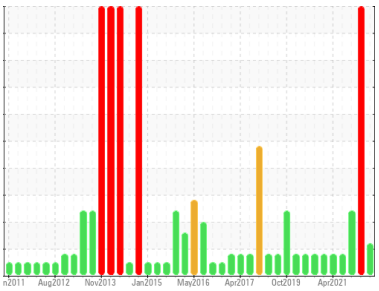
PROBLEM SUMMARY

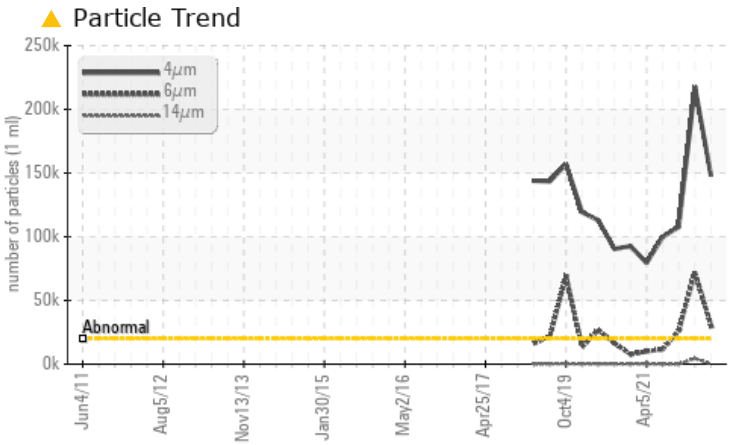
Sample Rating Trend



ISO

Area
System 56 - Hazardous Drains [13884889]
Machine Id
Z-5601B Centrifuge Gearbox Lube Oil
Component
Gearbox
Fluid
GEAR OIL ISO 320 (13 LTR)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. Please specify the brand, type, and viscosity of the oil on your next sample.

PROBLEMATIC TEST RESULTS

Sample Status				ABNORMAL	SEVERE	ABNORMAL
Particles >4µm		ASTM D7647	>20000	▲ **147853**	⬢ 217830	▲ 107804
Particles >6µm		ASTM D7647	>5000	▲ **30616**	⬢ 71961	▲ 26167
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ **24/22/15**	⬢ 25/23/19	▲ 24/22/14

Customer Id: HIBSTJ
Sample No.: PP
Lab Number: 02577584
Test Package: MAR 2

To manage this report scan the QR code

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Wes Davis +1 905-569-8600 x223
wesd@wearcheck.ca

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
Change Filter	---	---	?	We recommend you service the filters on this component.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Information Required	---	---	?	Please specify the brand, type, and viscosity of the oil on your next sample.

HISTORICAL DIAGNOSIS

ISO

11 Mar 2023 Diag: Kevin Marson

Check seals and/or filters for points of contaminant entry. We advise that you check all areas where contaminants can enter the system. 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 that you drain the oil from the component if this has not already been done. Resample in 30-45 days to monitor this situation. Please specify the brand, type, and viscosity of the oil on your next sample.All component wear rates are normal. Particles >6µm are severely high. Oil Cleanliness are severely high. Particles >4µm are severely high. Particles >4µm are severely high.. ppm Water and water and water and water contamination levels are abnormal. Particles >14µm are abnormally high. Particles >21µm are abnormally high. There is a moderate concentration of water present in the oil. Free water present. The white residue present in the sample is oil additive precipitate. Viscosity of sample indicates oil is within ISO 320 range, advise investigate. The AN level is acceptable for this fluid. The oil is no longer serviceable due to the presence of contaminants.

view report

WEAR

29 Dec 2022 Diag: Kevin Marson

We recommend you service the filters on this component. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition. The fluid was specified as IRVING HDH SAE 80W90, however, a fluid match indicates that this fluid is ISO 320 Gear Oil. Please confirm the oil type and grade on your next sample.Copper ppm levels are abnormal. Particles >4µm are abnormally high. Particles >6µm and oil cleanliness are abnormally high. The water content is negligible. Viscosity of sample indicates oil is within ISO 320 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

view report

ISO

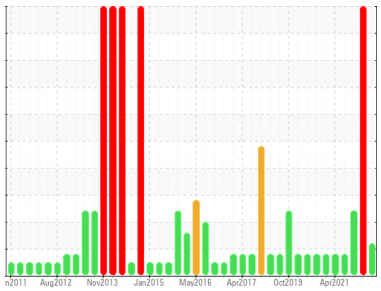
24 Apr 2022 Diag: Kevin Marson

We recommend you service the filters on this component. We recommend an early resample to monitor this condition.All component wear rates are normal. Particles >4µm are abnormally high. Particles >6µm are abnormally high. The water content is negligible. 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
System 56 - Hazardous Drains [13884889]
Machine Id
Z-5601B Centrifuge Gearbox Lube Oil
Component
Gearbox
Fluid
GEAR OIL ISO 320 (13 LTR)

DIAGNOSIS

Recommendation

We recommend you service the filters on this component. We recommend an early resample to monitor this condition. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

All component wear rates are normal.

Contamination

There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The water content is negligible.

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		**PP**	PP	PP
Sample Date		Client Info		**08 Aug 2023**	11 Mar 2023	29 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**	SEVERE	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>150	**14**	9	54
Chromium	ppm	ASTM D5185(m)	>10	**<1**	0	<1
Nickel	ppm	ASTM D5185(m)	>10	**<1**	0	<1
Titanium	ppm	ASTM D5185(m)		**0**	0	<1
Silver	ppm	ASTM D5185(m)		**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>5	**<1**	0	<1
Lead	ppm	ASTM D5185(m)	>65	**2**	<1	3
Copper	ppm	ASTM D5185(m)	>80	**48**	4	▲ 97
Tin	ppm	ASTM D5185(m)	>8	**<1**	<1	5
Antimony	ppm	ASTM D5185(m)	>5	**0**	<1	<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

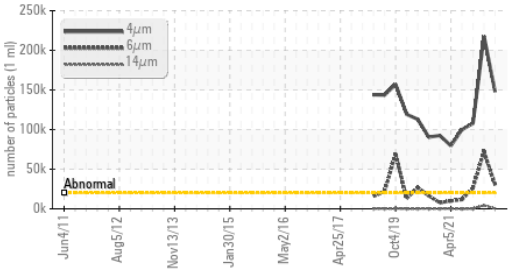
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	50	**3**	10	5
Barium	ppm	ASTM D5185(m)	15	**<1**	0	0
Molybdenum	ppm	ASTM D5185(m)	15	**0**	0	0
Manganese	ppm	ASTM D5185(m)		**<1**	<1	<1
Magnesium	ppm	ASTM D5185(m)	50	**2**	7	4
Calcium	ppm	ASTM D5185(m)	50	**7**	12	10
Phosphorus	ppm	ASTM D5185(m)	350	**239**	222	200
Zinc	ppm	ASTM D5185(m)	100	**10**	4	33
Sulfur	ppm	ASTM D5185(m)	12500	**6478**	9402	7915
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>20	**6**	<1	3
Sodium	ppm	ASTM D5185(m)		**4**	42	26
Potassium	ppm	ASTM D5185(m)	>20	**<1**	2	<1
Water	%	ASTM D6304*	>0.2	**0.032**	▲ 0.583	0.001
ppm Water	ppm	ASTM D6304*	>2000	**327.5**	▲ 5835.4	14.2

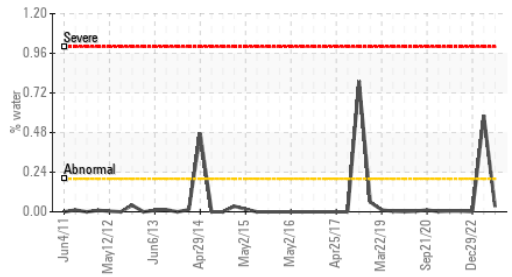
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>20000	▲ **147853**	⬢ 217830	▲ 107804
Particles >6µm		ASTM D7647	>5000	▲ **30616**	⬢ 71961	▲ 26167
Particles >14µm		ASTM D7647	>640	**191**	▲ 4476	83
Particles >21µm		ASTM D7647	>160	**46**	▲ 976	17
Particles >38µm		ASTM D7647	>40	**4**	19	3
Particles >71µm		ASTM D7647	>10	**2**	1	2
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ **24/22/15**	⬢ 25/23/19	▲ 24/22/14

OIL ANALYSIS REPORT

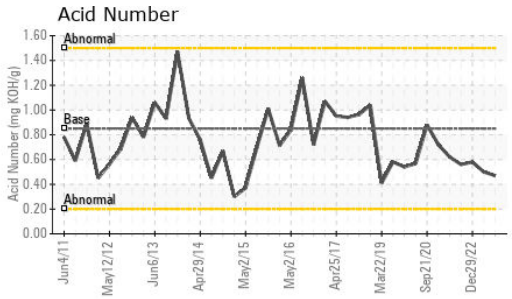
Particle Trend



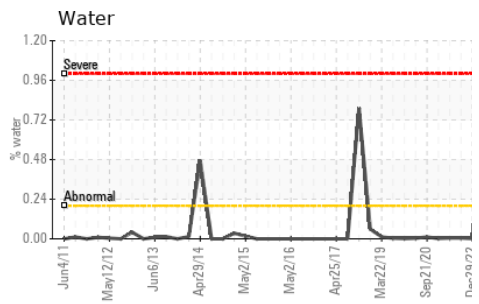
Water



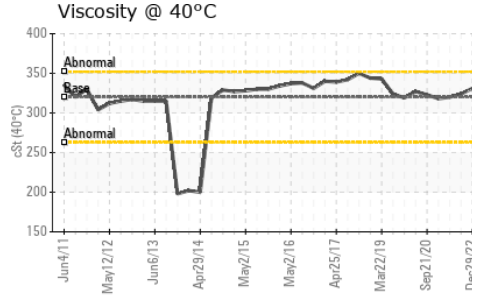
Acid Number



Water



Viscosity @ 40°C

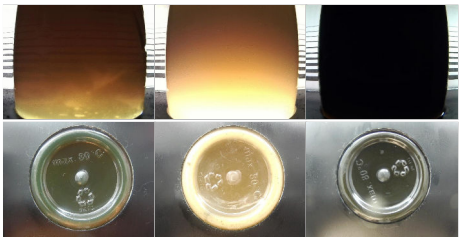


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.85	**0.47**	0.50	0.58

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	**VLITE**	▲ LIGHT	NONE
Silt	scalar	Visual*	NONE	**NONE**	NONE	NONE
Debris	scalar	Visual*	NONE	**NONE**	NONE	VLITE
Sand/Dirt	scalar	Visual*	NONE	**NONE**	NONE	NONE
Appearance	scalar	Visual*	NORML	**NORML**	▲ MILKY	NORML
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	**.2%**	▲ .2%	NEG
Free Water	scalar	Visual*		**NEG**	▲ 1%	NEG

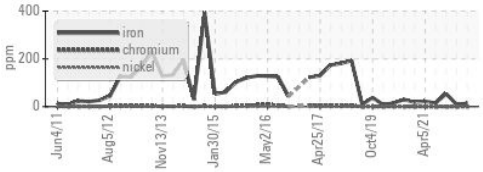
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	320	**316**	▲ 314	▲ 331

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

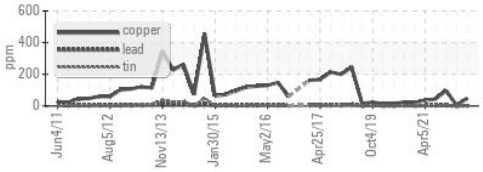


GRAPHS

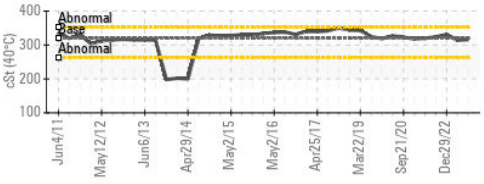
Ferrous Alloys



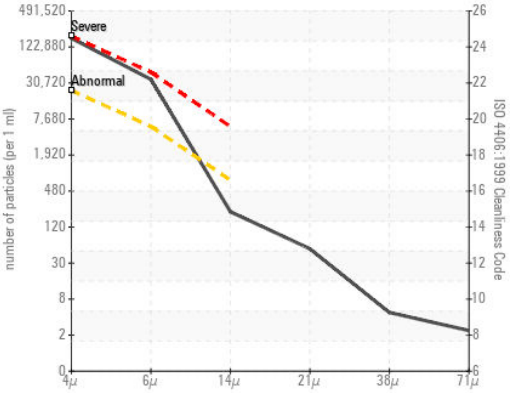
Non-ferrous Metals



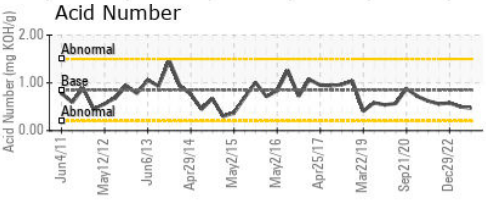
Viscosity @ 40°C



Particle Count



Acid Number



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PP
Lab Number : 02577584
Unique Number : 5630644
Test Package : MAR 2 (Additional Tests: KF, PrtCount)

Received : 22 Aug 2023
Diagnosed : 24 Aug 2023
Diagnostician : Wes Davis

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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.