

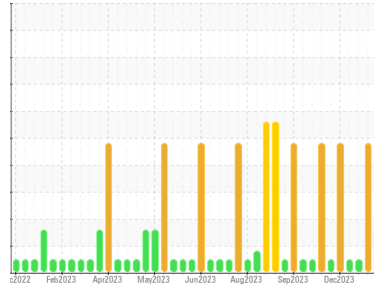


# OIL ANALYSIS REPORT



Machine Id  
**ZOKM01BE (S/N GZJ00541)**  
 Component  
**Biogas Engine**  
 Fluid  
**SHELL MYSELLA S5 S (160 GAL)**

Sample Rating Trend



## DIAGNOSIS

### Recommendation

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

Elemental level of silicon (Si) above normal.

### 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 INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>WC0775204</b>	WC0675546	WC0675544
Sample Date	Client Info		<b>11 Mar 2024</b>	14 Feb 2024	10 Jan 2024
Machine Age	hrs	Client Info	<b>83836</b>	83348	82567
Oil Age	hrs	Client Info	<b>225</b>	715	168
Oil Changed	Client Info		<b>Changed</b>	N/A	Changed
Sample Status			<b>ABNORMAL</b>	SEVERE	NORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water	WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol	WC Method		<b>NEG</b>	NEG	NEG

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >15	<b>5</b>	6	3
Chromium	ppm	ASTM D5185m >4	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m >2	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185m	<b>&lt;1</b>	<1	0
Silver	ppm	ASTM D5185m >5	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >6	<b>3</b>	2	3
Lead	ppm	ASTM D5185m >9	<b>&lt;1</b>	<1	0
Copper	ppm	ASTM D5185m >6	<b>2</b>	3	4
Tin	ppm	ASTM D5185m >4	<b>4</b>	5	2
Vanadium	ppm	ASTM D5185m	<b>&lt;1</b>	0	0
Cadmium	ppm	ASTM D5185m	<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	<b>4</b>	4	0
Barium	ppm	ASTM D5185m	<b>1</b>	10	0
Molybdenum	ppm	ASTM D5185m	<b>8</b>	5	4
Manganese	ppm	ASTM D5185m	<b>0</b>	0	<1
Magnesium	ppm	ASTM D5185m	<b>28</b>	22	27
Calcium	ppm	ASTM D5185m	<b>1575</b>	1482	1391
Phosphorus	ppm	ASTM D5185m 300	<b>321</b>	381	327
Zinc	ppm	ASTM D5185m	<b>418</b>	399	403
Sulfur	ppm	ASTM D5185m	<b>3794</b>	3691	3101

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >181	<b>▲ 199</b>	▲ 266	129
Sodium	ppm	ASTM D5185m	<b>0</b>	<1	6
Potassium	ppm	ASTM D5185m >20	<b>2</b>	1	0

## INFRA-RED

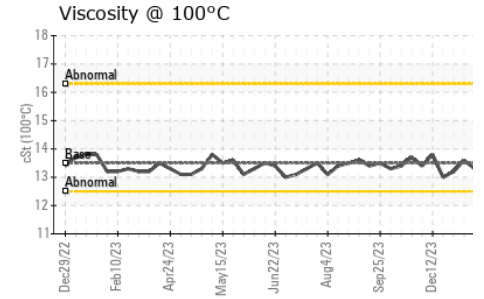
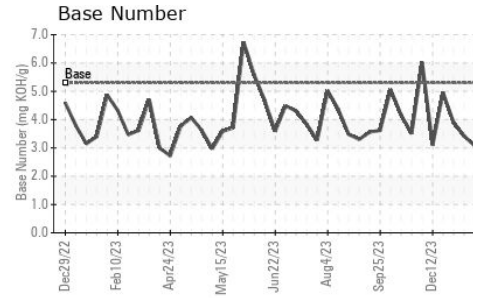
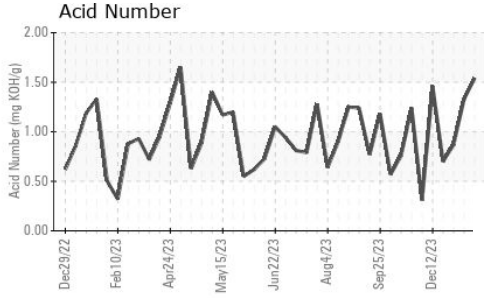
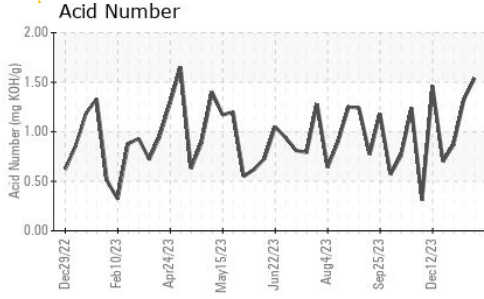
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	<b>0.1</b>	0	0
Nitration	Abs/cm	*ASTM D7624 >20	<b>4.5</b>	4.3	3.6
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>21.1</b>	22.2	18.3

## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>13.6</b>	13.6	10.8
Acid Number (AN)	mg KOH/g	ASTM D8045	<b>1.54</b>	1.33	0.87
Base Number (BN)	mg KOH/g	ASTM D2896 5.3	<b>3.08</b>	3.42	3.89



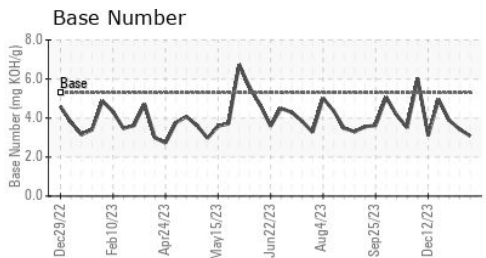
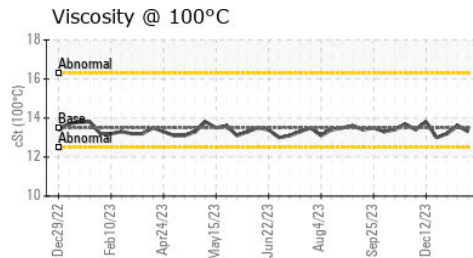
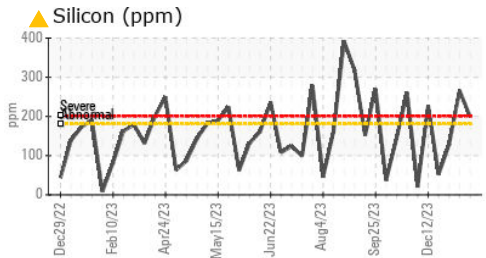
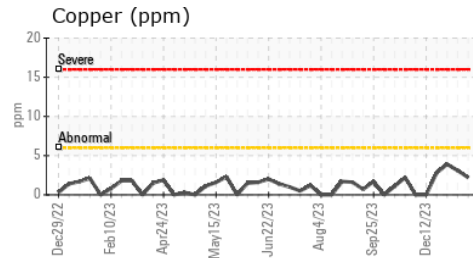
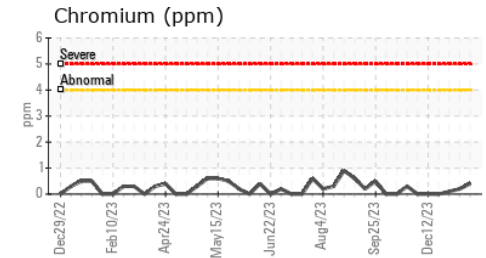
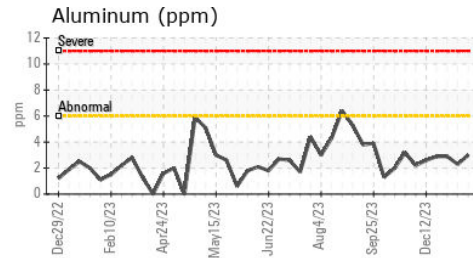
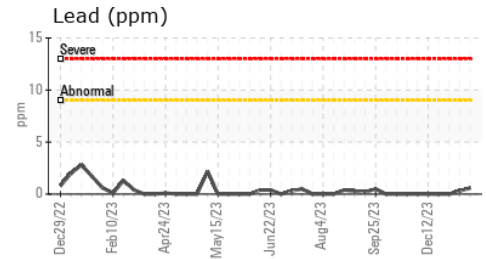
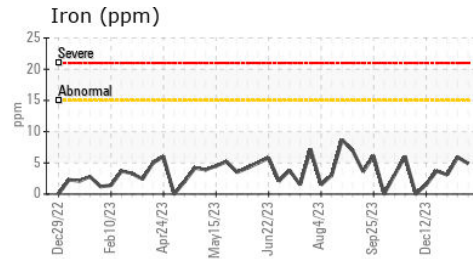
# OIL ANALYSIS REPORT



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	>0.1	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	13.5	13.3	13.6

## GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
 Sample No. : WC0775204  
 Lab Number : 06125112  
 Unique Number : 10939263  
 Test Package : MOB 2

Received : 21 Mar 2024  
 Tested : 25 Mar 2024  
 Diagnosed : 25 Mar 2024 - Sean Felton

**EDL NA Recips-Zook**  
 Zook Powerstation, 388 E. Main Street  
 Leola, PA  
 US 17540-1925  
 Contact: Kevin Johnson  
 kevin.johnson@edlenergy.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)

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