



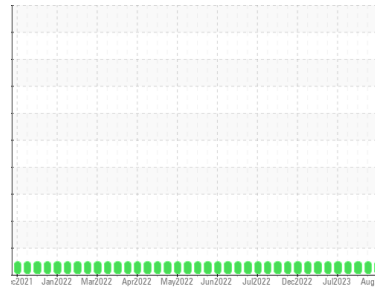
OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id
JENBACHER GM02 (S/N 1251397)
 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	WC0721955	WC0721958	WC0721961	
Sample Date	Client Info	21 Aug 2023	14 Aug 2023	07 Aug 2023	
Machine Age	hrs	Client Info	20066	19899	19731
Oil Age	hrs	Client Info	6294	6127	5959
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
Water	WC Method >.2	NEG	NEG	NEG
Glycol	WC Method	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >20	5	4	5
Chromium	ppm ASTM D5185m >5	<1	<1	<1
Nickel	ppm ASTM D5185m >2	<1	0	0
Titanium	ppm ASTM D5185m	0	<1	0
Silver	ppm ASTM D5185m >5	1	0	0
Aluminum	ppm ASTM D5185m >15	2	4	3
Lead	ppm ASTM D5185m >20	1	2	0
Copper	ppm ASTM D5185m >15	<1	<1	<1
Tin	ppm ASTM D5185m >5	<1	<1	<1
Vanadium	ppm ASTM D5185m	<1	<1	0
Cadmium	ppm ASTM D5185m	<1	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m	3	4	4
Barium	ppm ASTM D5185m	0	0	0
Molybdenum	ppm ASTM D5185m	2	2	<1
Manganese	ppm ASTM D5185m	<1	<1	<1
Magnesium	ppm ASTM D5185m	16	19	14
Calcium	ppm ASTM D5185m	2498	2579	2589
Phosphorus	ppm ASTM D5185m	478	515	518
Zinc	ppm ASTM D5185m	598	598	621
Sulfur	ppm ASTM D5185m	2679	3053	3111

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >200	12	13	12
Sodium	ppm ASTM D5185m >20	1	3	2
Potassium	ppm ASTM D5185m >20	2	2	<1

INFRA-RED

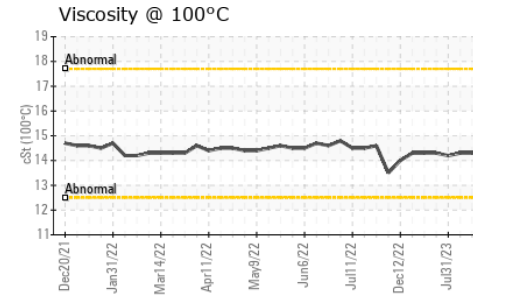
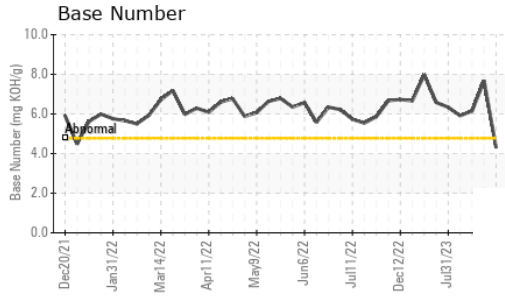
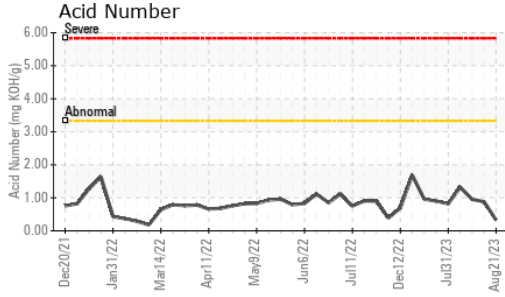
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >2	0	0	0
Nitration	Abs/cm *ASTM D7624 >20	9.4	9.6	9.5
Sulfation	Abs/.1mm *ASTM D7415 >30	18.3	19.2	19.2

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	14.8	15.8	15.8
Acid Number (AN)	mg KOH/g ASTM D8045	0.33	0.88	0.952
Base Number (BN)	mg KOH/g ASTM D2896	4.3	7.68	6.15



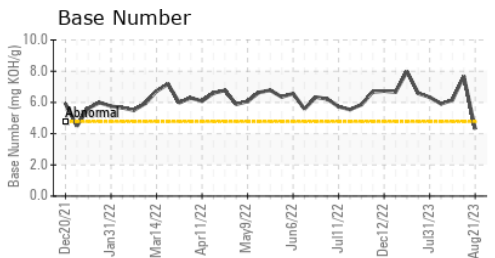
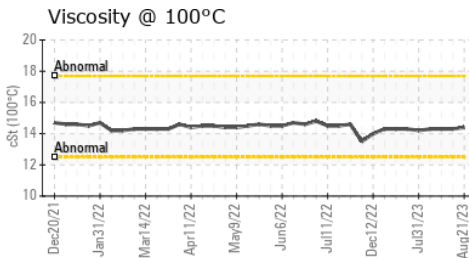
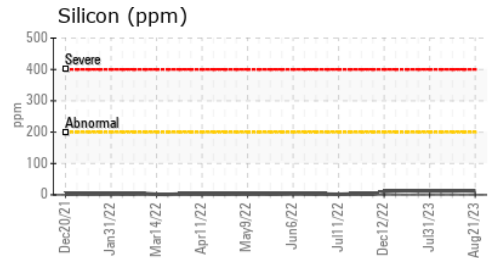
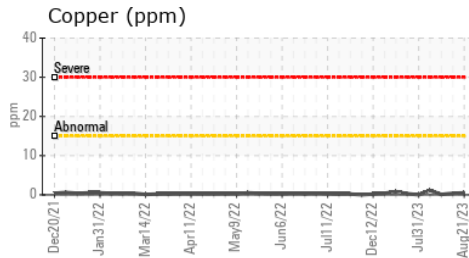
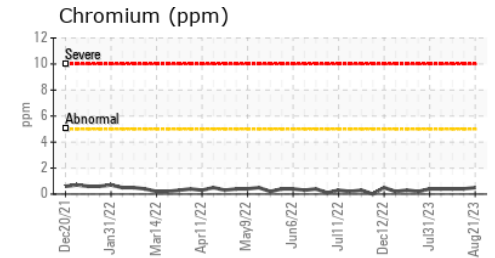
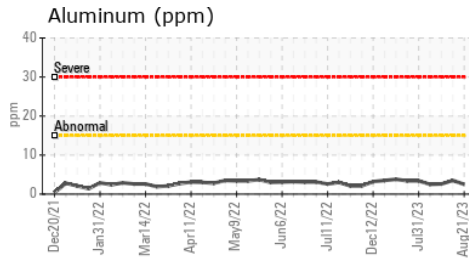
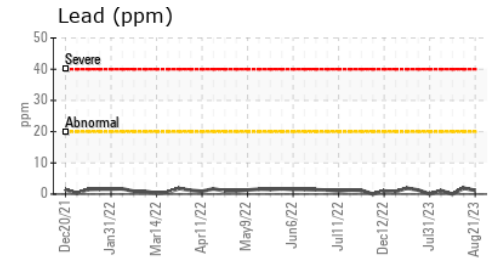
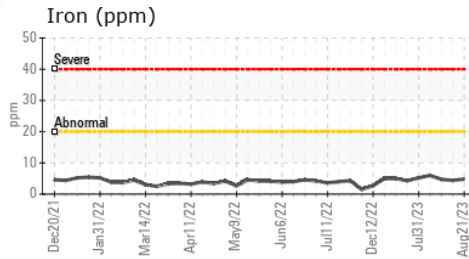
OIL ANALYSIS REPORT



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	14.4	14.3	14.3

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : WC0721955 Received : 24 Aug 2023
 Lab Number : 05934240 Diagnosed : 28 Aug 2023
 Unique Number : 10619511 Diagnostician : Sean Felton
 Test Package : MOB 2 (Additional Tests: TAN Man)

ASB MAS GA LFG PLANT COGEN
 3791 BROWNS MILL RD SE
 ATLANTA, GA
 US 30354
 Contact: DEREK PAGE
 derek.page@cubedistrictenergy.com

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)

T:
F: