

**STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

DUMP THE PUMPS, INC.
And JIM SKURA

RECEIVED

Apr 28, 2014

Petitioners,
v.

Dept. of Environmental Protection
Office of General Counsel

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION,
and FLORIDA KEYS AQUEDUCT AUTHORITY,

FDEP Permit No. 295404-019-DWC/CM

Respondents.
_____ /

PETITION FOR FORMAL ADMINISTRATIVE PROCEEDINGS

Petitioners, DUMP THE PUMPS, INC. (“DTP”) and JIM SKURA (“Skura”), by and through undersigned counsel, and pursuant to Sections 120.569 and 120.57, Fla. Stat., and Rule 28-106.201, F.A.C., hereby file this Petition for Formal Administrative Proceedings (“Petition”), to challenge the issuance of FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (“FDEP”) permit 295404-019-DWC/CM, which permits “dry line” sewage collection/transmission system construction for Upper Sugarloaf Key, Monroe County, Florida.

I. PARTIES AND NOTICE

1. Petitioner, Dump the Pumps, Inc. (DTP) is a not-for-profit corporation incorporated under the laws of the state of Florida. DTP’s mailing address is P.O. Box 1956, Big Pine Key, Monroe County, Florida 33043. Its President is Mr. Banks Prevatt who maintains the telephone number of (305) 872-5264. DTP’s representative is their undersigned counsels, Robert N. Hartsell, P.A., Federal Tower Building, 1600 South Federal Highway, Suite 921, Pompano Beach, Florida 33062

who maintains the telephone number of (954) 778-1052 and Lee Robert Rohe, Esq. P.A., P.O. Box 420259, Summerland Key, FL 33042 who maintains the telephone number of (305) 745-2254.

2. Petitioner Jim Skura is a member of Dump the Pumps, Inc. and owns a residence located at 19680 Caloosa St., Sugarloaf Key, Florida 33042.

3. The agency's name, address and agency identification number are Respondent, FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION, 3900 Commonwealth Boulevard, Tallahassee, Florida 32399-3000, and the FDEP File Number is 295404-019-DWC/CM. The FDEP is a state agency established under Section 20.255, Fla. Stat. In part, the FDEP is charged with the responsibility of enforcing various state laws, including Chapter 403, Fla. Stats., enacted to protect Florida's environment and with issuing permits for the design, construction and operation of sewage collection/transmission system construction.

4. The address of Respondent, FLORIDA KEYS AQUEDUCT AUTHORITY ("FKAA"), is 1100 Kennedy Drive, Key West, Florida 33041. FKAA maintains the telephone number of (305) 296-2454. The FKAA is a political subdivision of the State of Florida, established by Special Act, Ch. 76-441, as amended, for purposes of supplying fresh water to the Florida Keys and for constructing a centralized sewer system for the Lower Keys.

5. DTP received actual notice from FDEP of intent to issue Permit No. 295404-019-DWC/CM by email on April 14, 2014 *via* Mr. Banks Prevatt.

6. This Petition is being filed within fourteen (14) days of actual notice of the agency action, and is therefore timely.

II. FACTUAL BACKGROUND

7. Monroe County is designated as an area of critical state concern under Section 380.05 and 380.0551, Fla. Stat and entitled to heightened environmental and development safeguards.
8. Upper Sugarloaf Key is included in the project known as the Cudjoe Regional Wastewater System (CRWS).
9. In 2000, Monroe County adopted a “Monroe County Sanitary Wastewater Plan” for the purpose of designing a central wastewater collection system and treatment facility for incorporated and unincorporated areas of Monroe County.
10. On July 15, 2013, Monroe County adopted Ordinance No. 027-2003 (the Wastewater Assessment Ordinance) which provides for imposition and collection of wastewater assessments against properties in Monroe County.
11. On or about October 5, 2005, Monroe County and FKAA entered into a lease agreement, whereas Monroe County, as lessee, leased certain lands for the construction, equipping and operation of a wastewater and sewer system.
12. Pursuant to the Section 2.8(v) of the October 5, 2005 lease agreement, FKAA was required to “establish rates, fees, and System Development Charges for the System which would be sufficient to provide funds adequate to fully fund the Operations and Maintenance Expenses of the System.”
13. FKAA has, on several occasions, held public meetings that led people to believe that gravity wastewater collection systems would be used throughout the CRWS except for outliers where it would not be practicable. FKAA promoted the typical use of gravity sewer on its website and in print advertising.

14. FKAA applied for a construction only permit to install a dryline sewage collection/transmission system pursuant to Chapter 403 Florida Statutes and Florida Administrative Code Rules 62-4 and 62-604. The FKAA designated certain properties and subdivision lots and homes within the Lower Keys for either gravity sewers or for low pressure sewers (“LPS”). The LPS system will require individual grinder pumps on private property while the gravity system will not.

15. A substantial number of members of DTP received notice, including Skura, that they were designated for LPS systems and would need to designate a portion of their property for grinder pump installation.

16. The grinder pump specified by FKAA to be installed on each designated LPS property is referred to as the “E-One grinder pump.”

17. On April 14, 2014, the FDEP issued Permit number 295404-019, which permits the “construction of 9,300 LF (linear feet) of 8” PVC (SDR 26) gravity sanitary sewer, 31 sanitary manholes, 2 neighborhood grinder pump stations, 121 E/One simplex grinder pump stations, 13 E/One duplex grinder pump stations, 27,253 LF 2” force main, 1,837 LF of 3” force main, and 4,737 LF of 4” force main).”

18. A true and correct copy of Permit number 295404-019 DWC/CM is attached as Exhibit A.

19. FDEP did not issue a permit for “wet” connection to any treatment plant or originator of waste.

III. DISPUTED ISSUES OF MATERIAL FACT

20. The Petitioners dispute that the proposed design meets the minimum requirements of design as set forth in the Florida Administrative Code, and is therefore eligible for permit.

21. The Petitioner disputes that the design adequately protects groundwater and offshore surface water, the environment or even improves upon the existing on-site treatment systems.

22. The Petitioners dispute that the engineers' reports, technical memorandum, letters, or application representations provide reasonable assurance that the design will meet FDEP criteria.

IV. FACTS THAT WARRANT REVERSAL OF THE FDEP PERMIT ISSUANCE

23. FCAA's Upper Sugarloaf design ("design") violates FDEP minimum design requirements.

24. Operation of the system as designed will result in loss of sewer service, raw sewage spills into residential yards, streets, harm the environment and/or backups into homes.

25. Critical aspects of the design were manipulated to accommodate the use of the slow-pumping E-One grinder pump and to make the transmission force main design appear more robust than it is. The design and construction plans pose substantial risk of groundwater and surface water contamination and harm to public health and safety.

26. The design has inadequate scouring velocity on every 2-inch force main beginning on a dead end or cul-de-sac street. A single simplex E-one grinder pump station pumps too slowly to achieve the minimum 2.0 feet per second ("fps") required in the 2-inch collector main in the street. See Chapter 48.1, Recommended Standards for Wastewater Facilities ("Ten State Standards"), incorporated by reference 62-604.300 (g) F.A.C.) . The E-one also pumps too slowly to achieve the recommended 3.5-5 fps re-suspension velocity in the 1-1/4-inch service lateral, and far from the required velocity in the 2-inch force main in the street. There is no way to address this with the E-one grinder pumps. Currently, the City of Marathon is experiencing this same problem on its 1-1/4-inch E-One grinder pump laterals and are experiencing significant

maintenance issues. Jacksonville Electric Authority ("JEA") reports similar troublesome blockages in the E-One grinder pumps they maintain in the greater Jacksonville area.

27. Inadequate scouring velocity exists on neighborhood lift station force mains except near design peak flows. See Chapter 48.1, Recommended Standards for Wastewater Facilities ("Ten State Standards"), incorporated by reference 62-604.300 (g) F.A.C.

28. Inadequate scouring velocity exists at some trunk line manifold force mains. See Chapter 48.1, Recommended Standards for Wastewater Facilities ("Ten State Standards"), incorporated by reference 62-604.300 (g) F.A.C.. The neighborhood lift stations are designed using multiple slow-pumping E-One grinder pumps that operate in stages, as needed, to keep up with incoming wastewater. During periods of low flow, the pumps would alternate, one running at a time. One pump running alone cannot achieve the required scouring velocity in any connected force main located on any street. In the off season, there may be weeks or months when 2.0 fps is not achieved. Additionally, because the flow experiences starts and stops, there is a need of re-suspension velocities of 3.5-5 fps also. The design cannot achieve that velocity.

29. The permitted E-One grinder pumps specified are not approved or rated for use in a pump or lift station; and are not in compliance with FDEP Rules, 10 States Standards, the National Electric Code and National Fire Protection Association standards. See Chapter 42.35 and 44.1, Recommended Standards for Wastewater Facilities (1997) (a.k.a. "Ten State Standards"), incorporated by reference 62-604.300 (g) F.A.C.

30. A pump wetwell handling primarily residential sewage is a Classified Hazardous Area "Class 1, Division 2, Group D" by NFPA 820. NEC Article 501.125(B) states "In Class 1, Division 2 locations, motors, generators, and other rotating machinery in which are employed sliding contacts, centrifugal or other types of switching mechanism (including motor overcurrent,

overloading, and overtemperature devices), or integral resistance devices, either while starting or running, shall be identified for Class 1 Division 1 locations....”, or in other words fully explosion proof. The E-One grinder pump employs an integral over-temperature switch with automatic reset in the motor, as well as level switches in the motor, and therefore it is not allowed in a Class 1 Division 2 location. E-One specifically warns in its Installation Guide for the specified E-One Extreme Upgrade grinder pump on page 4 in bold print “**This pump is not to be installed in a location classified as hazardous** in accordance with National Electric ANSI/NFPA 70.” The E-One pump pit’s 2-inch passive vent intended for air displacement and entry during pump cycles does not qualify as “mechanical ventilation” and therefore does not declassify the environment as hazardous.

31. In unique locations such as Upper Sugarloaf Key, where homes are vacant for weeks or months at a time, there is a distinct risk of not just gasses being generated in the pit, but of gasses generated in the force mains being forced under significant pressure past the simplex station check valves and thence into the pit where they will accumulate. Hydrogen sulfide, being heavier than air, will not likely rise through the vent until the pit is full to the top with the explosive gas. Use of the specified E-One grinder pump is a violation of national public safety codes and poses a serious and potentially deadly explosion hazard.

32. In light of the vulnerability of the Florida Keys to hurricanes, rogue power outages and storm surge, there is no realistic plan for maintaining service during an extended power outage. Florida Administrative Code is very clear that uninterrupted sewer service must be maintained. See 62-604.500(2) F.A.C.; Chapter 44.1 Recommended Standards for Wastewater Facilities (1997) (a.k.a. "Ten State Standards"), incorporated by reference 62-604.300 (g) F.A.C.. See also Design and Specification Guidelines for Low Pressure Sewer Systems (1981) FDEP, incorporated

by reference 62-604.300 (j) F.A.C.. There is no possibility of uninterrupted service in a widespread power outage with the design as permitted. This design fails to comply with FDEP requirements with a grinder pump based LPS.

33. The pump station design does not incorporate a quick-connect pump-out connection. These are required by Florida Administrative Code but were not included in the design. Rule 62-604.400(2)(a)(3), F.A.C.. The covers of the pump stations are secured with several tamper-proof screws which require a special tool for removal. This design will delay physical pump-outs when simply powering the pump is not a viable means of emptying the pit. This inability to quickly pump out sewage poses a risk to water quality and public health and safety.

34. The design has inadequate provisions for air release. See Design and Specification Guidelines for Low Pressure Sewer Systems (1981) DEP, incorporated by reference 62-604.300 (j) F.A.C.. Thousands of feet of force main are designed with dives, including but not limited to those under water mains, without air releases to release trapped gasses generated by decomposing waste. Air locking obstruction of the forcemains may be expected, interrupting service, in violation of Rule 62-604.500(2) F.A.C.. This inability to release air poses an explosion risk and endangers public health and safety.

35. The design also fails to provide an allowance in the flow calculations for the variance between high seasonal and low off-season part time occupancy in the Keys. In Upper Sugarloaf, the U.S. Census 2010 did not segregate Upper Sugarloaf as an independent reporting area, but the area is similar to neighboring Cudjoe Key which was reported to have a seasonal/part time occupancy rate of over 48.5% . Based on a 6 month season, the yearly average flow as used in calculations is only 76% of high season flow. Consequently, the sizing of lift stations, force mains, and head loss calculations are seriously inadequate to meet minimum design standards.

36. The design provides an inadequate allowance for the fact that the Keys are an area of high tourism and a vacation destination. Many visitors descend on residences as well as lodging and campgrounds during certain long weekends such as Fantasy Fest and Lobster Mini-season. Brown and Caldwell Engineering did a study for the basis of design for the receiving wastewater treatment plant (WWTP) in Cudjoe Key. The study examined actual inflows to existing treatment plants and concluded that a tourism peaking factor of 2.5 times the average flow is necessary to calculate the peak flow day and that a peaking factor of 4.5 is necessary for the peak hour. There is no reserve capacity in an LPS system. The lift stations and force mains are designed using a 4.0 peaking factor above average annual gallons per minute, which is the bare minimum criteria of the Ten States Standards and documented inadequate for this area.

37. The plans and calculations submitted to and approved by the FDEP are unreliable for the system intended to be built because only 78% of the grinder to gravity conversions are accounted for in the reduction of grinder pumps from the original permit of April 14, 2011. The Board of County Commissioners voted to provide gravity sewer service, instead of LPS, to 46 properties on Upper Sugarloaf but only 36 properties are shown converted on the permit. The flow and head loss calculations and lift station details submitted in the Permit Application Package are suspect.

38. The calculations for flow and head loss in the PAP are erroneously based on a "Probability Chart" purported to predict the maximum number of grinder pump stations that will run simultaneously. After a power outage of only a couple of hours, it is reasonable to assume that 100% of pumps at occupied homes and 100% of all neighborhood lift stations will attempt to pump at once. The force mains are not sized for such an occurrence. In the 100% scenario, the head pressure will be excessive and the pumps will run to their maximum pressures to try to

overcome the resistance before cutting out on thermal overload or destroying the rubber stator sleeve surrounding the rotor. The excessive pressure may also burst pipes or break connections.

39. The E-One grinder pump specifications indicate that the pump is capable of generating 120 psi (pounds per square inch) for up to 5 minutes. The deadhead pressure against an obstruction or closed valve can reach 180 psi with a new pump. The force main pipes on this project are pressure tested to between 75 and 150 psi. The E-One grinder pump is capable of exceeding the static test pressure of the newly installed force main pipe. Notwithstanding, this is a static test pressure and that surge pressures as would occur from sudden loss or application of power can easily exceed double the normal operating pressure. The specified force main pipe is only rated for a working pressure of 160 psi. The E-One grinder pump has no pressure relief valve, thus there is a risk of bursting pipes or breaking connections. With the geological conditions in the Lower Keys and the pea rock bedding around these pipes, a burst pipe could allow the injection of raw sewage into the tidal water table for many years without detection.

40. The project was designed using a smaller number of people to a residence than determined from the 2010 Census Bureau report. The design calculations used only 1.75 persons per residence instead of 2.37 persons. Flow can be expected to be 35% over design as a result.

41. The design plans show 6-foot minimum separation where 10-foot is required by Florida Administrative Code Rule 62-604.400(2)(g). The plans also call for 12-inch vertical separation at crossings where a forcemain pipe dives under a watermain but 18 inches is required by Rule 62-604.400(2)(a)(3)(i), F.A.C.

42. The pump stations were sized for an inadequate flow and will be connecting to higher than expected head.

43. The E-One grinder pump is not explosion proof and neither are the floats that were accepted for use in neighborhood lift stations. See Chapter 44.1 and 42.35, Recommended Standards for Wastewater Facilities (1997) (a.k.a. "Ten State Standards"), incorporated by reference 62-604.300 (g) F.A.C. and Chapter 501.125 N.E.C.

44. The peak flow used in calculations is inadequate according to actual flow studies previously approved by FDEP. Since the E-One pumps are so slow pumping and are used in multiples with staged pumping, low flows will result in only one pump running and velocity will be extremely low in some cases and inadequate in all cases.

45. There is no provision for detecting shaft seal leakage on the E-One grinder pump as required.

46. Although the control box is outside of the wet well, the thermal overload switch is built into the pump leading to the susceptibility of explosion.

47. Force main pipes are as small as 2-inch, and minimum velocity will not be achieved in some even at peak flow.

48. For this project the friction coefficient used in calculations of head loss was 140 for collection force mains and 150 for the HDPE portion of transmission mains (different engineers used different criteria). The Florida Administrative Code Rules requires a friction coefficient of 120 be used for design. This means that head loss may be underestimated in practice and has certainly been underestimated for permitting approval purposes. The pipes using 140 instead of 120 have head loss underestimated by approximately 33% and the pipes using 150 have head loss underestimated by approximately 51%. Considering that 33,827 feet of force main piping is required on Upper Sugarloaf, a substantial head loss will occur that was not included in the hydraulic modeling.

49. The wastewater generation quantity is not based on the EDU value that homes and businesses were assessed upon, but upon a more “convenient” and erroneous assumed value that is significantly lower, and validated by making assumptions about irrigation percentages based on satellite imagery. However, many, if not most, Upper Sugarloaf homeowners do not irrigate at all, and most of the rest irrigate only very sparingly. Flows may therefore be expected to be significantly higher than designed.

50. The calculation of wastewater flow per residential EDU was not based on Census information from 2010. The head-counts per home in 2010 in this vicinity are higher than the head-count used in the calculations of the Permit Application. Based on the 2010 Census, flow per residential EDU should be 35% higher. The system is not designed to accommodate that 35% required to meet the minimum Ten States Standards.

51. The transmission wastewater force main pipe from Upper Sugarloaf Key to the receiving wastewater treatment plant (WWTP) in Cudjoe Key is not designed in accordance with FDEP Rules. Furthermore, the force main is not designed to carry the anticipated peak day’s flow, as determined by the Technical Memorandums of the consulting engineers involved in permitting of the receiving WWTP, and therefore is believed to be woefully inadequate to transport the waste. The peak hour flow anticipated is expected to be 4.5 times the annual average yet 3.77 was used in head loss calculations, which equates to a flow 119% of anticipated. Added is the loss of using a C factor of 140 where 120 is required for plastic pipe per FDEP rules. The result is a grand total of 159% of anticipated maximum head loss.

V. PETITIONERS SUBSTANTIAL INTERESTS WILL BE AFFECTED

52. DTP is a not-for-profit organization incorporated under the laws of Florida. DTP’s corporate purpose is to “dump the pumps” in the Lower the Keys by eliminating the grinder pump

systems and their concomitant negative impacts to the water quality and public health and welfare. In its corporate capacity, DTP's substantial interests will be adversely affected by the issuance of the Permit. DTP now has approximately 58 members, a substantial number of which interests' will be substantially and adversely affected by the issuance of the permit. DTP brings files this Petition on behalf of itself and on behalf of its approximately 58 members.

53. DTP members, and Skura will be served by the Cudjoe Regional Wastewater System (CRWS), of which Sugarloaf Key is a part. DTP's substantial interests, the substantial interests of its members and Skura's substantial interests will be adversely affected and harmed when permits are issued with only cursory review of designs, designs which fail to utilize the minimum standards required by FDEP Rules and Ten States Standards in an area where every precaution should be taken.

54. The system as designed and proposed to be permitted will not function as intended and will result in raw sewage releases into a the yards of DTP members, and Skura, and will have adverse impacts upon Endangered Species Habitat and Outstanding Florida Waters of a National Marine Sanctuary creating significant health hazard and diminishing the very qualities that make the area a desirable place to reside and visit.

55. The design parameters are much too conservative, especially for the atypical conditions of the region and Sugarloaf Key. If all the wastewater cannot flow through the pipes at the specified velocities, the wastewater will be discharged to the ground, the groundwater and to the surrounding surface waters, creating hazardous unsanitary conditions for a substantial number of members of DTP and Skura.

56. Skura is a resident of and a property owner on Sugarloaf Key and will be required to be serviced by an E-One grinder pump located on their property as part of this permit. Skura will

suffer from the aforementioned substantial adverse impacts associated with the installation of a grinder pump system including but not limited to overflow during power outages, explosion risk, odor, loss of property rights, undetectable sewage raw sewage leaks, health and personal safety risks.

57. Skura and the members of Dump the Pumps, Inc. recreate in the nearshore waters of Sugarloaf Key. Raw sewage leaks caused by the system failure will adversely affect members of DTP who recreate in the nearshore waters of Sugarloaf Key.

58. The wastewater collection system, as designed and proposed to be permitted, incorporates a very large number of E-One grinder pump stations that are intended by FKAA to be installed on private property including the property of a substantial number of DTP members, including Skura. The grinder pump stations occupy a portion of the yard and present a risk of explosion, odor, release of pollutants and unsanitary conditions. The easement allows strangers to legally enter the property at will, while exposing the homeowner to liability if they are injured by, for instance, an explosion release of pollutants and asphyxiation.

59. Mr. Skura fishes on a regular basis in the nearshore waters of Sugarloaf Key. A raw sewage discharge will adversely affect his ability to consume the fish he catches.

VI. ULTIMATE FACTS AND LAW

60. The wastewater collection system currently designed and approved for permit is inappropriate for the geographic area; is inadequately designed to function as intended; poses a serious risk of raw sewage release; poses an established risk of explosion; fails to provide reasonable assurance that the project will not degrade the environment; fails to provide reasonable assurance that the project will not harm the public; and is not designed in accordance with

minimum FDEP standards. Relief is authorized by and sought under Chapter 120, Sections 403.87, 403.412, Fla. Stat., Rules 62-4.160 and 62-4.100 F.A.C., and others. The Permit violates FDEP Rules 62-604.130, 62-604.300, 62-604.400, 62-604.500, 62-604.600 F.A.C.

WHEREFORE DTP respectfully demands:

- A) The Petition be forwarded to the Division of Administrative Hearings for appointment of an administrative law judge;
- B) This Petition be consolidated with the challenge to permit 295404-018 DWC/CM and
- C) An Order be issued denying the subject permit.

Respectfully Submitted,

BY: 

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