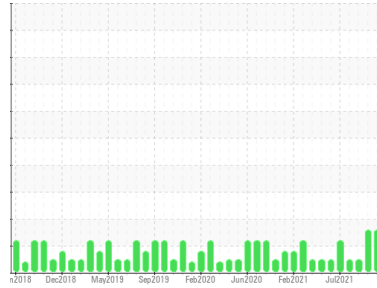


PROBLEM SUMMARY

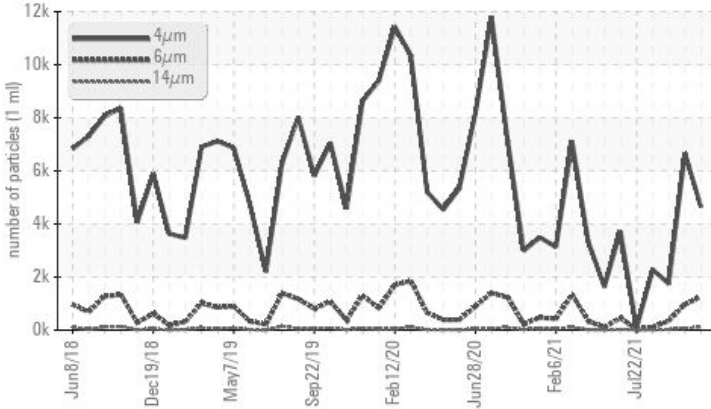
Area
Framo [450156589]
 Machine Id
HPU Deck Machinery Hyd. Power (S/N Sample Tag IH-65202-S1)
 Component
Hydraulic System
 Fluid
CASTROL HYSPIN AWH-M ISO 46 (2200 LTR)

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. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using MAR 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid.

PROBLEMATIC TEST RESULTS

Sample Status			ABNORMAL	ATTENTION	NORMAL
Particles >6µm	ASTM D7647	>640	▲ 1261	▲ 967	348
Particles >14µm	ASTM D7647	>40	▲ 103	▲ 68	28
Particles >21µm	ASTM D7647	>10	▲ 24	▲ 16	10
Oil Cleanliness	ISO 4406 (c)	>--/16/12	▲ 19/17/14	▲ 20/17/13	18/16/12

Customer Id: TERHAM
 Sample No.: PC
 Lab Number: 02568264
 Test Package: MAR 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
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.
Contact Required	---	---	?	Please contact your representative for information regarding the proper sampling kits for your service.
Alert	---	---	?	NOTE: We recommend using MAR 3 test kits,
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

08 Apr 2023 Diag: Kevin Marson

ISO



We recommend you service the filters on this component. Resample at the next service interval to monitor. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using MAR 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid. Component wear rates appear to be normal (unconfirmed). There is a light 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



30 Apr 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 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



03 Dec 2021 Diag: Kevin Marson

NORMAL

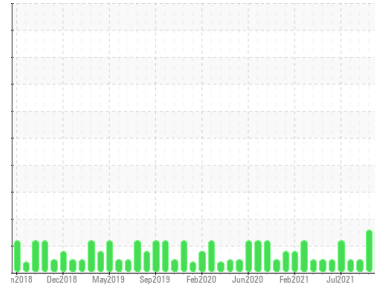


Resample at the next service interval to monitor. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using MAR 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid. All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. 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



Area
Framo [450156589]
 Machine Id
HPU Deck Machinery Hyd. Power (S/N Sample Tag IH-65202-S1)
 Component
Hydraulic System
 Fluid
CASTROL HYSPIN AWH-M ISO 46 (2200 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. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using MAR 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid.

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 system cleanliness is above the acceptable limit for the 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	history 1	history 2
Sample Number	Client Info	PC	PC	PC
Sample Date	Client Info	06 Jun 2023	08 Apr 2023	30 Apr 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	history 1	history 2
PQ	ASTM D8184*	0	0	0
Iron	ppm	4	3	3
Chromium	ppm	0	0	0
Nickel	ppm	<1	0	<1
Titanium	ppm	0	0	0
Silver	ppm	<1	<1	0
Aluminum	ppm	<1	0	<1
Lead	ppm	0	<1	<1
Copper	ppm	4	4	3
Tin	ppm	0	0	0
Antimony	ppm	0	0	<1
Vanadium	ppm	0	0	0
Beryllium	ppm	0	0	0
Cadmium	ppm	0	0	0

ADDITIVES

method	limit/base	current	history 1	history 2
Boron	ppm	<1	<1	0
Barium	ppm	0	0	0
Molybdenum	ppm	0	0	0
Manganese	ppm	0	0	0
Magnesium	ppm	<1	<1	0
Calcium	ppm	30	29	29
Phosphorus	ppm	345	350	324
Zinc	ppm	382	371	373
Sulfur	ppm	2452	2456	2452
Lithium	ppm	<1	<1	<1

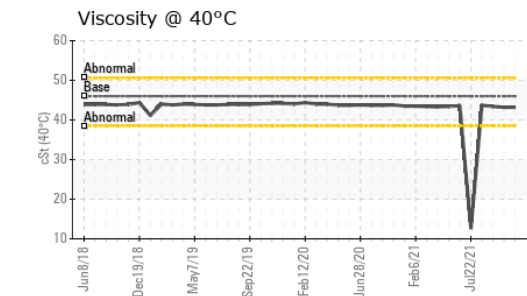
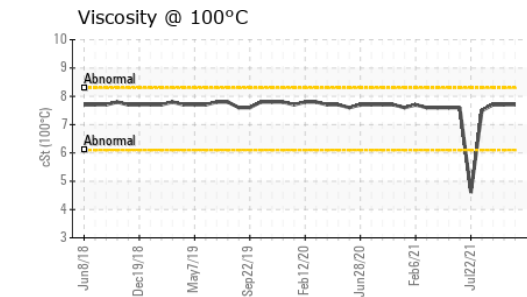
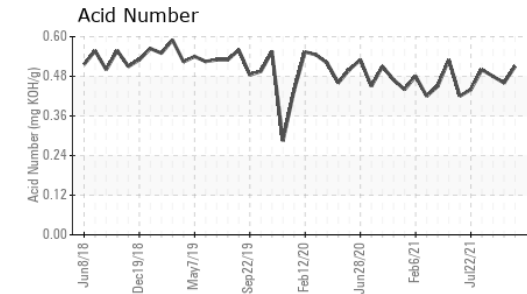
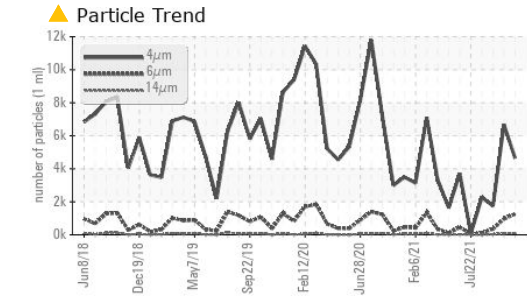
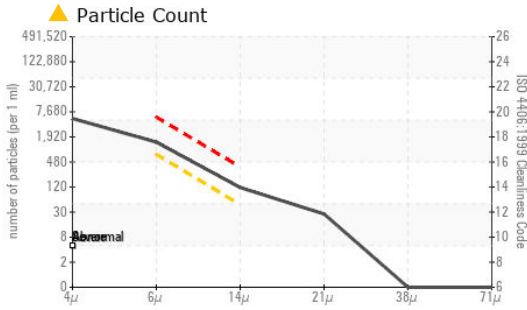
CONTAMINANTS

method	limit/base	current	history 1	history 2
Silicon	ppm	2	2	2
Sodium	ppm	<1	<1	0
Potassium	ppm	<1	<1	<1

FLUID CLEANLINESS

method	limit/base	current	history 1	history 2
Particles >4µm	ASTM D7647	4643	6674	1747
Particles >6µm	ASTM D7647	▲ 1261	▲ 967	348
Particles >14µm	ASTM D7647	▲ 103	▲ 68	28
Particles >21µm	ASTM D7647	▲ 24	▲ 16	10
Particles >38µm	ASTM D7647	0	2	1
Particles >71µm	ASTM D7647	0	0	0
Oil Cleanliness	ISO 4406 (c)	▲ 19/17/14	▲ 20/17/13	18/16/12

OIL ANALYSIS REPORT



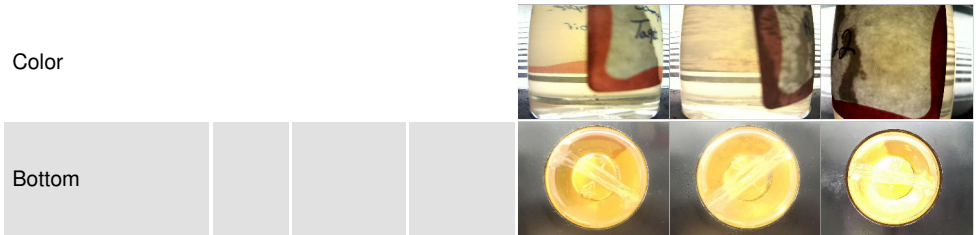
FLUID DEGRADATION

method	limit/base	current	history 1	history 2		
Acid Number (AN) mg KOH/g	ASTM D974*	0.51	0.46	0.48		
VISUAL		method	limit/base	current	history 1	history 2
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	NONE	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	history 1	history 2
Visc @ 40°C	cSt ASTM D7279(m)	43.2	43.2	43.4
Visc @ 100°C	cSt ASTM D7279(m)	7.7	7.7	7.7
Viscosity Index (VI)	Scale ASTM D2270*	148	148	147

SAMPLE IMAGES



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC
Lab Number : **02568264** **Received** : 06 Jul 2023
Unique Number : 5605310 **Diagnosed** : 07 Jul 2023
Test Package : MAR 2 (Additional Tests: KV100, PQ, TAN Man, VI) **Diagnostician** : Kevin Marson

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.

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