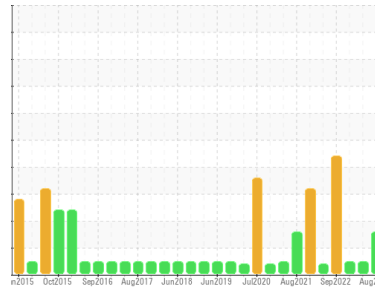




PROBLEM SUMMARY

Sample Rating Trend



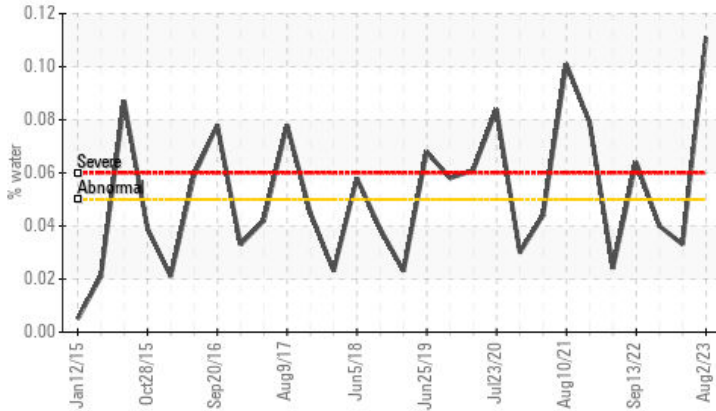
WATER



Area
BRUCE B/0B/54600
 Machine Id
0B-54600-SG6-Avon Aux
 Component
Tank Jet Turbine
 Fluid
SHELL AEROSHELL 500 (--- GAL)

COMPONENT CONDITION SUMMARY

▲ Water



RECOMMENDATION

We advise that you check for the source of water entry. Check seals and/or filters for points of contaminant entry. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We advise that you use off-line filtration with water adsorbent filters to attempt to remove the water from this oil. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

PROBLEMATIC TEST RESULTS

Sample Status			ABNORMAL	NORMAL	NORMAL	
Water	%	ASTM D6304*	>0.05	▲ 0.111	0.033	0.040
ppm Water	ppm	ASTM D6304*	>500	▲ 1110.1	331.2	405.9

Customer Id: BRUTIV
 Sample No.: WC0642787
 Lab Number: 02580358
 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Kevin Marson +1 (289)291-4644 x4644
Kevin.Marson@wearcheck.com

To change component or sample information:
 Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Resample	---	---	?	We recommend an early resample to monitor this condition.
Information Required	---	---	?	NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.
Check Breathers	---	---	?	The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather.
Check Water Access	---	---	?	We advise that you check for the source of water entry.
Check Seals	---	---	?	Check seals and/or filters for points of contaminant entry.
Filter Fluid	---	---	?	We advise that you use off-line filtration with water adsorbent filters to attempt to remove the water from this oil.

HISTORICAL DIAGNOSIS

04 May 2023 Diag: Kevin Marson

NORMAL



Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The water content is negligible. The system and fluid cleanliness is acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



15 Dec 2022 Diag: Kevin Marson

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The water content is negligible. The system and fluid cleanliness is acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



13 Sep 2022 Diag: Kevin Marson

WEAR PARTICLES



We advise that you check for the source of water entry. Check seals and/or filters for points of contaminant entry. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We recommend you service the filters on this component. We recommend an early resample to monitor this condition. No other corrective action is recommended at this time. Wear particle analysis indicates that the ferrous cutting particles are marginal. All other component wear rates are normal. Cutting wear particles are caused by either hard protuberances (mis-aligned components, etc.), or abrasives entering the system and embedding themselves in softer materials (sand, etc.), and gouging out mating surfaces. Water and ppm water contamination levels are abnormal. Particles >4µm are abnormally high. Particles >6µm and oil cleanliness are abnormally high. There is a moderate concentration of water present in the oil. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

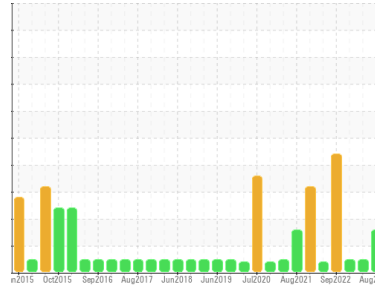
view report





OIL ANALYSIS REPORT

Sample Rating Trend



WATER



Area
BRUCE B/0B/54600
 Machine Id
0B-54600-SG6-Avon Aux
 Component
Tank Jet Turbine
 Fluid
SHELL AEROSHELL 500 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check for the source of water entry. Check seals and/or filters for points of contaminant entry. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We advise that you use off-line filtration with water adsorbent filters to attempt to remove the water from this oil. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

Wear

All component wear rates are normal.

Contamination

There is a moderate concentration of water present in the oil. The system cleanliness is acceptable for your target ISO 4406 cleanliness code.

Fluid Condition

The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0642787	WC0548205	WC0535167
Sample Date	Client Info		02 Aug 2023	04 May 2023	15 Dec 2022
Machine Age	hrs	Client Info	0	0	0
Oil Age	hrs	Client Info	0	0	0
Oil Changed	Client Info		N/A	N/A	N/A
Sample Status			ABNORMAL	NORMAL	NORMAL

WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185(m)	>2	0	0	0
Chromium	ppm	ASTM D5185(m)	>1	0	0	0
Nickel	ppm	ASTM D5185(m)	>1	<1	0	<1
Titanium	ppm	ASTM D5185(m)	>5	0	0	0
Silver	ppm	ASTM D5185(m)	>2	0	0	0
Aluminum	ppm	ASTM D5185(m)	>1	0	0	0
Lead	ppm	ASTM D5185(m)	>2	0	0	<1
Copper	ppm	ASTM D5185(m)	>1	0	0	0
Tin	ppm	ASTM D5185(m)	>1	0	0	0
Antimony	ppm	ASTM D5185(m)		0	0	<1
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		0	0	0

ADDITIVES

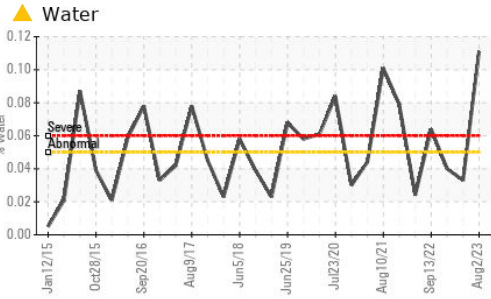
	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185(m)	0	<1	0	<1
Barium	ppm	ASTM D5185(m)	0	0	0	0
Molybdenum	ppm	ASTM D5185(m)	0	0	0	0
Manganese	ppm	ASTM D5185(m)	0	0	0	0
Magnesium	ppm	ASTM D5185(m)	0	0	0	<1
Calcium	ppm	ASTM D5185(m)	0	<1	0	0
Phosphorus	ppm	ASTM D5185(m)	1000	1072	1046	1019
Zinc	ppm	ASTM D5185(m)	5	1	<1	<1
Sulfur	ppm	ASTM D5185(m)	0	2	1	2
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m)	>5	<1	<1	<1
Sodium	ppm	ASTM D5185(m)	>5	<1	<1	<1
Potassium	ppm	ASTM D5185(m)	>20	<1	0	0
Water	%	ASTM D6304*	>0.05	▲ 0.111	0.033	0.040
ppm Water	ppm	ASTM D6304*	>500	▲ 1110.1	331.2	405.9

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000	1097	3987	2990
Particles >6µm	ASTM D7647	>1300	151	891	468
Particles >14µm	ASTM D7647	>320	15	84	20
Particles >21µm	ASTM D7647	>80	6	28	9
Particles >38µm	ASTM D7647	>20	1	6	5
Particles >71µm	ASTM D7647	>4	0	4	4
Oil Cleanliness	ISO 4406 (c)	>19/17/15	17/14/11	19/17/14	19/16/11

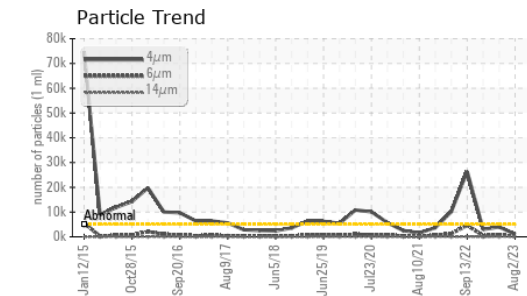
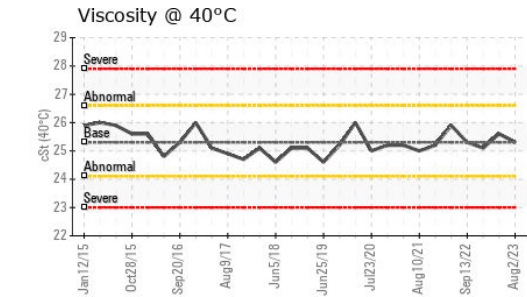
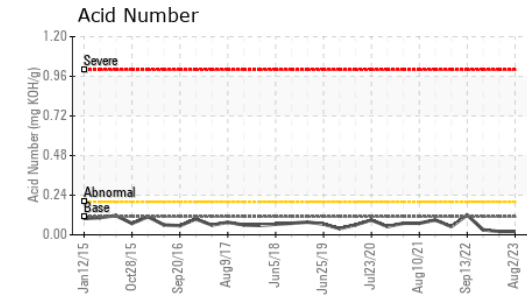
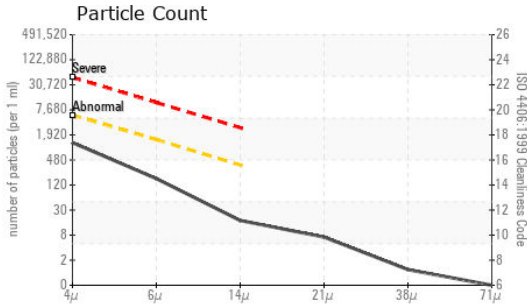


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.11	0.02	0.02	0.03

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	VLITE	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*	>0.05	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	25.3	25.3	25.6	25.1

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



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0642787
Lab Number : **02580358**
Unique Number : 5633418
Test Package : IND 2

Bruce Power - Bruce A PdM
 P.O.Box 1540, 177 Tie Road., RM-222 U2 Column 2N11 615'
 Tiverton, ON
 CA N0G 2T0
 Contact: Pierre Adouki
 pierre.adouki@brucepower.com
 T: (519)361-2673
 F:

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.