

OIL ANALYSIS REPORT

Sample Rating Trend





Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- GAL)

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.

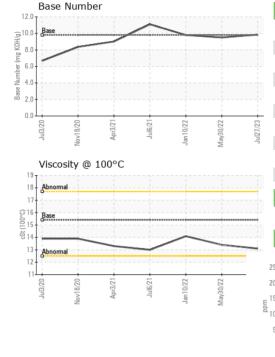
Fluid Condition

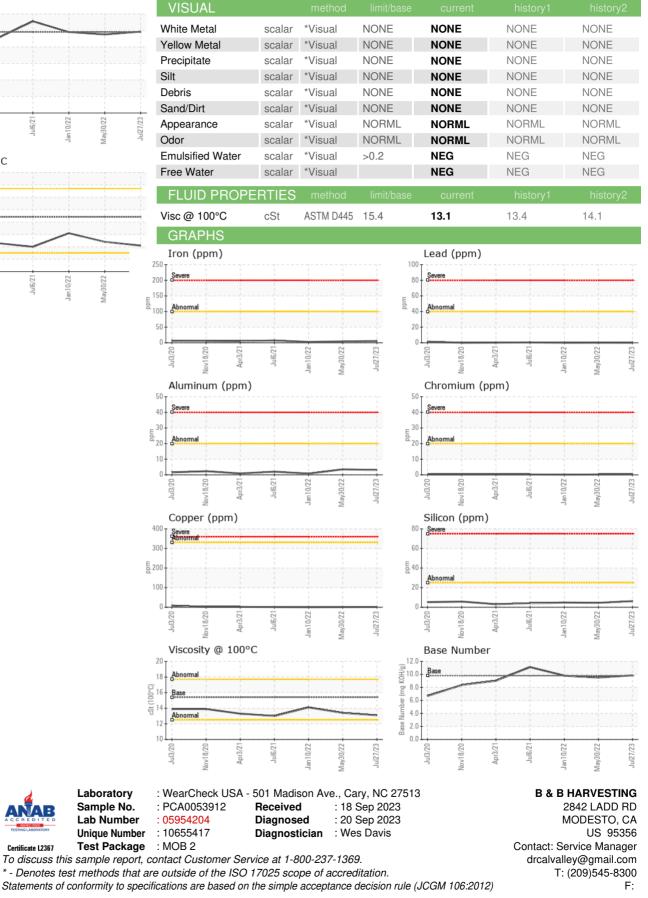
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFOR	MAT <u>ION</u>	method	limit/base	current	history1	history2
Sample Number		Client Info		PCA0053912	PCA0053947	PCA0053921
Sample Date		Client Info		27 Jul 2023	30 May 2022	10 Jan 2022
Machine Age	mls	Client Info		625410	578465	560055
Oil Age	mls	Client Info		20000	20000	20000
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<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	6	4	3
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	3	4	<1
Lead	ppm	ASTM D5185m	>40	0	<1	0
Copper	ppm	ASTM D5185m	>330	1	<1	<1
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Antimony	ppm	ASTM D5185m				<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 0	history1 4	history2 99
	ppm ppm					
Boron		ASTM D5185m	0	0	4	99
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0 0 60	0 0	4	99 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	0 0 60	4 0 57	99 0 53
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	0 0 60 0 947 1082	4 0 57 <1	99 0 53 <1
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	0 0 60 0 1010 1070 1150	0 0 60 0 947 1082 1038	4 0 57 <1 834 1059 1007	99 0 53 <1 908 1217 1027
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	0 0 60 0 1010 1070 1150 1270	0 0 60 0 947 1082 1038 1235	4 0 57 <1 834 1059 1007 1180	99 0 53 <1 908 1217 1027 1064
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	0 0 60 0 1010 1070 1150	0 0 60 0 947 1082 1038	4 0 57 <1 834 1059 1007	99 0 53 <1 908 1217 1027
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	0 0 60 0 1010 1070 1150 1270	0 0 60 0 947 1082 1038 1235	4 0 57 <1 834 1059 1007 1180	99 0 53 <1 908 1217 1027 1064
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	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	0 0 60 0 1010 1070 1150 1270 2060	0 0 60 0 947 1082 1038 1235 3461	4 0 57 <1 834 1059 1007 1180 3126	99 0 53 <1 908 1217 1027 1064 2663 history2 5
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	0 0 60 1010 1070 1150 1270 2060	0 0 60 0 947 1082 1038 1235 3461 current	4 0 57 <1 834 1059 1007 1180 3126 history1	99 0 53 <1 908 1217 1027 1064 2663 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	0 0 0 1010 1070 1150 1270 2060 kimit/base >25	0 0 60 0 947 1082 1038 1235 3461 <i>current</i> 6	4 0 57 <1 834 1059 1007 1180 3126 history1 4	99 0 53 <1 908 1217 1027 1064 2663 history2 5
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 ASTM D5185m ASTM D5185m	0 0 0 1010 1070 1150 1270 2060 kimit/base >25	0 0 60 947 1082 1038 1235 3461 current 6 1	4 0 57 <1 834 1059 1007 1180 3126 history1 4 0	99 0 53 <1 908 1217 1027 1064 2663 history2 5 0
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	0 0 0 1010 1070 1150 1270 2060 limit/base >25	0 0 60 947 1082 1038 1235 3461 current 6 1 1 <1	4 0 57 <1 834 1059 1007 1180 3126 history1 4 0 1	99 0 53 <1 908 1217 1027 1064 2663 history2 5 0 0
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	0 0 0 1010 1070 1150 1270 2060 2060 225 >25	0 0 60 947 1082 1038 1235 3461 <i>current</i> 6 1 <1 <1	4 0 57 <1 834 1059 1007 1180 3126 history1 4 0 1 1 history1	99 0 53 <1 908 1217 1027 1064 2663 history2 5 0 0 0 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	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3	0 0 60 947 1082 1038 1235 3461 <i>current</i> 6 1 <1 <1 <i>current</i> 0.2	4 0 57 <1 834 1059 1007 1180 3126 history1 4 0 1 history1 0.2	99 0 53 <1 908 1217 1027 1064 2663 history2 5 0 0 0 history2 0.1
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	0 0 0 1010 1070 1150 1270 2060 2060 225 220 220 220 20 20 20 20 20 20 20 20 20	0 0 60 947 1082 1038 1235 3461 <i>current</i> 6 1 <1 <1 <i>current</i> 0.2 7.8	4 0 57 <1 834 1059 1007 1180 3126 history1 4 0 1 history1 0.2 7.6	99 0 53 <1 908 1217 1027 1064 2663 history2 5 0 0 0 history2 0.1 5.4
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	0 0 0 1010 1070 1150 1270 2060 2060 225 20 225 20 20 3 20 3 20 20 20 20 20 20 20 20 20 20 20 20 20	0 0 60 947 1082 1038 1235 3461 <i>current</i> 6 1 <1 <1 <i>current</i> 0.2 7.8 18.0	4 0 57 <1 834 1059 1007 1180 3126 history1 4 0 1 1 history1 0.2 7.6 20.0	99 0 53 <1 908 1217 1027 1064 2663 history2 5 0 0 0 history2 0.1 5.4 18.6
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 D5185m	0 0 0 1010 1070 1150 1270 2060 2060 225 20 220 220 20 3 20 20 20 20 20 20 20 20 20 20 20 20 20	0 0 60 947 1082 1038 1235 3461 <i>current</i> 6 1 <1 <1 <i>current</i> 0.2 7.8 18.0	4 0 57 <1 834 1059 1007 1180 3126 history1 4 0 1 1 history1 0.2 7.6 20.0 history1	99 0 53 <1 908 1217 1027 1064 2663 history2 5 0 0 0 history2 0.1 5.4 18.6 history2



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Certificate L2367