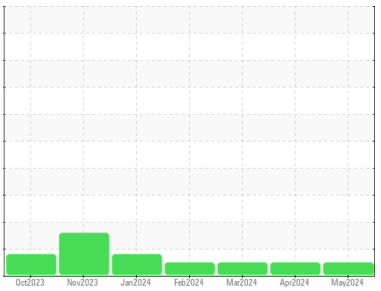
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
2423
Component
Biogas Engine
Fluid
LO-ASH ENGINE OIL SAE 40 (--- GAL)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
Fuel content negligible. 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.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PCA0111240**	PCA0111217	PCA0111218
Sample Date		Client Info		**16 May 2024**	16 Apr 2024	07 Mar 2024
Machine Age	hrs	Client Info		**50741**	50196	49186
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**NORMAL**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
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	>45	**15**	8	27
Chromium	ppm	ASTM D5185m	>2	**0**	<1	<1
Nickel	ppm	ASTM D5185m	>2	**0**	<1	0
Titanium	ppm	ASTM D5185m		**0**	<1	0
Silver	ppm	ASTM D5185m	>5	**0**	0	0
Aluminum	ppm	ASTM D5185m	>10	**1**	2	2
Lead	ppm	ASTM D5185m	>5	**0**	<1	<1
Copper	ppm	ASTM D5185m	>14	**5**	2	9
Tin	ppm	ASTM D5185m	>13	**<1**	<1	0
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	<1	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	37	**0**	0	0
Barium	ppm	ASTM D5185m	12	**0**	0	0
Molybdenum	ppm	ASTM D5185m	200	**2**	4	3
Manganese	ppm	ASTM D5185m		**<1**	0	0
Magnesium	ppm	ASTM D5185m	5	**37**	44	41
Calcium	ppm	ASTM D5185m	1600	**1487**	1496	1326
Phosphorus	ppm	ASTM D5185m	300	**359**	374	304
Zinc	ppm	ASTM D5185m	400	**436**	452	404
Sulfur	ppm	ASTM D5185m	2600	**2923**	2734	2305

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>200	**2**	2	2
Sodium	ppm	ASTM D5185m		**1**	0	0
Potassium	ppm	ASTM D5185m	>20	**0**	3	<1
Fuel	%	ASTM D3524	>4.0	**0.2**	0.0	0.2

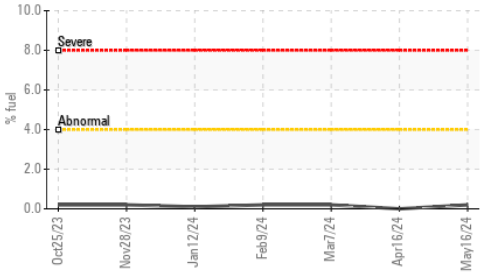
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0**	0.1	0
Nitration	Abs/cm	*ASTM D7624	>20	**5.0**	4.9	4.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	**16.9**	16.7	16.5

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**11.8**	11.4	11.4
Acid Number (AN)	mg KOH/g	ASTM D8045		**1.22**	0.60	0.60
Base Number (BN)	mg KOH/g	ASTM D2896	3.0	**3.38**	4.03	3.56

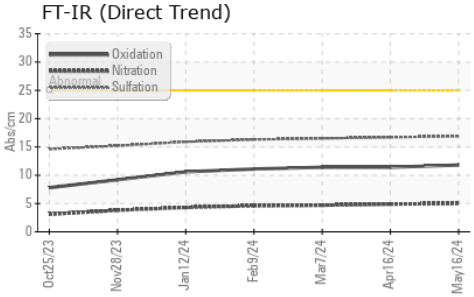
OIL ANALYSIS REPORT

OIL DIAGNOSTICS

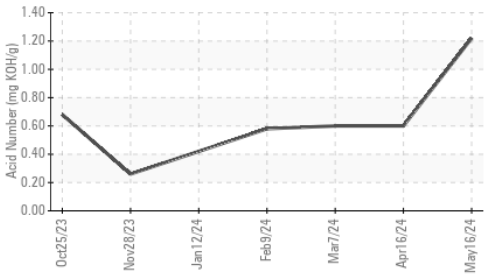
Fuel Dilution



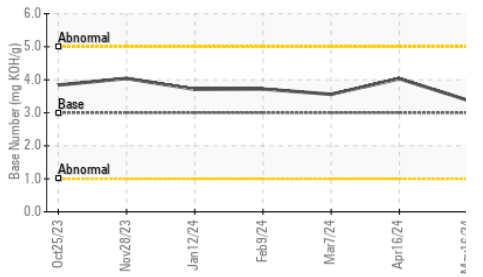
FT-IR (Direct Trend)



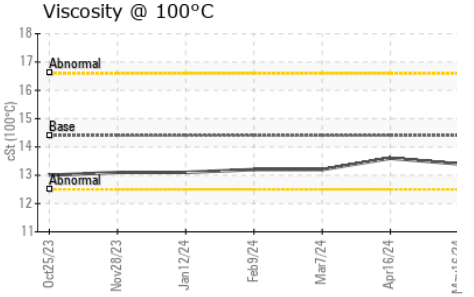
Acid Number



Base Number



Viscosity @ 100°C

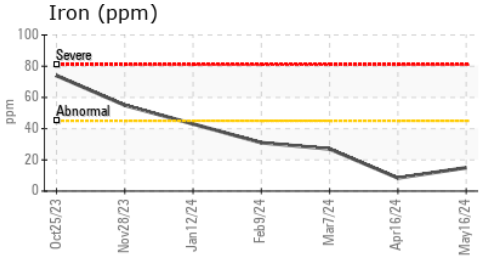


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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

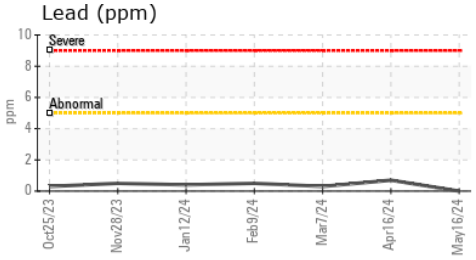
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	**13.4**	13.6	13.2

GRAPHS

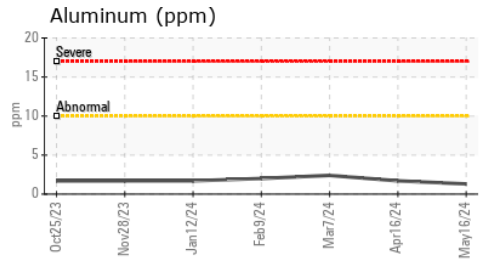
Iron (ppm)



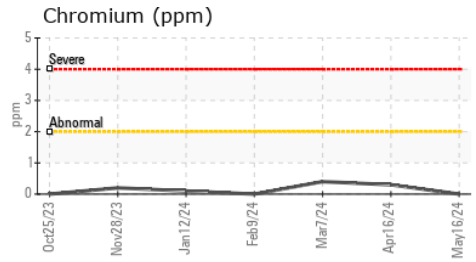
Lead (ppm)



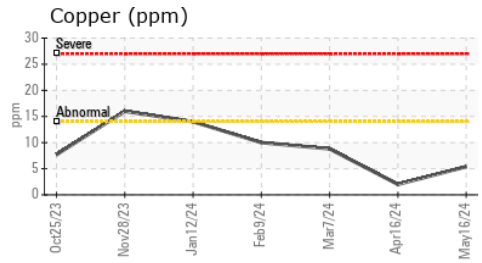
Aluminum (ppm)



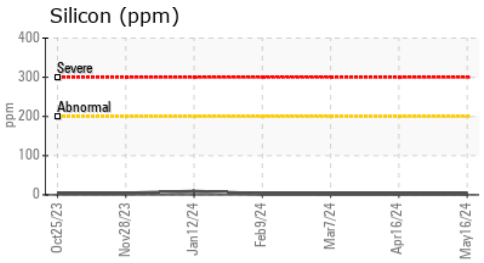
Chromium (ppm)



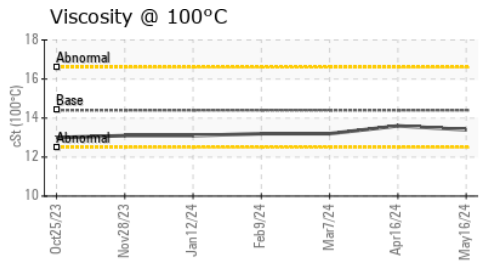
Copper (ppm)



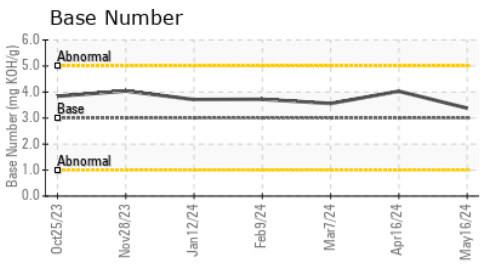
Silicon (ppm)



Viscosity @ 100°C



Base Number



ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0111240 **Received** : 30 May 2024
Lab Number : 06195622 **Tested** : 03 Jun 2024
Unique Number : 11057745 **Diagnosed** : 03 Jun 2024 - Sean Felton
Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel)

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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Report Id: USAMAN [WUSCAR] 06195622 (Generated: 06/03/2024 10:14:21) Rev: 1
Contact/Location: JASON KUZNESKI - USAMAN