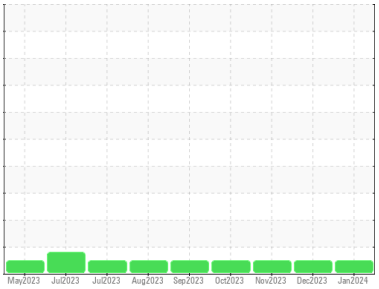
OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
MRC-295
Component
Natural Gas Engine
Fluid
TULCO LUBSOIL GEO XL LOW ASH 40 (--- GAL)

DIAGNOSIS

Recommendation
Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

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.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**TO60001957**	TO60001915	TO60001721
Sample Date		Client Info		**05 Jan 2024**	02 Dec 2023	04 Nov 2023
Machine Age	hrs	Client Info		**6908**	6433	6430
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	Not Changd	N/A
Sample Status				**NORMAL**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.1	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	**3**	2	<1
Chromium	ppm	ASTM D5185m	>4	**0**	0	0
Nickel	ppm	ASTM D5185m	>2	**0**	0	0
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m	>3	**0**	0	0
Aluminum	ppm	ASTM D5185m	>9	**<1**	0	<1
Lead	ppm	ASTM D5185m	>30	**3**	2	<1
Copper	ppm	ASTM D5185m	>35	**<1**	<1	<1
Tin	ppm	ASTM D5185m	>4	**0**	0	0
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	100	**73**	80	72
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m	1	**<1**	<1	0
Manganese	ppm	ASTM D5185m		**0**	0	<1
Magnesium	ppm	ASTM D5185m	10	**13**	12	13
Calcium	ppm	ASTM D5185m	1150	**1323**	1395	1238
Phosphorus	ppm	ASTM D5185m	290	**268**	287	196
Zinc	ppm	ASTM D5185m	272	**297**	316	295
Sulfur	ppm	ASTM D5185m	1900	**1401**	1386	1246

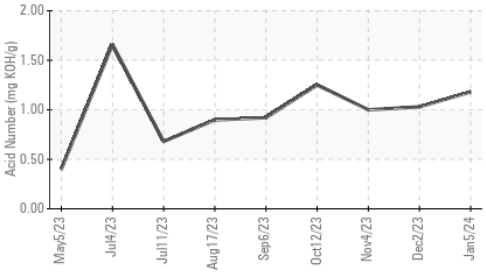
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>+100	**1**	2	1
Sodium	ppm	ASTM D5185m		**2**	2	2
Potassium	ppm	ASTM D5185m	>20	**<1**	0	0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0**	0	0
Nitration	Abs/cm	*ASTM D7624	>20	**9.2**	9.1	9.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	**16.7**	16.2	16.4

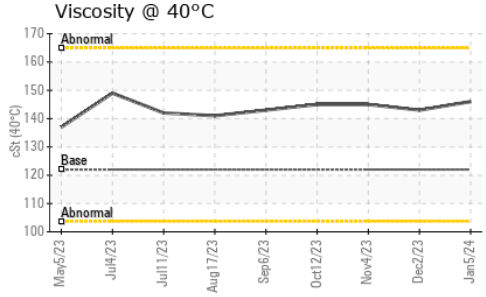
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**14.6**	14.0	14.1
Acid Number (AN)	mg KOH/g	ASTM D8045		**1.18**	1.03	1.00
Base Number (BN)	mg KOH/g	ASTM D2896	4.2	**3.10**	4.12	3.74

OIL ANALYSIS REPORT

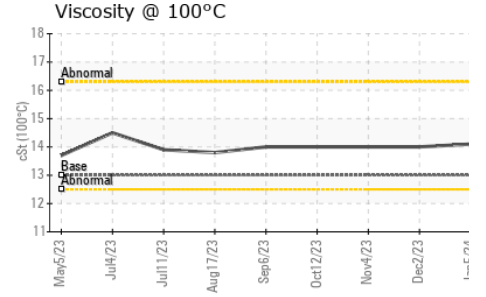
Acid Number



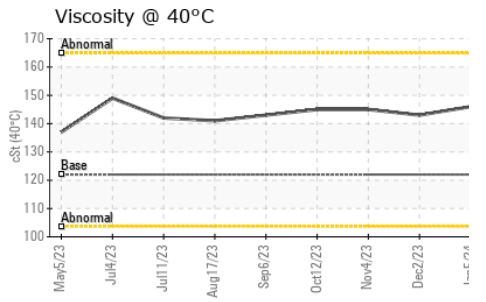
Viscosity @ 40°C



Viscosity @ 100°C



Viscosity @ 40°C

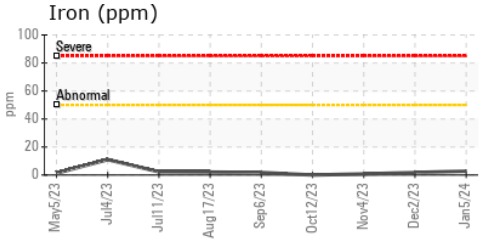


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

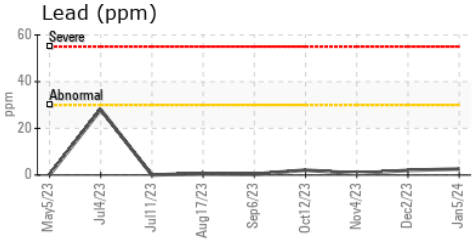
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	122	**146**	143	145
Visc @ 100°C	cSt	ASTM D445	13	**14.1**	14.0	14.0
Viscosity Index (VI)	Scale	ASTM D2270	103	**92**	94	92

GRAPHS

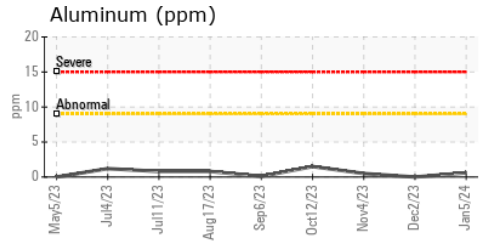
Iron (ppm)



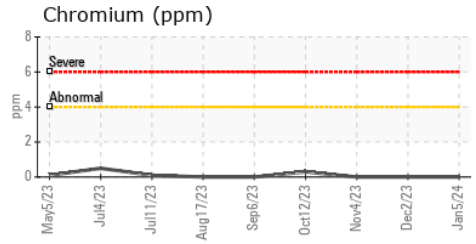
Lead (ppm)



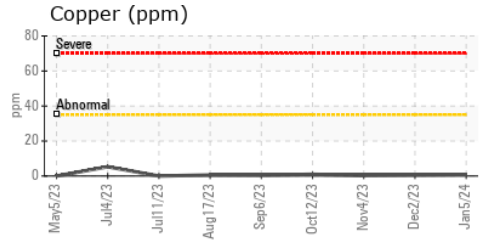
Aluminum (ppm)



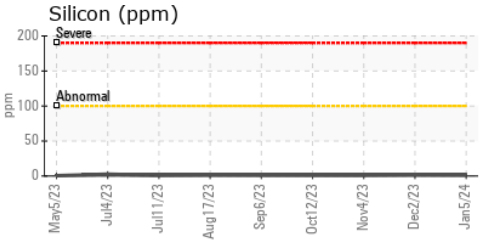
Chromium (ppm)



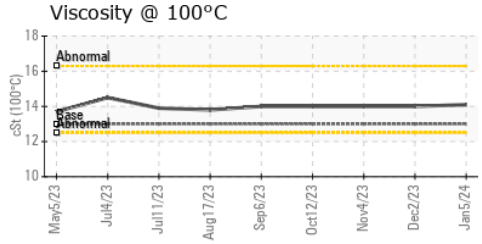
Copper (ppm)



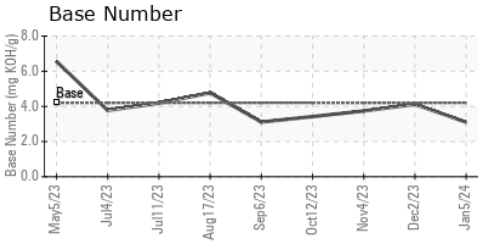
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO60001957
Lab Number : 06063754
Unique Number : 10835136
Test Package : MOB 2 (Additional Tests: KV40, VI)

Received : 17 Jan 2024
Tested : 19 Jan 2024
Diagnosed : 19 Jan 2024 - Wes Davis

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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