FDEP Agricultural Use Permit

Agricultural Use Plan

Part I - Facility Information

1. Facility Name *City of Boca Raton Water Reclamation Facility WWRF*

Facility Classification (check one from each column as appropriate)

☒ Domestic Wastewater Treatment Facility	☐ Type I	☐ New
☐ Residuals Management Facility	☒ Type II	☒ Existing
☐ Septage Management Facility	☐ Type III	

Facility 5050M00565BOCA RATON

Contact Mr. Rex McClung Title Chief Operator

Phone (561) 338-7331 Fax (561) 338-4255

2. Quantity of Residuals Generated 2496 dry tons (1 ton = 2000 lb) ☒ Actual ☐ Estimated

3. Residuals Characteristics (annual arithmetic average):

Parameter	Units*	Ceiling Limits for Class A and B	Concentration	Parameter (continued)	Units*	Ceiling Limits for Class A and B	Concentration
Total Nitrogen	%	N/A	9.7	Copper	mg/kg	4300	3.75
Total	%	N/A	3.7	Lead	mg/kg	840	BDL
Total Potassium	%	N/A	0.4	Mercury	mg/kg	57	0.6
Total Solids	%	N/A	12.9	Molybdenum	mg/kg	75	26
pH	std.	N/A	8	Nickel	mg/kg	420	12.2
Arsenic	mg/kg	75	BDL	Selenium	mg/kg	100	BDL
Cadmium	mg/kg	85	BDL	Zinc	mg/kg	7500	BDL

*All units are in a dry weight basis except for total solids and pH. All sampling and analysis shall be conducted pursuant to Title 40 Code of Federal Regulations, Section 503.8, and the POTW Sludge Sampling and Analysis Guidance Document.
N/A = not applicable

4. Pathogen Reduction Class Provided: ☐ A ☒ B (Rule 62-640.600(1), F.A.C)

Describe the pathogen reduction method Anaerobic Digestion

EPA Vector Attraction Reduction Option Used: (Rule 62-640.600(2), F.A.C.)

☒ 1	☒ 2	☐ 3	☐ 4	☐ 5
☐ 6	☐ 7	☐ 8	☐ 9	☐ 10

Part II - Residuals Site Information

1. Site Name Kirton Ranch (C-11653 BMP Demonstration Project Site, DEP/SFWMD/UF-IFAS)

   Site Classification: ☒ Agricultural ☐ Reclamation

   Site 5651 NE80th Ave

   City Okeechobee State FL Zip 34972-8118

   Site Coordinates: Latitude 27° 28' 36" N 80° 44' 36" W

   Section 28 Township 36 S Range 36 E County Okeechobee

   Road Directions to Site From Okeechobee 5 miles on the FL-70 E, then left on the NE80th Ave. Enter Kirton Ranch And continue until vehicle park.

   Site Owner Kirton Ranch, Inc.

   Site Manager (if different from owner) Mr. Dudley Kirton

   Owner/Manager Street Address 2901 SW 28th St

   City Okeechobee State FL Zip 34972

   Phone (863) 467-0732 Fax (863) 467-6674

2. Total Acreage of Site 2740 acres; Total Acreage to be Applied 9 acres (Sum of Application Enter individual application zone acreages in the table in Part III, item 2.

3. Site pH 4.8 – 6.1

4. Attach a County Section Aerial Map, or a copy of such map, indicating the boundaries of the site and delineating the boundary of each residuals application zone. The following information should be indicated on the map:
   - The identification number for each application zone;
   - Residuals storage facilities, if any on the site;
   - Water supply wells on the site or within 500 feet of the site;
   - Surface waters on the site or within 1000 feet of the site; and,
   - Occupied buildings on the site or within 300 feet of the site.

   The boundary of each application zone shall be shown to conform to the following requirements:
   - 300 feet from buildings occupied by the general public (may be reduced to 100 feet if residuals are injected into the soil);
   - 1000 feet (setback area vegetated) from Class I water bodies, Outstanding Florida Waters, or Outstanding National Resource Waters;
   - 200 feet (setback area vegetated) from any other surface water, including wetlands that are classified as waters of the state, except canals or bodies of water used for irrigation, which are located completely within the site and will not discharge from the site (this distance may be reduced to 100 feet if the requirements of Rule 62-640.700(4)(a)1. or 2., F.A.C., are met);
   - 300 feet from any private potable water supply well or 500 feet from any public potable water supply well; and,
   - 200 feet from any visible evidence of subsurface fractures, solution cavities, sink holes, excavation core holes, abandoned wells or other natural or man-made conduits that could allow direct contamination of ground water.
   - Site slopes shall not exceed 8%.

5. Describe how site use restrictions will be met in accordance with Rule 62-640.600(3), F.A.C.

   3b Applies – Site is on an agricultural, non residential or transit, private property. The site is used for a BMP demonstration project supervised by SFWMD/DEP/UF-IFAS. No food crops will be produced, no animal grazing (hay only). Owner and research personnel will be informed of the site use restriction rules.

6. Attach Natural Resources Conservation Service maps demonstrating that the seasonal high ground water level is not within 2 feet of the ground surface for each application zone. If the seasonal high ground water level will be within 2 feet of the surface or is undetermined, determine the ground water level in one or more representative locations in each application zone prior to each application of residuals. Indicate these locations on the map. If the seasonal high ground water level will be within 2 feet of the surface or is undetermined, describe what will be done with any residuals that would have been applied to the site (storage, alternate application sites, etc.).

   Ground water level is checked prior application and periodically with 51 wells installed on the project site. Residuals that can not be used will be returned and stored at the WWTP for later use

7. Using an appropriate map such as a USGS topographic map, determine site slope and attach documentation of the slope determination procedure used to demonstrate that land application zone slopes do not exceed 8 percent. If slopes exceed 2 percent in one or more land application zones, attach a Conservation Plan prepared by or approved by the Natural Resources Conservation Service or a stormwater management plan prepared in accordance with Chapter 62-25, F.A.C., by an engineer registered in Florida. The plan shall demonstrate that suitable soil infiltration rates and stormwater control measures exist at the site to retain runoff generated by the 10-year recurrence interval
1-hour duration storm event. Berms shall be placed for this purpose if necessary.
Maximum Site 0.21 %

8. If residuals will be stored temporarily (30 days or less) at the application site, describe the provisions for _____

If residuals will be stored for longer than 30 days (but not more than 2 years), attach documentation demonstrating that: a) the storage facilities at the site are adequate for the rates of residuals generation by permitted wastewater facilities sending residuals to the site; b) all of the residuals stored at the site, up to the capacity of the on-site storage facilities, can be land applied without resulting in an exceedence of cumulative loading limits or agronomic rates; and c) a longer storage period is needed because of agricultural operations or climatic factors at the site.

9. Describe the incorporation method and application technique to be Surface application only. No incorporation

10. If "other solids" as defined in Rule 62-640.200, F.A.C., will be applied to the residuals application site, describe the intended use and beneficial method of application: No "other solids"

11. Is this site located in an area identified by statute or by rule of the Department of Environmental Protection as being subject to restrictions on phosphorus loadings? ☒ Yes ☐ No

If yes, attach: a) documentation of the characterization of soil phosphorus as determined by site-specific soil testing including results of initial soil testing performed before the first application of residuals to the site and a description of how subsequent soil testing will be accomplished after the completion of each crop cycles or growing seasons but before residuals are applied for the next crop cycle or growing season; b) a description of how the phosphorus content of all sources of phosphorus applied to the site will be accounted for in establishing residuals application rates at the site; c) a determination of the agricultural phosphorus needs of crops grown at the site; d) a description of the adequacy of measures that will be used to minimize or prevent water quality impacts that could result from sediment transport from residuals application areas to surface waters; and e) a description of the capacity of the soil to hold phosphorus.

Part III - Agricultural Site Information

1 Describe how the use of residuals on this site is part of planned agricultural operations.
The use of residuals has BMP development and demonstration purposes as described in the attached Work Plan. The goal of this SFWMD/DEP/UF-IFAS supervised project is to deliver BMPs for the reduction of Phosphorous loads from all DEP agricultural use permit holders.

2. Determine the maximum allowable residuals nitrogen application rate using the nitrogen demand of the site vegetation.

a. Mark the following as appropriate:
Basis for determination of nitrogen demand:
☐ Nitrogen loading table in Rule 62-640.750(2)(a), F.A.C.
☒ Recommendations of Natural Resources Conservation Service or Institute of Food and Agricultural Sciences (attach documentation)
☐ Other; identify (attach _____

Method used to determine maximum residuals nitrogen application rate:

☐ Rule 62-640.750(2)(b)1., F.A.C. - The calculation method in Chapter 7, Environmental Protection Agency, *Process Design Manual for Land Application of Sewage Sludge and Domestic Septage*.
☐ Rule 62-640.750(2)(b)2., F.A.C. - Other methods if approved by the Department.
Enter the maximum residuals nitrogen application rate in the table in part b. Attach a sheet(s) showing the calculations performed for the rate as well as the other information entered in the table. Clearly indicate how the nitrogen assimilation rates are weighted for different crops grown on the same zones at the same time or consecutively. Also indicate how contributions of nitrogen from other applied sources are accounted for in the calculations.

b. **Application Zone Information**

Enter each zone in a separate column. Attach additional sheets if necessary. (Each application zone shall be clearly marked on the county section aerial map required in Part II, item 4.)

	Column 1	Column 2	Column 3	Column 4
Application zone ID #	Application Zone			
Acreage of application zone	9 acres			
Crop(s) grown on application zone	Bahiagrass Hay			
Nitrogen Demand in lbs/acre/year	160 (according to UF/IFAS			
Maximum Residuals Nitrogen Application Rate in lbs/acre/year	310			
Maximum Residuals Phosphorus Application Rate in lbs/acre/year (if applicable)	18 (40lbs P_2O_5/acre according to UF/IFAS SL129)			
List the names of any other facilities that land apply residuals in each zone.	none			
Date of initial application*				
Cumulative metals loading to date for each zone in lbs/acre*				
Arsenic				
Cadmium				
Copper				
Lead				
Mercury				
Nickel				
Selenium				
Zinc				
Estimated remaining site life				

*****Baseline cumulative loading is calculated from all residuals applications to the zone beginning with the date of the first application subject to regulation by either Chapter 62-640, F.A.C., or Title 40 Code of Federal Regulations Part 503, whichever is earlier (Rule 62-640.650(3)(b)3., F.A.C.).

Part IV - Reclamation Site Information (if applicable)

1. Describe the circumstances that have caused damage to the land and resulted in the need to perform land _____

2. Describe the existing condition of the _____

3. Describe how the use of residuals on this site will be part of planned land reclamation _____

4. Describe grading to be performed: (All site grading shall be completed before residuals application _____

5. Describe the method of incorporation into the soil that will be used: (The applied material shall be incorporated into the soil the application, except for Class A _____

6. Describe the type of vegetation to be established and the schedule for planting: (Seed or turf-forming grass shall be planted as possible, but in no case later than three months after the last application of _____

7. Describe the anticipated application quantity (dry tons/acre): (The maximum allowable application quantity is 50 dry tons/acre with application to be accomplished one time within a one-year period on any acre of the _____

Part V - Certifications

Permittee

The permittee certifies that he/she is familiar with and shall comply with the applicable requirements of Chapter 62-640, F.A.C.; shall allow land application of his/her residuals only on a site for which an Agricultural Use Plan has been approved by the Department; and that the residuals to be land applied shall meet the general criteria in Rule 62-640.700(1), F.A.C. and shall be treated to the standards as identified in this plan. The permittee also certifies that he/she shall maintain a record of the total quantity of residuals land applied at this site and will file with the Department an annual summary of the residuals applied on this site, and that the residuals hauler and application site owner or manager have been made aware of the provisions of this rule.

Mr Rex McClung _____

Signature of Permittee Title Date

Site Owner

The site owner certifies that he/she has been provided a copy of Chapter 62-640, F.A.C., and that the site information provided in this plan is accurate to the best of his/her knowledge.

Mr Dudley Kirton _____

Signature of Site Owner Date

INSTRUCTIONS FOR AGRICULTURAL USE PLAN

This form shall be completed in accordance with Chapter 62-640, Florida Administrative Code (F.A.C.), and submitted to the appropriate Department District Office with the application for a wastewater permit for facilities which apply or intend to apply domestic wastewater residuals to land for agricultural or reclamation purposes. A form must be completed for each site where the facility's residuals will be land applied. If the application sites are modified or new application sites are to be used, a modified or new Agricultural Use Plan must be submitted with an application for a minor permit modification in accordance with Rule 62-640.300(2), F.A.C. All applicable items must be completed in full to avoid delay in processing. If attached sheets (or other technical documentation) are used in place of the blank space provided, refer to them in that space. All information is to be typed or printed in ink. Facilities which produce Class AA residuals in accordance with Rule 62-640.850, F.A.C., are not required to complete this form and Class AA residuals may be distributed and marketed under the provisions of Rule 62-640.850, F.A.C.

Part I - Facility Information.

Facility Name: Enter the name of the facility as it appears on the facility wastewater permit or permit application.

Facility Classification: Check one block from each column as applicable.

Facility ID: Enter the facility identification number as it appears on the facility wastewater permit.

Contact Person/Title/Phone/Fax: Enter the name and applicable information of the person who can be contacted for questions regarding the facility and this agricultural use plan.

Quantity of Residuals Generated Yearly: Enter the total quantity of residuals generated or expected to be generated by the facility on a yearly basis. Check whether the entered quantity is an actual observed amount or if it is an estimated amount. Residuals management facilities shall enter the amount of residuals that will be treated on a yearly basis.

Residuals Characteristics: Enter the arithmetic average for each parameter from the analyses of previous year of operation for an existing facility or the predicted concentrations of each parameter for a new facility. All units are in dry weight basis except for total solids and pH.

Pathogen Reduction Class Provided: Enter the pathogen reduction class provided by this facility. Choose only one.

Description of pathogen reduction method used: Briefly summarize the process used to achieve the above pathogen class. This should simply be abstracted from information submitted for the permittee's permit application or facility engineering report. A professional engineer's signature is not required for this entry.

Vector Attraction Option Used: Mark the VAR option used by this facility for its residuals. Choose only one from the table below.

Summary of Options for Meeting Vector Attraction Reduction	
Option Number	**Description**
1	Meet 38 percent reduction in volatile solids content.
2	Demonstrate vector attraction reduction with additional anaerobic digestion in a bench-scale unit.
3	Demonstrate vector attraction reduction with additional aerobic digestion in a bench-scale unit.
4	Meet a specific oxygen uptake rate for aerobically digested biosolids.
5	Use aerobic processes at greater than 40^{o}C for 14 days or longer.
6	Alkali addition under specified conditions.
7	Dry biosolids with no unstabilized solids to at least 75 percent solids.
8	Dry biosolids with unstabilized solids to at least 90 percent solids.
9	Inject biosolids beneath the soil surface.
10	Incorporate biosolids into the soil within 6 hours of application to or placement on the land.

Note: Table is derived from Table 5-8, A Plain English Guide to the EPA Part 503 Biosolids Rule, EPA/832/R-93/003, U.S. Environmental Protection Agency, 1993.

Part II - Residuals Site Information

Site Name: Enter the name of the site that this agricultural use plan describes.

Site Classification: Identify the site as an agricultural site or a land reclamation site.

Site Address/City/State/Zip: Enter the actual location address of the site.

Site Coordinates: Enter the latitude and longitude of the site in the degrees, minutes, seconds format. Use the centroid of the site.

Section/Township/Range/County: Enter the section, township, range, and county name. Section, township, and range can usually be found on a U.S.G.S. topographical map.

Road Directions to Site: Enter the driving directions necessary to visit the site.

Site Owner: Enter the legal name of the owner of the site.

Site Manager: Enter the site manager's name if the site is managed by someone other than the owner.

Owner/Manager Street Address/City/State/Zip/Phone/Fax: Enter the address and telephone information of the responsible person for the site.

Total Acreage of Site/Total Acreage to be Applied: First enter the entire acreage of the identified site, then enter the sum of the acreages of all the application zones that will be used by this facility. Enter the acreages of each individual application zone listed in the table in Part III, item 2.b.

Site pH: Enter the pH of the site's soil, tested in a location that is representative of application zone(s).

County Section Aerial Map with identification of site features: Provide the county section aerial map in a legible form with the indicated features clearly identified.

Site restrictions: Briefly describe the provisions made to ensure the site will meet the applicable site restrictions in Rule 62-640.600(3), F.A.C.

Seasonal high ground water level: The ground water level shall not be within two feet of the soil surface when applying residuals. Natural Resource Conservation Service Maps may be used to indicate that the seasonal high ground water level is not within two feet of the ground surface. Otherwise, the ground water level shall be tested prior to application. Briefly describe what provisions will be made for any residuals that would have been applied if the test reveals that the ground water level is within two feet of the soil surface.

Maximum site slope: Determine the site's maximum slope. It may not exceed 8 percent and if greater than 2 percent, a conservation plan must be attached.

Residuals storage: Briefly describe any provisions for temporary storage of residuals at the site.

Incorporation and application methods: Briefly describe the intended method of incorporation of the residuals into the soil (if any) and method of application.

Other Solids If "other solids" are to be applied to the site, briefly describe the intended beneficial use.

Phosphorus sensitive areas: If the site is located in an area that has been identified by the Florida Legislature as being subject to restrictions on phosphorus loadings, the plan must address the information described in Rule 62-640.500(4), F.A.C.

Part III - Agricultural Site Information:

Description of residuals use in agricultural operations: Briefly describe how residuals will be used in the agricultural operations of the site.
Determination of maximum residuals nitrogen application rate: Identify the basis for the nitrogen demand and any adjustments. Attach a sheet showing the actual calculations performed to determine the maximum allowable residuals nitrogen application rate. Enter the determined rates in the following table containing application zone information.

Application Zone Information - (table)
Application zone ID#: Each application zone shall have an alphanumeric identification (i.e. 1, 1A, or A, etc.) that will distinguish it from the other application zones at the site. This identification will stay with the application zone indefinitely since the application records and cumulative metals loading will be tracked by this identification number.
Application zone acreage: Enter each application zone's acreage.
Crop(s): Enter the primary crop(s) grown on each zone.
Nitrogen Demand: Enter the nitrogen demand in lb./acre/year based on the crop(s) grown on each zone.
Maximum Residuals Nitrogen Application Rate in lb/acre/year: Enter the rate determined in Part III, item 2, part a, for each zone.
Maximum Residuals Phosphorus Application Rate in lb/acre/year: Enter the rate if the zone is located in an area identified by the Florida Legislature as being subject to restrictions on phosphorus loadings.
List of any other facilities that land apply residuals in each zone: List the names of any other parties who land apply residuals to this application zone.
Date of first regulated application: Enter the date that the tracking of the cumulative metals loading started. The tracking of cumulative metals loading starts with the first application of residuals that was/is subject to regulation by either Chapter 62-640, F.A.C., or Title 40 Code of Federal Regulations Part 503, whichever is earlier.
Cumulative metals loading to date for each zone: Enter the calculated cumulative loading of each of the listed metals for each zone.
Estimated remaining site life: Enter the estimated remaining site life for each zone based on the expected annual metal loadings to the zone.

Part IV - Reclamation Site Information
Need for land reclamation: Briefly describe the background of how the land became damaged and the need for land reclamation.
Existing condition of the land: Briefly describe the current condition of the site.
Residuals and land reclamation activities: Briefly describe how residuals will be used in the land reclamation operations.
Grading: Briefly describe what grading will be needed on the site.
Method of Incorporation: Briefly describe how the residuals will be incorporated into the soil. This shall be done on the same day as application for Class B residuals.
Vegetation: Briefly describe what vegetation will be planted on the site and the schedule.
Application quantity: Give the expected quantity of residuals that will be applied to the site in dry tons/acre (1 ton = 2000 lb).

Part V - Certifications
Each party shall sign in the appropriate sections and enter the date of signature.
A professional engineer's signature is not required for the AUP. A professional engineer's signature may be required on applicable attached documentation to the AUP. For example, if the site slopes exceed 2 percent and a stormwater management plan is submitted that was prepared in accordance with Chapter 62-25, F.A.C., by an engineer registered in Florida, then the engineer's signature is required on the stormwater management plan.