Water	scalar	*Visual		NEG	NEG	NEG
\wedge	FLUID PROPE	RTIES	method	limit/base	current	history1	history2
$\langle \rangle$	Visc @ 100°C	cSt	ASTM D44	5 12.00	13.8	13.7	11.6
	GRAPHS						
	Iron (ppm)				Lead (ppm)		
*	250 Severe		I I I I		Severe		1 I I I I
Jun 28/23 0ct23/23	200						
00 Jun	Abnormal			E.	60 40 Abnormal		
	100 - 0						
	50	\searrow		-	0		
-		3/22	3/23 -	lct23/23 +		0/22 - 8/22 - 2/22 -	pri 17/23 - in 28/23 - ct23/23 -
	Jan 22/21 May 27/21 Sep 23/21 May 20/22	Sep 13/22 - Dec22/22 -	Apr17/23 Jun28/23	0ct23/23	Jan 22/21 May 27/21 Sep 23/21	May20/22 Sep13/22 Dec22/22	Apr17/23 Jun28/23 Oct23/23 Jul6/24
_	Aluminum (ppm)				Chromium (_	
	50 T	1			⁵⁰ T		
	40 - Severe				40 - Severe		
~ ~ ~ ~	Abnormal			mdd	30		
Jun28/23 0ct23/23	abnormal		1 I		20 - Abnormal	1 1 1	
ng ö	10	\sim	-	-	10		
	21+	22	23	23	21	22	23
	Jan 22/21 May 27/21 Sep 23/21 May 20/22	Sep 13/22 Dec22/22	Apr17/23 Jun28/23	0ct23/23 Jul6/24	Jan 22/21 May 27/21 Sep 23/21	May20/22 Sep13/22 Dec22/22	Apr17/23 Jun28/23 0ct23/23 Jul6/24
	Copper (ppm)	0	4	0	Silicon (ppm)		
	⁸⁰⁰				80 Severe	/	
	600				60		
					Abnormal		
	200				20		
	0	2	3	m 4	0	2-1	+
	Jan 22/21 May 27/21 Sep 23/21 May 20/22	Sep 13/22 Dec 22/22	Apr17/23 Jun28/23	0ct23/23	Jan 22/21 May 27/21 Sep 23/21	May20/22 - Sep13/22 - Dec22/22 -	Aprl 7/23 Jun 28/23 Oct23/23 Jul6/24
		De	Ar	ŏ	E	8	Ju Ju
	Viscosity @ 100°C				Base Numbe	r 	
	14 Abnormal			8 8 6 Vinnber (mg KOH/g) Base Number (mg KOH/g)	3.0	\wedge	
	12 Base			Ĕ G	.0 -		\sim
	C 12			aqun 4	l.0		
	10 - Abnormal			Z ase	2.0		
	21+	2+-	<u> </u>	O			
	Jan 22/21 May 27/21 Sep 23/21 May 20/22	Sep 13/22 Dec22/22	Apr17/23 Jun28/23	0ct23/23 Jul6/24	Jan 22/21 May 27/21 Sep 23/21	May20/22 Sep13/22 Dec22/22	Apr17/23 Jun28/23 Oct23/23 Jul6/24
	Ji Se Ma	Se	A A	0	N N N	Mi. Se	Ϋ́Ϋ́Ϋ́Ϋ́Ϋ́Ϋ́Ϋ́Ϋ́Ϋ́Ϋ́Ϋ́Ϋ́Ϋ́Υ
Laboratory	: WearCheck USA - 501				N		LEASING #119
Sample No. Lab Number	: PCA0128941 : 06238893	Recei Teste		17 Jul 2024 17 Jul 2024			DUSTRIAL AVE K HEIGHTS, NJ
Unique Number		Diagr		17 Jul 2024 - V	Ves Davis		US 07604



Test Package : MOB 1 (Additional Tests: TBN) 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) F: (201)528-7053

Report Id: MILRUT [WUSCAR] 06238893 (Generated: 07/17/2024 16:33:37) Rev: 1

Contact/Location: MIKE LONGETTE - MILRUT

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Т:

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