



Washington State  
Department of Transportation  
Bridge Preservation Dive Team

UNDERWATER INSPECTION REPORT FOR  
MCNEIL IS. STILL HARBOR DOCK

BRIDGE NO. DOC-6

STRUCTURE ID 00200441



Prepared For WA State Dept. of Corrections (DOC)

Inspection Date April 27, 2021

Lead Inspector/Diver Richard M. Pawelka  
Cert. # G1215

Inspector/Diver James R. W. Harding



Status: Released

Printed On: 7/22/2021

Agency: Other State Agencies

CD Guid: 5208fe21-e016-4495-96f1-98d4c3a17d2d

CD Date: 6/29/2021

Program Mgr: Evan M Grimm

UNDERWATER INSPECTION REPORT  
FOR THE  
MCNEIL IS. STILL HARBOR DOCK

BRIDGE NO. DOC-6  
STRUCTURE ID 00200441

EXECUTIVE SUMMARY

The WSDOT Bridge Preservation Dive Team performed an underwater inspection of the subject facility on April 27, 2017. A total of 37 steel pipe piles were inspected by diving. The concrete pontoon exteriors were given a cursory swim-by inspection.

In general, the steel pipe piles that position the floating docks (spud piles) are in poor condition. The zinc paint coating on the piles is failing in large areas from the splash zone down to mudline. Missing areas of coating have exposed the steel substrate which now has large areas of surface corrosion and section loss. The overall pitting of the metal made it difficult to obtain accurate thickness readings with the ultrasonic thickness meter. Some pits are to full thickness and plans indicate a 0.5" nominal wall thickness. Twenty-one of the thirty-seven steel spud piles (56%) have holes in them. Thirteen of those piles' holes were caused by constant mechanical abrasion of several UHMW "log" booms tethered to the piles. Eleven of those piles may have enough damage to threaten performance during extreme events. These holes have increased in size and number since the previous underwater inspection. The concrete floating pontoons had thick marine growth covering nearly 100% of the surface area. Spot cleaning revealed no defects.

Repair or replace steel spud/guide piles that are rated as Condition State 4 with multiple and large holes. REPAIR #10003.

Recommend retaining the 48-month frequency for underwater inspections.



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<b>Inspector</b>	Richard M. Pawelka	<b>Date</b>	4/27/2021
<b>Bridge No.</b>	DOC-6	<b>Bridge Name</b>	MCNEIL IS. STILL HARBOR DOCK
<b>Bridge Type</b>		<b>Waterway Name</b>	STILL HARBOR (P. SOUND)
<b>Dive Objective</b>	Inspect submerged structural elements and assess scour.		

Diving Operation

Type of Operation  SCUBA  Surface Supplied Air  Snorkel  ROV  Other \_\_\_\_\_

**Equipment**

**Suit** Dry suit

**Air Supply** Not Applicable

**Site Access** 26' Munson launched from Zittel's Marina, Olympia

**Inspection Tools** Hammer

Conditions

**Water**  Salt  Fresh  Brackish Temperature 49 °F Visibility 2+ ft

**Surface**  Calm  Choppy  Rough

**Tide**  High  Low  Flood  Ebb  N/A

**Current**  Fast  Moderate  Slow Velocity 0 ft/sec

**Weather**  Clear  Cloudy  Overcast  Rain  Windy Air Temp 57 °F

Diver Checks

- First Aid Equipment on Site
- Physical Condition of Diver(s) Checked
- Communication for EMS
- Communications for Diver(s) Checked
- Dive Gear Inspected
- Team Briefed and Understands Dive Plan
- Air Source Checked
- Special Site Hazards Noted
- Pre-Activity Safety Plan Reviewed
- Line-Tending Procedures Reviewed
- Covid-19 Protocol \_\_\_\_\_
- \_\_\_\_\_

Dive Plan and Dive Team Procedures

Assess site conditions and determine type of dive operation. Hold on-site pre-dive safety meeting to discuss and plan dive operation, determine roles and responsibilities, review emergency procedures, and check physical condition of diver(s). Assemble and check dive gear. Check communication for diver(s). After completion of dive, review notes, check condition of diver(s), take soundings and photos as required.



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## Dive Schedule

Dive No.	Entry Time	Exit Time	Total Time in Water	Maximum Depth	Remarks
1	13:30:00	13:40:00	00:10:00	2 *fsw	JRWH Wade Piles 1 and 2

## Dive Narrative

The WSDOT Bridge Preservation Dive Team and two Routine inspectors arrived at the Still Harbor Dock at 13:00 after concluding their inspection of the McNeil Island Mooring Float (DOC-3). The boat was moored to the t-dock. The team discussed the pre-activity safety plan (PASP) with Covid-19 protocol. The McNeil Island Still Harbor Trestle (DOC-7) piles were given a routine inspection with the assistance of a dive team member, James Harding. Richard and Darren looked at the piling from the surface. The visible spud pile holes behind the UHMW log boom were noted and photos were taken. James was then able to wade to Piles 1 and 2 and inspect them. He verbally called out notes to Richard. It was decided that an underwater inspection the next day during higher tide would be better for inspecting the damage to the piling while clear of the UHMW log booms. The team disembarked at 13:45.

\*fsw = feet sea water

## Dive Team Members

James R.W. Harding (JRWH), P.E.

(Name)

Wading Inspector

(Role)

Richard M. Pawelka (RMP), P.E.

(Name)

DPIC / Notes

(Role)

Darren O. Nebergall (DON), P.E.

(Name)

Standby

(Role)



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<b>Bridge No.</b>	DOC-6	<b>Bridge Name</b>	MCNEIL IS. STILL HARBOR DOCK
<b>Bridge Type</b>		<b>Waterway Name</b>	STILL HARBOR (P. SOUND)
<b>Dive Objective</b>	Inspect submerged structural elements and assess scour.		

### Diving Operation

Type of Operation  SCUBA  Surface Supplied Air  Snorkel  ROV  Other \_\_\_\_\_

**Equipment**

<b>Suit</b>	<u>Dry suit</u>
<b>Air Supply</b>	<u>Surface Supplied</u>
<b>Site Access</b>	<u>26' Munson launched from Zittel's Marina</u>
<b>Inspection Tools</b>	<u>GoPro, Light, Hammer, D-meter</u>

### Conditions

**Water**  Salt  Fresh  Brackish    Temperature 49 °F    Visibility 5-10 ft

**Surface**  Calm  Choppy  Rough

**Tide**  High  Low  Flood  Ebb  N/A

**Current**  Fast  Moderate  Slow    Velocity < 0.5 ft/sec

**Weather**  Clear  Cloudy  Overcast  Rain  Windy    Air Temp 60 °F

### Diver Checks

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> First Aid Equipment on Site       | <input checked="" type="checkbox"/> Physical Condition of Diver(s) Checked |
| <input checked="" type="checkbox"/> Communication for EMS             | <input checked="" type="checkbox"/> Communications for Diver(s) Checked    |
| <input checked="" type="checkbox"/> Dive Gear Inspected               | <input checked="" type="checkbox"/> Team Briefed and Understands Dive Plan |
| <input checked="" type="checkbox"/> Air Source Checked                | <input checked="" type="checkbox"/> Special Site Hazards Noted             |
| <input checked="" type="checkbox"/> Pre-Activity Safety Plan Reviewed | <input checked="" type="checkbox"/> Line-Tending Procedures Reviewed       |
| <input checked="" type="checkbox"/> Covid-19 Protocol _____           | <input type="checkbox"/> _____   |

### Dive Plan and Dive Team Procedures

Assess site conditions and determine type of dive operation. Hold on-site pre-dive safety meeting to discuss and plan dive operation, determine roles and responsibilities, review emergency procedures, and check physical condition of diver(s). Assemble and check dive gear. Check communication for diver(s). After completion of dive, review notes, check condition of diver(s), take soundings and photos as required.



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## Dive Schedule

Dive No.	Entry Time	Exit Time	Total Time in Water	Maximum Depth	Remarks
1	08:56:00	10:42:00	01:46:00	21 *fsw	Spud Piles A through Y and pontoons
2	10:59:00	11:22:00	00:23:00	11 *fsw	Spud Piles 3 through 12 and pontoons

## Dive Narrative

The WSDOT Bridge Preservation Dive Team and two Routine inspectors arrived at the Still Harbor Dock at 08:45. The boat was moored to the t-dock on the inside right side. The team discussed the pre-activity safety plan (PASP) with Covid-19 protocol. A surface supplied air dive operation was chosen. The diver, James Harding, assembled and donned his gear as Richard, the DPIC and note-taker, checked him off. Darren, the standby diver and tender helped James get his gear on. Once James was ready and his comms were checked he splashed and swam to spud Pile A. He turned on his head-mounted GoPro camera.

1. James submerged at spud Pile A. He descended on the 12:00 offshore side to the mudline and ascended the 6:00 onshore side. He moved to the next pile while checking the underside of the pontoon and continued the inspection in the same manner. He called out defects and locations via hardwire comms to the surface team. He finished at spud Pile Y, ascended, and was recovered to the boat. His physical condition was checked and the team took a quick break.

Diver /Air In/Air Out(psig)  
JRWH/1750/1100

After James re-donned his gear and was re-checked. His GoPro was turned on and he splashed. He swam to spud Pile 3.

2. James descended down spud Pile 3 and performed the inspection in the same manner as before concluding at spud Pile 12. James ascended and was recovered to the boat. His physical condition was checked, notes were reviewed, the GoPro camera was checked, and a post dive safety meeting ensued.

Diver /Air In/Air Out(psig)  
JRWH/1150/1050

The team concluded their inspection and disembarked at 11:30.

\*fsw = feet sea water

## Dive Team Members

James R.W. Harding (JRWH), P.E.

(Name)

Diver

(Role)

Richard M. Pawelka (RMP), P.E.

(Name)

DPIC / Notes / Comms

(Role)

Darren O. Nebergall (DON), P.E.

(Name)

Standby Diver / Tender

(Role)



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<b>Bridge No.</b>	DOC-6	<b>Bridge Name</b>	MCNEIL IS. STILL HARBOR DOCK		
<b>Bridge Type</b>		<b>Waterway Name</b>	STILL HARBOR (P. SOUND)		
<b>Substructure</b>	Steel Pipe Piles	<b>Foundation</b>	Steel Pipe Piles		
<b>No. Spans</b>	1	<b>No. Piers Dived</b>	2	<b>Inspection Hours</b>	3.0

5	<input checked="" type="checkbox"/> Substructure Condition (1676)	8	<input type="checkbox"/> Chan/Protection (1677)	T	<input type="checkbox"/> Scour Code (1680)
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BMS Elements							
Element	Element Description	Total	Units	State 1	State 2	State 3	State 4
8361	Scour	2	EA	2	0	0	0
8701	Ferry Concrete Floating Pontoon	42	CELL	35	7	0	0
8902	Protective Coating - Piling	7400	SF	6525	200	675	0
8910	Safety Access Ladders	2	EA	2	0	0	0

Notes	
0	<p><b>ORIENTATION:</b> The McNeil Island Still Harbor Dock includes the concrete floats, gangplank, and the steel spud piles. For location reference: Offshore is north, shore is south, left side is west, and right side is east. Defects on piles are called out in clock direction where 6:00 is facing onshore and 12:00 is offshore. See the attached Layout drawing for reference and Pile Inspection Data spreadsheet for additional findings.</p>
1676	<p><b>SUBSTRUCTURE:</b> Substructure coded to '4' due to holes in more than half of the steel piling.</p>
1677	<p><b>CHANNEL:</b> This structure abuts another structure and does not connect to the shoreline directly. No bank issues noted. No restrictions to water flow past the structure.</p>
1680	<p><b>SCOUR:</b> Structure is in tidal waters with weak and variable tidal currents. Scour code set to "T - tidal" and is considered a low risk for scour. See Note 8361.</p>
8361	<p><b>SCOUR (Field):</b> There are two lines of spud/guide piles, 1 - 12 and A - Y. Assume each line is a bent or pier.</p> <p>Underwater Inspection Findings: Water flow in the vicinity is tidal. No scour patterns or scour countermeasures were observed.</p> <p>See attached Layout drawing for details.</p>



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<b>Bridge Type</b>		<b>Waterway Name</b>	STILL HARBOR (P. SOUND)		
<b>Substructure</b>	Steel Pipe Piles	<b>Foundation</b>	Steel Pipe Piles		
<b>No. Spans</b>	1	<b>No. Piers Dived</b>	2	<b>Inspection Hours</b>	3.0

### Notes (Continued)

8701 CONCRETE FLOATING PONTOON:  
 A repair to the pontoon timber walers tying the adjoining floats together was done in 2016 - 2017. Prior to the repair, the listing of the pontoon segments indicates the pontoon polystyrene has degraded and taken on water through the waler bolt holes. There is a serviceability issue which may reappear after a significant storm from the north. 2019 inspection found the dock lists downward 4" from Panel C to the end of Panel A (Photo #29). At the M-N joint shore side, the boat tie off cleat is bolted only to the timber walers (Photo #30). Seven of the dock segments have been repaired since the 2013 inspection (CS 2).

Underwater Inspection Findings:  
 The submerged surfaces of the pontoons are covered in heavy marine growth, making a detailed inspection very difficult. Spot cleaning revealed no defects (Photo #UW-1).

See attached Layout drawing for locations and details.

8902 INORGANIC ZINC VINYL PAINT:  
 Many of the spud piles have rust blisters and seam rust (photo #3).

Underwater Inspection Findings:  
 Much of the spud pile coating has failed underwater. Pile metal substrate is exposed between 10% and 50% of the pile surface area underwater, see Element 8703 Photos #UW-2 and #UW-8 for typical underwater coating condition.

8910 SAFETY ACCESS LADDERS:  
 There is a ladder attached to each end of the t-dock (Photo UW-25).

See attached Layout drawing for locations of ladders.

### Repairs

Repair No	Pr	R	Repair Description	BMS	Noted	Maint	Verified
10003	1	B	Repair or replace steel spud/guide Piles A, D, E, F, J, L, O, P, V, W, and Y. These piles have multiple and/or larger holes that may be detrimental to performance during an extreme weather event.	8703	4/27/2021		

### Inspections Performed and Resources Required

Report Type	Date	Freq	Hrs	Insp	CertNo	Coinsp	Note		
Underwater	4/27/2021	48	3.0	RMP	G1215	JRWH	Underwater inspection by WSDOT Dive Team. Frequency set at 48 months to correspond with every-other routine inspection. (Set values for codes 1232, 1533, 1538 & 1541 in an effort to populate blank fields in the UW Report - NAF)		
Resources	Hours	Min	Pref	Max	Freq	Date	Need Date	Override	Notes



# Underwater Inspection Report

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<b>Bridge No.</b>	DOC-6	<b>Bridge Name</b>	MCNEIL IS. STILL HARBOR DOCK		
<b>Bridge Type</b>		<b>Waterway Name</b>	STILL HARBOR (P. SOUND)		
<b>Substructure</b>	Steel Pipe Piles	<b>Foundation</b>	Steel Pipe Piles		
<b>No. Spans</b>	1	<b>No. Piers Dived</b>	2	<b>Inspection Hours</b>	3.0

Boat	M	M	M							Used 26' Munson boat for access during 2021 inspections. Launched from Zittel's Marina. POV parking was \$10 each. Truck and boat trailer \$20. 15 minute boat ride on glass.
Third Party Notification										Schedule inspection with Greg Buikema, Marine Operations Supervisor of McNeil Island, at Office: (253)588-5281 (ext. 0016) and/or Cell: (253)328-3229 and/or Email: gabuikema@doc1.wa.gov
<b>Primary Safety</b>	4/8/2019	24	1.5	JHL	D2016	CRT				
<b>Resources</b>	<b>Hours</b>	<b>Min</b>	<b>Pref</b>	<b>Max</b>	<b>Freq Date</b>	<b>Need Date</b>	<b>Override</b>	<b>Notes</b>		
Boat	1.00		D							
Third Party Notification										Schedule inspection with Greg Buikema (DOC) 253-328-3229 or 253-588-5281 (cell). A security clearance must be done for all inspectors prior to landing on the island. This can be done via Greg, provide full name, SS#, and date of birth (DOB).

**BRIDGE INSPECTION REPORT**

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**Br. No.** DOC-6

**SID** 00200441

**Br. Name** MCNEIL IS. STILL HARBOR DOCK

**Carrying**

**Route On**

**Mile Post**

**Intersecting** STILL HARBOR (P. SOUND)

**Route Under**

**Mile Post**

**SI-29**

8701 Ferry Concrete Floating Pontoon

Photo Type: G - General

Orientation: Sea

Date: 4/8/2019

Repairs:

Dock lists 4" down from Panel C to the end of Panel A.



**SI-30**

8701 Ferry Concrete Floating Pontoon

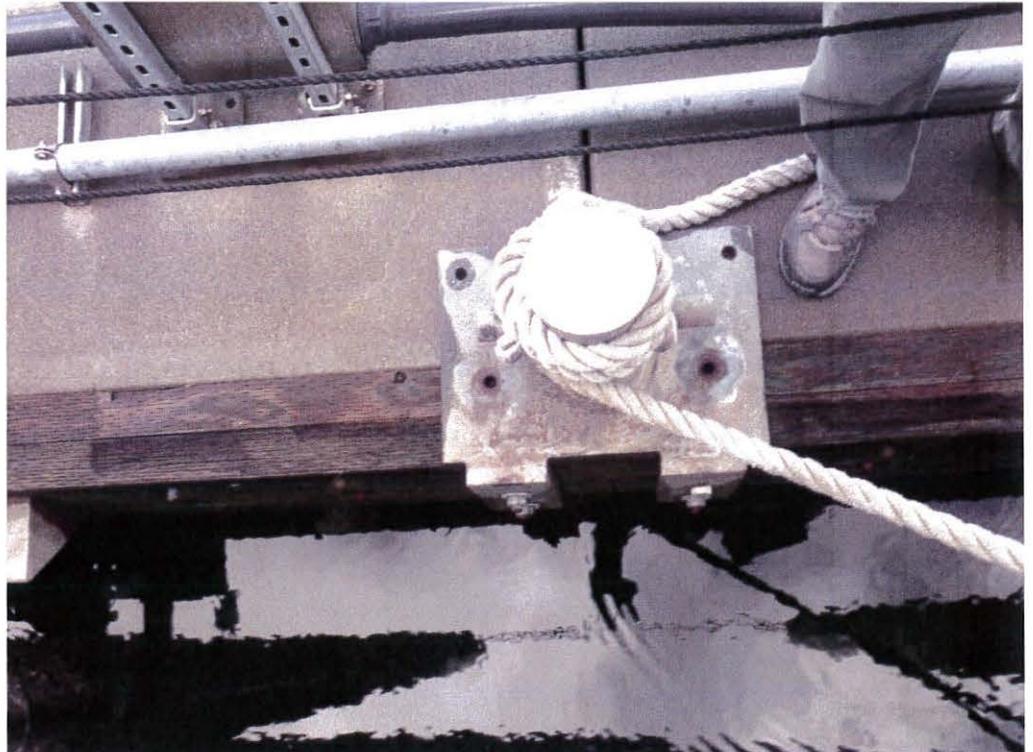
Photo Type: G - General

Orientation: DN

Date: 4/8/2019

Repairs:

At the M-N joint shore side, the boat tie off cleat is bolted only to the timber walers.



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Br. Name MCNEIL IS. STILL HARBOR DOCK

Carrying

Route On

Mile Post

Intersecting STILL HARBOR (P. SOUND)

Route Under

Mile Post

UW-1

8701 Ferry Concrete Floating Pontoon

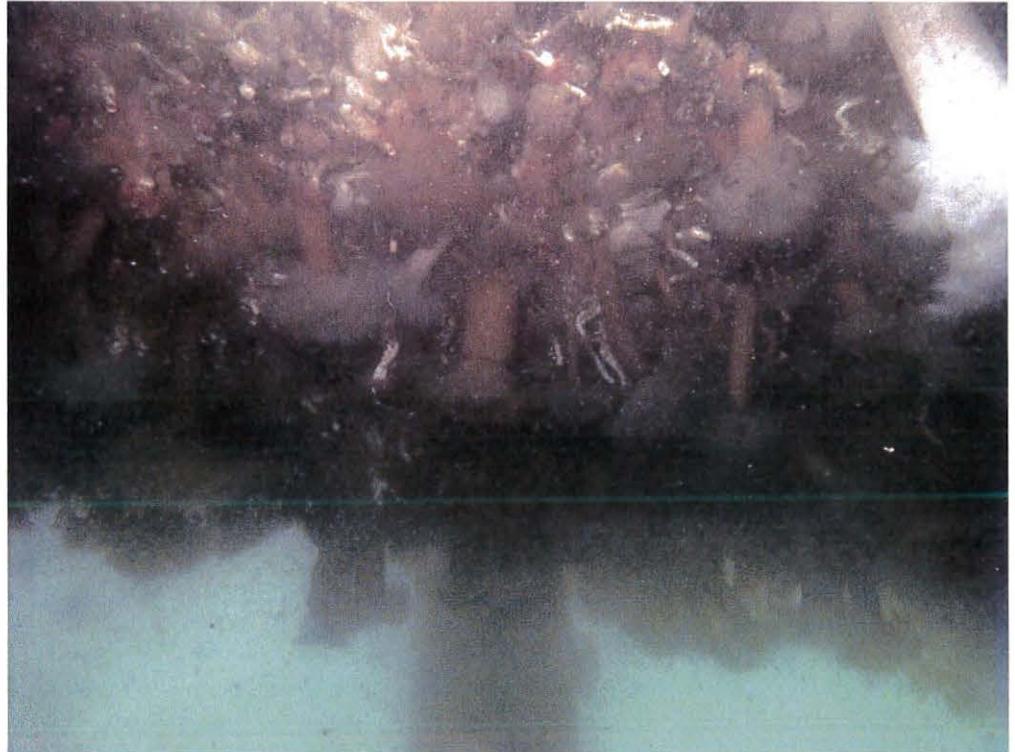
Photo Type: G - General

Orientation:

Date: 5/23/2013

Repairs:

Typical heavy marine growth on floating dock sections.



SI-27

8703 Spud Piling & Wells

Photo Type: G - General

Orientation:

Date: 4/26/2017

Repairs:

Spud pile rollers are all intact, some are bent from storm events.



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**Br. Name** MCNEIL IS. STILL HARBOR DOCK

**Carrying**

**Route On**

**Mile Post**

**Intersecting** STILL HARBOR (P. SOUND)

**Route Under**

**Mile Post**

## UW-2

8703 Spud Piling & Wells

Photo Type: M - Monitor

Orientation:

Date: 5/23/2013

Repairs:

T-dock Pile S; general coating failure and rusting with section loss. Typical of T-dock piles.



## UW-3

8703 Spud Piling & Wells

Photo Type: I - In Depth

Orientation:

Date: 4/27/2017

Repairs:

T-dock, Pile A: 18" H x 4" W hole from mechanical damage.



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<b>Carrying</b>		<b>Route On</b>	<b>Mile Post</b>
<b>Intersecting</b> STILL HARBOR (P. SOUND)		<b>Route Under</b>	<b>Mile Post</b>

**UW-4**

8703 Spud Piling & Wells

Photo Type: I - In Depth

Orientation:

Date: 5/23/2013

Repairs:

T-dock Pile J; 4" wide mechanical damage (flat spot). 2013 photo; compare to UW-5 for 2017 photo and UW-18 for 2021 photo to see progression.



**UW-5**

8703 Spud Piling & Wells

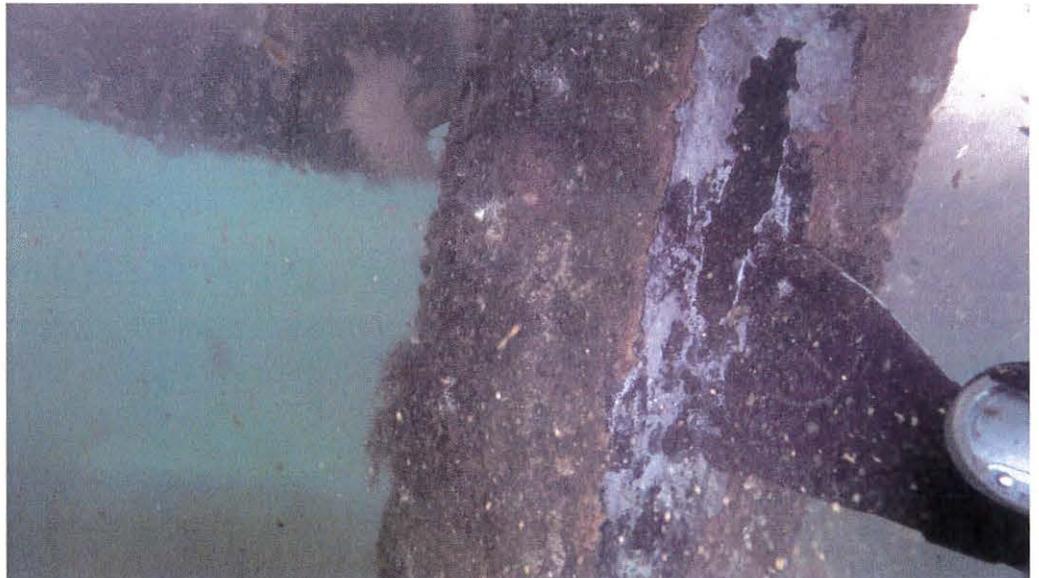
Photo Type: I - In Depth

Orientation:

Date: 4/27/2017

Repairs:

T-dock Pile J: 12" H x 2.5" W hole (was just a flat spot in 2013, see UW-4).



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<b>Carrying</b>		<b>Route On</b>	<b>Mile Post</b>
<b>Intersecting</b> STILL HARBOR (P. SOUND)		<b>Route Under</b>	<b>Mile Post</b>

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**UW-6**

8703 Spud Piling & Wells

Photo Type: I - In Depth

Orientation:

Date: 4/27/2017

Repairs:

T-dock Pile O: 18" H x 4" W (up to) hole from mechanical damage.



**UW-7**

8703 Spud Piling & Wells

Photo Type: I - In Depth

Orientation:

Date: 4/27/2017

Repairs:

T-dock Pile P: Large 3-ft. vertical hole from mechanical damage.



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<b>Carrying</b>		<b>Route On</b>	<b>Mile Post</b>
<b>Intersecting</b> STILL HARBOR (P. SOUND)		<b>Route Under</b>	<b>Mile Post</b>

**UW-10**

8703 Spud Piling & Wells

Photo Type: R - Repair

Orientation: Sea

Date: 4/27/2021

Repairs: 10003

Pile A has a 3"(W) x 36"(H) hole from mechanical abrasion of UHMW log boom.



**UW-11**

8703 Spud Piling & Wells

Photo Type: R - Repair

Orientation: Sea

Date: 4/27/2021

Repairs: 10003

Pile D has a 4"(W) x 36"(H) hole from mechanical abrasion of UHMW log boom.



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<b>Carrying</b>		<b>Route On</b>	<b>Mile Post</b>
<b>Intersecting</b> STILL HARBOR (P. SOUND)		<b>Route Under</b>	<b>Mile Post</b>

## UW-12

8703 Spud Piling & Wells

Photo Type: R - Repair

Orientation: Shore

Date: 4/27/2021

Repairs: 10003

Pile D has a 5"(W) x 2"(H) hole.



## UW-13

8703 Spud Piling & Wells

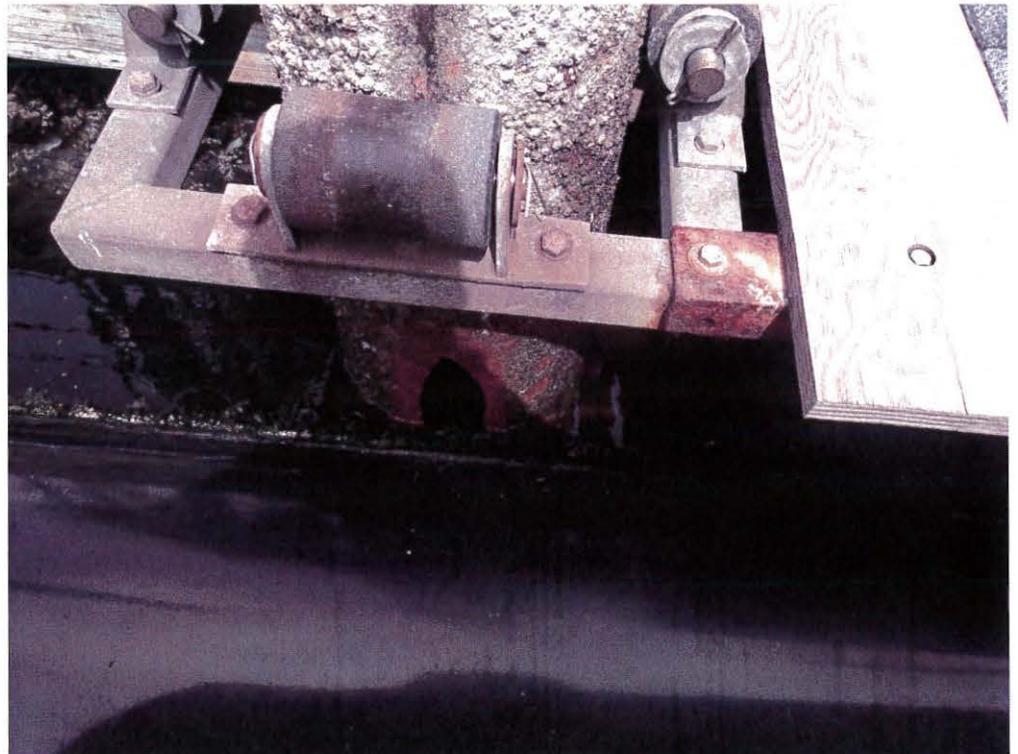
Photo Type: R - Repair

Orientation: DN

Date: 4/27/2021

Repairs: 10003

Pile E has a 2"(W) x 18"(H) hole from mechanical abrasion of log boom. Looking offshore during low tide.



BRIDGE INSPECTION REPORT

Status: Released

Printed On: 7/22/2021

Agency: Other State Agencies

CD Guid: 5208fe21-e016-4495-96f1-98d4c3a17d2d

Release Date: 6/29/2021

Program Mgr: Evan M Grimm

Br. No. DOC-6

SID 00200441

Br. Name MCNEIL IS. STILL HARBOR DOCK

Carrying

Route On

Mile Post

Intersecting STILL HARBOR (P. SOUND)

Route Under

Mile Post

UW-14

8703 Spud Piling & Wells

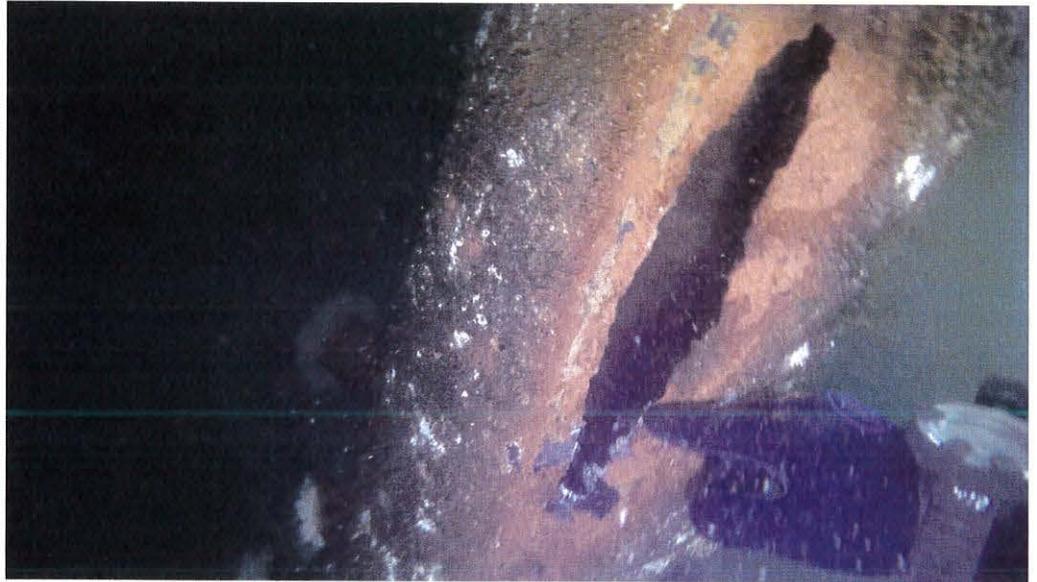
Photo Type: R - Repair

Orientation: Sea

Date: 4/27/2021

Repairs: 10003

Pile E has a 2"(W) x 18"(H) hole from mechanical abrasion of log boom looking offshore.



UW-15

8703 Spud Piling & Wells

Photo Type: R - Repair

Orientation: Shore

Date: 4/27/2021

Repairs: 10003

Pile E has 4-1/2"(W) x 1-1/2"(H) and 3-1/2"(W) x 3/4"(H) side-by-side holes looking inshore left.



BRIDGE INSPECTION REPORT

Status: Released

Printed On: 7/22/2021

Agency: Other State Agencies

CD Guid: 5208fe21-e016-4495-96f1-98d4c3a17d2d

Release Date: 6/29/2021

Program Mgr: Evan M Grimm

Br. No. DOC-6

SID 00200441

Br. Name MCNEIL IS. STILL HARBOR DOCK

Carrying

Route On

Mile Post

Intersecting STILL HARBOR (P. SOUND)

Route Under

Mile Post

UW-16

8703 Spud Piling & Wells

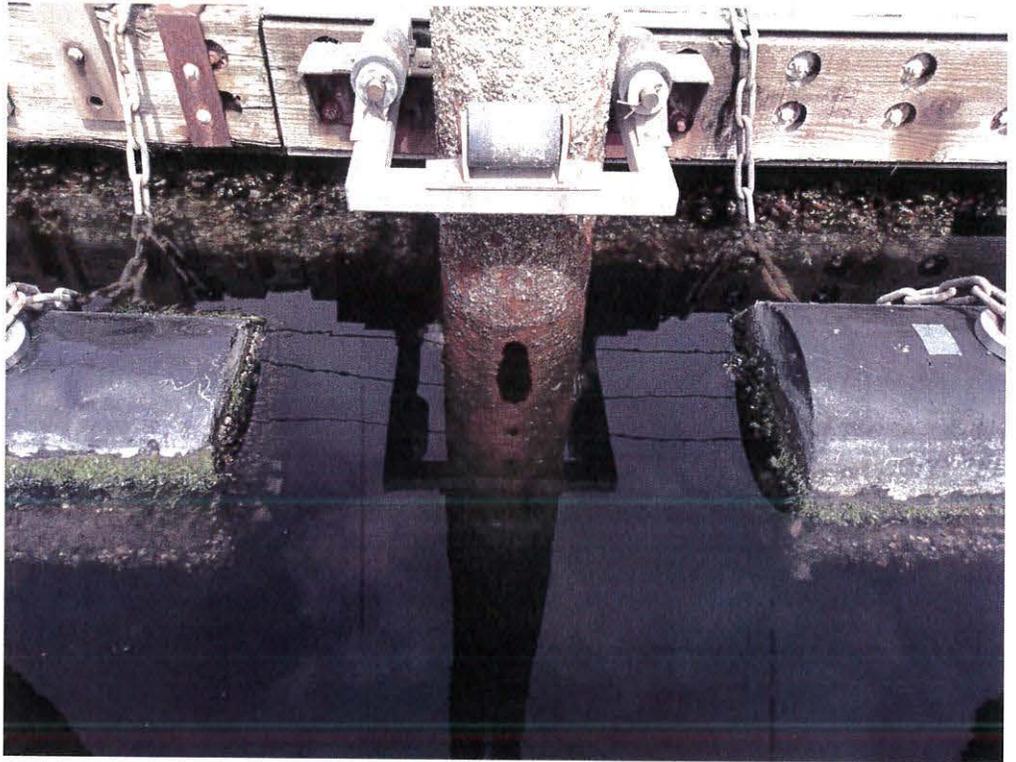
Photo Type: R - Repair

Orientation: Sea

Date: 4/27/2021

Repairs: 10003

Pile F has 3-1/2"(W) x 18"(H), 2"(W) x 2-1/2"(H), and 1-1/2"(W) x 3"(H) holes from mechanical abrasion of log boom at low tide.



UW-17

8703 Spud Piling & Wells

Photo Type: R - Repair

Orientation: DN

Date: 4/27/2021

Repairs: 10003

Pile F has 3-1/2"(W) x 18"(H), 2"(W) x 2-1/2"(H), and 1-1/2"(W) x 3"(H) holes from mechanical abrasion of log boom.



BRIDGE INSPECTION REPORT

Status: Released

Printed On: 7/22/2021

Agency: Other State Agencies

CD Guid: 5208fe21-e016-4495-96f1-98d4c3a17d2d

Release Date: 6/29/2021

Program Mgr: Evan M Grimm

<b>Br. No.</b> DOC-6	<b>SID</b> 00200441	<b>Br. Name</b> MCNEIL IS. STILL HARBOR DOCK	
<b>Carrying</b>		<b>Route On</b>	<b>Mile Post</b>
<b>Intersecting</b> STILL HARBOR (P. SOUND)		<b>Route Under</b>	<b>Mile Post</b>

**UW-18**

8703 Spud Piling & Wells

Photo Type: R - Repair

Orientation: Sea

Date: 4/27/2021

Repairs: 10003

Pile J has a 3"(W) x 18"(H) hole from mechanical abrasion of log boom.



**UW-19**

8703 Spud Piling & Wells

Photo Type: R - Repair

Orientation: Sea

Date: 4/27/2021

Repairs: 10003

Pile L has a 3"(W) x 24"(H) hole from mech abrasion of log boom.



**BRIDGE INSPECTION REPORT**

Status: Released

Printed On: 7/22/2021

Agency: Other State Agencies

CD Guid: 5208fe21-e016-4495-96f1-98d4c3a17d2d

Release Date: 6/29/2021

Program Mgr: Evan M Grimm

**Br. No.** DOC-6

**SID** 00200441

**Br. Name** MCNEIL IS. STILL HARBOR DOCK

**Carrying**

**Route On**

**Mile Post**

**Intersecting** STILL HARBOR (P. SOUND)

**Route Under**

**Mile Post**

**UW-20**

8703 Spud Piling & Wells

Photo Type: R - Repair

Orientation: Sea

Date: 4/27/2021

Repairs: 10003

Pile O has a 4"(W) x 24"(H) hole from mechanical abrasion of log boom.



**UW-21**

8703 Spud Piling & Wells

Photo Type: R - Repair

Orientation: Sea

Date: 4/27/2021

Repairs: 10003

Pile P has a 5"(W) x 54"(H) large hole from mechanical abrasion of log boom.



BRIDGE INSPECTION REPORT

Status: Released

Printed On: 7/22/2021

Agency: Other State Agencies

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Release Date: 6/29/2021

Program Mgr: Evan M Grimm

Br. No. DOC-6

SID 00200441

Br. Name MCNEIL IS. STILL HARBOR DOCK

Carrying

Route On

Mile Post

Intersecting STILL HARBOR (P. SOUND)

Route Under

Mile Post

UW-22

8703 Spud Piling & Wells

Photo Type: R - Repair

Orientation: Sea

Date: 4/27/2021

Repairs: 10003

Pile V has 4" (W) x 24"(H) and 3"(W) x 14"(H) holes from mechanical abrasion of log boom.



UW-23

8703 Spud Piling & Wells

Photo Type: R - Repair

Orientation: Sea

Date: 4/27/2021

Repairs: 10003

Pile W has 4-1/2"(W) x 18"(H), 2-1/2"(W) x 7"(H), and 3"(W) x 8"(H) holes from mechanical abrasion of log boom.



**BRIDGE INSPECTION REPORT**

Status: Released

Printed On: 7/22/2021

Agency: Other State Agencies

CD Guid: 5208fe21-e016-4495-96f1-98d4c3a17d2d

Release Date: 6/29/2021

Program Mgr: Evan M Grimm

**Br. No.** DOC-6

**SID** 00200441

**Br. Name** MCNEIL IS. STILL HARBOR DOCK

**Carrying**

**Route On**

**Mile Post**

**Intersecting** STILL HARBOR (P. SOUND)

**Route Under**

**Mile Post**

**UW-24**

8703 Spud Piling & Wells

Photo Type: R - Repair

Orientation: Sea

Date: 4/27/2021

Repairs: 10003

Pile Y has a 3"(W) x 18"(H) hole and a 3" (W) x 6"(H) hole from mechanical abrasion of log boom.



**SI-3**

8902 Inorganic Zinc Vinyl Paint

Photo Type: G - General

Orientation: Right

Date: 5/23/2013

Repairs:

Typical shot of spud piles. Seam rust on welds are breaking through the paint.



# BRIDGE INSPECTION REPORT

Status: Released

Printed On: 7/22/2021

Agency: Other State Agencies

CD Guid: 5208fe21-e016-4495-96f1-98d4c3a17d2d

Release Date: 6/29/2021

Program Mgr: Evan M Grimm

**Br. No.** DOC-6

**SID** 00200441

**Br. Name** MCNEIL IS. STILL HARBOR DOCK

**Carrying**

**Route On**

**Mile Post**

**Intersecting** STILL HARBOR (P. SOUND)

**Route Under**

**Mile Post**

## UW-8

8902 Inorganic Zinc Vinyl Paint

Photo Type: I - In Depth

Orientation:

Date: 4/27/2017

Repairs:

Typical pile condition underwater.  
Coating has failed over 25%-50% of the  
surface area on the piles below water.  
Example of ~25% exposed metal shown.



## UW-25

8910 Safety Access Ladders

Photo Type: G - General

Orientation: Left

Date: 4/27/2021

Repairs:

There is a ladder attached to each end of  
the t-dock.







Underwater		4/27/2021	Lead: RMP		Co: JRWH		
Routine		4/27/2021	Lead: LAW		Co: ABK		
Pile Location		Condition/Damage				Inspection Type	
Bent	Pile	Condition State (CS)	MDL Elev. (MLLW)	Defect Location	Details/Remarks	Routine/UW	Date
<b>PILE INSPECTION DATA - Steel Dock Spud Piles are 14" Diam. and 3/8" Thick</b>							
Pile Defect Locations are called out in Clock Direction with Offshore face at 12:00 and Onshore face at 06:00.							
*All areas of surface rust or coating failure (cf) have localized pitting up to 1/4" deep.							
Longitudinal	1	1		MDL - ITZ	*50% area surface rust / 50% area marine growth	UW	4/27/2021
Onshore to Offshore				MDL	Thickness 0.395" (2013)		
	2	1		MDL - ITZ	*25% area surface rust / 75% area marine growth coverage	UW	4/27/2021
	3	1		MDL - ITZ	*25% area surface rust / 75% area marine growth coverage	UW	4/27/2021
			-7.0	MDL	Thickness 0.370" (2013)		
	4	1		MDL - ITZ	*25% area surface corrosion with pitting up to 0.25" deep	UW	4/27/2021
			-7.0	MDL	Thickness 0.375" (2021)		
	5	3		MDL - ITZ	*25% area surface rust / 75% area marine growth	UW	4/27/2021
				MDL+5 @5:30	1-1/2" diam. hole		
			-8.0	MDL			
	6	1		MDL - ITZ	*25% area surface rust / 75% area marine growth	UW	4/27/2021
			-8.0	MDL			
	7	1		MDL - ITZ	*25% area surface rust / 75% area marine growth	UW	4/27/2021
			-8.5	MDL			
	8	1		MDL - ITZ	*25% area surface rust / 75% area marine growth	UW	4/27/2021
			-9.5	MDL	Thickness 0.375" (2013)		
	9	3		MDL - ITZ	*25% area surface rust / 75% area marine growth	UW	4/27/2021
				MDL+7 @6:00	1-1/2" diam. hole		
			-9.5	MDL			
	10	3		MDL - ITZ	*25% area surface rust / 75% area marine growth	UW	4/27/2021
				MDL+5 to +7 @6:00	6"(W) very thin area (not holed thru) with heavy pitting		
			-9.5	MDL			
	11	1		MDL - ITZ	*25% area surface rust / 75% area marine growth	UW	4/27/2021
			-10.0	MDL			
	12	1		MDL - ITZ	*25% area surface rust / 75% area marine growth	UW	4/27/2021
			-11.0	MDL	Thickness 0.270" in localized deep pit (2013)		



Underwater		4/27/2021	Lead: RMP		Co: JRWH		
Routine		4/27/2021	Lead: LAW		Co: ABK		
Pile Location		Condition/Damage				Inspection Type	
Bent	Pile	Condition State (CS)	MDL Elev. (MLLW)	Defect Location	Details/Remarks	Routine/UW	Date
Transverse (Lt to Rt)	A	4		MDL+9 to +12 @6:00	3"(W) x 36"(H) hole from mechanical abrasion of log boom (2017 Photo #UW-3, 2021 Photo #UW-10)	UW	4/27/2021
			-13.0	MDL - ITZ MDL	*25% area surface rust / 75% area marine growth		
	B	3		MDL - ITZ	*50% area surface rust / 50% area marine growth	UW	4/27/2021
			-13.0	MDL+5 @4:30 MDL+3 @5:00 MDL	1" diam. hole 2"(W) x 2"(H) hole		
	C	3		MDL - ITZ	*50% area surface rust / 50% area marine growth	UW	4/27/2021
				MDL+10 to +12 MDL +11 @6:00 MDL +5	4" wide flat spot from mechanical abrasion of log boom 1-1/2" diam. star pattern hole in the 4" wide flat spot 1-1/2" diam. hole		
	D	4	-13.0	MDL			
				MDL+9 to +12 @6:00	4"(W) x 36"(H) hole from mechanical abrasion of log boom (Photo #UW-11)	UW	4/27/2021
				MDL+9 MDL+8.5 @6:00 MDL+8 MDL - ITZ	3"(W) x 12"(H) hole from mechanical abrasion of log boom 1-1/2" diam. hole 1" dia. hole from mechanical abrasion of log boom *50% area surface rust / 50% area marine growth		
				MDL+2 @2:00 MDL+1.5 @12:00 MDL	2"(W) x 1"(H) hole 5"(W) x 2"(H) hole (Photo #UW-12)		
			-13.5				
	E	4		MDL+10.5 to +12 @6:00	2"(W) x 18"(H) hole from mechanical abrasion of log boom (Photos #UW-13 and #UW-14)	UW	4/27/2021
				MDL+9 MDL+8 to +12 MDL - ITZ	1/2" diam. hole from mechanical abrasion of log boom 4" wide flat spot from mechanical abrasion of log boom *25% area surface rust / 75% area marine growth		
				MDL+2 @12:00-3:00 MDL+1.5 @3:00 MDL	4-1/2"(W) x 1-1/2"(H) and 3-1/2"(W) x 3/4"(H) (Photo #UW-15) 2" diam. hole		
			-14.0				



Underwater		4/27/2021	Lead: RMP		Co: JRWH		
Routine		4/27/2021	Lead: LAW		Co: ABK		
Pile Location			Condition/Damage			Inspection Type	
Bent	Pile	Condition State (CS)	MDL Elev. (MLLW)	Defect Location	Details/Remarks	Routine/UW	Date
	F	4		MDL+10to+8.5@6:00	3-1/2"(W) x 18"(H) hole from mechanical abrasion of log boom (Photos #UW-16 and #UW-17)	UW	4/27/2021
				MDL+9@6:00	2"(W) x 2-1/2"(H) hole from mechanical abrasion of log boom		
				MDL+8.5@6:00	1-1/2"(W) x 3"(H) hole from mechanical abrasion of log boom		
				MDL - ITZ	*25% area surface rust / 75% area marine growth		
			-13.5	MDL			
	G	3		MDL+9.5to+11.5	3"(W) x 2"(H) flat area from mechanical abrasion of log boom, no holes	UW	4/27/2021
				MDL+6@6:00	1/2" diam. hole in pit		
				MDL+1.5@12:00	1/4" diam. hole in pit		
				MDL - ITZ	*25% area surface rust / 75% area marine growth		
			-14.0	MDL			
	H	3		MDL+4@12:00	1" diam. hole	UW	4/27/2021
				MDL+3.5@11:00	3" diam. hole		
				MDL+2@12:00	3"(W) x 2"(H) hole		
				MDL+6" @11:00	2" diam. hole		
				MDL - ITZ	*25% area surface rust / 75% area marine growth		
			-14.0	MDL			
	I	1		MDL - ITZ	*25% area surface rust / 75% area marine growth	UW	4/27/2021
			-13.5	MDL			
	J	4		MDL+11	12"(H) x 2.5"(W) hole from mechanical abrasion of log boom [Photos #UW-4 (2013) and #UW-5 (2017) ]	UW	4/27/2021
				MDL+7 to +8.5@6:00	3"(W) x 18"(H) hole from mechanical abrasion of log boom (Photo #UW-18)		
					4" wide flat spot from mechanical abrasion of log boom		
				MDL+7 to +11	1-1/2" diam. hole		
				MDL+4@11:00	1-1/2"(W) x 2"(H) hole		
				MDL+3.5@12:00	3-1/2"(W) x 1"(H) hole		
				MDL+2@12:00	*25% area surface rust / 75% area marine growth		
				MDL - ITZ			
			-13.0	MDL			



Underwater		4/27/2021	Lead: RMP				Co: JRWH	
Routine		4/27/2021	Lead: LAW				Co: ABK	
Pile Location		Condition/Damage					Inspection Type	
Bent	Pile	Condition State (CS)	MDL Elev. (MLLW)	Defect Location	Details/Remarks	Routine/UW	Date	
	K	3		MDL+7to+10 @6:00	4" wide flat spot from mechanical abrasion of log boom, thin no holes	UW	4/27/2021	
				MDL - ITZ	*25% area surface rust / 75% area marine growth			
			-12.0	MDL				
	L	4		MDL+9 @6:00	3"(W) x 24"(H) hole from mech abrasion of log boom (Photo #UW-19)	UW	4/27/2021	
				MDL+8 @6:00	1" diam. hole			
				MDL+6 - ITZ	5" wide flat spot from mech abrasion of log boom			
				MDL+4 @12:00	3"(W) x 2"(H) hole			
				MDL - ITZ	*25% area surface rust / 75% area marine growth			
			-12.5	MDL				
	M	3		MDL+9 @6:00	2"(W) x 3"(H) hole from mechanical abrasion of log boom	UW	4/27/2021	
				MDL+8 @6:00	2-1/2"(W) x 7"(H) hole from mechanical abrasion of log boom			
				MDL+8-ITZ	3" - 4" wide flat spot from mechanical damage of log boom			
				MDL-ITZ	*25% area surface rust / 75% area marine growth			
			-11.5	MDL				
	N	1		MDL - ITZ	*10% area surface rust / 90% area marine growth (typical).	UW	4/27/2021	
			-12.0	MDL				
	O	4		MDL+6to+8 @6:00	4"(W) x 24"(H) hole from mechanical abrasion of log boom (Photos #UW-6 (2017) and Photo #UW-20)	UW	4/27/2021	
				MDL+5 to +9	4" wide flat spot from mechanical damage of log boom			
				MDL+5 @3:00	1" diam. hole			
				MDL+4 @4:00	1/4" diam. hole in pit			
				MDL +8" @3:00	1/2" diam. hole			
				MDL+3" @2:00	1-1/2"(W) x 1/4"(H) hole			
				MDL - ITZ	*10% area surface rust / 90% area marine growth			
			-11.0	MDL				
	P	4		MDL+4to+8.5 @6:00	5"(W) x 54"(H) large hole from mechanical abrasion of log boom (Photo #UW-7 and #UW-21)	UW	4/27/2021	
				MDL+3.5 @6:00	2" diam. hole			
				MDL - ITZ	*25% area surface rust / 75% area marine growth			
			-10.5	MDL				
	Q	1		MDL - ITZ	*25% area surface rust / 75% area marine growth	UW	4/27/2021	
			-11.0	MDL				



Underwater		4/27/2021	Lead: RMP					Co: JRWH
Routine		4/27/2021	Lead: LAW					Co: ABK
Pile Location		Condition/Damage						Inspection Type
Bent	Pile	Condition State (CS)	MDL Elev. (MLLW)	Defect Location	Details/Remarks	Routine/UW	Date	
	R	1		MDL - ITZ	*25% area surface rust / 75% area marine growth	UW	4/27/2021	
			-11.0	MDL				
	S	3		MDL+5 @1:00	2"(W) x 1"(H) and 1" diam. Hole	UW	4/27/2021	
				MDL+3 @12:30	2"(W) x 3"(H) hole			
				MDL+1 @12:30	2-1/2"(W) x 6"(H) hole			
				MDL - ITZ	*25% area surface rust / 75% area marine growth, Photo #UW-2 shows typical pile condition underwater			
			-10.5	MDL				
	T	1		MDL - ITZ	*25% area surface rust / 75% area marine growth	UW	4/27/2021	
			-10.5	MDL				
	U	1		MDL+6 to +10 @6:00	3"(W) flat area with heavy corrosion & pitting	UW	4/27/2021	
				MDL - ITZ	*25% area surface rust / 75% area marine growth			
			-10.5	MDL				
	V	4		MDL+6.5(bot.) @6:00	4" (W) x 24"(H) hole from mechanical abrasion of log boom	UW	4/27/2021	
				MDL+4.5(bot.) @6:00	3"(W) x 14"(H) hole from mechanical abrasion of log boom (Photo #UW-22)			
				MDL - ITZ	*25% area surface rust / 75% area marine growth			
			-10.5	MDL				
	W	4		MDL+5(bot.) @6:00	4-1/2"(W) x 18"(H) hole from mechanical abrasion of log boom	UW	4/27/2021	
				MDL+4(bot.) @6:00	2-1/2"(W) x 7"(H) hole from mechanical abrasion of log boom			
				MDL+3(bot) @6:00	3"(W) x 8"(H) hole from mechanical abrasion of log boom (Photo #UW-23)			
				MDL - ITZ	*25% area surface rust / 75% area marine growth			
			-9.5	MDL				
	X	1		MDL - ITZ	*25% area surface rust / 75% area marine growth	UW	4/27/2021	
			-10.0	MDL				



Underwater		4/27/2021	Lead: RMP				Co: JRWH	
Routine		4/27/2021	Lead: LAW				Co: ABK	
Pile Location		Condition/Damage					Inspection Type	
Bent	Pile	Condition State (CS)	MDL Elev. (MLLW)	Defect Location	Details/Remarks	Routine/UW	Date	
	Y	4		MDL+5.5(bot.) @6:00	3"(W) x 18"(H) hole from mechanical abrasion of log boom	UW	4/27/2021	
				MDL+4.5(bot.) @6:00	3"(W) x 6"(H) hole from mechanical abrasion of log boom (Photo #UW-24)			
			-10.0	MDL - ITZ MDL	*25% area surface rust / 75% area marine growth			
		37 Total Steel Piles						
		11	CS4					
		10	CS3					
		0	CS2					
		16	CS1					