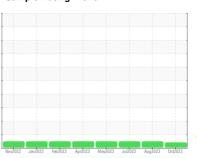


# **OIL ANALYSIS REPORT**

Sample Rating Trend



VISCOSITY



Machine Id 2101 Component

**Natural Gas Engine** 

**DIESEL ENGINE OIL SAE 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.

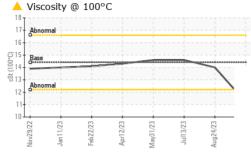
## Fluid Condition

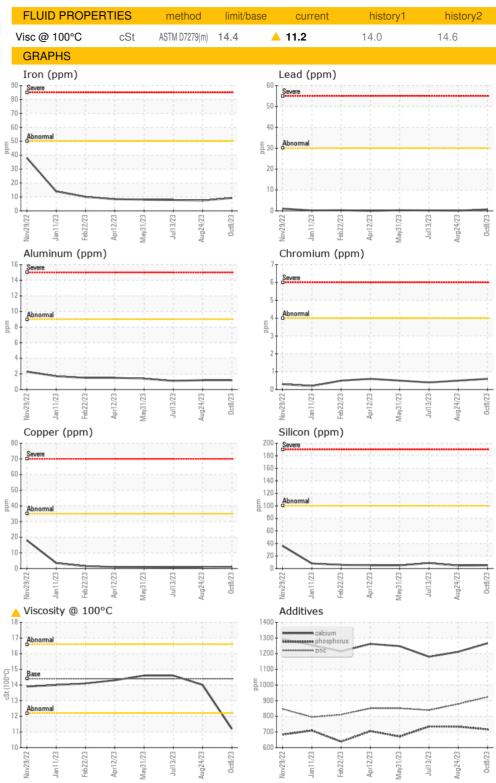
Viscosity of sample indicates oil is within SAE 30 range, advise investigate. The condition of the oil is acceptable for the time in service.

Novidazz Janidaza Fonidaza Apridaza Maydaza Judzaza Augdaza Ocedoza						
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0849733	WC0849847	WC0830064
Sample Date		Client Info		08 Oct 2023	24 Aug 2023	13 Jul 2023
Machine Age	kms	Client Info		0	56807	119217
Oil Age	kms	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	NORMAL	NORMAL
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>50	9	7	8
Chromium	ppm	ASTM D5185(m)	>4	<1	<1	<1
Nickel	ppm	ASTM D5185(m)	>2	<1	<1	<1
Titanium	ppm	ASTM D5185(m)		0	<1	<1
Silver	ppm	ASTM D5185(m)	>3	<1	0	<1
Aluminum	ppm	ASTM D5185(m)	>9	1	1	1
Lead	ppm	ASTM D5185(m)	>30	<1	<1	<1
Copper	ppm	ASTM D5185(m)	>35	1	<1	<1
Tin	ppm	ASTM D5185(m)	>4	<1	<1	<1
Antimony	ppm	ASTM D5185(m)		<1	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
Boron	ppm	ASTM D5185(m)	250	10	14	20
Barium	ppm	ASTM D5185(m)	10	<1	0	0
Barium Molybdenum	ppm ppm	ASTM D5185(m) ASTM D5185(m)	10 100	<1 56	0 52	0 50
		, ,				
Molybdenum	ppm	ASTM D5185(m)		56	52	50
Molybdenum Manganese	ppm	ASTM D5185(m) ASTM D5185(m)	100	56 0	52 <1	50 <1
Molybdenum Manganese Magnesium	ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	100 450	56 0 864	52 <1 816	50 <1 816
Molybdenum Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	100 450 3000	56 0 864 1266	52 <1 816 1212	50 <1 816 1180
Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	100 450 3000 1150	56 0 864 1266 716	52 <1 816 1212 734	50 <1 816 1180 735
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm	ASTM D5185(m)	100 450 3000 1150 1350	56 0 864 1266 716 923	52 <1 816 1212 734 879	50 <1 816 1180 735 839
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	100 450 3000 1150 1350	56 0 864 1266 716 923 2019	52 <1 816 1212 734 879 1994	50 <1 816 1180 735 839 1925
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium	ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	100 450 3000 1150 1350 4250	56 0 864 1266 716 923 2019	52 <1 816 1212 734 879 1994 <1	50 <1 816 1180 735 839 1925 <1
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	100 450 3000 1150 1350 4250   limit/base >+100	56 0 864 1266 716 923 2019 <1	52 <1 816 1212 734 879 1994 <1 history1	50 <1 816 1180 735 839 1925 <1 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	100 450 3000 1150 1350 4250   limit/base >+100	56 0 864 1266 716 923 2019 <1 current	52 <1 816 1212 734 879 1994 <1 history1	50 <1 816 1180 735 839 1925 <1 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	100 450 3000 1150 1350 4250 limit/base >+100 >158	56 0 864 1266 716 923 2019 <1 current 5 3	52 <1 816 1212 734 879 1994 <1 history1 5	50 <1 816 1180 735 839 1925 <1 history2 9 2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)	100  450 3000 1150 1350 4250  limit/base >+100 >158 >20	56 0 864 1266 716 923 2019 <1 current 5 3	52 <1 816 1212 734 879 1994 <1 history1 5 2 0	50 <1 816 1180 735 839 1925 <1 history2 9 2 <1
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)	100  450 3000 1150 1350 4250  limit/base >+100 >158 >20  limit/base	56 0 864 1266 716 923 2019 <1 current 5 3 0	52 <1 816 1212 734 879 1994 <1 history1 5 2 0 history1 0	50 <1 816 1180 735 839 1925 <1 history2 9 2 <1 history2 0
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)  method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	100  450 3000 1150 1350 4250  limit/base >+100 >158 >20  limit/base	56 0 864 1266 716 923 2019 <1 current 5 3 0 current 0	52 <1 816 1212 734 879 1994 <1 history1 5 2 0 history1	50 <1 816 1180 735 839 1925 <1 history2 9 2 <1 history2
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)  METHOD  ASTM D5185(m) ASTM D7844* ASTM D7624*	100  450 3000 1150 1350 4250  limit/base >+100 >158 >20  limit/base	56 0 864 1266 716 923 2019 <1 current 5 3 0 current 0 13.3 21.1	52 <1 816 1212 734 879 1994 <1 history1 5 2 0 history1 0 11.4	50 <1 816 1180 735 839 1925 <1 history2 9 2 <1 history2 0 10.2
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)  METHOD  ASTM D5185(m)  ASTM D5185(m)  ASTM D5185(m)  ASTM D5185(m)  ASTM D5185(m)  ASTM D5185(m)  ASTM D7844* ASTM D7844* ASTM D7624* ASTM D7624*	100  450 3000 1150 1350 4250  limit/base >+100 >158 >20 limit/base	56 0 864 1266 716 923 2019 <1 current 5 3 0 current 0 13.3 21.1	52 <1 816 1212 734 879 1994 <1 history1 5 2 0 history1 0 11.4 22.1	50 <1 816 1180 735 839 1925 <1 history2 9 2 <1 history2 0 10.2 21.2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)  METHOD  ASTM D5185(m) ASTM D5185(m)  ASTM D5185(m)  ASTM D5185(m)  ASTM D5185(m)  ASTM D5185(m)  METHOD  ASTM D7844*  ASTM D7624* ASTM D7624* ASTM D7415*  METHOD	100  450 3000 1150 1350 4250  limit/base >+100 >158 >20 limit/base	56 0 864 1266 716 923 2019 <1 current 5 3 0 current 0 13.3 21.1 current 20.5	52 <1 816 1212 734 879 1994 <1 history1 5 2 0 history1 0 11.4 22.1 history1	50 <1 816 1180 735 839 1925 <1 history2 9 2 <1 history2 0 10.2 21.2 history2
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA Oxidation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)  METHOD  ASTM D5185(m) ASTM D5185(m)  ASTM D5185(m) ASTM D5185(m)  ASTM D5185(m)  METHOD  ASTM D7844* ASTM D7624* ASTM D7624* ASTM D7415*  METHOD  ASTM D7414*	100  450 3000 1150 1350 4250  limit/base >+100 >158 >20 limit/base >20 >30 limit/base >25	56 0 864 1266 716 923 2019 <1 current 5 3 0 current 0 13.3 21.1 current 20.5 current	52 <1 816 1212 734 879 1994 <1 history1 5 2 0 history1 0 11.4 22.1 history1 18.6	50 <1 816 1180 735 839 1925 <1 history2 9 2 <1 history2 0 10.2 21.2 history2 18.4
Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA Oxidation VISUAL	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m)  METHOD ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D7185(m) ASTM D71	100  450 3000 1150 1350 4250  limit/base >+100 >158 >20 limit/base >20   limit/base   limit/base   limit/base	56 0 864 1266 716 923 2019 <1 current 5 3 0 current 0 13.3 21.1 current	52 <1 816 1212 734 879 1994 <1 history1 5 2 0 history1 0 11.4 22.1 history1 18.6 history1	50 <1 816 1180 735 839 1925 <1 history2 9 2 <1 history2 0 10.2 21.2 history2 18.4 history2



# **OIL ANALYSIS REPORT**







CALA ISO 17025:2017 Accredited Laboratory

Laboratory Sample No. Lab Number Unique Number : 5657289

Test Package : MOB 1

: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 : WC0849733

Received : 02588223

: 11 Oct 2023 Diagnosed : 11 Oct 2023 Diagnostician : Kevin Marson

CITY OF HAMILTON 2200 UPPER JAMES,, MOUNTAIN TRANSIT STOREROOM MOUNT HOPE, ON

CA LOR 1W0 Contact: Jeff Parr jeff.parr@hamilton.ca

To discuss this sample report, contact Customer Service at 1-800-268-2131. Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab.

Validity of results and interpretation are based on the sample and information as supplied.

T: (905)546-2424 F: (905)679-4502