

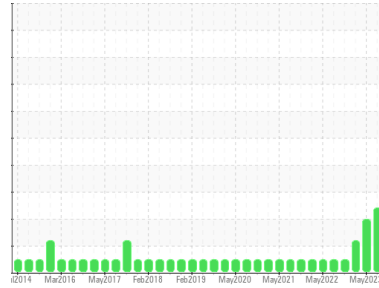


# PROBLEM SUMMARY

Sample Rating Trend

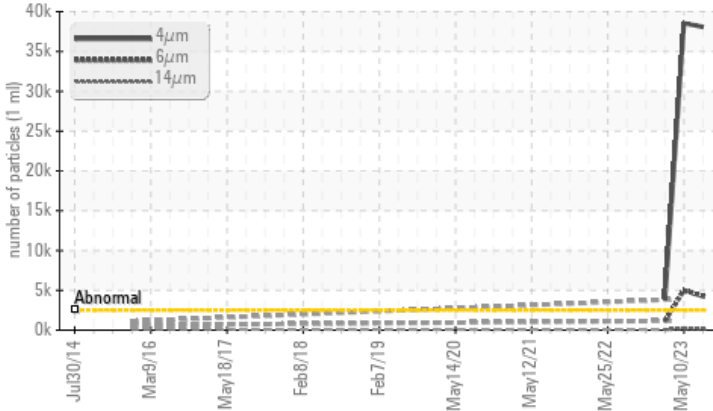
ISO

Area  
**LOG YARD**  
 Machine Id  
**PORTAL CRANE GRAPPLE HOIST GEAR REDUCER (S/N LY105B22DG1)**  
 Component  
**Gear Reducer**  
 Fluid  
**ROYAL PURPLE SYNERGY 90/220 (--- GAL)**



## COMPONENT CONDITION SUMMARY

### Particle Trend



## RECOMMENDATION

Check seals and/or filters for points of contaminant entry. 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. We recommend you service the filters on this component. Resample in 30-45 days to monitor this situation. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

## PROBLEMATIC TEST RESULTS

Sample Status			SEVERE	ABNORMAL	ATTENTION
Particles >4µm	ASTM D7647	>2500	SEVERE 38090	ABNORMAL 38537	ATTENTION 3815
Particles >6µm	ASTM D7647	>640	ABNORMAL 4261	ABNORMAL 4996	ATTENTION 1158
Particles >14µm	ASTM D7647	>80	ABNORMAL 146	ABNORMAL 188	ATTENTION 62
Oil Cleanliness	ISO 4406 (c)	>18/16/13	SEVERE 22/19/14	ABNORMAL 22/19/15	ATTENTION 19/17/13

Customer Id: JMHCRY  
 Sample No.: WC0782891  
 Lab Number: 05930544  
 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:  
 Wes Davis +1 905-569-8600 x223  
[wesd@wearcheck.ca](mailto:wesd@wearcheck.ca)

To change component or sample information:  
 Customer Service +1 1-800-237-1369  
[customerservice@wearcheck.com](mailto:customerservice@wearcheck.com)

## RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	---	---	?	We recommend you service the filters on this component.
Resample	---	---	?	Resample in 30-45 days to monitor this situation.
Information Required	---	---	?	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 Seals	---	---	?	Check seals and/or filters for points of contaminant entry.

## HISTORICAL DIAGNOSIS

### 10 May 2023 Diag: Don Baldrige

ISO



We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor. All component wear rates are normal. There is a high amount of particulates present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



### 15 Feb 2023 Diag: Angela Borella

ISO



No corrective action is recommended at this time. Resample at the next service interval to monitor. All component wear rates are normal. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.

view report



### 28 Nov 2022 Diag: Wes Davis

NORMAL



Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. All component wear rates are normal. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report





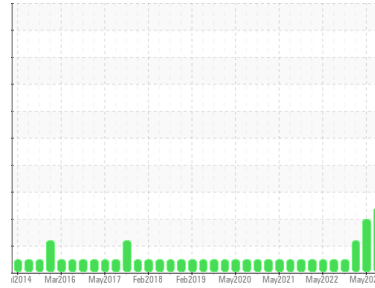
# OIL ANALYSIS REPORT

Sample Rating Trend

ISO



Area  
**LOG YARD**  
 Machine Id  
**PORTAL CRANE GRAPPLE HOIST GEAR REDUCER (S/N LY105B22DG1)**  
 Component  
**Gear Reducer**  
 Fluid  
**ROYAL PURPLE SYNERGY 90/220 (--- GAL)**



## DIAGNOSIS

### Recommendation

Check seals and/or filters for points of contaminant entry. 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. We recommend you service the filters on this component. Resample in 30-45 days to monitor this situation. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

### Wear

All component wear rates are normal.

### Contamination

There is a high amount of silt (particulates < 14 microns in size) present in the oil. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code.

### 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		<b>WC0782891</b>	WC0782936	WC0734534
Sample Date	Client Info		<b>17 Aug 2023</b>	10 May 2023	15 Feb 2023
Machine Age	mths	Client Info	<b>0</b>	0	0
Oil Age	mths	Client Info	<b>0</b>	0	0
Oil Changed	Client Info		<b>N/A</b>	N/A	N/A
Sample Status			<b>SEVERE</b>	ABNORMAL	ATTENTION

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >150	<b>43</b>	28	<1
Chromium	ppm	ASTM D5185m >10	<b>&lt;1</b>	0	0
Nickel	ppm	ASTM D5185m >10	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m	<b>0</b>	0	<1
Silver	ppm	ASTM D5185m	<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185m >25	<b>0</b>	1	<1
Lead	ppm	ASTM D5185m >100	<b>0</b>	0	0
Copper	ppm	ASTM D5185m >50	<b>&lt;1</b>	<1	0
Tin	ppm	ASTM D5185m >10	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185m	<b>&lt;1</b>	0	0
Cadmium	ppm	ASTM D5185m	<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	<b>127</b>	143	132
Barium	ppm	ASTM D5185m	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	<b>0</b>	0	0
Manganese	ppm	ASTM D5185m	<b>&lt;1</b>	0	0
Magnesium	ppm	ASTM D5185m	<b>&lt;1</b>	<1	<1
Calcium	ppm	ASTM D5185m	<b>17</b>	13	0
Phosphorus	ppm	ASTM D5185m 370	<b>523</b>	473	473
Zinc	ppm	ASTM D5185m	<b>0</b>	14	0
Sulfur	ppm	ASTM D5185m	<b>12394</b>	11051	11103

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >50	<b>5</b>	4	<1
Sodium	ppm	ASTM D5185m	<b>1</b>	<1	<1
Potassium	ppm	ASTM D5185m >20	<b>1</b>	0	0

## FLUID CLEANLINESS

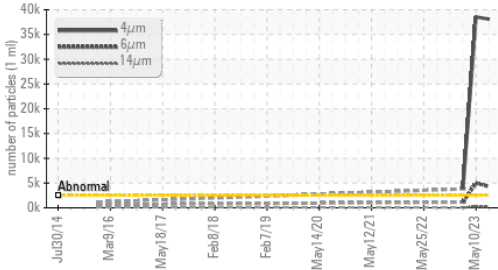
	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>2500	<b>38090</b>	38537	3815
Particles >6µm	ASTM D7647	>640	<b>4261</b>	4996	1158
Particles >14µm	ASTM D7647	>80	<b>146</b>	188	62
Particles >21µm	ASTM D7647	>20	<b>25</b>	33	12
Particles >38µm	ASTM D7647	>4	<b>1</b>	0	0
Particles >71µm	ASTM D7647	>3	<b>0</b>	0	0
Oil Cleanliness	ISO 4406 (c)	>18/16/13	<b>22/19/14</b>	22/19/15	19/17/13

## FLUID DEGRADATION

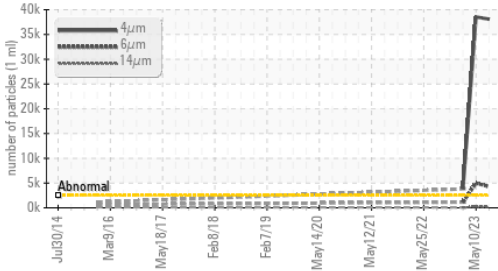
	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045 1.33	<b>0.93</b>	0.91	0.95

# OIL ANALYSIS REPORT

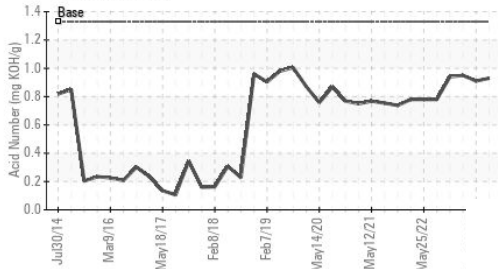
### Particle Trend



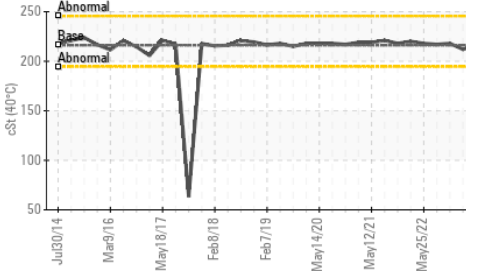
### Particle Trend



### Acid Number



### Viscosity @ 40°C



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	LIGHT
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	216.1	215	216

SAMPLE IMAGES	method	limit/base	current	history1	history2
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**Color**

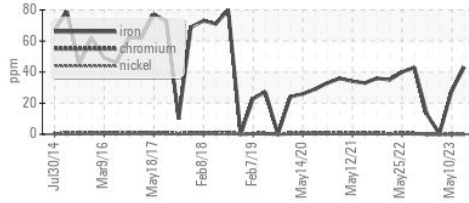
no image

**Bottom**

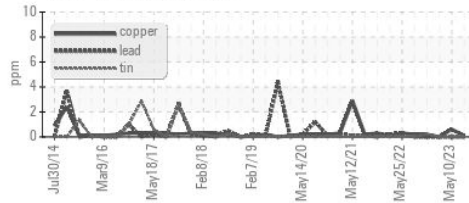
no image

### GRAPHS

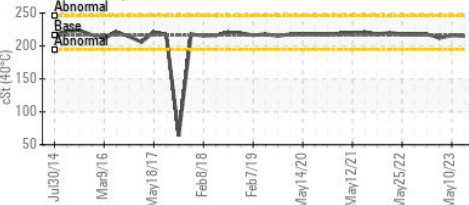
#### Ferrous Alloys



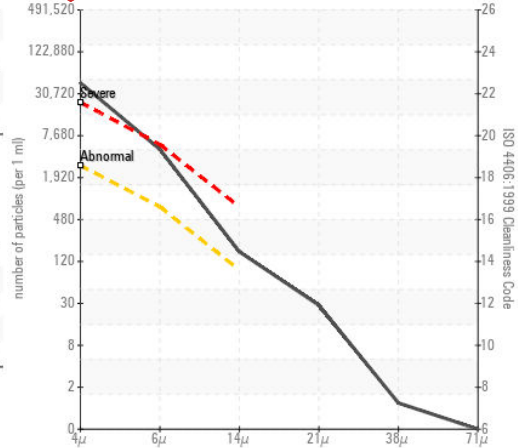
#### Non-ferrous Metals



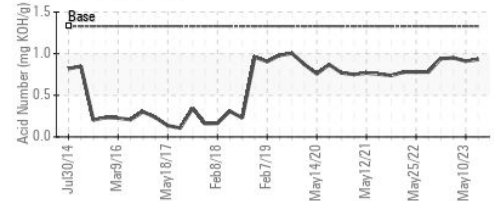
#### Viscosity @ 40°C



#### Particle Count



#### Acid Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0782891 **Received** : 21 Aug 2023  
**Lab Number** : 05930544 **Diagnosed** : 22 Aug 2023  
**Unique Number** : 10615815 **Diagnostician** : Wes Davis  
**Test Package** : IND 2 ( Additional Tests: PrtCount )

**J.M. Huber Corporation**  
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 CRYSTAL HILL, VA  
 US 24539  
 Contact: Ted Hudson  
 ted.hudson@huber.com  
 T: (434)476-3550  
 F: (434)476-8133

To discuss this sample report, contact Customer Service at 1-800-237-1369.

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)