## BLUEWAVE

## EXHIBIT J – Recommendation Letter from Bristol Engineering



May 13, 2016

Mr. Jonathan Mancini BWC Wankico River LLC 137 Newbury Street, 4<sup>th</sup> Floor Boston, Massachusetts 02116

Re: Professional Opinion

Proposal to Cut Trees within Zone 1

Oak Bluffs Water District

Dear Mr. Mancini:

Bristol Engineering Advisors, Inc. has reviewed the proposal to clear trees within the Zone 1 to the Oak Bluffs Water District Public Water Supply Wells. We are pleased to provide you with this letter and professional opinion regarding the potential affect tree removal may have on the Oak Bluffs drinking water supply.

It is our understanding that a total of 2.28 acres of tree clearing will be required within the Zone 1 for both Well No. 3 and Well No. 4; with no clearing closer than 300 feet to either well. The purpose of the clearing is to minimize potential shading impacts to the proposed solar field that is to be located wholly outside the Zone 1 of either well. The depth to groundwater exceeds 55 feet at both locations.

## **Regulatory Issues:**

Public water supplies are extensively regulated to ensure their long-term viability as sources of clean, safe drinking water. The Water Management Act (M.G.L. 21G, 1986) and accompanying regulations (310 CMR 36.00) govern the quantity and timing of water withdrawals, while the Drinking Water Regulations (310 CMR 22.00) regulate the process by which water withdrawals are sited, treated and, occasionally abandoned. These regulations are comprehensive; however they are also supplemented by Guidelines and Policies for Public Water Systems, which provide substantial additional detail in how the regulations are to be implemented.

Adherence to the regulations and accompanying guidelines and policies is particularly important in island settings where practical alternatives to groundwater for public water supplies are not available. In these circumstances it is reasonable to seek a higher level of confidence that a proposed project is consistent with safe drinking water objectives.

The Oak Bluffs project originally incorporated substantial siting of solar panels with the Zone 1 to Well Nos. 3 and 4, though appeared to be in compliance with the Bureau of Resource Protection, Drinking Water Program Policy on Wind and Solar Energy Project Proposed in Zone 1 (Policy #2011-1, Effective 9/1/2011). Subsequent modification has significantly reduced the scope wherein no panels are proposed to be installed within the Zone 1.

The project appears to be sited in an area that could be classified as "Water Supply Lands", and as such is required to comply with 310 CMR 22.24 and Policy #2011-1. The project has been proposed in a

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manner consistent with State regulation and policy.

## **Potential Water Quality Considerations**

There is anecdotal evidence that land clearing and development in close proximity to public water supply wells can have a long-term adverse impact on drinking water quality. Rainwater is naturally slightly acidic, having a pH of between 5.0 and 5.5, due to dissolved carbon dioxide and other pollutants in the atmosphere – both natural and man-made. Native topsoil has a buffering and filtering capacity that can be an effective in raising pH. When topsoil is removed, the pH remains low and can result in dissolution of naturally occurring iron and manganese. These minerals then flow with groundwater into the public water supply wells and, at sufficiently high concentrations require treatment to remove. This impact has been observed where large-scale land clearing, including removal of vegetation and topsoil has occurred.

With its high organic matter content, topsoil is also a "first line of defense" to protecting groundwater quality when manmade pollutants are spilled onto the ground. In addition to the organic matter trapping small quantities of pollutants, the natural bacteria and other microscopic organisms can be helpful in minimizing the potential environmental harm from small releases.

Our understanding is that the project, as proposed, will require tree removal, but will not involve stump or topsoil removal within the proposed Zone 1 clearing. The stumps are to be cut close to ground level, left in place to avoid excessive disruption of the topsoil and some type of vegetative ground cover may be planted.

In summary, the proposed tree removal is consistent with drinking water regulations and policies, and it does not propose removal of topsoil either within the Zone 1 or in the panel installation area. Provided the project is constructed and operated consistent with the application, it is my professional opinion that the project presents minimal risk to adversely affect the groundwater pH or to the Oak Bluffs drinking water wells.

If you have any questions regarding this matter, please feel free to contact me at (508) 758-8270.

Respectfully yours,

Bristol Engineering Advisors, Inc.

Peter Newton, PG

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