

OIL ANALYSIS REPORT

Sample Rating Trend



DT650

Component Diesel Engine

Fluid PETRO CANADA DURON SHP 10W30 (42 mls)

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

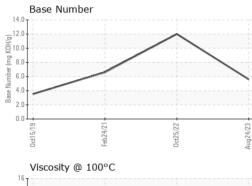
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

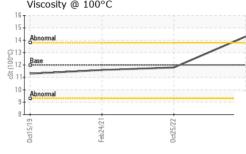
SAMPLE INFORI	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0103237	PCA0080947	PCA0042870
Sample Date		Client Info		24 Aug 2023	25 Oct 2022	24 Feb 2021
Machine Age	mls	Client Info		173196	147774	92017
Oil Age	mls	Client Info		25422	55757	0
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>2.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	32	95	26
Chromium	ppm	ASTM D5185m	>20	2	3	1
Nickel	ppm	ASTM D5185m	>4	<1	0	<1
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	5	8	6
Lead	ppm	ASTM D5185m	>40	0	2	<1
Copper	ppm	ASTM D5185m	>330	4	8	9
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Antimony	ppm	ASTM D5185m				0
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES			11 11 11			
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	limit/base	current 24	history1 1	history2 16
	ppm ppm	ASTM D5185m				
Boron		ASTM D5185m	2	24	1	16
Boron Barium Molybdenum Manganese	ppm	ASTM D5185m ASTM D5185m	2 0 50	24 0	1 <1	16 <1
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50	24 0 97 5 98	1 <1 62	16 <1 24
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 0	24 0 97 5	1 <1 62 2	16 <1 24 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	2 0 50 950 1050 995	24 0 97 5 98	1 <1 62 2 920 1155 990	16 <1 24 <1 733
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	24 0 97 5 98 2424	1 <1 62 2 920 1155	16 <1 24 <1 733 1350
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 50 950 1050 995	24 0 97 5 98 2424 1164	1 <1 62 2 920 1155 990	16 <1 24 <1 733 1350 766 883 2495
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 0 950 1050 995 1180	24 0 97 5 98 2424 1164 1409	1 <1 62 2 920 1155 990 1257	16 <1 24 <1 733 1350 766 883
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	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 0 950 1050 995 1180	24 0 97 5 98 2424 1164 1409 4689 	1 <1 62 2 920 1155 990 1257 2802	16 <1 24 <1 733 1350 766 883 2495
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	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 0 950 1050 995 1180 2600	24 0 97 5 98 2424 1164 1409 4689 	1 <1 62 2 920 1155 990 1257 2802 	16 <1 24 <1 733 1350 766 883 2495
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN	ppm 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 ASTM D5185m	2 0 50 950 1050 995 1180 2600	24 0 97 5 98 2424 1164 1409 4689 	1 <1 62 2 920 1155 990 1257 2802 history1	16 <1 24 <1 733 1350 766 883 2495 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon	ppm ppm 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 ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 ilimit/base >25	24 0 97 5 98 2424 1164 1409 4689 current 10	1 <1 62 2 920 1155 990 1257 2802 history1 10	16 <1 24 <1 733 1350 766 883 2495 history2 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium 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 ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 ilimit/base >25	24 0 97 5 98 2424 1164 1409 4689 current 10 5 6	1 <1 62 2 920 1155 990 1257 2802 history1 10 2 22 22 history1	16 <1 24 <1 733 1350 766 883 2495 history2 7 2 24 24 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium 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 imit/base >25 >20	24 0 97 5 98 2424 1164 1409 4689 current 10 5 6	1 <1 62 2 920 1155 990 1257 2802 history1 10 2 222	16 <1 24 <1 733 1350 766 883 2495 history2 7 2 2 24
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium INFRA-RED	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 20	24 0 97 5 98 2424 1164 1409 4689 current 10 5 6 Current	1 <1 62 2 920 1155 990 1257 2802 history1 10 2 22 22 history1	16 <1 24 <1 733 1350 766 883 2495 history2 7 2 24 24 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	2 0 50 0 950 1050 995 1180 2600 2600 20 255 >25 >20 20 20 20 20 20	24 0 97 5 98 2424 1164 1409 4689 current 10 5 6 current 0.5	1 <1 62 2 920 1155 990 1257 2802 history1 10 2 22 22 history1 0.1	16 <1 24 <1 733 1350 766 883 2495 history2 7 2 24 24 history2 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm 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 i mit/base >25 >20 i mit/base >3 >20	24 0 97 5 98 2424 1164 1409 4689 Current 10 5 6 Current 0.5 10.7 20.8	1 <1 62 2 920 1155 990 1257 2802 history1 10 2 22 history1 0.1 6.5	16 <1 24 <1 733 1350 766 883 2495 history2 7 2 24 24 history2 1 1 10.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm 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 2600 200 1000 255 20 20 20 20 20 20 20 20 20 20 20 20 20	24 0 97 5 98 2424 1164 1409 4689 Current 10 5 6 Current 0.5 10.7 20.8	1 <1 62 2 920 1155 990 1257 2802 history1 10 2 22 history1 0.1 6.5 23.8	16 <1 24 <1 733 1350 766 883 2495 history2 7 2 24 24 history2 1 10.1 23.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844	2 0 50 0 950 1050 995 1180 2600 imit/base >26 20 imit/base >3 >20 >30 >30	24 0 97 5 98 2424 1164 1409 4689 10 5 6 0.5 6 0.5 10.7 20.8 current	1 <1 62 2 920 1155 990 1257 2802 history1 10 2 22 history1 0.1 6.5 23.8 history1	16 <1 24 <1 733 1350 766 883 2495 history2 7 2 24 24 history2 1 10.1 23.5 history2

Submitted By: Under NWWDUN - James Threatt

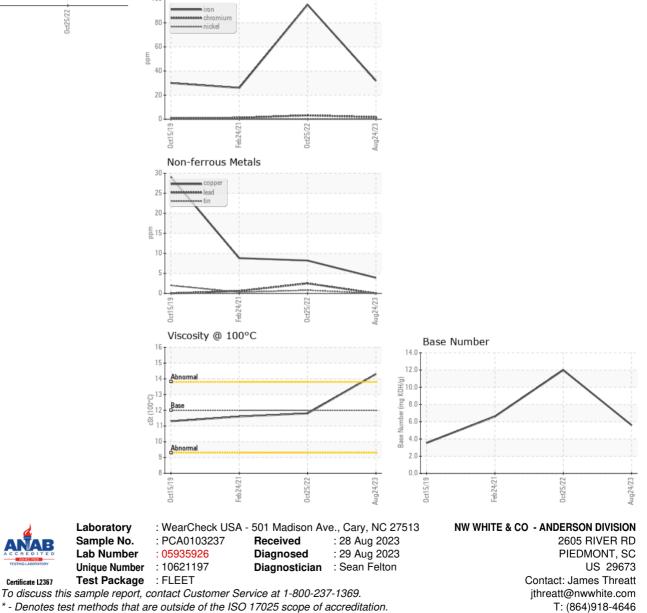


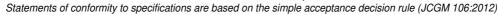
OIL ANALYSIS REPORT





VISUAL		method	limit/base	current	history1	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/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	12.00	14.3	11.8	11.6
GRAPHS						
Ferrous Alloys						
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