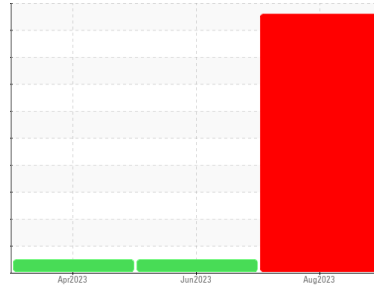


# PROBLEM SUMMARY

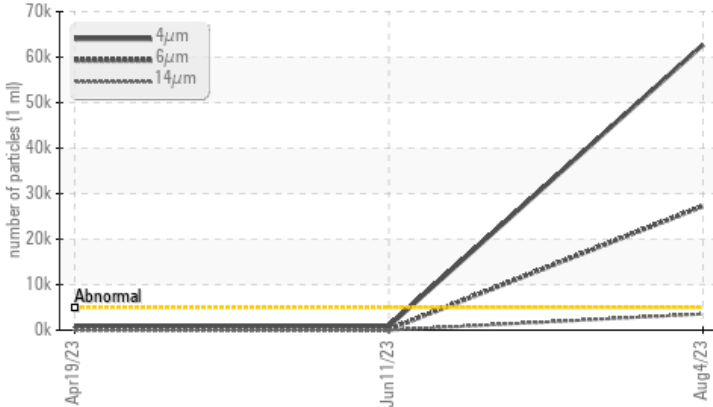
Area  
**[45018327]**  
 Machine Id  
**IH-65205 HPU FRAMO AUXILIARY**  
 Component  
**Auxiliary Hydraulic System**  
 Fluid  
**NOT GIVEN (--- GAL)**

Sample Rating Trend



## COMPONENT CONDITION SUMMARY

Particle Trend



## RECOMMENDATION

Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. We advise that you check all areas where contaminants can enter the system. We advise that you check for visible metal particles in the oil. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. 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. Resample in 30-45 days to monitor this situation. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the brand, type, and viscosity of the oil on your next sample. We suspect that the abnormal contaminant(s) is the result of incorrect sampling technique. DISCLAIMER: Interpretation of results is based on the sample as received from the customer. The condition of the sample and the method of sampling cannot be verified.

## PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	NORMAL	NORMAL
Particles >4µm	ASTM D7647	>5000	62738	885	956	
Particles >6µm	ASTM D7647	>1300	27271	151	245	
Particles >14µm	ASTM D7647	>160	3560	10	13	
Particles >21µm	ASTM D7647	>40	1115	2	4	
Particles >38µm	ASTM D7647	>10	38	0	0	
Oil Cleanliness	ISO 4406 (c)	>19/17/14	23/22/19	17/14/10	17/15/11	
White Metal	scalar	Visual*	NONE	VLITE	NONE	NONE
Debris	scalar	Visual*	NONE	LIGHT	NONE	NONE
PrtFilter					no image	no image

Customer Id: TERHAM  
 Sample No.: PC0062025  
 Lab Number: 02582113  
 Test Package: MAR 2



To manage this report scan the QR code

To discuss the diagnosis or test data:  
 Bill Quesnel CLS,OMA II,MLA-III,LLA-I +1  
 (289)291-4641 x4641  
[Bill.Quesnel@wearcheck.com](mailto:Bill.Quesnel@wearcheck.com)

To change component or sample information:  
 Gloria Gonzalez +1 (289)291-4643 x4643  
[gloria.gonzalez@wearcheck.com](mailto: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	---	---	?	Resample in 30-45 days to monitor this situation.
Alert	---	---	?	<small>Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. We suspect that the abnormal contaminant(s) is the result of incorrect sampling technique. DISCLAIMER: Interpretation of results is based on the sample as received from the customer. The condition of the sample and the method of sampling cannot be verified.</small>
Information Required	---	---	?	Please specify the brand, type, and viscosity of the oil on your next sample. 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 Dirt Access	---	---	?	We advise that you check all areas where contaminants can enter the system.
Check For Visual Metal	---	---	?	We advise that you check for visible metal particles in the oil.
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 Jun 2023 Diag: Kevin Marson

NORMAL



Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the brand, type, and viscosity of the oil on your next sample. 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



### 19 Apr 2023 Diag: Kevin Marson

NORMAL

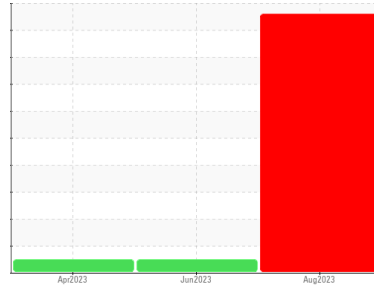


Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the brand, type, and viscosity of the oil on your next sample. 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  
**[45018327]**  
Machine Id  
**IH-65205 HPU FRAMO AUXILIARY**  
Component  
**Auxiliary Hydraulic System**  
Fluid  
**NOT GIVEN (--- GAL)**



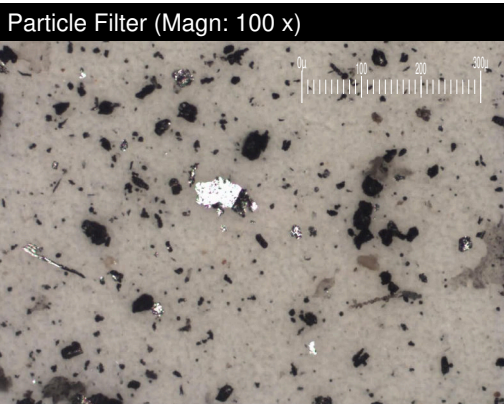
**DIAGNOSIS**

**Recommendation**  
Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. We advise that you check all areas where contaminants can enter the system. We advise that you check for visible metal particles in the oil. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. 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. Resample in 30-45 days to monitor this situation. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the brand, type, and viscosity of the oil on your next sample. We suspect that the abnormal contaminant(s) is the result of incorrect sampling technique. DISCLAIMER: Interpretation of results is based on the sample as received from the customer. The condition of the sample and the method of sampling cannot be verified.

**Wear**  
Moderate concentration of visible metal present. Cylinder wear is indicated.

**Contamination**  
There is a high amount of particulates (2 to 100 microns in size) present in the oil. Moderate concentration of visible dirt/debris present in the oil.

**Fluid Condition**  
The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.



SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			<b>PC0062025</b>	PC	PC0052473
Sample Date	Client Info			<b>04 Aug 2023</b>	11 Jun 2023	19 Apr 2023
Machine Age	hrs Client Info			<b>0</b>	0	0
Oil Age	hrs Client Info			<b>0</b>	0	0
Oil Changed	Client Info			<b>N/A</b>	N/A	N/A
Sample Status				<b>SEVERE</b>	NORMAL	NORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm ASTM D5185(m)	>20		<b>2</b>	2	2
Chromium	ppm ASTM D5185(m)	>10		<b>0</b>	0	0
Nickel	ppm ASTM D5185(m)	>10		<b>0</b>	0	0
Titanium	ppm ASTM D5185(m)			<b>0</b>	0	0
Silver	ppm ASTM D5185(m)			<b>0</b>	0	0
Aluminum	ppm ASTM D5185(m)	>10		<b>&lt;1</b>	<1	0
Lead	ppm ASTM D5185(m)	>20		<b>&lt;1</b>	<1	<1
Copper	ppm ASTM D5185(m)	>20		<b>4</b>	4	4
Tin	ppm ASTM D5185(m)	>10		<b>0</b>	0	0
Antimony	ppm ASTM D5185(m)			<b>0</b>	0	0
Vanadium	ppm ASTM D5185(m)			<b>0</b>	0	0
Beryllium	ppm ASTM D5185(m)			<b>0</b>	0	0
Cadmium	ppm ASTM D5185(m)			<b>0</b>	0	0

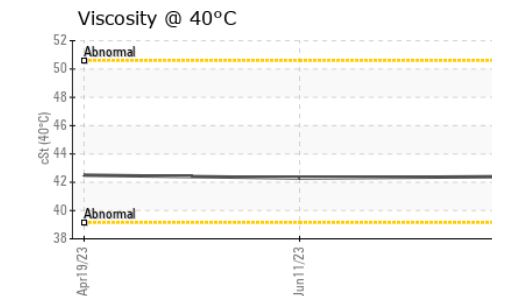
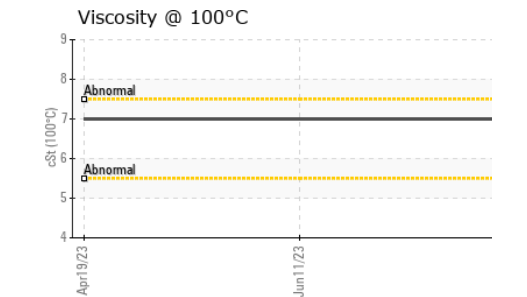
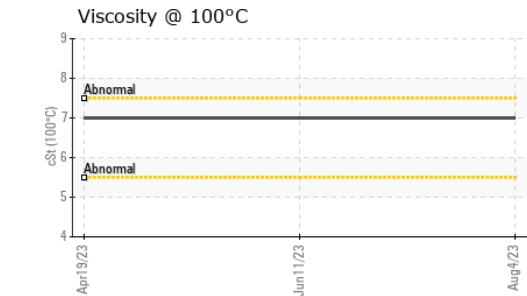
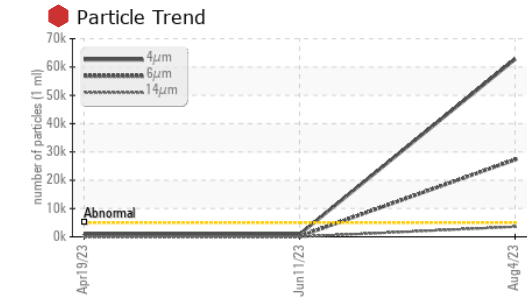
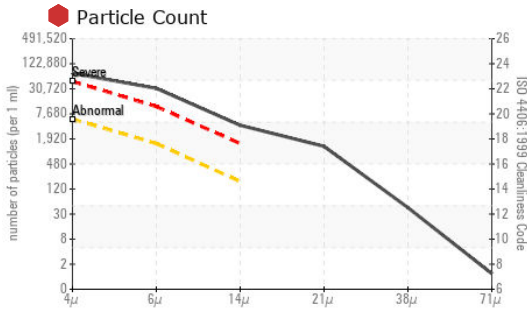
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm ASTM D5185(m)			<b>&lt;1</b>	1	0
Barium	ppm ASTM D5185(m)			<b>0</b>	0	0
Molybdenum	ppm ASTM D5185(m)			<b>0</b>	0	0
Manganese	ppm ASTM D5185(m)			<b>0</b>	0	0
Magnesium	ppm ASTM D5185(m)			<b>&lt;1</b>	<1	0
Calcium	ppm ASTM D5185(m)			<b>4</b>	4	2
Phosphorus	ppm ASTM D5185(m)			<b>354</b>	340	349
Zinc	ppm ASTM D5185(m)			<b>43</b>	39	38
Sulfur	ppm ASTM D5185(m)			<b>3201</b>	3288	3139
Lithium	ppm ASTM D5185(m)			<b>&lt;1</b>	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185(m)	>15		<b>&lt;1</b>	<1	<1
Sodium	ppm ASTM D5185(m)			<b>&lt;1</b>	<1	<1
Potassium	ppm ASTM D5185(m)	>20		<b>&lt;1</b>	<1	<1

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000		<b>62738</b>	885	956
Particles >6µm	ASTM D7647	>1300		<b>27271</b>	151	245
Particles >14µm	ASTM D7647	>160		<b>3560</b>	10	13
Particles >21µm	ASTM D7647	>40		<b>1115</b>	2	4
Particles >38µm	ASTM D7647	>10		<b>38</b>	0	0
Particles >71µm	ASTM D7647	>3		<b>1</b>	0	0
Oil Cleanliness	ISO 4406 (c)	>19/17/14		<b>23/22/19</b>	17/14/10	17/15/11

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g ASTM D974*			<b>0.20</b>	0.23	0.20

# OIL ANALYSIS REPORT



PARAMETER	method	limit/base	current	history1	history2	
<b>White Metal</b>	scalar	Visual*	NONE	▲ VLITE	NONE	NONE
<b>Yellow Metal</b>	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
<b>Precipitate</b>	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
<b>Silt</b>	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
<b>Debris</b>	scalar	Visual*	NONE	▲ LIGHT	NONE	NONE
<b>Sand/Dirt</b>	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
<b>Appearance</b>	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
<b>Odor</b>	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
<b>Emulsified Water</b>	scalar	Visual*	>0.05	<b>NEG</b>	NEG	NEG
<b>Free Water</b>	scalar	Visual*		<b>NEG</b>	NEG	NEG

PARAMETER	method	limit/base	current	history1	history2
<b>Visc @ 40°C</b>	cSt	ASTM D7279(m)	<b>42.4</b>	42.3	42.5
<b>Visc @ 100°C</b>	cSt	ASTM D7279(m)	<b>7</b>	7	7
<b>Viscosity Index (VI)</b>	Scale	ASTM D2270*	<b>124</b>	124	123

PARAMETER	method	limit/base	current	history1	history2
<b>Color</b>					
<b>Bottom</b>					
<b>PrtFilter</b>					

**GRAPHS**

**Ferrous Alloys**

Element	ppm
Iron	~8
Chromium	~2
Nickel	~1

**Non-ferrous Metals**

Element	ppm
Copper	~5
Lead	~2
Tin	~1

**Viscosity @ 40°C**

Date	cSt (40°C)
Apr 19/23	~43
Jun 11/23	~43
Aug 4/23	~43

**Particle Filter (Magn: 100 x)**

**Acid Number**

Date	Acid Number (mg KOH/g)
Apr 19/23	~0.20
Jun 11/23	~0.20
Aug 4/23	~0.20



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC0062025 **Received** : 13 Sep 2023  
**Lab Number** : 02582113 **Diagnosed** : 18 Sep 2023  
**Unique Number** : 5643178 **Diagnostician** : Bill Quesnel  
**Test Package** : MAR 2 ( Additional Tests: Bottom, BottomAnalysis, FilterPatch, KV100, PrtFilter, VI )

**Suncor - Terra Nova Projects**  
 Scotia Centre, 235 Water Street  
 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.