



## Mechanical Seal Analysis (MSA)

<b>Date</b>	07/23/20	<b>Pump Position</b>	207C
<b>MSA #</b>	2020-038	<b>Seal Manufacturer</b>	FSI
<b>Inquiry #</b>	I-20-0080	<b>Seal Model</b>	MS1030SP0052-2318
<b>Customer</b>	Anchor Seals	<b>Shaft Size</b>	3.25"
<b>Customer Ref #</b>	2190304	<b>Drawing #</b>	FSI-2318
<b>End User</b>	USS Clairton Works	<b>Seal Serial #</b>	DI-100
<b>Pump House</b>	TEC	<b>Inboard Rotary Material</b>	Silicon Carbide
<b>Contact</b>	Jason DiBiase	<b>Inboard Stationary Material</b>	Carbon
<b>Phone</b>	412-299-6900	<b>Outboard Rotary Material</b>	-
<b>Salesperson</b>	House	<b>Outboard Stationary Material</b>	-
		<b>Elastomers</b>	Viton

### General Seal Condition

Seal was returned assembled.



## Figure 1: Seal Assembly

Both flush ports were found to be clear.



## Figure 2 & 3: Flush Port

## Seal Face Conditions

The Carbon stationary face was coated in product. Once cleaned it showed a concentric wear pattern including slight scratches on the sealing face.



## Figure 4: Stationary Face

The silicon carbide rotary face was coated in product and cracked near one of the drive

pins.



**Figure 5: Rotary Face**

### **Elastomers**

All O-rings were in fair condition for sealing purposes.



**Figure 6: O-rings**

**Metal Components, Springs, Pins**

All metal parts are in good working condition.





**Figure 7: Metal Components**

The springs flexed freely upon removal.



**Figure 8: Springs**

### **Failure Explanation/Recommendation**

**Failure Explanation:** It appears that this seal failed due to the crack in the rotary face. Due to the location of the crack in the face this would have resulted from a potential hard start during this seals run life.

**Recommendation:** Replace this seal with the FSI seal currently specified for this pump location.

**Additional Note:**