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 GOVERNOR

MELANIE LOYZIM  
 COMMISSIONER

**Project Review Memorandum**  
 BUREAU OF WATER QUALITY, DIVISION OF ENVIRONMENTAL ASSESSMENT

To: Maria Eggett, Project Manager Date: 4-20-21  
 From: William T. Noble, Licensed Geologist *W.T.N.* Land Div., Bureau of Land Resources  
 Re: Kingfish Maine, Jonesport, Project No. L-028995-26-A-N.  
Environmental Geology Unit

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An initial review of the site application for this project, dated 3-25-21, and its supporting information, received on 4-12-21, has been completed. Review was limited to the soils, groundwater, water supply, wastewater, and blasting sections of the site application, and aspects of stormwater that may affect groundwater quality. Comments are as follows:

1. The geotechnical engineering report, dated 1-5-21, should be signed by the geotechnical engineer responsible for its preparation. See Part I, Section 1.E.1.c of the site application.
2. If a wetlands report was prepared in conjunction with delineation of wetlands as shown on project plans, then this report should be provided. No wetlands report was found in the packet of materials provided for review. See Part II, Section 11.D of the site application. The report should be signed and dated by the wetlands investigator responsible for its preparation.
3. Soil data from subsurface excavations located within the footprints of the proposed underdrained soil filter basins and wetponds needs to be provided by a licensed soil scientist. Explorations must extend to a depth of at least 3 feet below the lowest component of these stormwater structures, if possible. See Sections 7.B and 7.D.4 of the Stormwater Management (SM) Rules.
4. Depending on the results of the soil scientist's investigation noted above, underdrained soil filter (UDSF) basins may need impermeable liners per Appendix E, Section 4.a.iii of the SM Rules, unless the criteria of subsections 4.b and 4.c can be met.
5. If impermeable liners are required for UDSF basins, the cross-section detail on plan sheet C18 should be revised accordingly. The impermeable liner material type and thickness should be specified.
6. In conjunction with the above comment (if applicable), the UDSF basin cross section detail on plan sheet C18 should show sidewalls of impermeable liners extending to or above the seasonal high watertable or bedrock (as applicable), and elevations of the top edges of the impermeable liners should also be specified in the cross-section, based on soil data. It will be helpful to also provide a schedule summarizing elevations of subsurface data (watertable or bedrock, as applicable) and various components of the five UDSFs, in addition to the impermeable liner top edge.
7. The type and thickness of impermeable liner for the permanent pool referenced in NOTE 3 in the wetpond cross-section detail on plan sheet C22 should be specified. If to consist of earth materials, details (e.g. liner textural specifications, compaction procedure, moisture-density requirements, ASTM standards, etc.) should be included as was done in NOTE 2.

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8. The sand and gravel aquifer, surficial, and bedrock geology maps provided in Section 15 of the site application should show the site location and project boundaries. See Part II, Section 15.A.1 of the site application. In addition, all maps should include an identification of, or a key to, the mapping units shown thereon, and the surficial map should show geologic units at the site.
9. Regarding the draft Spill Prevention, Control, and Countermeasures (SPCC) plan, dated March 2021:
  - a.) A final version of the Spill Prevention, Control, and Countermeasures (SPCC) plan should be provided when available, signed, stamped, and dated by the plan preparer and other responsible parties as appropriate.
  - b.) A readily-accessible location where the plan will be kept should be indicated.
  - c.) If other materials have the potential to contaminate groundwater, if spilled, these materials should be addressed either in this plan or in a separate groundwater protection plan (GWPP). See Part II, Section 15.B of the site application.
  - d.) Figure 1 in Appendix H was not found with the SPCC plan and should be provided.
10. The Hydrogeology and Water Supply Report, dated March 2021, must be signed, stamped, and dated by a Licensed Geologist. See Part I, Section 1.E.1.c of the site application. In addition, the recommendations in Section 5 of the report should be followed, and a plan or schedule for implementation of these recommendations should be provided.
11. If the water supply wells are defined as a public water system, then the information outlined in Part II, Section 16.A.2.e of the site application should be provided.
12. A report, entitled "Subsurface Wastewater Disposal Soil Investigation" (included in Section 11 of the site application, rather than Section 17), dated 1-6-20, indicates a base map enclosure which was not found with the report, and should be provided.
13. Regarding proposed subsurface wastewater disposal systems 1 and 2:
  - a.) Both proposed disposal system designs did not include additional test pit data as indicated by Part II, Sections 17.A.4.c and 17.A.6.c of the site application. Due to the consistent soil conditions reported, this additional information will not be requested, however, the site evaluator should be aware of these requirements for future site location projects.
  - b.) Cross-sections for both systems 1 and 2 should show the specified sand extending out 3 feet and sloping back to the 9" wide strip alongside the Eljen GSF® units. See Figure 13 in the Eljen GSF® design and installation manual for above-ground disposal fields.
  - c.) Section 6 of the engineered subsurface wastewater disposal system application (HHE-220 form) indicates that a professional engineer is to sign "Exhibit D" (HHE-200 form).
  - d.) Ground elevations at all four corners of the engineered disposal fields were not found and should be shown on plan sheet C20 as required by Section 5.A.4.a.ii of the Subsurface Wastewater Disposal (SSWD) Rules, and Part II, Section 17.A.6.d of the site application.
  - e.) Limits of backfill extensions should be shown around the engineered disposal fields in the disposal field plan-view diagram on plan sheet C20. See Section 5.A.4.a.vii of the SSWD Rules and Part II, Section 17.A.6.b of the site application.

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- f.) It is recommended that the applicant ensure that plan sheet C15, or other similar site plan, is included with the engineered system application when submitting to the DHHS Subsurface Wastewater Unit, to show the layout and location of the proposed system as indicated by Section 5.A.3.a. of the SSWD Rules. A site plan was not found with the engineered system application materials presented in Section 17 of the site application, but it is provided on C15 in the plan set.
14. There is no evidence that the nitrate-nitrogen impact assessment, included as Appendix 17D of the engineered disposal system application exhibit, was conducted by a geologist, as indicated by Part II, Section 17.B.1 of the site application, and the analysis used a total mixing approach, which is not appropriate to estimate the extent of the nitrate-nitrogen concentration in a discrete contaminant plume downgradient of the disposal fields. However, the issue is considered moot in that site plans show shallow groundwater likely flows easterly from the disposal fields to the ocean, a significant hydrologic feature, and that there are no downgradient receptors of concern (*e.g. project boundaries and wells*).
  15. Plan sheets which show subsurface explorations, should include a NOTE identifying the soil investigators responsible for location and evaluation of these explorations (*by name and title*) and which references the reports (*by title & date*) wherein subsurface data and narrative regarding the explorations can be found. This applies to plan sheets C10, C11, C14, C15, and V2, and may apply to other plan sheets not cited. Alternatively, this NOTE could be included on sheet C0.
  16. Plan sheets that include two dug well symbols in the LEGEND should identify the symbol used to indicate the existing drilled wells. This applies to plan sheets C1, C, C3, C4, C5, C6, and C8. Plan sheet C0 identifies a dug well and a well symbol, and sheets C7 and V2 only identify a dug well symbol and should include a drilled well for consistency with LEGENDS on other sheets.
  17. If blasting for construction will occur within 500 feet of non-owned off-site structures (*buildings and wells*), then a map showing anticipated blast locations, and blasting plan, prepared and signed by a qualified blaster, should be provided to the Department. See Part II, Sections 20.A and 20.B of the application. The blasting plan must include blasting standards in the statute: 38 MRS §490-Z (14). The blasting plan must be provided prior to any blasting, and include an anticipated blast design/shot pattern specifically tailored to the project site. Submittal of the blasting plan, and a map showing anticipated blast locations, could be required as a condition of site approval.

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