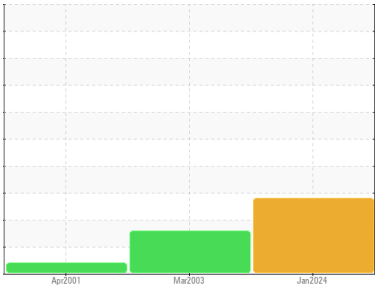
OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Machine Id
D+K 0038 (S/N H-1146)
Component
Hydraulic System
Fluid
PENNZOIL PENNZBELL AW68 (200 GAL)

DIAGNOSIS

Recommendation
We recommend you service the filters on this component. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample.

Wear
The copper level is abnormal. All other component wear rates are normal.

Contamination
High concentration of visible dirt/debris present in the oil.

Fluid Condition
The oil viscosity is lower than normal. This plus the additive levels indicates the addition of a different brand, or type of oil. Confirm oil type. The AN level is acceptable for this fluid.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0819594**	WCI2014644	WCI2007551
Sample Date		Client Info		**15 Jan 2024**	28 Mar 2003	26 Apr 2001
Machine Age	hrs	Client Info		**0**	0	0
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	Not Changd	N/A
Sample Status				**ABNORMAL**	ABNORMAL	---

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.05	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	**5**	1	1
Chromium	ppm	ASTM D5185m	>20	**0**	0	<1
Nickel	ppm	ASTM D5185m	>20	**0**	0	0
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m		**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**0**	0	0
Lead	ppm	ASTM D5185m	>20	**0**	0	3
Copper	ppm	ASTM D5185m	>20	▲ **37**	2	2
Tin	ppm	ASTM D5185m	>20	**0**	0	2
Antimony	ppm	ASTM D5185m		**---**	0	14
Vanadium	ppm	ASTM D5185m		**0**	0	<1
Cadmium	ppm	ASTM D5185m		**0**	0	<1

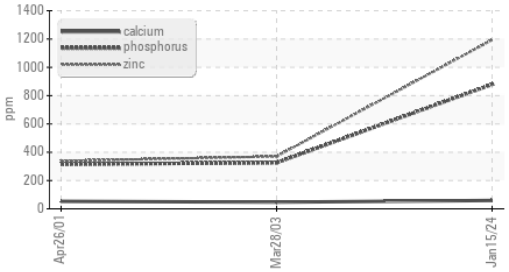
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**0**	0	0
Barium	ppm	ASTM D5185m		**0**	0	1
Molybdenum	ppm	ASTM D5185m		**0**	0	0
Manganese	ppm	ASTM D5185m		**0**	0	0
Magnesium	ppm	ASTM D5185m		**0**	0	0
Calcium	ppm	ASTM D5185m		**59**	47	53
Phosphorus	ppm	ASTM D5185m		▲ **879**	326	315
Zinc	ppm	ASTM D5185m		▲ **1193**	370	338
Sulfur	ppm	ASTM D5185m		▲ **2524**	1757	1822

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>15	**2**	3	3
Sodium	ppm	ASTM D5185m		**12**	<1	<1
Potassium	ppm	ASTM D5185m	>20	**0**	6	1

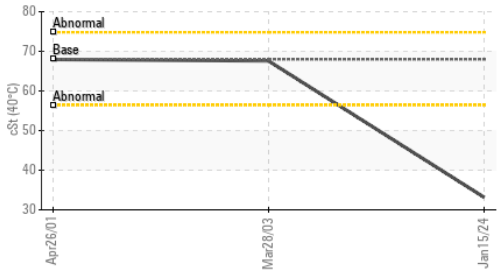
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	**---**	7435	10610
Particles >6µm		ASTM D7647	>1300	**---**	▲ 5080	▲ 3457
Particles >14µm		ASTM D7647	>160	**---**	▲ 1183	37
Particles >21µm		ASTM D7647	>40	**---**	▲ 255	9
Particles >38µm		ASTM D7647	>10	**---**	▲ 11	1
Particles >71µm		ASTM D7647	>3	**---**	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	**---**	▲ 20/20/17	▲ 21/19/12

OIL ANALYSIS REPORT

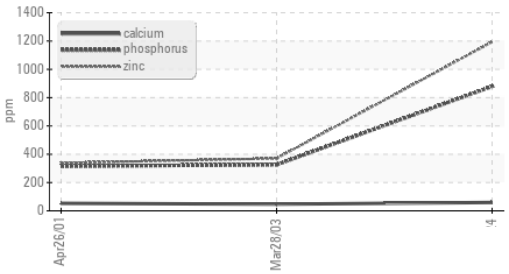
▲ Additives



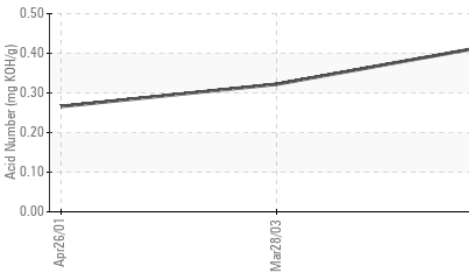
▲ Viscosity @ 40°C



▲ Additives



Acid Number



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		**0.42**	0.322	0.266

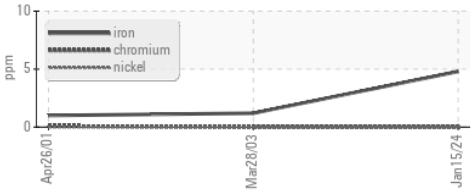
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	▲ **HEAVY**	LIGHT	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	NORML	NORML
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>0.05	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	68	▲ **33.17**	67.58	67.94

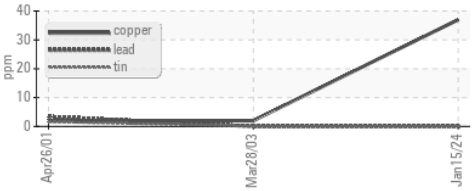
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color				*no image*	*no image*
Bottom				*no image*	*no image*

GRAPHS

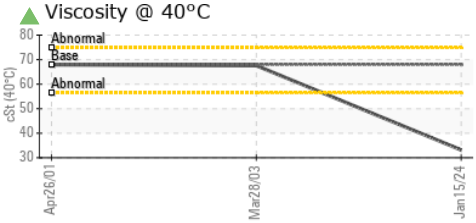
Ferrous Alloys



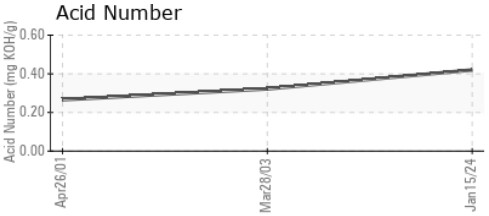
▲ Non-ferrous Metals



▲ Viscosity @ 40°C



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0819594 **Recieved** : 16 Jan 2024
Lab Number : 06060987 **Diagnosed** : 23 Jan 2024
Unique Number : 10832369 **Diagnostician** : Doug Bogart
Test Package : IND 2

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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