From: **Wiehe, Stephen** wiehes@wseinc.com
Subject: Review of timber piles
Date: September 29, 2021 at 11:37 AM
To: Julianne Wooten jwooten@pgrenewables.com
Cc: Hall, Johanna hallj@wseinc.com

SW

Julianne

This email follows out discussion about the literature review Weston & Sampson has done about the potential for preservatives to leach from timber piles and impact soil or groundwater. The level of review is embodied in the memo that you have seen, from Frank Riccardi and myself. This internal review was done to satisfy ourselves of the level of risk to human health and the environment from installing treated timber piles, as this was identified as an emerging market segment to support the renewable energy development community, who was looking for cost effective alternatives to the commercially available tradition steel and concrete foundation solar PV canopy systems.

The product that we were developing combined utility grade timber piles (telephone poles) and lightweight steel trusses, that are ubiquitous in the built environment. There are literally millions of similarly treated timber piles, poles and structured lumber in us in the US and around the world. The treatment of the poles has been the subject of many prior studies, that when taken on the whole, suggested that the leaching of the chemical used in the modern day treat treatment of these timber products is generally benign. The research was done by members of the our staff who were not involved directly in the timber pile solar projects; so as to limit the amount of bias that might be expected by those who were working on these projects.

While there are indeed chemicals that are used to inhibit microbial growth, insect infestation and premature rot of the utility grade timbers that have selected for use, these products are EPA-approved for the intended use. In short, we found no evidence of widespread document impacts from use of such timbers, only anecdotal evidence. From the limited research we have done, we find much of the chemical product is retained in the wood, and does not appear to leach significantly into groundwater or migrate very far in the soil in which they are installed. Migration is limited further by organic rich soils, similar to those soils often found in cranberry bogs.

Personally, I am a Professional Geologist (FL and NY) with 32 years of experience. I have a bachelor's degree in Geology, with a specialty in the engineering geosciences. I am a qualified Environmental Professional (per ASTM 1527) and a former Registered Environmental Site Assessors (National Registry of Environmental Professionals), who has

spent a great deal of time conducting contamination site assessments, and developing and implementing remedial action plans to remediate contaminated soil and groundwater. I have significant experience in characterizing groundwater flow, and measuring contaminant fate and transport. I worked on the assessment of hundreds of contaminated sites before focusing on development of renewable energy projects for the past 14 years. In my opinion, the use of the CCA-treated timber piles pose little threat to human health and the environment.

In addition Frank Ricciardi is a professional engineer in six states (MA, RI, NY, NJ, PA and CT) as well as a Massachusetts Licensed Site Professional for over fifteen years overseeing the cleanup of oil and hazardous material releases. In his experience and based on the studies/data evaluated feels that there is minimal risk posed to human health and/or the environment.

Sincerely,

Stephen P. Wiehe, PG
SENIOR ASSOCIATE
Weston & Sampson
55 Walkers Brook Drive, Suite 100 | Reading, MA 01867
Office 978-532-1900 x 2221
Cell 978-587-1672
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