

**PAINT COLOR INVESTIGATION
AND
CHINKING/DAUBING ANALYSIS**

Smith-Taylor Cabin
Shelter Island, New York



Prepared for:
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February 10, 2012

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INTRODUCTION

At the request of the Taylor Island Foundation, Jablonski Building Conservation (JBC), examined paint samples and analyzed a sample of chinking/daubing removed from the Smith-Taylor Cabin, located in Shelter Island, New York. The samples were taken by Mary Jablonski of JBC on January 20, 2012.

The analysis, which conformed to standard wet-chemical techniques, was performed to provide the primary characteristics of the existing chinking / daubing. This analysis is critical in the formulation of an appropriate replication mix.

BRIEF HISTORY & DESCRIPTION OF SMITH-TAYLOR CABIN

The Smith-Taylor Cabin was originally a one-room recreational picnic structure built in the Rustic or Adirondack style that dates to circa 1900. The original log structure was built by Francis Marion Smith, who purchased Taylor Island (formerly known as Cedar Island) in 1899 to build a summer estate.



Figure 1: Francis Marion Smith, wife Mary Rebecca Thompson Smith, and family members posing at the picnic shelter, c. 1900.¹

¹ Zachary N. Studenroth, *Historic Structure Report: Smith-Taylor Cabin, Shelter Island, New York*, July 2008, <http://www.taylorsisland.org/hsr/00HSRComplete.pdf> (accessed February 3, 2012), 58-59. Jablonski Building Conservation, Inc. February 10, 2012

Financial trouble in the 1920s caused Smith to lose title to the estate and the island, leading S. Gregory Taylor to purchase the property circa 1940. While Taylor owned the island, he built an addition onto the original log structure in order to transform the building into a residence.²



Figure 2: Smith-Taylor Cabin as enlarged during S. Gregory Taylor's ownership, c. 1940.³

² Zachary N. Studenroth, *Historic Structure Report: Smith-Taylor Cabin, Shelter Island, New York*, July 2008, <http://www.taylorisland.org/hsr/00HSRComplete.pdf> (accessed February 3, 2012), 12-13.

³ Zachary N. Studenroth, *Historic Structure Report: Smith-Taylor Cabin, Shelter Island, New York*, July 2008, <http://www.taylorisland.org/hsr/00HSRComplete.pdf> (accessed February 3, 2012), 58-59.

An architectural description of the cabin and addition is detailed in the building's *Historic Structure Report*:

The one-story, Smith-Taylor Cabin is the only habitable structure that remains standing on Taylor's Island today. It is irregular in massing and measures approximately 50 feet by 43 feet overall. It is distinguished by a central tower measuring approximately 7 feet square in section that rises three stories to a narrow, two-sided balcony overlooking Coecles Harbor. The ground floor of the building incorporates two distinct living areas, the largest of which is a rectangular, multi-purpose space constructed of logs dating c. 1900. The adjoining rooms extend to the east and south of this room – including a new “front” entryway on the west façade, two bedrooms, two bathrooms and a kitchen dating c. 1940 – and preserve exterior “cabin siding” that simulates the appearance of the original, authentic log building. (Non-historic vertical planking is employed in areas where the siding has been repaired.) The rooms that were added c. 1940 appear to have been built at the same time and correspond to the date in which the original building was enlarged, winterized and transformed into both a seasonal and year-round dwelling.⁴

The logs used in the circa 1900 portion of the structure were left unhewn and have a circumference of approximately 10 inches. The logs were assembled using a single saddle corner notching technique and attached to one another with wooden pegs. The ends of each log extend approximately 1 foot away from the corner notch.

⁴ Zachary N. Studenroth, *Historic Structure Report: Smith-Taylor Cabin, Shelter Island, New York*, July 2008, <http://www.taylorisland.org/hsr/00HSRComplete.pdf> (accessed February 3, 2012), 26.

FINISH COLOR INVESTIGATION METHODOLOGY

The samples were broken to reveal fresh cross-sections. Each sample was mounted in a clear resin and examined microscopically using a Nikon Stereo Zoom microscope under magnifications between 10X-63X. The samples were also examined under UV fluorescent light using a Zeiss Axioskop 40 under 10X magnification.

All layers have been recorded using a descriptive color name to document the seriation of the samples for comparative purposes. Under illumination conditions that simulate natural daylight (using a fiber optic illuminator), the original finish layers were matched to both a standardized universal color system (Munsell) and a commercial paint color system (Pittsburgh Paints Voice of Color). Color designations and representative color swatches from Pittsburgh Paints have been provided at the end of this report.

Photographs showing the location of paint samples are included in Appendix A.

PAINT SAMPLE LOCATIONS

Smith Taylor Cabin, Shelter Island

<u>Sample #</u>	<u>Description</u>
ST-001	Left Side of Window Sash, Exterior Northwest corner of Bedroom #2
ST-002	Left Side of Window Frame, Exterior Northwest corner of Bedroom #2
ST-003	Left Side of French Door Frame, Exterior Southeast end of Living Room
ST-004	Left French Door Lite, Exterior Southeast end of Living Room
ST-005	Vertical Log, Exterior Southeast corner of Living Room
ST-006	Log, Exterior Northeast end of Living Room
ST-007	Right Side of Window Frame, Exterior West Window Return at Eastern end of Living Room
ST-008	Left Door Lite Sash, Exterior Northern side of Living Room
ST-009	Right Side of Door, Exterior Northern side of Living Room
ST-010	Right Side of Door Frame, Exterior Northern side of Living Room
ST-011	Log, Exterior Southwest corner of Living Room
ST-012	Right Side of Window Sash, Exterior North side of Kitchen
ST-013	Right Side of Window Frame, Exterior North side of Kitchen
ST-014	Center of Window Sash, Exterior West side of Bedroom #1
ST-015	Right Side of Window Sash, Exterior South side of Bathroom
ST-016	Exterior South side of Tower

FINDINGS

The Tower Log Walls

The tower has extremely weathered wood on all surfaces. One paint sample (ST-016) was taken from the south side approximately 3 foot from the walkway where the paint appeared to have several layers. In the sample, the wood is dark brown not the light brown one expects to see if the wood had been coated regularly. Only three layers were found and they look to have been relatively recent painting campaigns. The first layer was a white primer and the two additional layers were red brown layers with the first reddish brown slightly redder than the second.

The Log Walls, First Floor

The logs were originally bark covered and some of this evidence remains. However, once the bark was lost, the surfaces began to be painted (ST-006 and ST-011). There is more paint on the logs adjacent to the west entrance (ST-011) than the log sampled on the east wall (ST-006). The first coating found on west entrance was a dark brown stain. The dark reddish brown is a much more recent application. A vertical log or portion of a log sampled on the east elevation next to the French doors has a finish very similar to the French doors of a stain that appears to have a later clear, slightly yellowish varnish.

Windows

The windows on the log cabin portion of the house (Samples ST-004, ST-005 and ST-007) were stained a dark brown and have a clear varnish that has probably yellowed on top of the stain. It is not known when the varnish was applied. These are not as deteriorated as the windows on other additions to the house. Samples with the dark brown stain were taken from the east side French doors and adjacent lights, and the north side living room windows.

Samples ST-001 and ST-002 were taken from the north facing wall of the east side of an addition. The sash, sample ST-001 is very weathered and has fewer layers than the frame. The frame appears to have been stained with a dark brown and varnished with a clear but yellowed coat. A later dark brown varnish was applied and later still the frame was painted green. The sash of the same window appears to have been painted green from its beginning with at least one coat of brownish red followed by green again. This analysis could not determine if the frame and sash date to the same period as the wood and paint are extremely deteriorated.

On the west elevation addition, the window sampled (ST-012 and ST-013) had a dark brown stained window frame that was varnished. The sash was painted initially a dark reddish brown and then a dark green.

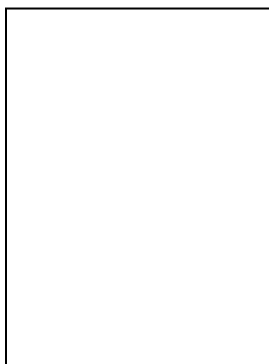
On the south elevation, two windows were sampled. At the kitchen window (ST-0015) the window frame had only one layer of dark green. The window sash from the bedroom (ST-015) had multiple layers of paint. There were two campaigns of reddish brown paint followed by three dark green painting campaigns.

Door on North Elevation

The door that is currently painted red and green on the north elevation appears to have been painted from the beginning. The diamond light insert (ST-008) has two red layers and both layers were very similar in color. The outer door rail (ST-009) has two layers of dark green that have faded. The painted door frame around this door (ST-010) is quite interesting and has multiple layers of paint. It was originally stained dark brown and varnished. It was then painted blue for two painting campaigns and then twice painted dark green.

SUMMARY

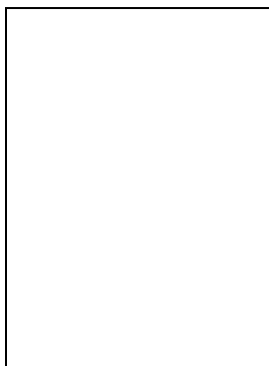
A dark brown stain was used on the wood trim and window frames of the house. This stain was possibly varnished after the stain was applied for protection. However, it is doubtful that the trim units date to the original construction of the cottage. The stain does not match any of the Munsell colors in our books but the closest commercial color match to the stain is Cabot Semi-Transparent Oil Stain in "Black". Please note that the original stain was not opaque.



Dark Brown Stain

Cabot
Semi-Transparent Oil Stain
"Black"

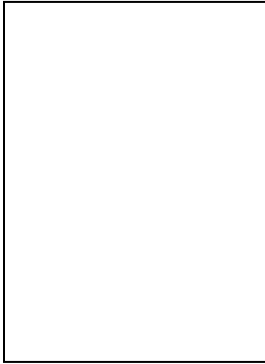
The window sash were painted from the time of their installation. Most of the earlier sash appear to have been painted a reddish brown matching Munsell 10R 4/8 with a commercial paint match of Benjamin Moore 2174-20 "Cinnamon". The painted north door diamond inset also was painted this color. The logs on the tower and on some of the lower portion of the house were also painted this color.



Reddish Brown Window Sash Color

Benjamin Moore
2174-20
"Cinnamon"

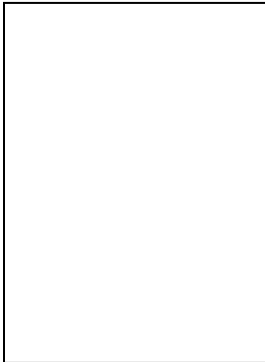
Later sash were painted a dark green matching Munsell 2.5G 3/4 with a commercial match of Benjamin Moore “Chrome Green EXT. RM”. All sash, including the earlier sash, appear to have been painted green at the same time. The painted north door rails were also painted this color.



Later Green Window Sash Color

Benjamin Moore
“Chrome Green EXT. RM.”

The one extra color found was the door frame of the north door that had a bright blue matching Munsell color 7.5B 3/6, commercial match Benjamin Moore 2062-30 “Blue Danube” over a dark brown stain.



Door Frame
North Door

Benjamin Moore
2062-30
“Blue Danube”

BRIEF HISTORY OF CHINKING/DAUBING

In log construction, chinking and daubing is used to fill in the gaps between logs and make the structure weathertight. This sealing process typically consists of three steps.

Chinking:⁵

1. Dry blocking such as wood chips or stones spalls was inserted into the joints to fill all of the openings.
2. This is followed by softer material such as oakum, moss, clay, dried animal dung, newspaper, or rags. Together, these materials that make up the chinking would serve as insulation.

Daubing:⁶

3. The chinking was then covered up with a troweled on finish. The daubing consistency varied; it could be a lime or clay mortar, plaster, clay or mud depending on the location and the available materials. While the chinking could remain in place, the daubing was a sacrificial layer that required frequent replacement, often annually.

⁵ Bruce D. Bomberger, *Preservation Brief 26: The Preservation and Repair of Historic Log Structures* (Washington, D.C.: Technical Preservation Services, National Park Service, U.S. Department of the Interior: September 1991), <http://www.nps.gov/hps/tps/briefs/brief26.htm> (accessed February 2, 2012).

⁶ Bruce D. Bomberger, *Preservation Brief 26: The Preservation and Repair of Historic Log Structures* (Washington, D.C.: Technical Preservation Services, National Park Service, U.S. Department of the Interior: September 1991), <http://www.nps.gov/hps/tps/briefs/brief26.htm> (accessed February 2, 2012).

METHODOLOGY OF CHINKING/DAUBING ANALYSIS

Microscopic Inspection

A freshly broken surface of the sample was examined microscopically during the investigation using a Nikon Stereo Zoom microscope with a 10X-63X power. The sample was examined in normal reflected light under illumination conditions that simulate daylight (fiber optic illuminator) for the purpose of color identification. Using natural daylight, the sample was matched to a color standard of the Munsell Color Chart (as per ASTM 1535 Specifying Color by the Munsell System).

The presence, type and concentration of fibers in the chinking were noted. The fibers and fines were examined under polarized light using a Zeiss Axioskop 40 under 100X to 200X magnification.

Gravimetric Analysis

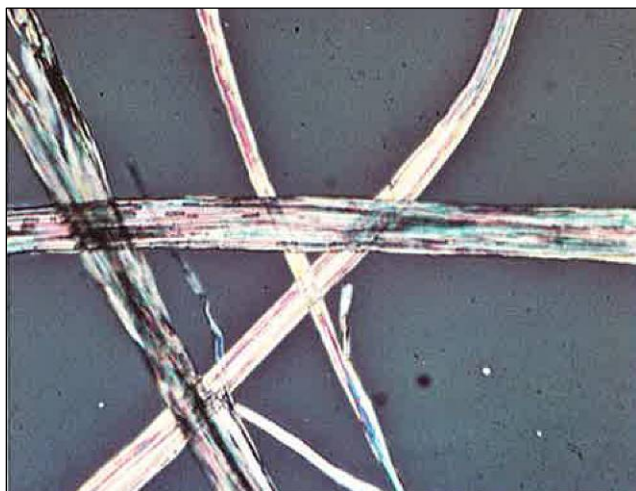
A freshly broken surface of the sample was examined under a variable zoom microscope with an external light source equipped with daylight filters. The binder in the sample was matched to a color standard of the Munsell Color Chart (as per ASTM “1535 Specifying Color by the Munsell System”) under natural light. Each sample was then separated into three component parts (i.e. pigment, clay or cement residue) acid-soluble, "fines", and aggregate or sand, via wet-chemical techniques

The sample was first crushed and then digested with 3M hydrochloric acid. Levigation and filtration were used to separate the fines from the aggregate. Weight percentages of the constituent parts were calculated to gain an understanding of the original daubing mix. The colors of the “fines” and sand were matched to the Munsell Soil Color Chart. Predominant colors and shapes of sand grains were noted during examination of the aggregate fractions. Sieve analysis of the sand was performed to determine particle size distribution.

RESULTS OF CHINKING/DAUBING ANALYSIS

Chinking

There were two different colored fibers in the chinking sample. One cluster of fibers was dark grayish brown (Munsell 10YR 3.5/2) and one was greenish gray (10GY 4/1 – 10BG 5/1). During microscopic examination it was verified that the greenish gray sample had what appeared to be blue dye on the fiber. Both the dark grayish brown and greenish gray plant fibers in the chinking were analyzed separately but were each identified as jute. A description of the appearance of jute in polarized light during microscopic examination is as follows:



These are transparent, colorless to pale yellow, generally straight, smooth cylinders with occasional cross markings (nodes).... Both ends of the fiber taper to points.... These bast fibers are most likely to be seen in bundles, since jute is usually used in bast form and seldom separated down to the individual fibers.⁷

The greenish gray color of one of the fiber clusters is indicative of oakum. Oakum is loosely twisted jute fiber that has been impregnated with tar or a tar derivative. It was commonly packed into joints and was used because it is repellent to insects and rodents and is resistant to decay.

⁷ Walter C. McCrone and John Gustav Delly, *The Particle Atlas, Volume II: The Light Microscopy Atlas* (Ann Arbor, Michigan: Ann Arbor Science Publishers, 1973), 354.

Microscopic Examination of Chinking Fibers	
Dark Grayish Brown Fiber	Greenish Gray Fiber
	
Figure 3: Dark grayish brown fiber under normal reflected light (daylight simulation). 	Figure 4: Greenish gray fiber under normal reflected light (daylight simulation). 
Figure 5: Dark grayish brown fiber under polarized light at 10X magnification.	Figure 6: Greenish gray fiber under polarized light at 10X magnification.

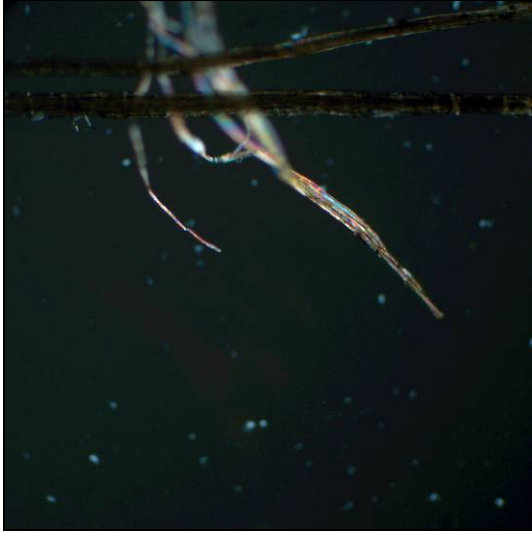


Figure 7: Dark grayish brown fiber under cross-polarized light at 10X magnification.

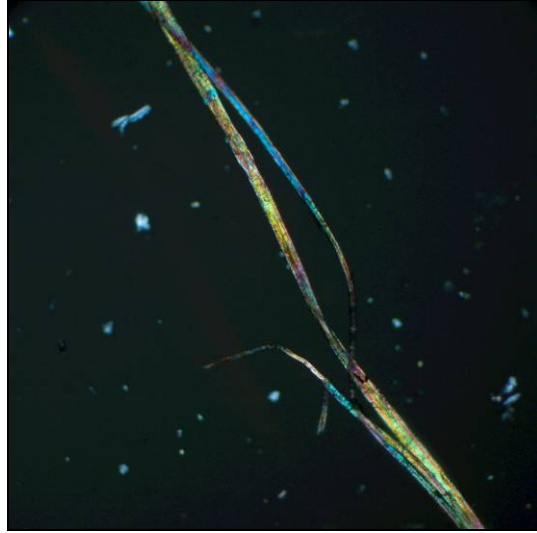


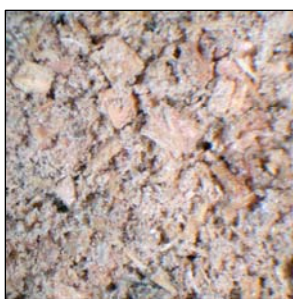
Figure 8: Greenish gray fiber under cross-polarized light at 10X magnification.

Daubing



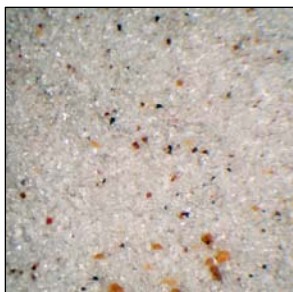
Based on the provided sample, the daubing appears to be approximately 5/8" wide. In cross-section the matrix of the daubing appears to be very pale brown (Munsell 10YR 7/3) in color with many wood pulp fibers visible. The daubing was fairly compact but had many voids in cross section. The daubing sample was moderately soft and relatively easy to crush with a mortar and pestle. On a scale of 1 to 5 with 1 being soft and 5 being hard, the daubing was a 3 in hardness.

Components of Smith-Taylor Daubing:



"Fines" – 55.95% of the total sample weight. The "fines" are contain wood pulp and are very pale brown (Munsell 10YR 7/3.5) in color.

Acid soluble fraction – 36.16% of the total sample weight. A 3M solution of hydrochloric acid was added to the crushed portion of the sample, which produced an extremely vigorous effervescent reaction. Many particles within the sample floated on top of the acid when it was added.



Aggregate – 7.89% of the total sample weight. Colors of individual grains are white with a few brownish red and black particles. The overall color of the aggregate is white (Munsell 2.5Y 8/1) in color. The aggregate appears to be clear quartz. The angular particles are fine (1/8 – 1/4mm) in size.

Sieve Analysis of Daubing Aggregate:

Sieve Number	Percent Passing	
	Smith-Taylor Daubing	ASTM limit for Natural Sand
4	100%	100%
8	100%	95 – 100%
16	100%	70 – 100%
30	100%	40 – 75%
50	100%	10 – 35%
100	91.67%	2 – 15%
200	15%	0 – 5%

CONCLUSIONS OF CHINKING/DAUBING ANALYSIS

The daubing mixture used at the Smith-Taylor Cabin consisted of wood pulp/fiber, lime and sand. It is possible that the daubing also contained cement as mixtures of wood-pulp plaster and cement mortar were commonly found in log construction daubing, as described in a 1939 *Woodcraft* publication:

Mortar makes the most enduring and watertight chinking. Where the cracks are wide, metal laths or meshed wire made for the purpose should be nailed in them before the mortar is applied in order to give it a foundation. A mixture of cement mortar and wood-pulp plaster makes the best caulking, the latter substance giving the mortar more consistency for filling the larger openings between the logs—cement mortar alone is inclined to be too runny and has a tendency to settle away from the log above as it dries. It is well to apply the mortar thicker where it rests on the lower log allowing it to taper to the log above, thus giving the caulking a wider base at the bottom and preventing its settling. If the logs are allowed to season before they are caulked, they will not shrink away from the mortar.⁸

Wood-pulp would have also been added to the daubing in order to increase the elasticity and durability of the mixture.⁹

The presence of lime in the mortars analyzed is evidenced by the percentage of acid-soluble material and the resulting vigorous reaction which occurred with the addition of hydrochloric acid to the crushed samples.

According to ASTM C144 “Standard Specification for Aggregate for Masonry Mortar” the sand used in the daubing analyzed is poorly graded, with 100% of the aggregate passing through the number 30 and 50 sieves (the Standard allows for 40-75% at sieve no. 30 and 10-35% at sieve no. 50), 91.67% of the aggregate passing through the number 100 sieve (the Standard allows for 2-15%), and 15% of the aggregate passing through the number 200 sieve (the Standard allows for 0-5%).

⁸ Bernard S. Mason, “Chinking and Caulking,” in *Woodcraft* (New York: A.S. Barnes & Company, 1939) quoted in “Lean-To-How-To,” *Adirondack Life*, Collectors Issue 2009, <http://www.adirondacklife.com/content/view/206/119/> (accessed February 7, 2012).

⁹ *Commercial and Financial New England Illustrated* (Boston: The Boston Herald, 1906), 268, <http://books.google.com/> (accessed February 7, 2012).

RECOMMENDATIONS

The chinking and daubing used on the Smith-Taylor Cabin should be replaced where necessary, but only once all log replacements or repairs have been completed. Loose daubing that is not securely attached to the logs should be carefully removed so that the joints can be better sealed. Based on the heavy deterioration of the existing logs and chinking/daubing, all remaining chinking/daubing should be removed and replaced.



Figure 9: The chinking / daubing between the logs is mostly missing; where present, the chinking / daubing is severely deteriorated.

Commercially available chinking products should not be used on this historic log structure. A chinking / daubing mixture that matches the original, based on the above analysis, should be used. The basic techniques for the repair of the chinking and daubing should adhere to the National Park Service's *Preservation Brief 26: The Preservation and Repair of Historic Log Structures*:

Daubing that is loose or is not adhered to the logs must first be cleaned out by hand.... If needed, soft filler should be added, such as jute or bits of fiberglass batt, pressed firmly into voids with a stick or blunt tool. Concealed reinforcement may sometimes be used, depending upon the authenticity of the restoration. This can include galvanized nails partially inserted only on the upper side of the log to allow for the daubing to move with the upper log and keep the top joint sealed, or galvanized wire mesh secured with galvanized nails. Like repointing masonry, daubing should not be done in full sun, excessive heat or when freezing temperatures are expected. The daubing materials should be dry-mixed, the chinking rechecked as being tight and secure, and the mix wetted and stirred to a

stiff, paste-like consistency. The mix dries quickly, so no more daubing should be prepared at a time than can be applied in about 30 minutes. A test patch of new daubing, either on the building, or in a mockup elsewhere, will help test the suitability of the formula's color and texture match.

Before applying the daubing, the chinking area, including filler and log surfaces to be covered, should be sprayed with water to prevent the dry filler from too rapidly drawing off the daubing moisture which will result in hairline cracking. A trowel, ground to the width of the daubing, is used to press the daubing into the chinking space, and to smooth the filled areas. Wide or deep chinking spaces or joints may have to be daubed in layers, to prevent sagging and separation from the logs, by applying one or two scratch coats before finishing the surface.¹⁰

The following daubing mixtures are recommended by the National Park Service for use on historic log structures:

Daubing Mixes (by volume) ¹¹		
Mix A	Mix B	Mix C
• 1/4 part cement • 1 part lime • 4 parts sand • 1/8 part dry color • Hog bristles or excelsior (fine wood shavings)	• 6 parts sand • 4 parts lime • 1 part cement	• 1 part Portland cement • 4-8 parts lime • 7-10 parts sand

We recommend keeping the cement to a minimum in a daub mix. Cement can do irreparable damage to log structures because of its minimally porous qualities and rigidity. Its density reduces uniform breathability causing logs to become saturated with water and quickly leading to rot.

Chinking should be flexible and never be stronger than the material to which it adheres. By using cement, a rigid, incompatible chinking is introduced and the logs bear the full brunt of any seasonal movement which then allows for the further absorption of water.

Caulks and sealants, because of their impervious nature, should not be used for daubing.

A firm called Limeworks can supply the lime and possibly even a traditional daubing mix.

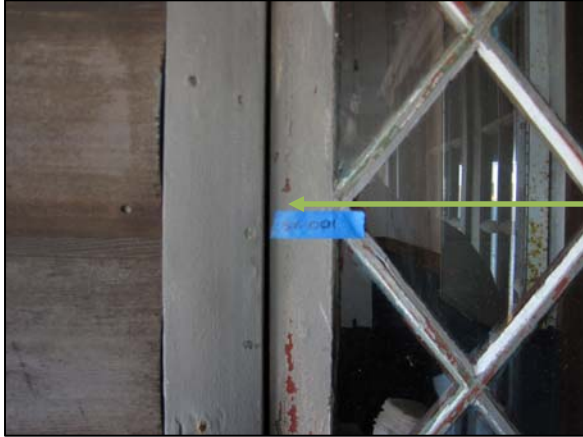
¹⁰ Bruce D. Bomberger, *Preservation Brief 26: The Preservation and Repair of Historic Log Structures* (Washington, D.C.: Technical Preservation Services, National Park Service, U.S. Department of the Interior: September 1991), <http://www.nps.gov/hps/tps/briefs/brief26.htm> (accessed February 2, 2012).

¹¹ Bruce D. Bomberger, *Preservation Brief 26: The Preservation and Repair of Historic Log Structures* (Washington, D.C.: Technical Preservation Services, National Park Service, U.S. Department of the Interior: September 1991), <http://www.nps.gov/hps/tps/briefs/brief26.htm> (accessed February 2, 2012).

APPENDIX A

Illustrations of Paint Sample Locations

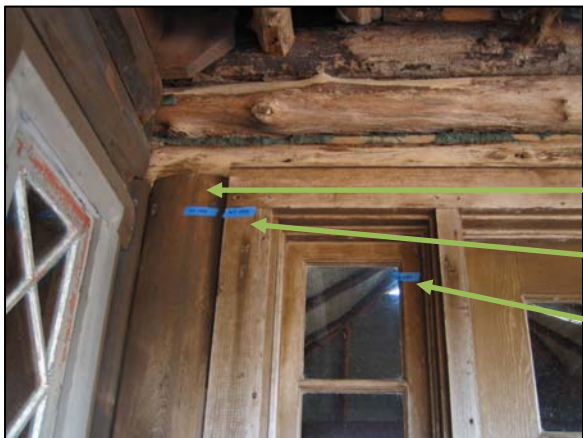
**Paint Sample Location Illustrations
Smith Taylor Cabin**



Sample ST-001



Sample ST-002



Sample ST-005

Sample ST-003

Sample ST-004



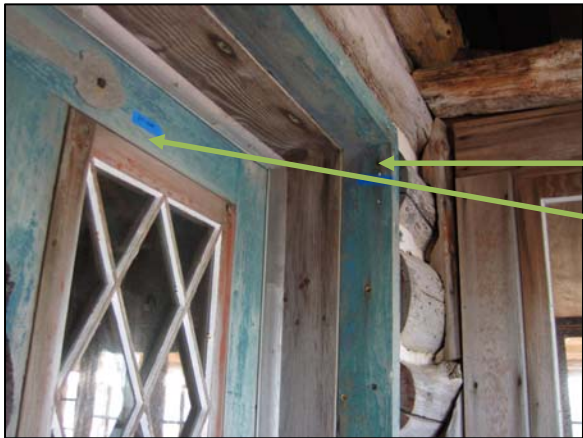
Sample ST-006



Sample ST-009

Sample ST-007

Sample ST-008

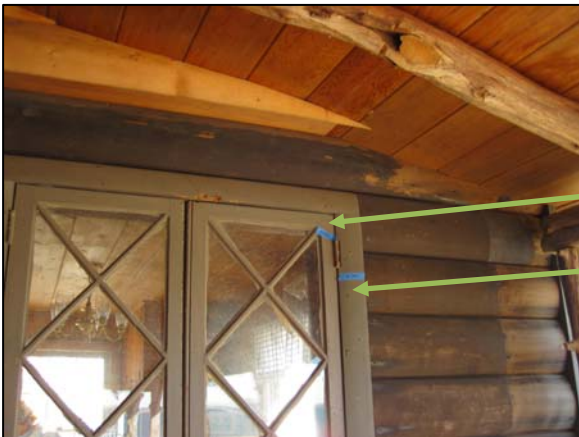


Sample ST-010

Sample ST-009



Sample ST-011



Sample ST-012

Sample ST-013



Sample ST-014

Sample ST-015

APPENDIX B

PAINT SAMPLE CHROMOCHRONOLOGIES

TYPICAL PAINT CHROMOCHRONOLOGY AND COLOR MATCH

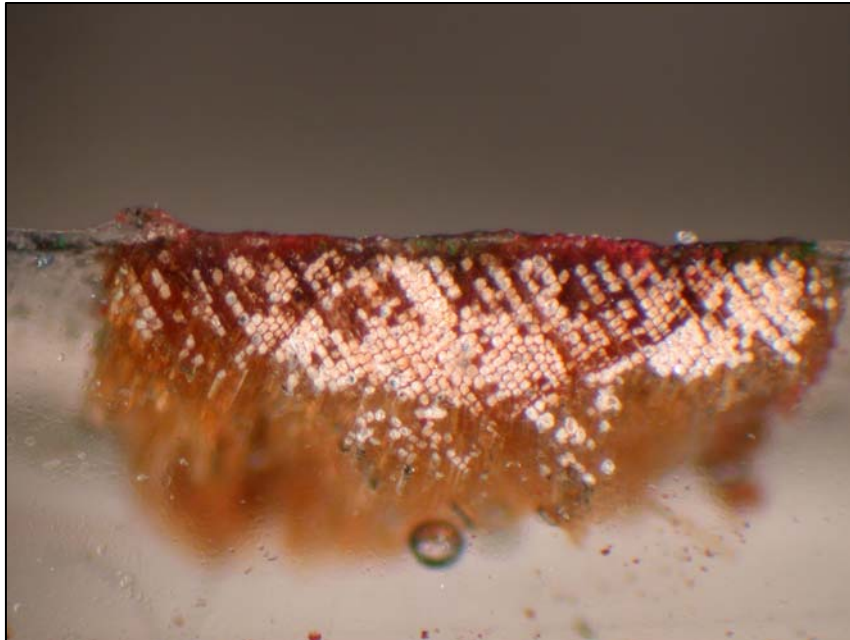
SAMPLE NUMBERS AND LOCATIONS: ST-001 Left Side of Window Sash, Exterior Northwest corner of Bedroom #2

SUBSTRATE: Wood

	<i>PRIMER/</i>	<i>COMMERCIAL</i>	<i>MUNSELL</i>
CHROMOCHRONOLOGY	FINISH	MATCH	MATCH
1. Green - paint	finish	BM 2035-10 Seaweed	2.5G 4/6
2. Red - paint	finish	BM 2174-20 Cinnamon	10R 4/8
3. Green	finish		
4. White	finish		
5. Gray	finish		

Notes:

- 1st Color layer matches layer #4 on Sample ST-002
- 1st layer is very weathered.



Sample ST-001

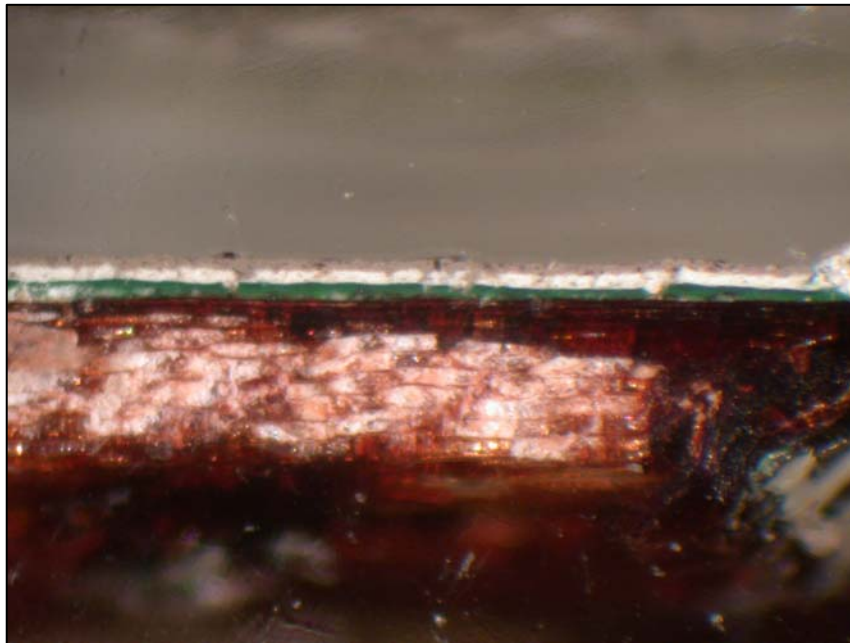
TYPICAL PAINT CHROMOCHRONOLOGY AND COLOR MATCH

SAMPLE NUMBERS AND LOCATIONS: ST-002 Left Side of Window Frame, Exterior Northwest corner of Bedroom #2

SUBSTRATE: Wood

CHROMOCHRONOLOGY	<i>PRIMER/</i>	<i>COMMERCIAL</i>	<i>MUNSELL</i>
	FINISH	MATCH	MATCH
1. Dark brown stain	Finish		
2. Yellowish brown varnish	Finish		
3. Dark brown varnish	Finish		
4. Green - paint	Finish	BM 2035-10 Seaweed	2.5G 4/6
5. Green	Finish		
6. White	Primer?		
7. Gray			

Notes:



Sample ST-002

TYPICAL PAINT CHROMOCHRONOLOGY AND COLOR MATCH

SAMPLE NUMBERS AND LOCATIONS: ST-003 Left Side of French Door Frame, Exterior Southeast end of Living Room

SUBSTRATE: wood

CHROMOCHRONOLOGY	<i>PRIMER/</i> FINISH	<i>COMMERCIAL</i> MATCH	<i>MUNSELL</i> MATCH
1. Dark brown	stain		7.5YR 2/4
2. Clear/slightly yellow	varnish		

Notes:



Sample ST-003

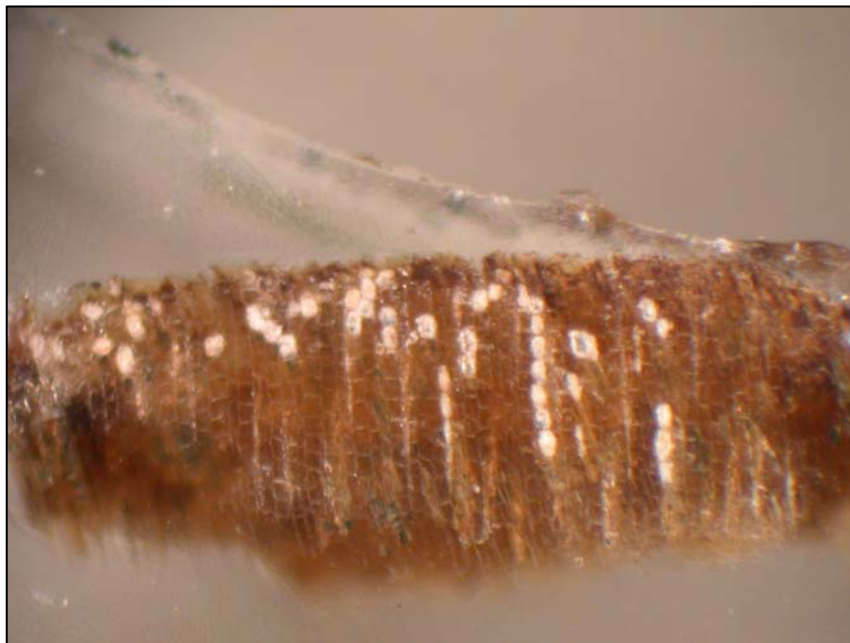
TYPICAL PAINT CHROMOCHRONOLOGY AND COLOR MATCHSAMPLE NUMBERS
AND LOCATIONS:

ST-004 Left French Door Lite, Exterior Southeast end of Living Room

SUBSTRATE: wood

CHROMOCHRONOLOGY	<i>PRIMER/</i> FINISH	<i>COMMERCIAL</i> MATCH	<i>MUNSELL</i> MATCH
1. Brown	stain		
2. Clear/slightly yellow	varnish		

Notes:



Sample ST-004

TYPICAL PAINT CHROMOCHRONOLOGY AND COLOR MATCHSAMPLE NUMBERS
AND LOCATIONS:

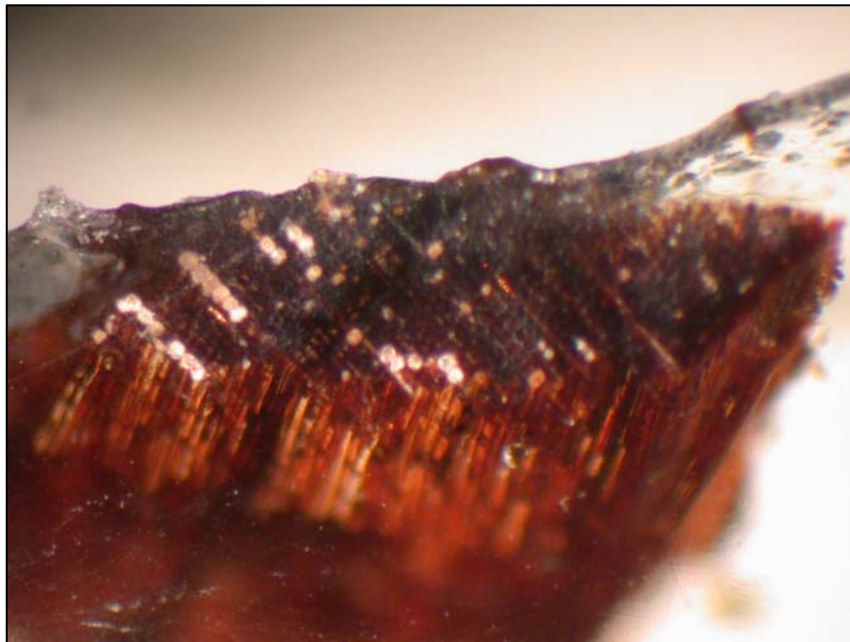
ST-005 Vertical Log, Exterior Southeast corner of Living Room

SUBSTRATE: wood

CHROMOCHRONOLOGY	<i>PRIMER/</i> FINISH	<i>COMMERCIAL</i> MATCH	<i>MUNSELL</i> MATCH
1. Dark brown	stain		
2. Dark brown	varnish		

Notes:

- The dark brown varnish is very aged.



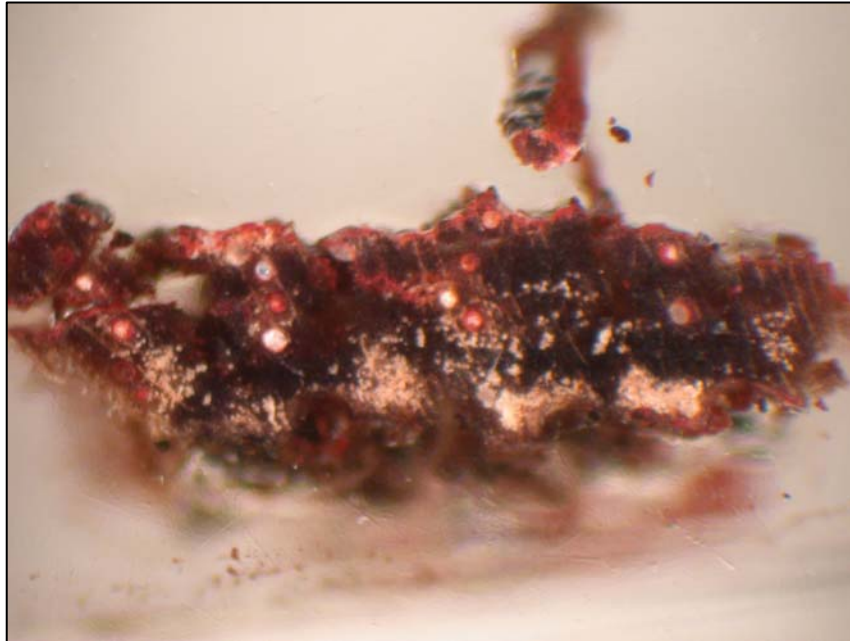
TYPICAL PAINT CHROMOCHRONOLOGY AND COLOR MATCHSAMPLE NUMBERS
AND LOCATIONS:

ST-006 Log, Exterior Northeast end of Living Room

SUBSTRATE: wood

	<i>PRIMER/</i>	<i>COMMERCIAL</i>	<i>MUNSELL</i>
CHROMOCHRONOLOGY	FINISH	MATCH	MATCH
1. Dark red - paint	finish	BM 2174-20 Cinnamon	10R 4/8

Notes:



Sample ST-006

TYPICAL PAINT CHROMOCHRONOLOGY AND COLOR MATCH

SAMPLE NUMBERS AND LOCATIONS: ST-007 Right Side of Window Frame, Exterior West Window Return at Eastern end of Living Room

SUBSTRATE: wood

CHROMOCHRONOLOGY	<i>PRIMER/</i>	<i>COMMERCIAL</i>	<i>MUNSELL</i>
	FINISH	MATCH	MATCH
1. Dark brown	stain		
2. Reddish brown	stain		

Notes:



Sample ST-007

TYPICAL PAINT CHROMOCHRONOLOGY AND COLOR MATCHSAMPLE NUMBERS
AND LOCATIONS:

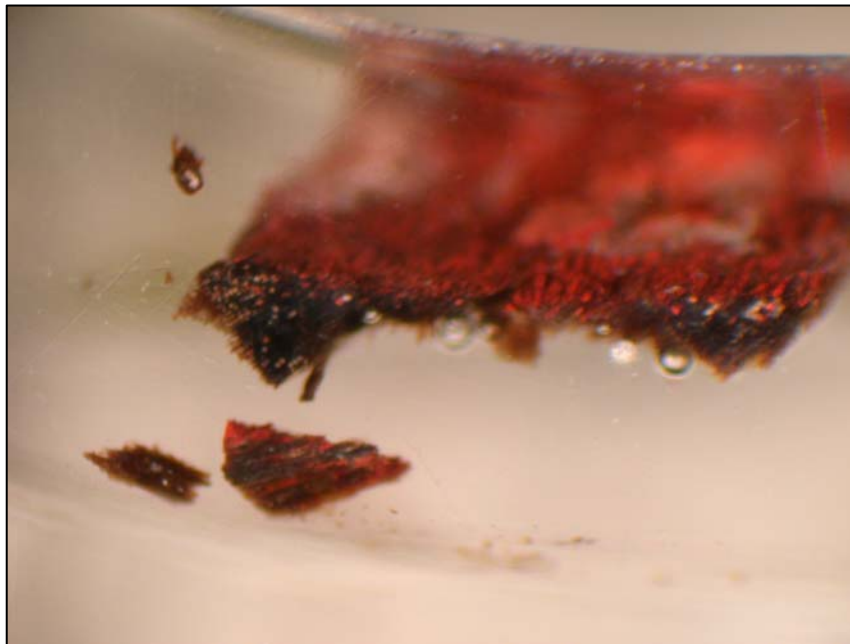
ST-008 Left Door Lite Sash, Exterior Northern side of Living Room

SUBSTRATE: wood

CHROMOCHRONOLOGY	<i>PRIMER/</i> FINISH	<i>COMMERCIAL</i> MATCH	<i>MUNSELL</i> MATCH
1. Dark red - paint	finish	BM 2174-20 Cinnamon	10R 4/8
2. Dark red	finish		

Notes:

- UV degraded wood



Sample ST-008

TYPICAL PAINT CHROMOCHRONOLOGY AND COLOR MATCHSAMPLE NUMBERS
AND LOCATIONS:

ST-009 Right Side of Door, Exterior Northern side of Living Room

SUBSTRATE: wood

	<i>PRIMER/</i>	<i>COMMERCIAL</i>	<i>MUNSELL</i>
CHROMOCHRONOLOGY	FINISH	MATCH	MATCH
1. Dark green	finish	SW 6322 - Inverness	7.5GY 3/4
2. Dark green	finish	BM Chrome Green EXT RM	2.5G 3/4

Notes:



Sample ST-009

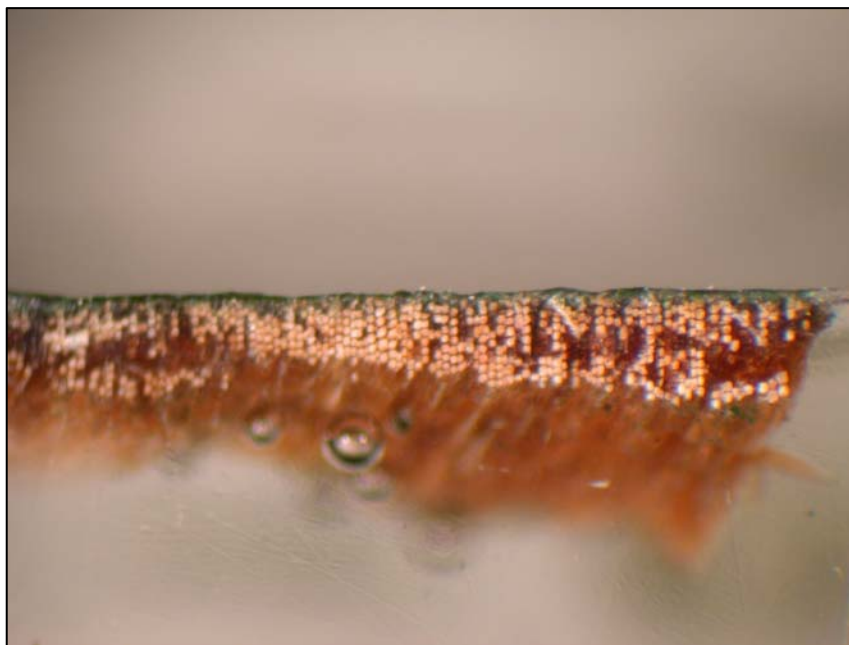
TYPICAL PAINT CHROMOCHRONOLOGY AND COLOR MATCH

SAMPLE NUMBERS AND LOCATIONS: ST-010 Right Side of Door Frame, Exterior North side of Living Room

SUBSTRATE: wood

CHROMOCHRONOLOGY	<i>PRIMER/</i> FINISH	<i>COMMERCIAL</i> MATCH	<i>MUNSELL</i> MATCH
1. Dark brown	varnish		
2. Pale brown	varnish		
3. Blue	finish		7.5B 3/6
4. Blue	finish		
5. Dark Green	finish		7.5GY 3/4
6. Dark Green			

Notes:



Sample ST-010

TYPICAL PAINT CHROMOCHRONOLOGY AND COLOR MATCHSAMPLE NUMBERS
AND LOCATIONS:

ST-011 Log, Exterior Southwest corner of Living Room

SUBSTRATE: wood

CHROMOCHRONOLOGY	<i>PRIMER/</i> FINISH	<i>COMMERCIAL</i> MATCH	<i>MUNSELL</i> MATCH
1. Dark brown	stain		
2. Reddish brown	finish		10R 4/8
3. Red			

Notes:



Sample ST-011

TYPICAL PAINT CHROMOCHRONOLOGY AND COLOR MATCHSAMPLE NUMBERS
AND LOCATIONS:

ST-012 Right Side of Window Sash, Exterior North side of Kitchen

SUBSTRATE: wood

CHROMOCHRONOLOGY	<i>PRIMER/</i> FINISH	<i>COMMERCIAL</i> MATCH	<i>MUNSELL</i> MATCH
1. Dark brown	varnish		
2. Clear/slightly yellow	varnish		
3. Gray	finish		

Notes:



Sample ST-012

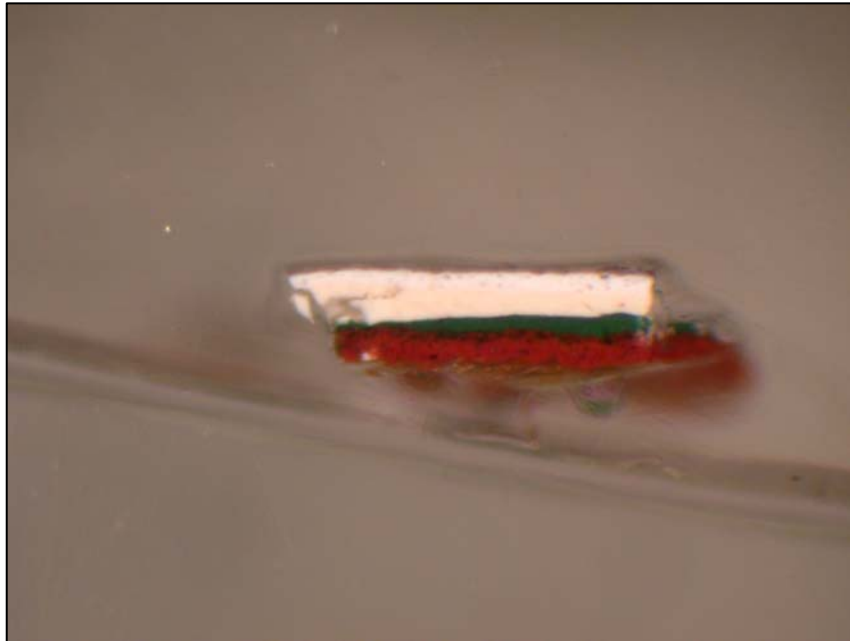
TYPICAL PAINT CHROMOCHRONOLOGY AND COLOR MATCHSAMPLE NUMBERS
AND LOCATIONS:

ST-013 Right Side of Window Frame, Exterior North side of Kitchen

SUBSTRATE: wood

	<i>PRIMER/</i>	<i>COMMERCIAL</i>	<i>MUNSELL</i>
CHROMOCHRONOLOGY	FINISH	MATCH	MATCH
1. Reddish brown	finish	BM 2174-20 Cinnamon	10R 4/8
2. Reddish brown	finish	BM 2174-20 Cinnamon	10R 4/8
3. Dark green	finish		7.5GY 3/4
4. Clear/slightly yellow	varnish		
5. White			
6. Gray			

Notes:



Sample ST-013

TYPICAL PAINT CHROMOCHRONOLOGY AND COLOR MATCHSAMPLE NUMBERS
AND LOCATIONS:

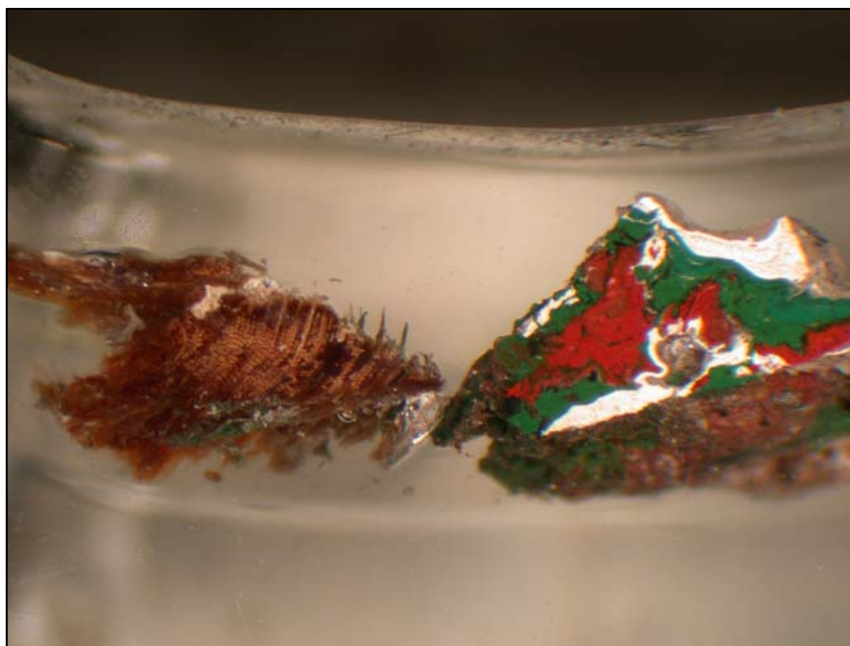
ST-014 Center of Window Sash, Exterior West side of Bedroom #1

SUBSTRATE: wood

	<i>PRIMER/</i>	<i>COMMERCIAL</i>	<i>MUNSELL</i>
CHROMOCHRONOLOGY	FINISH	MATCH	MATCH
1. Reddish brown	finish	BM 2174-20 Cinnamon	10R 4/8
2. Dark green	finish		2.5G 3/4
3. Dark green	finish		
4. Dark green	finish		
5. White	finish		
6. White	finish		
7. Gray	finish		

Notes:

- Very deteriorated, probably same layers as ST-013 but one extra green layer and possibly two extra white layers.



Sample ST-014

TYPICAL PAINT CHROMOCHRONOLOGY AND COLOR MATCHSAMPLE NUMBERS
AND LOCATIONS:

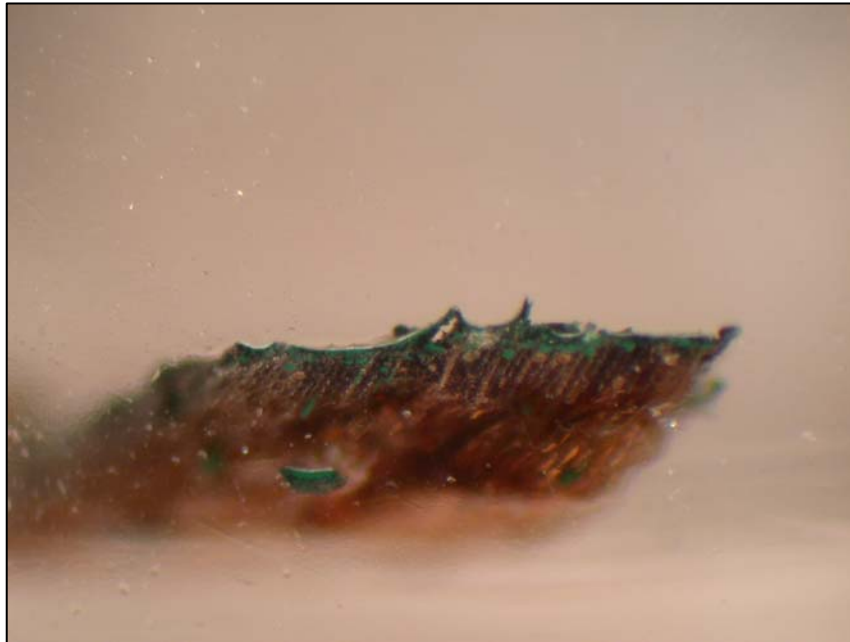
ST-015 Right Side of Window Sash, Exterior South side of Bathroom

SUBSTRATE: wood

	<i>PRIMER/</i>	<i>COMMERCIAL</i>	<i>MUNSELL</i>
CHROMOCHRONOLOGY	FINISH	MATCH	MATCH
1. Dark green	finish	BM Chrome Green EXT RM	2.5G 3/4
2. White	finish		
3. Gray			

Notes:

- Very weathered wood



Sample ST-015

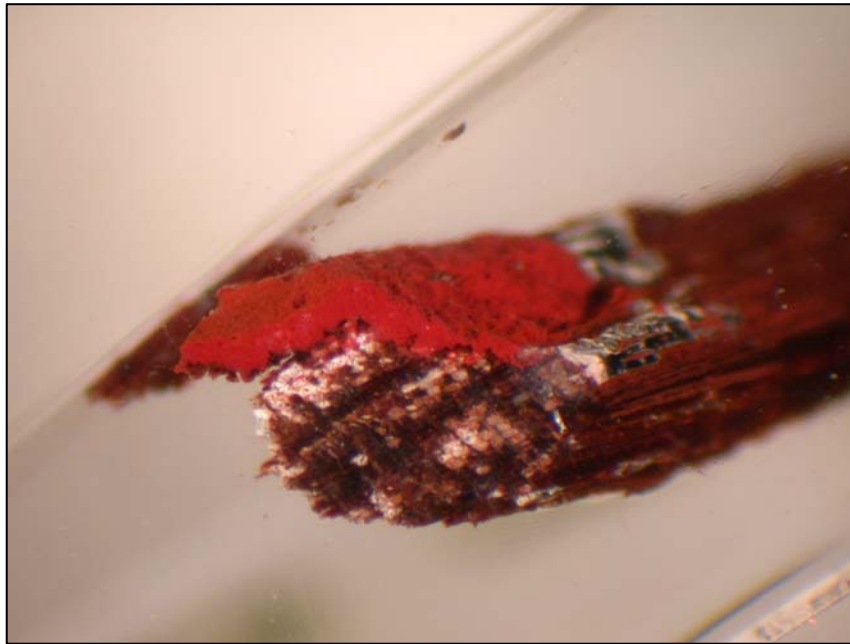
TYPICAL PAINT CHROMOCHRONOLOGY AND COLOR MATCHSAMPLE NUMBERS
AND LOCATIONS:

ST-016 Exterior South side of Tower

SUBSTRATE: wood

CHROMOCHRONOLOGY	<i>PRIMER/</i> FINISH	<i>COMMERCIAL</i> MATCH	<i>MUNSELL</i> MATCH
1. White	finish		
2. Reddish brown	finish		7.5R 3/8
3. Reddish brown	finish		10R 4/8

Notes:



Sample ST-016

