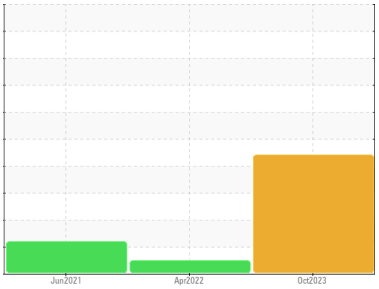
PROBLEM SUMMARY

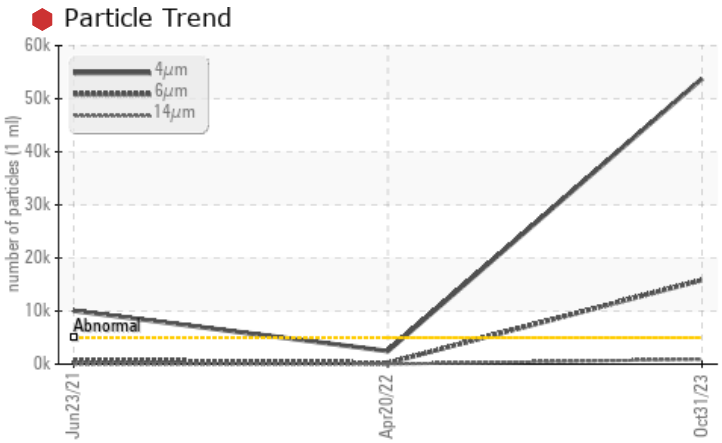
Sample Rating Trend



ISO

Machine Id
68HYDPACK007
Component
Hydraulic System
Fluid
SHELL TELLUS S2 MX 32 (60 GAL)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

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.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	NORMAL	ABNORMAL
Particles >4µm		ASTM D7647	>5000	**53783**	2449	10053
Particles >6µm		ASTM D7647	>1300	**15848**	227	763
Particles >14µm		ASTM D7647	>160	**912**	21	4
Particles >21µm		ASTM D7647	>40	**154**	6	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	**23/21/17**	18/15/12	21/17/9

Customer Id: GLEONA
Sample No.: PC0052754
Lab Number: 02593225
Test Package: IND 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	---	---	?	Resample in 30-45 days to monitor this situation.
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

20 Apr 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 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

23 Jun 2021 Diag: Kevin Marson

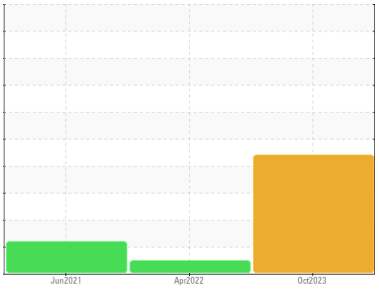
VISCOSITY

We recommend you service the filters on this component. We recommend an early resample to monitor this condition.All component wear rates are normal. Particles >4µm are abnormally high. Viscosity of sample indicates oil is within SAE 20 range, advise investigate. 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

Machine Id
68HYDPACK007
Component
Hydraulic System
Fluid
SHELL TELLUS S2 MX 32 (60 GAL)

DIAGNOSIS

Recommendation
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.

Wear
All component wear rates are normal.

Contamination
There is a high amount of particulates (2 to 100 microns in size) present in the oil.

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		**PC0052754**	PC0052987	PC0044566
Sample Date		Client Info		**31 Oct 2023**	20 Apr 2022	23 Jun 2021
Machine Age	hrs	Client Info		**0**	0	0
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	Filtered	Filtered
Sample Status				**SEVERE**	NORMAL	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	**<1**	<1	1
Chromium	ppm	ASTM D5185(m)	>20	**0**	0	0
Nickel	ppm	ASTM D5185(m)	>20	**<1**	<1	0
Titanium	ppm	ASTM D5185(m)		**0**	0	<1
Silver	ppm	ASTM D5185(m)		**<1**	0	<1
Aluminum	ppm	ASTM D5185(m)	>20	**<1**	0	<1
Lead	ppm	ASTM D5185(m)	>20	**0**	<1	<1
Copper	ppm	ASTM D5185(m)	>20	**<1**	1	<1
Tin	ppm	ASTM D5185(m)	>20	**0**	0	0
Antimony	ppm	ASTM D5185(m)		**0**	0	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	history1	history2
Boron	ppm	ASTM D5185(m)		**<1**	<1	46
Barium	ppm	ASTM D5185(m)		**<1**	0	<1
Molybdenum	ppm	ASTM D5185(m)		**0**	0	22
Manganese	ppm	ASTM D5185(m)		**0**	0	<1
Magnesium	ppm	ASTM D5185(m)		**8**	0	276
Calcium	ppm	ASTM D5185(m)		**85**	54	1467
Phosphorus	ppm	ASTM D5185(m)		**331**	330	873
Zinc	ppm	ASTM D5185(m)		**408**	398	1037
Sulfur	ppm	ASTM D5185(m)		**780**	706	3798
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

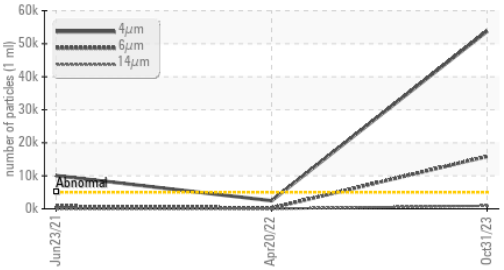
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	**1**	<1	4
Sodium	ppm	ASTM D5185(m)		**<1**	0	3
Potassium	ppm	ASTM D5185(m)	>20	**0**	<1	<1

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	**53783**	2449	▲ 10053
Particles >6µm		ASTM D7647	>1300	**15848**	227	763
Particles >14µm		ASTM D7647	>160	▲ **912**	21	4
Particles >21µm		ASTM D7647	>40	▲ **154**	6	0
Particles >38µm		ASTM D7647	>10	**5**	1	0
Particles >71µm		ASTM D7647	>3	**1**	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	**23/21/17**	18/15/12	▲ 21/17/9

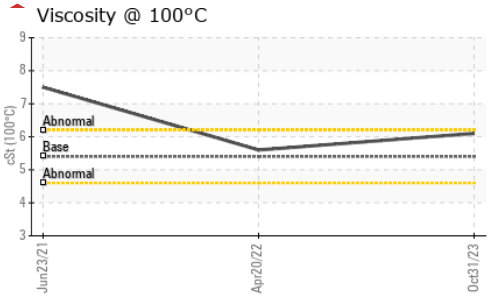
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*		**0.48**	0.39	1.27

OIL ANALYSIS REPORT

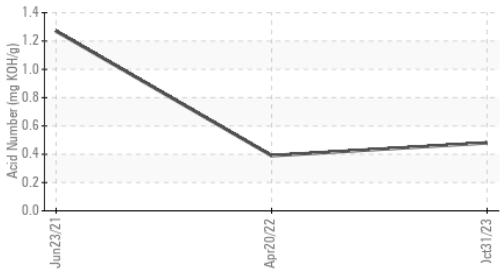
Particle Trend



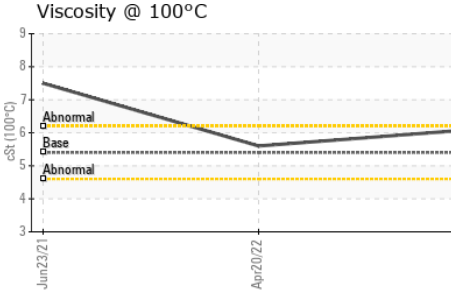
Viscosity @ 100°C



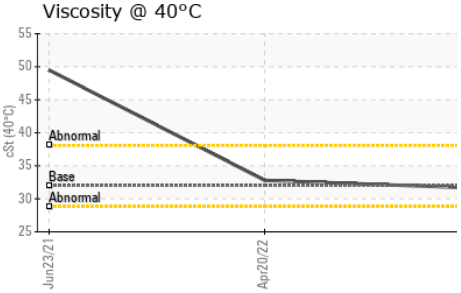
Acid Number



Viscosity @ 100°C



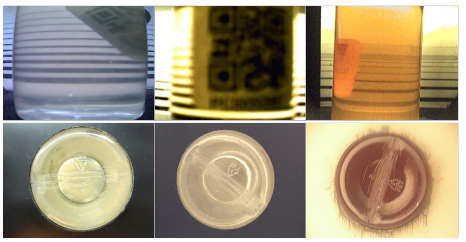
Viscosity @ 40°C



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*	>0.05	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

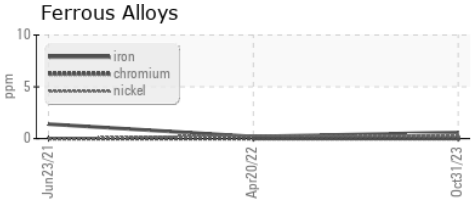
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	32.0	**31.6**	32.8	▲ 49.5
Visc @ 100°C	cSt	ASTM D7279(m)	5.4	**6.1**	5.6	▲ 7.5
Viscosity Index (VI)	Scale	ASTM D2270*	105	**144**	108	114

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

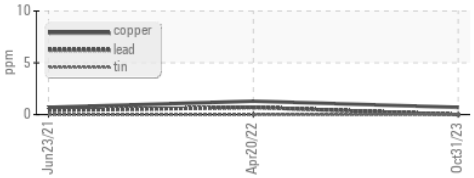


GRAPHS

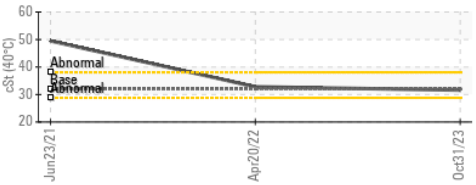
Ferrous Alloys



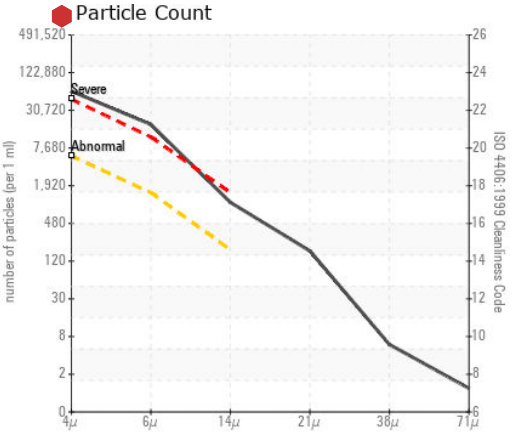
Non-ferrous Metals



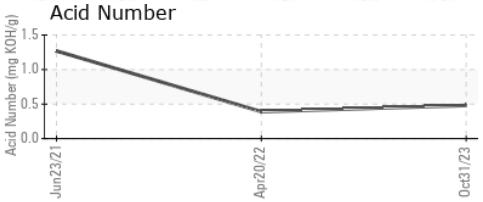
Viscosity @ 40°C



Particle Count



Acid Number



CALA
ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0052754 **Received** : 01 Nov 2023
Lab Number : 02593225 **Diagnosed** : 02 Nov 2023
Unique Number : 5670304 **Diagnostician** : Kevin Marson
Test Package : IND 2 (Additional Tests: KV100, VI)

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.

Glencore Canada – Fraser Mine
85 Regional Road 8
Onaping, ON
CA P0M 2R0
Contact: Marc-Andre Marseille
marcandre.marseille@dmcmining.com
T:
F: