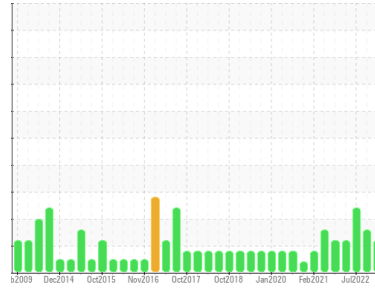




PROBLEM SUMMARY

Sample Rating Trend



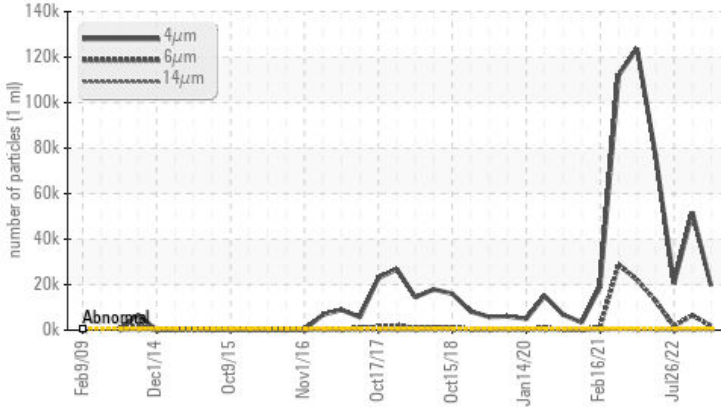
ISO



Area
Mystic Lake
Machine Id
MYL01-1 Turbine Bearing (S/N 4375405)
Component
Port Turbine Bearing
Fluid
CONOCO HYDROCLEAR GEAR EP 68 (--- GAL)

COMPONENT CONDITION SUMMARY

▲ Particle Trend



RECOMMENDATION

The filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

Sample Status			ABNORMAL	ABNORMAL	ABNORMAL
Particles >4µm	ASTM D7647	>640	▲ 19636	▲ 51781	▲ 20531
Particles >6µm	ASTM D7647	>160	▲ 1827	▲ 6556	▲ 1682
Oil Cleanliness	ISO 4406 (c)	>16/14/12	▲ 21/18/12	▲ 23/20/13	▲ 22/18/13

Customer Id: PPLBUT
Sample No.: WC0751586
Lab Number: 05840600
Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
Angela Borella +1 800-237-1369
angela.borella@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

24 Jan 2023 Diag: Angela Borella

ISO



We recommend you service the filters on this component. Resample at the next service interval to monitor. All component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



26 Jul 2022 Diag: Don Baldrige

ISO



We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor. All component wear rates are normal. There is a high amount of particulates present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



12 Apr 2022 Diag: Don Baldrige

ISO



We recommend you service the filters on this component. Resample at the next service interval to monitor. All component wear rates are normal. There is a high amount of particulates present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



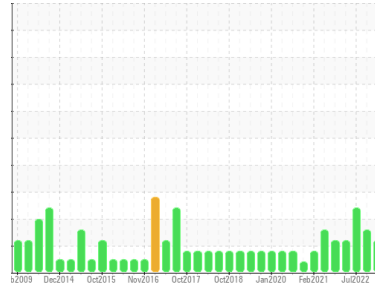


OIL ANALYSIS REPORT

Sample Rating Trend

ISO

Area
Mystic Lake
 Machine Id
MYL01-1 Turbine Bearing (S/N 4375405)
 Component
Port Turbine Bearing
 Fluid
CONOCO HYDROCLEAR GEAR EP 68 (--- GAL)



DIAGNOSIS

Recommendation

The filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is a high amount of silt (particulates < 14 microns in size) present in the oil.

Fluid Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0751586	WC0751575	WC0545748
Sample Date	Client Info		27 Apr 2023	24 Jan 2023	26 Jul 2022
Machine Age	yrs	Client Info	0	0	0
Oil Age	yrs	Client Info	0	0	0
Oil Changed	Client Info		Filtered	N/A	N/A
Sample Status			ABNORMAL	ABNORMAL	ABNORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>2	NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>20	<1	<1	0
Chromium	ppm	ASTM D5185m	>20	0	0	0
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	<1
Lead	ppm	ASTM D5185m	>20	<1	2	4
Copper	ppm	ASTM D5185m	>20	3	2	1
Tin	ppm	ASTM D5185m	>20	<1	<1	<1
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	0	0
Molybdenum	ppm	ASTM D5185m		0	0	0
Manganese	ppm	ASTM D5185m		<1	0	0
Magnesium	ppm	ASTM D5185m		<1	0	0
Calcium	ppm	ASTM D5185m		0	0	3
Phosphorus	ppm	ASTM D5185m		3	1	8
Zinc	ppm	ASTM D5185m		0	4	3
Sulfur	ppm	ASTM D5185m		2	0	5

CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>15	10	11	3
Sodium	ppm	ASTM D5185m		2	0	0
Potassium	ppm	ASTM D5185m	>20	0	<1	<1

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>640	▲ 19636	▲ 51781	▲ 20531
Particles >6µm	ASTM D7647	>160	▲ 1827	▲ 6556	▲ 1682
Particles >14µm	ASTM D7647	>40	26	▲ 63	▲ 44
Particles >21µm	ASTM D7647	>10	4	6	▲ 13
Particles >38µm	ASTM D7647	>3	0	0	▲ 3
Particles >71µm	ASTM D7647	>3	0	0	0
Oil Cleanliness	ISO 4406 (c)	>16/14/12	▲ 21/18/12	▲ 23/20/13	▲ 22/18/13

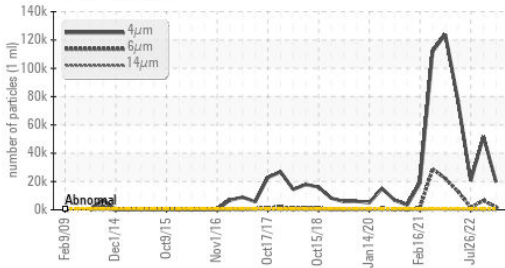
FLUID DEGRADATION

	method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D8045	0.73	0.139	0.06	0.121

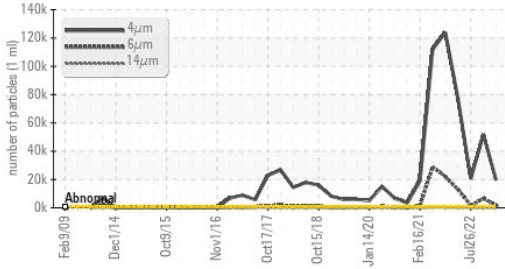


OIL ANALYSIS REPORT

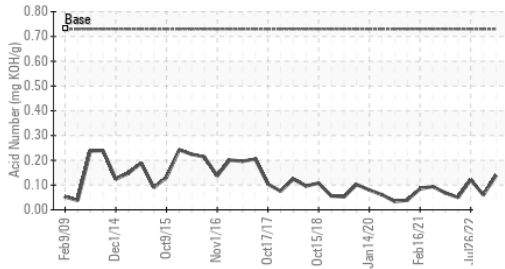
▲ Particle Trend



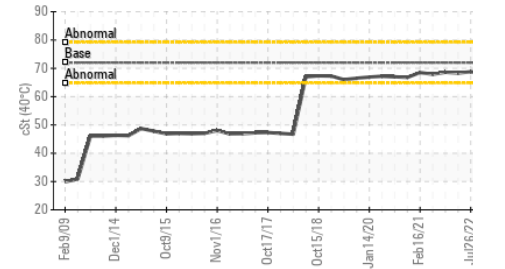
▲ Particle Trend



Acid Number



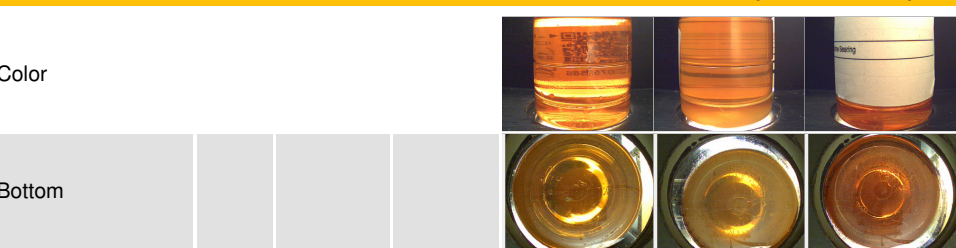
Viscosity @ 40°C



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

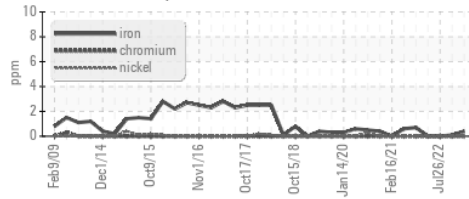
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445 72	68.8	68.3	68.8

SAMPLE IMAGES

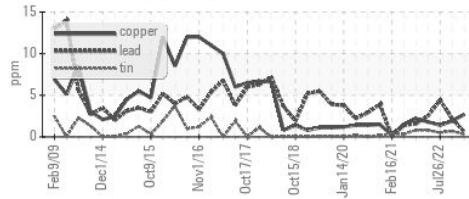


GRAPHS

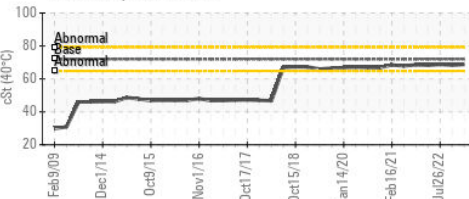
Ferrous Alloys



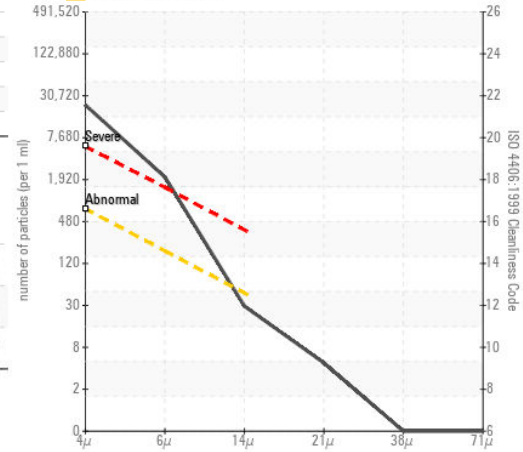
Non-ferrous Metals



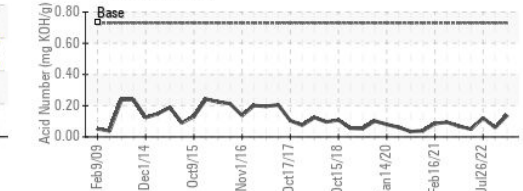
Viscosity @ 40°C



▲ Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0751586 **Received** : 08 May 2023
Lab Number : 05840600 **Diagnosed** : 10 May 2023
Unique Number : 10459403 **Diagnostician** : Angela Borella
Test Package : IND 2 (Additional Tests: PrtCount)

NORTHWESTERN ENERGY
 6700 RAINBOW DAM RD
 GREAT FALLS, MT
 US 59404
 Contact: ANDY KUKES
 andy.kukes@northwestern.com

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)

T: x:

F: x: