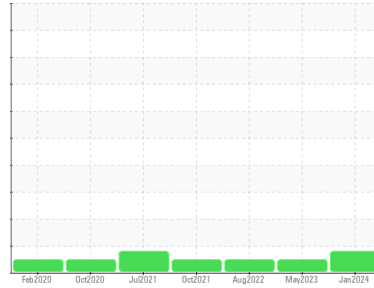


OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Machine Id
TB112

Component
Diesel Engine

Fluid
DIESEL ENGINE OIL SAE 5W40 (--- GAL)

DIAGNOSIS

Recommendation

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

Aluminum ppm levels are abnormal. Piston wear is indicated.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		PC0082670	PC0075782	PC0064446
Sample Date	Client Info		02 Jan 2024	23 May 2023	29 Aug 2022
Machine Age	hrs	Client Info	4939	4372	3993
Oil Age	hrs	Client Info	0	0	0
Oil Changed	Client Info		Changed	N/A	Changed
Sample Status			ABNORMAL	NORMAL	NORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>5	<1.0	<1.0	<1.0
Water	WC Method	>0.2	NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185(m)	>100	32	28	18
Chromium	ppm	ASTM D5185(m)	>20	1	<1	<1
Nickel	ppm	ASTM D5185(m)	>4	<1	0	<1
Titanium	ppm	ASTM D5185(m)		0	<1	<1
Silver	ppm	ASTM D5185(m)	>3	0	0	0
Aluminum	ppm	ASTM D5185(m)	>20	▲ 34	18	19
Lead	ppm	ASTM D5185(m)	>40	<1	0	<1
Copper	ppm	ASTM D5185(m)	>330	12	10	10
Tin	ppm	ASTM D5185(m)	>15	<1	<1	<1
Antimony	ppm	ASTM D5185(m)		0	0	<1
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	20	41	28
Barium	ppm	ASTM D5185(m)	10	0	0	0
Molybdenum	ppm	ASTM D5185(m)	100	58	61	56
Manganese	ppm	ASTM D5185(m)		<1	<1	<1
Magnesium	ppm	ASTM D5185(m)	450	1093	1123	1083
Calcium	ppm	ASTM D5185(m)	3000	812	875	828
Phosphorus	ppm	ASTM D5185(m)	1150	978	1088	1062
Zinc	ppm	ASTM D5185(m)	1350	1177	1218	1178
Sulfur	ppm	ASTM D5185(m)	4250	2857	2830	2712
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

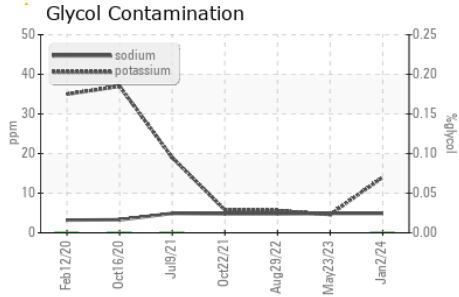
CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m)	>25	6	7	6
Sodium	ppm	ASTM D5185(m)	>44	5	5	5
Potassium	ppm	ASTM D5185(m)	>20	14	5	6
Glycol	%	ASTM D7922*		0.0	NEG	NEG

INFRA-RED

	method	limit/base	current	history1	history2	
Soot %	%	ASTM D7844*	>3	0.3	0.1	0.1
Nitration	Abs/cm	ASTM D7624*	>20	13.9	12.3	13.2
Sulfation	Abs/.1mm	ASTM D7415*	>30	23.6	21.1	23.2

OIL ANALYSIS REPORT

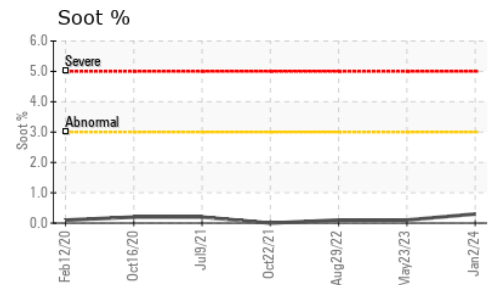
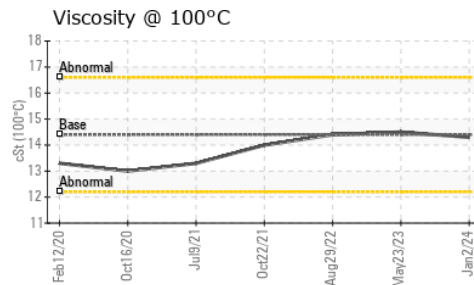
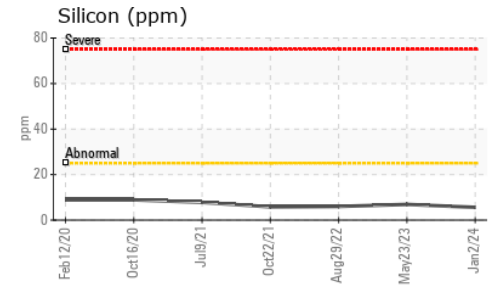
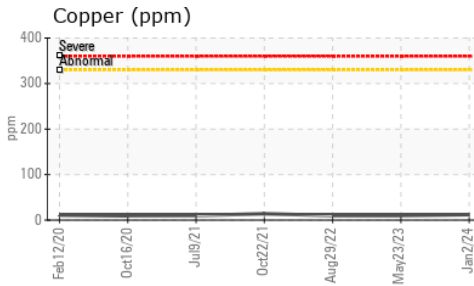
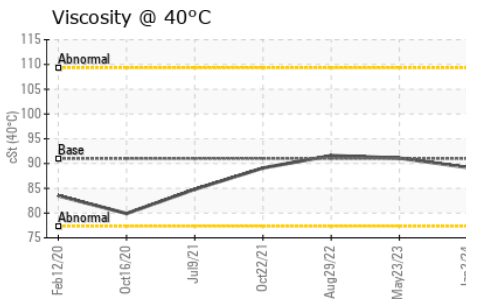
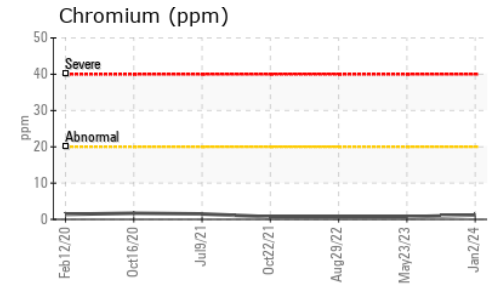
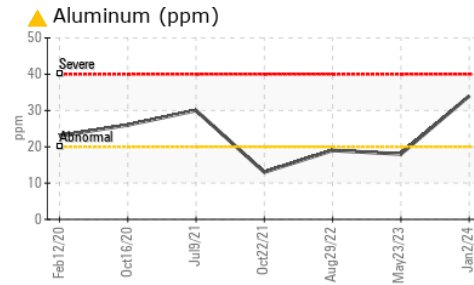
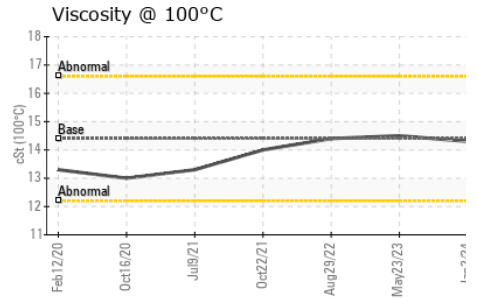
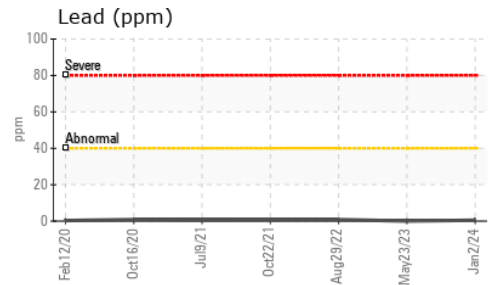
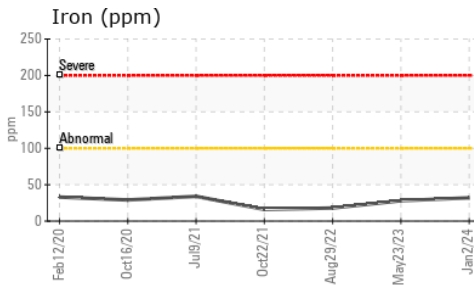
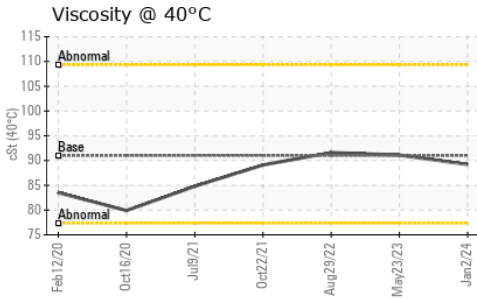


FLUID DEGRADATION	method	limit/base	current	history1	history2	
Oxidation	Abs./1mm	ASTM D7414*	>25	26.8	22.5	24.4

VISUAL	method	limit/base	current	history1	history2	
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 40°C	cSt	ASTM D7279(m)	91	89.2	91.1	91.6
Visc @ 100°C	cSt	ASTM D7279(m)	14.4	14.3	14.5	14.4
Viscosity Index (VI)	Scale	ASTM D2270*	164	166	165	163

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0082670
Lab Number : 02615544
Unique Number : 5724639
Test Package : MOB 1 (Additional Tests: Glycol, KV40, VI)

Green Infrastructure and Partners Inc (GIPI) - 286 - Shoring & Foundations
 151 Ram Forest Rd,
 Stouffville, ON
 CA L4A 2G8
 Contact: Bill Acton
 bacton@gipi.com

Received : 14 Feb 2024
Tested : 14 Feb 2024
Diagnosed : 15 Feb 2024 - Kevin Marson

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.

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F: