

OIL ANALYSIS REPORT



Machine Id

612 Component Diesel Engine Fluid PETRO CANADA DURON HP 15W40 (--- 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.

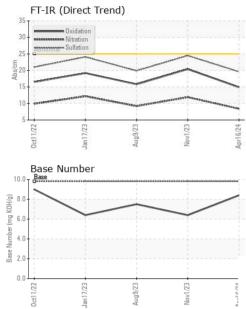
Fluid Condition

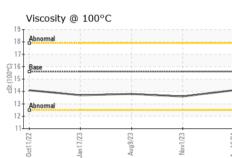
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

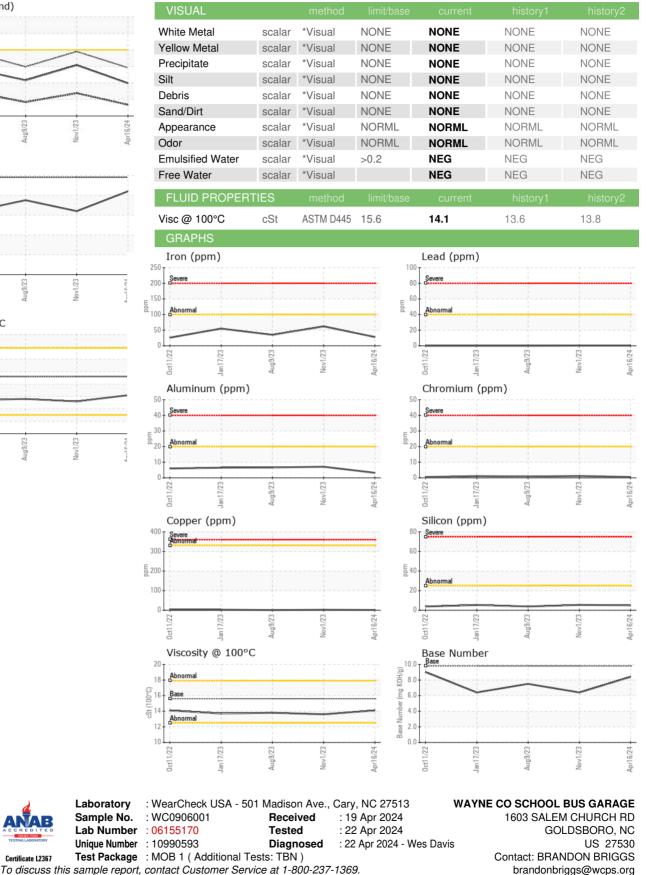
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0906001	WC0868028	WC0792672
Sample Date		Client Info		16 Apr 2024	01 Nov 2023	09 Aug 2023
Machine Age	mls	Client Info		94530	85412	79742
Oil Age	mls	Client Info		5000	0	0
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	٧	method	limit/base	current	history1	history2
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>100	28	62	35
Chromium	ppm	ASTM D5185m	>20	<1	1	<1
Nickel	ppm	ASTM D5185m	>4	<1	<1	<1
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	3	7	7
Lead	ppm	ASTM D5185m	>40	<1	<1	0
Copper	ppm	ASTM D5185m	>330	1	2	<1
Tin	ppm	ASTM D5185m	>15	<1	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		<1	<1	0
ADDITIVES						
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	Method ASTM D5185m	limit/base	current 2	history1 5	history2 9
	ppm ppm		limit/base			
Boron		ASTM D5185m	limit/base	2	5	9
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	2 0	5 5	9 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 58	5 5 62	9 0 61
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 58 <1	5 5 62 <1	9 0 61 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 58 <1 830	5 5 62 <1 823	9 0 61 <1 905
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	2 0 58 <1 830 1245	5 5 62 <1 823 1095	9 0 61 <1 905 1112
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	2 0 58 <1 830 1245 1046	5 5 62 <1 823 1095 1000	9 0 61 <1 905 1112 1011
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	2 0 58 <1 830 1245 1046 1219	5 5 62 <1 823 1095 1000 1158	9 0 61 <1 905 1112 1011 1269
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 58 <1 830 1245 1046 1219 3230	5 5 62 <1 823 1095 1000 1158 2816	9 0 61 <1 905 1112 1011 1269 3663
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	limit/base	2 0 58 <1 830 1245 1046 1219 3230 current	5 5 62 <1 823 1095 1000 1158 2816 history1	9 0 61 <1 905 1112 1011 1269 3663 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 ASTM D5185m	limit/base	2 0 58 <1 830 1245 1046 1219 3230 current 5	5 5 62 <1 823 1095 1000 1158 2816 history1 5	9 0 61 <1 905 1112 1011 1269 3663 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 ASTM D5185m ASTM D5185m	limit/base	2 0 58 <1 830 1245 1046 1219 3230 current 5 0	5 5 62 <1 823 1095 1000 1158 2816 history1 5 0	9 0 61 <1 905 1112 1011 1269 3663 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	2 0 58 <1 830 1245 1046 1219 3230 current 5 0 4	5 62 <1 823 1095 1000 1158 2816 history1 5 0 8	9 0 61 <1 905 1112 1011 1269 3663 history2 4 2 3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base	2 0 58 <1 830 1245 1046 1219 3230 current 5 0 4 x	5 62 <1 823 1095 1000 1158 2816 history1 5 0 8 history1	9 0 61 <1 905 1112 1011 1269 3663 history2 4 2 3 3 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm	ASTM D5185m ASTM D5185m	limit/base >25 >20 limit/base >3	2 0 58 <1 830 1245 1046 1219 3230 current 5 0 4 current 0.9	5 62 <1 823 1095 1000 1158 2816 history1 5 0 8 history1 1.7	9 0 61 <1 905 1112 1011 1269 3663 history2 4 2 3 history2 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	2 0 58 <1 830 1245 1046 1219 3230 <i>current</i> 5 0 4 <i>current</i> 0.9 8.4	5 62 <1 823 1095 1000 1158 2816 history1 5 0 8 history1 1.7 1.7 11.9	9 0 61 <1 905 1112 1011 1269 3663 history2 4 2 3 history2 1 9,2
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	limit/base >25 >20 limit/base >3 >20 >3 >20	2 0 58 <1 830 1245 1046 1219 3230 <u>current</u> 5 0 4 <u>current</u> 0.9 8.4 19.6	5 62 <1 823 1095 1000 1158 2816 history1 5 0 8 history1 1.7 1.7 11.9 24.5	9 0 61 <1 905 1112 1011 1269 3663 history2 4 2 3 history2 1 9.2 19.9



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* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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Certificate 12367

Laboratory

Sample No.

Contact/Location: BRANDON BRIGGS - WAYGOL

T:

F: