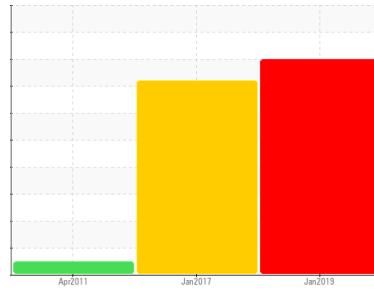


# PROBLEM SUMMARY

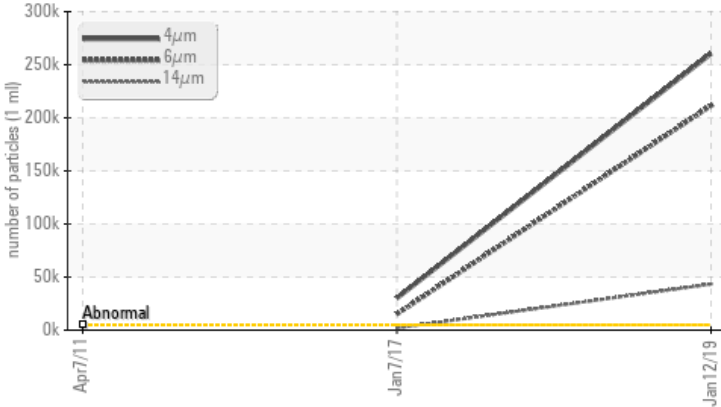
Area  
**[71122672]**  
 Machine Id  
**PB-58630A WHPU HP PUMP A (S/N SAMPLE TAG PB-58630A)**  
 Component  
**Oil**  
 Fluid  
**{not provided} (--- GAL)**

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 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.

## PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	SEVERE	SEVERE
Particles >4µm	ASTM D7647	>5000	▲ 260339	▲ 30000	---	
Particles >6µm	ASTM D7647	>1300	▲ 211482	▲ 15000	---	
Particles >14µm	ASTM D7647	>160	▲ 43335	▲ 1900	---	
Particles >21µm	ASTM D7647	>40	▲ 5631	▲ 240	---	
Oil Cleanliness	ISO 4406 (c)	>19/17/14	▲ 25/25/23	▲ 22/21/18	---	
White Metal	scalar	Visual*	NONE	▲ VLITE	▲ VLITE	
PrtFilter						
					no image	

Customer Id: TERHAM  
 Sample No.: PC  
 Lab Number: 02264965  
 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](mailto:Kevin.Marson@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	---	---	?	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.
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.
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

### ISO



#### 07 Jan 2017 Diag: Kevin Marson

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 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. Light concentration of visible metal present. Particles >14µm are severely high. Particles >6µm are severely high. Oil Cleanliness is severe. Particles >21µm are abnormally high. Particles >4µm are abnormally high. Particles >38µm are abnormally high. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report



### WATER



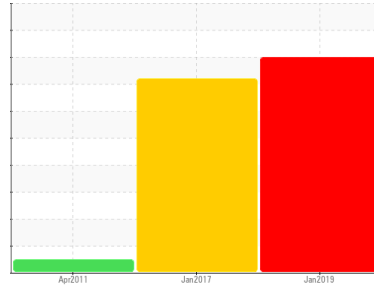
#### 07 Apr 2011 Diag: Kevin Marson

We advise that you check for the source of water entry. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. All component wear rates are normal. There is a high concentration of water present in the oil. The oil is no longer serviceable due to the presence of contaminants.

view report



Area  
**[71122672]**  
 Machine Id  
**PB-58630A WHPU HP PUMP A (S/N SAMPLE TAG PB-58630A)**  
 Component  
**Oil**  
 Fluid  
**{not provided} (--- GAL)**



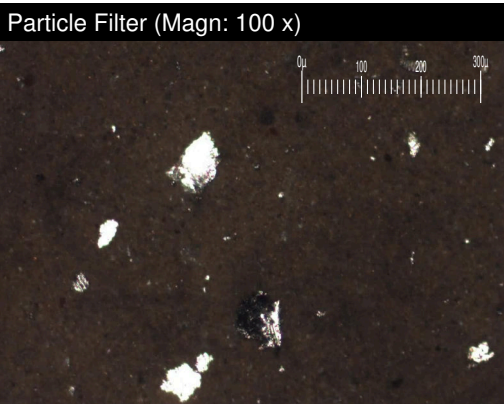
**DIAGNOSIS**

**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 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.

**Wear**  
 All other component wear rates are normal.

**Contamination**  
 Particles >14µm are severely high. Particles >21µm are severely high. Particles >6µm are severely high. Particles >4µm are severely high.

**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	history1	history2
Sample Number	Client Info			<b>PC</b>	PC	PC
Sample Date	Client Info			<b>12 Jan 2019</b>	07 Jan 2017	07 Apr 2011
Machine Age	cyc Client Info			<b>0</b>	0	0
Oil Age	cyc Client Info			<b>0</b>	0	0
Oil Changed	Client Info			<b>N/A</b>	N/A	N/A
Sample Status				<b>SEVERE</b>	SEVERE	SEVERE

CONTAMINATION		method	limit/base	current	history1	history2
Water	WC Method			<b>NEG</b>	NEG	NEG

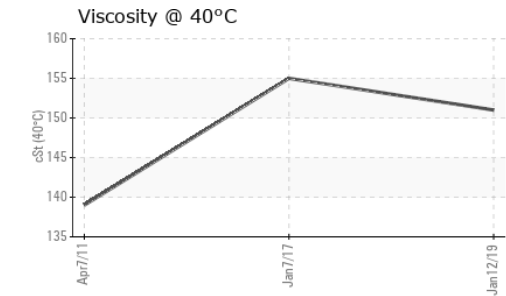
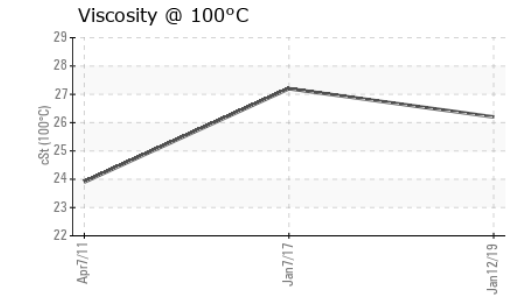
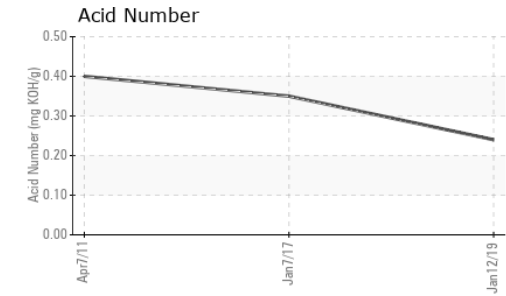
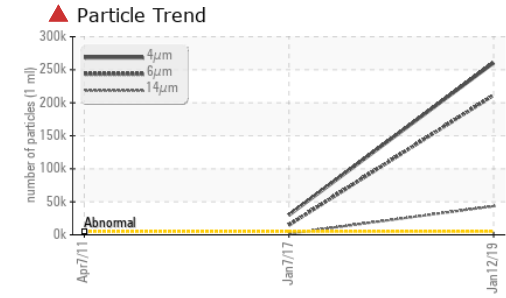
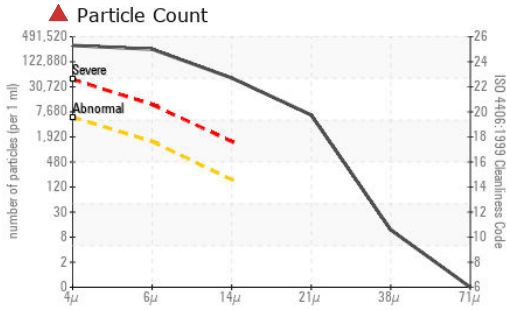
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)		<b>7</b>	0	<1
Chromium	ppm	ASTM D5185(m)		<b>0</b>	0	<1
Nickel	ppm	ASTM D5185(m)		<b>0</b>	0	0
Titanium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185(m)		<b>0</b>	<1	<1
Lead	ppm	ASTM D5185(m)		<b>&lt;1</b>	0	0
Copper	ppm	ASTM D5185(m)		<b>9</b>	<1	0
Tin	ppm	ASTM D5185(m)		<b>0</b>	0	0
Antimony	ppm	ASTM D5185(m)		<b>0</b>	<1	1
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	1
Barium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185(m)		<b>0</b>	<1	0
Manganese	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	0
Magnesium	ppm	ASTM D5185(m)		<b>2</b>	4	4
Calcium	ppm	ASTM D5185(m)		<b>2</b>	0	<1
Phosphorus	ppm	ASTM D5185(m)		<b>1289</b>	1129	5
Zinc	ppm	ASTM D5185(m)		<b>2</b>	0	0
Sulfur	ppm	ASTM D5185(m)		<b>2298</b>	1178	286
Lithium	ppm	ASTM D5185(m)		<b>0</b>	0	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)		<b>2</b>	0	<1
Sodium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Potassium	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	13	9

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000	<b>▲ 260339</b>	▲ 30000	---	
Particles >6µm	ASTM D7647	>1300	<b>▲ 211482</b>	▲ 15000	---	
Particles >14µm	ASTM D7647	>160	<b>▲ 43335</b>	▲ 1900	---	
Particles >21µm	ASTM D7647	>40	<b>▲ 5631</b>	▲ 240	---	
Particles >38µm	ASTM D7647	>10	<b>10</b>	▲ 30	---	
Particles >71µm	ASTM D7647	>3	<b>0</b>	3	---	
Oil Cleanliness	ISO 4406 (c)	>19/17/14	<b>▲ 25/25/23</b>	▲ 22/21/18	---	

# OIL ANALYSIS REPORT



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC  
**Lab Number** : 02264965  
**Unique Number** : 4812191  
**Test Package** : MAR 2 ( Additional Tests : Bottom, BottomAnalysis, FilterPatch, KV100, PrtCount, VCo)

**Suncor - Terra Nova Projects**  
 Scotia Centre, 235 Water Street  
 St. John's, NL  
 CA A1C 1B6  
 Contact: Josh Hynes  
 joshynes@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.

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*		<b>0.24</b>	0.35	0.40
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	▲ VLITE	▲ VLITE	NONE
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Silt	scalar	Visual*	NONE	<b>NONE</b>	NONE	LIGHT
Debris	scalar	Visual*	NONE	<b>VLITE</b>	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	Visual*		<b>NEG</b>	NEG	▲ .1%
Free Water	scalar	Visual*		<b>NEG</b>	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)		<b>151</b>	155	139
Visc @ 100°C	cSt	ASTM D7279(m)		<b>26.2</b>	27.2	23.9
Viscosity Index (VI)	Scale	ASTM D2270*		<b>210</b>	213	204

SAMPLE IMAGES		method	limit/base	current	history1	history2
Color				no image		
Bottom				no image		
PrtFilter						no image