

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id DT766 Component Diesel Engine

Fluid

PETRO CANADA DURON SHP 10W30 (--- 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

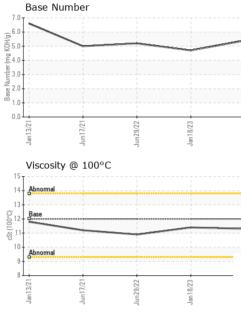
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORI	MATION	method	limit/base	current	history 1	history 2
Sample Number		Client Info		PCA0096939	PCA0091216	PCA0074856
Sample Date		Client Info		30 Jun 2023	18 Jan 2023	29 Jun 2022
Machine Age	mls	Client Info		154392	129664	103235
Oil Age	mls	Client Info		24728	26429	49956
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history 1	history 2
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history 1	history 2
Iron	ppm	ASTM D5185m	>120	19	18	23
Chromium	ppm	ASTM D5185m	>20	<1	<1	1
Nickel	ppm	ASTM D5185m	>5	<1	0	0
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>2	0	<1	<1
Aluminum	ppm	ASTM D5185m	>20	4	6	6
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	5	8	12
Tin	ppm		>15	<1	<1	<1
Antimony	ppm	ASTM D5185m				
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	<1
ADDITIVES		method	limit/base	current	history 1	history 2
Boron	ppm	ASTM D5185m	2	2	2	6
Boron Barium	ppm	ASTM D5185m ASTM D5185m	2 0	2 12	2 0	6 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	2 12 63	2 0 61	6 0 67
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	2 12 63 <1	2 0 61 <1	6 0 67 <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	2 12 63 <1 877	2 0 61 <1 872	6 0 67 <1 899
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	2 12 63 <1 877 1183	2 0 61 <1 872 1025	6 0 67 <1 899 1100
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	2 12 63 <1 877 1183 925	2 0 61 <1 872 1025 847	6 0 67 <1 899 1100 939
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	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	2 12 63 <1 877 1183 925 1252	2 0 61 <1 872 1025 847 1097	6 0 67 <1 899 1100 939 1208
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 50 950 1050 995 1180 2600	2 12 63 <1 877 1183 925 1252 3070	2 0 61 <1 872 1025 847 1097 2715	6 0 67 <1 899 1100 939 1208 3015
Boron 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 ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600	2 12 63 <1 877 1183 925 1252 3070 current	2 0 61 <1 872 1025 847 1097 2715 history 1	6 0 67 <1 899 1100 939 1208 3015 history 2
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 method	2 0 50 950 1050 995 1180 2600	2 12 63 <1 877 1183 925 1252 3070 current 5	2 0 61 <1 872 1025 847 1097 2715 history 1 7	6 0 67 <1 899 1100 939 1208 3015 history 2 6
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 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	2 12 63 <1 877 1183 925 1252 3070 current 5 5	2 0 61 <1 872 1025 847 1097 2715 history 1 7 6	6 0 67 <1 899 1100 939 1208 3015 history 2 6 5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 limit/base >25	2 12 63 <1 877 1183 925 1252 3070 current 5 5 10	2 0 61 <1 872 1025 847 1097 2715 history 1 7 6 7	6 0 67 <1 899 1100 939 1208 3015 history 2 6 5 11
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm TS	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20	2 12 63 <1 877 1183 925 1252 3070 current 5 5 5 10 current	2 0 61 <1 872 1025 847 1097 2715 history 1 7 6 7 6 7 history 1	6 0 67 <1 899 1100 939 1208 3015 history 2 6 5 11 11 history 2
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 >20	2 12 63 <1 877 1183 925 1252 3070 current 5 5 10 current 0.7	2 0 61 <1 872 1025 847 1097 2715 history 1 7 6 7 6 7 <i>history</i> 1 0.7	6 0 67 <1 899 1100 939 1208 3015 history 2 6 5 11 11 history 2 0.7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 limit/base >25 >20 limit/base >4 >20	2 12 63 <1 877 1183 925 1252 3070 current 5 5 10 current 0.7 10.5	2 0 61 <1 872 1025 847 1097 2715 history 1 7 6 7 6 7 history 1 0.7 10.6	6 0 67 <1 899 1100 939 1208 3015 history 2 6 5 11 history 2 0.7 10.2
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 ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 imit/base >25 imit/base >20 imit/base >4 >20	2 12 63 <1 877 1183 925 1252 3070 current 5 5 10 current 0.7 10.5 22.5	2 0 61 <1 872 1025 847 1097 2715 history 1 7 6 7 6 7 history 1 0.7 10.6 22.3	6 0 67 <1 899 1100 939 1208 3015 history 2 6 5 11 11 history 2 0.7 10.2 22.6
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 D7844 *ASTM D7624 *ASTM D7415	2 0 0 50 0 950 1050 995 1180 2600 2600 255 20 220 220 20 20 20 20 20 20 20 20 20 2	2 12 63 <1 877 1183 925 1252 3070 current 5 5 10 current 0.7 10.5 22.5 current	2 0 61 <1 872 1025 847 1097 2715 history 1 7 6 7 6 7 history 1 0.7 10.6 22.3 history 1	6 0 67 <1 899 1100 939 1208 3015 history 2 6 5 11 history 2 0.7 10.2 22.6 history 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 ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 950 1050 995 1180 2600 imit/base >25 imit/base >20 imit/base >4 >20	2 12 63 <1 877 1183 925 1252 3070 current 5 5 10 current 0.7 10.5 22.5	2 0 61 <1 872 1025 847 1097 2715 history 1 7 6 7 6 7 history 1 0.7 10.6 22.3	6 0 67 <1 899 1100 939 1208 3015 history 2 6 5 11 11 history 2 0.7 10.2 22.6



OIL ANALYSIS REPORT

VISUAL



	Laboratory Sample No. Lab Number Unique Number	: WearCheck USA - : PCA0096939 : 05888611 : 10539094	501 Madia Received Diagnost	d :03. ed :05.	ry, NC 27513 Jul 2023 Jul 2023 s Davis	Jan13/21		ERSON DIVISIO 2605 RIVER RI PIEDMONT, SO US 2967
		Base Base			7.0 6.0 (0) HOX 5.0 but 4.0 squmNu 3.0 see 2.0 1.0	Base Number		
		Viscosity @ 100°	C	Jan18/23	Jun30/23			
		Non-ferrous Meta	Jun29/22	Jan 16/23	Jun30/23			
Jun29/22	Jan 18/23 +	GRAPHS Ferrous Alloys				-		
		FLUID PROPI Visc @ 100°C	CRTIES	method ASTM D445	limit/base	current 11.3	history 1 11.4	history 2 10.9
Jun29/22	Jan 1 8/23	Appearance Odor Emulsified Water Free Water	scalar scalar scalar scalar	*Visual *Visual *Visual *Visual	NORML NORML >0.2	NORML NORML NEG NEG	NORML NORML NEG NEG	NORML NORML NEG NEG
2	3	Silt Debris Sand/Dirt	scalar scalar scalar	*Visual *Visual *Visual	NONE NONE NONE	NONE NONE NONE	NONE NONE NONE	NONE NONE NONE
		Yellow Metal Precipitate	scalar scalar	*Visual *Visual	NONE	NONE NONE	NONE	NONE



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Submitted By: Under NWWDUN - James Threatt