

OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

DT849 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 INFORM	ΛΑΤΙΟΝ	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0125411	PCA0119933	PCA0107453
Sample Date		Client Info		28 May 2024	02 May 2024	04 Dec 2023
Machine Age	mls	Client Info		106428	101623	0
Oil Age	mls	Client Info		106428	0	0
Oil Changed		Client Info		Not Changd	Changed	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATI	ON	method	limit/base	current	history1	history2
Fuel		WC Method	\ 5	~10	<1.0	<10
Water		WC Method	>0.2	NFG	NEG	NEG
Glycol		WC Method	20.2	NEG	NEG	NEG
	2	method	limit/base	ourrent	history1	history?
	5		innit/base	current	Thistory	Thistoryz
Iron	ppm	ASTM D5185m	>100	<1	21	13
Chromium	ppm	ASTM D5185m	>20	0	1	<1
Nickel	ppm	ASTM D5185m	>4	0	5	<1
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>3	0	<1	0
Aluminum	ppm	ASTM D5185m	>20	1	3	2
Lead	ppm	ASTM D5185m	>40	0	1	<1
Copper	ppm	ASTM D5185m	>330	2	6	5
Tin	ppm	ASTM D5185m	>15	0	2	0
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	<1	<1
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current <1	history1 1	history2 80
ADDITIVES Boron Barium	ppm ppm	method ASTM D5185m ASTM D5185m	limit/base 2 0	current <1 0	history1 1 0	history2 80 0
ADDITIVES Boron Barium Molybdenum	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 2 0 50	current <1 0 57	history1 1 0 54	history2 80 0 41
ADDITIVES Boron Barium Molybdenum Manganese	ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 2 0 50 0	current <1 0 57 0	history1 1 0 54 1	history2 80 0 41 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm ppm	methodASTM D5185mASTM D5185mASTM D5185mASTM D5185m	limit/base 2 0 50 0 950	<pre>current <1 0 57 0 904</pre>	history1 1 0 54 1 816	history2 80 0 41 <1 438
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 2 0 50 0 950 1050	current <1 0 57 0 904 1091	history1 1 0 54 1 1 816 1044	history2 80 0 41 <1 438 1583
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 2 0 50 0 950 1050 995	Current <1 0 57 0 904 1091 1012	history1 1 0 54 1 816 1044 845	history2 80 0 41 <1 438 1583 1043
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 2 0 50 0 950 1050 995 1180	current <1 0 57 0 904 1091 1012 1196	history1	history2 80 0 41 <1 438 1583 1043 1202
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 2 50 0 950 1050 995 1180 2600	current <1 0 57 0 904 1091 1012 1196 3554	history1 1 0 54 1 816 1044 845 1129 2788	history2 80 0 41 <1 438 1583 1043 1202 3929
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base 2 0 50 0 950 1050 995 1180 2600	current <1 0 57 0 904 1091 1012 1196 3554 current	history1	history2 80 0 41 <1 438 1583 1043 1202 3929 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Chosphorus Zinc Sulfur CONTAMINAN Silicon	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m	limit/base 2 0 5 0 0 9 5 0 105 0 9 9 5 118 0 2 6 0 imit/base > 25	current <1 0 57 0 904 1091 1012 1196 3554 current 1	history1 1 0 54 1 816 1044 845 1129 2788 history1	history2 80 0 41 <1 438 1583 1043 1202 3929 history2 4
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Chosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	method ASTM D5185m	limit/base 2 0 5 0 0 9 5 0 105 0 9 9 5 118 0 2 6 0 0 limit/base > 25	current <1 0 57 0 904 1091 1012 1196 3554 current 1 1 1	history1 1 0 54 1 816 1044 845 1129 2788 history1 10 0	history2 80 0 41 <1 438 1583 1043 1202 3929 history2 4 <1
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sidium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm TS	method ASTM D5185m	limit/base 2 0 5 0 5 0 9 5 0 1050 9 9 5 1180 2 6 0 imit/base > 20	current <1 0 57 0 904 1091 1012 1196 3554 current 1 1 1 1 1 1 1	history1 1 0 54 1 816 1044 845 1129 2788 history1 10 9	history2 80 0 41 <1 438 1583 1043 1202 3929 history2 4 <1 3
ADDITIVES 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	method ASTM D5185m	limit/base 2 0 5 0 0 9 5 0 10 5 0 9 5 0 1180 2 6 0 1180 2 6 0 2 5 2 0 1 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 1 1 0 1	current <1 0 57 0 904 1091 1012 1196 3554 current 1 1 1 1 1 1 1 1 1 1 1 1 1 1	history1 1 0 54 1 816 1044 845 1129 2788 history1 10 9 history1	history2 80 0 41 <1 438 1583 1043 1202 3929 history2 4 <1 3 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm	method ASTM D5185m	limit/base 2 0 5 0 9 5 0 9 5 0 9 5 0 9 5 0 1 1 8 0 9 5 1 1 8 0 1 1 8 0 1 1 8 0 1 1 8 0 1 1 8 0 1 1 1 1	current <1 0 57 0 904 1091 1012 1196 3554 current 1 1 1 1 1 0 0.2	history1 1 0 54 1 816 1044 845 1129 2788 history1 10 9 history1 0.7	history2 80 0 41 <1 438 1583 1043 1202 3929 history2 4 <1 3 history2 0.7
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Silicon Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm t ppm ppm	method ASTM D5185m	<pre>limit/base 2 0 0 5 0 0 95 0 105 0 995 1180 2600 2600 255 3 20 imit/base >3 20</pre>	current <1 0 57 0 904 1091 1012 1196 3554 current 1 1 1 0 0.2 5.6	history1 1 0 54 1 816 1044 845 1129 2788 history1 10 9 history1 0.7 9.3	history2 80 0 41 <1 438 1583 1043 1202 3929 history2 4 <1 3 history2 0.7 8.5
ADDITIVES 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 t spm ppm ppm ppm spm ppm spm ppm spm	method ASTM D5185m ASTM D7844 *ASTM D7624	limit/base 2 0 50 0 950 1050 995 1180 2600 limit/base >20 <3 >20	current <1 0 57 0 904 1091 1012 1196 3554 current 1 1 0 0 0 0.2 5.6 18.1	history1 1 0 54 1 816 1044 845 1129 2788 history1 10 0 9 history1 0.7 9.3 21.6	history2 80 0 41 <1 438 1583 1043 1202 3929 history2 4 <1 3 history2 0.7 8.5 20.7
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D5185m	limit/base 2 0 50 0 950 1050 995 1180 2600 limit/base >20 limit/base >30 limit/base	current <1 0 57 0 904 1091 1012 1196 3554 current 1 1 1 0.2 5.6 18.1	history1 1 0 54 1 816 1044 845 1129 2788 history1 10 0 9 history1 0.7 9.3 21.6 history1	history2 80 0 41 <1 438 1583 1043 1202 3929 history2 4 <1 3 history2 0.7 8.5 20.7 history2
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7415 Method *ASTM D7414 *ASTM D7414	imit/base 2 0 50 0 950 1050 995 1180 2600 imit/base >20 >30 imit/base >20 >30 imit/base >25	current <1 0 57 0 904 1091 1012 1196 3554 current 1 1 0.2 5.6 18.1 current 13.6	history1 1 0 54 1 816 1044 845 1129 2788 history1 10 0 9 history1 0.7 9.3 21.6 history1 16.6	history2 80 0 41 <1 438 1583 1043 1202 3929 history2 4 <1 3 history2 0.7 8.5 20.7 history2 15.7
ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD Oxidation Base Number (BN)	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	method ASTM D5185m ASTM D7185M ASTM D71415 *ASTM D7414 *ASTM D7414 ASTM D2896	limit/base 2 0 50 0 950 1050 995 1180 2600 limit/base >20 limit/base >3 >20 limit/base >30 limit/base >25	current <1 0 57 0 904 1091 1012 1196 3554 current 1 1 0.2 5.6 18.1 current 13.6 8.4	history1 1 0 54 1 816 1044 845 1129 2788 history1 10 0 9 history1 0.7 9.3 21.6 history1 16.6 5.4	history2 80 0 41 <1 438 1583 1043 1202 3929 history2 4 <1 3 history2 0.7 8.5 20.7 history2 15.7 6.2



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
	DTIEC	mathad	limit/bass	ourropt	history	history
	niies	method	IIIIII/Dase	current	TIIStOLA	TIIStoryz
Visc @ 100°C	cSt	ASTM D445	12.00	11.1	11.2	11.4
GRAPHS						





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