



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
MRC-291
 Component
Natural Gas Engine
 Fluid
TULCO LUBSOIL GEO XL LOW ASH 40 (--- GAL)

RECOMMENDATION

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

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TO60002942	TO60002721	TO60002571
Sample Date		Client Info		10 Jul 2024	31 May 2024	01 May 2024
Machine Age	hrs	Client Info		5105	4413	4226
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>50	7	6	5
Chromium	ppm	ASTM D5185m	>4	<1	<1	0
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>9	2	2	0
Lead	ppm	ASTM D5185m	>30	5	4	1
Copper	ppm	ASTM D5185m	>35	7	2	2
Tin	ppm	ASTM D5185m	>4	<1	<1	0
Vanadium	ppm	ASTM D5185m		0	<1	0
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.

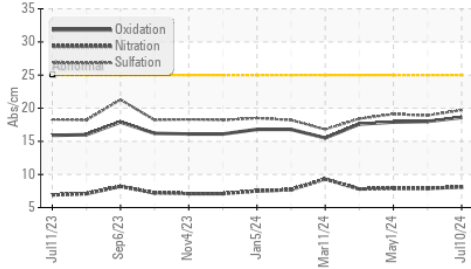
Silicon	ppm	ASTM D5185m	>+100	2	2	<1
Potassium	ppm	ASTM D5185m	>20	4	3	0
Water		WC Method	>0.1	NEG	NEG	NEG
Soot %	%	*ASTM D7844		0	0.1	0
Nitration	Abs/cm	*ASTM D7624	>20	8.1	7.9	7.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.7	18.9	19.1
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	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

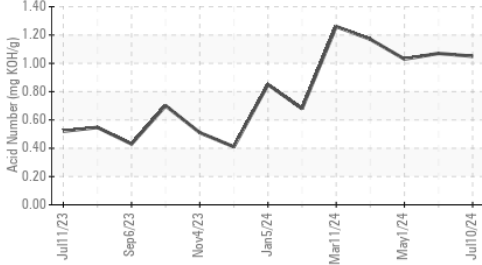
The BN result indicates that there is suitable alkalinity remaining in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		9	5	5
Boron	ppm	ASTM D5185m	100	27	34	33
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m	1	<1	1	0
Manganese	ppm	ASTM D5185m		2	0	<1
Magnesium	ppm	ASTM D5185m	10	13	11	10
Calcium	ppm	ASTM D5185m	1150	1356	1320	1373
Phosphorus	ppm	ASTM D5185m	290	281	277	273
Zinc	ppm	ASTM D5185m	272	349	340	344
Sulfur	ppm	ASTM D5185m	1900	2987	2331	2734
Oxidation	Abs/.1mm	*ASTM D7414	>25	18.6	18.0	17.9
Acid Number (AN)	mg KOH/g	ASTM D8045		1.05	1.07	1.03
Base Number (BN)	mg KOH/g	ASTM D2896	4.2	3.14	3.40	4.05
Visc @ 40°C	cSt	ASTM D445	122	152	150	151
Visc @ 100°C	cSt	ASTM D445	13	14.5	14.6	14.5
Viscosity Index (VI)	Scale	ASTM D2270	103	93	95	93

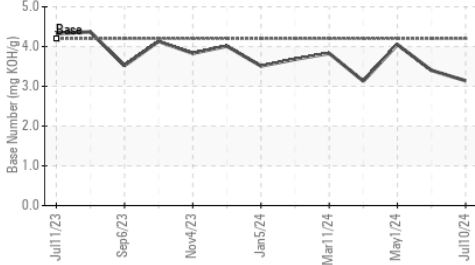
FT-IR (Direct Trend)



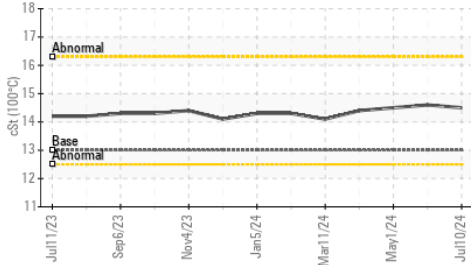
Acid Number



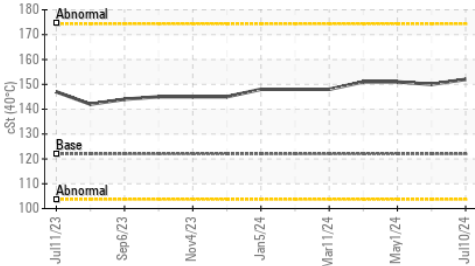
Base Number



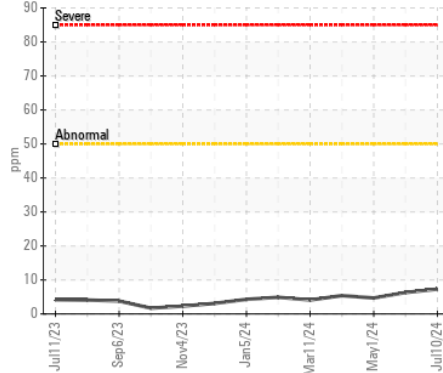
Viscosity @ 100°C



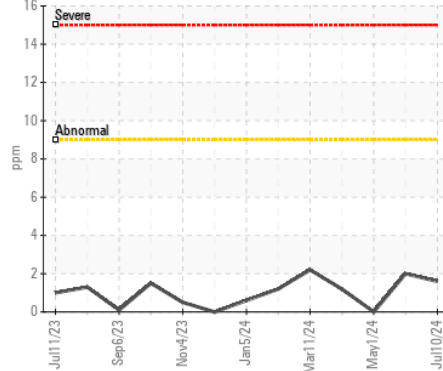
Viscosity @ 40°C



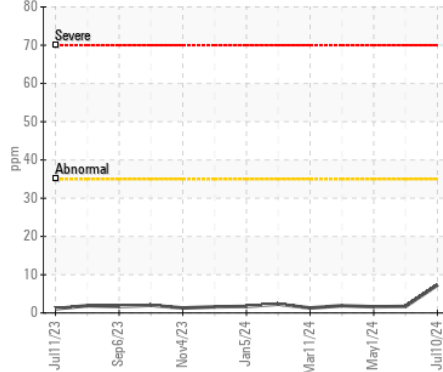
Iron (ppm)



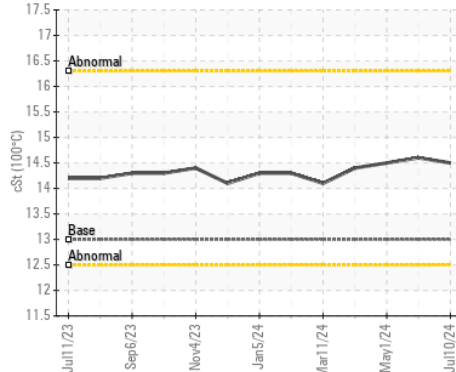
Aluminum (ppm)



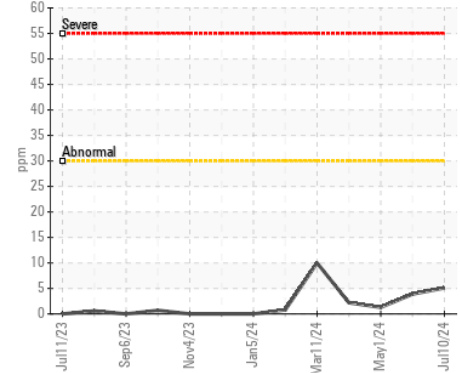
Copper (ppm)



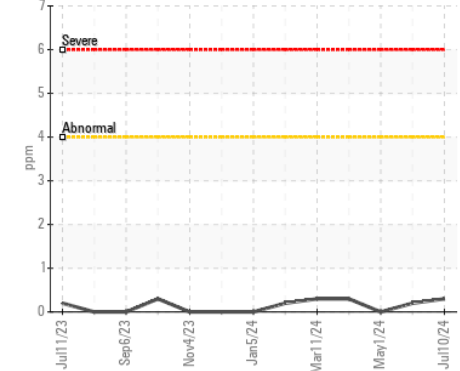
Viscosity @ 100°C



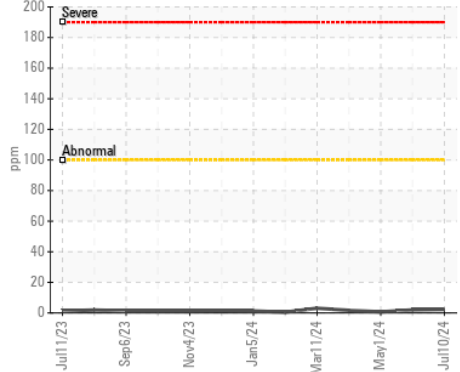
Lead (ppm)



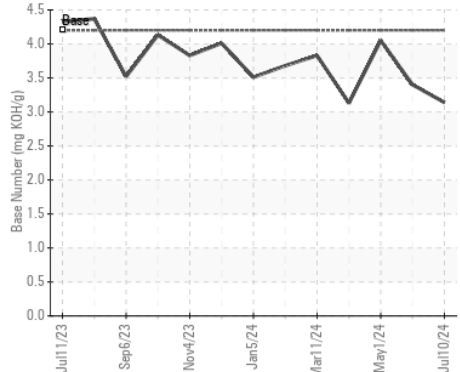
Chromium (ppm)



Silicon (ppm)



Base Number



Certificate L2367

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

Sample No. : TO60002942

Lab Number : 06238536

Unique Number : 11127370

Test Package : MOB 2 (Additional Tests: KV40, VI)

Received : 16 Jul 2024

Tested : 17 Jul 2024

Diagnosed : 17 Jul 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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