SAJ-2004-12518 (SP-JCM) St. John Marina

## Exhibit 7, Attachment A

Letter from Oliver Bigler, P.E., Director of Design and Engineering, Technomarine Manufacturing Inc.



September 17, 2019

Chaliese N. Summers Managing Member The Summer's End Group, LLC 5000 Estate Enighed, Suite #63 St John, U.S. Virgin Islands, 00830

> RE: SAJ-2004-12518 (SP-JCM) Clarification of previous submittal

The following is response to the Regulatory Division, South Permits Branch, Antilles Section SAJ-2004-12518 (SP-JCM), statement/comment "5." (five) outlining Technomarine's pile installation method for the proposed development of the St. John Marina, located at Coral Harbor, Estate Carolina, Coral Bay, St. John, U.S. Virgin Islands.

Relying on our experience designing over 950 marinas in nearly identical geotechnical conditions, Technomarine proposes the following estimated pile length and pile driving description. Based on our 39 years of experience, the following basic comments can be made with confidence;

- 1. Average water depths within the marina footprint are approximately 12'; pile cutoff elevation will be roughly 5 feet above mean water; with an average embedment depth of 25', piles will be 45' long.
- 2. Dock piles will be a combination of 14" & 18" diameter steel piles filled with rebar reinforced concrete, all 45 feet in length, with approximately 25-foot embedment depth. Total dock pile count equals 66: 14-inch diameter steel anchor piles, 457: 14-inch diameter steel anchor pile and 437: 18-inch diameter steel anchor pile. Mooring Field buoys shall be anchored with helmken embedment auger anchors or like, 10-foot embedment depth, in groups of three for a total of 36 auger anchors.
- 3. Based on the results of the geotechnical survey report performed by Sea Diversified at the proposed marina site, no hard layer is present within the pile penetration depth. Assuming a mix of silty sand and clay soil conditions, and no evidence of rock within the limits of the pile penetration, predicted install times using a typical vibra-hammer would be in the range of:
  - 8 +/- piles installed per day per pile barge
  - 16 +/- piles installed with the use of 2qty pile barges (if applicable)
- 4. Pile count and installation duration per dock section;
  - A Dock
    - Pile count: 140 (140 dock piles, 0 mooring piles)
    - Install duration: 17 days
  - B Dock
    - Pile count = 144 (144 dock piles, 0 mooring piles)

- Install duration: 18 days
- <u>C Dock</u>
  - Pile count: (77 dock piles, 0 mooring piles)
  - Install duration: 10 days
- <u>D Dock</u>
  - Pile count: 89 total(89 dock piles, 0 mooring piles)
  - o Install duration: 11 days
- <u>E Dock</u>
  - Pile count: 149 total (149 dock piles, 0 mooring piles)
  - Install duration: 19 days
- <u>F Dock</u>
  - Pile count: 243 total (243 dock piles, 0 mooring piles)
  - Install duration: 30 days
- G Dock
  - Pile count: 54 total (54 dock piles, 0 mooring piles)
  - Install duration: 7 days
- <u>H Dock</u>
  - Pile count: 64 total (64 dock piles, 0 mooring piles)
  - Install duration: 8 days
- Mooring Field
  - Anchor count: 36 total (36 helmken auger anchors)
  - Install duration: 4.5 days

Project pile installation, including mooring field auger anchors will be performed by one crew, installing approximately 8 +/- piles/anchors per day; with a total pile/anchor count of 996 (960 Dock piles, 36 auger anchors, 0 mooring piles). Auger anchors will be installed by divers concurrently during pile driving activities. Pile-driving including auger anchor installation will occur for a total duration of 120 approximate days. Mooring piles will not be installed and are not required to operate this marina because each slip includes a full-length dock finger to support each vessel.

In the event that an impact-hammer be required to complete the installation of any piles, underwater "air bubble curtain" and "wood block" will be employed to reduce underwater noise and keep aquatic creatures/fish away from all pile driving operations.

Again, these assumptions are based on Technomarine's extensive experience designing and driving piles for similar structures in similar environments.

In closing we have further re-evaluated and ran additional engineering, loading, calculations, etc., on all aspects of the marina including civil structural, mechanical, anchoring and find the design superior in nature to all marina industry standards.

Thank you,

Olivier Bigler, P.E. Director of Design and Engineering Technomarine Manufacturing Inc