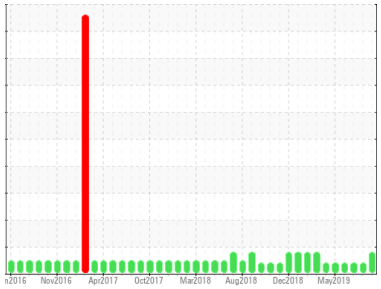
OIL ANALYSIS REPORT

Sample Rating Trend



INSOLUBLES

Machine Id
Press #3 6561231
Component
Hydraulic System
Fluid
SHELL TELLUS S2 M 46 (251 GAL)

DIAGNOSIS

Recommendation

We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

MPC (Membrane Patch Colorimetry) test indicates a high concentration of varnish present. The system cleanliness is acceptable for your target ISO 4406 cleanliness code.

Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PTKM2326806**	PTKM2326802	PTKM2313915
Sample Date		Client Info		**24 Sep 2019**	21 Aug 2019	24 Jul 2019
Machine Age	hrs	Client Info		**31550**	30758	30096
Oil Age	hrs	Client Info		**3908**	3116	2454
Oil Changed		Client Info		**Not Changd**	Not Changd	Not Changd
Sample Status				**SEVERE**	ABNORMAL	ABNORMAL

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	>20	**<1**	<1	<1
Chromium	ppm	ASTM D5185m	>10	**0**	0	0
Nickel	ppm	ASTM D5185m		**0**	0	0
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m		**<1**	0	0
Aluminum	ppm	ASTM D5185m	>10	**0**	<1	0
Lead	ppm	ASTM D5185m	>10	**0**	0	0
Copper	ppm	ASTM D5185m	>75	**<1**	<1	<1
Tin	ppm	ASTM D5185m	>10	**0**	0	<1
Antimony	ppm	ASTM D5185m		**0**	0	0
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

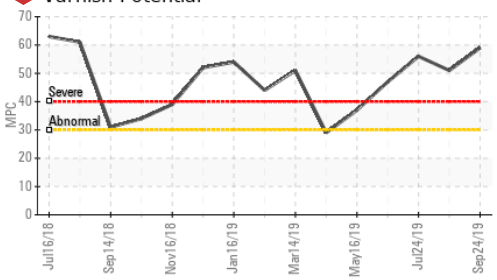
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**<1**	0	<1
Barium	ppm	ASTM D5185m		**0**	0	0
Molybdenum	ppm	ASTM D5185m		**0**	0	0
Manganese	ppm	ASTM D5185m		**0**	<1	0
Magnesium	ppm	ASTM D5185m		**0**	<1	0
Calcium	ppm	ASTM D5185m		**12**	20	24
Phosphorus	ppm	ASTM D5185m		**283**	260	274
Zinc	ppm	ASTM D5185m		**286**	274	302
Sulfur	ppm	ASTM D5185m		**625**	650	927

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

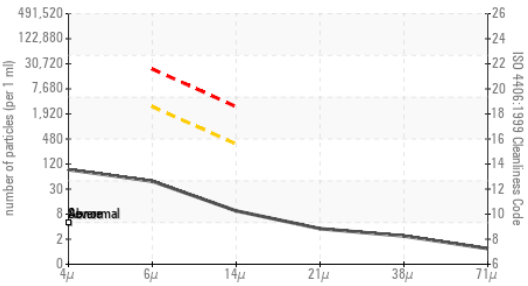
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**78**	169	140
Particles >6µm		ASTM D7647	>2500	**41**	42	41
Particles >14µm		ASTM D7647	>320	**8**	5	4
Particles >21µm		ASTM D7647	>80	**3**	3	1
Particles >38µm		ASTM D7647	>20	**2**	2	0
Particles >71µm		ASTM D7647	>4	**1**	2	0
Oil Cleanliness		ISO 4406 (c)	>18/15	**13/13/10**	15/13/10	14/13/9

OIL ANALYSIS REPORT

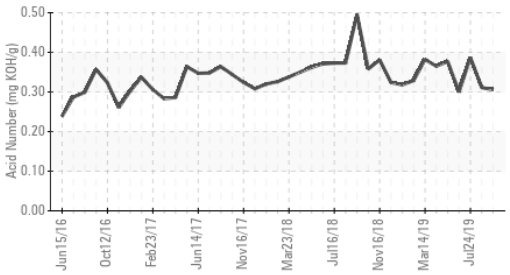
Varnish Potential



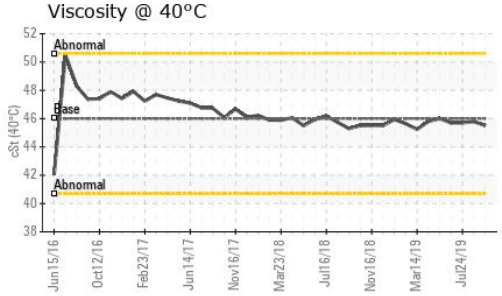
Particle Count



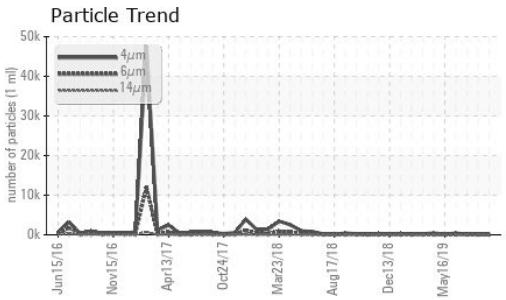
Acid Number



Viscosity @ 40°C



Particle Trend

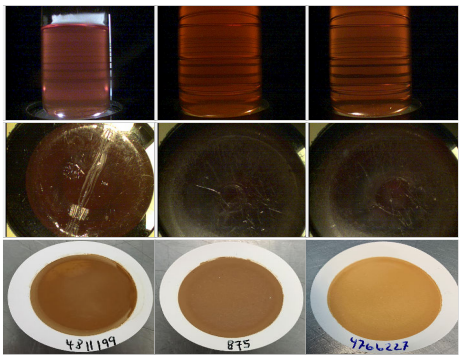


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		**0.306**	0.311	0.387
MPC Varnish Potential	Scale	ASTM D7843	>15	**59**	51	56

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	**LIGHT**	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	46.0	**45.5**	45.8	45.7

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					
MPC					



ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PTKM2326806 **Recieved** : 30 Sep 2019
Lab Number : 04811199 **Diagnosed** : 04 Oct 2019
Unique Number : 8761071 **Diagnostician** : Doug Bogart
Test Package : MOB 2 (Additional Tests: MPC)

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)

NIAGARA BOTTLING
11031 88TH AVE
PLEASANT PRAIRIE, WI
US 53158
Contact: AJ

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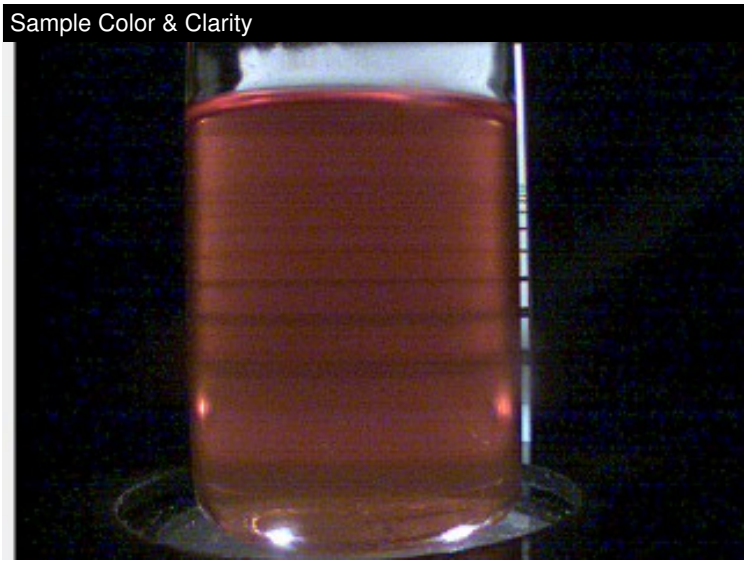
F:

MPC (Varnish Test)

Sample Color & Clarity



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