

8. PUBLIC COMMENTS

Public notice of this application was made in the *Ellsworth American* newspaper on or about March 8, 2018. The Department receives public comments on an application until the date a final agency action is taken on the application. Those persons receiving copies of draft permits must have at least 30 days in which to submit comments on the draft or to request a public hearing, pursuant to *Application Processing Procedures for Waste Discharge Licenses*, 06-096 CMR 522 (effective January 12, 2001).

9. DEPARTMENT CONTACTS

Additional information concerning this permitting action may be obtained from, and written comments sent to:

Gregg Wood
Division of Water Quality Management
Bureau of Water Quality
Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017 Telephone: (207) 287-7693
e-mail: gregg.wood@maine.gov

10. RESPONSE TO COMMENTS

During the period of September 28, 2018, through the issuance date of the permit/license, the Department solicited comments on the proposed draft permit/license to be issued for the discharge(s) from the Whole Oceans LLC facility. The Department received written comments from the following entities:

Maine Department of Marine Resources (DMR)
National Oceanic & Atmospheric Administration (NOAA)
National Resources Council of Maine (NRCM)
Friends of Penobscot Bay (FOPB)
Penobscot Indian Nation (PIN)
Gulf of Maine Institute (GMI)
Atlantic Salmon Federation (ASF)
Kennebec River Biosciences (KRB)
Whole Oceans LLC

Town of Bucksport
Des FitzGerald
Andrew Stevenson
James Merkel
Lew McGregor
Holly Faubel
Deborah Capwell
Karin Spitfire
Eileen Wolper

Therefore, the Department has prepared a Response to Comments as follows.

Water Quality Monitoring/Dye Study

Comment #1a (DMR) – DMR requests the opportunity to review and provide comments on any dye study plan and be provided any subsequent results of the dye study conducted with consideration to low and high flow periods. The DMR requests a thorough hydrographic review and/or model near the discharge location to determine the discharge dilution plume relative to the movement of the salt water wedge and associated turbidity maximum.

Response #1a: The DMR request is acceptable to the Department. Special Condition F, *Dye Study*, requires the dye study plan to be submitted to the Department for review and approval six months following the effective date of the permit. The Department will forward a copy of the plan to DMR once it is received by the Department.

Comment #1b (NRCM): NRCM states DEP should require at least one ambient water quality monitoring site very close to the WO outfall. The site should be as close to the WO facility as MP3 in Attachment D is to the Bucksport waste water treatment facility. The commenter requests monitoring near the outfall should include searching for *beggiatoa* mats. Significant growth has occurred under salmon pens when they are poorly run.

Response #1b: - The Department Division of Environmental Assessment responsible for ambient water quality monitoring to date does not agree a monitoring site closer to the outfall than monitoring station P2 is appropriate. A monitoring site closer will likely be within the zone of initial dilution for the discharge and will not capture the impact to ambient conditions but capture the characteristics of effluent as it mixes with the receiving water. Such a monitoring station will not be helpful in the overall assessment of the impact of the discharge on ambient conditions.

As for monitoring for *beggiatoa* mats, the Department does not believe this is necessary. *Beggiatoa* mats under the net pen sites were observed at sites where excessive quantities of uneaten food were collecting directly under the pen sites. The mats were generally associated with food depths of 6 to 24 inches deep. The WO facility is anticipating a 91% removal of fish feces and uneaten food as the waste stream passes through the waste water treatment facility. However, if the treatment facility fails to perform as expected and higher than expected solids loss results, the Department would be willing to revisit searching for *beggiatoa* mats.

Comment #1c (NRCM): NRCM states DEP should require WO to monitor all parameters it can with sondes rather than just turbidity. Parameters would include at least temperature, pH and dissolved oxygen.

Response #1c: - The Department agrees. Special Condition G, *Ambient Water Quality Monitoring*, has been rewritten to make clear which parameters are to be collected via a sonde and which parameters are to be monitored via grab sampling.

Water Quality Monitoring/Dye Study

Comment#1d (Holly Faubel) – The commenter states that WO should provide either peer reviewable modeling or a security bond to address algal blooms taking into account historic and predictive modeling of river and bay temperatures.

Response #1d: Special Condition F, *Dye Study*, Special Condition G, *Ambient Water Quality Monitoring*, and effluent monitoring required by Special Condition A, *Effluent Limitations and Monitoring Requirements*, will provide the necessary information the Department needs to determine whether the discharge from the WO is causing or contributing algal blooms.

Comment #1e (Karin Spitfire, FOPB): The commenter believes the impact from the dischargers (WO & Nordic Aquafarms) should be considered together rather than separately or sequentially. Unless this is done, it is not clear that the standards of Maine's anti-degradation policy will be met.

Response 1e: The Department will be evaluating both facilities separately as well as collectively. For WO, an independent evaluation of the discharge indicates the impact to ambient water quality is not measurable at the southern tip of Verona Island. As a result, the discharge from the WO facility will have no impact on the ambient water quality at the Nordic Aquafarms site. Therefore, the state's antidegradation policy has been met in that the discharge will not cause or contribute to failure of the receiving water to meet the standards of its assigned classification, and all designated use will be maintained and protected.

Antibiotics

Comment #2a (DMR)- DMR states the quantity of antibiotics in the draft permit application appears to be greater than necessary, as the annual level is based on maximum dosage, when the proposed use is limited to emergencies. DMR requests monthly reporting of antibiotic usage and the pathogen being treated as well as monitoring of residual antibiotics in the near-field sediments be conducted. DMR also requests development of a monitoring program to evaluate discharge effects of antibiotics at 18.6 MGD to the near field and far field marine environment and impacts to marine organisms.

Response #2a: DMR is correct in that the quantities in the application are too high as the mass calculation for Aquaflo® (florfenicol) was miscalculated and should be 750 kg/yr not 7,500 kg/yr. In addition, the annual quantities appear high because they were calculated based on maximum dosages not limited emergencies which inflates the mass values.

The Department has revised the permit to require the permittee to include monthly reporting of antibiotic usage and the pathogen being treated as well as monitoring of residual antibiotics in the effluent, but not the near-field sediments. If the effluent values are not detected at any flow regime there is no reason to conduct near field or far field sediment sampling or assess impacts to marine environments. However, if antibiotics are detected in the effluent that are at levels that have a

Antibiotics(cont'd)

reasonable potential to exceed thresholds that may impact marine organisms, the Department may re-open the permit pursuant to Special Condition O, *Reopening of Permit For Modifications*, to establish sediment sampling or require an assessment to the marine environment and or impacts to marine organisms.

Comment 2b (Andrew Stevenson) – The commenter thinks it is important for the DEP, DACF, DMR and the public to know how the fungicides, bactericides, parasiticides, antibiotics and therapeutants will be controlled, tracked, destroyed or neutralized. The commenter requests the applicant provide the DEP with credible information about how these substances bio-accumulate in the salmon (if they do) or how they persist in the effluent and the solids waste flows (if they do not).

Response #2b: The use of antibiotics in the salmon farming industry is becoming increasingly rare and in the case of Land Based/ RAS salmon industry extremely rare. If antibiotics are used, they are usually for a very short duration (e.g., 10 days) and they are never used prophylactically (on an ongoing basis) as they are commonly used in poultry or hog production. Atlantic salmon experts such as the Freshwater Institute, who have been growing fish for over 30 years, note that they have never used antibiotics. They typically are successful using mild treatments with salt or hydrogen peroxide to keep fish healthy. Whole Oceans will adopt these same practices.

Comment #2c (PIN, Holly Faubel): The commenters recommends that when drugs are used for disease control, the permittee should be required to monitoring the effluent for fungicides, bactericides, parasiticides, antibiotics and therapeutants to determine if the waste water treatment facility is capable of removing them before discharge to the river. The PIN also questions why environmental monitoring and evaluation is required for Investigational New Animal Drugs (INADs) but not other compounds used?

Response #2c : The Department has revised the permit to require the permittee to include monthly reporting of antibiotic usage and the pathogen being treated as well as monitoring of residual antibiotics in the effluent. INADs are investigational drugs and have not been completely vetted like the other compounds approved by the FDA. The environmental monitoring and evaluation is designed to gather additional data on the efficacy of the drug(s) as well as their fate and transport.

Comment #2d (Holly Faubel): The commenter requests WO documents its containment strategy for participation in the INAD program.

Response #2d: Special Condition I, *Disease Control*, §4(b)(3) contains the requirements of the environmental monitoring and evaluation program associated with the use INADs. The Department considers this sufficient for what the commenter terms as the containment strategy.

Antibiotics(cont'd)

Comment #2e (NOAA) – The commenter requested the Department incorporate a requirement for a biosecurity plan for the facility to eliminate introducing or spreading any pathogens (bacterial or viral) into the environment. This should be included in Special Condition I, *Use of Drugs for Disease Control*, of the permit.

Response# 2e: The permittee is actively preparing a biosecurity plan for the facility and will be prepared to submit the plan to the Department at the same time as the CMS plan. Both will be due on or before 6 months after the effective date of the permit.

Comment #2f (Karin Spitfire): The commenter requests standards be set for pesticides, germicides etc. that may be given to the fish and have those standards be evaluated by scientists who have nothing to gain from the aquaculture industry.

Response #2f: The fungicides, bactericides, parasiticides, antibiotics and therapeutants identified in the WOs application have been reviewed by IFWs fish pathologist, the State of Maine veterinarian and DMR staff familiar with aquaculture. The only compound identified as being of concern is Praziquantel (trematodes) which is not FDA approved and is therefore being removed from the final permit.

Containment and Escapement

Comment #3a (DMR) – DMR requests to be notified immediately of any tank or system failures where fish containment is compromised regardless of whether escaped quantities are known.

Response #3a: Special Condition K, *Protection of Atlantic Salmon*, has been modified accordingly in the final permit.

Comment #3b (NRCM,NOAA): The commenters stated DEP should require WO to prevent the escape of any fish and report the escape of even one fish.

Response 3b:: Special Condition K, *Protection of Atlantic Salmon*, has been modified accordingly in the final permit.

Comment #3c (NOAA) – The commenter requests Special Condition K, *Protection of Atlantic Salmon*, include a requirement for the Containment Management System (CMS) plan to be submitted to NOAA and the UFWS for review and approval prior to issuing a discharge permit for the facility. In addition, NOAA states that in the event anticipated risks to the ESA listed Atlantic salmon GOM DPS population from the facility increases as a result of improperly designed, operated on inadequate protective measures in place, the Services (NOAA and USFWS) reserve the right to require additional conditions such as marking of fish to identify the facility, and/or require rearing only North American origin populations to reduce the impacts from escapes.

Containment and Escapement

Response #3c: Special Condition K, *Protection of Atlantic Salmon*, of the draft permit requires the permittee to submit the CMS to the Department six months after the effective date of the permit for review and approval. The permittee is actively preparing a CMS plan for the facility and will be submitting it to the Department in a timely fashion, well in advance of the commencement of operations. Therefore, Special Condition K of the final permit has been revised to require the permittee to submit the CMS plan to the NOAA, USFWS and DMR for review at the same time as the submission to the Department. The Department will remain the agency responsible for final approval. In addition, Special Condition K has been modified to bar any eggs or fish of any age to be stocked at the site without final approval of the CMS.

Solids & Sludge Disposal

Comment #4a (Andrew Stevenson) – The commenter states there is not enough information in the application to tell how long sludge solids can be held at the facility before they must be trucked away and no description of the holding facilities that might be constructed. The commenter requests that the beneficial use be identified before DEP makes a permitting decision. The commenter also requests the applicant identify landfills capable of receiving and safely burying sterilized solids slurry generated in the quarantine area of the facility.

Response #4a : The sludge will be dealt with in two forms, solid and liquid, as each is used in different composting features. The solid form will be kept in a concrete bunker, which provides secondary containment, and when filled will be emptied to a sludge (slurry) tanker for removal on a regular basis to a Maine composting facility. WO is currently in negotiations with Maine composting facilities. WO is also examining the potential of using liquid waste and drying it out, through a drying process on site, down to a 15-20% solid, which will be stored in a similar concrete tank, and removed on a regular basis to an anaerobic digestion facility in Maine for use. There are a number of landfill facilities WO is currently in negotiations with to manage the facility's sludge, as they are currently licensed for other terrestrial animal disposal containment. The solids and sludge will pass through an in-house sterilization unit prior to tanker removal.

Comment #4b (Andrew Stevenson) – The commenter requests the applicant provide more details of incinerating or ensiling of mortalities and screenings from fish exclusion barriers. If either of the operations is part of the overall facility design, the commenter requests the applicant provide more information. If either operation is performed offsite by a third-party then the applicants need to identify the companies or services that can provide safe handling and disposal of the mortalities.

Response #4b: Ensilation will be carried out on site utilizing standard proven ensilation equipment, which will be installed and operated by WO staff. The ensilation activities will take place in an enclosed building, and once the process of ensilation has taken place, the sludge will be stored in a cement bunker with secondary containment, and removed on a regular basis to appropriate composting facilities.

Solids & Sludge Disposal

Comment #4c: (Andrew Stevenson) – The commenter states the waste stream flows diagrams indicate fish processing waste water is collected in sealed tanks and is then pumped to the municipal sewer but on other flow schematics indicates all waste water is being treated on-site and discharged to the Penobscot River. The commenter requests the applicant revise the application documents to clearly state that the only waste water to be discharged to the Bucksport municipal waste water treatment facility will be sanitary waste flows only from normal activities such as bathrooms and cafeterias if this is the case.

Response #4c: The permittee has not finalized its decision on whether to treat fish processing waste water on-site or convey it to the municipal waste water treatment facility. Once that decision is finalized the Department will require the permittee to submit revised schematics. This permitting actions does not take into consideration the waste stream from a fish processing facility. Inclusion of said waste stream will require a separate approval process and formal modification of this permit.

Fish Feed

Comment #5a (Andrew Stevenson): The commenter requests the applicant provide additional information on the composition of the feedstocks that WO will feed its fish at all stages of their life cycle. Without clear a clear statement of feedstock constituents, DEP cannot determine the complete nature of the plant effluent or the solid waste streams.

Response #5a: The permittee has not made a final decision on the formulation of their fish feed yet as this sector of the aquaculture industry is growing rapidly and new formulations are being created every month. To address the commenters concern, a new Special Condition L, *Fish Feed*, has been added to the final permit requiring the permittee to submit a list of all the ingredients in the feed prior to stocking it on site. Should the Department find compounds of concern which the Department believes need to be monitored in the final effluent, the permit may be reopened pursuant to Special Condition O, *Reopening Permit For Modification*, to require additional monitoring or impose limitations on pollutants of concern.

Comment #5b (PIN): The commenter questions why the facility is not subject to toxicity testing requirements of the DEP's Surface Water Toxics Control Program given potential toxicity from the fish food and drugs used at the facility.

Response #5b: 06-096 CMR Chapter 530, *Surface Water Toxics Control Program*, §2(D)(5) authorizes the Department to waive or reduce testing or replace testing with requirements adequate to characterize the toxicity of the identified pollutants when the discharger provides information as to the pollutants used at a facility. In the absence of the use of chemicals in Attachment C of the permit, the pollutants of concern are not toxic pollutants and routine whole effluent toxicity (WET (testing), analytical chemistry and priority pollutant testing are not necessary.

Fish Feed

However, the Department has revised the final permit to require the permittee to include monthly reporting of antibiotic usage and the pathogen being treated as well as monitoring of residual antibiotics in the effluent if used. If the effluent values are not detected at any flow regime there is no reason to conduct Chapter 530 toxicity testing requirements. However, if antibiotics are detected in the effluent that are at levels that have a reasonable potential to exceed thresholds that may impact marine organisms, the Department may re-open the permit to establish Chapter 530 testing requirements, sediment sampling or require an assessment to the marine environment and or impacts to marine organisms.

As for fish feed, a new Special Condition L, *Fish Feed*, has been added to the final permit requiring the permittee to submit a list of all the ingredients in the feed prior to stocking it on site. Should the Department find compounds of concern which the Department believes need to be monitored in the final effluent, the permit may be reopened pursuant to Special Condition O, *Reopening Permit For Modification*, to require additional monitoring or impose limitations on pollutants of concern.

Pursuant to Chapter 530, 2(D)(4) requires all dischargers waived or reduced testing must file an annual certification statement that describes:

- (a) Changes in the number or types of non-domestic wastes contributed directly or indirectly to the wastewater treatment works that may increase the toxicity of the discharge;
- (b) Changes in the operation of the treatment works that may increase the toxicity of the discharge; and
- (c) Changes in industrial manufacturing processes contributing wastewater to the treatment works that may increase the toxicity of the discharge.

Therefore, a new Special Condition M, *06-096 CMR 530(2)(D)(4) Statement For Reduced/Waived Toxics Testing*, has been added to the final permit requiring the permittee to file the annual Chapter 530.

Comment #5c (Deborah Capwell): The commenter states WO's hasn't said what they are planning to feed the fish. If we don't know that, how can we know what kind of impact the fish feces and uneaten food will have on the whole operation?

Response #5c : The permittee has not made a final decision on the formulation of their fish feed yet as this sector of the aquaculture industry is growing rapidly and new formulations are being created every month. To address the commenters concern, a new Special Condition L, *Fish Feed*, has been added to the final permit requiring the permittee to submit a list of all the ingredients in the feed prior to stocking it on site. Should the Department find compounds of concern which the Department believes need to be monitored in the final effluent, the permit may be reopened pursuant to Special Condition O, *Reopening Permit For Modification*, to require additional monitoring or impose limitations on pollutants of concern.

BOD & TSS

Comment #6a (NRCM): NRCM states the proposed levels of BOD, TSS and nutrient discharges are too high given another RAS facility proposed by Nordic AquaFarms Inc in Belfast proposes significantly lower treatment levels than WO. If the DEP accepts Nordic Aquafarms numbers as true, it should not approve the WO permit as written and at least require WO meet comparable limits as proposed by Nordic Aquafarms.

Response #6a: The Department acknowledges the contrast in the proposed effluent values for the two facilities. Until the facilities are constructed and running at steady state conditions and gathering effluent data via monitoring, it is impossible to determine what level of treatment these facilities will be able to actually achieve. As result, the Department is not in a position to accept either facilities proposal to be the standard for this new industry.

There are no promulgated numeric effluent guidelines/standards for discharges from RAS facilities, net pen facilities or flow through fish rearing facilities which the Department could utilize to establish best practicable treatment (BPT) standards. Therefore, limitations for BOD, TSS and nitrogen in this permit are based on a Department best professional judgment (BPJ) of effluent values expected from the waste water treatment proposed by the applicant. The treatment train of a drum filter followed by biofiltration followed by ultraviolet disinfection appears to be the standard treatment train for this industry. According to the permittee's application, it expects percent removal rates of 79% for BOD, 91% reduction for TSS, 89% for total phosphorus and 19% for nitrogen.

To address the commenters concern, the Department is footnoting the three parameters indicating that the next permit renewal, the Department will conduct a statistical evaluation of the data for the three parameters. Assuming the Nordic Aquafarm permit is approved, the Department will perform the same statistical evaluation for the Nordic facility and evaluate the results of the two facilities and make another BPJ of BPT for the industry (applicable to both facilities) based on actual performance data.

Nutrients

Comment #7a (NRCM): The commenter states DEP should require year-round monitoring and limitations for nutrients as nutrients may accumulate in sediments in winter months, and this accumulation may affect water quality in warmer months,

Response #7a ; The Department's Division of Environmental Assessment that has been conducting ambient water quality monitoring on the Penobscot River in the vicinity of the discharge and around Verona Island does not think it is necessary to establish limitations or monitoring requirements for nutrients on a year-round basis. Any potential changes to ambient water quality due to nutrients will be limited to discharges during the summer months. The Department believes the required seasonal nutrient monitoring requirement is appropriate and therefore the permit remains unchanged.

Nutrients (cont'd)

Comment #7b (PIN) – The commenter requests that total phosphorus limitations be established for the facility similar to the approach used in the proposed draft permit for total nitrogen. Phosphorus limits are necessary to ensure adequate water quality protections

Response #7b: Waste Discharge License Conditions, 06-096 CMR 523 specifies that water quality based limits are necessary when it has been determined that a discharge has a reasonable potential to cause or contribute to an excursion above any State water quality standard including State narrative criteria. In addition, 06-096 CMR 523 specifies that water quality based limits may be based upon criterion derived from a proposed State criterion, or an explicit State policy or regulation interpreting its narrative water quality criterion, supplemented with other relevant information which may include: EPA's Water Quality Standards Handbook, October 1983, risk assessment data, exposure data, information about the pollutant from the Food and Drug Administration, and current EPA criteria documents.

USEPA's Quality Criteria for Water 1986 (Gold Book) puts forth an in-stream phosphorus concentration goal of less than 0.100 mg/L in streams or other flowing waters not discharging directly to lakes or impoundments, to prevent nuisance algal growth. The use of the 0.100 mg/L Gold Book goal is consistent with the requirements of 06-096 CMR 523 noted above for use in a reasonable potential (RP) calculation.

Based on the above rationale, the Department has chosen to utilize the Gold Book goal of 0.100 mg/L. It is the Department's intent to continue to make determinations of actual attainment or impairment based upon environmental response indicators from specific water bodies. The use of the Gold Book goal of 0.100 mg/L for use in the RP calculation will enable the Department to establish water quality based limits in a manner that is reasonable and that appropriately establishes the potential for impairment, while providing an opportunity to acquire environmental response indicator data, numeric nutrient indicator data, and facility data as needed to refine the establishment of site-specific water quality-based limits for phosphorus. Therefore, this permit may be reopened during the term of the permit to modify any reasonable potential calculation, phosphorus limits, or monitoring requirements based on site-specific data.

For the background concentration in the Penobscot River just upstream of the permittee's discharge, the Department utilized a background concentration of 0.017 mg/L. This value was determined to be representative of background conditions in ambient water quality sampling in the summer of 2014. For effluent concentration, the Department utilized a value of 0.9 mg/L based on information from the permittee's application.

Nutrients (cont'd)

Using the following calculation, the permittee's facility does not exceed or have a reasonable potential to exceed the EPA's Gold Book value of 0.100 mg/L and the Department's 06-096 CMR Chapter 583 draft criteria of 0.030 mg/L for Class B waters (classification before transition to Class SC). The calculations are as follows:

$$Cr = \frac{Q_e C_e + Q_s C_s}{Q_r}$$

Q _e = effluent flow i.e. facility design flow	=	18.6 MGD
C _e = effluent pollutant concentration	=	0.9 mg/L
Q _s = 7Q10 flow of receiving water (Brewer)	=	2,096 MGD (3,243 cfs)
C _s = upstream concentration	=	0.017 mg/L
Q _r = receiving water flow	=	2,115 MGD
Cr = receiving water concentration	=	?

$$Cr = \frac{(18.6 \text{ MGD} \times 0.9 \text{ mg/L}) + (2,098 \text{ MGD} \times 0.017 \text{ mg/L})}{2,115 \text{ MGD}} = 0.025 \text{ mg/L}$$

Cr = 0.025 mg/L < 0.100 mg/L ⇒ **No reasonable potential**

Cr = 0.025 mg/L < 0.030 mg/L ⇒ **No reasonable potential**

Given the facility does not exhibit a reasonable potential to exceed the Department's draft criteria, the Department does not believe a limitation is appropriate. However, the permit does contain a seasonal monitoring requirement for total phosphorus. If discharge levels are considerably higher than the value the permittee has presented in its application and the calculation indicates the discharge does exceed or have a reasonable to exceed the draft criteria, the Department may reopen the permit pursuant to Special Condition O, *Reopening of Permit For Modifications*, to establish appropriate limitations and or monitoring requirements.

Miscellaneous

Comment #8a (Andrew Stevenson): The commenter states the topographic map in the application depicts the saltwater intake point as being downstream of discharge point Outfall #003. Is this accurate? If not the applicant needs to provide a revised map.

Response #8a : The topographic map is incorrect. The intake structure for the facility is located along the banks of the Penobscot River in between discharge Outfalls #001B and Outfall #003. The facility has the option to discharge from Outfall #001B or Outfall #003. Outfall #003 will be the primary discharge outfall which is located downstream of the intake structure. The Fact Sheet of the draft states the following:

Miscellaneous (cont'd)

The treated wastewater is discharged to the Penobscot River via one of two outfalls that are designated as Outfall #001B and Outfall #003. Outfall #001A is located at the intake screen to the pump house providing cooling water to the turbine generator for Bucksport Generation LLC and sea water to the RAS facility. This outfall will be used to discharge backwash waters to clean the facility's intake screens. The discharge configuration consists of a 24" diameter discharge pipe that runs below the intake screens to the non-contact cooling water structure. The discharge pipe has twelve 6" diameter diffuser pipes located 4 feet on centers. This outfall configuration is beneficial to the facility as it provides for continuous cleaning of the screens.

Outfall #001B is located just upstream of Outfall #001A and consists of a 48" diameter steel pipe that extends out into the river approximately 230 feet and necks down to two 24" diameter steel pipes that make up the wye-shaped diffuser. The end of the pipe is covered by approximately 16 feet of water at mean low tide and 27 feet of water at mean high tide.

Outfall #003 (downstream of Outfall #001A) is currently being utilized as a cooling water discharge for the No. 3 Turbine for the power plant owned and operated by Bucksport Generation LLC. The cooling water itself is limited and monitored in accordance with MEPDES permit ME0002160 last issued by the Department on October 15, 2015. Cooling waters from the power plant and process waste water from the Whole Oceans facility can be co-mingled to be discharged through a sloping 36" steel pipe with a diffuser. The diffuser has 10, 12" diameter vertical ports spaced 10 feet on center to enhance mixing with the receiving waters. The diffuser ports are covered by between 27 feet and 43 feet of water at mean low tide and 38 feet and 54 feet of water at mean high tide.

Comment #8b (NOAA): The commenter suggests the facility should have requirements to eliminate impingement and entrainment of juvenile fish on the facility's intake screens and that said measures are properly maintained and monitored regularly.

Response #8b: The Fact Sheet for the NPDES permit for the former mill contained an analysis by the USEPA concluded the intake structure for the mill utilizes best available technology (BAT) thereby satisfying the requirement of Section 316(b) of the Clean Water Act to minimize adverse environmental impact on the waterway. Section 316(b) of the Clean Water Act regulates cooling water intake structures that can be responsible for killing fish and other organisms either from being trapped against the structures (impingement) or drawn into the systems' and then exposed to extreme heat, chemicals or physical stress (entrainment). Though the intake structure will be utilized for something other than cooling water and is not subject to Section 316(b) requirements, BAT is still being applied.

Miscellaneous (cont'd)

Comment #8c (Holly Faubel) – The commenter states that testing for BOD, TSS and ammonia testing will only be done for May-Oct while the facility is discharging 12 months out of the year and that scientific reports show that ammonia is more hazardous to fish at colder temperatures. The commenter requests WO be required to conduct testing year-round.

Response #8c: The draft permit contains year-round monitoring for BOD and TSS at a frequency of 3/Week. Ammonia is seasonal, May 1 – October 31. The Department has adopted ambient water quality criteria (AWQC) for ammonia. The toxicity associated with ammonia is pH and temperature dependent. The higher the temperature the lower the AWQC meaning it is more toxic at higher temperatures not lower temperatures. Therefore, monitoring for total ammonia in the warmer months is appropriate but not necessary in the colder months.

Comment #8d: (Deborah Capwell) – The commenter states that the permit application she accessed is for a little over 5,000 tons. Will WO have to reapply when they are at full build out of 20,000 tons?

Response #8d: The permit authorizes the facility to discharge under full production capacity of 20,000 metric tons. See pages 6 and 7 of 21 of the permit. However, total nitrogen limits for Phases II & III will be established at a later date after a statistical evaluation is conducted on the nutrient data that is collected for Phase I. The permittee will be required to submit a permit modification application to incorporate these limitations.

Comment #8e (Holly Faubel) – The commenter requests WO be required to provide a plan for handling complete die-off of their total tonnage if fish.

Response #8e : If in the event of a total, or significant mortality event, WO has stated it will activate the Catastrophic Mortality Composting Plan, whereby all fish will be quickly and efficiently removed from the tanks, via pumps, to slurry (bulk) tankers for immediate transport to either pre-agreed rendering facilities or landfill sites for composting.

Comment #8f (FOPB): The commenter states it is not clear how WO's slaughterhouse effluent will be managed. Will it be sent to Bucksport's POTW or get discharged as part of WO's waste water effluent?

Response #8f: The permittee has not made a final decision on whether to construct a fish processing facility on-site and therefore, this draft permit does not take that process into consideration. If a processing facility is constructed, the permittee has indicated it will explore both the treatment and disposal of the waste water on-site or by way of the municipal waste water treatment facility. A separate review and approval process would be required for these options.

Miscellaneous (cont'd)

Comment #8g (Deborah Capwell): Can the Bucksport's municipal system handle such a significant increase in the sanitary waste water (around 10,000 gallons/day)? If not, what is the back-up plan?

Response #8g: The WO facility is not likely to generate around 10,000 gallons per day of sanitary waste water. The facility will employ somewhere around 100 people. The Maine State Plumbing Code allocates 30 gallons/day/employee which would total 3,000 gpd. The permittee has indicated it has spoken to the Town of Bucksport about the ability to serve and been told there is sufficient capacity to receive the sanitary waste water from WO. It is noted the treatment facility completed an upgrade to a secondary level of treatment in calendar year 2017.

Comment #8h (Eileen Wolper): If the Bucksport Sanitary Water Treatment Facility cannot handle the amount of fish oil and nutrient load of fish processing, will that effluent end up being dumped into the Penobscot River? Will there be a way to monitor this? Is the Water Treatment Plant of Bucksport aware of this potential compromise in their sewage treatment from fish oil? Who pays for any necessary upgrades to the city facility? Will oil content of effluent be monitored and reported?

Response #8h: The permittee has not made a final decision on whether to construct a fish processing facility on-site and therefore, this draft permit does not take that process into consideration. If a processing facility is constructed, the permittee has indicated it will explore the option of treating the waste water onsite or convey it to the municipal waste water treatment facility. A separate review and approval process would be required for these options. Conveyance to the municipal waste water treatment will likely result in WO providing some level of pretreatment before the waste water is conveyed to the municipal treatment facility.

Comment #8i (FOPB, Jim Merkel) – The Department should be evaluating kairomones in the discharge.

Response #8i: A fish pathologist at the MIFW researched the kairomone issue and found literature that suggests that kairomones have very short half lives in aquatic environments (minutes to hours to days, all depending on the study and design). A quick search also found experimental evidence to support that exposure to UV light from the sun is a major factor in the rate of degradation. As UV light is known to degrade a number of chemicals and organic compounds, such is not surprising. Noteworthy in these studies is the effect that UV light exposure had at natural environmental levels, a dose that is less than 1/1000th of the dose that WO will use for effluent UV treatment. Based on the limited available information, it is likely that the UV effluent treatment, which is included in the WO operational plan, will neutralize kairomone content to that of being ecologically insignificant. When combined with information that kairomone discharge from land-based salmon farms is unlikely to result in the attraction and accumulation of sea lice in Penobscot Bay, the concern over kairomones in the discharge seems to be unwarranted.