

January 12, 2024

Michael Walker, CEO
STAX Engineering, Inc.
65 Pine Avenue, Suite 943
Long Beach, California 90802
m.walker@staxengineering.com

Dear Michael Walker:

California Air Resources Board (CARB) staff have reviewed the amended Test Plan for the barge-based STAXbox.A-1 system (XCRAFT-1 + XBOX-1P) to treat emissions from container vessel auxiliary engines.

STAX Engineering, Inc. (STAX) submitted "Research Test Plan to Expand Containership CAECS and Test XCap Connector" (Test Plan, Version 1, dated October 31, 2023) to CARB while Executive Order (EO) approval for the STAXbox.A-1 system was still pending. The STAXbox.A-1 was granted EO G-23-294 on December 4, 2023.

CARB staff reviewed the Test Plan (Version 1) and provided comments to STAX on December 15, 2023. At CARB staff's suggestion, STAX subdivided the testing identified in Test Plan (Version 1) and submitted Test Plan A (Version 2) on December 17, 2023, to include only testing for the purposes of 1) expanding the operating conditions for the STAXbox.A-1 system, and 2) evaluating the XCAP connector which is an added component that may be attached to the original flexible ducting connector to improve exhaust capture design. CARB staff met with STAX on December 19, 2023, and STAX revised and resubmitted Test Plan A (Version 3) later that same day. CARB staff reviewed Test Plan A (Version 3) and provided comments to STAX on December 20, 2023. STAX revised and resubmitted Test Plan A (Version 4) on December 21, 2023, though the title page of the document was not updated and still lists the December 19, 2023, date from the previous version. STAX submitted additional information on January 2, 2024, regarding the XCAP connector dimensions and the minimum and maximum exhaust pipe diameter that can be serviced using this XCAP. CARB staff reviewed Test Plan A (Version 4) and provided comments to STAX on January 10, 2024. STAX revised and resubmitted Test Plan A (Version 5, attached) on January 11, 2024.

Based on CARB staff's review, and pursuant to Health and Safety Code section 93130.5(f) of the 2020 At Berth Regulation, STAX's Test Plan A (Version 5, submitted January 11, 2024) is hereby approved in accordance with testing requirements under the 2020 At Berth Regulation and the CARB Recommended Emissions Testing Guidelines for Ocean-Going Vessels.

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CARB approval is based on the system description, design, and operational procedures outlined in STAX's Test Plan A (Version 5). No changes or modifications are permitted to the STAXBox.A-1 system, including the capture system design and operation, without prior CARB approval. In order to modify EO G-23-294 to reflect the requested changes outlined in the Test Plan, STAX will need to complete all testing outlined in their Test Plan A (Version 5) and provide all reports generated from these tests.

The application requirements that STAX must meet to submit test results are outlined in section 93130.5 of the 2020 At Berth Regulation. Per section 93130.5(i) of the 2020 At Berth Regulation, if testing deviates from the approved Test Plan without prior CARB approval, the Executive Officer may deem the application incomplete or disapprove the application. An example of deviating from the Test Plan includes conducting testing on additional vessel visits beyond those approved in the Test Plan and claiming such visits qualify for the research exception set forth in section 93130.8(d) or 93130.10(e) of the 2020 At Berth Regulation. CARB reserves the right to request the results of any testing conducted beyond the testing described in the approved Test Plan.

Vessel visits that coincide with the tests specified in the approved test plan may count as a compliant visit under the research exceptions in section 93130.8(d) or 93130.10(e) of the 2020 At Berth Regulation; however, these sections only apply for testing identified in Test Plan A (Version 5) and conducted after the date of this letter when Test Plan A (Version 5) was approved. All testing must adhere to the system description, design, and operational procedures outlined in the approved Test Plan. To complete the testing outlined in Test Plan A (Version 5), a total of 12 vessel visits are approved to utilize the research exception to compliance with the 2020 At Berth Regulation set forth in section 93130.8(d) or 93130.10(e).

STAX is responsible for tracking the usage of the 12 approved vessel visits that may utilize the research exception, and STAX must provide a copy of the approved Test Plan to each vessel participating in the research. STAX is also responsible for communicating with the vessel operator to ensure the operator knows what tests are being performed during the visit, and which number out of the 12 approved visits the vessel is participating in. As noted above, any tests completed in excess of those approved in the Test Plan would not be eligible for the research exception to compliance with the 2020 At Berth Regulation set forth in section 93130.8(d) or 93130.10(e). If more than 12 vessel visits are needed to complete all the testing outlined in the approved Test Plan, STAX must seek additional approval from CARB.

Testing for a new purification train to be added to the XCRAFT-1 barge (XBOX-1S) and a new system (XCRAFT-2 + XBOX-2P) will be addressed in future Test Plan(s).

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If you have any questions, please contact Angela Csondes, Manager, Marine Strategies Section, at angela.csondes@arb.ca.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Bonnie Soriano". The signature is fluid and cursive, with the first name "Bonnie" written in a larger, more prominent script than the last name "Soriano".

Bonnie Soriano, Chief, Freight Activity Branch, Transportation and Toxics Division

Enclosure: STAX CARB Expanded EO XCAP research test plan.005

cc: Angela Csondes, Section Manager, Marine Strategies Section