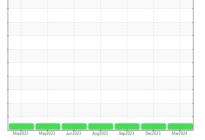


Natural Gas Engine

OIL ANALYSIS REPORT

Sample Rating Trend







DIESEL ENGINE OIL SAE 15W40 (--- GAL)

DIAGNOSIS

Machine Id **2217** Component

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Wear

Metal levels are typical for a new component breaking in.

Contamination

There is no indication of any contamination in the oil.

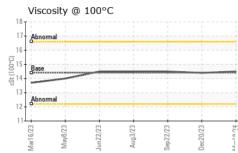
Fluid Condition

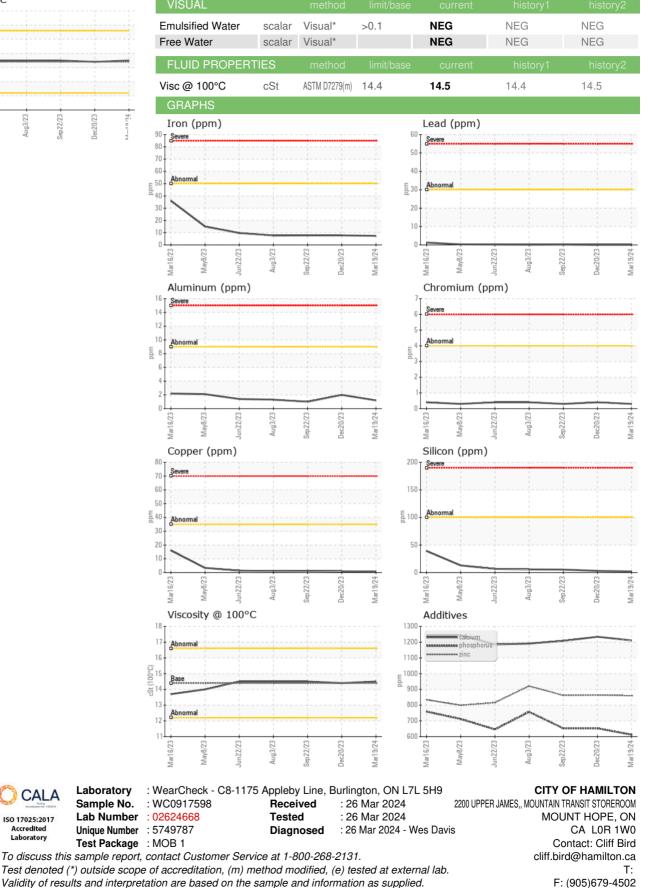
The condition of the oil is acceptable for the time in service.

SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0917598	WC0878170	WC0849912
Sample Date		Client Info		19 Mar 2024	20 Dec 2023	22 Sep 2023
Machine Age	kms	Client Info		76487	57706	40844
Oil Age	kms	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	N/A
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	٧	method	limit/base	current	history1	history2
Water		WC Method	>0.1	NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>50	7	8	8
Chromium	ppm	ASTM D5185(m)		<1	<1	<1
Nickel	ppm	ASTM D5185(m)	>2	<1	<1	<1
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)	>3	0	0	<1
Aluminum	ppm	ASTM D5185(m)		1	2	1
Lead	ppm	ASTM D5185(m)	>30	0	0	<1
Copper	ppm	ASTM D5185(m)	>35	<1	<1	1
Tin	ppm	ASTM D5185(m)	>4	0	0	<1
Antimony	ppm	ASTM D5185(m)		0	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185(m)	limit/base 250	current 11	history1 13	history2 11
	ppm ppm					
Boron		ASTM D5185(m)	250	11	13	11
Boron Barium	ppm	ASTM D5185(m) ASTM D5185(m)	250 10	11 0	13 0	11 <1
Boron Barium Molybdenum	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10	11 0 53	13 0 53	11 <1 53
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10 100 450	11 0 53 0	13 0 53 0	11 <1 53 0
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10 100 450	11 0 53 0 800	13 0 53 0 789	11 <1 53 0 795
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000	11 0 53 0 800 1211	13 0 53 0 789 1234	11 <1 53 0 795 1208
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150	11 0 53 0 800 1211 612	13 0 53 0 789 1234 653	11 <1 53 0 795 1208 653
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350	11 0 53 0 800 1211 612 860	13 0 53 0 789 1234 653 864	11 <1 53 0 795 1208 653 862
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350	11 0 53 0 800 1211 612 860 1911	13 0 53 0 789 1234 653 864 2047	11 <1 53 0 795 1208 653 862 1924
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250	11 0 53 0 800 1211 612 860 1911 <1	13 0 53 0 789 1234 653 864 2047 <1	11 <1 53 0 795 1208 653 862 1924 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250 imit/base >+100	11 0 53 0 800 1211 612 860 1911 <1 vurrent	13 0 53 0 789 1234 653 864 2047 <1 history1	11 <1 53 0 795 1208 653 862 1924 <1 <1 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250 imit/base >+100	11 0 53 0 800 1211 612 860 1911 <1 current 2	13 0 53 0 789 1234 653 864 2047 <1 history1 3	11 <1 53 0 795 1208 653 862 1924 <1 <1 history2 5
Boron Barium Molybdenum Manganese Magnesium Calcium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250 4250 imit/base >+100 >158	11 0 53 0 800 1211 612 860 1911 <1 <1 current 2 2 2	13 0 53 0 789 1234 653 864 2047 <1 history1 3 2	11 <1 53 0 795 1208 653 862 1924 <1 * history2 5 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250 4250 imit/base >+100 >158 >20	11 0 53 0 800 1211 612 860 1911 <1 <1 current 2 2 2 2 <1	13 0 53 0 789 1234 653 864 2047 <1 history1 3 2 2 2	11 <1 53 0 795 1208 653 862 1924 <1 history2 5 2 0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250 Iimit/base >+100 >158 >20 Iimit/base	11 0 53 0 800 1211 612 860 1911 <1 <1 current 2 2 2 <1 current	13 0 53 0 789 1234 653 864 2047 <1 kistory1 3 2 2 2 kistory1	11 <1 53 0 795 1208 653 862 1924 <1 history2 5 2 0 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250 Iimit/base >+100 >158 >20 Iimit/base	11 0 53 0 800 1211 612 860 1911 <1 current 2 2 2 <1 current 0	13 0 53 0 789 1234 653 864 2047 <1 kistory1 3 2 2 2 kistory1 0	11 <1 53 0 795 1208 653 862 1924 <1 1924 <11924<1bistory2520history20
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m)	250 10 100 450 3000 1150 1350 4250 Jimit/base >+100 >158 >20 Jimit/base	11 0 53 0 800 1211 612 860 1911 <1 2 2 2 2 <1 2 <1 0 0 12.0	13 0 53 0 789 1234 653 864 2047 <1 history1 3 2 2 2 history1 0 12.0 21.7	11 <1 53 0 795 1208 653 862 1924 <1 history2 5 2 0 history2 0 history2 0 11.5 21.2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) ASTM D7844* ASTM D7624*	250 10 100 450 3000 1150 1350 4250 imit/base >158 >20 imit/base >20 >20	11 0 53 0 800 1211 612 860 1911 <1 current 2 2 2 <1 current 0 12.0 22.2	13 0 53 0 789 1234 653 864 2047 <1 history1 3 2 2 2 history1 0 12.0	11 <1 53 0 795 1208 653 862 1924 <1 history2 5 2 0 history2 0 history2 0 11.5



OIL ANALYSIS REPORT





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