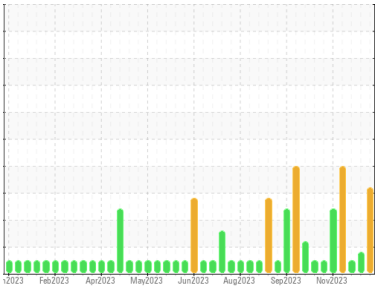
OIL ANALYSIS REPORT

Sample Rating Trend



DEGRADATION

Machine Id
WVTM02BE
Component
Biogas Engine
Fluid
CHEVRON HDAX 6500 LFG GAS ENGINE OIL (--- GAL)

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 iron level is abnormal.

Contamination
There is no indication of any contamination in the oil.

Fluid Condition
The AN level is above the recommended limit. The BN level is low.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0785321**	WC0785318	WC0785388
Sample Date		Client Info		**04 Dec 2023**	30 Nov 2023	20 Nov 2023
Machine Age	hrs	Client Info		**41969**	41877	41642
Oil Age	hrs	Client Info		**387**	295	642
Oil Changed		Client Info		**Not Changd**	Not Changd	Not Changd
Sample Status				**ABNORMAL**	ATTENTION	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>4.0	**<1.0**	<1.0	<1.0
Water		WC Method	>0.1	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>15	▲ **18**	▲ 13	6
Chromium	ppm	ASTM D5185m	>4	**0**	0	0
Nickel	ppm	ASTM D5185m	>2	**1**	0	<1
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m	>5	**0**	0	0
Aluminum	ppm	ASTM D5185m	>6	**2**	2	2
Lead	ppm	ASTM D5185m	>9	**6**	5	4
Copper	ppm	ASTM D5185m	>6	**2**	<1	<1
Tin	ppm	ASTM D5185m	>4	**6**	4	4
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**	0	0
Barium	ppm	ASTM D5185m		**<1**	0	0
Molybdenum	ppm	ASTM D5185m		**1**	<1	<1
Manganese	ppm	ASTM D5185m		**0**	0	<1
Magnesium	ppm	ASTM D5185m		**8**	8	9
Calcium	ppm	ASTM D5185m		**1757**	1950	1707
Phosphorus	ppm	ASTM D5185m		**269**	296	273
Zinc	ppm	ASTM D5185m		**348**	402	311
Sulfur	ppm	ASTM D5185m		**3480**	4044	3533

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>181	**176**	161	129
Sodium	ppm	ASTM D5185m		**2**	<1	2
Potassium	ppm	ASTM D5185m	>20	**0**	0	1

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0**	0	0.1
Nitration	Abs/cm	*ASTM D7624	>20	**4.8**	4.9	5.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	**27.9**	26.7	25.2

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**15.3**	14.5	13.8
Acid Number (AN)	mg KOH/g	ASTM D8045	1.2	▲ **2.83**	2.54	1.77
Base Number (BN)	mg KOH/g	ASTM D2896	4.5	▲ **0.96**	2.81	2.90

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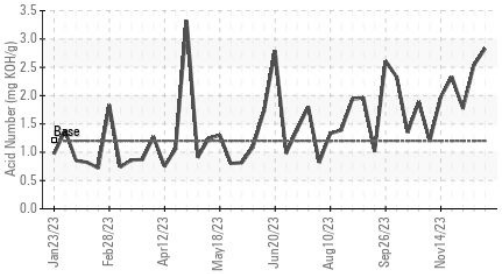
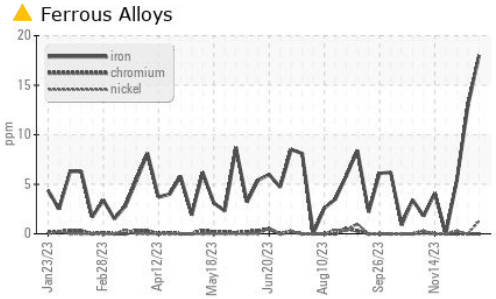
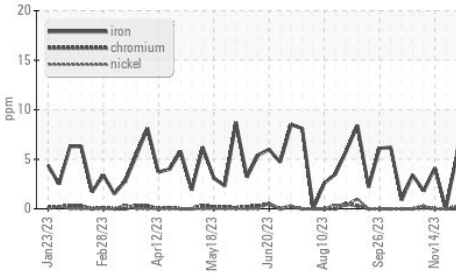
Acid Number



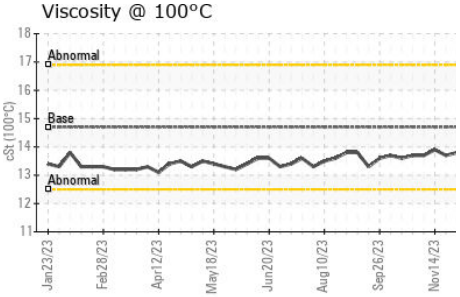
Ferrous Alloys



Ferrous Alloys



Viscosity @ 100°C

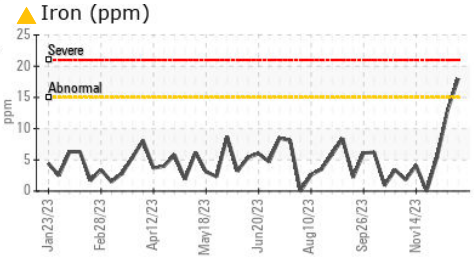


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	NORML	NORML
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

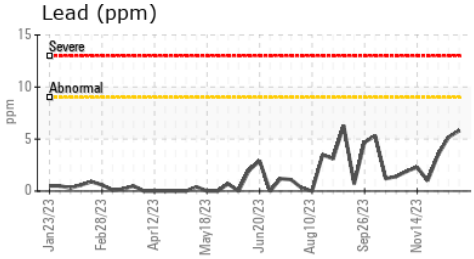
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.7	**13.9**	13.8	13.8

GRAPHS

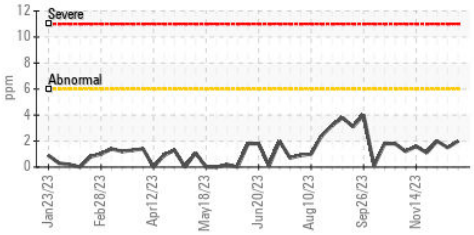
Iron (ppm)



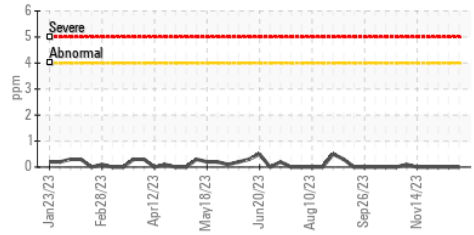
Lead (ppm)



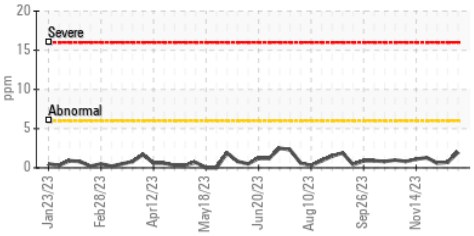
Aluminum (ppm)



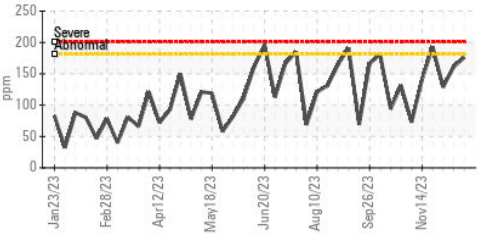
Chromium (ppm)



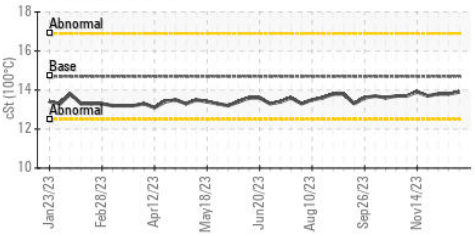
Copper (ppm)



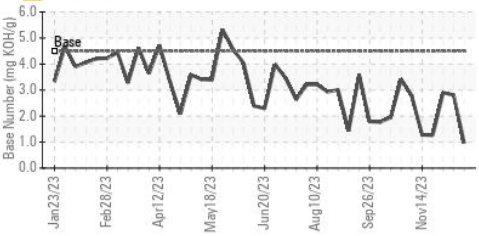
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0785321
Lab Number : 06026654
Unique Number : 10776445
Test Package : MOB 2

Received : 06 Dec 2023
Diagnosed : 08 Dec 2023
Diagnostician : Don Baldridge

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)

EDL NA Recips-Watervliet
Watervliet Powerstation, 3563 Hennessey Road
Watervliet, MI
US 49098
Contact: Scott Eastman
scott.eastman@edlenergy.com
T:
F:

Report Id: EDLWAT [WUSCAR] 06026654 (Generated: 12/08/2023 09:59:51) Rev: 1

Submitted By: Scott Eastman