

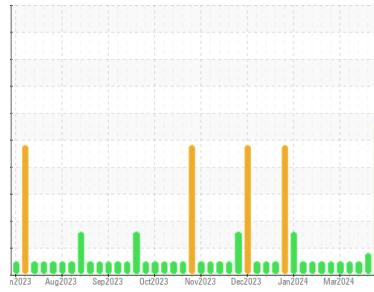


OIL ANALYSIS REPORT



Machine Id
SJNM03BE
 Component
Biogas Engine
 Fluid
CHEVRON HDAX 9500 GAS ENGINE OIL 40 (--- GAL)

Sample Rating Trend



DIRT



DIAGNOSIS

- Recommendation**
We recommend that you drain the oil and perform a filter service on this component if not already done. We recommend an early resample to monitor this condition.
- Wear**
The copper level is abnormal.
- 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.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0865695	WC0865726	WC0865722
Sample Date	Client Info		11 Apr 2024	04 Apr 2024	28 Mar 2024
Machine Age	hrs	Client Info	115822	115822	115653
Oil Age	hrs	Client Info	905	738	569
Oil Changed	Client Info		Not Chngd	Not Chngd	Not Chngd
Sample Status			SEVERE	ABNORMAL	NORMAL

CONTAMINATION

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

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >14	4	1	3
Chromium	ppm	ASTM D5185m >3	<1	0	<1
Nickel	ppm	ASTM D5185m	<1	0	<1
Titanium	ppm	ASTM D5185m	0	0	0
Silver	ppm	ASTM D5185m	0	0	0
Aluminum	ppm	ASTM D5185m >5	1	1	2
Lead	ppm	ASTM D5185m >8	1	1	1
Copper	ppm	ASTM D5185m >5	6	5	4
Tin	ppm	ASTM D5185m >3	2	4	3
Vanadium	ppm	ASTM D5185m	<1	0	0
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	1	2	2
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	5	4	4
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m	20	27	26
Calcium	ppm	ASTM D5185m	1837	1834	1846
Phosphorus	ppm	ASTM D5185m	246	265	286
Zinc	ppm	ASTM D5185m	297	347	353
Sulfur	ppm	ASTM D5185m	2106	1864	2504

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >180	209	174	151
Sodium	ppm	ASTM D5185m >20	4	4	4
Potassium	ppm	ASTM D5185m >20	2	3	5

INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	0	0	0
Nitration	Abs/cm	*ASTM D7624	6.1	5.4	5.5
Sulfation	Abs/.1mm	*ASTM D7415	18.4	20.4	17.0

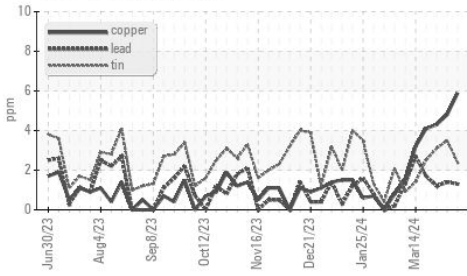
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	11.5	10.1	9.7
Acid Number (AN)	mg KOH/g	ASTM D8045 1.0	0.998	0.89	2.17
Base Number (BN)	mg KOH/g	ASTM D2896 5.4	4.20	15.25	4.51

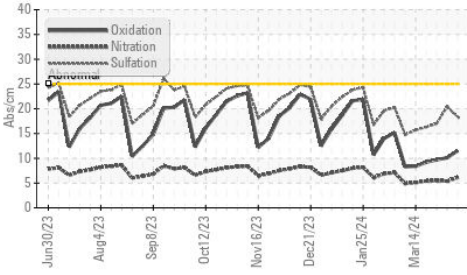


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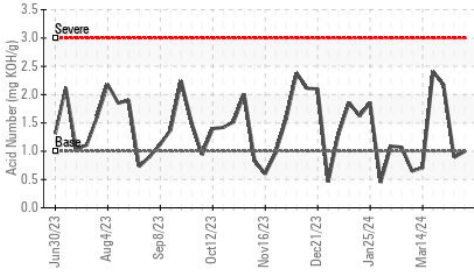
Non-ferrous Metals



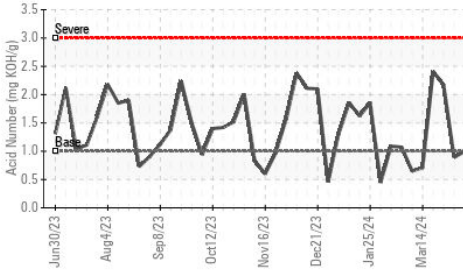
FT-IR (Direct Trend)



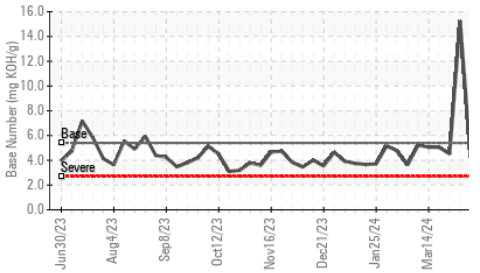
Acid Number



Acid Number



Base Number

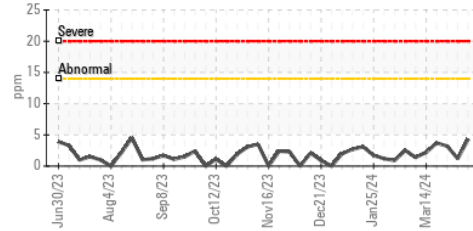


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

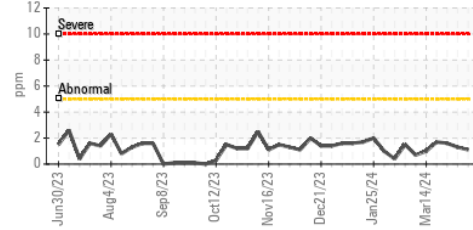
FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	13.4	13.7	13.6	13.5

GRAPHS

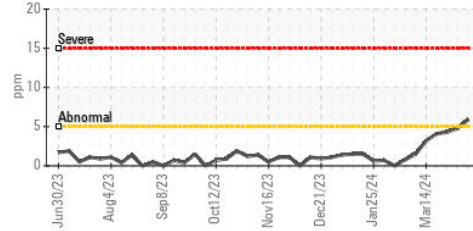
Iron (ppm)



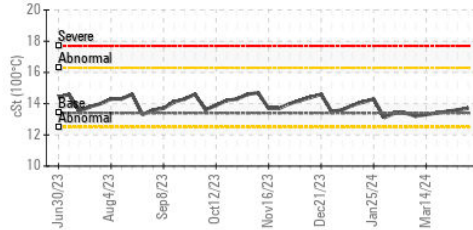
Aluminum (ppm)



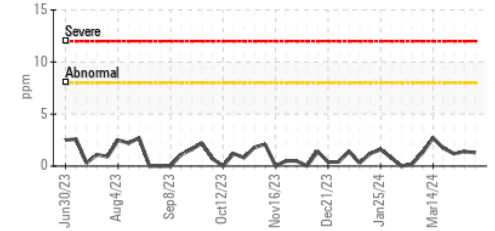
Copper (ppm)



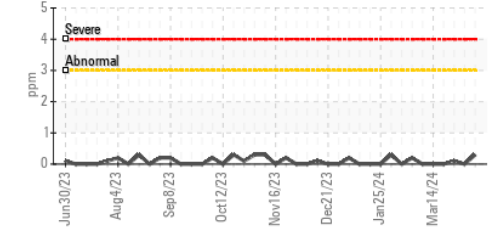
Viscosity @ 100°C



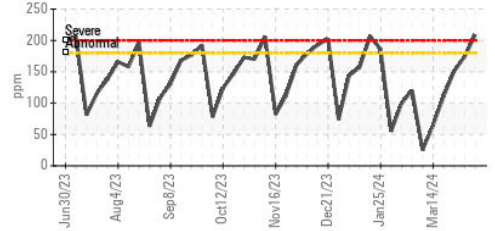
Lead (ppm)



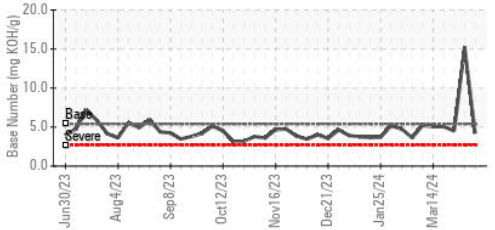
Chromium (ppm)



Silicon (ppm)



Base Number



Certificate L2367

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

Sample No. : WC0865695

Lab Number : 06148896

Unique Number : 10978974

Test Package : MOB 2

Received : 15 Apr 2024

Tested : 16 Apr 2024

Diagnosed : 17 Apr 2024 - Sean Felton

EDL NA Recips-South Jordan

South Jordan Powerstation, 10473 S. Bacchus Hwy.

South Jordan, UT

US 84095

Contact: Aaron Klein

aaron.klein@edlenergy.com

T:

F:

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)