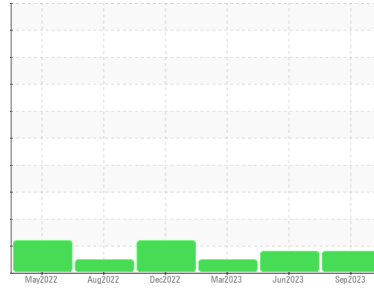




# PROBLEM SUMMARY

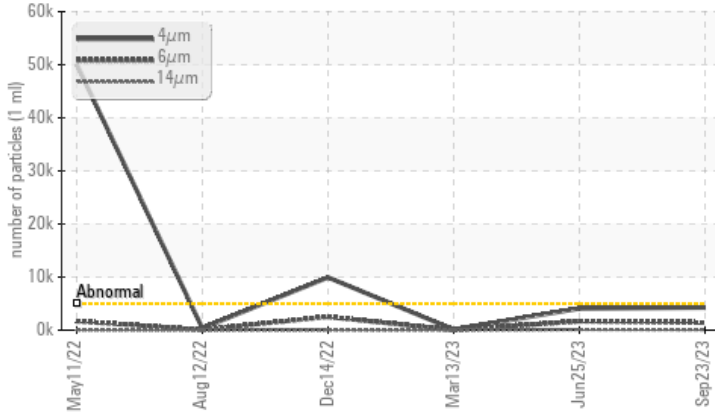
Sample Rating Trend



Machine Id  
**BUSCH VP-3A (S/N 5593581)**  
 Component  
**Vacuum Pump**  
 Fluid  
**USPI VAC 100 (--- GAL)**

## COMPONENT CONDITION SUMMARY

▲ Particle Trend



## RECOMMENDATION

Resample at the next service interval to monitor.

## PROBLEMATIC TEST RESULTS

| Sample Status   |                        | ATTENTION  | ATTENTION  | NORMAL  |
|-----------------|------------------------|------------|------------|---------|
| Particles >6µm  | ASTM D7647 >1300       | ▲ 1407     | ▲ 1673     | 33      |
| Oil Cleanliness | ISO 4406 (c) >19/17/14 | ▲ 19/18/13 | ▲ 19/18/14 | 14/12/9 |

Customer Id: TYSAMAPRO  
 Sample No.: USPM29763  
 Lab Number: 05961797  
 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

### 25 Jun 2023 Diag: Doug Bogart

ISO



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 suitable for further service.

view report



### 13 Mar 2023 Diag: Doug Bogart

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. 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



### 14 Dec 2022 Diag: Jonathan Hester

ISO



Resample at the next service interval to monitor. All component wear rates are normal. There is a high 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 suitable for further service.

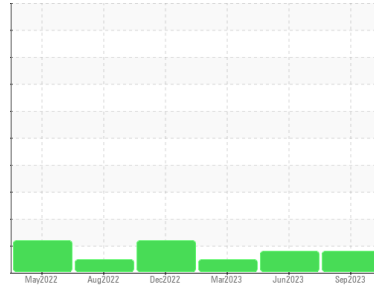
view report





# OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Machine Id  
**BUSCH VP-3A (S/N 5593581)**

Component  
**Vacuum Pump**

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

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

There is a moderate amount of silt (particulates < 14 microns in size) present in the oil.

### 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>USPM29763</b>   | USPM27148   | USPM27571   |
| Sample Date   | Client Info | <b>23 Sep 2023</b> | 25 Jun 2023 | 13 Mar 2023 |
| Machine Age   | hrs         | Client Info        | 0           | 0           |
| Oil Age       | hrs         | Client Info        | 0           | 0           |
| Oil Changed   | Client Info | <b>N/A</b>         | N/A         | N/A         |
| Sample Status |             | <b>ATTENTION</b>   | ATTENTION   | NORMAL      |

## WEAR METALS

| method   | limit/base | current         | history1     | history2 |    |
|----------|------------|-----------------|--------------|----------|----|
| Iron     | ppm        | ASTM D5185m >20 | <b>2</b>     | 0        | 0  |
| Chromium | ppm        | ASTM D5185m >20 | <b>0</b>     | 0        | 0  |
| Nickel   | ppm        | ASTM D5185m >20 | <b>0</b>     | <1       | 0  |
| Titanium | ppm        | ASTM D5185m     | <b>&lt;1</b> | 0        | <1 |
| Silver   | ppm        | ASTM D5185m     | <b>0</b>     | 0        | 0  |
| Aluminum | ppm        | ASTM D5185m >20 | <b>3</b>     | 0        | 0  |
| Lead     | ppm        | ASTM D5185m >20 | <b>0</b>     | <1       | 0  |
| Copper   | ppm        | ASTM D5185m >20 | <b>&lt;1</b> | 4        | 0  |
| Tin      | ppm        | ASTM D5185m >20 | <b>&lt;1</b> | 0        | 0  |
| Vanadium | ppm        | ASTM D5185m     | <b>&lt;1</b> | 0        | <1 |
| Cadmium  | ppm        | ASTM D5185m     | <b>&lt;1</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        | <1  |
| Manganese  | ppm        | ASTM D5185m      | <b>&lt;1</b> | 0        | <1  |
| Magnesium  | ppm        | ASTM D5185m 0    | <b>&lt;1</b> | 0        | 0   |
| Calcium    | ppm        | ASTM D5185m 0    | <b>&lt;1</b> | 0        | 0   |
| Phosphorus | ppm        | ASTM D5185m 1800 | <b>679</b>   | 714      | 763 |
| Zinc       | ppm        | ASTM D5185m 0    | <b>0</b>     | 0        | 2   |
| Sulfur     | ppm        | ASTM D5185m 0    | <b>107</b>   | 111      | 0   |

## CONTAMINANTS

| method    | limit/base | current          | history1     | history2 |       |
|-----------|------------|------------------|--------------|----------|-------|
| Silicon   | ppm        | ASTM D5185m >15  | <b>2</b>     | 2        | 2     |
| Sodium    | ppm        | ASTM D5185m      | <b>0</b>     | 0        | 0     |
| Potassium | ppm        | ASTM D5185m >20  | <b>2</b>     | <1       | 0     |
| Water     | %          | ASTM D6304 >.1   | <b>0.049</b> | 0.068    | 0.031 |
| ppm Water | ppm        | ASTM D6304 >1000 | <b>490.6</b> | 689.9    | 316.4 |

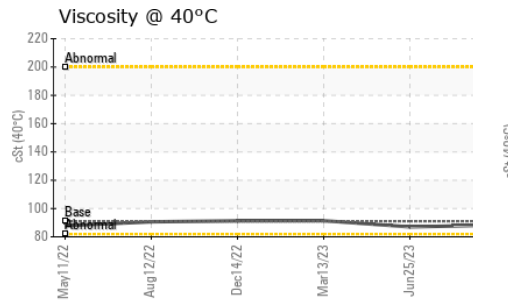
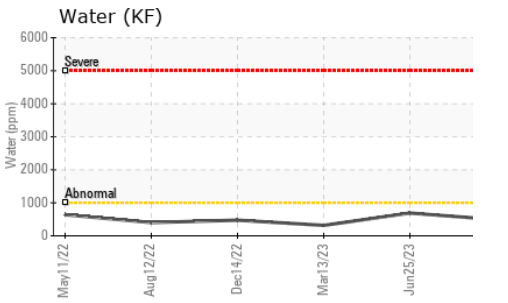
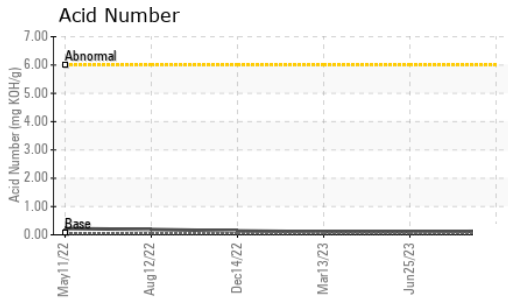
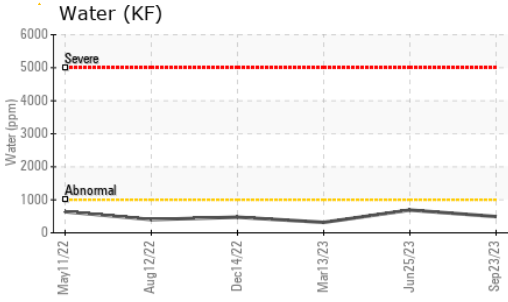
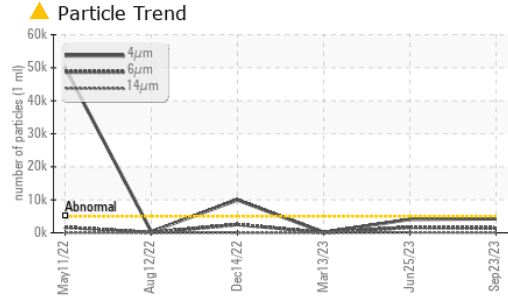
## FLUID CLEANLINESS

| method          | limit/base             | current           | history1   | history2 |
|-----------------|------------------------|-------------------|------------|----------|
| Particles >4µm  | ASTM D7647 >5000       | <b>4249</b>       | 4086       | 113      |
| Particles >6µm  | ASTM D7647 >1300       | <b>▲ 1407</b>     | ▲ 1673     | 33       |
| Particles >14µm | ASTM D7647 >160        | <b>65</b>         | 110        | 4        |
| Particles >21µm | ASTM D7647 >40         | <b>8</b>          | 11         | 2        |
| Particles >38µm | ASTM D7647 >10         | <b>1</b>          | 1          | 1        |
| Particles >71µm | ASTM D7647 >3          | <b>1</b>          | 0          | 1        |
| Oil Cleanliness | ISO 4406 (c) >19/17/14 | <b>▲ 19/18/13</b> | ▲ 19/18/14 | 14/12/9  |

## FLUID DEGRADATION

| method           | limit/base | current         | history1    | history2 |      |
|------------------|------------|-----------------|-------------|----------|------|
| Acid Number (AN) | mg KOH/g   | ASTM D8045 0.05 | <b>0.13</b> | 0.11     | 0.11 |

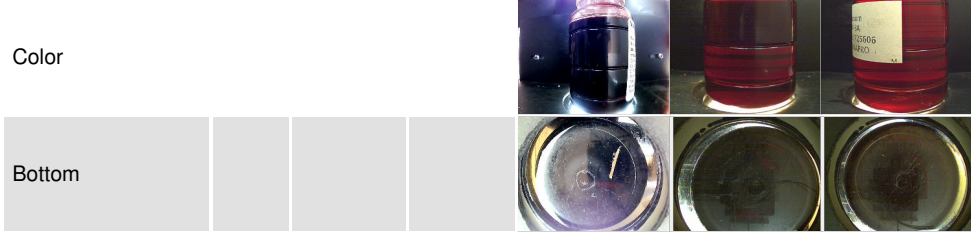
# OIL ANALYSIS REPORT



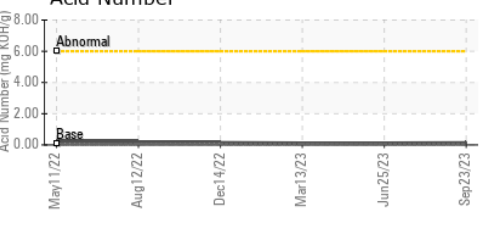
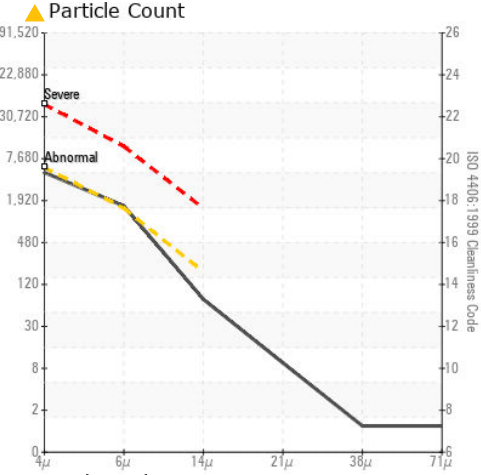
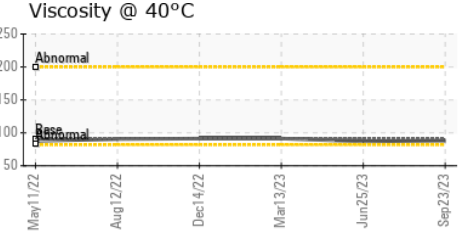
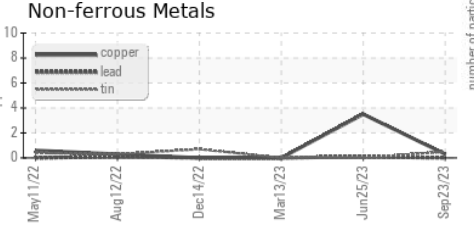
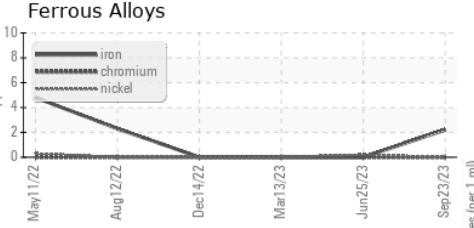
| VISUAL           | method | limit/base | current | history1     | history2 |
|------------------|--------|------------|---------|--------------|----------|
| White Metal      | scalar | *Visual    | NONE    | <b>LIGHT</b> | NONE     |
| Yellow Metal     | scalar | *Visual    | NONE    | <b>NONE</b>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

| FLUID PROPERTIES | method | limit/base   | current     | history1 | history2 |
|------------------|--------|--------------|-------------|----------|----------|
| Visc @ 40°C      | cSt    | ASTM D445 91 | <b>88.3</b> | 87.0     | 91.4     |

### SAMPLE IMAGES



### GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : USPM29763 **Received** : 26 Sep 2023  
**Lab Number** : 05961797 **Diagnosed** : 27 Sep 2023  
**Unique Number** : 10668348 **Diagnostician** : Doug Bogart  
**Test Package** : IND 2

**TYSON -AMARILLO-PRO**  
 AMARILLO, TX  
 US  
 Contact: SERVICE MANAGER

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)