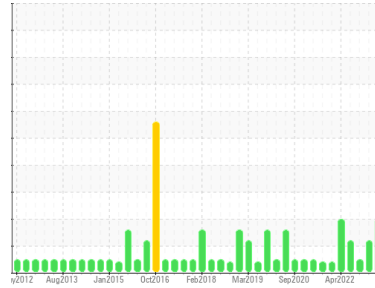




PROBLEM SUMMARY

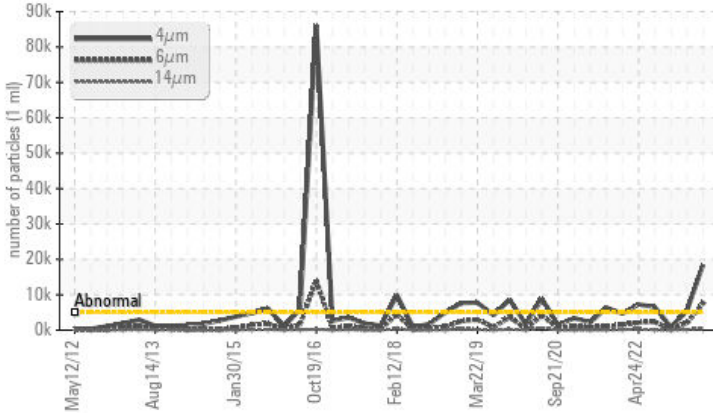
Area
System 43 - Water Injection [13884889]
 Machine Id
Z-4305A Pump / Motor Lubricating Oil
 Component
Pump
 Fluid
IRVING HYDRAULIC OIL LP 32 (1950 LTR)

Sample Rating Trend



COMPONENT CONDITION SUMMARY

▲ Particle Trend



RECOMMENDATION

We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status			ABNORMAL	ATTENTION	NORMAL
Particles >4µm	ASTM D7647	>5000	▲ 18424	▲ 5373	849
Particles >6µm	ASTM D7647	>1300	▲ 7556	▲ 1948	240
Particles >14µm	ASTM D7647	>160	▲ 458	158	24
Particles >21µm	ASTM D7647	>40	▲ 91	42	7
Oil Cleanliness	ISO 4406 (c)	>19/17/14	▲ 21/20/16	▲ 20/18/14	17/15/12

Customer Id: HIBSTJ
 Sample No.: PP
 Lab Number: 02577510
 Test Package: MAR 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
 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 advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Filter Fluid	---	---	?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.

HISTORICAL DIAGNOSIS

11 Mar 2023 Diag: Wes Davis

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 light amount of silt (particulates < 14 microns in size) present in the oil. 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



29 Dec 2022 Diag: Wes Davis

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



05 Dec 2022 Diag: Wes Davis

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 light amount of silt (particulates < 14 microns in size) present in the oil. 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



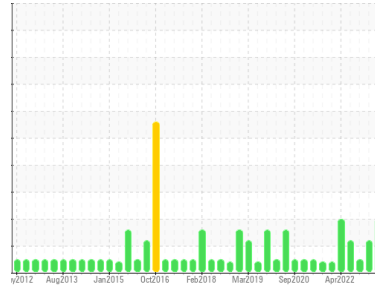


OIL ANALYSIS REPORT

Sample Rating Trend

ISO

Area
System 43 - Water Injection [13884889]
 Machine Id
Z-4305A Pump / Motor Lubricating Oil
 Component
Pump
 Fluid
IRVING HYDRAULIC OIL LP 32 (1950 LTR)



DIAGNOSIS

Recommendation

We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

There is a moderate amount of particulates (2 to 100 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	0	0	0
Oil Age	hrs	0	0	0
Oil Changed	Client Info	N/A	N/A	N/A
Sample Status		ABNORMAL	ATTENTION	NORMAL

WEAR METALS

method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185(m) >75	<1	0	0
Chromium	ppm	ASTM D5185(m) >5	0	0	0
Nickel	ppm	ASTM D5185(m)	<1	0	<1
Titanium	ppm	ASTM D5185(m)	0	0	0
Silver	ppm	ASTM D5185(m)	0	0	0
Aluminum	ppm	ASTM D5185(m) >5	<1	0	0
Lead	ppm	ASTM D5185(m) >10	0	0	0
Copper	ppm	ASTM D5185(m) >15	<1	<1	<1
Tin	ppm	ASTM D5185(m)	0	0	0
Antimony	ppm	ASTM D5185(m)	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)	0	<1	<1
Barium	ppm	ASTM D5185(m)	0	0	0
Molybdenum	ppm	ASTM D5185(m)	0	0	0
Manganese	ppm	ASTM D5185(m)	0	0	0
Magnesium	ppm	ASTM D5185(m)	1	2	1
Calcium	ppm	ASTM D5185(m)	49	52	50
Phosphorus	ppm	ASTM D5185(m)	356	373	366
Zinc	ppm	ASTM D5185(m) 400	417	419	417
Sulfur	ppm	ASTM D5185(m)	1516	1682	1728
Lithium	ppm	ASTM D5185(m)	<1	<1	<1

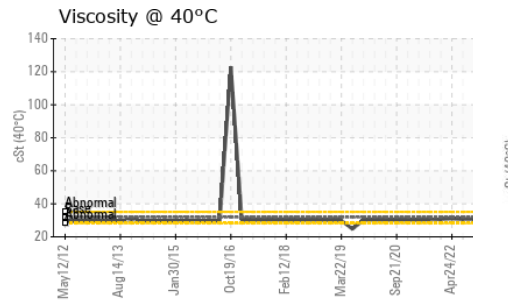
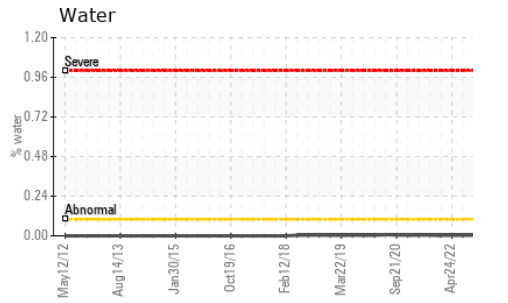
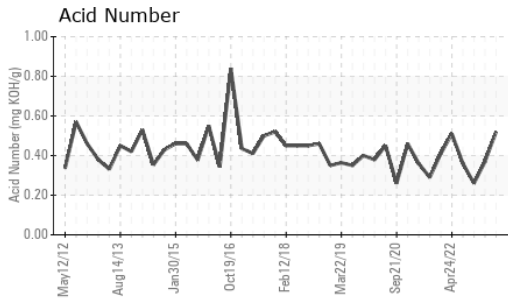
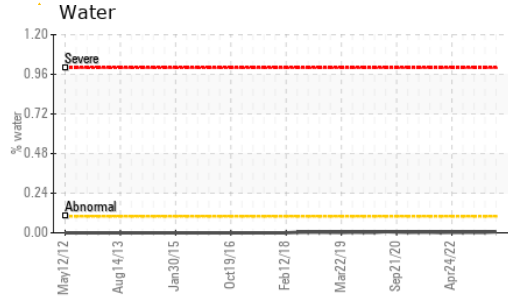
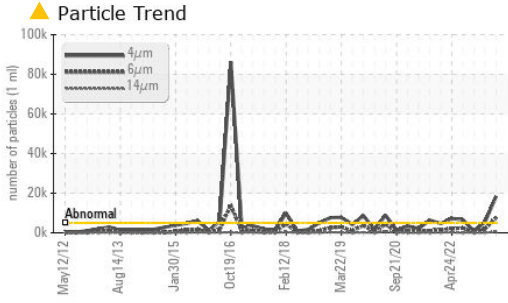
CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m) >20	0	0	0
Sodium	ppm	ASTM D5185(m)	2	2	3
Potassium	ppm	ASTM D5185(m) >20	1	<1	<1
Water	%	ASTM D6304*	0.006	0.003	0.003
ppm Water	ppm	ASTM D6304* >.1	68.2	33.2	27.5

FLUID CLEANLINESS

method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647 >5000	▲ 18424	▲ 5373	849
Particles >6µm	ASTM D7647 >1300	▲ 7556	▲ 1948	240
Particles >14µm	ASTM D7647 >160	▲ 458	158	24
Particles >21µm	ASTM D7647 >40	▲ 91	42	7
Particles >38µm	ASTM D7647 >10	1	2	0
Particles >71µm	ASTM D7647 >3	0	1	0
Oil Cleanliness	ISO 4406 (c) >19/17/14	▲ 21/20/16	▲ 20/18/14	17/15/12

OIL ANALYSIS REPORT

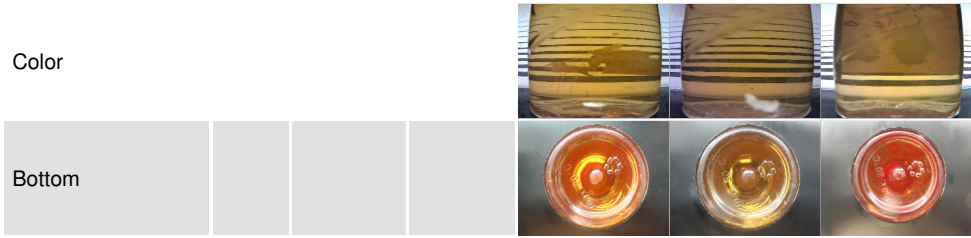


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*		0.52	0.37	0.26

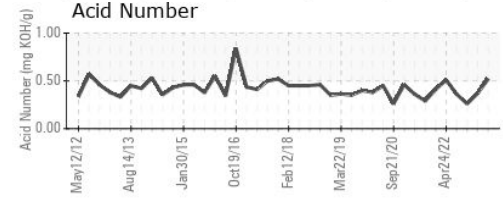
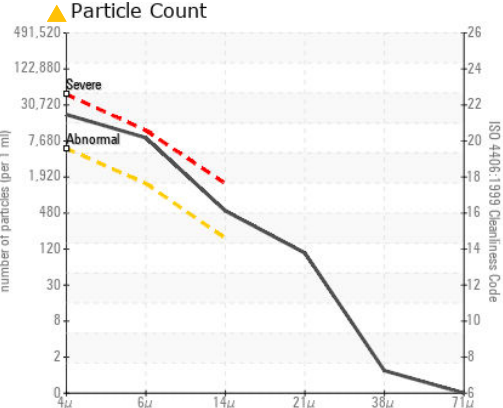
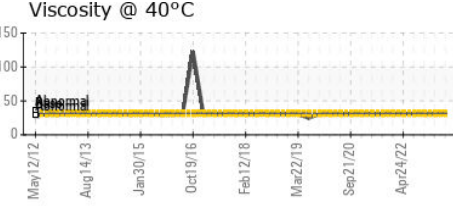
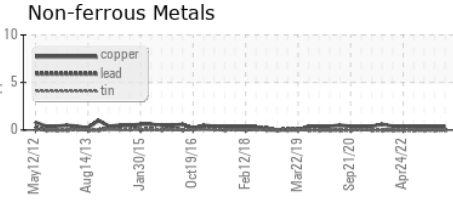
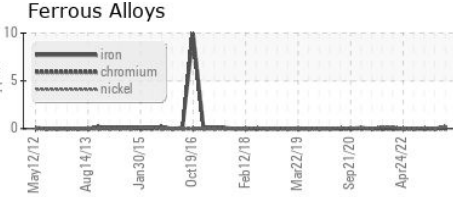
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	VLITE	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*		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)	31.9	30.7	30.5	30.5

SAMPLE IMAGES



GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **HIBERNIA MGMT & DEVELOPMENT CO. LTD**
Sample No. : PP **Received** : 22 Aug 2023 **SUITE 1000,, 100 NEW GOWER STREET**
Lab Number : 02577510 **Diagnosed** : 23 Aug 2023 **ST. JOHNS, NL**
Unique Number : 5630570 **Diagnostician** : Wes Davis **CA A1C 6K3**
Test Package : MAR 2 (Additional Tests: KF, TAN Man) **Contact: Christopher Michelau**
 To discuss this sample report, contact Customer Service at 1-800-268-2131. **christopher.j.michelau@exxonmobil.com**
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. **T:**
 Validity of results and interpretation are based on the sample and information as supplied. **F: (709)722-3766**