



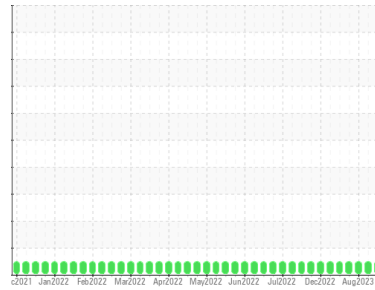
OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id
JENBACHER GM01
 Component
Biogas Engine
 Fluid
Q8 MAHLER G8 SAE 40 (--- 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 AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0721954	WC0721957	WC0721960
Sample Date	Client Info		21 Aug 2023	14 Aug 2023	07 Aug 2023
Machine Age	hrs	Client Info	15832	15664	15500
Oil Age	hrs	Client Info	4349	4181	4017
Oil Changed	Client Info		N/A	N/A	N/A
Sample Status			NORMAL	NORMAL	NORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>4.0	<1.0	<1.0	<1.0
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	3	3
Chromium	ppm	ASTM D5185m	>5	<1	<1
Nickel	ppm	ASTM D5185m	>2	<1	0
Titanium	ppm	ASTM D5185m		0	<1
Silver	ppm	ASTM D5185m	>5	1	0
Aluminum	ppm	ASTM D5185m	>15	1	2
Lead	ppm	ASTM D5185m	>20	1	2
Copper	ppm	ASTM D5185m	>15	<1	<1
Tin	ppm	ASTM D5185m	>5	0	<1
Vanadium	ppm	ASTM D5185m		<1	<1
Cadmium	ppm	ASTM D5185m		<1	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		2	7
Barium	ppm	ASTM D5185m		0	0
Molybdenum	ppm	ASTM D5185m		1	2
Manganese	ppm	ASTM D5185m		<1	<1
Magnesium	ppm	ASTM D5185m		10	33
Calcium	ppm	ASTM D5185m		2387	2436
Phosphorus	ppm	ASTM D5185m		451	491
Zinc	ppm	ASTM D5185m		553	558
Sulfur	ppm	ASTM D5185m		2494	2933

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>200	4	4
Sodium	ppm	ASTM D5185m	>20	<1	2
Potassium	ppm	ASTM D5185m	>20	3	2

INFRA-RED

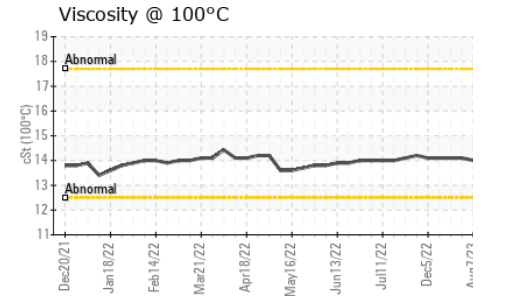
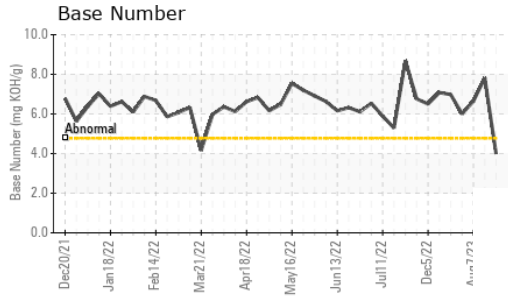
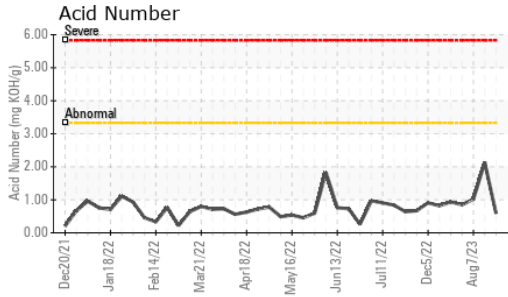
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>2	0	0
Nitration	Abs/cm	*ASTM D7624	>20	8.8	9.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.0	18.5

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.4	14.8
Acid Number (AN)	mg KOH/g	ASTM D8045		0.59	2.129
Base Number (BN)	mg KOH/g	ASTM D2896		4.0	7.82



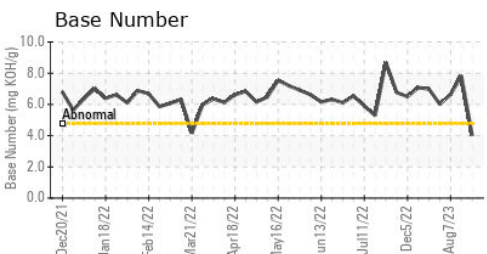
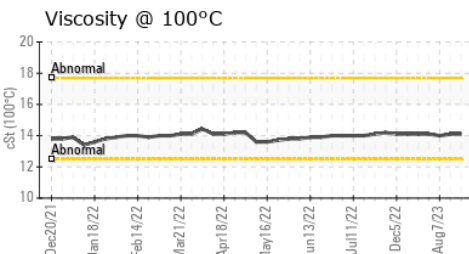
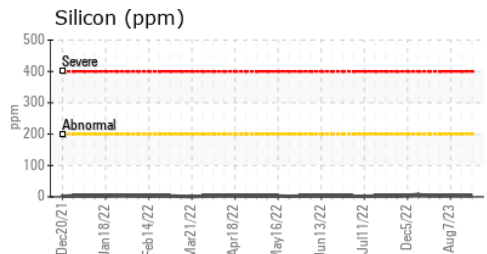
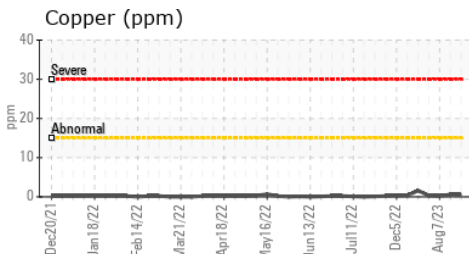
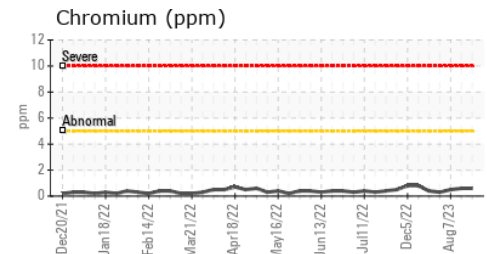
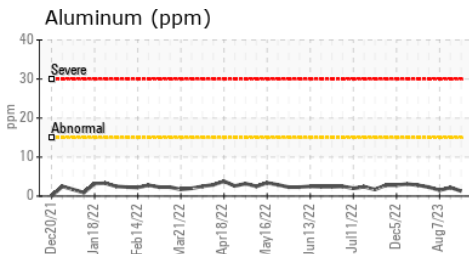
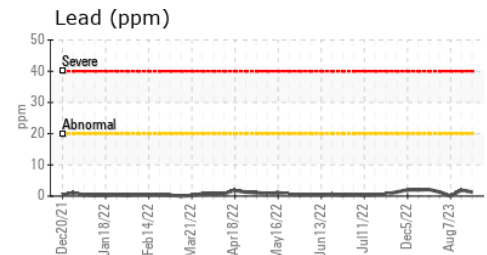
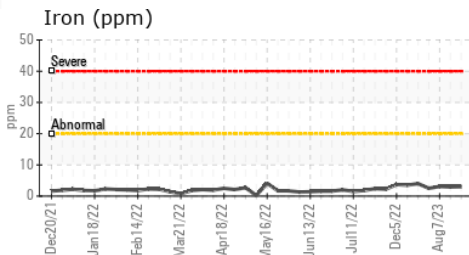
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.1	14.1	14.0

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0721954 **Received** : 24 Aug 2023
Lab Number : 05934241 **Diagnosed** : 28 Aug 2023
Unique Number : 10619512 **Diagnostician** : Sean Felton
Test Package : MOB 2 (Additional Tests: TAN Man)

ASB
 3791 BROWNS MILL RD SE
 ATLANTA, GA
 US 30354
 Contact: DEREK PAGE
 derek.page@cubedistrictenergy.com
 T:
 F:

Certificate L2367
 To discuss this sample report, contact Customer Service at 1-800-237-1369.
 * - 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)