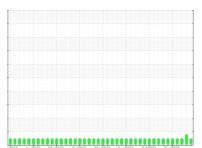


OIL ANALYSIS REPORT

Sample Rating Trend







JENBACHER GM03 (S/N 1144731) Component

Biogas Engine

MAHLER 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

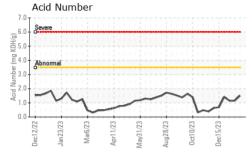
Fluid Condition

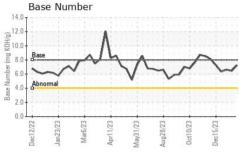
The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.

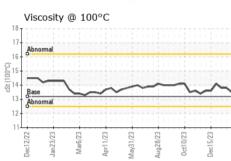
SAMPLE INFORM	MOITAN	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0880422	WC0880419	WC0880409
Sample Date		Client Info		20 Mar 2024	14 Mar 2024	24 Jan 2024
Machine Age	hrs	Client Info		50550	50412	49889
Oil Age	hrs	Client Info		23	2177	1654
Oil Changed	1113	Client Info		N/A	N/A	Not Changd
Sample Status		Ciletit IIIIO		NORMAL	ABNORMAL	NORMAL
CONTAMINATION	١	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	16	<u>^</u> 29	18
Chromium	ppm	ASTM D5185m	>5	<1	2	1
Nickel	ppm		>2	0	<1	<1
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m		5	7	4
Lead	ppm	ASTM D5185m	>20	<1	<1	<1
	ppm	ASTM D5185m		4	6	4
Copper Tin		ASTM D5185m		3	6	5
	ppm		>0			
Vanadium	ppm	ASTM D5185m		<1	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		<1	0	3
Barium	ppm	ASTM D5185m		1	0	0
Molybdenum	ppm	ASTM D5185m		1	1	1
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		8	10	0
Calcium	ppm	ASTM D5185m		2410	2411	2279
Phosphorus	ppm	ASTM D5185m		395	413	413
Zinc	ppm	ASTM D5185m		490	511	479
Sulfur	ppm	ASTM D5185m		2705	2657	2451
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>200	94	186	128
Sodium	ppm	ASTM D5185m	>20	0	<1	2
Potassium	ppm	ASTM D5185m	>20	4	2	<1
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>2	0	0.1	0
Nitration	Abs/cm	*ASTM D7624	>20	6.5	7.7	7.5
i tili allon	Abs/.1mm	*ASTM D7024	>30	17.3	19.5	19.2
Sulfation	MUS/. IIIIII	MOTIVI D/410	> 00	17.3	13.3	13.4
			11 - 11 - 11			
FLUID DEGRADA	TION	method	limit/base	current	history1	
FLUID DEGRADA Oxidation	Abs/.1mm	*ASTM D7414	limit/base >25	12.0	14.8	14.6
Sulfation FLUID DEGRADA Oxidation Acid Number (AN)	TION					history2 14.6 1.15



OIL ANALYSIS REPORT







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

FLUID PROPER	IIIES	method			history1	history2
Visc @ 100°C	cSt	ASTM D445	13.2	13.5	13.8	13.8

GRAPH	S														
Iron (pp	m)						L	_eac	І (рр	m)					
Severe							50 T	Severe			1177				Ш
							₌ 30 -								
Abnormal						$-\Lambda$	E 30 - 1	Abnon	mal						
	<u></u>	00.00		1	1	_/	10-								H
722	723	/23	73	73	723		0 	77/	73	/23	/23	/23	/23	723	73
Dec12/22 Jan23/23	Mar6/23	Apr11/23	May31/23	Aug28/23.	Oct10/23	Dec15/23	כמיכובים	Zigan	Jan23/23	Mar6/23	Apr11/23	May31/23	Aug28/23	Oct10/23	Dec15/23
Aluminu	m (pp	m)						Chro	miu	m (pį	om)				
Severe							12 10	Severe							
Severe							8-								
Abnormal							E 6-	Abnon	mal						111
							2								
22	23	23	23	23	S 23	23	⊥0	77	23	33	-23	23	23	23	23
Dec12/22 Jan23/23	Mar6/23	Apr11/23	May31/23	Aug28/23	Oct10/23	Dec15/23	50,51-0	Dec 17	Jan23/23	Mar6/23	Apr11/23	May31/23	Aug28/23	Oct10/23	Dec15/23
Copper	(ppm))						Silico	on (p	pm)					
							500	Severe							Ш
Severe							1001								
Abnormal							돌 200 - 1	Abnon	mal						
				1	\sim	^	100-						~		
22-	23 .	23	23	23	23	× ·	<u>ــــا</u> 0	77	23	23	23	23	23	23	23
Dec12/22 Jan23/23	Mar6/23	Apr11/23	May31/23	Aug28/23	Oct10/23	Dec15/23	0000000	71390	Jan23/23	Mar6/23	Apr11/23	May31/23	Aug28/23	Oct10/23	Dec15/23
Viscosity	@ 10		2	4						mber		2	4		
Abnormal															
Apriorinal							Number (mg KOH/g)	D			٨				
Base Abnormal					~	~	nber (n	Base	~	1	14	1	_	1	1
Aonormal							₹ 5.0+	Abnon	mal				4 4 4	44444	7-1





Certificate L2367

Laboratory Sample No.

Test Package : MOB 2

Lab Number : 06125117 Unique Number: 10939268

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : WC0880422 Received

Tested Diagnosed

: 21 Mar 2024 : 25 Mar 2024

Dec15/23

: 25 Mar 2024 - Sean Felton

PINE RIDGE 105 BAILEY JESTER RD

GRIFFIN, GA US 30224

Contact: STEPHEN SAVAGE

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

stephen.savage@cubedistrictenergy.com T:

* - 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)

F: