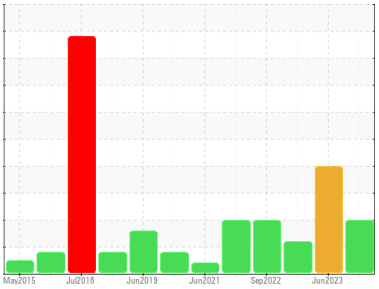
PROBLEM SUMMARY

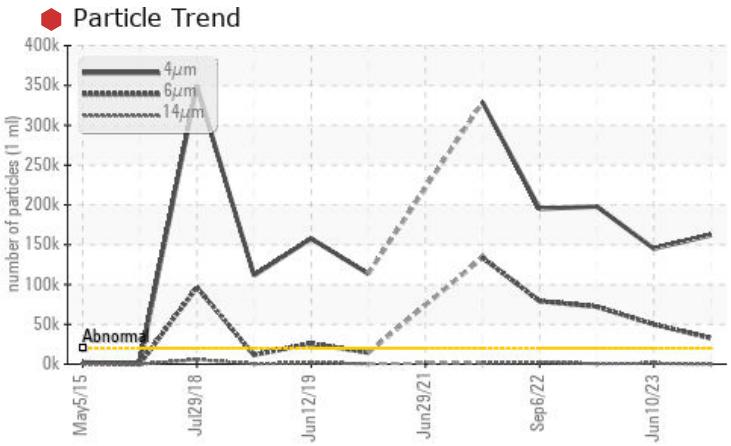
Sample Rating Trend



ISO

Area
REACTOR 1
Machine Id
A1 AGITATOR (S/N 11537A)
Component
Gearbox
Fluid
ROYAL PURPLE SYNFILM GT220 (13 GAL)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

The particle concentrations are elevated since the last sample. This could be a consequence of sample process if the sample was collected without the benefit of a fixed sample port. If possible filter the oil using B5=75 or better quality media. If not, Replace the oil, and use extra caution to flush the agitator sump completely and refill using clean handling utensils. Please resample after a month of run time following oil change to validate results.

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	ABNORMAL	ABNORMAL
Particles >4µm		ASTM D7647	>20000	**162108**	145010	198005
Particles >6µm		ASTM D7647	>5000	**32686**	49960	72180
Oil Cleanliness		ISO 4406 (c)	>21/19/16	**25/22/14**	24/23/17	25/23/16

Customer Id: HEXHOPAR
Sample No.: PLS0000750
Lab Number: 05901827
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Doug Bogart +1 (800)237-1369 x4016
dougb@wearcheckusa.com

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

10 Jun 2023 Diag: Mike Johnson

VISUAL METAL

Filter oil if possible using B6=75 filter media or better. No other action required at this time. Resample at next normal interval.Wear particles are elevated from previous samples but still relatively low. Consistently elevated wear particles can be an early sign of machine failure. Contamination is elevated. Filtration can help extend machine life. Fluid health is acceptable for continued use provided that contamination can be brought under control.

view report

09 Mar 2023 Diag: Mike Johnson

ISO

Filter oil if possible using B6=75 filter media or better. Filtration will greatly extend machine life. Resample at next normal interval.Wear particles are low and steady. Contamination is significantly elevated. Filter if possible to extend machine life. Fluid health indicators are acceptable for continued use provided that contamination can be brought under control.

view report

06 Sep 2022 Diag: Mike Johnson

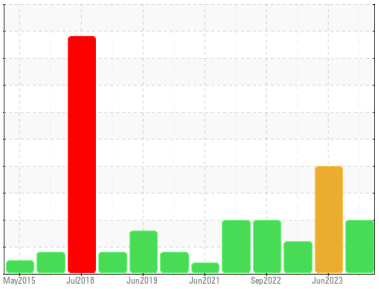
ISO

Filter oil if possible using B6=75 Filter media or better. Oil is very dirty. Consider an oil flush and fill if filtration is not possible. Resample at next normal interval.Wear particles are low and steady. Particle count is excessively high. High particulate can cause premature wear leading to eventual part failure. Fluid heath is acceptable for continued use providing that the particulate is brought under control.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Area
REACTOR 1
Machine Id
A1 AGITATOR (S/N 11537A)
Component
Gearbox
Fluid
ROYAL PURPLE SYNFILM GT220 (13 GAL)

DIAGNOSIS

Recommendation

The particle concentrations are elevated since the last sample. This could be a consequence of sample process if the sample was collected without the benefit of a fixed sample port. If possible filter the oil using B5=75 or better quality media. If not, Replace the oil, and use extra caution to flush the agitator sump completely and refill using clean handling utensils. Please resample after a month of run time following oil change to validate results.

Wear

The wear rate is within the historical tren line.

Contamination

The particle count is severely elevated. It would be useful to filter the oil while the machine is operating using side-stream (kidney-loop) filtration, with elements rated B6=75 or better.

Fluid Condition

The viscosity is slightly above the `alert` level of +10%. This could be caused by residual ISO 460 used previously. This is not a concern at this time. Other lubricant health parameters (additives, AN value, Ox-Ni-Su) suggest the oil is good for continued use.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PLS0000750**	PLS0000606	PLS0000598
Sample Date		Client Info		**13 Jul 2023**	10 Jun 2023	09 Mar 2023
Machine Age	mths	Client Info		**0**	0	6
Oil Age	mths	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**SEVERE**	ABNORMAL	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184		**33**	38	21
Iron	ppm	ASTM D5185m	>200	**27**	▲ 56	23
Chromium	ppm	ASTM D5185m	>15	**<1**	<1	0
Nickel	ppm	ASTM D5185m	>15	**0**	<1	0
Titanium	ppm	ASTM D5185m		**0**	<1	0
Silver	ppm	ASTM D5185m		**0**	<1	0
Aluminum	ppm	ASTM D5185m	>25	**3**	1	2
Lead	ppm	ASTM D5185m	>100	**0**	0	0
Copper	ppm	ASTM D5185m	>200	**0**	<1	0
Tin	ppm	ASTM D5185m	>25	**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		**0**	0	0
Barium	ppm	ASTM D5185m		**0**	3	0
Molybdenum	ppm	ASTM D5185m		**0**	0	0
Manganese	ppm	ASTM D5185m		**<1**	<1	<1
Magnesium	ppm	ASTM D5185m	90	**81**	132	80
Calcium	ppm	ASTM D5185m		**2**	4	0
Phosphorus	ppm	ASTM D5185m		**4**	4	1
Zinc	ppm	ASTM D5185m		**<1**	2	0
Sulfur	ppm	ASTM D5185m		**21506**	28292	20326

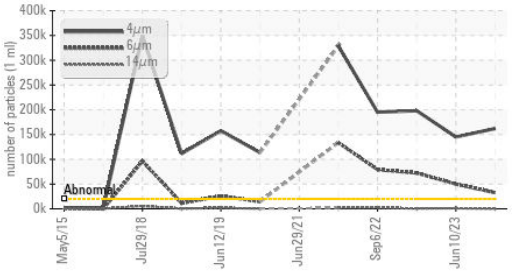
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	**4**	8	4
Sodium	ppm	ASTM D5185m		**0**	1	2
Potassium	ppm	ASTM D5185m	>20	**<1**	<1	0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0**	0.1	0.1
Nitration	Abs/cm	*ASTM D7624		**2.8**	2.9	3.0
Sulfation	Abs/.1mm	*ASTM D7415		**30.8**	31.0	30.4

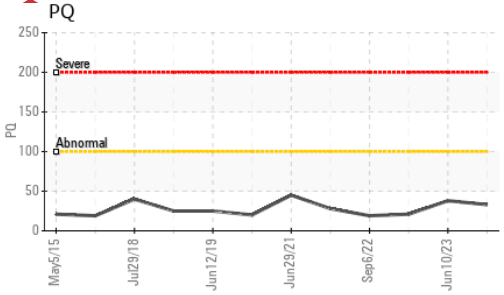
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>20000	⬢ **162108**	▲ 145010	▲ 198005
Particles >6µm		ASTM D7647	>5000	▲ **32686**	▲ 49960	▲ 72180
Particles >14µm		ASTM D7647	>640	**141**	▲ 1074	601
Particles >21µm		ASTM D7647	>160	**11**	155	70
Particles >38µm		ASTM D7647	>40	**2**	12	1
Particles >71µm		ASTM D7647	>10	**2**	1	0
Oil Cleanliness		ISO 4406 (c)	>21/19/16	⬢ **25/22/14**	▲ 24/23/17	▲ 25/23/16

OIL ANALYSIS REPORT

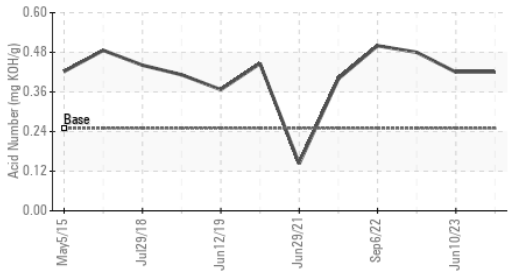
Particle Trend



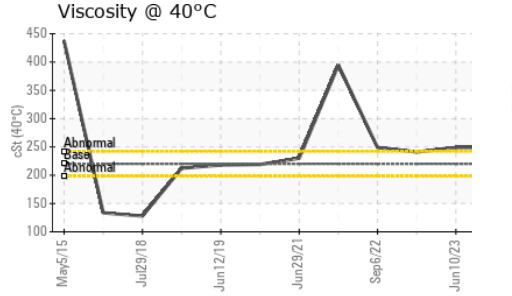
PQ



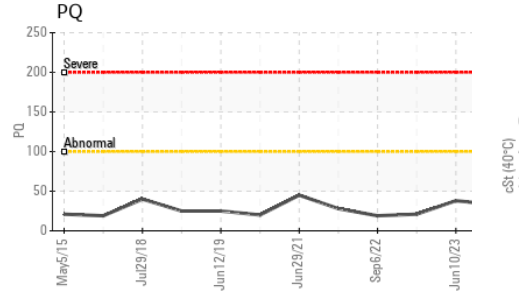
Acid Number



Viscosity @ 40°C



PQ

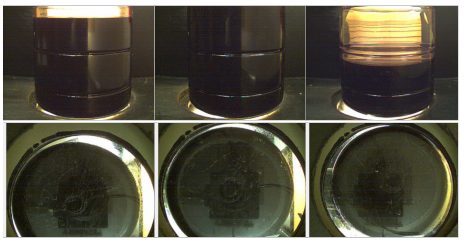


FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414		**26.5**	27.1	25.7
Acid Number (AN)	mg KOH/g	ASTM D8045	0.25	**0.42**	0.42	0.48

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	▲ LIGHT	VLITE
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**	▲ 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	>0.2	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

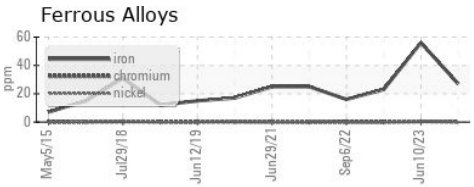
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	220	**249**	249	241

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

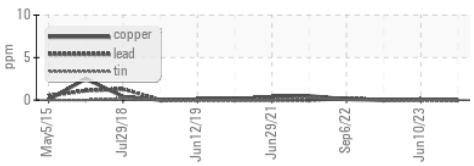


GRAPHS

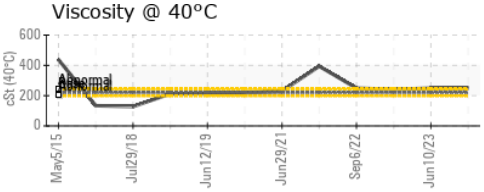
Ferrous Alloys



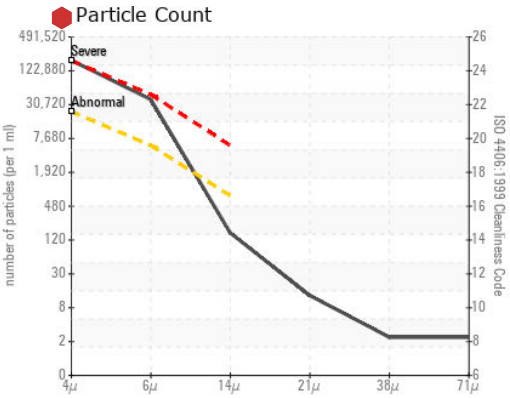
Non-ferrous Metals



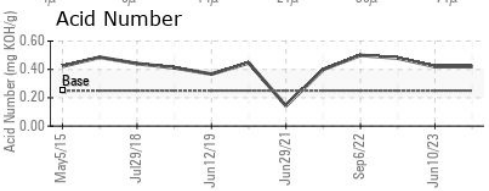
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PLS0000750 **Received** : 18 Jul 2023
Lab Number : 05901827 **Diagnosed** : 23 Aug 2023
Unique Number : 10563183 **Diagnostician** : Doug Bogart
Test Package : IND 2 (Additional Tests: FT-IR, PQ, PrtCount)

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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