Mississippi State University

FOREST AND WILDLIFE RESEARCH CENTER

FOREST PRODUCTS DEPARTMENT

EVALUATION OF ISK POLE WRAPS

Final Inspection

SUBMITTED TO:

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Final Inspection of ISK Pole Wrap Products

In November of 2007 all remaining pole stubs in the ISK study were removed from test and visually evaluated for the presence of decay and/or termite damage. Annual inspections had been suspended since 2003 due to the lack of attack on the test specimens. Each pole stub was evaluated individually and the results can be found in the appendix. Overall group photographs are shown in figures 1–8.

Figure 1 – Group photo of untreated pine pole stubs which did not receive a supplementary wrap/bandage.

Figure 2 - Group photo of untreated pine pole stubs which received a supplementary wrap/bandage 1/16" thick.

Figure 3 - Group photo of untreated pine pole stubs which received a supplementary wrap/bandage 1/8" thick.

Figure 4 - Group photo of untreated pine pole stubs which received a supplementary wrap/bandage 1/4" thick.

Figure 5 – Group photo of penta treated pine pole stubs which did not receive a supplementary wrap/bandage.

Figure 6 - Group photo of penta treated pine pole stubs which received a supplementary wrap/bandage 1/16" thick.

Figure 7 - Group photo of penta treated pine pole stubs which received a supplementary wrap/bandage 1/8" thick.

Figure 8 - Group photo of penta treated pine pole stubs which received a supplementary wrap/bandage 1/4" thick.

Lack of decay and/or termite attack in the poles pre-treated with pentachlorophenol (penta) make it impossible to draw any conclusions on this portion of the study concerning the effectiveness of the wrap/bandage treatments. One penta pole stub (#2118) did have a small localized amount of decay approximately ¼" deep. After being segmented at this point, it was confirmed that the decay was localized (Figure 9).

Figure 9 – Pole #2118 did not show any signs of internal decay underneath the small spot of surface decay.

The untreated pine poles which received bandage/wrap treatments of varying thickness prior to installation performed well overall except for the control group which received no bandage /wrap prior to installation. Table 1 shows the average depth of decay for each bandage/wrap group.

Table 1 – Average decay depth from surface of pole, per treatment/ bandage groups for untreated test pole stubs.

	1/16"	1/8"	1/4"	None
Untreated	0.410	0.453	0.142	Failed

Some pole stubs in the various groups of untreated poles with bandage/wrap treatments did not perform as well as others as evidenced below. Figure 10 shows internal decay in pole stub #2211 and it was the only pole with decay of this type. Most decay was found just above the wrap and adjacent to ground line. Some specimens had small pockets of deep decay while most only showed signs of slight decay in the affected area (Figure 11). Only two poles showed deep decay around the circumference of the poles.

Figure 10 – Pole #2211 had internal decay surrounding the pith from the bottom up to approximately 24".

Figure 11 – A small pocket of deep decay was found on some poles.

Figure 12 is an example of the typical termite damage found on these pole samples while Figure 13 depicts the worst case found. All termite damage was immediately above the wrap, just above ground line.

Figure 12 – Pole #2223 is an example of the type of termite damage found during this study.

Figure 13 – Pole #2212 sustained the worst damage by termites in this study.

ISK Pole-Wrap Installed 7/98
Treatment Info

Pole#	Wrap	Assay(PCP)	Pole#	Wrap	Assay(PCP)
2101	1/16	0.434	2132	none	0.326
2102	1/4	0.29	2133	1/8	0.765
2103	none	0.228	2134	1/8	0.406
2104	1/8	0.54	2135	1/16	0.383
2105	none	0.576	2136	1/8	0.386
2106	1/4	0.229	2137	1/4	0.465
2107	1/8	0.401	2138	1/16	0.35
2108	1/16	0.353	2139	none	0.372
2109	none	0.325	2140	1/8	0.246
2110	1/4	0.231	2141	1/16	0.36
2111	1/4	0.345	2142	1/4	0.3
2112	1/16	0.246	2143	1/4	0.405
2113	1/4	NA	2144	none	0.408
2114	1/16	0.313	2145	1/16	0.38
2115	1/4	0.254	2146	1/16	0.367
2116	none	0.301	2147	1/8	0.374
2117	1/8	0.208	2148	none	0.283
2118	1/16	0.23	2149	1/4	0.368
2119	1/8	0.369	2150	none	0.432
2120	none	0.265	2151	1/8	0.411
2121	none	0.329	2152	1/16	0.348
2122	1/4	0.558	2153	1/16	0.555
2123	1/8	0.421	2154	1/4	0.258
2124	1/16	0.314	2155	1/4	0.301
2125	none	0.281	2156	1/4	0.321
2126	1/16	0.234	2157	1/16	0.292
2127	1/8	0.228	2158	1/8	0.359
2128	none	0.744	2159	1/4	0.351
2129	none	0.333	2160	1/8	0.381
2130	1/16	0.411	2161	1/16	0.361
2131	1/8	NA	2162	1/8	0.372

ISK Pole-Wrap Installed 7/98
Treatment Info

Pole#	Wrap	Assay(PCP)	Pole#	Wrap	Assay(PCP)
2163	1/4	0.529	2198	1/8	UNT
2164	1/16	0.457	2199	1/4	UNT
2165	1/8	0.277	2200	1/8	UNT
2166	none	0.536	2201	1/8	UNT
2169	1/8	0.522	2202	1/16	UNT
2170	1/16	0.391	2203	1/4	UNT
2171	1/16	0.39	2204	1/4	UNT
2172	none	0.38	2205	1/4	UNT
2173	1/8	0.297	2206	1/16	UNT
2174	1/8	0.516	2207	1/16	UNT
2175	1/4	0.305	2208	1/8	UNT
2176	1/4	0.415	2209	1/8	UNT
2177	none	0.418	2210	1/16	UNT
2178	none	0.298	2211	1/16	UNT
2179	1/4	0.397	2212	1/8	UNT
2180	none	0.533	2213	1/16	UNT
2181	none	0.323	2214	1/4	UNT
2182	1/4	0.266	2215	1/4	UNT
2183	1/4	UNT	2216	1/8	UNT
2184	1/16	UNT	2217	1/16	UNT
2185	1/4	UNT	2218	1/4	UNT
2186	1/16	UNT	2219	1/16	UNT
2187	1/8	UNT	2220	1/16	UNT
2188	1/16	UNT	2221	1/8	UNT
2189	1/4	UNT	2222	1/8	UNT
2190	1/8	UNT	2223	1/8	UNT
2191	1/16	UNT	2224	1/16	UNT
2192	1/4	UNT	2225	1/8	UNT
2193	1/16	UNT	2226	1/4	UNT
2194	1/16	UNT	2227	1/4	UNT
2195	1/8	UNT	2228	1/8	UNT
2196	1/8	UNT	2229	1/16	UNT
2197	1/4	UNT	2230	1/4	UNT

ISK Pole-Wrap Installed 7/98
Treatment Info

Pole#	Wrap	Assay(PCP)
2231	1/4	UNT
2232	1/8	UNT
2233	1/8	UNT
2234	1/16	UNT
2235	1/8	UNT
2236	1/4	UNT
2237	1/4	UNT
2238	1/16	UNT
2239	1/4	UNT
2240	1/4	UNT
2241	1/8	UNT
2242	1/16	UNT
2243	none	UNT
2247	none	UNT
2248	none	UNT
2249	none	UNT
2250	none	UNT
2251	none	UNT
2252	none	UNT
2253	none	UNT
2254	none	UNT
2255	none	UNT
2256	none	UNT
2257	none	UNT
2258	none	UNT
2260	none	UNT
2261	none	UNT
2262	none	UNT
2263	none	UNT
2264	none	UNT
2265	none	UNT
2266	none	UNT

	May-03 COMMENTS	Nov-07 Decay	Termite	COMMENTS	TREATMENT
2101		0.000	0.000		1/16
2102		0.000	0.000		1/4
2103		0.000	0.000		NONE
2104		0.000	0.000		1/8
2105		0.000	0.000		NONE
2106		0.000	0.000		1/4
2107		0.000	0.000		1/8
2108		0.000	0.000		1/16
2109		0.000	0.000		NONE
2110		0.000	0.000		1/4
2111		0.000	0.000		1/4
2112		0.000	0.000		1/16
2113		0.000	0.000		1/4
2114		0.000	0.000		1/16
2115		0.000	0.000		1/4
2116		0.000	0.000		NONE
2117		0.000	0.000		1/8
2118		0.250	0.000		1/16
2119		0.000	0.000		1/8
2120		0.000	0.000		NONE
2121		0.000	0.000		NONE
2122		0.000	0.000		1/4
2123		0.000	0.000		1/8
2124		0.000	0.000		1/16
2125		0.000	0.000		NONE
2126		0.000	0.000		1/16
2127		0.000	0.000		1/8

2128	0.000	0.000		NONE
2129	0.000	0.000		NONE
2130	0.000	0.000		1/16
2131	0.000	0.000		1/8
2132	0.000	0.000		NONE
2133	0.000	0.000		1/8
2134	0.000	0.000		1/8
2135	0.000	0.000		1/16
2136	0.000	0.000		1/8
2137	0.000	0.000		1/4
2138	0.000	0.000		1/16
2139	0.000	0.000		NONE
2140	0.000	0.000		1/8
2141	0.000	0.000		1/16
2142	0.000	0.000		1/4
2143	0.000	0.000		1/4
2144	0.000	0.000		NONE
2145	0.000	0.000		1/16
2146	0.000	0.000		1/16
2147	0.000	0.000		1/8
2148	0.000	0.000		NONE
2149	0.000	0.000		1/4
2150	0.000	0.000		NONE
2151	0.000	0.000		1/8
2152	0.000	0.000		1/16
2153	0.000	0.000		1/16
2154	0.000	0.000		1/4
2155	0.000	0.000		1/4
2156	0.000	0.000		1/4
2157	0.000	0.000		1/16
2158	0.000	0.000		1/8

2159		0.000	0.000		1/4
2160		0.000	0.000		1/8
2161	Pulled 2003			Pulled 2003	1/16
2162		0.000	0.000		1/8
2163	Pulled 2003			Pulled 2003	1/4
2164	Pulled 2003			Pulled 2003	1/16
2165		0.000	0.000		1/8
2166	Pulled 2003			Pulled 2003	NONE
2167		0.000	0.000		1/4
2168		0.000	0.000		1/8
2169	Pulled 2003			Pulled 2003	1/8
2170		0.000	0.000		1/16

2171		0.000	0.000		1/16
2172		0.000	0.000		NONE
2173		0.000	0.000		1/8
2174	Pulled 2003			Pulled 2003	1/8
2175	Pulled 2003			Pulled 2003	1/4
2176		0.000	0.000		1/4
2177	Pulled 2003			Pulled 2003	NONE
2178		0.000	0.000		NONE
2179		0.000	0.000		1/4
2180		0.000	0.000		NONE
2181		0.000	0.000		NONE
2182		0.000	0.000		1/4
2183		0.250	0.000		1/4
2184	Pulled 2003			Pulled 2003	1/16
2185	Pulled 2003			Pulled 2003	1/4
2186		0.250	0.500		1/16
2187	Pulled 2003			Pulled 2003	1/8
2188	Pulled 2003			Pulled 2003	1/16
2189	Pulled 2003			Pulled 2003	1/4
2190		0.250	0.250		1/8
2191		2.000	100.000		1/16
2192		0.063	0.000		1/4
2193		0.063	0.500		1/16
2194		0.500	0.500		1/16
2195		0.000	0.000		1/8
2196	Pulled 2003			Pulled 2003	1/8
2197		0.500	100.000		1/4
2198		0.000	0.000		1/8
2199		0.000	0.000		1/4
2200		0.000	0.000		1/8
2201		0.063	0.000		1/8

2202	0.500	100.000		1/16
2203	0.063	0.000		1/4
2204	0.000	0.000		1/4
2205	0.250	0.000		1/4
2206	0.500	100.000		1/16
2207	0.063	0.000	Fruiting Body near top	1/16
2208	0.063	0.000		1/8
2209	0.063	0.000		1/8
2210	0.000	0.000		1/16
2211	0.000	0.000	center decayed	1/16
2212	1.500	100.000		1/8
2213	0.250	0.000		1/16
2214	1.000	0.500		1/4
2215	0.000	0.000		1/4
2216	0.500	100.000		1/8
2217	0.250	0.000		1/16
2218	0.250	0.000		1/4
2219	0.500	0.750	one spot with 1 1/2" DK	1/16
2220	0.250	0.000		1/16
2221	0.250	0.500		1/8
2222	0.500	100.000		1/8
2223	0.500	100.000		1/8
2224	0.750	0.000		1/16
2225	2.000	0.063		1/8
2226	0.000	0.000		1/4
2227	0.000	0.000		1/4
2228	0.500	0.750		1/8
2229	0.500	0.750		1/16
2230	0.000	0.000		1/4
2231	0.031	0.000		1/4
2232	0.063	0.000		1/8

2233	_____	0.250	0.500	_____	1/8
2234	_____	0.250	0.000	_____	1/16
2235	_____	0.500	100.000	_____	1/8
2236	_____	0.063	0.000	_____	1/4
2237	_____	0.063	0.000	_____	1/4
2238	_____	0.500	100.000	_____	1/16
2239	_____	0.063	0.000	_____	1/4

2240		0.063	0.000		1/4
2241		0.500	0.000		1/8
2242		0.500	0.000		1/16
2243		Failed	Failed		NONE
2245		Failed	Failed		NONE
2247		Failed	Failed		NONE
2248		Failed	Failed		NONE
2249		Failed	Failed		NONE
2250		Failed	Failed		NONE
2251		Failed	Failed		NONE
2252		Failed	Failed		NONE
2253		Failed	Failed		NONE
2254		Failed	Failed		NONE
2255		Failed	Failed		NONE
2256	Pulled 2003	Failed	Failed	Pulled 2003	NONE
2257		Failed	Failed		NONE
2258		Failed	Failed		NONE
2259		0	0		1/16
2260		Failed	Failed		NONE
2261	Pulled 2003	Failed	Failed	Pulled 2003	NONE
2262		Failed	Failed		NONE
2263		Failed	Failed		NONE
2264		Failed	Failed		NONE
2265		Failed	Failed		NONE
2266		Failed	Failed		NONE

Decay = average depth of decay from surface(inches) around pole
Termite = percentage of pole circumference damaged at ground line damaged
Failed = pole totally gone at ground line and below