

OIL ANALYSIS REPORT

Sample Rating Trend





Diesel Engine

PETRO CANADA 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.

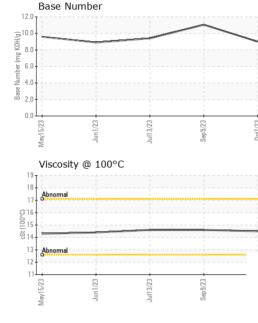
Fluid Condition

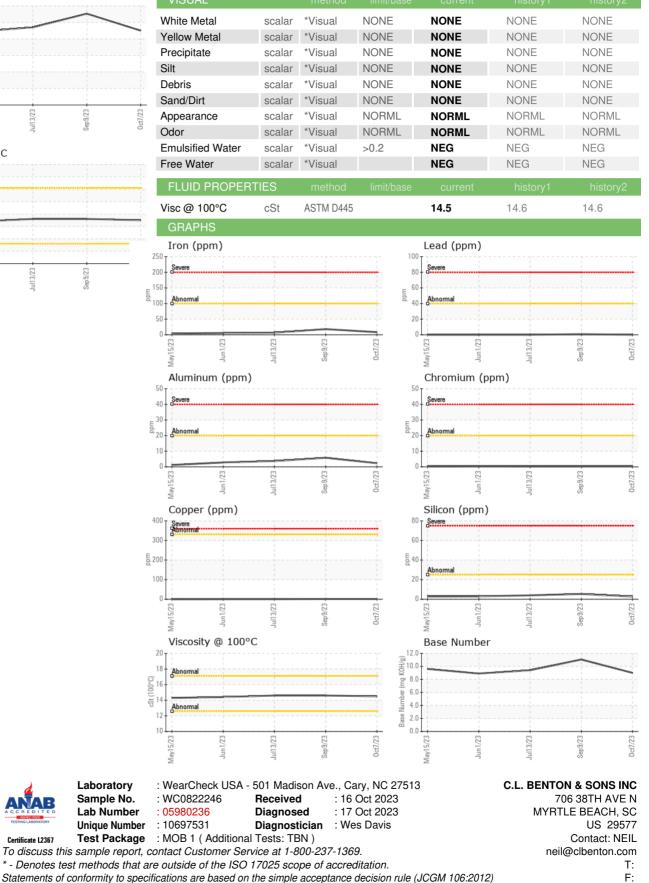
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

			Jun2023	Jul2023 Sep2023		
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0822246	WC0517479	WC0822402
Sample Date		Client Info		07 Oct 2023	09 Sep 2023	13 Jul 2023
Machine Age	hrs	Client Info		26886	26344	25988
Oil Age	hrs	Client Info		542	356	168
Oil Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	ABNORMAL	NORMAL
CONTAMINATIO	N	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	8	18	7
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	<1	0	<1
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>20	2	6	4
Lead	ppm	ASTM D5185m	>40	0	<1	0
Copper	ppm	ASTM D5185m	>330	1	1	<1
Tin	ppm	ASTM D5185m	>15	<1	<1	0
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		<1	<1	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 7	history1 5	history2 9
	ppm ppm		limit/base			
Boron		ASTM D5185m	limit/base	7	5	9
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	7 3	5 0	9 1
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	7 3 63	5 0 66	9 1 74
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	7 3 63 <1	5 0 66 <1	9 1 74 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	7 3 63 <1 952	5 0 66 <1 1084	9 1 74 0 1143
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	7 3 63 <1 952 1099	5 0 66 <1 1084 1195	9 1 74 0 1143 1321
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	limit/base	7 3 63 <1 952 1099 942	5 0 66 <1 1084 1195 1049	9 1 74 0 1143 1321 1209
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	limit/base	7 3 63 <1 952 1099 942 1180	5 0 66 <1 1084 1195 1049 1345	9 1 74 0 1143 1321 1209 1433
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 ASTM D5185m		7 3 63 <1 952 1099 942 1180 2720	5 0 66 <1 1084 1195 1049 1345 3248	9 1 74 0 1143 1321 1209 1433 3463
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	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	limit/base	7 3 63 <1 952 1099 942 1180 2720 current	5 0 66 <1 1084 1195 1049 1345 3248 history1	9 1 74 0 1143 1321 1209 1433 3463 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	limit/base >25	7 3 63 <1 952 1099 942 1180 2720 current 3	5 0 66 <1 1084 1195 1049 1345 3248 history1 5	9 1 74 0 1143 1321 1209 1433 3463 history2 4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	limit/base >25	7 3 63 <1 952 1099 942 1180 2720 current 3 2	5 0 66 <1 1084 1195 1049 1345 3248 history1 5 2	9 1 74 0 1143 1321 1209 1433 3463 history2 4 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20	7 3 63 <1 952 1099 942 1180 2720 current 3 2 2 <1	5 0 66 <1 1084 1195 1049 1345 3248 history1 5 2 2 2	9 1 74 0 1143 1321 1209 1433 3463 history2 4 2 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base	7 3 63 <1 952 1099 942 1180 2720 current 3 2 2 <1 current	5 0 66 <1 1084 1195 1049 1345 3248 history1 5 2 2 2 history1	9 1 74 0 1143 1321 1209 1433 3463 history2 4 2 1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3 >20	7 3 63 <1 952 1099 942 1180 2720 <u>current</u> 3 2 <1 <u>current</u> 0.1	5 0 66 <1 1084 1195 1049 1345 3248 history1 5 2 2 2 history1 0.1	9 1 74 0 1143 1321 1209 1433 3463 history2 4 2 1 history2 0.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3 >20	7 3 63 <1 952 1099 942 1180 2720 current 3 2 <1 current 0.1 6.6	5 0 66 <1 1084 1195 1049 1345 3248 history1 5 2 2 2 history1 0.1 6.6	9 1 74 0 1143 1321 1209 1433 3463 history2 4 2 1 history2 0.1 6.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	Imit/base >25 >20 Imit/base >3 >20 >30	7 3 63 <1 952 1099 942 1180 2720 current 3 2 <1 current 0.1 6.6 17.5	5 0 66 <1 1084 1195 1049 1345 3248 history1 5 2 2 2 2 history1 0.1 6.6 17.9	9 1 74 0 1143 1321 1209 1433 3463 history2 4 2 1 history2 0.1 6.0 17.7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844 *ASTM D7844	limit/base >25 >20 limit/base >3 >20 >30 >30	7 3 63 <1 952 1099 942 1180 2720 Current 3 2 <1 Current 0.1 6.6 17.5 Current	5 0 66 <1 1084 1195 1049 1345 3248 history1 5 2 2 2 history1 0.1 6.6 17.9 history1	9 1 74 0 1143 1321 1209 1433 3463 history2 4 2 1 history2 0.1 6.0 17.7 history2



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Certificate L2367

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