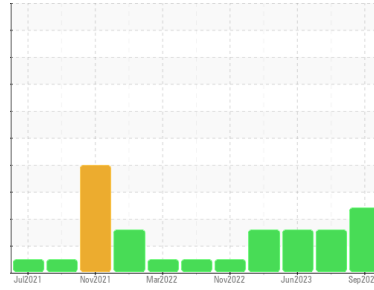




# PROBLEM SUMMARY

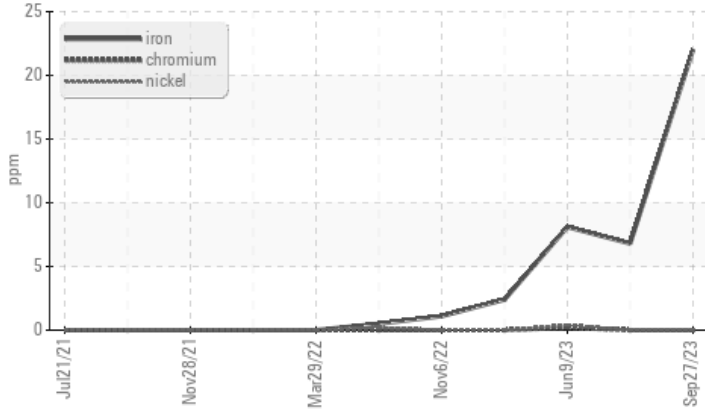
Sample Rating Trend



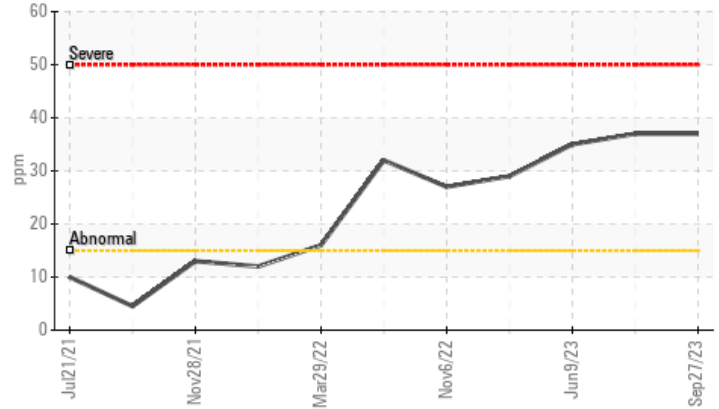
Machine Id  
**5S (S/N 5578772)**  
 Component  
**Vacuum Pump**  
 Fluid  
**USPI VAC 100 (--- GAL)**

## COMPONENT CONDITION SUMMARY

### ▲ Ferrous Alloys



### ▲ Silicon (ppm)



## RECOMMENDATION

Resample at the next service interval to monitor.

## PROBLEMATIC TEST RESULTS

Sample Status				ATTENTION	ABNORMAL	ABNORMAL
Iron	ppm	ASTM D5185m	>20	▲ 22	7	8
Silicon	ppm	ASTM D5185m	>15	▲ 37	▲ 37	▲ 35

Customer Id: CARFORCOL  
 Sample No.: USPM29811  
 Lab Number: 05966381  
 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:  
 Doug Bogart +1 (800)237-1369 x4016  
[dougb@wearcheckusa.com](mailto:dougb@wearcheckusa.com)

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

## RECOMMENDED ACTIONS

*There are no recommended actions for this sample.*

## HISTORICAL DIAGNOSIS

### 19 Jun 2023 Diag: Doug Bogart

DIRT



Resample at the next service interval to monitor. All component wear rates are normal. Elemental level of silicon (Si) above normal. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



### 09 Jun 2023 Diag: Doug Bogart

DIRT



Resample at the next service interval to monitor. All component wear rates are normal. Elemental level of silicon (Si) above normal. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



### 20 Feb 2023 Diag: Doug Bogart

DIRT



Resample at the next service interval to monitor. All component wear rates are normal. Elemental level of silicon (Si) above normal. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

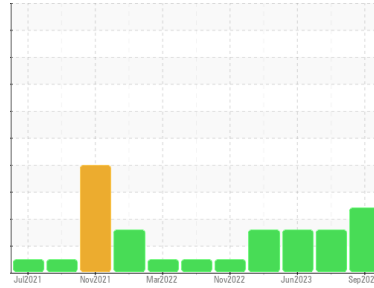
view report





# OIL ANALYSIS REPORT

Sample Rating Trend



DIRT



Machine Id  
**5S (S/N 5578772)**

Component  
**Vacuum Pump**

Fluid  
**USPI VAC 100 (--- GAL)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

An increase in the iron level is noted.

### Contamination

Elemental level of silicon (Si) above normal. The amount and size of particulates present in the system are acceptable.

### 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>USPM29811</b>	USPM28205	USP227701
Sample Date	Client Info	<b>27 Sep 2023</b>	19 Jun 2023	09 Jun 2023
Machine Age	hrs	Client Info	<b>0</b>	0
Oil Age	hrs	Client Info	<b>0</b>	0
Oil Changed	Client Info	<b>N/A</b>	N/A	N/A
Sample Status		<b>ATTENTION</b>	ABNORMAL	ABNORMAL

## WEAR METALS

method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m >20	<b>▲ 22</b>	7	8
Chromium	ppm	ASTM D5185m >20	<b>0</b>	0	<1
Nickel	ppm	ASTM D5185m >20	<b>0</b>	0	<1
Titanium	ppm	ASTM D5185m	<b>0</b>	0	0
Silver	ppm	ASTM D5185m	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >20	<b>&lt;1</b>	0	<1
Lead	ppm	ASTM D5185m >20	<b>0</b>	0	0
Copper	ppm	ASTM D5185m >20	<b>0</b>	0	0
Tin	ppm	ASTM D5185m >20	<b>&lt;1</b>	<1	<1
Vanadium	ppm	ASTM D5185m	<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m	<b>0</b>	0	0

## ADDITIVES

method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m 0	<b>0</b>	0	0
Barium	ppm	ASTM D5185m 0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m 0	<b>0</b>	0	0
Manganese	ppm	ASTM D5185m	<b>&lt;1</b>	0	<1
Magnesium	ppm	ASTM D5185m 0	<b>0</b>	0	<1
Calcium	ppm	ASTM D5185m 0	<b>6</b>	0	4
Phosphorus	ppm	ASTM D5185m 1800	<b>964</b>	999	971
Zinc	ppm	ASTM D5185m 0	<b>121</b>	6	56
Sulfur	ppm	ASTM D5185m 0	<b>5</b>	15	12

## CONTAMINANTS

method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m >15	<b>▲ 37</b>	▲ 37	▲ 35
Sodium	ppm	ASTM D5185m	<b>2</b>	<1	<1
Potassium	ppm	ASTM D5185m >20	<b>&lt;1</b>	0	<1
Water	%	ASTM D6304 >.1	<b>0.050</b>	0.046	0.082
ppm Water	ppm	ASTM D6304 >1000	<b>500.7</b>	469.6	822.8

## FLUID CLEANLINESS

method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647 >5000	<b>1323</b>	387	1110
Particles >6µm	ASTM D7647 >1300	<b>173</b>	109	341
Particles >14µm	ASTM D7647 >160	<b>16</b>	8	24
Particles >21µm	ASTM D7647 >40	<b>6</b>	4	3
Particles >38µm	ASTM D7647 >10	<b>0</b>	1	0
Particles >71µm	ASTM D7647 >3	<b>0</b>	0	0
Oil Cleanliness	ISO 4406 (c) >19/17/14	<b>18/15/11</b>	16/14/10	17/16/12

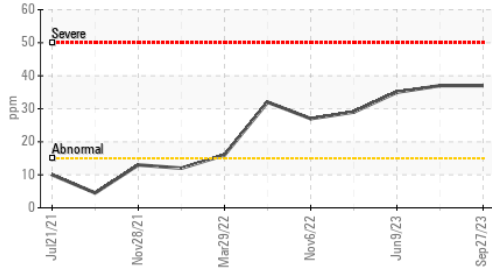
## FLUID DEGRADATION

method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D8045 0.05	<b>1.32</b>	1.33	1.16

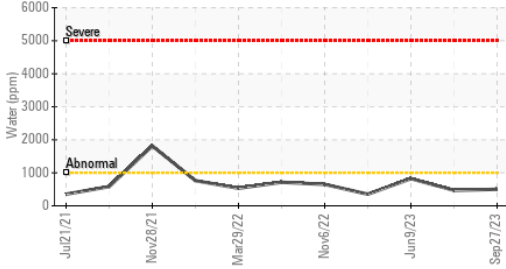


# OIL ANALYSIS REPORT

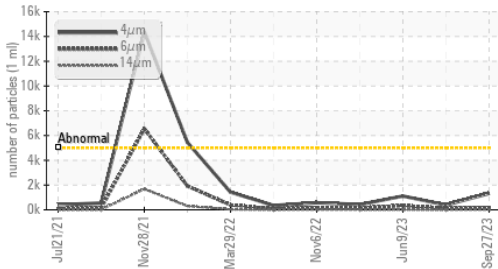
▲ Silicon (ppm)



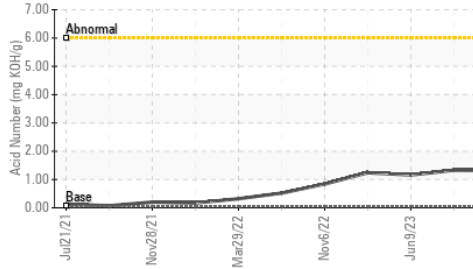
Water (KF)



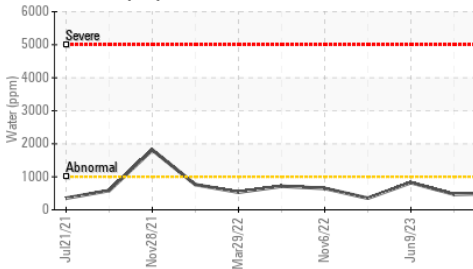
Particle Trend



Acid Number



Water (KF)

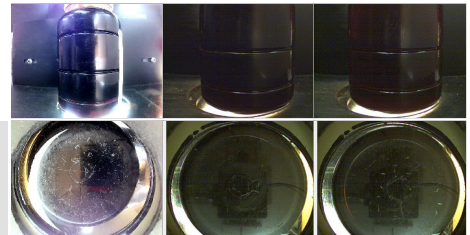


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>.1	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445 91	104	104	102

SAMPLE IMAGES	method	limit/base	current	history1	history2
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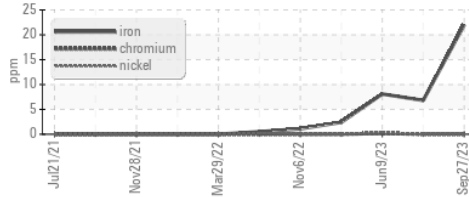
Color



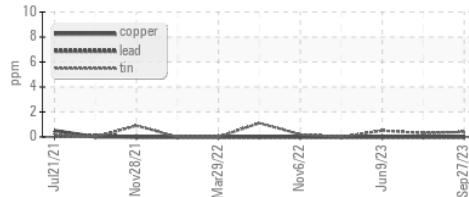
Bottom

## GRAPHS

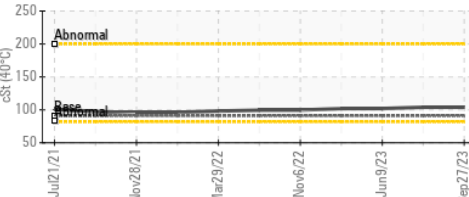
▲ Ferrous Alloys



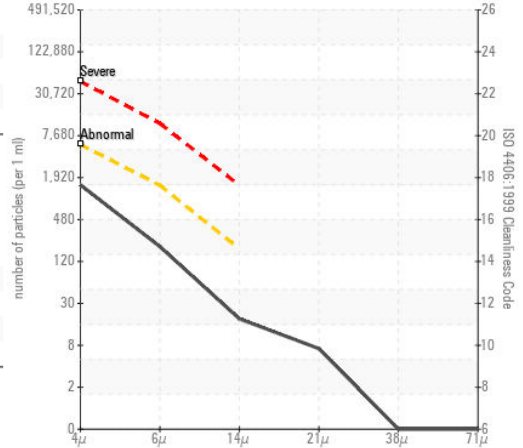
Non-ferrous Metals



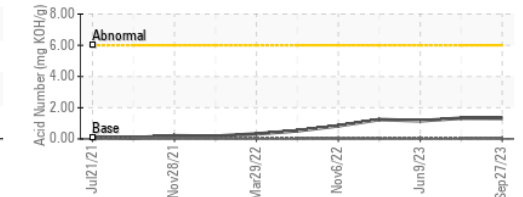
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
 Sample No. : USPM29811 Received : 02 Oct 2023  
 Lab Number : 05966381 Diagnosed : 04 Oct 2023  
 Unique Number : 10672932 Diagnostician : Doug Bogart  
 Test Package : IND 2

**CARGILL FORT MORGAN**  
 1505 E BURLINGTON AVE  
 FORT MORGAN, CO  
 US 80701  
 Contact: JOE ROSENFELD

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)

T:  
F: