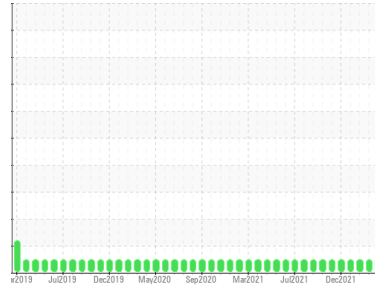


Area
Framo [450156594]
Machine Id
HPU Framo B Hyd. Power (S/N Sample Tag IH-65204-S1)
Component
Hydraulic System
Fluid
CASTROL HYSPIN AWH-M ISO 46 (27000 LTR)



DIAGNOSIS

Recommendation
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.

Wear
Component wear rates appear to be normal (unconfirmed).

Contamination
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

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 history 1 history 2

Sample Number	Client Info	PC	PC	PC0052465
Sample Date	Client Info	10 Jun 2023	14 May 2023	19 Apr 2023
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		NORMAL	NORMAL	NORMAL

WEAR METALS method limit/base current history 1 history 2

PQ	ASTM D8184*		0	0	0
Iron	ppm ASTM D5185(m)	>20	2	2	2
Chromium	ppm ASTM D5185(m)	>10	0	0	0
Nickel	ppm ASTM D5185(m)	>10	0	<1	<1
Titanium	ppm ASTM D5185(m)		0	0	0
Silver	ppm ASTM D5185(m)		0	0	0
Aluminum	ppm ASTM D5185(m)	>10	<1	<1	0
Lead	ppm ASTM D5185(m)	>20	<1	<1	<1
Copper	ppm ASTM D5185(m)	>20	4	4	4
Tin	ppm ASTM D5185(m)	>10	0	0	0
Antimony	ppm ASTM D5185(m)		0	<1	0
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 history 1 history 2

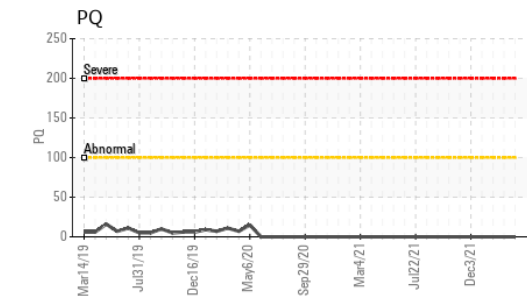
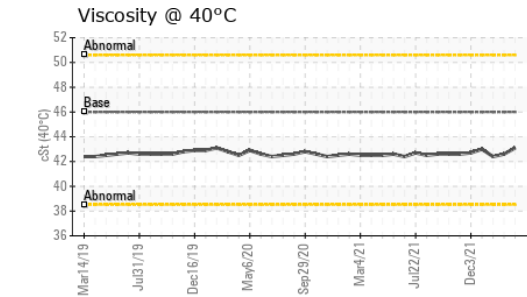
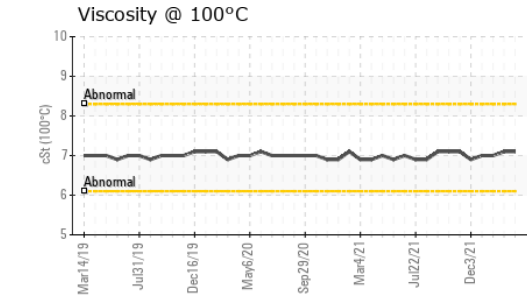
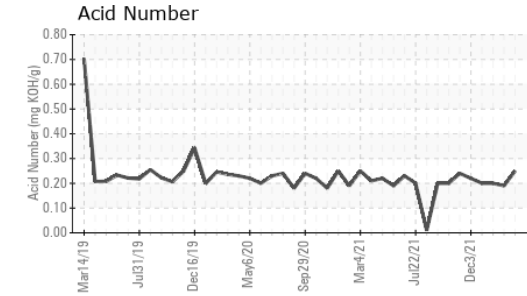
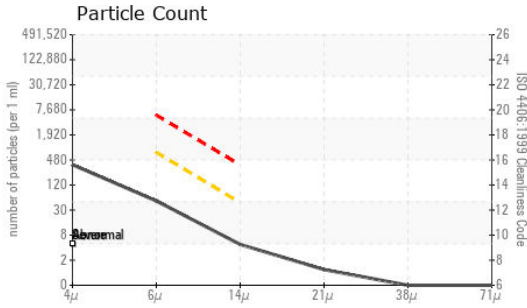
Boron	ppm ASTM D5185(m)		<1	0	0
Barium	ppm ASTM D5185(m)		0	0	0
Molybdenum	ppm ASTM D5185(m)		0	0	0
Manganese	ppm ASTM D5185(m)		0	0	0
Magnesium	ppm ASTM D5185(m)		0	0	0
Calcium	ppm ASTM D5185(m)		4	2	2
Phosphorus	ppm ASTM D5185(m)		334	354	350
Zinc	ppm ASTM D5185(m)		39	40	39
Sulfur	ppm ASTM D5185(m)		3127	3255	3149
Lithium	ppm ASTM D5185(m)		<1	<1	<1

CONTAMINANTS method limit/base current history 1 history 2

Silicon	ppm ASTM D5185(m)	>15	<1	<1	<1
Sodium	ppm ASTM D5185(m)		<1	0	<1
Potassium	ppm ASTM D5185(m)	>20	<1	<1	0

FLUID CLEANLINESS method limit/base current history 1 history 2

Particles >4µm	ASTM D7647		325	183	600
Particles >6µm	ASTM D7647	>640	44	45	163
Particles >14µm	ASTM D7647	>40	4	6	12
Particles >21µm	ASTM D7647	>10	1	2	3
Particles >38µm	ASTM D7647	>3	0	0	0
Particles >71µm	ASTM D7647	>3	0	0	0
Oil Cleanliness	ISO 4406 (c)	>--/16/12	16/13/9	15/13/10	16/15/11

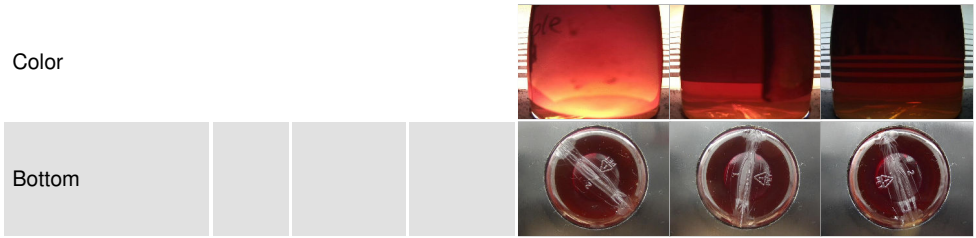


FLUID DEGRADATION		method	limit/base	current	history 1	history 2
Acid Number (AN)	mg KOH/g	ASTM D974*		0.25	0.19	0.20

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)	46.0	43.1	42.6	42.4
Visc @ 100°C	cSt	ASTM D7279(m)		7.1	7.1	7
Viscosity Index (VI)	Scale	ASTM D2270*	150	125	127	124

SAMPLE IMAGES



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC
Lab Number : 02568263
Unique Number : 5605309
Test Package : MAR 2 (Additional Tests: KV100, PQ, TAN Man, VI)

Received : 06 Jul 2023
Diagnosed : 07 Jul 2023
Diagnostician : Kevin Marson

Suncor - Terra Nova Projects
 Scotia Centre, 235 Water Strret
 St. John's, NL
 CA A1C 1B6
 Contact: Josh Hynes
 joshhynes@suncor.com
 T: (709)778-3575
 F: (709)724-2835

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.