Oregon

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March 29, 2022 *via electronic delivery*

Rob Webb, Principal Engineer
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1236 Finn Hill Road
Poulsbo, WA 98370

RE: 2022 Johnson Lake, Fish Tissue Sampling
ECSI # 2086

Dear Rob Webb:

The Oregon Department of Environmental Quality (DEQ) reviewed the February 4, 2022 *Johnson Lake Fish Tissue Monitoring Study Sampling and Analysis Plan* (Sampling Plan) prepared by Grette Associates, LLC on behalf of Owens Brockway Glass Container, Inc. (Owens-Brockway). The sampling and analysis plan describes the fish tissue monitoring in Johnson Lake, located west of I-205 adjacent to the Owens Brockway Glass Container, Inc. facility (5850 NE 92nd Drive in Portland, Oregon; ECSI# 2086). Fish tissue sampling is required as part of long-term monitoring of the remedial action implemented by Owens-Brockway as described in the *Remediation Operations and Maintenance Plan (O&M Plan)-Sediment Remedial Action* (December 20, 2012).

DEQ's comments on the documents are presented below. Please submit a final Fish Tissue Monitoring Study Sampling and Analysis Plan, incorporating these comments within 30 days.

1. Section 1. Introduction
    a. This section lists Appendices C and D as reversed. Appendix C includes the analytical laboratory (ALS Global) standard operating procedures for fish tissue sample preparation and Appendix D includes the DEQ comment letter from the 2017 collection and sampling effort.

2. Section 1.3.3 Organization.
    a. This section states that additional requirements based on comments from DEQ will be incorporated into the monitoring report but does not specify what those are. Please list the additional sections, including (i) documentation of the 2022 fish tissue sampling event should include the information provided in the 2018 revised report as well as a summary of the results from the 2017 and 2004 events for comparison and (ii) description of fish collected (number, species, length, mass) and which fish constituted which composite.

b. The description of the lake area as a whole should include (i) an inspection of the areas near the outfalls to Johnson Lake and any observations of increased turbidity, discoloration, or algae growth in these areas and (ii) a survey the condition and effectiveness of the warning signs around the lake and lake access areas. Corresponding photographs should be collected of the inspected areas.

3. Section 2.1 Fish Collection
   a. DEQ refers to EPA's Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories Volume 1 Fish Sampling and Analysis, 2000 (EPA Guidance for Fish Sampling), available at https://www.epa.gov/fish-tech/epa-guidance-developing-fish-advisories
   b. The priority should be the collection of large whole-fish, defined as >350 mm in length. DEQ does not consider fish <350 mm of sufficient size for an evaluation of fish that may be consumed by humans and large wildlife species. The large whole-fish tissue type in the O&M plan should be updated to reflect fish >350 mm in length. This is important to evaluate the fish tissue concentrations consistently with the remedial investigation, baseline risk assessment, and the remedial action objective for PCB congener 126.
   c. All game and panfish (e.g. bass, bluegill, sunfish, perch) collected >125 mm should be retained for potential analysis. Due to the scarcity of these fish, the analysis of individual fish may be required.
   d. The collection of small whole-fish composites (<125 mm) should prioritize perimeter sampling zones 6, 7, and 8 to evaluate body burdens of small home range species closest to the facility. Note that previous efforts have not found small whole-fish inhabiting the center of the lake. Small fish typically include the three-spined stickleback and sculpin.
   e. The report states that "*The goal for each category is to collect enough fish for the lab to composite five samples of the same fish type (fillets) and size range (whole fish) into a single composite for each category.*"
      i. Five specimen of the same fish species should be collected to form into a single whole-body composite sample. An additional five specimen of the same fish species should be collected to form a single fillet composite sample. This allows for more accurate whole-body estimates and allows for correct implementation of Section 11.2.4.1 Whole Fish Tissue in the attached ALS Standard Operating Procedure.
      ii. If there are not enough fish collected to develop both whole body and fillet composites, whole body composites should be the priority. This is consistent with the goals of both DEQ and the Oregon Health Authority to ensure risk is not underestimated for people that typically eat the whole fish.
      iii. While five fish per composite is the goal, if fewer than five fish of a species are collected, potential compositing with a smaller number of fish or the analysis of individual fish should be considered. Decisions regarding compositing of type and sizes of fish should be made after coordinating with DEQ.
      iv. Fish should not be composited across species, as DEQ stated previously, and in accordance with the EPA Guidance for Fish Sampling.

f. Page 5 states that "*individual fish comprising a composite sample should be of similar size (the smallest individual in a composite should be no less than 75% of the total length of the largest individual)*" while page 4 states that "*the differences between lengths of individuals in a composite sample and the average of the lengths shall not exceed 10 percent.*" Please clarify that the 75% size difference is for fish in a single composite, in accordance with EPA Guidelines for Fish Sampling (page 6-19), and that the 10% difference in lengths is for replicate samples (see page 6-26). This section of the EPA Guidelines for Fish Sampling states that "*Replicate composite samples should be as similar to each other as possible. In addition to being members of the same species, individuals within each composite should be of similar length (size) (see Section 6.1.1.6). The relative difference between the average length (size) of individuals within any composite sample from a given site and the average of the average lengths (sizes) of individuals in all composite samples from that site should not exceed 10 percent (U.S> EPA 1990d)."*

g. DEQ should be provided notice if a second 4-day collection and sampling effort is required to collect a sufficient quantity of fish.

h. Please specify if fish from individual areas of the lake will be held in separate coolers and whether fish will be held over multiple days during the 4-day collection event.

i. Please collect photographs of the fish selected for sampling for each species and keep a record of all fish collected, including species type, length, and whether selected for sampling or released.

j. The report states that "*Based on the previous sampling in Johnson Lake (ARCADIS 2004b, Grette Associates 2017), it is unlikely that more than five fish of any fillet category or >125mm will be collected during the course of sampling."*

    i. Largescale sucker and carp representing a large size class (>350 mm) were collected during the remedial investigation (2004), evaluated in the baseline risk assessment, and formed the basis for the remedial action objective to prevent consumption of fish with tissue concentrations greater than 0.003 ppb PCB congener 126.

    ii. The method used for fish collection is important to consider for the large, bottom-dwelling fish as some methods, such as electro-fishing, may not penetrate the depths necessary to reach these fish. Multiple fishing methods should be used to collect the targeted fish species in each of the categories.

k. In addition to water temperature and dissolved oxygen, please collect turbidity readings at each sampling location where GPS locations are recorded.

4. Section 2.2 Tissue Sample Collection

    a. The section should clearly indicate that fish tissue composites will be created using equal mass from each individually homogenized fish sample and can reference Section 11.3 Compositing of the attached ALS Standard Operating Procedure. Please clarify if the reference to "additional filleting procedures and requirements" in Attachment B refers to the EPA Guidance for Fish Sampling provided in the May 25, 2017 DEQ letter.

b. When referring to the MET-TISP SOP, please include a reference to attachment C. Please confirm that this SOP is in accordance with the EPA Guidance for Fish Sampling.

5. Section 2.3 Sample Transport and Chain of Custody Procedures
   a. Please include the sample naming convention that will be used to distinguish fish species categories and to identify which fish will be included in which composited sample by the laboratory.

6. Section 3.3. Chemicals of Concern
   a. Please add total mercury to the analyte list because it has similar health effects as PCBs, and thus the Oregon Health Authority needs this information to calculate meal recommendations.

7. Section 4 Quality Assurance
   a. Please expand this section to include any additional sampling that is proposed for the 2022 sampling event, such as additional fish species targeted to meet QA/QC goals, replicate and duplicate samples, and data validation. Please provide a full reference to the QAPP and attach a copy.

8. Appendix A Scientific Taking Permit
   a. Please confirm the Scientific Taking Permit has been obtained or will be obtained from the Oregon Department of Fish and Wildlife prior to the sampling event.

Please contact me at (503) 229-5538 or franziska.landes@deq.oregon.gov if you have any questions.

Sincerely,

F. Landes

Franziska Landes
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Northwest Region Cleanup Section

Ec: Sue Sholl, Owens Illinois
Sarah Van Glubt, DEQ
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Jennifer Peterson, DEQ
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References

EPA, 2000. Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories Volume 1 Fish Sampling and Analysis, (available at https://www.epa.gov/fish-tech/epa-guidance-developing-fish-advisories)