



underwater screening services

# Advanced Engineering Report : AER477A

1015 Wyoming Ave. Forty-Fort, PA. 18704 PHONES: 888-219-DIVE (3483) FAX (570) 718-0762

Visit our website: [www.uwscreening.com](http://www.uwscreening.com)

## Sluice Gate - 2000 series

### Select Sluice Gate Type

Rodney Hunt	Waterman	Caldwell Willcox	Crane	Armco X	Record	Chapman
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Customer Name: New Jersey Water Supply Authority  
 Address: South Bound Brook Lock  
 City, State: South Bound Brook, New Jersey  
 Zip Code: 08880  
 Dive Job Reference No.: 13681  
 Inspection Date & Gate No.: March 22<sup>nd</sup>, 2022  
Gate # 1 or "Roadside"

Field Code Only!	
Code	Description
G	Good
F	Fair
R	Replace
R/A	Repair or Replace as Required

Field Code Only!

### Site Observations: Circle & Fill In Requested Information

Overhead Crane	Yes No	Tonnage:	Hook Height:	Hook Travel:
Hole In Roof	Yes No	Overhead Obstructions:		
General Arrangement Available During Inspection	Yes No	Client to Mail Drawings: Yes No		
Photos Taken	Operator Assembly	Obstructions	Damaged Components	Access

### Unit Specifications (use back of page as required)

Overall Depth of Basin: 15'- 00" (approx.)	Overall Water Depth : 08'-00" (approx..)	
Height of Operator: 34"	Operator Construction: Cast Steel	Operator Drive: Hand
Operating Stem dia.: 2.50"	Operating Stem Construction: A36	Operating Stem Threads: Acme 4/1
Sluice Gate Size: 36" x 48"	Sluice Gate Construction: Cast Iron	Wall Thimble or Glyda-seal Mounted

\*\*\*\*\*Please List All Quantities Inspected\*\*\*\*\*



"Marine Utility Equipment Supply and Service Company"™

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**UW Screening Services**  
 1015 Wyoming Avenue  
 Forty-Fort, PA. 18704

**Advanced Engineering Report AER477A**

Specification: 2.2-2.1.0

**Revision 05-2001**  
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**Sluice Gate - 2000 series**

**ELECTRIC DRIVEN OPERATOR SPECIFICATION**

MANUFACTURER:

UNIT:

RATIO:  
 OUTPUT RPM (APPROX.) :

**MOTOR SPECIFICATION**

MANUFACTURER:

OR APPROVED  
 EQUIVALENT:

HORSEPOWER:

FRAME:

RPM:

EFFICIENCY:

STANDARD

VOLTAGE:

MINIMUM GUARANTEED EFF

FREQUENCY:

50 HERTZ

ENERGY EFFICIENCY

PHASE:  SINGLE  THREE

MOUNTING:

FOOTLESS

60 HERTZ

C- FACE FOOTLESS

ENCLOSURE:

ODP

TOTALLY ENCLOSED

TEFC

SEVER DUTY

EXPLOSION PROOF: CLASS    GROUP    DIV.

TENV

INSULATION (MIN.):

A

B

F

H

B (STANDARD)

C

D

NEMA DESIGN:

SERVICE FACTOR:

1

1.15

OTHER: \

CONDUIT BOX SIZE:

STANDARD: \

OVERSIZE:

REMARKS:

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**UNDERWATER SCREENING SERVICES, LLC****Advanced Engineering Report**

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Total Qty.	Series Number	Part Description	Dimensional Characteristics	Code Number First Inspection	Comments
1	2007	Safety Stop Collar		F	
	2006	Stem Cover Indicator			
	2010	Dial Position Indicator			
	2012	Pedestal		F	
	2013	Mechanical Seal			
	2011	Tapered Roller Bearing			
1	2009	Hand Crank			
	2027	Needle Bearing & Oil Seal			
1	2007	Cut Spur Gear		R/A	
1	2006	Bevel Gear		R/A	
1	2010	Lubrication Fittings		R/A	
	2012	Bronze Thrust Nut			
1	2013	Threaded Stem (1)	12'-10" total length	R/A	Corroded
	2011	Hoisting Stem (2)			
	2009	Hoisting Stem (3)			
	2027	Hoisting Stem (4)			
	2016	Hoisting Stem (5)			
	2086	Wall Brackets			
		Stem Guide "Solid"			
	2017	Stem Guide "Split"			
	2086	Babbitt Bushing			
		Bronze Bushing			
	2032	Stem Coupler "Pinned"			
		Stem Coupler "threaded and Keyed"			
1	2485	Gate Disc	Width: 39 1/4" Length: 51 1/4"	R/A	
1	2041	Wall Thimble	Cast Iron	R/A	
2		Gate Guides	Cast Iron	R/A	
4		Bronze Seals	Top: Sides: Bottom:	R/A	(Not inspected)
2	2002	Top Adjustment Wedges	Cast Bronze	R/A	
4	2003	LH Adjustment Wedges	Cast Bronze	R/A	
4	2641	RH Adjustment Wedges	Cast Bronze	R	Top wedge is misaligned & middle two wedges broke off
2	2040	Bottom Adjustment Wedges	Cast Bronze	R/A	
1		Bronze Thrust Nut	Cast Bronze	R/A	
1		Thrust Nut Bolt		R/A	

## Field Code Descriptio

G-Good F-Fair R-Replace R/A-Repair or Replace as Required



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### Notes Section

#### Sluice Gate - 2000 series

Note/Code	Recommended Action
9.1	<p><b><u>CONCLUSION &amp; RECOMMENDATIONS:</u></b></p> <ol style="list-style-type: none"> <li>1) The <b>"REPLACE"</b> designation denotes major/serious material loss in excess of 30% on wear surfaces &amp; structural members. Failure to replace the components itemized will result in unit down time.</li> <li>2) The designation "FAIR" refers to component material loss of less than 30% on wear surfaces &amp; structural members. The unit must be re-inspected regularly within (12) twelve months to evaluate the progression of wear and replace parts as required.</li> <li>3) The items listed as <b>"GOOD"</b> are to be re-inspected regularly within (18) eighteen months to (24) twenty-four months.</li> <li>4) The items denoted by "N/A" indicates that no evaluation was possible based on the part not physically being on the unit.</li> </ol> <p><b><u>SUMMATION:</u></b></p>
	<b>Notes</b>
9.2	<i>The overall condition is fair to poor; the gate wedges (on the right side) are misaligned or have broken off and are missing. Adjustment of this gate is not possible currently due to the missing wedges. The guide portion of the wedge assembly (located in the disc guide frame) must also be replaced; this will mean the bolts/anchors holding the frame and guides must be removed and the repair is typically done dry.</i>
9.3	
9.4	
9.5	

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### Raw Water Intake Summary

#### Sluice Gate - 2000 series

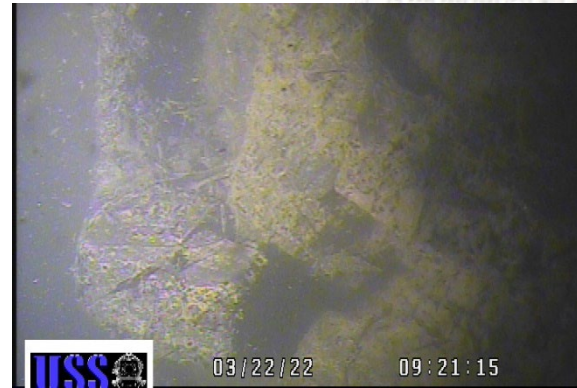
*Our diver did not observe a significant amount of accumulated silt or debris that would hinder the gates operation.*



MAR 31 2005



Stem



Guide and wedge



Thrust nut



Condition of bulkhead downstream of gate

MAR 31 2005