

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

612494 Component Diesel Engine Fluid PETRO CANADA DURON SHP 10W30 (--- GAL)

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.

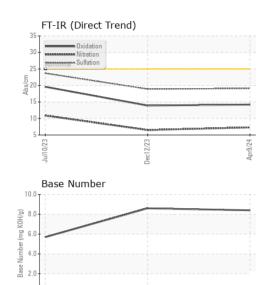
Fluid Condition

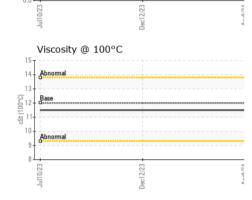
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0121478	PCA0112282	PCA0100774
Sample Date		Client Info		09 Apr 2024	12 Dec 2023	10 Jul 2023
Machine Age	mls	Client Info		0	117155	108896
Oil Age	mls	Client Info		0	117155	108896
Oil Changed		Client Info		N/A	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	14	13	44
Chromium	ppm	ASTM D5185m	>20	2	3	6
Nickel	ppm	ASTM D5185m	>4	0	<1	<1
Titanium	ppm	ASTM D5185m		2	2	9
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	13	12	36
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	17	17	62
Tin	ppm	ASTM D5185m	>15	1	1	3
Vanadium	ppm	ASTM D5185m		0	<1	<1
Cadmium	ppm	ASTM D5185m		0	<1	0
				•		
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 7	5	4
	ppm ppm			current		
Boron Barium Molybdenum		ASTM D5185m	2 0 50	current 7 0 59	5 12 57	4 0 54
Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m	2 0 50 0	current 7 0 59 <1	5 12 57 <1	4 0 54 1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950	current 7 0 59 <1 933	5 12 57 <1 919	4 0 54 1 858
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050	Current 7 0 59 <1 933 1212	5 12 57 <1 919 1127	4 0 54 1 858 1348
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995	Current 7 0 59 <1 933 1212 1023	5 12 57 <1 919 1127 978	4 0 54 1 858 1348 937
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 ASTM D5185m	2 0 50 950 1050 995 1180	current 7 0 59 <1 933 1212 1023 1268	5 12 57 <1 919 1127 978 1232	4 0 54 1 858 1348 937 1209
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	2 0 50 950 1050 995 1180 2600	Current 7 0 59 <1 933 1212 1023	5 12 57 <1 919 1127 978	4 0 54 1 858 1348 937
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	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	current 7 0 59 <1 933 1212 1023 1268	5 12 57 <1 919 1127 978 1232	4 0 54 1 858 1348 937 1209
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 50 950 1050 995 1180 2600	current 7 0 59 <1 933 1212 1023 1268 3481 current 3	5 12 57 <1 919 1127 978 1232 3437 history1 4	4 0 54 1 858 1348 937 1209 2990 history2 4
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 method ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	current 7 0 59 <1 933 1212 1023 1268 3481 current 3 2	5 12 57 <1 919 1127 978 1232 3437 history1 4 4	4 0 54 1 858 1348 937 1209 2990 history2 4 5
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 50 950 1050 995 1180 2600	current 7 0 59 <1 933 1212 1023 1268 3481 current 3	5 12 57 <1 919 1127 978 1232 3437 history1 4	4 0 54 1 858 1348 937 1209 2990 history2 4
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	2 0 50 950 1050 995 1180 2600 limit/base >25	current 7 0 59 <1 933 1212 1023 1268 3481 current 3 2 22 current	5 12 57 <1 919 1127 978 1232 3437 history1 4 4 21 21 history1	4 0 54 1 858 1348 937 1209 2990 history2 4 5 71 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 ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	current 7 0 59 <1 933 1212 1023 1268 3481 current 3 2 22 current 0.6	5 12 57 <1 919 1127 978 1232 3437 history1 4 4 21 <u>history1</u> 0.5	4 0 54 1 858 1348 937 1209 2990 history2 4 5 71 5 71 history2 1.2
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 0 950 1050 995 1180 2600 limit/base >25 -20 limit/base	current 7 0 59 <1 933 1212 1023 1268 3481 current 3 2 22 current 0.6 7.3	5 12 57 <1 919 1127 978 1232 3437 history1 4 4 21 4 21 bistory1 0.5 6.5	4 0 54 1 858 1348 937 1209 2990 history2 4 5 71 5 71 history2 1.2 1.2 10.9
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 ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3	current 7 0 59 <1 933 1212 1023 1268 3481 current 3 2 22 current 0.6	5 12 57 <1 919 1127 978 1232 3437 history1 4 4 21 <u>history1</u> 0.5	4 0 54 1 858 1348 937 1209 2990 history2 4 5 71 5 71 history2 1.2
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>limit/base</i> >25 >20 <i>limit/base</i> >3 >20	current 7 0 59 <1 933 1212 1023 1268 3481 current 3 2 22 current 0.6 7.3	5 12 57 <1 919 1127 978 1232 3437 history1 4 4 21 4 21 bistory1 0.5 6.5	4 0 54 1 858 1348 937 1209 2990 history2 4 5 71 5 71 history2 1.2 1.2 10.9
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 imit/base >25 imit/base >3 >20	current 7 0 59 <1 933 1212 1023 1268 3481 current 3 2 22 current 0.6 7.3 19.1	5 12 57 <1 919 1127 978 1232 3437 history1 4 4 21 history1 0.5 6.5 18.9	4 0 54 1 858 1348 937 1209 2990 history2 4 5 71 history2 1.2 1.2 1.2 10.9 23.7



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
FLUID PROPE	RTIES	method	limit/ba	se	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00		11.5	11.5	11.5
GRAPHS							
Iron (ppm)					Lead (ppm)		
⁰ T;				100			
) - Gevere				80-	Severe		
Abnormal				60.	Ab		
) - Abnormal				<u>−</u> 40-	Abnormal		
				20-			
	23 -		24	0	23	53	4
Jul10/23	Dec12/23		Apr9/24		Jul10/23	Dec12/23	Anr9/24
-	ā						
Aluminum (ppm)				50	Chromium (pp)m)	
Severe				40	Severe		
				₌ 30			
Abnormal				ad 20	Abnormal		
0				10-			
٥L				0			
Juit 0/23	Dec12/23		Apr9/24		Jul10/23	Dec12/23	Apr9/24
∼ Copper (ppm)	ă				¬ Silicon (ppm)	Ď	
Severe				80	Severe		
				60-			
0-				표 40 ·			
0				20	Abnormal		
	_			20.			
2 2	23-		24	0	23	23-	24
Jul10/23	Dec12/23		Apr9/24		Jul10/23	Dec12/23	Aor9/24
Viscosity @ 100°C	_				Base Number	_	
6 T			(W/H	10.0			
4 - Abnormal			Base Minmher (mn KOH/A)	8.0 6.0			
2 Base			her (n	4.0			
0 - Abnormal			N	2.0			
8			ase a	0.0			
	2/23		Apr9/24 -	0.04	0/23	2/23 -	3/24 -
Jul10/23	Dec12/23		Apri		Jul10/23	Dec12/23	Apr9/24
VearCheck USA - 501					М		
2CA0121478 1 <mark>6143831</mark>	Recei Teste		Apr 2024 (Apr 2024				ENNETT ROAD ADELPHIA, PA
			Apr 2024 Apr 2024		D .	FHIL	
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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)

Report Id: MILPHINE [WUSCAR] 06143831 (Generated: 04/11/2024 04:31:09) Rev: 1

Certificate L2367

Laboratory Sample No. Lab Number Unique Number Test Package

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