



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Area
GOLDEN BEAR
Machine Id
MRC-271
Component
Natural Gas Engine
Fluid
TULCO LUBSOIL GEO XL LOW ASH 40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TO60002001	TO60001632	TO60001640
Sample Date		Client Info		01 Feb 2024	05 Jan 2024	01 Nov 2023
Machine Age	hrs	Client Info		14465	13828	12283
Oil Age	hrs	Client Info		1	0	0
Filter Age	hrs	Client Info		1	0	0
Oil Changed		Client Info		Not Changed	N/A	Not Changed
Filter Changed		Client Info		Not Changed	N/A	Not Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>50	7	6	7
Chromium	ppm	ASTM D5185m	>4	<1	0	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>9	1	<1	<1
Lead	ppm	ASTM D5185m	>30	22	20	28
Copper	ppm	ASTM D5185m	>35	13	10	12
Tin	ppm	ASTM D5185m	>4	<1	0	<1
Vanadium	ppm	ASTM D5185m		0	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

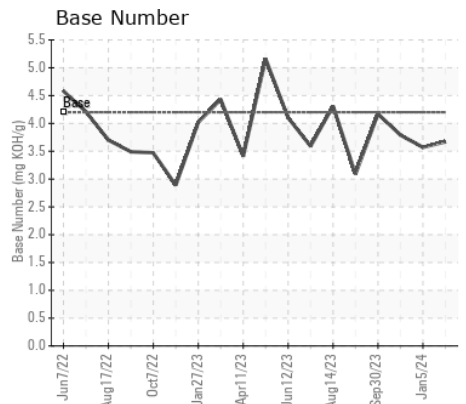
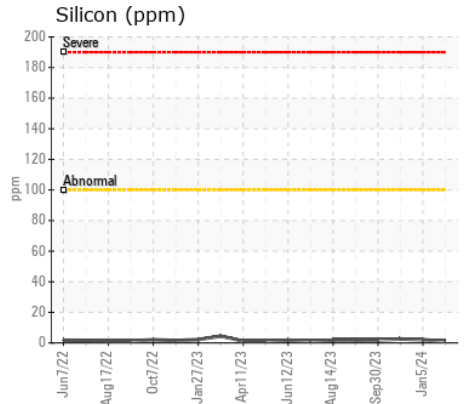
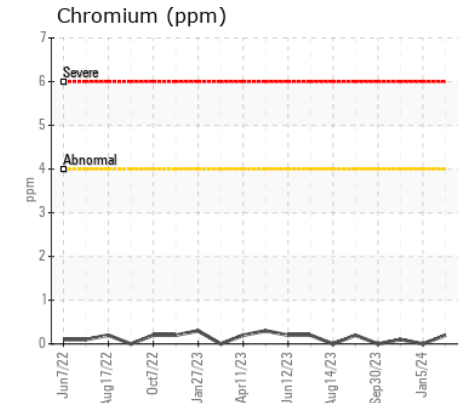
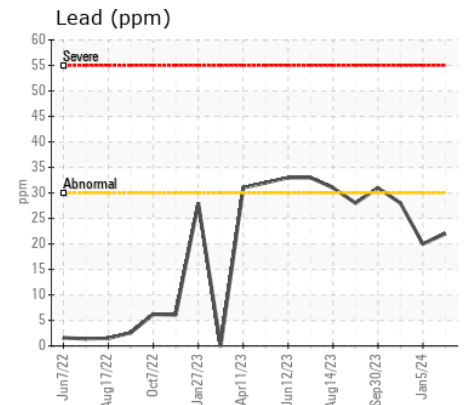
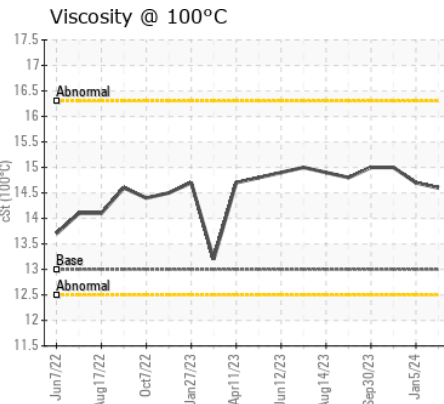
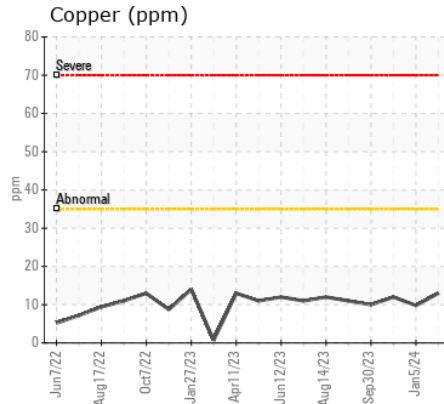
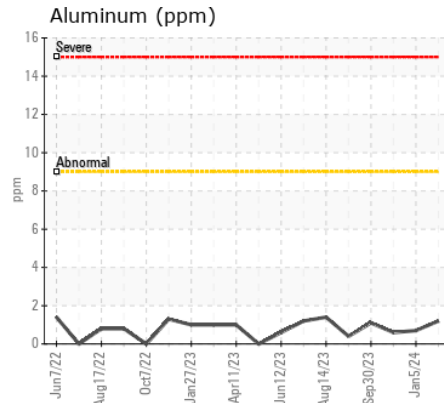
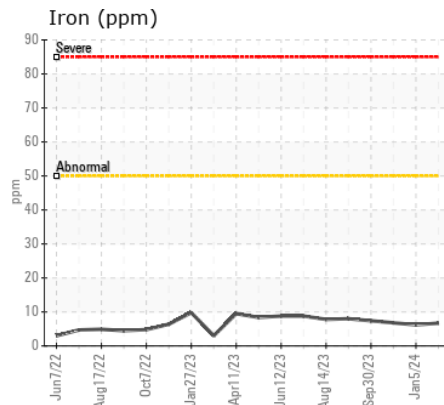
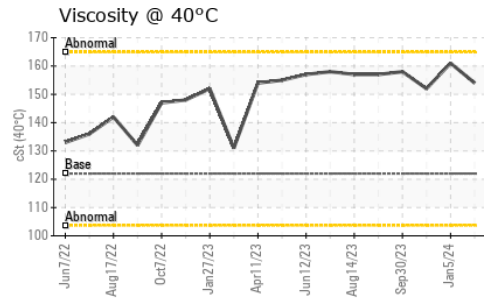
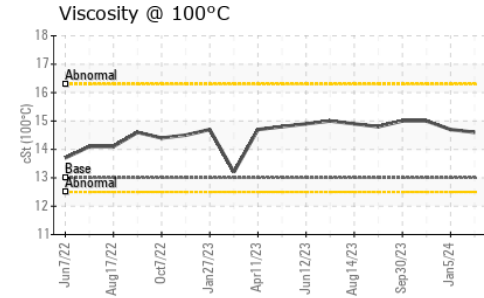
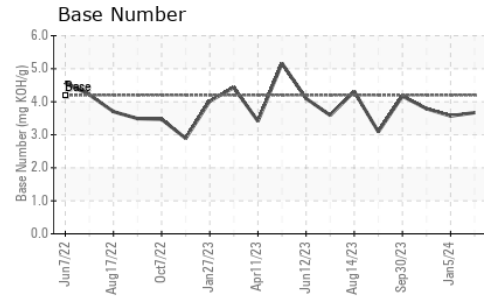
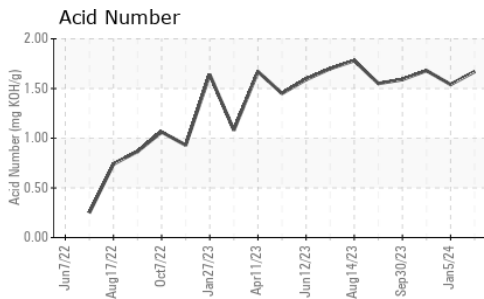
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>+100	1	2	3
Potassium	ppm	ASTM D5185m	>20	3	2	2
Water		WC Method	>0.1	NEG	NEG	NEG
Soot %	%	*ASTM D7844		0	0	0
Nitration	Abs/cm	*ASTM D7624	>20	10.5	10.5	10.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.1	20.0	20.4
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

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.

Sodium	ppm	ASTM D5185m		3	6	7
Boron	ppm	ASTM D5185m	100	87	71	70
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m	1	<1	<1	<1
Manganese	ppm	ASTM D5185m		0	0	<1
Magnesium	ppm	ASTM D5185m	10	12	12	13
Calcium	ppm	ASTM D5185m	1150	1433	1447	1516
Phosphorus	ppm	ASTM D5185m	290	282	283	329
Zinc	ppm	ASTM D5185m	272	366	342	407
Sulfur	ppm	ASTM D5185m	1900	2219	2224	2003
Oxidation	Abs/.1mm	*ASTM D7414	>25	21.8	21.3	23.0
Acid Number (AN)	mg KOH/g	ASTM D8045		1.67	1.54	1.68
Base Number (BN)	mg KOH/g	ASTM D2896	4.2	3.67	3.57	3.79
Visc @ 40°C	cSt	ASTM D445	122	154	161	152
Visc @ 100°C	cSt	ASTM D445	13	14.6	14.7	15.0
Viscosity Index (VI)	Scale	ASTM D2270	103	92	88	98



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO60002001
Lab Number : 06087585
Unique Number : 10875030
Test Package : MOB 2 (Additional Tests: KV40, VI)

Received : 13 Feb 2024
Tested : 14 Feb 2024
Diagnosed : 14 Feb 2024 - Wes Davis

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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)