

BEFORE THE GOVERNING BOARD OF THE
SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Order No. 2010- -CO-WU

In re:

CITY OF LAKE WORTH,

Respondent.

_____ /

OPERATIONAL AGREEMENT

Pursuant to Chapter 373, Florida Statutes ("Fla. Stat."), and the rules promulgated thereunder, this Operational Agreement is entered into between the SOUTH FLORIDA WATER MANAGEMENT DISTRICT ("DISTRICT" or "SFWMD") and CITY OF LAKE WORTH ("Respondent" or "LAKE WORTH") by mutual consent, without trial or adjudication of any issue of fact or law.

FINDINGS OF FACT

The DISTRICT and Respondent stipulate to the following Findings of Fact:

1. The DISTRICT is a public corporation of the State of Florida existing by virtue of Chapter 25270, Laws of Florida, 1949, and operating pursuant to Chapter 373, Fla. Stat., and Title 40E, Florida Administrative Code ("Fla. Admin. Code"), as a multipurpose water management district with its principal office at 3301 Gun Club Road, West Palm Beach, FL 33406.
2. The DISTRICT has the power and duty to protect Florida's water resources and to administer and enforce the provisions of Chapter 373, Fla. Stat., and the rules promulgated there under Title 40E, Fla. Admin. Code. The DISTRICT has jurisdiction over the matters addressed in this Operational Agreement.
3. LAKE WORTH is a political subdivision of the State of Florida, whose business mailing address for the purpose of this Operational Agreement is 7 North Dixie

Highway, Lake Worth, Florida 33460.

4. Water Use Permit No. 50-00234-W (“Permit”) was originally issued to LAKE WORTH in 1976. The permit has subsequently been renewed and modified to reflect increases in the allocation and the expansion of the service area.

5. In 1990, LAKE WORTH was required to modify its Saline Water Intrusion (“SALT”) Program monitoring well network to add eight monitoring wells to identify and observe the saline water front between its wellfield and the Intracoastal Waterway (“ICW”).¹

6. LAKE WORTH’s 1995 Permit contained a limiting condition requiring LAKE WORTH to continue to submit monthly water level and chloride concentration data in accordance with the SALT Program.

7. In May 2000, the DISTRICT published the Lower East Coast Water Supply Plan (“LECWSP”). The LECWSP identified LAKE WORTH’s wellfield as at an increased risk of saltwater intrusion.² The LECWSP stated that LAKE WORTH “may not be able to meet a 1-in-10 year level of certainty in 2020... [Its] projected 2020 demands may not be able to be met at their current wellfield location[].”³

8. LAKE WORTH’s Permit was renewed and modified on or about February 8, 2006, pursuant to Application No. 050615-14. A copy of the renewed and modified Permit is attached hereto as Exhibit “A.” In reviewing Application No. 050615-14, DISTRICT staff noted that long-term chloride monitoring detected increases in two of the salinity monitoring wells (LWMW-2 and LWMW-4) located between the wellfield and the ICW.

¹ The ICW is located approximately one mile east from Lake Worth’s public water supply wellfield. Well Number 5 is the production well located closest to the ICW.

² SOUTH FLORIDA WATER MGMT. DIST., LOWER EAST COAST WATER SUPPLY PLAN 328 (2000).

³ Id.

9. LAKE WORTH's wellfield drawdown, associated with its permitted allocation, intersects the known position of the saltwater front, see map attached hereto as Exhibit "B." The saltwater front within the Surficial Aquifer System at the site is known, historically, to be slowly moving landward. This gradual progression is evidenced by a long-term, steady increase in salinity levels measured in LAKE WORTH's Monitor Wells LWMW-2, LWMW-4, and in PB-889.

10. In accordance with the recommendations of the LECWSP, LAKE WORTH chose to utilize water withdrawn from the Floridan Aquifer to reduce existing demands on the Surficial Aquifer System and to meet future demands. The DISTRICT's Staff Report noted that the "decreased Surficial aquifer withdrawals would allow the Surficial aquifer water levels to recover to higher levels, which should help reverse the inland movement of saline water."

11. The 2006 Permit imposed Limiting Conditions 8, 9, and 10 which require LAKE WORTH to mitigate for harmful impacts such as interference with existing legal uses, harm to existing off-site land uses, and harm to the natural resources caused by its withdrawals. One of the harmful impacts contemplated by Limiting Condition No. 10 is a "[r]eduction in ground or surface water levels that results in harmful lateral movement of the fresh water/salt water interface...."

12. If any of the Permit's limiting conditions are violated, LAKE WORTH is advised in Condition No. 11 that the Permit "shall be subject to review and possible modification, enforcement action, or revocation."

13. LAKE WORTH was required by Limiting Condition No. 23 to develop long-term water supply alternatives and submit a plan concerning this subject. LAKE WORTH's plan was to construct a Floridan Aquifer wellfield and treatment facilities and reduce

Surficial Aquifer System withdrawals. However, until such time as the wellfield and treatment plant are operational, LAKE WORTH's raw water supply is derived from its Surficial Aquifer System wellfield and, potentially, from existing interconnects with other public water supply utilities.

14. Limiting Condition No. 25 of the 2006 Permit requires LAKE WORTH to continue to submit monitoring data in accordance with the approved saltwater intrusion monitoring program.

15. LAKE WORTH has submitted monitoring data in accordance with permit limiting conditions.

16. Since issuance of the 2006 Permit, the monitoring data has shown that the position of the saltwater front continues to be unstable, and is moving towards the wellfield. Between the issuance of the permit in January 2006, and the height of the water shortage in August 2007, chlorides in this well increased at a rate of about 130 parts per million per year ("ppm/year"). From August 2007 through December 2008, chlorides were relatively stable, increasing at a rate of only 24 ppm/year, but in February 2009, the salinity in this well began to rise more rapidly once more, causing renewed concern for the wellfield and the resource.

17. In 2007, the DISTRICT's Governing Board imposed a series of water shortage orders throughout the DISTRICT due to severe drought conditions. In May 2007, the Governing Board issued an emergency order imposing various operational and reporting conditions on LAKE WORTH.

18. Pursuant to Order No. 2007-109-DAO-WS, LAKE WORTH was ordered to terminate pumpage from Production Well 5, which is located closest to the saltwater front, and limit its withdrawals from Production Wells 1, 2, 3, 4, 7 and 14 to historic averages.

These requirements were imposed in an effort to reduce the wellfield's withdrawal influence on the position of the saltwater front. LAKE WORTH was also required to increase the frequency of its measuring and reporting of pumpage, water level, and water quality from select wells associated with its water use permit to weekly increments.

19. After imposition of Order No. 2007-109-DAO-WS, wellfield withdrawals decreased from approximately 7.3 million gallons per day ("mgd") to less than 5.3 mgd, in part, due to one day per week landscape irrigation restrictions. LAKE WORTH modified its pumping regime to reduce withdrawals as much as possible from the wellfield's easternmost wells.

20. From November 2007 to December 2008, under an average wellfield pumpage of 5.28 mgd, the wellfield operation regime specified in the water shortage order resulted in relatively modest increases in chloride levels.

21. From January 2009 to March 2009, LAKE WORTH's withdrawals increased to over 6 mgd. Data collected pursuant to the Water Shortage Order monitoring requirements indicated an accelerated increase in salinity levels along the saltwater front.

22. On April 6, 2009, LWMW-2 and LWMW-4 showed increased chloride levels of 1,850 mg/L and 1,640 mg/L, respectively. Monitor Well PB-889 showed a chloride level of 7,500 mg/L. Order No. 2009-098-DAO-WS was issued soon thereafter, modifying Order No. 2007-109-DAO-WS, to limit LAKE WORTH's wellfield withdrawals to 5.28 mgd and requiring the same pumpage limitations on specified wells as the previous order.

23. Normal rainfall conditions have returned to the south Florida region with a seasonal rise in groundwater levels associated with this rainfall. As of August 24, 2009, groundwater levels in the vicinity of Lake Worth's wellfield were at 3.75 feet NGVD and 4.43 feet NGVD at LWMW-2 and LWMW-4 respectively. Historically, average August

groundwater elevations at LWMW-2 and LWMW-4 are higher, 4.2 and 5.0 feet NGVD respectively.

24. Despite the return of normal rainfall conditions, LAKE WORTH monitor wells indicate chloride concentrations have not yet returned to 2008 levels. As of August 24, 2009, LWMW-2 and LWMW-4 showed chloride levels of 1,950 mg/L and 1,740 mg/L, respectively. PB-889 showed a chloride level of 8,000 mg/L.

25. LAKE WORTH asserts that the cause of the elevated chlorides is area-wide wellfield withdrawals in Palm Beach County and, to a lesser degree, the lack of adequate rainfall since 2006 and the resulting reduction in freshwater head at this monitoring well location.

26. The DISTRICT asserts LAKE WORTH's withdrawals have contributed, in part, to the increase in chloride concentrations. In support of its contention, the DISTRICT has reviewed the various monitoring data which has been submitted to the DISTRICT.

27. Data from 2000, as described in Paragraph 17 and depicted in the graphs contained in Composite Exhibit "C," depict chloride increases indicative of saltwater intrusion under LAKE WORTH's permitted withdrawals of 7.3 mgd. Peak chloride concentrations observed at LWMW-2 (1,950 mg/L), LWMW-4 (1,640 mg/L), and PB-889 (7,500 mg/L) in May 2007 occurred prior to imposition of restrictions associated with Order No. 2007-109-DAO-WS. From July 2007 to December 2008, the data generally indicate a much slighter chloride concentration increase compared to the time prior to the imposition of Order No. 2007-109-DAO-WS. Given the above and foregoing, the DISTRICT concludes the following:

a. Permitted withdrawals of 7.3 mgd will result in deleterious levels of saltwater intrusion that occurred prior to 2007;

b. Relatively normal rainfall coupled with water shortage restrictions from July 2007 to October 2008 resulted in only slight chloride concentration increases; and,

c. Chloride concentrations continue to show slight increases despite curtailed water withdrawals, and the DISTRICT contends that chloride concentrations would be even greater without curtailed wellfield withdrawals.

28. The DISTRICT is entering into this Operational Agreement to temporarily modify LAKE WORTH's wellfield operation plan and limit the withdrawal of water from the easternmost portion of LAKE WORTH's wellfield in order to minimize the inland movement of the saltwater front.

ULTIMATE FACTS AND CONCLUSIONS OF LAW

29. Respondent is a person within the meaning of Section 373.019(15), Fla. Stat.

30. The DISTRICT has regulatory authority over the consumptive uses of water in the DISTRICT pursuant to Part II of Chapter 373, Fla. Stat.

31. Section 373.219, Fla. Stat., authorizes the Governing Board to require permits for the consumptive use of water and to impose such reasonable conditions as are necessary to assure that such use is consistent with the overall objectives of the DISTRICT or department and is not harmful to the water resources of the area.

32. Pursuant to Section 373.044, Fla. Stat., the DISTRICT is authorized to adopt rules to implement the provision of Chapter 373, Fla. Stat.

33. Pursuant to Rule 40E-2.381, Fla. Admin. Code, the Governing Board "shall impose on any permit granted such reasonable standard and special conditions as are necessary to ensure that the permitted use or withdrawal will be consistent with the overall objectives of the DISTRICT."

34. The DISTRICT finds that the lateral movement of the saltwater front is

occurring near LAKE WORTH's wellfield which may be due, at least in part, to LAKE WORTH's wellfield withdrawals.

35. Section 373.171(1), Fla. Stat., authorizes the water management districts to issue orders affecting the use of water, as conditions warrant to "obtain the most beneficial use of the water resources of the state and to protect the public, health, safety, and welfare and the interests of the water user affected...."

36. Chapter 373, Fla. Stat., gives deference to water management district governing boards in defining how to maximize reasonable-beneficial uses of the State's water resources, including the balance of various missions to address harm to the water resources while developing water resources for consumptive uses. *Village of Tequesta v. Jupiter Inlet Corp.*, 371 So. 2d 663 (Fla. 1979); *Harloff v. City of Sarasota and SWFWMD*, 575 So. 2d 1324 (Fla. 2d DCA 1991); *Osceola County v. St. Johns River Water Management District*, 486 So. 2d 616 (Fla. 5th DCA 1986), *aff'd*, 504 So. 2d 385 (Fla. 1987).

37. The DISTRICT is authorized to enter into agreements pursuant to Section 373.083, Fla. Stat.

38. The DISTRICT is authorized to take action to enforce its rules and regulations pursuant to Sections 373.196 and 373.603, Fla. Stat.

39. The Governing Board has authorized the Executive Director, or his/her designee, to execute this Agreement.

40. LAKE WORTH has the authority to enter into the Agreement.

THEREFORE, having reached a resolution of this matter, the DISTRICT and the Respondent mutually agree and it is ordered that:

AGREEMENT

41. The Limiting Conditions contained in the Permit shall remain in full force and

effect during the duration of this Operational Agreement, except as specifically otherwise provided by the terms of the Operational Agreement.

42. LAKE WORTH shall continue to limit its wellfield withdrawals to 5.28 MGD as measured on a per well basis and calculated and reported monthly, as summed from the individual well metered values. Additionally, pumpage from Production Wells 1, 2, 3, 4, 5, 7, and 14 shall be limited as described in the table below. In no event shall LAKE WORTH exceed the Surficial Aquifer System wellfield limitations set forth in Exhibit 7B of its Permit.

<u>Well</u>	<u>Rate/Volume (mgm)</u>
LW-1	15.4
LW-2	26.0
LW-3	16.6
LW-4	16.3
LW-5	0
LW-7	9.7
LW-14	13.9

43. Within 180 days of the effective date of this Order, LAKE WORTH shall construct and operate a new monitoring well called LWMW-10, subject to the following conditions.

- a. The monitoring well shall be located eastward of the northern portion of LAKE WORTH'S wellfield at a location to be agreed upon by DISTRICT staff.
- b. The monitoring well shall be constructed in accordance with DISTRICT specifications and rules.
- c. LAKE WORTH shall establish horizontal and vertical control of the

new monitoring well and associated measuring point elevations in accordance with National Geodetic Vertical Datum (1929).

d. LAKE WORTH shall collect bi-weekly water level elevation and chloride concentrations of this well and incorporate it into the monitoring network specified in the permit.

44. LAKE WORTH shall submit the following reports to the DISTRICT:

a. Beginning on June 15, 2010 and continuing on the 15th day of each month thereafter, LAKE WORTH shall provide a pumpage report for each well for the preceding month.

b. Beginning on June 15, 2010 and continuing on the 15th day of each month thereafter, LAKE WORTH shall provide a report detailing the chloride concentrations for each well.

c. The reports shall be submitted to Bill Rasperger via e-mail at brasperg@sfwmd.gov or through any web portal that may be created for this purpose.

45. By January 11, 2011, LAKE WORTH shall submit an application to modify Permit No. 50-00234-W.

46. LAKE WORTH shall develop a calibrated, density-dependent numerical model ("Safe Yield Study") designed to simulate aquifer conditions and wellfield pumpage in the vicinity of its Surficial Aquifer System wellfield. The purpose of this modeling effort is to assist in providing reasonable assurances that saline water intrusion will not cause harm to LAKE WORTH's Surficial Aquifer System wellfield and the water resource if pumpage is allowed or increased. The Safe Yield Study shall determine the cause of the saline movement, the extent of future movement through the duration of the permit, and estimate the potential safe yield of LAKE WORTH'S Surficial Aquifer System wellfield as well as

demonstrate that any proposed withdrawal from the Surficial Aquifer System wellfield will not cause harmful saline intrusion through the duration of the permit. LAKE WORTH has met with the DISTRICT and the DISTRICT concurs with the Scope of Work for the Safe Yield Study as provided in Exhibit "D".

47. Within 180 days from the date of execution of the Operational Agreement, LAKE WORTH shall provide the DISTRICT with three copies of a draft of the Safe Yield Study and the input and output files (on Compact Disc, DVD or other appropriate electronic media) for all modeling scenarios, in standard MODFLOW/SEAWAT format.

48. Within thirty days of receipt of the draft Safe Yield Study, the DISTRICT will provide LAKE WORTH with comments on the draft Safe Yield Study.

49. Within thirty days of receipt of DISTRICT's comments, unless an extension is requested by LAKE WORTH and granted by the DISTRICT, LAKE WORTH shall incorporate DISTRICT comments and submit three copies of the final Safe Yield Study as well as the input and output files (on compact disc, DVD, or other appropriate electronic media) for all modeling scenarios, in standard MODFLOW/SEAWAT format.

50. Within thirty days of the DISTRICT's receipt of the final Safe Yield Study, the DISTRICT shall inform LAKE WORTH as to whether it concurs with the results of the final Safe Yield Study.

51. If the DISTRICT concurs with the results of the final Safe Yield Study, LAKE WORTH shall undertake one of the following actions:

a. If the results of the final Safe Yield Study indicate that the safe yield of LAKE WORTH's Surficial Aquifer System wellfield is greater than 5.28 mgd, then LAKE WORTH will be allowed to operate its Surficial Aquifer System wellfield at the safe yield,

provided the safe yield does not exceed the permitted allocation, upon execution of an order terminating this Operational Agreement.

b. If the results of the final Safe Yield Study indicate that the safe yield of LAKE WORTH's Surficial Aquifer System wellfield is greater than 5.28 mgd and the permitted allocation, then LAKE WORTH may to operate its Surficial Aquifer System wellfield at the permitted allocation upon execution of an order terminating this Operational Agreement. Additionally, LAKE WORTH shall modify its application submitted pursuant to Paragraph 45 to request the volume of water determined by the Safe Yield Study, provided said volume satisfies the DISTRICT's permitting criteria and is approved by the DISTRICT.

c. If the results of the final Safe Yield Study indicate that the safe yield of LAKE WORTH's Surficial Aquifer System wellfield is less than or equal to 5.28 mgd, then LAKE WORTH shall limit withdrawals to no greater than the safe yield identified by the results of the final Safe Yield Study and amend its application to modify Permit No. 50-00234-W, submitted pursuant to Paragraph 45, to request an allocation from the Surficial Aquifer System, which is no greater than the safe yield identified by the results of the final Safe Yield Study.

52. If the DISTRICT does not concur with the results of the final Safe Yield Study, LAKE WORTH shall revise the Safe Yield Study to address any and all issues raised by the DISTRICT. LAKE WORTH and the DISTRICT shall follow the provisions listed in Paragraphs 49 through 50 until such time as both parties agree to the results and conclusions of the Safe Yield Study.

53. This Operational Agreement shall terminate once a modification of Water Use Permit No. 50-00234-W is approved, upon expiration or renewal of the Permit, or in accordance with Paragraph 52(a), whichever occurs first.

GENERAL PROVISIONS

54. The DISTRICT hereby expressly reserves the right to petition for judicial enforcement of the terms of this Operational Agreement. In such event, Respondent and its successors-in-interest and/or assigns do not contest or deny any fact, legal conclusion, or any other matter or fact set forth in this Operational Agreement, including the Findings of Fact, Ultimate Facts and Conclusions of Law set forth herein. If the DISTRICT successfully petitions or sues for enforcement of this Operational Agreement, Respondent, its successors and/or assigns hereby agree to and shall pay all reasonable attorney's fees, (including, but not limited to, the reasonable fair market value of in-house counsel fees, as if performed by outside or private counsel, court costs, and any other damages sustained by the DISTRICT). In addition, the DISTRICT hereby expressly reserves the right to initiate appropriate legal action to prevent or prohibit the future violation of applicable statutes or the rules promulgated there under, or to alleviate an immediate serious danger to the public health, safety or welfare.

55. Failure to comply with this Operational Agreement shall constitute a violation of Chapter 373, Fla. Stat., and enforcement proceedings may be brought in any appropriate administrative or judicial forum.

56. Respondent is fully aware that a violation of the terms of this Operational Agreement may subject Respondent to judicial imposition of damages, civil penalties up to Ten Thousand Dollars (\$10,000.00) per offense per day, costs, and criminal penalties.

57. The requirements of this Operational Agreement shall bind and inure to the benefit of the successors and assigns of Respondent, except as modified by the parties hereto.

58. Respondent hereby waives the right to request an administrative hearing on

the terms of this Operational Agreement under Sections 120.569 and 120.57, Fla. Stat., and acknowledges but waives their right to appeal this Operational Agreement pursuant to Section 120.68, Fla. Stat., upon signing this Operational Agreement.

59. Entry into this Operational Agreement does not relieve Respondent of the need to comply with all applicable federal, state or local laws, regulation or ordinances, including any DISTRICT permitting requirements. Also, the Operational Agreement does not give Respondent the authority to conduct any activities on the Property which are under DISTRICT jurisdiction without first obtaining DISTRICT authorization.

60. In addition, nothing herein shall be construed to limit the authority of the DISTRICT to undertake any action against Respondent in response to or to recover the costs of responding to conditions at the Property or to enforce the terms of this Operational Agreement and the DISTRICT hereby expressly reserves the right to initiate appropriate legal action to prevent, prohibit or abate any future violations of applicable statutes or the rules promulgated thereunder, or to alleviate an immediate serious danger to the public health, safety or welfare or any violation not specifically addressed by this Operational Agreement.

61. This Operational Agreement does not convey any property right to Respondent, nor any rights and privileges other than those specified in this Operational Agreement. This Operational Agreement incorporates, embodies, and expresses all agreements between Respondent and the DISTRICT and may not be altered except as authorized herein.

62. Persons who are not parties to this Operational Agreement, but whose substantial interests may be affected by this Operational Agreement, may have a right to petition this Operational Agreement. A notice of rights is attached and incorporated as

Exhibit "E."

63. This Operational Agreement is a final order from the DISTRICT, pursuant to Section 120.52(7), Fla. Stat., and is final and effective on the date filed with the Clerk of the DISTRICT unless a petition for administrative hearing is filed in accordance with Chapter 120, Fla. Stat., or any other applicable state law. Upon the timely filing of a petition, the Operational Agreement will not be effective until further order from the DISTRICT.

DONE AND SO ORDERED in Palm Beach County, Florida, on this _____ day of _____, 2010.

**SOUTH FLORIDA WATER
MANAGEMENT DISTRICT**
By its Governing Board

Executive Director or designee

Attested:

Legal Form Approved:

By: _____
District Clerk/Assistant Secretary
Dated: _____, 2010

By: _____
Jennifer Bokankowitz, Esq.

CITY OF LAKE WORTH

By: _____
Print Name: _____
Print Title: _____



**SOUTH FLORIDA WATER MANAGEMENT DISTRICT
WATER USE PERMIT NO. RE-ISSUE 50-00234-W
(NON - ASSIGNABLE)**

FORM #0298
Rev. 5/03

Date Issued: 08-FEB-2006 **Expiration Date:** January 11, 2026

Authorizing: THE CONTINUATION OF AN EXISTING USE OF GROUNDWATER FROM THE FLORIDAN AQUIFER SYSTEM AND SURFICIAL AQUIFER SYSTEM FOR PUBLIC WATER SUPPLY USE WITH AN ANNUAL ALLOCATION OF 4405.31 MILLION GALLONS.

Located In: Palm Beach County, S28,29/T44S/R43E

Issued To: CITY OF LAKE WORTH
(LAKE WORTH UTILITIES AUTHORITY)
1900 2ND AVE NORTH
LAKE WORTH, FL 33408

This Permit is issued pursuant to Application No.050615-14 , dated June 15, 2005, for the Use of Water as specified above and subject to the Special Conditions set forth below. Permittee agrees to hold and save the South Florida Water Management District and its successors harmless from any and all damages, claims or liabilities which may arise by reason of the construction, maintenance or use of activities authorized by this permit. Said application, including all plan and specifications attached thereto, is by reference made a part hereof.

Upon written notice to the permittee, this permit may be temporarily modified, or restricted under a Declaration of Water Shortage or a Declaration of Emergency due to Water Shortage in accordance with provisions of Chapter 373, Fla. Statutes, and applicable rules and regulations of the South Florida Water Management District.

This Permit may be permanently or temporarily revoked, in whole or in part, for the violation of the conditions of the permit or for the violation of any provision of the Water Resources Act and regulations thereunder.

This Permit does not convey to the permittee any property rights nor any privileges other than those specified herein, nor relieve the permittee from complying with any law, regulation, or requirement affecting the rights of other bodies or agencies.

Limiting Conditions are as follows:

SEE PAGES 2 - 6 OF 6 (28 LIMITING CODITIONS).

South Florida Water Management
District, by its Governing Board

On ORIGINAL SIGNED BY:
By ELIZABETH VEGUILLA
DEPUTY CLERK

LIMITING CONDITIONS

1. This permit shall expire on January 11, 2026. The permit for withdrawals from the Surficial Aquifer System shall expire on January 11, 2011.
The permit for withdrawals from the Floridan Aquifer System shall expire on January 11, 2026.

2. Application for a permit modification may be made at any time.

3. Water use classification:

Public water supply

4. Source classification is:

Ground Water from:
Floridan Aquifer System
Surficial Aquifer System

5. Annual allocation shall not exceed 4405 MG.

Maximum monthly allocation shall not exceed 410.9372 MG.

The following limitations to annual withdrawals from specific sources are stipulated:
Surficial Aquifer System: 2,765 MG.

Pursuant to Basis of Review for Water Use Permit Applications 1.7.2.2 the use of the Surficial Aquifer System is stipulated between January 11, 2006 and January 11, 2011 for the following amount:

Annual allocation shall not exceed 2765 MG.

Maximum Monthly allocation shall not exceed 336 MG.

Pursuant to Basis of Review for Water Use Permit Applications 1.7.2.2 the use of the Floridan Aquifer System is stipulated between January 11, 2006 and January 11, 2026 for the following amount:

Annual allocation shall not exceed 3285 MG.

Maximum Monthly allocation shall not exceed 410.9 MG.

6. Pursuant to Rule 40E-1.6105, F.A.C., Notification of Transfer of Interest in Real Property, within 30 days of any transfer of interest or control of the real property at which any permitted facility, system, consumptive use, or activity is located, the permittee must notify the District, in writing, of the transfer giving the name and address of the new owner or person in control and providing a copy of the instrument effectuating the transfer, as set forth in Rule 40E-1.6107, F.A.C.

Pursuant to Rule 40E-1.6107 (4), until transfer is approved by the District, the permittee shall be liable for compliance with the permit. The permittee transferring the permit shall remain liable for all actions that are required as well as all violations of the permit which occurred prior to the transfer of the permit.

Failure to comply with this or any other condition of this permit constitutes a violation and pursuant to Rule 40E-1.609, Suspension, Revocation and Modification of Permits, the District may suspend or revoke the permit.

This Permit is issued to:
City of Lake Worth
1900 2nd Avenue North
Lake Worth, Fl. 33408

7. Withdrawal facilities:

Ground Water - Existing:

- 1 - 12" X 110' X 750 GPM Well Cased To 90 Feet
- 1 - 12" X 116' X 750 GPM Well Cased To 76 Feet
- 1 - 12" X 200' X 1000 GPM Well Cased To 160 Feet
- 1 - 12" X 250' X 1000 GPM Well Cased To 120 Feet
- 1 - 12" X 250' X 1000 GPM Well Cased To 190 Feet
- 1 - 14" X 138' X 700 GPM Well Cased To 97 Feet
- 1 - 14" X 150' X 1000 GPM Well Cased To 100 Feet
- 1 - 14" X 159' X 900 GPM Well Cased To 108 Feet
- 1 - 14" X 175' X 800 GPM Well Cased To 100 Feet
- 1 - 14" X 310' X 800 GPM Well Cased To 230 Feet
- 1 - 16" X 102' X 750 GPM Well Cased To 49 Feet
- 1 - 16" X 1550' X 1500 GPM Well Cased To 900 Feet
- 2 - 14" X 250' X 800 GPM Wells Cased To 190 Feet
- 3 - 14" X 160' X 800 GPM Wells Cased To 100 Feet

Ground Water - Proposed:

- 1 - 12" X 258' X 800 GPM Well Cased To 193 Feet
- 9 - 16" X 1550' X 1500 GPM Wells Cased To 900 Feet

Surface Water - Existing:

8. Permittee shall mitigate interference with existing legal uses that was caused in whole or in part by the permittee's withdrawals, consistent with the approved mitigation plan. As necessary to offset the interference, mitigation will include pumpage reduction, replacement of the impacted individual's equipment, relocation of wells, change in withdrawal source, or other means.

Interference to an existing legal use is defined as an impact that occurs under hydrologic conditions equal to or less severe than a 1 in 10 year drought event that results in the:

(1) Inability to withdraw water consistent with provisions of the permit, such as when remedial structural or operational actions not materially authorized by existing permits must be taken to address the interference; or

(2) Change in the quality of water pursuant to primary State Drinking Water Standards to the extent that the water can no longer be used for its authorized purpose, or such change is imminent.

9. Permittee shall mitigate harm to existing off-site land uses caused by the permittee's withdrawals, as determined through reference to the conditions for permit issuance. When harm occurs, or is imminent, the District will require the permittee to modify withdrawal rates or mitigate the harm. Harm as determined through reference to the conditions for permit issuance, includes:

(1) Significant reduction in water levels on the property to the extent that the designed function of the water body and related surface water management improvements are damaged, not including aesthetic values. The designed function of a water body is identified in the original permit or other governmental authorization issued for the construction of the water body. In cases where a permit was not required, the designed function shall be determined based on the purpose for the original construction of the water body (e.g. fill for construction, mining, drainage canal, etc.)

(2) Damage to agriculture, including damage resulting from reduction in soil moisture resulting from consumptive use; or

(3) Land collapse or subsidence caused by reduction in water levels associated with consumptive use.

10. Permittee shall mitigate harm to the natural resources caused by the permittee's withdrawals, as determined through reference to the conditions for permit issuance. When harm occurs, or is imminent, the District will require the permittee to modify withdrawal rates or mitigate the harm. Harm, as determined through reference to the conditions for permit issuance includes:
 - (1) Reduction in ground or surface water levels that results in harmful lateral movement of the fresh water/salt water interface,
 - (2) Reduction in water levels that harm the hydroperiod of wetlands,
 - (3) Significant reduction in water levels or hydroperiod in a naturally occurring water body such as a lake or pond,
 - (4) Harmful movement of contaminants in violation of state water quality standards, or
 - (5) Harm to the natural system including damage to habitat for rare or endangered species.
11. If any condition of the permit is violated, the permit shall be subject to review and possible modification, enforcement action, or revocation.
12. Authorized representatives of the District shall be permitted to enter, inspect, and observe the permitted system to determine compliance with special conditions.
13. The Permittee is advised that this permit does not relieve any person from the requirement to obtain all necessary federal, state, local and special district authorizations.
14. The permit does not convey any property right to the Permittee, nor any rights and privileges other than those specified in the Permit and Chapter 40E-2, Florida Administrative Code.
15. Permittee shall submit all data as required by the implementation schedule for each of the limiting conditions to: S.F.W.M.D., Supervising Hydrogeologist - Post-Permit Compliance, Water Use Regulation Dept. (4320), P.O. Box 24680, West Palm Beach, FL 33416-4680.
16. In the event of a declared water shortage, water withdrawal reductions will be ordered by the District in accordance with the Water Shortage Plan, Chapter 40E-21, F.A.C. The Permittee is advised that during a water shortage, pumpage reports shall be submitted as required by Chapter 40E-21, F.A.C.
17. Prior to the use of any proposed water withdrawal facility authorized under this permit, unless otherwise specified, the Permittee shall equip each facility with a District-approved operating water use accounting system and submit a report of calibration to the District, pursuant to Section 4.1, Basis of Review for Water Use Permit Applications.

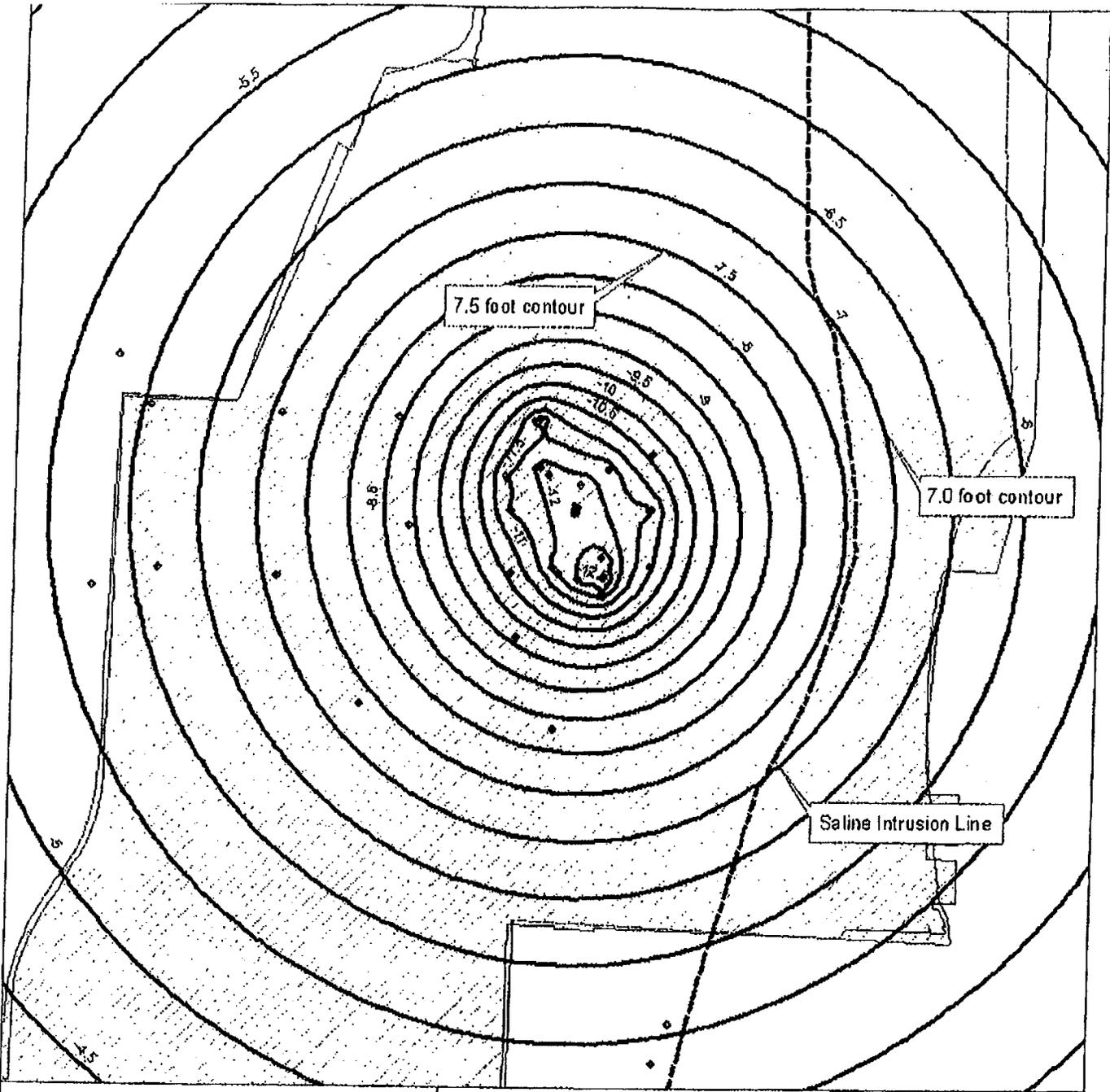
In addition, the Permittee shall submit a report of recalibration for the water use accounting system for each water withdrawal facility (existing and proposed) authorized under this permit every five years from each previous calibration, continuing at five-year increments.
18. Monthly withdrawals for each withdrawal facility shall be submitted to the District quarterly. The water accounting method and means of calibration shall be stated on each report.
19. The Permittee shall notify the District within 30 days of any change in service area boundary. If the Permittee will not serve a new demand within the service area for which the annual allocation was calculated, the annual allocation may then be subject to modification and reduction.
20. The Water Conservation Plan required by Section 2.6.1 of the Basis of Review for Water Use Permit Applications within the South Florida Water Management District, must be implemented in accordance with the approved implementation schedule. Within one year of permit issuance, an ordinance shall be adopted that requires any person who purchases and installs an automatic lawn sprinkler system to install, operate and maintain a rain sensor device which will override the irrigation cycle of the sprinkler

system when adequate rainfall has occurred.

21. Permittee shall determine unaccounted-for distribution system losses. Losses shall be determined for the entire distribution system on a monthly basis. Permittee shall define the manner in which unaccounted-for losses are calculated. Data collection shall begin within six months of Permit issuance. Loss reporting shall be submitted to the District on a yearly basis from the date of Permit issuance.
22. Permittee shall maintain an accurate flow meter at the intake of the water treatment plant for the purpose of measuring daily inflow of water.
23. Prior to any application to renew or modify this permit, the Permittee shall evaluate long term water supply alternatives and submit a long term water supply plan to the District. Within one year of permit issuance, the Permittee shall submit to the District an outline of the proposed plan. The assessment should include consideration of saline intrusion, wellfield protection, plans for compliance with applicable wellfield protection ordinances, expected frequencies and plans to cope with water shortages or well field failures, and conservation measures to reduce overall stresses on the aquifer. In addition, the permittee shall provide quarterly updates on the status of both the Floridan Aquifer wells and reverse osmosis treatment facility construction activities. It is anticipated that the use of the Floridan Aquifer as an alternative source will become operational by July, 2008. Alternative water supply funding is contingent upon successful completion of these projects.
24. It has been determined that this project relies, in part on the waters from the Central and Southern Project, and as such is considered to be an indirect withdrawal from an MFL water body under recovery (Everglades). The Lower East Coast Regional Water Supply Plan (May 2000), which is the recovery plan for the Everglades, incorporates a series of water resource development projects and operational changes that are to be completed over the duration of the permit and beyond. If the recovery plan is modified and it is determined that this project is inconsistent with the approved recovery plan, the Permittee shall be required to modify the permit consistent with the provisions of Chapter 373, Florida Statutes.
25. The Permittee shall continue to submit monitoring data in accordance with the approved saline water intrusion monitoring program for this project. In addition to the approved plan, the permittee shall monitor the chloride concentration from each Floridan Aquifer well on a monthly basis and submit the data quarterly to the District.
26. Every five years from the date of permit issuance, the permittee shall submit a water use compliance report for review and approval by District Staff, which addresses the following:
 1. The results of a water conservation audit that documents the efficiency of water use on the project site using data produced from an onsite evaluation conducted. In the event that the audit indicates additional water conservation is appropriate or the per capita use rate authorized in the permit is exceeded, the permittee shall propose and implement specific actions to reduce the water use to acceptable levels within timeframes proposed by the permittee and approved by the District.
 2. A comparison of the permitted allocation and the allocation that would apply to the project based on current District allocation rules and updated population and per capita use rates. In the event the permit allocation is greater than the allocation provided for under District rule, the permittee shall apply for a letter modification to reduce the allocation consistent with District rules and the updated population and per capita use rates to the extent they are considered by the District to be indicative of long term trends in the population and per capita use rates over the permit duration. In the event that the permit allocation is less than allowable under District rule, the permittee shall apply for a modification of the permit to increase the allocation if the permittee intends to utilize an additional allocation, or modify its operation to comply with the existing conditions of the permit.
27. Permittee shall implement the wellfield operating plan submitted in support of the application for this permit. The permittee shall not exceed the projections of raw water demands listed in Exhibit 7B for the Surficial Aquifer. The quantiles shown in the columns beneath the "Average Demand - Raw" category

shall be used as the maximum amount to be withdrawn from the Surficial Aquifer on a daily basis for each future year. In order to reduce withdrawals from the Surficial Aquifer, additional quantities may be utilized from the Floridan Aquifer to meet the total demands. As raw water withdrawals from the Surficial Aquifer are reduced in future years, withdrawals from the Floridan Aquifer will be used to meet the total demand, as specified in Exhibit 7B. If, for any reason, withdrawals from the Floridan Aquifer cannot be made in sufficient volume to meet total demands without exceeding the Surficial Aquifer withdrawals listed in Exhibit 7B, the permittee must immediately apply for a modification of this permit.

28. Public water utilities that control, either directly or indirectly, a wastewater treatment plant, and which had determined, at the time of issuance of its consumptive use permit and pursuant to Section 403.064, F.S., that reuse of reclaimed water was not feasible must advise the District of any change in this determination that may occur during the term of the consumptive use permit. In the event the utility determines reuse has become feasible, then the District will require the utility to provide the information listed in Sections 3.2.3.1. and 5.2.5.2.A.



PALM BEACH COUNTY, FLORIDA

Legend

 Application



Map Date: 5/8/2007

Permit Number: 50-00234-W

Project Name: LAKE WORTH UTILITIES

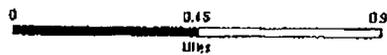
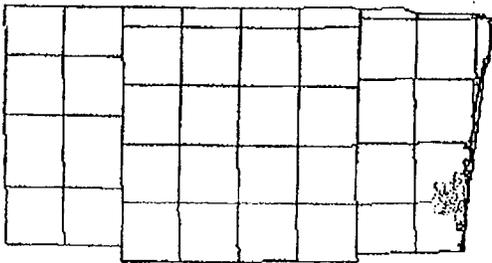
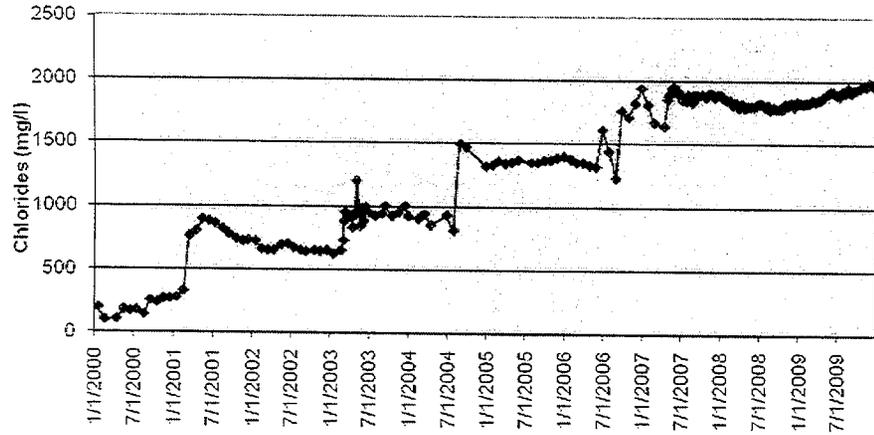


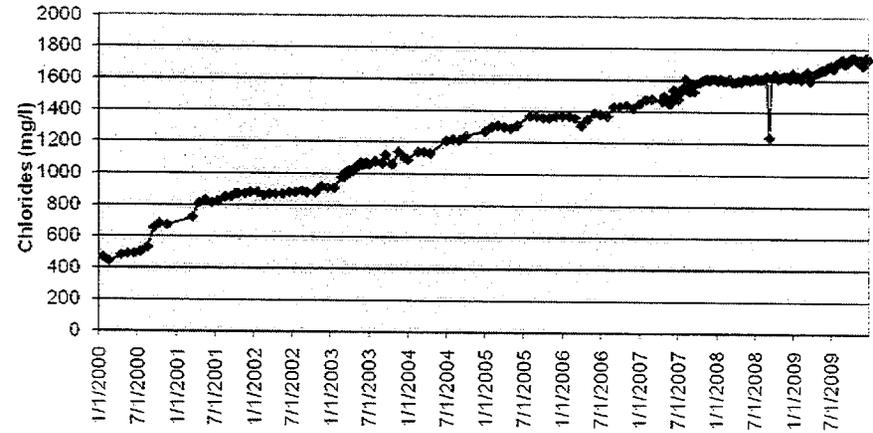
EXHIBIT B



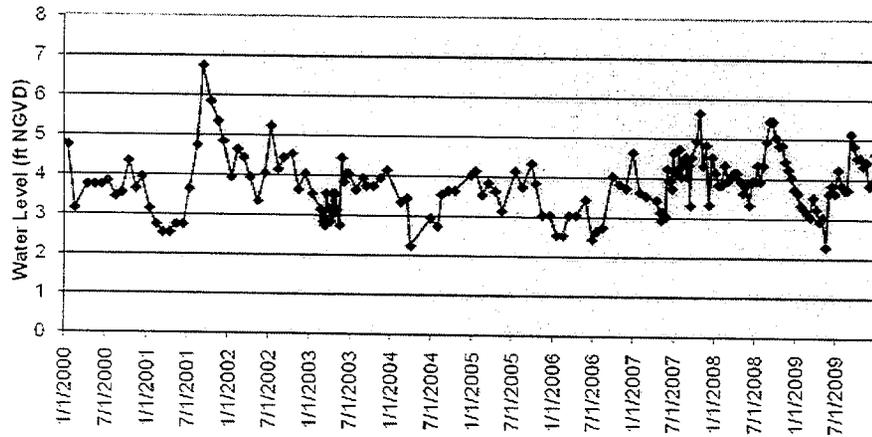
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Lake Worth Utilities 50-00234-W



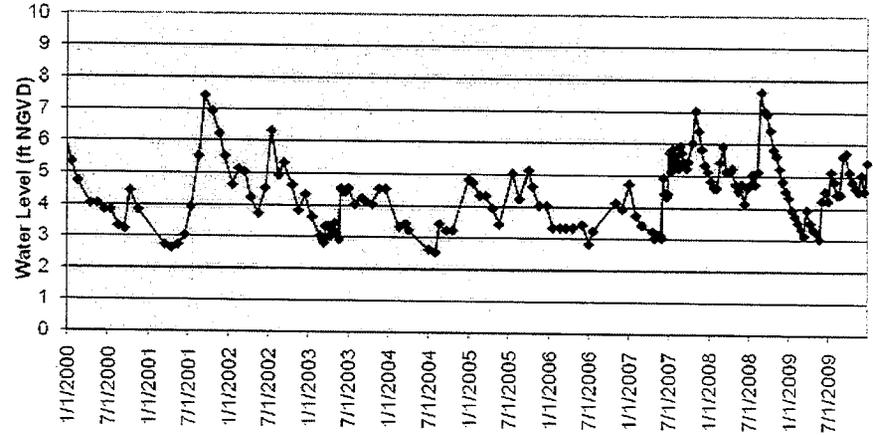
Well LWMW-4
Lake Worth Utilities 50-00234-W



Well LWMW-2
Lake Worth Utilities 50-00234-W



Well LWMW-4
Lake Worth Utilities 50-00234-W



Proposal To Provide Engineering and Hydrogeological Services for the Surficial Aquifer Water Use Permit Renewal and Variable Density Groundwater Model Development

Services to be provided by: Mock•Roos
Services provided to (City): City of Lake Worth
Proposal Date: February 24, 2010

Proposal Terms

A. Project Description:

The City has an existing water use permit issued by the South Florida Water Management District (“SFWMD”) of which the surficial aquifer portion will expire on January 11, 2011. This permit allows the City to withdraw water from the surficial aquifer wellfield for treatment at the water plant. Preparation of the renewal application will include completing forms, tables, and exhibits, projecting the future population for the service area, meeting with SFWMD, and providing follow-up coordination as necessary. In addition to the basic permit application information, SFWMD is requiring the City to develop a variable density groundwater model to more accurately predict the movement of the saltwater interface. Mock•Roos will provide the services as outlined in **B. Scope of Services** below. By approval of this proposal, Mock•Roos will assume the role of “Engineer of Record” for renewal of the City’s surficial aquifer Water Use Permit No. 50-0024-34-W and will be authorized to submit documents to the regulatory agencies and respond to those agencies’ requests for information on behalf of the City.

B. Scope of Services:

1. Review the modeling, documentation, and previous work performed by others to evaluate the safe yield for the City’s surficial aquifer system (SAS). Perform preliminary modeling analysis with existing models to understand the data results.
2. Meet with City staff to discuss previous modeling efforts and results, the expectations of the permit renewal and process and the proposed variable density groundwater modeling efforts.
3. Attend a pre-application meeting with SFWMD to discuss expectations and any special requirements for the permit application renewal package. The goal of the meeting will be to present the City’s approach and to understand what criteria SFWMD will apply when evaluating what constitutes a safe yield for future City withdrawals.
4. Coordinate with City staff to obtain historic flow record updates, customer growth rates, and other necessary data for the permit application and supporting documents package.
5. Develop and review population projections with City staff and obtain input for future population to use for flow projections.

6. Identify potential additional surficial aquifer well sites with City staff and gather appropriate information on those chosen sites to include in the permit application.
7. Update existing tabular data tables based on the information received.
8. Prepare new exhibits and update existing exhibits as necessary for the permit application.
9. Complete the permit application form(s) and assemble supporting documents for the permit application package. Submit draft permit application package to the City for review. Meet with City staff to review the draft permit application package and obtain input. Incorporate comments.
10. Perform preliminary modeling efforts necessary for the development of a variable density groundwater flow and transport model using the SEAWAT version 4 program. These services will include the following tasks:
 - a. Undertake modeling of the SAS utilizing a multilayer MODFLOW model developed by JLA Geosciences for the Town of Lantana and used to successfully support re-issuance of their water use permit.
 - b. Update the Lantana model with historical monitoring data collected by the City as part of their saline water monitoring program and historical pumpage data from the City's wellfield and adjacent water users that may influence water levels in the City's wellfield and monitoring wells. If available, results from aquifer performance tests (APTs) performed with wells located within the model domain will also be used to assist with calibration. Additional information will also be considered from technical literature and readily available electronic databases.
 - c. Re-calibrate the model with the above data through multiple model runs. This re-calibration will include the following additional model refinements: 1) Develop a refined grid cell spacing and smaller model domain to specifically simulate conditions in the vicinity of the City's wellfield, 2) Refine model input to achieve model calibration consistent with SFWMD criteria described in their Basis of Review.
11. Attend a meeting with SFWMD to review initial model re-calibration and supporting assumptions. The goal of this meeting is to address potential concerns that SFWMD staff may have with calibration prior to developing and applying a density dependent groundwater model. Following this meeting the model will be updated with SFWMD input, if required.
12. Develop the variable density groundwater flow and transport model using SEAWAT version 4, which incorporates a Variable-Density Flow (VDF) Process with an Integrated MT3DMS Transport (IMT) Process. Model simulations will assess groundwater flow and transport processes associated with the occurrence and migration of the saltwater wedge known to exist east of the City's SAS wellfield. The SEAWAT modeling will evaluate likely historical and potential future migration of the saltwater wedge, with and without potential influence from City withdrawals. Tasks include:

- a. Revise the re-calibrated MODFLOW groundwater model described above. Revisions will include subdividing the model layer structure into multiple thinner layers. Thinner model layers assist in resolving relatively sharp hydraulic head and concentration gradients that exist through the transition zone between freshwater and seawater. SEAWAT modeling also involves modifying the eastern boundary of the model domain to accommodate salinity concentrations and hydraulic heads associated with the Atlantic Ocean.
 - b. Perform initial simulations that involve long-term periods (decades to perhaps >100 years) without SAS withdrawals to develop initial conditions for simulations with withdrawals. Simulations involving 1-in-10 year drought, average, and above-average rainfall conditions will be performed to evaluate how hydraulic head and salinity concentrations may vary without direct pumping influence.
 - c. Perform additional simulations that include historical City withdrawals as well as other existing legal users (ELUs) in the vicinity of the City's wellfield. Comparisons will be made between model-predicted and historic water-level and salinity (chloride) data. Simulations will also be performed to evaluate wellfield operating plans and their potential influence on migration of the saltwater wedge. The goal is that results from these modeling exercises will assist in the establishment of a safe yield for the SAS consistent with SFWMD permitting criteria.
13. Prepare a draft comprehensive report documenting development and application of the revised MODFLOW and SEAWAT models. Submit two hard copies of the draft report to the City for review. Meet with City staff to review the draft report and obtain input. Incorporate comments.
 14. Submit completed permit application package, including the comprehensive modeling report, to the SFWMD. Provide City with two hard copies and one PDF version (on CD) of the permit application, supporting documentation and final modeling report. Permit application fee to be provided by the City.
 15. Attend up to one post application meeting with SFWMD.
 16. Respond to up to two requests for information (RAIs) from SFWMD and provide follow-up coordination as needed. If extensive requests for information are received or if requests to significantly reconfigure the wellfield or withdrawals are received, these services can be completed as Additional Services.

C. Additional Services:

1. Any services not included in the Scope of Services will be considered Additional Services.
2. Any program changes, schedule changes, or other project changes requested by City will be considered Additional Services.
3. Additional Services can be provided upon Mock•Roos receiving signed authorization from City.

NOTICE OF RIGHTS

As required by Sections 120.569(1), and 120.60(3), Fla. Stat., following is notice of the opportunities which may be available for administrative hearing or judicial review when the substantial interests of a party are determined by an agency. Please note that this Notice of Rights is not intended to provide legal advice. Not all the legal proceedings detailed below may be an applicable or appropriate remedy. You may wish to consult an attorney regarding your legal rights.

RIGHT TO REQUEST ADMINISTRATIVE HEARING

A person whose substantial interests are or may be affected by the South Florida Water Management District's (SFWMD or District) action has the right to request an administrative hearing on that action pursuant to Sections 120.569 and 120.57, Fla. Stat. Persons seeking a hearing on a District decision which does or may determine their substantial interests shall file a petition for hearing with the District Clerk within 21 days of receipt of written notice of the decision, unless one of the following shorter time periods apply: 1) within 14 days of the notice of consolidated intent to grant or deny concurrently reviewed applications for environmental resource permits and use of sovereign submerged lands pursuant to Section 373.427, Fla. Stat.; or 2) within 14 days of service of an Administrative Order pursuant to Subsection 373.119(1), Fla. Stat. "Receipt of written notice of agency decision" means receipt of either written notice through mail, or electronic mail, or posting that the District has or intends to take final agency action, or publication of notice that the District has or intends to take final agency action. Any person who receives written notice of a SFWMD decision and fails to file a written request for hearing within the timeframe described above waives the right to request a hearing on that decision.

Filing Instructions

The Petition must be filed with the Office of the District Clerk of the SFWMD. Filings with the District Clerk may be made by mail, hand-delivery or facsimile. **Filings by e-mail will not be accepted.** Any person wishing to receive a clerked copy with the date and time stamped must provide an additional copy. A petition for administrative hearing is deemed filed upon receipt during normal business hours by the District Clerk at SFWMD headquarters in West Palm Beach, Florida. Any document received by the office of the SFWMD Clerk after 5:00 p.m. shall be filed as of 8:00 a.m. on the next regular business day. Additional filing instructions are as follows:

- Filings by mail must be addressed to the Office of the SFWMD Clerk, P.O. Box 24680, West Palm Beach, Florida 33416.
- Filings by hand-delivery must be delivered to the Office of the SFWMD Clerk. **Delivery of a petition to the SFWMD's security desk does not constitute filing. To ensure proper filing, it will be necessary to request the SFWMD's security officer to contact the Clerk's office.** An employee of the SFWMD's Clerk's office will receive and file the petition.
- Filings by facsimile must be transmitted to the SFWMD Clerk's Office at (561) 682-6010. Pursuant to Subsections 28-106.104(7), (8) and (9), Fla. Admin. Code, a party who files a document by facsimile represents that the original physically signed document will be retained by that party for the duration of that proceeding and of any subsequent appeal or subsequent proceeding in that cause. Any party who elects to file any document by facsimile shall be responsible for any delay, disruption, or interruption of the electronic signals and accepts the full risk that the document may not be properly filed with the clerk as a result. The filing date for a document filed by facsimile shall be the date the SFWMD Clerk receives the complete document.

Initiation of an Administrative Hearing

Pursuant to Rules 28-106.201 and 28-106.301, Fla. Admin. Code, initiation of an administrative hearing shall be made by written petition to the SFWMD in legible form and on 8 and 1/2 by 11 inch white paper. All petitions shall contain:

1. Identification of the action being contested, including the permit number, application number, District file number or any other SFWMD identification number, if known.
2. The name, address and telephone number of the petitioner and petitioner's representative, if any.
3. An explanation of how the petitioner's substantial interests will be affected by the agency determination.
4. A statement of when and how the petitioner received notice of the SFWMD's decision.
5. A statement of all disputed issues of material fact. If there are none, the petition must so indicate.
6. A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the SFWMD's proposed action.
7. A statement of the specific rules or statutes the petitioner contends require reversal or modification of the SFWMD's proposed action.
8. If disputed issues of material fact exist, the statement must also include an explanation of how the alleged facts relate to the specific rules or statutes.
9. A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the SFWMD to take with respect to the SFWMD's proposed action.

A person may file a request for an extension of time for filing a petition. The SFWMD may, for good cause, grant the request. Requests for extension of time must be filed with the SFWMD prior to the deadline for filing a petition for hearing. Such requests for extension shall contain a certificate that the moving party has consulted with all other parties concerning the extension and that the SFWMD and any other parties agree to or oppose the extension. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

If the District takes action with substantially different impacts on water resources from the notice of intended agency decision, the persons who may be substantially affected shall have an additional point of entry pursuant to Rule 28-106.111, Fla. Admin. Code, unless otherwise provided by law.

Mediation

The procedures for pursuing mediation are set forth in Section 120.573, Fla. Stat., and Rules 28-106.111 and 28-106.401-.405, Fla. Admin. Code. The SFWMD is not proposing mediation for this agency action under Section 120.573, Fla. Stat., at this time.

RIGHT TO SEEK JUDICIAL REVIEW

Pursuant to Sections 120.60(3) and 120.68, Fla. Stat., a party who is adversely affected by final SFWMD action may seek judicial review of the SFWMD's final decision by filing a notice of appeal pursuant to Florida Rule of Appellate Procedure 9.110 in the Fourth District Court of Appeal or in the appellate district where a party resides and filing a second copy of the notice with the SFWMD Clerk within 30 days of rendering of the final SFWMD action.