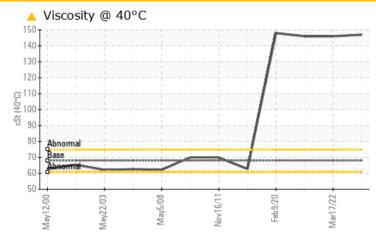
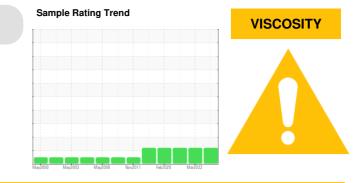


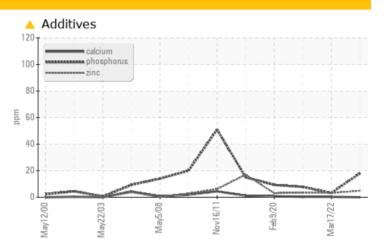
PROBLEM SUMMARY

Machine Id **Powerhouse Crane Aux Hoist Gearcase (S/N 76100-CR-1-A)** Component Gear Case Fluid ESSO SPARTAN EP 68 (28 LTR)

COMPONENT CONDITION SUMMARY







RECOMMENDATION

Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS								
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL		
Phosphorus	ppm	ASTM D5185(m)	400	<u> </u>	<u> </u>	<u> </u>		
Sulfur	ppm	ASTM D5185(m)		🔺 2297	2 073	🔺 2094		
Visc @ 40°C	cSt	ASTM D7279(m)	68	🔺 147	1 46	1 46		

Customer Id: ONTATI Sample No.: WC0783244 Lab Number: 02545887 Test Package: IND 1



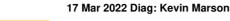
To manage this report scan the QR code

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 <u>gloria.gonzalez@wearcheck.com</u>

RECOMMENDED ACTIONS						
Action	Status	Date	Done By	Description		
Check Fluid Source			?	Confirm the source of the lubricant being utilized for top-up/fill.		

HISTORICAL DIAGNOSIS





Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. Viscosity of sample indicates oil is within ISO 150 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The condition of the oil is acceptable for the time in service.

03 Feb 2021 Diag: Kevin Marson

VISCOSITY



Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. Viscosity of sample indicates oil is within ISO 150 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The condition of the oil is acceptable for the time in service.

09 Feb 2020 Diag: Kevin Marson

Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. Viscosity of sample indicates oil is within ISO 150 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The condition of the oil is acceptable for the time in service.







view report





OIL ANALYSIS REPORT

SAMPLE INFORMATION

Sample Number

Machine Id **Powerhouse Crane Aux Hoist Gearcase (S/N 76100-CR-1-A)** Component Gear Case

ESSO SPARTAN EP 68 (28 LTR)

DIAGNOSIS

A Recommendation

Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor.

Wear

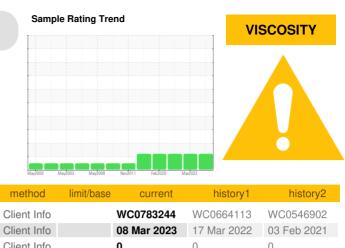
All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

Viscosity of sample indicates oil is within ISO 150 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The condition of the oil is acceptable for the time in service.



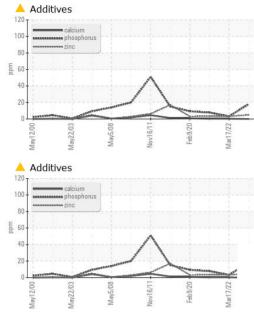
Sample Date		Client Info		08 Mar 2023	17 Mar 2022	03 Feb 2021
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>150	3	1	2
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	<1
Aluminum	ppm	ASTM D5185(m)	>25	0	<1	<1
Lead	ppm	ASTM D5185(m)	>100	0	0	<1
Copper	ppm	ASTM D5185(m)	>50	<1	<1	<1
Tin	ppm	ASTM D5185(m)	>10	0	0	0
Antimony	ppm	ASTM D5185(m)	>5	0	0	<1
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)	.4	<1	<1	<1
Barium	ppm	ASTM D5185(m)		0	0	<1
Molybdenum	ppm	ASTM D5185(m)	0	0	0	0
Manganese	ppm	ASTM D5185(m)		0	0	0
Magnesium	ppm	ASTM D5185(m)	0	0	<1	0
Calcium	ppm	ASTM D5185(m)	0	0	<1	<1
Phosphorus	ppm	ASTM D5185(m)	400	<mark>/</mark> 18	A 3	<u> </u>
Zinc	ppm	ASTM D5185(m)	0	5	3	3
Sulfur	ppm	ASTM D5185(m)		A 2297	2 073	🔺 2094
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

	1-1-	()				
CONTAMINA	NTS	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>50	3	3	2
Sodium	ppm	ASTM D5185(m)		<1	0	<1
Potassium	ppm	ASTM D5185(m)	>20	<1	<1	<1

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	NONE	VLITE
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	VLITE
Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG

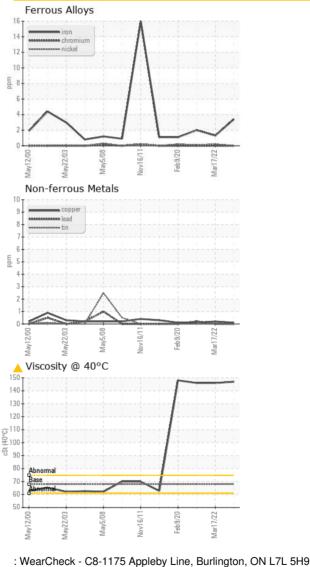


OIL ANALYSIS REPORT





GRAPHS



Received

Diagnosed

: 16 Mar 2023

: 17 Mar 2023

Diagnostician : Kevin Marson

Ontario Power Generation ATIKOKAN T.G.S., BOX 1900 ATIKOKAN, ON CA P0T 1C0 Contact: Dale Anthony dale.anthony@opg.com T: F: (807)597-1198



Accredited Laboratory Test Package : IND 1 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.

: WC0783244

: 02545887

CALA

ISO 17025:2017

Laboratory

Sample No.

Lab Number

Unique Number : 5550897