

OIL ANALYSIS REPORT

Sample Rating Trend





Machine Id
MTNM01BE
Component
Biogas Engine

SHELL MYSELLA S5 N 40 (160 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.

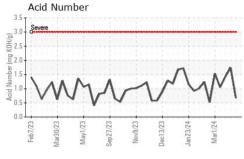
Fluid Condition

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.

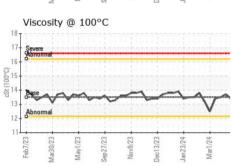
40 (160 GAL)		2023 Mar20	23 May2023 Sep2023	Nov2023 Dec2023 Jan2024 I	War2024	
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0775214	WC0775223	WC0775260
Sample Date		Client Info		26 Mar 2024	19 Mar 2024	11 Mar 2024
Machine Age	hrs	Client Info		41861	41782	41696
Oil Age	hrs	Client Info		14	435	349
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	SEVERE	NORMAL
CONTAMINATION	١	method	limit/base	current	history1	history2
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.11	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>15	3	6	5
Chromium	ppm	ASTM D5185m	>4	0	<1	<1
Nickel	ppm	ASTM D5185m		<1	<1	<1
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m		0	<1	0
Aluminum	ppm	ASTM D5185m	>6	3	4	3
Lead	ppm	ASTM D5185m	>9	0	<1	0
Copper	ppm	ASTM D5185m	>6	<1	2	1
Tin	ppm		>4	1	5	3
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		4	5	5
Barium	ppm	ASTM D5185m		0	2	0
	ppiii	710 1111 20100111		~	_	
Molybdenum	ppm	ASTM D5185m		4	6	6
Molybdenum Manganese						6
Manganese	ppm	ASTM D5185m		4	6	
-	ppm	ASTM D5185m ASTM D5185m		4 0	6	0
Manganese Magnesium	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	300	4 0 25	6 0 29	0 28
Manganese Magnesium Calcium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	300	4 0 25 1488	6 0 29 1819	0 28 1586
Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	300	4 0 25 1488 301	6 0 29 1819 367	0 28 1586 355
Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	300	4 0 25 1488 301 390	6 0 29 1819 367 484	0 28 1586 355 441 3518
Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m		4 0 25 1488 301 390 3399	6 0 29 1819 367 484 3962	0 28 1586 355 441 3518
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	4 0 25 1488 301 390 3399	6 0 29 1819 367 484 3962 history1	0 28 1586 355 441 3518 history2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >181	4 0 25 1488 301 390 3399 current	6 0 29 1819 367 484 3962 history1	0 28 1586 355 441 3518 history2
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >181 >21	4 0 25 1488 301 390 3399 current 99	6 0 29 1819 367 484 3962 history1 221 0	0 28 1586 355 441 3518 history2 177 0 1
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >181 >21 >20	4 0 25 1488 301 390 3399 current 99 1	6 0 29 1819 367 484 3962 history1 221 0 2	0 28 1586 355 441 3518 history2 177 0 1
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	limit/base >181 >21 >20	4 0 25 1488 301 390 3399 current 99 1 0	6 0 29 1819 367 484 3962 history1 ▲ 221 0 2	0 28 1586 355 441 3518 history2 177 0 1
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m	limit/base >181 >21 >20 limit/base	4 0 25 1488 301 390 3399 current 99 1 0 current	6 0 29 1819 367 484 3962 history1 ▲ 221 0 2 history1 0.1	0 28 1586 355 441 3518 history2 177 0 1 history2 0.1
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m method ASTM D5185m	limit/base >181 >21 >20 limit/base	4 0 25 1488 301 390 3399 current 99 1 0 current	6 0 29 1819 367 484 3962 history1 ▲ 221 0 2 history1 0.1 5.2	0 28 1586 355 441 3518 history2 177 0 1 history2 0.1 5.0 22.5
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76145	limit/base >181 >21 >20 limit/base >16	4 0 25 1488 301 390 3399 current 99 1 0 current 0.1 4.2 19.4	6 0 29 1819 367 484 3962 history1 ▲ 221 0 2 history1 0.1 5.2 23.4	0 28 1586 355 441 3518 history2 177 0 1 history2 0.1 5.0 22.5
Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m Method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m Method	limit/base >181 >21 >20 limit/base >16	4 0 25 1488 301 390 3399 current 99 1 0 current 0.1 4.2 19.4	6 0 29 1819 367 484 3962 history1 ▲ 221 0 2 history1 5.2 23.4 history1	0 28 1586 355 441 3518 history2 177 0 1 history2 0.1 5.0 22.5 history2



OIL ANALYSIS REPORT



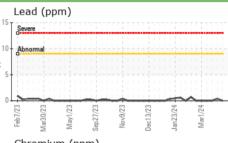


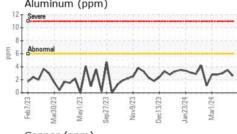


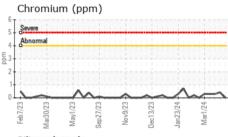
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.11	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	ΓIES	method	limit/base	current	history1	history2

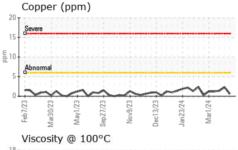
FLUID FROFER	THES	memou			HISTORY	HISTORYZ
Visc @ 100°C	cSt	ASTM D445	13.5	13.4	13.7	13.5

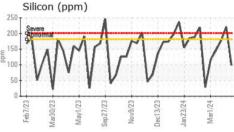
Seve	re						
Abne	ormal						
		٨				^	
1	\wedge	1	M	~	/	V	V
/23	1/23	/23	/23	1/23	/23	1/24	/24
Feb7/23	Mar30/2	May1/2	Sep27/	Nov9/23	Jec13/23	Jan23/24	Mar1/24

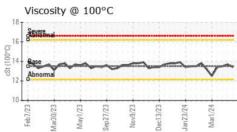


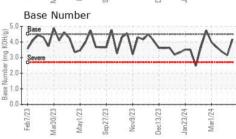
















Laboratory Sample No.

: WC0775214 Lab Number : 06132225 Unique Number: 10951690

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received : 28 Mar 2024 **Tested**

Diagnosed

: 29 Mar 2024 : 02 Apr 2024 - Sean Felton

EDL NA Recips-Morgantown Morgantown Powerstation, 950 Shiloh

Morgantown, PA US 19543

Test Package : MOB 2 Certificate L2367 To discuss this sample report, contact Customer Service at 1-800-237-1369.

aron.gunn@edlenergy.com T:

Contact: ARON GUNN

* - 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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