

STATE OF FLORIDA  
DIVISION OF ADMINISTRATIVE HEARINGS

THOMAS H. ADAMS, )  
)  
    Petitioner, )  
)  
vs. ) CASE NO. 95-0863  
)  
RESORT VILLAGE UTILITY, INC. )  
and DEPARTMENT OF ENVIRONMENTAL )  
PROTECTION, )  
)  
    Respondents. )  
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LUSIA DENDE-GALLIO and )  
HARRY BUZZETT, )  
)  
    Petitioners, )  
)  
vs. ) CASE NO. 95-0864  
)  
RESORT VILLAGE UTILITY, INC. )  
and DEPARTMENT OF ENVIRONMENTAL )  
PROTECTION, )  
)  
    Respondents. )  
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CHARLES F. DUNCKLEE, )  
MARIE A. DUNCKLEE, )  
DONALD THOMPSON, and )  
MARTA THOMPSON, )  
)  
    Petitioners, )  
)  
vs. ) CASE NO. 95-0865  
)  
RESORT VILLAGE UTILITY, INC. )  
and DEPARTMENT OF ENVIRONMENTAL )  
PROTECTION, )  
)  
    Respondents. )  
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FRANKLIN COUNTY, )  
)  
    Petitioner, )  
)  
vs. ) CASE NO. 95-0866  
)  
RESORT VILLAGE UTILITY, INC. )  
and DEPARTMENT OF ENVIRONMENTAL )  
PROTECTION, )  
)  
    Respondents. )  
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W. WHITNEY SLAGHT and	)	
DOROTHY SLAGHT,	)	
	)	
Petitioners,	)	
	)	
vs.	)	CASE NO. 95-0867
	)	
RESORT VILLAGE UTILITY, INC.	)	
and DEPARTMENT OF ENVIRONMENTAL	)	
PROTECTION,	)	
	)	
Respondents.	)	
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RECOMMENDED ORDER

Upon due notice, this cause came on for formal hearing before Ella Jane P. Davis, a duly assigned Hearing Officer of the Division of Administrative Hearings, on September 6-8, 1995, in Apalachicola, Florida.

APPEARANCES

For Petitioner, Franklin County:	Alfred O. Shuler, Esquire SHULER & SHULER Post Office Box 850 Apalachicola, Florida 32329
For all other Petitioners:	Samuel J. Morley, Esquire Karen D. Walker, Esquire HOLLAND & KNIGHT Post Office Drawer 810 Tallahassee, Florida 32302
For Respondent DEP:	Thomas I. Mayton, Jr., Esquire Department of Environmental Protection 2600 Blair Stone Road Tallahassee, Florida 32399-2400
For Respondent Resort Village:	L. Lee Williams, Jr., Esquire MOORE, WILLIAMS, ET AL. Post Office Box 1169 Tallahassee, Florida 32302

STATEMENT OF THE ISSUE

Whether the applicant is entitled to a permit for the construction of a wastewater treatment facility and associated reuse/land application system (AWT).

PRELIMINARY STATEMENT

On January 27, 1995, the Department of Environmental Protection (DEP) issued its Notice of Intent to Issue Permit No. 235845 to this applicant for the construction of an advanced wastewater treatment facility and associated reuse/land application system intended to serve the proposed St. George Island Resort Village in Franklin County, Florida.

Timely-filed Petitions for Formal Administrative Hearing initiated Case Nos. 95-0862 (Concerned Property Owners), 95-0863 (Adams), 95-0864 (Dende-Gallio & Buzzett), 95-0865 (Duncklee & Thompson), and 95-0867 (Slaughter).

The cases were consolidated before the Division of Administrative Hearings (DOAH) with a similar timely-filed Petition by Franklin County (DOAH Case No. 95-0866). Petitioners in Case Nos. 95-0862, 95-0863, 95-0864, 95-0865, and 95-0867 collectively filed an Amended Petition for Formal Administrative Hearing. Franklin County likewise filed an amended petition, upon which it ultimately proceeded to formal hearing herein.

In addition to the permitting process for the AWT facility, the developer (principal of the applicant herein), through its engineer, submitted information to DEP to comply with the stormwater permitting and regulatory requirements of Chapter 62-25 F.A.C. By letter dated May 22, 1995, DEP advised the developer that no stormwater permit would be required for the first phase of Resort Village. Thomas Adams, Petitioner herein in DOAH Case No. 95-0863, filed a separate petition challenging DEP's grant of an exemption from stormwater permitting. The matter was referred to DOAH and assigned Case No. 95-3623. The stormwater case was consolidated with these pending AWT cases, and the style of the cause was amended. DEP then formally withdrew the stormwater exemption. On August 18, 1995, jurisdiction of the stormwater case was relinquished to DEP, and DOAH Case No. 95-3623 was closed.

Ultimately, all Petitioners, save Franklin County, proceeded to formal hearing herein upon a Second Amended Petition for Formal Administrative Hearing.

The parties stipulated to the standing of the Petitioners in Case Nos. 95-0863 through 95-0865 and 95-0867, pursuant to Section 403.412(5), F.S. Concerned Property Owners, Petitioner in Case No. 95-0862, voluntarily dismissed that case at formal hearing. An order was subsequently entered closing DOAH Case No. 95-0862 and amending the style of this case as set out above.

At the commencement of formal hearing, counsel for DEP announced that DEP no longer had reasonable assurances as to a portion of the draft Intent to Issue AWT Permit, but that staff might feel differently after hearing all the evidence presented at formal hearing. Accordingly, since DEP no longer fully supported its own Intent to Issue as drafted, DEP was assigned an order of proof after the applicant had rested and before Petitioners, who challenged the entire application/Intent to Issue, as drafted. It is noted, however, that DEP has, posthearing, joined the applicant in a joint proposed recommended order urging adoption of identical findings of fact and a recommendation to issue the permit with some modification of the draft Intent to Issue.

At formal hearing, the applicant presented the oral testimony of Gary Volenec, Nicholas Andreyev, Randy Armstrong, and Ben Johnson. The deposition of Richard A. Mortensen, P.E., was introduced as Resort Village's Exhibit 10. Resort Village had 17 out of 19 exhibits admitted in evidence.

DEP presented the oral testimony of Jonathan May and Victor Hultstrand and had 13 out of 13 exhibits admitted in evidence.

The individual Petitioners presented the oral testimony of Tom Pratt, Graham Lewis, Woodard Miley II, Steve Leitman, Richard Musgrove, Justin Strickland, and Robert J. Livingston and had 40 out of 41 exhibits admitted in evidence.

Franklin County presented no testimony or exhibits.

A transcript was filed with the Division of Administrative Hearings on October 16, 1995. On October 26, 1995, the individual Petitioners and Franklin County filed a joint proposed recommended order, and the applicant and DEP filed a joint proposed recommended order. All proposed findings of fact have been ruled upon in the appendix to this recommended order, pursuant to Section 120.59(2), F.S.

Motions, orders, and notices of filing subsequent to the filing of proposed recommended orders are reflected in the record and will not be reiterated here.

#### FINDINGS OF FACT

1. The applicant proposes to develop a 58-acre parcel of land located within a 100-acre commercial area on the western half of St. George Island, Franklin County, in the vicinity of Nick's Hole. The proposed development will consist of a mixture of hotel rooms, a recreational complex, restaurant facilities, and retail space. The wastewater facility will be located in an area specifically designated under the 1977 Development Order for resort support facilities.

2. The applicant proposes to construct a 30,000 gallons per day (gpd) domestic wastewater treatment facility expandable to 90,000 gpd to serve the proposed development, with reclaimed water to be discharged through absorption cells, constituting a reuse/land application system. The entire facility constitutes an advanced wastewater treatment facility (AWT).

3. The proposed project site is bordered on the west by airport property.

4. West of the airport is property owned by the State under the C.A.R.L. Program, bordering Nick's Hole.

5. The Gulf of Mexico borders the southern portion of the Resort Village site, and an Apalachicola Bay wetlands system (a/k/a "the marsh") borders the northern portion of the Resort Village site.

6. The proposed wastewater treatment plant will be located on the north side of Leisure Lane.

7. Apalachicola Bay is designated an Outstanding Florida Water (OFW), which is the highest classification for environmental protection purposes. It is also a Class II shellfish harvesting water and an aquatic preserve. It is a National Estuarine Research Reserve and an International Biosphere Reserve.

8. The Apalachicola River is the most important portion of the Apalachicola Bay ecosystem, followed by East Bay, and then Nick's Hole.

9. The Apalachicola Bay and the Apalachicola River System are designated by the Northwest Florida Water Management District as the highest priority watershed under the Surface Water Improvement and Management (SWIM) program.

10. Apalachicola Bay is one of the most productive estuarine systems in the northern hemisphere, and is recognized worldwide as an exceptional natural resource area. The introduction of too many nutrients into the Apalachicola Bay System could destroy this productivity.

11. Nick's Hole is a small lagoon surrounded by extensive productive salt marsh and seagrass beds. Nick's Hole and the northern wetlands are major spawning and nursery areas for shrimp, oysters, fin fish and blue crabs. These areas are recognized as some of the most environmentally sensitive and productive nursery habitats in the Apalachicola River basin. Scientific studies conclude that drainage leading into Nick's Hole and the northern wetlands should be protected against nutrients or contaminants associated with sewage wastewater in order to protect the productivity of the area and ecological condition of the Bay System.

12. Development of the subject property creates a potential for introduction of nitrogen and phosphorous into Nick's Hole and Apalachicola Bay which might result in an increased production of phytoplankton. Due to the proximity of Nick's Hole and the northern tidal wetlands to the absorption fields, there also are concerns about the potential for direct flow into surface waters flowing into Nick's Hole and influx of effluent from the groundwater. Hypereutrophication (quick aging) of all the waterbodies as a result of nutrient loading is another concern.

13. Groundwater degradation due to nutrient loading by the project and transmigration of effluent and specific nutrients are of utmost concern with regard to this project because the ecosystem in the vicinity of St. George Island is unique and extremely sensitive. Nick's Hole is the most productive area for its size in the entire Bay System, has limited flushing, and is a major drainage system for St. George Island. The marsh system to the north of the plant is among the richest on the island. Barrier islands, such as St. George Island, present unusual environmental problems, primarily because they are subject to extreme wave action during hurricanes, because there is little land to treat waste and any nutrients will eventually wind up in the surrounding waters, and because the tidal creeks have limited flushing capabilities.

14. The parties' disputes center around whether or not there will be ponding under normal conditions or the 25 year flood event which would result in surface water runoff of effluent and proscribed nutrients and whether these conditions would result in groundwater contamination flowing into surrounding waters.

15. The AWT will provide the highest level of treatment available for wastewater. The reclaimed product will contain not more, on a permitted annual basis, than the following concentrations: 5 milligrams of biochemical oxygen demand (CBOD5) per liter, 5 milligrams of suspended solids per liter, 3 milligrams of total nitrogen per liter, and 1 milligram of total phosphorous per liter. This is commonly referred to as "the 5-5-3-1 criteria" and is codified in Section 403.086(4)(a) F.S.

16. The highly treated effluent would be suitable for irrigation purposes. However, DEP Rule 62-610.451(1), F.A.C. prevents such uses in a public access area unless the capacity of the plant is 100,000 gpd or greater.

17. The treated effluent leaving the AWT would be drinkable and of higher quality than many public drinking water supplies.

18. DEP did not require an antidegradation analysis because the proposed facility does not directly discharge into surface waters. However, the applicant undertook an anticontaminant modelling as more fully described below.

19. In order to ensure reliability, the AWT will be built in three phases, each having a 30,000 gpd capacity. While this will increase the applicant's cost, it will more importantly allow incremental DEP review prior to the second and third phase expansions so as to further ensure compliance with applicable DEP rules.

20. To dispose of the treated effluent and provide additional treatment, the applicant proposes an absorption field land application system comprised of three subsurface absorption cells, subject to compliance with Part V, Chapter 62-610 F.A.C.

21. Each of the subsurface absorption cells will be used on a rotating basis to balance the amount of effluent which will percolate into the groundwater at each location. That means one will operate after another on a flexible rotation schedule.

22. The absorption cells have been located toward the south side (Gulf side) of the property to reduce the amount of effluent which flows toward, and ultimately reaches, Apalachicola Bay. Although the applicant has modified the locations of certain cells within the general south side location for all cells over the period of DEP's application review, this minor adjustment would have no significant impact upon the applicant's early data and calculations showing safety of ground and surface water runoff from the AWT. Also, recent data taking into account this minor relocation was submitted at formal hearing with the same result. See Finding of Fact 54.

23. The cells total approximately five acres in size, which allows a net average effluent hydraulic loading rate of .41 gpd per square foot.

24. This application rate is well below the application rate of 1.9 gpd per square foot allowed by DEP Rule 62-610.523(3) F.A.C.

25. DEP does not normally require such small wastewater facilities to provide Class I reliability, however the Intent to Issue was not forthcoming until agency personnel were satisfied, initially, at least, that this applicant's AWT could meet Class I reliability. The evidence shows that Class I reliability will be obtained, but that the modifications agreed to by the applicant at formal hearing might enhance reliability. See, Findings of Fact 129-132. Additionally, the AWT facility will incorporate other design features not required by DEP rules designed to enhance environmental protections.

26. Rule 62-610.550(3) F.A.C. provides that, "Absorption fields shall be designed and operated to preclude saturated ground conditions at the ground surface." See, Findings of Fact 114-121.

27. Ponding has been observed after major storm events in isolated areas within Resort Village and nearby, particularly near Leisure Lane and the airport. However, several site inspections have revealed no ponding within the absorption cell areas. St. George Island received 5.23 inches of rain on October 2 and 3, 1992. A site inspection during this event revealed no ponding at or near where the absorption cells will be located. The closest standing water was observed 200-300 feet from the area. On August 14 and 15 1994, Tropical Storm Beryl dropped over 10.25 inches of rain on an area encompassing St. George Island. No ponding within the absorption cells area occurred during this storm event. (Note Finding of Fact 119: The applicant has assumed a 25-year-24 hour storm event would total ten inches of rain.) Hurricane/Tropical Storm Erin dropped 7.17 inches of rain on the site over a three day period

ending August 4, 1995. The proposed areas for the plant as well as the absorption cells were dry.

28. Competent witnesses in all fields presented by the applicant testified credibly that this site and AWT design promise high infiltration and low loading rates in generally homogeneous soils with a rapid permeability rate, that infiltration rates at the absorption cells will remain high, even under extremely wet conditions associated with major storm events, and that surface waters will dissipate quickly.

29. In 1993, Richard A. Mortensen, P.E., a civil engineer, and Nicholas Andreyev P.E., an environmental engineer, directed a soil, hydrogeologic and effluent disposal study and developed a groundwater monitoring plan for the project.

30. On-site well drilling was conducted by a three-man team. A series of monitoring wells and piezometers were installed to measure groundwater levels, even through simple soil borings are all that are normally used for a system of this size.

31. Richard Mortensen has overseen more than 70 similar projects and was onsite in May or June 1993. Petitioner's discomfort with the education, training and experience of the persons doing the actual physical borings, well-sampling, and pump tests for the applicant at this time and later as described below is immaterial in light of the explicit directions before, and review afterward, by Mr. Mortensen; the June 1993 presence of Ted Fussell, a registered water well contractor and licensed geologist who formerly worked with the Southwest Florida Water Management District as described in the testimony of Gary Volenec, P.E. and the deposition of Mr. Mortensen; repeated on-site oversight by Mr. Volenec, an environmental engineer specializing in wastewater concerns; and the fact that physically taking such measurements is highly technician-oriented work, not requiring exotic expertise.

32. Soil tests showed horizontal permeability ranging from 74 to 151 feet per day. A shallow aquifer pump test showed a weighted average permeability of 156 feet per day. These are "high" permeability rates; the higher the permeability rates, the less "mounding" can be expected to occur. "Mounding" is defined as that permanent change of groundwater as a result of a continuous application of water.

33. For purposes of modelling the groundwater flows in the initial hydrogeotechnical report, Messrs. Mortensen and Andreyev made conservative assumptions regarding the soil permeability and aquifer characteristics.

34. Impacts to the groundwater were modeled by Mr. Andreyev, using a computer program called "MODFLOW" calibrated to be consistent with the site-specific data. Mr. Andreyev specializes in groundwater modelling. From 1986 to 1990, he and his firm have conducted over 500 hydrogeologic studies, including at least five studies on barrier islands. As found previously, St. George Island is a barrier island. Mr. Andreyev has written and published various groundwater and stormwater computer models, and has taught groundwater and stormwater seminars to DEP and water management district personnel.

35. MODFLOW is a three dimensional finite difference of groundwater flow computer model published by the U.S. Geological Survey, and recognized acceptable by DEP.

36. Mr. Andreyev is familiar with, and skilled in, operating the MODFLOW program, having used it in excess of 400 times.

37. That Mr. Andreyev provided mixed fact and opinion testimony without being formally tendered as an expert in any field is not controlling. Most of his testimony was rendered without objection. Some of his testimony is supported by learned treatises recognized by Petitioners' experts and admitted without objection. Clearly, this record demonstrates that he has, by knowledge, skill, experience, training, and education, expertise in hydrogeology and groundwater and contaminant modelling on barrier islands, which can assist the trier of fact in understanding the evidence or determining facts in issue. Moreover, he testified concerning personal knowledge of the facts underlying any opinion testimony, and what he perceived and inferred could not have been accurately expressed except in the form of an opinion.

38. The computer modelling simulated two years of continuous application of effluent to ensure the "steady state" or equilibrium point of any potential groundwater mound would be reached. Continuous application beyond two years would not cause any further mounding effects. Messrs. Mortensen and Andreyev concluded that if the recommended cell rotation were followed, loading 90,000 gpd would never create a groundwater mound over +4.2 feet MSL, and typically would result in less than +3.2 feet MSL after resting. In contrast, the absorption cells would have a minimum ground elevation of 5.5 NGVD, as required by DEP.

39. After the June 1993 study, slight changes in absorption cell locations were made so as to further improve their performance and/or better utilize site space, but as found previously, these relocations do not significantly change the MODFLOW results. See below.

40. Contrary to Petitioner's assertions, the more credible competent evidence weighs in favor of a finding that normal tidal influences will not significantly impact inland groundwater levels at the site.

41. Further groundwater studies using additional monitoring wells were conducted in October and November 1993 to better predict groundwater movement in response to requests by DEP during the application review.

42. During the monitoring period, there were three rainfall events, including one with a total measured rainfall of 4.5 inches.

43. These studies indicated there is a subsurface groundwater ridge running east-west, slightly to the Bay side of the center of the island.

44. Groundwater on the north side of this ridge will tend to flow towards the Bay, while groundwater on the south side will tend to flow towards the Gulf.

45. These studies also revealed a north-south ridge or high point in the groundwater between the subject property and Nick's Hole in the vicinity of the airport.

46. Water which percolates into the ground south of the east-west ridge will tend to move towards the Gulf, while water placed on the east side of the north-south ridge will tend to move away from Nick's Hole.



47. The absorption cells have been located towards the Gulf and east of the airport in order to minimize any flows towards Apalachicola Bay and Nick's Hole.

48. The 22 wells were monitored on 18 separate days.

49. On three of the 18 days, the groundwater elevations for several of the wells reported in the Applicant's Exhibit No. 1(c) were alleged by Petitioners to be slightly higher or slightly lower than the field notes would indicate. However, no single well had a discrepancy for more than two of the 18 days.

50. In March 1994, another groundwater study, similar to the one performed in October and November of 1993, was performed by Messrs. Leitman and Volenec.

51. The purpose of this study was to confirm the previous studies, and to gather additional data along the eastern portion of the site in fulfillment of DEP requests. The gathered data did not significantly deviate from the previous data.

52. In 1995, immediately preceding the September formal hearing, a new MODFLOW analysis was performed by Mr. Andreyev. It was designed to be a more intensive and more accurate representation of field conditions. It eliminated some of the more conservative assumptions of the prior analyses and attempted to analyze all rainfall over a 25-30 year period.

53. Under pre-development site conditions, the groundwater mound or ridge is approximately 2.2 feet NGVD.

54. For this study, Mr. Andreyev incorporated the effects of the impervious surface areas of the stormwater retention ponds and the revised absorption cell locations, along with other factors.

55. Surrounding property was also modeled in order to eliminate "boundary effects".

56. The presence of the stormwater retention ponds did not significantly affect the results of the model.

57. Consistent with the historical data, average annual rainfall was set at 55 inches, and evapotranspiration of 40 inches was assumed. Mounding is a long term phenomena, and the studies appropriately consider long term rainfall data.

58. A calibrated soil net recharge rate of .0034 ft./day was incorporated into the model. The underground aquifer was modeled as a "two layer" system with the first layer extending from the surface to -10 feet NGVD. The second layer extends from -10 feet NGVD to -32 feet NGVD.

59. Proper calibration of the model requires the use of these aquifer characteristics.

60. Like the 1993 study, the recent 1995 study involved a two year model run in order to reach a steady groundwater state.

61. This more precise study showed less mounding than the previous study.

62. Under the 30,000 gpd scenario, the groundwater mound will rise to approximately 2.7 feet NGVD.

63. With 90,000 gpd effluent, the groundwater mound will rise to approximately 4.2 feet NGVD.

64. The mounding will not affect the operation of the absorption cells.

65. Under the 30,000 gpd scenario, 78 percent of the effluent will flow towards the Gulf, 16 percent will flow towards Apalachicola Bay, and six percent will flow towards Nick's Hole.

66. Under the 90,000 gpd scenario, 74 percent of the effluent will flow towards the Gulf, 18 percent will flow towards the Bay, and 8 percent will flow towards Nick's Hole.

67. Petitioners' contention that there is also a groundwater ridge under the dunes which will inhibit the flow of groundwater towards the Gulf is based on an assumption that groundwater elevations generally follow topographic elevations. While this may be true with respect to mainland aquifers, it is not necessarily true on barrier islands which tend to be highest at the center of the island and decrease in proportional relationships to the distance from the shoreline. With regard to this issue, the undersigned finds the individuals with greater barrier island experience to have provided testimony more consistent with published authorities and are otherwise more persuasive. The applicant's groundwater modelling is found to be accurate and adequate.

68. In response to concerns of DEP staff and employees of the Northwest Florida Water Management District, Mr. Andreyev performed a contaminant transport analysis to estimate the long term migration and concentration of nitrogen (nitrate), phosphorous and biological oxygen demand (BOD) resulting from the AWT.

69. Mr. Andreyev used a three dimensional modelling program known as "MT3D" for this purpose. MT3D uses flow in three dimensions consistent with the MODFLOW modelling.

70. This type of modelling is commonly used in connection with leachate from landfills, gasoline spills, and other solvent spills, for precise tracking of harmful contaminants. Its level of precision is not normally required for AWT permitting. Rather, it is normally assumed that with proper treatment and appropriate set-backs, effluent disposal will not have any harmful effects.

71. Accurate contaminant transport modelling depends primarily upon accurate groundwater modelling. Contaminant transport modelling will be inaccurate if underlying groundwater modelling is inaccurate. Having determined that the applicant's groundwater modelling is accurate and adequate, the applicant's contaminant transport modelling is also deemed accurate.

72. The governing parameters used in the applicant's contaminant transport model were: the estimated hydraulic flow field; the duration of loading (5 year intervals up to 30 years); the loading rates (30,000 gpd and 90,000 gpd); the source concentration of each constituent (1 mg/L phosphorous, 3 mg/L nitrogen, 5 mg/L BOD); a dispersion coefficient (20 ft transverse and 2 ft vertical); and retardation factors which are dependant upon the contaminant.

73. The computer model conservatively assumed all the nitrogen was nitrate, when in fact some portion may be less mobile.

74. The dispersion coefficient was appropriate for the soil conditions prevalent at the site.

75. The retardation factors chosen were selected as low-end estimates for the nutrients and soil conditions applicable, and thus provide conservative (worst case) estimates of the amount, if any, of nitrogen, phosphorus and BOD which could potentially reach the Gulf and Apalachicola Bay.

76. Because of this conservatism, it is reasonable to infer that the actual contamination level will be less than was modelled. However, according to the model, the following loading rates will apply.

77. After 25 to 30 years of plant operation at 30,000 gpd, the concentrations reaching the Gulf in mg/liter for BOD, nitrogen, and phosphorous, will be, under a worst case scenario, 3.4, 1.4 and .28, respectively.

78. The concentrations in mg/liter reaching Apalachicola Bay will be, at most, .8, .5, and 0 respectively for BOD, nitrogen and phosphorous.

79. No measurable level of these elements will reach Nick's Hole at 30,000 gpd even under the worst case assumptions.

80. The quantity of nutrients reaching the Gulf after 25 to 30 years of plant operation, in lbs/yr, will be 242, 99, and 20 for BOD, nitrogen, and phosphorous, respectively.

81. No more than 6.5 lbs of BOD, 7.3 lbs of nitrogen, and 0 lbs of phosphorous will reach Apalachicola Bay each year, after 25-30 years of plant operation at 30,000 gpd.

82. No BOD, nitrogen or phosphorous will reach Nick's Hole at 30,000 gpd.

83. At 90,000 gpd, after 25 to 30 years of plant operation, the concentrations reaching the Gulf, in a worst case scenario, will be no more than 4.2 mg/l BOD, 2.3 mg/l nitrogen, and .73 mg/l phosphorous.

84. The concentrations reaching Apalachicola Bay after 25 to 30 years of plant operation will be no more than 2.3 mg/l BOD, 1.3 mg/l nitrogen and .03 mg/l of phosphorous.

85. The concentrations in mg/liter reaching Nick's Hole will be no more than 1.1 BOD, .5 nitrogen and 0 phosphorous.

86. At 90,000 gpd, the quantity reaching the Gulf after 25 to 30 years of plant operation, in lbs/yr, will be no more than 850, 466 and 147 for BOD, nitrogen and phosphorous.

87. Similarly, no more than 113 lbs of BOD, 64 lbs of nitrogen and 1.5 lbs of phosphorous will reach Apalachicola Bay.

88. No more than 24 lbs of BOD, 11 lbs of nitrogen and 0 lbs of phosphorous will reach Nick's Hole each year.

89. For the small amount of nutrients that will eventually reach the Gulf of Mexico and Apalachicola Bay, the zone of discharge is dispersed over a wide area and will fluctuate with the tides.

90. Randy Armstrong, a prior DEP Chief of Permitting, is currently a private sector biologist and environmental consultant. He relied in part on Mr. Andreyev's calculations. He testified without objection to performing further calculations of his own to figure tidal exchanges on a daily rather than annual basis. His testimony and calculations in Resort Village Exhibit 18-19 are accepted below. See Findings of Fact 91-102.

91. The Apalachicola River discharges, on the average 16,150,000,000 gallons of water each day into the Apalachicola Bay. This daily discharge into Apalachicola Bay includes 53,876 lbs of BOD, 88,896 lbs of nitrogen, and 10,775 lbs of phosphorous.

92. Daily tidal exchanges discharge 77,500,000 gallons of water per day into the 70 acre marsh area adjacent to and north of the subject property, and 98,800,000 gallons into Nick's Hole.

93. For this 70 acre marsh area, daily loading of nutrients associated with the tidal exchange are 710 lbs of BOD, 433 lbs of nitrogen, and 32.3 lbs of phosphorous.

94. For Nick's Hole, the daily loading of nutrients associated with the tidal exchange is 906.4 lbs of BOD, 552.07 lbs of nitrogen, and 41.2 lbs of phosphorous.

95. Rainfall contributes 300,000 gallons of water to the 70 acre marsh area north of and adjacent to the subject property and 382,500 gallons to the 88 acre Nick's Hole area on an average daily basis.

96. For the 70 acre marsh area north of and adjacent to the subject property, daily loading of nutrients associated with this rainfall are 2.75 lbs of BOD, 1.25 lbs of nitrogen, and .08 lbs of phosphorous.

97. For Nick's Hole, the daily loading of nutrients associated with rainfall are 3.5 lbs of BOD, 1.59 lbs of nitrogen, and .1 lbs of phosphorous.

98. After 30 years of plant operation, daily loading to the 70 acre marsh area north of and adjacent to the subject property from 30,000 gallons of effluent will be .02 lbs of BOD, .02 lbs of nitrogen, and 0 lbs of phosphorous, at most.

99. There will be no nutrient loading of BOD, nitrogen or phosphorous into Nick's Hole or its surrounding marshes under the 30,000 gallon scenario.

100. After 30 years of plant operation, daily loading to the 70 acre marsh area north of, and adjacent to, the subject property from 90,000 gallons of effluent will be .31 lbs of BOD, .18 lbs of nitrogen, and 0 lbs of phosphorous, at most.

101. For Nick's Hole, and its surrounding marsh area daily loading will be at most .07 lbs of BOD, .03 lbs of nitrogen, and 0 lbs of phosphorous.

102. The foregoing loadings comply with the antidegradation policy set forth in Rules 62-4.242, 62-302.300, and 62-302.700 F.A.C.

103. The amount of nutrients resulting from either 30,000 or 90,000 gpd of plant operation is insignificant, relative to the amount of nutrients from the tidal exchange and rainfall. The small amount contributed by the plant will not be measurable or observable, and will not cause any degradation, quick aging, or excessive phytoplankton production of Apalachicola Bay, Nick's Hole, or the Gulf of Mexico.

104. Petitioners attacked the applicant's raw data, calculations, and modelling as inaccurate and/or unreliable. To the extent their witnesses focused upon additional tests that the applicant could have performed but which were neither required nor performed, these witnesses were not persuasive of the applicant's unreliability. Likewise, some minimal errors by the applicant in transposing raw data measurements are acknowledged, but it was not demonstrated that such errors significantly affected the reliability of the applicant's data or agency rule compliance. No other controlling inaccuracy in the applicant's data or methodology was established.

105. Expert witnesses Strickland and Musgrove's contrary testimony is rejected as not proven, and accordingly, Dr. Livingston's conclusions based thereon are not persuasive.

106. Petitioners' evidence regarding saturated ground conditions and problems with the land application system relate almost entirely to Cell A. As noted above, the applicant's witnesses have testified credibly and competently that all cells will perform as designed, even under extreme storm conditions. Since a rotational loading is contemplated, the performance of the cells is enhanced, but even if any single cell fails, the other two should be sufficient to keep the effluent below maximum rule standards. As noted above, some minor readjustments of cell location since early data was run would not substantially affect the validity of that data, as confirmed by the latest analysis.

107. Mr. Andreyev ran his computer models without absorption cell A being utilized. He concluded that even if all the effluent were rotated among absorption Cells B and C, the system would still function as designed. Therefore, even if a problem were to arise with Cell A, it could be overcome by changing the rotation schedule, which is flexible, to reduce or eliminate effluent loading to Cell A.

108. Mr. Andreyev's modelling accurately estimates the groundwater mounding impact created by loading both 30,000 gpd and 90,000 gpd of effluent into the absorption cells.

109. Applying 30,000 gpd of treated effluent to the cells in addition to the annual rainfall will cause a groundwater mound with a maximum elevation of not more than 2.8 feet NGVD.

110. Applying 90,000 gpd of treated effluent to the cells in addition to the annual rainfall will cause a groundwater mound with maximum elevation of not more than 4.5 feet NGVD.

111. The foregoing elevations represent the maximum level of mounding, and in most areas the mounding is lower.

112. The absorption cells will have a minimum ground elevation of 5.5 NGVD, as required by DEP. However, in the event that subsequent inspections at

each construction phase reveal a need, the applicant would be able to comply with a higher minimum elevation if DEP were to require it.

113. Since the maximum groundwater mound will be below the ground surface throughout the absorption cells, saturated ground conditions are precluded even when the maximum groundwater mounding occurs.

114. DEP's concern, in interpreting its Rule 62-610.550(3) F.A.C., was whether the absorption cells would be saturated at the end of their respective resting periods. See, Findings of Fact 119-121.

115. At the end of the resting period, the groundwater mound is below the maximum level.

116. Due to rainfall, the absorption cells will temporarily become saturated during extreme storm events. However, this is a short term phenomenon and will not adversely affect operation of the absorption cells.

117. The temporary saturation which occurs with intense storm events is not a problem. The rainwater places additional downward pressure on the effluent, which stays below the ground.

118. Petitioners asserted that in order to provide reasonable assurances that this project is environmentally safe, the applicant must demonstrate that the absorption cells could cope with a 25 year storm event.

119. Mr. Andreyev testified that in the course of hundreds of permit reviews, he has never been required by DEP to model the impact of a 25 year-24 hour-ten inch flood/storm event on top of the normal heavy saturation figures he had used in modelling for this project, which apparently is what the permit opponents were urging. Mr. Mortensen and Mr. Volenec confirmed that DEP had never requested such modelling for a 25 year flood event with regard to their prior projects either and that DEP had required no further assurances on this project beyond the data provided. Mr. Andreyev's experience was that this type of concern was addressed by DEP during stormwater permitting.

120. The applicant's latest analysis takes the stormwater retention ponds into consideration. See Finding of Fact 54-56. The fact that DEP rejoined the applicant (within their joint proposed recommended order) in seeking to have the AWT permit issued, is suggestive that any stormwater concerns of the agency have been resolved by what their personnel perceived at formal hearing. In any case, DEP's concerns about the subsequent application for a stormwater retention permit should be addressed in that proceeding, not here.

121. Victor Hultstrand, DEP's Supervisor of the Technical Services Section of Water Facilities, confirmed that the agency interprets Rule 62-610.550 (3) F.A.C. only to prohibit saturated ground conditions for average conditions, not short term conditions associated with infrequent major storm events. At one point, before the agency deemed the application complete, Mr. Hultstrand requested that the applicant work the 25 year storm event into its MODFLOW analysis. However, Mr. Hultstrand conceded that his request was intended to reassure himself personally and that there is no specific requirement in Rule 62-610.550 (3) F.A.C. for such a study. This interpretation of the rule is entitled to great weight and is accepted. Mr. Hultstrand was ultimately satisfied with the additional information provided prior to the application being deemed complete, without the superimposed 25 year storm data.

122. Nonetheless, Mr. Andreyev went a little further by incorporating the rainfall during the latest MODFLOW modelling into his model. It ranged from four to ten inches in his model. He also incorporated the mass balance of water from all storms for 30 years. This figure was pulled from LANDAP, an acceptable source. He averaged the water for a year closest to recorded distribution and used that year's storm events. Therefore, his calculations do not represent a particular storm, but represent the cycle of rainfall on a long term basis, including all hurricanes, and all 25- and 100-year storms that have occurred on the island. The joint posthearing proposal suggests DEP is fully satisfied with the latest information.

123. Rule 62-610.567 F.A.C., requires that "The land application site shall be designed to prevent the entrance of surface runoff. If necessary, berms shall be placed around the application area." The applicant has proposed to grade the site and to place berms around the cell boundaries in areas where the ground elevation drops below 6 feet NGVD. This will require a short berm in the corner of one absorption cell. The applicant has not specifically accounted for wave action under hurricane conditions, however, while it is conceivable that Cell A could experience run on with the berm and limited volumes of stormwater could run off the cells in extreme conditions, even during a 25 year storm event, if runoff somehow occurs from the absorption cells, no effluent would be present in such runoff.

124. Rule 62-600(2)(c) F.A.C. actually addresses the 25 year storm event. It requires that: "The treatment plant structures essential for the purpose of treating, stabilizing, conveying, or holding incompletely treated waste and mechanical equipment shall be protected from physical damage by the 100 year flood. The treatment plant shall be designed to remain fully operational and accessible during the 25 year flood".

125. According to FEMA maps for St. George Island, the proposed site for the plant is in an "A-9" zone, which has a 100 year flood elevation of 9 feet.

126. In order to provide an extra margin of safety, the plant has been elevated so that the tops of the tanks will be between elevations 11.5 and 17.7.

127. All electrical hardware, blowers, and other componentry have been elevated above the 25 year flood elevation.

128. The applicant provided reasonable assurances that the AWT auxiliary generator will be sufficient to operate the plant's vital components during peak flow conditions. One of Petitioner's concerns addresses what will be done with the applicant's auxiliary generator in case of extreme weather events. Portability of this item enables it to be moved about the site to avoid any problems occasioned by such flood events, including ponding, should it occur. Otherwise, the applicant has several safe locations for storage of the generator, notably the fire station which is offsite. Failure of the applicant to limit its versatility by designating a permanent location for its portable generator does not defeat this application, nor does the absence of schematics of the inside of standard purchase items.

129. The Intent to Issue calls for the presence of a certified Class C AWT operator monitoring the system with seven ground water monitoring wells and three surface water monitoring wells on a schedule established in the draft permit. The Northwest Florida Water Management District expressed concern regarding the number of hours that the plant operator would be on duty during weekends.

130. At formal hearing, the applicant, through its principal, Ben Johnson, stipulated to accept a modification to DEP's draft permit to require that the applicant have a certified plant operator at the site six hours on each weekend day, six hours on three week days and one visit on each of the remaining two weekdays, thereby resolving this concern. This modification of the permit draft is acceptable to DEP.

131. DEP and Northwest Florida Water Management District personnel expressed some concerns regarding the parameters in the Intent to Issue for monitoring groundwater and surface water near the plant and indicated that additional parameters should be added: total phosphorous (TP), phosphate (P04), total nitrogen (TN), total kjeldahl nitrogen (TKN), ammonia (NH3), nitrate (N02), and dissolved oxygen (DO). DO need only be sampled from the surface water monitoring stations.

132. At formal hearing, the applicant, through its principal, Ben Johnson, stipulated to accept a modification to the draft permit to require the additional sampling.

#### CONCLUSIONS OF LAW

133. The Division of Administrative Hearings has jurisdiction over the subject matter and the parties hereto pursuant to Section 120.57(1) F.S.

134. All Petitioners have standing to bring this cause on for formal evidentiary hearing.

135. The Department of Environmental Protection (DEP) has permitting jurisdiction under Chapter 403, F.A.C. and Chapter 62 F.A.C. over the permitting of domestic wastewater treatment facilities. Specifically, DEP has permitting jurisdiction under Section 403.087, F.S. (1993) and Chapters 62-4, 62-600, 62-601, 62-610, 62-640 and 62-699, F.A.C.

136. The permit applicant has the ultimate burden of persuasion to establish that it has provided reasonable assurances that the proposed advanced wastewater treatment facility will not violate the appropriate provisions of Chapter 403, F.S. or the relevant DEP rules. However, once the applicant has made a prima facie case, the opponents of the application/draft permit have the burden of going forward with evidence to prove the truth of the facts asserted in their petition. If the Petitioner fails to present evidence, or fails to carry the burden of proof as to the controverted facts asserted . . . then the permit must be approved. See, Department of Transportation v J.W.C. Company, Inc., 396 So. 778 (Fla. 1st DCA 1981).

137. While the applicant's burden is "one of reasonable assurances" it is not one of "absolute guarantees." See, Manasota 88, Inc. v. Agrico Chemical Company and Florida Department of Environmental Regulation, 12 FALR 1319, 1325 (February 19, 1990).

138. Resort Village presented competent, substantial evidence that the advanced wastewater treatment facility, as designed, and as set forth in the application and DEP's Intent to Issue as drafted but further modified by those amendments stipulated at formal hearing, provides those reasonable assurances.



RECOMMENDATION

Based on the foregoing Findings of Fact and Conclusions of Law, it is

RECOMMENDED that a permit be issued as set forth in the Intent to Issue as drafted but further modified to provide that

(a) There will be a certified operator on site for six hours on each weekend day, for six hours on three weekdays, and for a visit on the remaining two weekdays; and

(b) The following will be added to the list of parameters to be sampled: total phosphorous (TP), phosphate (P04), total nitrogen (TN), total kjeldahl nitrogen (TKN), ammonia (NH3), nitrate (N02), and dissolved oxygen (DO). Dissolved oxygen (DO) will only be sampled from the surface water monitoring stations.

DONE AND ENTERED this 16th day of January, 1996, in Tallahassee, Florida.

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ELLA JANE P. DAVIS, Hearing Officer  
Division of Administrative Hearings  
The DeSoto Building  
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(904) 488-9675

Filed with the Clerk of the  
Division of Administrative Hearings  
this 16th day of January, 1996.

APPENDIX TO RECOMMENDED ORDER  
CASE NOS. 95-0863, 95-0864, 95-865,95-0866,95-0867

The following constitute specific rulings, pursuant to S120.59(2), F.S., upon the parties' respective proposed findings of fact (PFOF).

Applicant's and DEP's Joint PFOF:

1-107, 115-174, and 179-180

Generally accepted upon the whole of the evidence, not necessarily upon the cited passages or only upon the cited passages. Unnecessary, subordinate, and/or cumulative material has not been adopted. Interspersed conclusions of law and legal argumentation have been rejected. Preliminary matters will be found under "Preliminary Statement." Conclusions of Law will be found under "Conclusions of Law."

108-114, and 175-178

Considered and factored into competency and credibility analysis but otherwise rejected as subordinate and non-dispositive, and where appropriate, rejected as mere legal argumentation.

Individual Petitioners' and Franklin County's Joint PFOF:

1-3, 5-6, 10-13, 14 Number 2, 15-16, 19-24, 26-27, 35-36, 39-40, 50, 76, 80  
Accepted, but unnecessary, subordinate, and/or cumulative material has not been adopted. Interspersed conclusions of law and legal argumentation have been rejected.

4, 54, 81, 89-90

Accepted as modified to more accurately reflect the record as a whole.

74-75

Rejected as set forth in the recommended order.

7-9, 14 Number 1, 17-18, 25, 29-30, 41-44, 46-49, 51-53, 55-61, 64 Number 1, 63 after 64, 64 Number 2, 65-73, 77-78, 82-88, and 91-92

Rejected as out of context or otherwise contrary to the facts as found upon the greater weight of the credible evidence as a whole. In some instances also rejected as unnecessary, subordinate, or cumulative or because legal argumentation was included with the proposed facts.

28, 31-34, 37-38, 45, 62

Rejected as subordinate and non-dispositive, and where appropriate, rejected as mere legal argumentation.

79 Rejected as mere speculation and legal argumentation.

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NOTICE OF RIGHT TO SUBMIT EXCEPTIONS

All parties have the right to submit to the agency written exceptions to this Recommended Order. All agencies allow each party at least ten days in which to submit written exceptions. Some agencies allow a larger period within which to submit written exceptions. You should contact the agency that will issue the Final Order in this case concerning agency rules on the deadline for filing exceptions to this Recommended Order. Any exceptions to this Recommended Order should be filed with the agency that will issue the Final Order in this case.