

CONSUMPTIVE USE TECHNICAL STAFF REPORT
12-Dec-2016
APPLICATION #: 91926-4

Owner: Sleepy Creek Lands LLC
15045 NW 141st Ct
Williston, FL 32696-7446

Applicant: Sleepy Creek Lands LLC
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Project Name: Sleepy Creek North and East Tracts (formerly called Adena Springs Ranch)

County: Marion

Objectors: Yes

Authorization Statement:

The District authorizes, as limited by the attached permit conditions, the use of a total of 978.2 million gallons per year (mgy) (2.68 million gallons per day (mgd) average) of groundwater from the Upper Floridan aquifer for irrigation of 2,231 acres of improved pasture and other crops, watering of cattle and commercial/industrial uses for years 2017 through 2023. For years 2024 through 2034, the permitted allocation reduces to 532.9 mgy (1.46 mgd).

Recommendation: Approval

Reviewers: Richard Burklew; James Hollingshead; Timothy Wetzel; Clay Coarsey

Abstract:

This is a modification of an existing agricultural use permit with a request for an 84% increase from 1.46 mgd to 2.68 mgd in groundwater allocation to (1) fully meet the agricultural demand previously demonstrated in the Sequence 3 Permit and (2) supply an additional commercial/industrial use. No change in duration is proposed. Staff is recommending approval of an increase in allocation of 1.22 mgd for a total allocation of 2.68 mgd for the years 2017 through 2023 and then a reduction to the current allocation of 1.46 mgd for the years 2024 through 2034.

PROJECT DESCRIPTION:**Project Location**

The Sleepy Creek Lands North and East Tracts cattle farm project is located in northern Marion County northwest and southeast of the community of Fort McCoy. The project consists of two separate non-contiguous parcels (the northern portion of the Sleepy Creek Lands LLC property and the Ft McCoy/Jones Turf-Grass Farms). The project area that is the subject of this application consists of a total of approximately 8,218 acres.

Project Summary

The project consists of converting approximately 7,208 acres of pine plantation, improved pasture and wetlands (North Tract), and 1,010 acres of existing sod farms (East Tract) into a cattle grazing and finishing operation for the production of grass-fed beef. The project is designed to maximize cattle forage intake on the North Tract through intensive rotational grazing practices and minimize the need to use supplemental feed. On the East Tract, the applicant proposes to utilize more standard grazing and pasture management techniques. To produce the forage necessary for grazing operations, the applicant is proposing to irrigate 2,231 acres of pasture grasses and grain crops. Each irrigated area will be watered with an efficient center pivot irrigation system.

The project is designed around the cattle finishing process. Based on the ranch plan, arriving cattle with an average weight of 875-lbs will be temporarily held at receiving corrals. They will then be grazed and rotated over time through the irrigated pastures and grain crops, eventually reaching the beef harvesting facility corral. The pasture rotation process will maximize cattle weight gain so that by the time the cattle reach the harvesting facility their anticipated finished weight will be 1,150-lbs. Due to the variable crop production throughout the year, excess forage production during the high growth periods will be mechanically harvested as haylage. This haylage will provide supplemental feed for the cattle during transitional periods when pasture or crop growth is insufficient to keep up with animal needs.

In addition to pasture and grass/crop irrigation, the applicant is also requesting to withdraw and use water for cattle watering and industrial/commercial use associated with a cattle and food processing facility (North Tract Facility). The percentage breakdown of use by type (irrigation, cattle watering and commercial/industrial) is 92% irrigation, 3% cattle watering and 5% commercial/industrial. The site also consists of non-irrigated pasture areas and other non-irrigated, miscellaneous land uses (e.g., timber).

Permitting History:

In December 2011, the District received a consumptive use permit (CUP) application for Sleepy Creek Lands (formerly known as Adena Springs Ranch) for a new groundwater withdrawal of 13 million gallons of water per day (mgd). Since the initial application, Sleepy Creek significantly amended its water withdrawal request in both amount and geographic scope, and “phased” its request over two permit sequences (2-083-91926-3 and 2-083-91926-4). These permit sequences are discussed below.

Sequence 3 Permit

In April 2014, Sleepy Creek requested authorization to consolidate and modify its existing permits for two sod farms (2-083-3011-7 and 2-083-91926-2) and to shift some or all of its existing allocation of 1.46 mgd to the North Tract of the Sleepy Creek property. This request was assigned permit number 2-083-91926-3 and became known as the Sequence 3 Permit. On May 14, 2014, District staff completed its review of the CUP consolidation request and recommended that the District's Governing Board approve that application. The District received two petitions challenging the Sequence 3 Permit.

After an administrative hearing, an administrative law judge (ALJ) issued a recommended order that the District issue the Sequence 3 Permit in accordance with the terms and conditions set forth in the technical staff report. The District's Governing Board entered a final order approving the CUP on July 14, 2015. The final order was appealed to the Fifth District Court of Appeal, which subsequently entered an order on October 4, 2016, affirming the District's final order.

Sequence 4 Permit

On June 19, 2014, Sleepy Creek amended its 2011 application for new groundwater from 13 mgd for use on the North and South Tracts to 1.12 mgd for use on the North Tract only. This request was assigned permit number 2-083-91926-4 and became known as the Sequence 4 Permit. On July 15, 2014, the District issued notice of its intent to deny the Sequence 4 Permit. Over the course of the last two years, Sleepy Creek has requested multiple extensions of time to file a petition for administrative hearing regarding the Sequence 4 Permit. These requests for extension were granted. On October 3, 2016, Sleepy Creek submitted a letter to the District requesting: 1) the permit application be re-evaluated using the District's updated modeling tool for the area; 2) an additional 0.14 mgd of groundwater for use at its cattle harvesting facility known as the North Tract Facility; and, 3) the Sequence 4 Permit be re-evaluated under the District's current rules. The District's current rules can be found in the Applicant's Handbook: Consumptive Uses of Water (effective November 3, 2015).

Sequence 5 Permit

On October 4, 2016, the permittee requested a letter modification to relocate proposed wells NT-5, NT-4, NT-8 (Station IDs 411774, 411773, 411777 respectively), remove well NT-10 (Station 411770), rename Well NT-5 (Station ID 411774) to NT-5/10 and correct the location of existing well NT-40 (Station ID 411809) with no change in source, withdrawal capacity, or casing diameter. Staff reviewed the letter modification request and issued a modification to the Sequence 3 Permit on November 1, 2016, to address the requested well relocation and well renaming issues. This is known as the Sequence 5 permit.

PROPOSED WATER SUPPLY SYSTEM AND WATER USE:

Water Supply System Description

The applicant is proposing to construct thirteen 12-inch wells and five 5-inch wells. There are four 12-inch diameter wells, seven 5-inch wells, one 6-inch diameter well, four 4-inch diameter wells already on the properties. The 12-inch diameter wells will withdraw water from the Upper Floridan aquifer (UFA) to supply 21 center pivots which will be used for irrigation and chemigation of improved pasture areas. Two five-inch wells will be used for the commercial/industrial facility (North Tract Facility). The remainder of the six, five and four-inch wells will be used for cattle watering. The typical 12-inch diameter well will be constructed to a total depth of approximately 200 feet, with steel casing to a depth of approximately 100 feet. Each well will be equipped with a 75-hp submersible pump and will be capable of producing 1,000 gpm.

On the North Tract, the applicant proposes to use fifteen long radius pivot irrigation arms that are capable of rotating 360° in 24-hrs. On the East Tract, the applicant proposes to use the existing six pivots on the sod farms. Water will be supplied to each pivot by a UFA well.

Water Use Description

The request is to modify the Sequence 5 Permit to authorize the withdrawal of an additional 1.12 mgd of groundwater for irrigation and an additional 0.14 mgd of groundwater for industrial uses at the North Tract Facility on the Sleepy Creek North Tract. The total project would include the irrigation of 2,231 acres of pasture grasses and grain crops using 21 center pivot irrigation systems and to water up to 7,578 head of cattle. The project area is divided between two tracts, the North Tract and East Tract.

On the North Tract, the applicant proposes to irrigate 1,620 acres using 15 center pivot systems. In any year, 20% of the irrigated area will be double-cropped with pasture grass and grains crops. The remaining 80% of the irrigated area will be used to grow pasture grasses only.

On the East Tract, the applicant proposes to irrigate 611 acres using 6 center pivot systems. The irrigation demand for 611 acres of pasture grass on the East Tract for a 2-in-10 drought year for the East Tract would be 169 mgy (0.464 mgd).

HYDROGEOLOGIC INVESTIGATION:

Hydrogeologic Setting

The project site is located in North Central Florida and lies on the eastern edge of what is known as the Ocala Platform. The Ocala Platform is an area where the limestone that comprises the Floridan Aquifer System (FAS) exists at or very near land surface.

Typically, the limestone in the Ocala Platform area has little to no unconsolidated material covering it. The occurrence of karst features (caves, sinkholes, karst prairies) are very common in this area. The North Tract lies to the east of the Ocala Platform in an area where there is substantial cover by clays and other sediments of the Hawthorn Group. As a result, there is a surficial aquifer system on-site and the effect of withdrawals from the Upper Floridan aquifer are buffered. Although the property is bordered on the west by karst prairies, site investigations have shown that there are no karst prairies within the project area.

Based on a review of available information, District staff has determined there are generally five hydrogeologic units of relevance within the site. These hydrogeologic units include the surficial aquifer system (SAS), the intermediate confining unit (ICU), the UFA, the middle confining unit I (MCUI), and the Lower Floridan aquifer (LFA).

The SAS is unconfined, and its upper boundary is defined by the water table. The SAS in the vicinity of the site is predominantly quartz sand layered between clayey sands. Based upon the test boring data collected near the site of Pivot Well 9, the sediments that form the SAS extend to a depth of approximately 55-60 ft below land surface (bls).

The top of the underlying ICU is defined by the presence of stiff, gray-green, phosphate bearing clays that make up the top of the Hawthorn Group. The lower portion of the ICU consists of sandy clay grading to hard, light tan colored, dolomitic limestone. The hard limestone layer generally occurs at a depth of 100 feet, and defines the bottom of the ICU and the top of the UFA.

The UFA consists of alternating layers of soft and hard light cream to brown limestone. The base of the UFA (and the top of the MCUI) was identified at 340 ft bls based on 1) a change from softer materials to much harder ones, 2) a high electrical resistivity log response in geophysical testing performed on a 950-foot deep test hole, and 3) correlation to other wells where the MCUI has been mapped by the District.

Based on the results of the deep test hole, the brown limestones and dolostones that comprise the MCUI have been estimated to extend from a depth of 340 ft to 750 ft bls. Preliminary evaluations based on temperature and fluid conductivity logs, as well as correlation with other logs, indicate that the base of the MCUI and the top of the LFA is 750 ft bls.

The section of the LFA encountered during drilling of the on-site test hole consists of alternating beds of limestone and dolostones. The test hole penetrated the upper 200 feet of the LFA (depth of 950 ft bls). Review of currently available information for the region indicates that the LFA extends to a depth of approximately 1,800 ft bls in the vicinity of the site.

Aquifer Testing

In order to evaluate impacts of the requested withdrawals, the applicant conducted two UFA aquifer performance tests (APTs) and coordinated with the District in the planning and implementation of a third UFA APT. The first two tests were comparable in scope and duration, while the third test was expanded in both scope and duration. In all cases, aquifer test plans were reviewed by District staff prior to implementation.

The first APT was conducted on the North Tract on a well that will serve proposed Pivot 9. The APT on Well 9 (formerly Well 21) began on March 26, 2012. Withdrawal rates of 2,338 gpm were maintained for 2.3 days before the test was terminated. Drawdown at UFA observation wells located within 100 feet of the test production well varied from 3.0 to 3.5 feet at the end of the test. Manual readings taken from wells located approximately 4,700 feet from the pumping well indicated UFA drawdown of approximately 1.5 feet.

Standard analytical techniques were used to estimate the UFA transmissivity from drawdown data collected from the wells located within approximately 100 feet of the production well. A mean value of 112,138 ft²/day was estimated for the UFA transmissivity, along with a leakance of 3.12E-9 day⁻¹ interpreted from the type-curve matching evaluation.

The second APT was performed on Well 33 (formerly Well 83) near the southwest corner of the larger tract of property owned by the applicant (approximately 5,000 feet east of Indian Lake Prairie). The APT began on October 17, 2012. Withdrawal rates of 1,423 gpm were maintained for 2.0 days before the test was terminated. Drawdown at UFA observation wells located within 100 feet of the test production varied from 9 to 12 feet at the end of the test. Standard analytical techniques were used to estimate the UFA transmissivity from drawdown data for wells located within approximately 100 feet of the production well. A mean value of 12,200 ft²/day was estimated for the UFA transmissivity. Leakance estimated from the type-curve matching was estimated at 1.0E-2 day⁻¹.

The estimated parameters from the first two APTs significantly deviated from those utilized in the calibration of the North Central Florida Active Water-Table Regional Groundwater Flow Model (NCF model). UFA transmissivities within the NCF model at these APT locations yielded 625,000 ft²/day for Well 9 (compared to a mean test value of 112,138 ft²/day), and 2,000,000 ft²/day for Well 33 (compared to a mean test value of 12,200 ft²/day).

District staff reviewed all of the available data for the region, including the information derived from the two APTs and determined that additional site-specific information was needed in order to provide reasonable assurances regarding the on-site aquifer characteristics. With that objective in mind, a third APT was conducted. Well 9 was again used as the production well. The APT also included an array of 19 wells monitoring: the SAS (total of four wells); the ICU (total of four wells); the UFA (total of ten wells); and the uppermost portion of the MCUI (one well). The majority of the shallower wells (SAS and ICU) were constructed within 150 feet of the production well. Several of the UFA wells were within 100 feet of the pumping well, with the remainder spaced at distances varying from 800 to 13,000 feet. Background wells were established at the second APT site (Well 33), approximately five miles to the south/southwest. Results from the analysis using the drawdown data collected from 18 on-site observation wells and several offsite wells in the SJRWMD observation well network indicated that: (1) transmissivity within the APT-influenced area varied from 62,000 to 102,500 square feet per day (ft²/day), (2) storativity varied from 3.7x10⁻⁴ to 5.5x10⁻³; and (3) leakance varied from 6.9x10⁻⁵ to 7.2x10⁻⁴ 1/day.

Groundwater Flow Modeling

The current version of the Northern District Groundwater Flow Model Version 5.0 (NDMv5) was used to estimate impacts on local and regional groundwater levels and flows. NDMv5 became available to SJRWMD water use regulation staff for use in permitting in July 2016. This model was developed collaboratively between the Southwest Florida Water Management District (SWFWMD) and the St. John River Water Management District (SJRWMD).

NDMv5 updated the existing NDMv4 to include new hydraulic and hydrogeologic information that became available after the completion of NDMv4. NDMv5 was calibrated to 1995 steady-state conditions, as well as a 10-year transient time period (1996 to 2006). In addition, a verification simulation was performed using 2010 climatic and pumping conditions. NDMv5 is a 3D model that simulates 7 distinct layers that represent the underlying aquifer systems and associated confining units. The NDMv5 active model grid covers over 8,000 square miles and within that area simulates discharge from 115 springs. NDMv5 also actively simulates numerous rivers and lakes within the model domain.

Many project specific simulations were run by District staff using NDMv5. The simulations included assessment of individual (project specific) impacts. Individual impacts were assessed by comparing results from the current permitted allocation model run both with the applicant and without the applicant's proposed withdrawals included. In addition, cumulative impacts were assessed by comparing the current permitted allocation model runs to an estimated predevelopment condition. It should be noted that in the permitted allocation run all use classes, except agriculture, were included at their full permitted quantities. Pursuant to District rules, the District issues agricultural irrigation permits based on a 2 in 10 year drought quantity. The requirement to issue agricultural permits based on a 2 in 10 year drought quantity must be addressed when using groundwater flow models to assess potential long term impacts from permitted withdrawals. To account for the fact that a drought allocation is not needed every year, the permitted allocations for agricultural uses were adjusted from the 2 in 10 year drought quantity to an estimated 5 in 10 year long-term average condition. In addition, return flows for agricultural and recreational/landscape irrigation withdrawals were applied to layer 1 of the model at 35% and 20%, respectively, of the withdrawal quantity. The applicant is proposing to use high efficiency center pivot irrigation systems with irrigation system efficiencies of 85%. Given that fact, 15% of the withdrawal quantity was assigned to layer 1 as return flow for the applicant's irrigation withdrawals. The results of the individual and cumulative impact assessments are discussed in more detail below.

PERMIT APPLICATION REVIEW:

Section 373.223, F.S., and Section 40C-2.301, Florida Administrative Code (F.A.C.), require an applicant to establish that the proposed use of water:

- (a) is a reasonable-beneficial use;
- (b) will not interfere with any presently existing legal use of water; and,
- (c) is consistent with the public interest.

In addition, the above requirements are detailed further in the Applicant's Handbook: Consumptive Uses of Water, November 3, 2015 ("A.H."). District staff has reviewed the consumptive use permit application pursuant to the above-described requirements and has determined that the application meets the conditions for issuance of this permit. A summary of District staff's review is provided below.

REASONABLE BENEFICIAL USE CRITERIA [Section 2.3, A.H.]:

Section 2.3(a) - The use must be in such quantity as is necessary for economic and efficient use.

Staff evaluated whether the proposed water is in such quantity as is necessary for economic and efficient utilization by considering the amount of water needed for the proposed crops, livestock and the food processing facility. Requested irrigation quantities were determined using the District’s supported program, GWRAPPS (GIS-based Water Resources & Agricultural Permitting & Planning System), specifically tailored for this location and proposed crops. GWRAPPS is a program based on the AFSIRS (Agricultural Field Scale Irrigation Requirements Simulation) model, which was developed by the Biological and Agricultural Engineering Department, University of Florida.

The applicant submitted an extensive analysis based on the District’s GWRAPPS model to estimate the amount of water needed for its proposed pasture and crop irrigation. For each irrigated area, the acreage of each soil type was determined. Based on the acreage and moisture retention properties of the soils identified, a soil type was selected to represent the soil type for each center pivot system (CPS) in the GWRAPPS. To improve the accuracy of estimating the irrigation requirements for this project, the applicant updated the default rainfall data typically used by the GWRAPPS program. The updated rainfall data is more representative of the actual rainfall intensities and frequencies expected at the site.

All irrigation will be performed by center pivots systems. CPSs are the most efficient irrigation systems capable of irrigating large areas with varying crop types. An irrigation efficiency of 85% was assumed for the proposed fifteen and existing six center pivot systems. To insure the irrigation systems are properly managed, the applicant has submitted a Water Conservation Plan (see next section for details). The irrigation requirement for each CPS for the 2-in-10 drought year is summarized in the table below:

Irrigation Demand for the 2-in-10 drought year summary (Table1):

Pivot ID	Soil Type	CPS Area (acres)	GIR*, in	GIR, mgd	GIR, mgy
PHASE 1A NORTH TRACT					
1	Lynne Sand	125.7	16.05	0.150	54.76
2	Lynne Sand	125.7	16.05	0.150	54.76
3	Lynne Sand	125.7	16.05	0.150	54.76
4	Lynne Sand	125.7	16.05	0.150	54.76
5	Eaton Loamy Sand	96.5	16.69	0.120	43.75
6	Electra Sand	103.0	19.11	0.146	53.43
7	Lynne Sand	70.0	16.05	0.084	30.49
8	Lynne Sand	125.7	16.05	0.150	54.76
9	Lynne Sand	125.7	16.05	0.150	54.76

10	Lynne Sand	102.3	16.05	0.122	44.60
11	Lynne Sand	70.0	16.05	0.084	30.49
12	Lynne Sand	120.5	16.05	0.144	52.50
13	Lynne Sand	100.3	16.05	0.120	43.73
14	Lynne Sand	86.5	16.05	0.103	37.68
15	Electra Sand	117.5	19.11	0.167	60.96
	<i>Subtotal</i>	<i>1620.4</i>		<i>1.990</i>	<i>726.17</i>
EAST TRACT					
E-1	Eaton loamy sand	93.1	10.46	0.072	26.45
E-2	Lynne Sand	117.3	10.01	0.087	31.89
W-1	Eaton loamy sand	20.5	10.46	0.016	5.82
W-2	Eaton loamy sand	157.1	10.46	0.122	44.63
W-3	Lynne Sand	130.7	10.01	0.097	35.54
W-4	Lynne Sand	92.3	10.01	0.069	25.10
	<i>Subtotal</i>	<i>611.0</i>		<i>0.464</i>	<i>169.44</i>
	Project Total	2231.4		2.454	895.61

*GIR- Gross Irrigation Requirement

For the irrigated areas, the applicant has requested 0.5 mgy (0.001 mgd) of groundwater for chemical mixing for the application of herbicides and pesticides. This request is for a total of 212 gallons per acre per year, based on four applications per year.

The applicant has requested 33.2 mgy (0.090 mgd) of groundwater to water up to 7,578 head of cattle. The requested volume is based on an average of 12 gallons per day per cow, as recommended in the District's CUP Applicant's Handbook.

Based on the submitted GWRAPPS model runs and the proposed irrigation method, staff has concluded that the irrigation demand is an economic and efficient use of the resource. Also, based on typical farming practices and the requested allocation for livestock watering, staff have concluded the requested chemical mixing and livestock watering demand is an economic and efficient use of the resource. In the litigation of the Sequence 3 Permit (DOAH Case Nos. 14-2608, 14-2609 and 14-2610), the ALJ concluded that Sleepy Creek Lands, LLC, provided reasonable assurance that these agricultural uses were in an amount necessary for economic and efficient utilization. In its final order issuing the Sequence 3 permit, the District's Governing Board upheld the ALJ's determination..

In this modification, the applicant has requested 51.1 mgy (0.14 mgd) of groundwater for industrial use at the North Tract Facility. The North Tract Facility is a cattle harvesting facility located within the North Tract property. The cattle harvesting facility also includes a commissary for final food product production and a proposed pet food facility for the production of animal feed. Upon completion, the project is projected to have 158 employees. The applicant has provided extensive information concerning different types of water using processes and the estimated water consumption for each process.

This facility operates under the oversight of the United States Department of Agriculture (USDA) Food Safety and Inspection Services (FSIS). Therefore, many of the water use requirements are based on USDA/FSIS requirements for these types of facilities.

Based on industry standards and water use information submitted for the boiler feed, equipment cooling, product content, product washing, refrigeration, sanitation, domestic and landscaping water needs, staff have concluded the requested allocation for the Beef Harvesting, Commissary and Pet Food Facility (i.e. the North Tract Facility) is an economic and efficient use of the resource.

The total water demand for irrigation, chemical mixing, livestock watering and industrial uses is summarized in the table below (Table 2).

Total Water Demand		
Water Demand Type/Site	Average Demand	
Irrigation Water Demand	mgd	mgy
North Tract (1620.4 acres)	1.990	726.2
East Tract (611 acres)	0.464	169.4
Subtotal (2231.4 acres)	2.454	895.6
Chemical Mixing Water Demand		
North Tract (1620.4 acres)	0.001	0.3
East Tract (611 acres)	0.0004	0.2
Subtotal (2231.4 acres)	0.001	0.5
Livestock Water Demand		
North Tract (6371 cows)	0.076	27.9
East Tract (1207 cows)	0.014	5.3
Subtotal (7578 cows)	0.090	33.2
Facility Water Demand		
Industrial	0.14	51.1
Total Water Demand per Tract		
North Tract – Industrial	0.14	51.1
North Tract - Agricultural	2.067	754.4
East Tract - Agricultural	0.478	174.9
Grand Total	2.68	978.2

Water Conservation

For industrial and agricultural uses respectively, sections 2.2.3.2 and 2.2.5.5, A.H. provide that applicants must submit a water conservation plan for their operations at the time of permit application. The applicant submitted a water conservation plan for agricultural uses as part of the Sequence 3 Permit. The plan includes the commitment by the applicant to implement numerous water conservation measures. The measures include proposed installation of a very high efficiency automatically operated computerized irrigation system, periodic water audits, rainfall shutoff sensors, use of an on-site weather station, use of a professional water conservation consultant, daily maintenance inspections and other measures. In the litigation of the Sequence 3 Permit (DOAH Case Nos. 14-2608, 14-2609 and 14-2610), the ALJ concluded that Sleepy Creek Lands, LLC, provided reasonable assurance that it had implemented all conservation measures economically, technically and environmentally feasible for the agricultural uses. In its final order issuing the Sequence 3 Permit, the District's Governing Board upheld the ALJ's determination.

As part of the submittal to modify the application to include the industrial uses on site, the applicant submitted a supplemental water conservation plan for industrial uses at the North Tract facility. The plan includes timeframes for the applicant to conduct a water audit, an element concerning future programmatic improvements and employee awareness and consumer education programs. The North Tract Facility has been developed using state of the art equipment and water use processes for meat processing. The amount of water used in these processes is largely dictated by USDA guidelines and sanitary requirements.

Based on review of the plans, staff conclude that the proposed water conservation activities meet the District's water conservation plan requirements.

Section 2.3(c) - The water source must be suitable for the consumptive use.

The UFA is a suitable source for the proposed agricultural and industrial uses; however, lower quality sources were evaluated as required by rule and are discussed in Section 2.3(e) below.

Section 2.3(d) - The source of the water must be capable of producing the requested amounts of water.

The applicant is proposing to withdraw up to 2.68 mgd annual average and up to 9.57 mgd as a maximum day withdrawal from the UFA. The groundwater model was utilized along with information obtained from the on-site APTs to evaluate whether the UFA is capable of supplying the requested quantities of water. Based on the groundwater modeling simulations and the APTs, the Floridan aquifer at this property is capable of producing large quantities of groundwater from wells installed into the UFA. Therefore, District staff conclude that the UFA at this site is fully capable of producing the requested quantities of groundwater.

Section 2.3(e) - Except when the use is for human food preparation or direct human consumption, the lowest acceptable quality water source must be utilized that is suitable for the purpose and is technically, economically, and environmentally feasible.

Section 2.3(e) provides that reclaimed water must be used in place of higher quality groundwater when readily available unless the applicant demonstrates its use is economically, environmentally, or technologically infeasible. The applicant performed a detailed analysis on whether the use of reclaimed water is feasible. The nearest source of reclaimed water is the City of Ocala, which is approximately 14 miles away. In order to utilize this source of reclaimed water, the applicant and/or utility provider would have to construct significant transmission lines to convey the reclaimed water to the site. The use of the reclaimed water would require the applicant to construct a large transmission system, storage ponds and surface water pumping stations on-site. Finally, the City of Ocala is currently developing a large-scale reclaimed water recharge project of its own; therefore, reclaimed water is less available now than it was in 2014 when this issue was first evaluated for this project. Due to the fact that reclaimed water availability has decreased and is still variable over the course of the year, the applicant would still need to construct wells in order to have groundwater to ensure an adequate water supply.

The applicant analyzed the costs associated with reclaimed water utilization and demonstrated that the costs rendered the use of reclaimed water economically infeasible. In addition, staff conclude that reclaimed water is not readily available due to the significant distance of the sources from the site and because the City of Ocala is developing a recharge project of its own which would utilize its reclaimed water.

The applicant also performed a detailed analysis on whether the use of other lower quality water sources is feasible. In addition to the use of reclaimed water (discussed above), the applicant evaluated whether surface water or captured storm water could be utilized to meet the water needs of this project. Specifically, the applicant evaluated whether the use of surface water from the Ocklawaha River and from on-site captured storm water was available and feasible.

As with reclaimed water, in order to utilize surface water sources, the applicant and/or utility providers would have to construct significant transmission lines plus pumping stations to withdraw and convey the surface water to the site. In addition, use of the lower quality water sources would require the applicant to construct the following on-site: a large transmission system, storage ponds and surface water pumping stations. Finally, since the surface water would be an unreliable source and may not be able to supply the water needs during dry periods, the applicant would still need to construct wells in order to use groundwater as a reliable supplemental source.

The applicant analyzed the costs associated with all the above and demonstrated that the costs rendered the use of lower quality water sources economically infeasible. Specifically, the applicant looked at the costs associated with the various uses of lower quality source options and then analyzed how the costs would impact their earnings with respect to the marketplace for a similar product. The analyses show that implementing any of the lower quality source options would add significant costs, risks and uncertainty to the project and would create a price differential for the product resulting in an unfair economic burden that will likely make them uncompetitive with similar grass-fed operators. In addition, the applicant states that the additional costs would significantly reduce the grass-fed beef product premium sought by the applicant which is the basis for desiring to raise grass-fed beef over conventional beef (47% reduction). Based on the analyses submitted, staff conclude that the use of lower quality sources of water is not economically feasible to implement at this time.

Section 2.3(f) - The use must not cause harm to existing off-site land uses resulting from hydrologic alterations.

Staff evaluated whether the proposed use will cause harm to existing off-site land uses resulting from hydrologic alterations. As part of this evaluation, staff evaluated whether the proposed use will cause or contribute to off-site flooding. The proposed use of water is primarily for irrigation of pasture and crops on a supplemental basis when rainfall is insufficient to meet plant needs. As such, the applicant will only be irrigating during dry periods. Also, irrigation will occur in a very efficient manner and is designed to provide the amount of water needed by pasture and crops. The applicant will not be over-irrigating or irrigating during wet periods. As such, any water that is used for irrigation will remain on site.

(g) The use must not cause harm to the water resources of the area in any of the following ways:

1. The use must not cause harmful water quality impacts to the water source resulting from the withdrawal or diversion.

The applicant evaluated whether the proposed withdrawals would seriously harm the water quality of the source. Specifically, the applicant evaluated the potential for groundwater contamination due to the movement or migration of contaminated groundwater within the Floridan aquifer into the source water of the regional aquifer system. The applicant conducted a record search (Phase 1 Environmental Survey - Type) to identify any existing contaminated sites within a 2-mile distance around the perimeter of the property boundaries. The applicant performed a review of identified and reported properties included in the following databases:

NPL
CERCLIS
NFRAP
RCRA COR ACT
RCRA TSD
RCRA GEN
State & Federal Brownfields
ERNS
State Spills 90
SWL
LUST
UST & AST
Federal IC/EC
Dry Cleaners

The results of the record search revealed that there are no known contaminated sites within 2 miles around the perimeter of the project site. Based on this analysis, staff conclude that the proposed groundwater withdrawal will have no potential impact on the movement or migration of contaminated groundwater in the region.

2. The use must not cause harmful water quality impacts from dewatering discharge to receiving waters.

No dewatering discharges are proposed with this use.

3. The use must not cause harmful saline water intrusion or harmful upconing.

Staff evaluated whether the proposed use of groundwater from the UFA would cause or contribute to significant saline water intrusion. Because the project is located in North Central Florida on the eastern edge of the Ocala Uplift and is a significant distance from the coast, the fresh water portion of the Floridan aquifer is very thick and there are no known sources of saline water nearby.

Fresh water (water with chloride concentrations less than 250 mg/L) underlies the project site to depths of 1,700 feet below NGVD. Review of available groundwater quality information indicates that chloride concentrations in the area have been reasonably stable for many years. No problems concerning the salinity of water in the Floridan aquifer in this area are currently known to exist. Groundwater modeling indicates that the potentiometric surface decline will be very small, and staff conclude that the proposed consumptive use will not cause or contribute to significant saline water intrusion.

4. The use must not cause harmful hydrologic alterations to natural systems, including wetlands or other surface waters (on site or off-site).

and

5. The use must not otherwise cause harmful hydrologic alterations to the water resources of the area.

Wetlands

Staff evaluated whether the proposed withdrawals would cause harm to the water resources of the area including harm to wetlands and other surface waters. District staff utilized the NDMv5 model to evaluate the potential drawdown within the surficial aquifer within the project vicinity. Using the applicant's full requested allocation of 2.68 million gallons per day (mgd), for pumps on/off, the model predicted an individual drawdown of less than 0.4 foot. Using all other water users plus the applicant's full requested allocation of 2.68 mgd, the model predicted a cumulative drawdown of less than 0.6 foot in the surficial aquifer.

Staff inspected wetlands and other surface waters located within the area of predicted drawdown. In addition to field evaluations, staff reviewed aerial photography, soils, topography, vegetation and groundwater flow model results to determine if harm to these areas from groundwater withdrawals has occurred. Based on the hydrologic indicators observed at these locations, water levels appeared to be within the normal range of fluctuation.

Based on the results of the groundwater flow modeling simulations, field observations, and data review, District Staff does not anticipate adverse impacts to wetlands.

However, the applicant will implement a wetland and other surface water monitoring plan to enable the District to verify that the applicant's water use is not causing adverse impacts or harmful hydrologic alterations to the water resources of the area. This monitoring plan includes the establishment of two wetland monitoring sites and one Upper Floridian aquifer monitoring site in those areas where the model predicts an increased risk for impacts from groundwater withdrawals. Groundwater level monitoring must be initiated by June 30, 2017, at the new monitoring locations.

Springs

There are 115 springs identified as existing in the NDMv5 model area. Based on the modeling simulations conducted for this permit application, District staff does not anticipate harmful hydrologic impacts to these springs. Silver Springs is discussed below.

Staff performed additional evaluations on four small springs that occur in close proximity to the project site (Orange, Camp Seminole, Wells Landing and Tobacco Patch Landing). All of these springs have significantly altered spring pools or runs due to human construction and activity.

Orange Spring: This third-magnitude spring was historically touted for its therapeutic properties and was a tourist destination at one time. The spring is enclosed by a kidney shaped pool that allows the spring to stage up and then discharge over a constructed limestone wall and into the spring run. Currently, a water bottling facility (Premium Waters Inc., CUP no. 20-083-3138-3) is situated adjacent to the spring and withdraws water from the spring for small batch boutique bottling operation.

Camp Seminole Spring: This fourth-magnitude spring is enclosed by a heart shaped pool and wall. Historically developed as a honeymoon resort in the 1970's, it is currently used as a Girl Scout swimming area. A manual weir system allows water levels to be manipulated in order to fill or drain the swimming area as needed.

Wells Landing Spring: This third magnitude spring belongs to a group of springs called Cannon Springs Group. The springs were inundated by Rodman Reservoir after the construction of the Eureka Dam on the Ocklawaha River.

Tobacco Patch Landing Spring: This third magnitude spring is also inundated by Rodman Reservoir and is normally submerged under 4 to 5 feet of water.

Using the groundwater flow model, potential cumulative spring discharge changes were assessed from a predevelopment condition. The cumulative impacts modeling scenario predict the following reductions in flow: Wells Landing Spring 0.27 cfs; Tobacco Patch Landing Spring 0.11 cfs; Orange Spring 0.05 cfs; and Camp Seminole 0.05 cfs. The applicant's individual contribution to the overall cumulative reduction to spring flow at these springs was also assessed. Those results predict the following reductions in flow based on only the applicant's proposed withdrawals: Wells Landing Spring 0.12 cfs; Tobacco Patch Landing Spring 0.05 cfs; Orange Spring <0.01 cfs; and Camp Seminole <0.01 cfs. Based on this evaluation, staff conclude that reasonable assurance has been provided that there will not be harmful hydrologic impacts to these springs.

Silver Springs

At this time, there are no established Minimum Flows and Levels (MFLs) for Silver Springs or the Silver River. However, multi-year investigations by District staff are on-going to develop MFLs for Silver Springs and the Silver River. These minimum flows and levels would be the limits at which further withdrawals would be significantly harmful to the water resources or the ecology of the area.

In order to assess potential impacts to Silver Springs and the Silver River, staff utilized a technical memorandum entitled "Evaluation of the Effects of a Series of Hypothetical Flow Reductions in the Silver River on Hydroenvironmental Characteristics" which incorporated environmental, hydrological and topographical data from the on-going MFLs investigations on Silver Springs and the Silver River. Potential flow reductions from groundwater pumping of 5%, 10%, and 15% (from a no-pumping condition) on local hydroenvironmental characteristics of the Silver River were evaluated to determine the potential for harm to this system. For all of the environmental characteristics evaluated, a 5% reduction in flow was considered protective. For some environmental characteristics, flow reductions of 10% or greater were not considered protective. This increased risk of harm could potentially have an adverse impact on ecological structure and important ecological functions associated with floodplains. Examples of potential adverse impacts to these important ecological functions include:

- Decreased floodplain inundation resulting in oxidation and subsidence of floodplain organic soils, which support healthy wetland ecosystems;
- Reduction in aquatic and wetland habitat (refugia, reproductive and forage) leading to a decrease in secondary production (fish, reptiles, amphibians, wading birds, etc.);
- Reduction in transport of inorganic sediment and organic matter (which is the base of microbial foodweb and secondary production), due to reduced frequency of physical contact of water with riparian or floodplain vegetation, soils and detritus;
- Reduction in filtration and the absorption of nutrients.

In order to provide reasonable assurances that the proposed withdrawals would not cause harmful hydrologic impacts to Silver Springs and the Silver River, District staff used the low end of the increased risk range (5%) in its analysis. To predict when the reduction in flow at Silver Springs and the Silver River would exceed 5%, District staff linearly interpolated results from two groundwater model runs. A model run was completed using the 2014 actual water use data and a model run was done with current permitted allocations. In the current permitted allocations model run it was assumed that the year 2035 represented the time when pumping at the full permitted quantities would occur. This is consistent with the fact that most of the permits are issued for a duration of 20 years. For the year 2014 (using actual water use data), a 2.5% reduction in flow due to groundwater pumping is predicted. For the current permitted allocation run estimated to be year 2035, a 7.4% reduction in flow is predicted to occur. Linearly interpolating between these two years results in a predicted exceedance of the 5% reduction in flow in the year 2024.

Therefore, District staff conclude that the applicant has provided reasonable assurance that the proposed increase in the use of water will not contribute to or exacerbate cumulative harm to the ecological structure and functions of Silver Springs and the Silver River through 2023. Based on a consideration of the Special Duration Factors in Section 1.5.3, A.H., District staff is recommending approval of the increased allocation (2.68 mgd) for the years 2017 through 2023 and then a reduction to the current allocation of 1.46 mgd for the years 2024 through 2034. In the event that projects are later proposed for implementation to avoid the potential for adverse impacts, the applicant may request a permit modification to re-evaluate the recommended duration of the increased allocation.

Section 2.3(h) - The consumptive use shall not cause or contribute to a violation of state water quality standards in receiving waters of the state, as set forth in chapters 62-3, 62-4, 62-302, 62-520, and 62-550, F.A.C., including any anti-degradation provisions of sections 62-4.242(1)(a) and (b), 62-4.242(2) and (3), and 62-302.300, F.A.C., and any special standards for Outstanding National Resource Waters set forth in sections 62-4.242(2) and (3), F.A.C. The criterion is considered to have been met for any use of water that is required to obtain a permit or certification under Chapter 403, Florida Statutes, or a permit under Part IV of Chapter 373, Florida Statutes. For those applications relying on the issuance of a permit under Part IV of Chapter 373 to meet this criterion, a special permit condition will be attached that prohibits the consumptive use until such other permit is issued and the system is constructed.

While the applicant's agricultural activities on the North Tract (converting forested uplands to improved pasture) are statutorily exempt from the need to obtain an environmental resource permit (ERP), the applicant applied for and the District issued an ERP (No. IND-083-130588-4). The activities approved by the ERP provide additional water quality treatment through the establishment of vegetated upland buffers, retention berms, redistribution swales, and the implementation of other conservation practices in the North Tract. The applicant also indicated that it will implement applicable Department of Agriculture and Consumer Services (DACs) best management practices (BMPs) on the East Tract to prevent water quality impacts there. The implementation of the proposed BMPs provides reasonable assurance that there will not be a water quality impact from the East Tract. In the litigation of the Sequence 3 Permit (DOAH Case Nos. 14-2608, 14-2609 and 14-2610), the ALJ concluded that Sleepy Creek Lands, LLC, provided reasonable assurance that the consumptive use will not cause or contribute to a violation of state water quality standards in receiving waters of the state. In its final order issuing the Sequence 3 Permit, the District's Governing Board upheld the ALJ's determination.

The North Tract Facility has a valid Industrial Wastewater Facility Permit (42-FLA770221) that was issued by the Florida Department of Environmental Protection. This permit authorizes the operation of the industrial wastewater treatment and disposal system that serves the beef processing, commissary and pet food facilities. This permit provides reasonable assurance that potential water quality impacts related to the industrial facility have been addressed.

Section 2.3(i) - The use must be in accordance with any minimum flow or level and implementation strategy established pursuant to Sections 373.042 and 373.0421, F.S.

Minimum Levels

Staff evaluated whether issuance of the permit will cause the water level in groundwater or surface water bodies to be lowered below a minimum level established by rule. Eighty-seven surface water bodies (72 lakes, 5 springs, 3 wetlands, and portions of 2 rivers and 1 creek), with minimum levels specified in subsection 40C-8.031(4), F.A.C., are present within the NDMv5 model domain. In order to evaluate the potential for causing the lake levels to be altered below the established minimums, District staff used groundwater modeling results to assess the potential effects of the proposed withdrawals on the potentiometric surface of the UFA beneath lakes with established minimum levels within the model domain. Those results indicate that the proposed withdrawal will not cause a significant reduction in UFA potentiometric levels below these lakes. Staff conclude that reasonable assurances have been provided that the proposed withdrawals will not cause a water level to fall below its established minimum level.

Minimum Flows

Staff evaluated whether issuance of the permit will cause the rate of flow of springs and surface watercourses to be lowered below an established minimum flow. In order to evaluate the potential for spring flow alterations, District staff used groundwater modeling results to assess the potential effects of the proposed groundwater withdrawals on the established minimum flows. Model results predict no reduction in spring flows. Staff conclude that reasonable assurances have been provided that the proposed use of water will not adversely affect minimum flows for springs located within the NDMv5 model domain.

Section 2.3(j) - The use must not use water reserved pursuant to Subsection 373.223(4), F.S.

The Governing Board has reserved from use a certain portion of the surface water flow through Prairie Creek and Camps Canal south of Newnans Lake in Alachua County, Florida (Rule 40C-2.302, F.A.C., August 18, 1994). District staff used groundwater modeling results to assess the potential effects of the proposed withdrawals on SAS and UFA water levels in the area of Prairie Creek and Camps Canal. Model results predict no significant reduction in SAS and UFA water levels in the area of interest. Staff conclude that reasonable assurances have been provided that the proposed use of water will not impact surface water flow through Prairie Creek and Camps Canal which has been reserved from use by rule pursuant to rule 40C-2.302, F.A.C.

INTERFERENCE WITH Presently EXISTING LEGAL USES [Sections 1.3.7.2 and 3.6, a.h.]

As part of its evaluation to address potential interference with existing legal uses, District staff researched whether there are any existing wells near the project. Because there were so few wells near the project, District staff evaluated this criterion by performing an evaluation using a hypothetical well located at the property boundary. The evaluation included the following conservative assumptions:

1. A small domestic well located within 100 feet of the project boundary (areas of highest potential drawdown), installed either in the shallow aquifer or the Upper Floridan aquifer.

2. A centrifugal pump is used to pump the water from the shallow aquifer well with lift capacity of 25 feet.
3. A small submersible pump is used to pump water from the Upper Floridan aquifer well.
4. The minimum total hydraulic head for the submersible pump (including head loss in pipes and pressure at the house) is 60 psi or 135 feet.
5. A maximum withdrawal at 9.57 mgd was considered in the evaluation.

The various analyses performed indicate that the drawdown in the SAS and in the UFA at the edge of the property will not interfere with the hypothetical use described above. As such, staff concludes that the proposed groundwater withdrawals will have no adverse impacts on legal water uses.

PUBLIC INTEREST [Sections 1.3.7.3 and 2.3(b), A.H.]:

Staff evaluated whether the requested consumptive use of water is consistent with the public interest. Staff conclude that the requested increase in allocation of 1.26 mgd of groundwater is consistent with the public interest through 2023 because the proposed use of water is for a cattle farm/operation designed to raise grass-fed beef and is a registered business within the state of Florida. In addition, the use will not adversely affect water resources, qualifies as a reasonable-beneficial use based on the factors listed in 40C-2.301(2), (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), F.A.C..

On separate page

ATTACHMENT A

Well Information

Site Name: Sleepy Creek Lands North and East Tracts

Wells Detail								
District ID	Station Name	Casing Diameter (inches)	Casing Depth (feet)	Total Depth (feet)	Capacity (GPM)	Source Name	Status	Use Type
10819	ET-1	6	171	320	Unknown	FAS - Upper Floridan Aquifer	Active	unknown
10820	ET-2	12	175	425	1000	FAS - Upper Floridan Aquifer	Active	unknown
35878	A	12	354	415	Unknown	FAS - Upper Floridan Aquifer	Active	unknown
39777	ET-3	4	Unknown	390	Unknown	FAS - Upper Floridan Aquifer	Active	unknown
39874	ET-4	4	144	210	Unknown	FAS - Upper Floridan Aquifer	Active	unknown
39875	ET-5	4	144	210	Unknown	FAS - Upper Floridan Aquifer	Active	unknown
39876	ET-6	4	155	270	Unknown	FAS - Upper Floridan Aquifer	Active	unknown
39877	ET-7	12	Unknown	270	Unknown	FAS - Upper Floridan Aquifer	Active	unknown
411770	NT-1	12	Unknown	Unknown	1000	FAS - Upper Floridan Aquifer	Proposed	unknown
411771	NT-2	12	Unknown	425	Unknown	FAS - Upper Floridan	Proposed	unknown

						Aquifer		
411772	NT-3	12	Unknown	Unknown	1000	FAS - Upper Floridan Aquifer	Proposed	unknown
411773	NT-4	12	Unknown	Unknown	1000	FAS - Upper Floridan Aquifer	Proposed	unknown
411774	NT-5/10	12	Unknown	Unknown	1000	FAS - Upper Floridan Aquifer	Proposed	unknown
411775	NT-6	12	Unknown	Unknown	1000	FAS - Upper Floridan Aquifer	Proposed	unknown
411776	NT-7	12	Unknown	Unknown	1000	FAS - Upper Floridan Aquifer	Proposed	unknown
411777	NT-8	12	Unknown	Unknown	1000	FAS - Upper Floridan Aquifer	Proposed	unknown
411778	NT-9	12	Unknown	Unknown	1000	FAS - Upper Floridan Aquifer	Active	unknown
411779	NT-10	12	Unknown	Unknown	1000	FAS - Upper Floridan Aquifer	Removed	unknown
411780	NT-11	12	Unknown	Unknown	1000	FAS - Upper Floridan Aquifer	Proposed	unknown
411781	NT-12	12	Unknown	Unknown	1000	FAS - Upper Floridan Aquifer	Proposed	unknown
411782	NT-13	12	Unknown	Unknown	1000	FAS - Upper Floridan Aquifer	Proposed	unknown
411783	NT-14	12	Unknown	Unknown	1000	FAS - Upper Floridan	Proposed	unknown

						Aquifer		
411784	NT-15	12	Unknown	Unknown	1000	FAS - Upper Floridan Aquifer	Proposed	unknown
411804	NT-35	5	Unknown	Unknown	100	FAS - Upper Floridan Aquifer	Active	unknown
411805	NT-36	5	Unknown	Unknown	100	FAS - Upper Floridan Aquifer	Proposed	unknown
411806	NT-37	5	Unknown	Unknown	100	FAS - Upper Floridan Aquifer	Active	unknown
411807	NT-38	5	Unknown	Unknown	100	FAS - Upper Floridan Aquifer	Proposed	unknown
411808	NT-39	5	Unknown	Unknown	100	FAS - Upper Floridan Aquifer	Proposed	unknown
411809	NT-40	5	Unknown	Unknown	100	FAS - Upper Floridan Aquifer	Active	unknown
411810	NT-41	5	Unknown	Unknown	100	FAS - Upper Floridan Aquifer	Active	unknown
411811	NT-42	5	Unknown	Unknown	100	FAS - Upper Floridan Aquifer	Active	unknown
411812	NT-43	5	Unknown	Unknown	100	FAS - Upper Floridan Aquifer	Proposed	unknown
411813	NT-44	5	Unknown	Unknown	100	FAS - Upper Floridan Aquifer	Active	unknown
460649	Beef Plant 1	5	121	225	Unknown	FAS - Upper Floridan	Active	unknown

						Aquifer		
460650	Beef Plant 2	5	Unknown	Unknown	Unknown	FAS - Upper Floridan Aquifer	Active	unknown

Monitoring Wells Detail						
District ID	Station Name	Casing Diameter (inches)	Casing Depth (feet)	Total Depth (feet)	Source Name	Status
461070	MW-1			15	Surficial Aquifer	Proposed
461071	MW-2			15	Surficial Aquifer	Proposed
461072	MW-3	4	100	340	FAS - Upper Floridan Aquifer	Proposed

Conditions

1. All submittals made to demonstrate compliance with this permit must include CUP number 91926-4 labeled on the submittal. Submittals should be made on-line at www.sjrwm.com/permitting whenever possible.
2. With advance notice to the permittee, District staff with proper identification shall have permission to enter, inspect, observe, collect samples, and take measurements of permitted facilities to determine compliance with the permit conditions and permitted plans and specifications. The permittee shall either accompany District staff onto the property or make provision for access onto the property.
3. Nothing in this permit should be construed to limit the authority of the St. Johns River Water Management District to declare a water shortage and issue orders pursuant to Chapter 373, F.S. In the event of a declared water shortage, the permittee must adhere to the water shortage restrictions, as specified by the District. The permittee is advised that during a water shortage, reports shall be submitted as required by District rule or order.
4. Prior to the construction, modification or abandonment of a well, the permittee must obtain a water well permit from the St. Johns River Water Management District or the appropriate local government pursuant to Chapter 40C-3, F.A.C. Construction, modification, or abandonment of a well will require modification of the consumptive use permit when such construction, modification, or abandonment is other than that specified and described on the consumptive use permit application form.
5. Leaking or inoperative well casings, valves, or controls must be repaired or replaced as required to eliminate the leak or make the system fully operational.
6. The permittee's consumptive use of water as authorized by this permit shall not interfere with legal uses of water existing at the time of permit application. If interference occurs, the District shall revoke the permit, in whole or in part, to curtail or abate the interference, unless the interference associated with the permittee's consumptive use of water is mitigated by the permittee pursuant to a District-approved plan.
7. The permittee's consumptive use of water as authorized by this permit shall not have significant adverse hydrologic impacts to off-site land uses existing at the time of permit application. If significant adverse hydrologic impacts occur, the District shall revoke the permit, in whole or in part, to curtail or abate the adverse impacts, unless the impacts associated with the permittee's consumptive use of water are mitigated by the permittee pursuant to a District-approved plan.

8. The permittee shall notify the District in writing within 30 days of any sale, transfer, or conveyance of ownership or any other loss of permitted legal control of the Project and/or related facilities from which the permitted consumptive use is made. Where permittee's control of the land subject to the permit was demonstrated through a lease, the permittee must either submit documentation showing that it continues to have legal control or transfer control of the permitted system/project to the new landowner or new lessee. All transfers of ownership are subject to the requirements of Rule 40C-1.612, F.A.C. Alternatively, the permittee may surrender the consumptive use permit to the District, thereby relinquishing the right to conduct any activities under the permit.
9. A District-issued identification tag shall be prominently displayed at each withdrawal site by permanently affixing such tag to the pump, headgate, valve, or other withdrawal facility as provided by Rule 40C-2.401, F.A.C. The permittee shall notify the District in the event that a replacement tag is needed.
10. The permittee's consumptive use of water as authorized by this permit shall not adversely impact wetlands, lakes, rivers, or springs. If adverse impacts occur, the District shall revoke the permit, in whole or in part, to curtail or abate the adverse impacts, unless the impacts associated with the permittee's consumptive use of water are mitigated by the permittee pursuant to a District-approved plan.
11. The permittee's consumptive use of water as authorized by this permit shall not reduce a flow or level below any minimum flow or level established by the District or the Department of Environmental Protection pursuant to Section 373.042 and 373.0421, F.S. If the permittee's use of water causes or contributes to such a reduction, then the District shall revoke the permit, in whole or in part, unless the permittee implements all provisions applicable to the permittee's use in a District-approved recovery or prevention strategy.
12. The permittee's consumptive use of water as authorized by the permit shall not cause or contribute to significant saline water intrusion. If significant saline water intrusion occurs, the District shall revoke the permit, in whole or in part, to curtail or abate the saline water intrusion, unless the saline water intrusion associated with the permittee's consumptive use of water is mitigated by the permittee pursuant to a District-approved plan.
13. The permittee's consumptive use of water as authorized by the permit shall not cause or contribute to flood damage. If the permittee's consumptive use causes or contributes to flood damage, the District shall revoke the permit, in whole or in part, to curtail or abate the flood damage, unless the flood damage associated with the permittee's consumptive use of water is mitigated by the permittee pursuant to a District-approved plan.
14. All consumptive uses authorized by this permit shall be implemented as conditioned by this permit, including any documents incorporated by reference in a permit condition. The District may revoke this permit, in whole or in part, or take enforcement action, pursuant to Section 373.136 or 373.243, F.S., unless a permit modification has been obtained to address the noncompliance.

The permittee shall immediately notify the District in writing of any previously submitted information that is later discovered to be inaccurate.

15. This permit does not convey to the permittee any property rights or privileges other than those specified herein, nor relieve the permittee from complying with any applicable local government, state, or federal law, rule, or ordinance.
16. A permittee may seek modification of any term of an unexpired permit. The permittee is advised that Section 373.239, F.S., and Rule 40C-2.331, F.A.C., are applicable to permit modifications.
17. This permit will expire on June 10, 2034.
18. Maximum annual groundwater withdrawals on both the North and East Tracts for all uses combined must not exceed:
 - 668.0 million gallons (1.83 million gallons per day average) in 2017,
 - 978.2 million gallons (2.68 million gallons per day average) in years 2018 through 2023 and
 - 532.9 million gallons (1.46 million gallons per day average) in years 2024 through 2034.
 - The application rates (inches of supplemental irrigation/pivot) as provided in Table 1 of the Technical Staff Report are needed to meet crop demands for a 2 in 10 year drought event, lesser quantities shall be utilized in years with more rainfall.
19. Except as provided for in 2 in 10 year drought allocation condition, the groundwater withdrawals, on an annual average basis (5 in 10), from the Floridan aquifer for pasture irrigation and cattle watering shall not exceed:
 - 694.6 million gallons (1.90 million gallons per day average) in the years 2018 through 2023
 - 362.8 million gallons (0.99 million gallons per day average) in the years 2024 through 2034.
20. Maximum annual groundwater withdrawals for the beef processing facility must not exceed:
 - 25.6 million gallons (0.07 million gallons per day average) in 2017, and
 - 51.1 million gallons (0.14 million gallons per day average) in years 2018 through 2034.
21. Maximum annual groundwater withdrawals on just the East Tract must not exceed 174.9 million gallons (0.478 million gallons per day average).
22. If any process wastewater is disposed of via an irrigation pivot, the groundwater allocation for irrigation shall be reduced by an equivalent amount.

23. Prior to use, wells NT-1, NT-2, NT-3, NT-4, NT-5/10, NT-6, NT-7, NT-8, NT-9, NT-11, NT-12, NT-13, NT-14, NT-15, NT-35, NT-36, NT-37, NT-38, NT-39, NT-40, NT-41, NT-42, NT-43, NT-44, ET-1, ET-2, ET-3, ET-4, ET-5, ET-6, ET-7, A, Beef Plant 1, Beef Plant 2 (Station ID numbers 411770, 411771, 411772, 411773, 411774, 411775, 411776, 411777, 411778, 411779, 411780, 411781, 411782, 411783, 411784, 411804, 411805, 411806, 411807, 411808, 41180, 411810, 411811, 411812, 411813, 10819, 10820, 39777, 39874, 39875, 39876, 39877, 35878, 460649, 460650), must be equipped with totalizing flow meters. All flowmeters must measure within +/- 5% of actual flow, be verifiable and be installed according to the manufacturer's specifications.

24. The permittee shall document proper installation of flow meters by submitting a copy of the manufacturer's specifications and photographs of the installed flow meters, or by a site visit by District staff, within 30 days of meter installation.

25. Total withdrawals from Wells NT-1, NT-2, NT-3, NT-4, NT-5/10, NT-6, NT-7, NT-8, NT-9, NT-11, NT-12, NT-13, NT-14, NT-15, NT-35, NT-36, NT-37, NT-38, NT-39, NT-40, NT-41, NT-42, NT-43, NT-44, ET-1, ET-2, ET-3, ET-4, ET-5, ET-6, ET-7, A, Beef Plant 1, Beef Plant 2 (Station ID numbers 411770, 411771, 411772, 411773, 411774, 411775, 411776, 411777, 411778, 411779, 411780, 411781, 411782, 411783, 411784, 411804, 411805, 411806, 411807, 411808, 41180, 411810, 411811, 411812, 411813, 10819, 10820, 39777, 39874, 39875, 39876, 39877, 35878, 460649, 460650), must be recorded continuously, totaled monthly, and reported to the District at least every six months from the initiation of the monitoring using Form No. EN-50. The reporting dates each year will be as follows for the duration of the permit:

Reporting Period	Report Due Date
January-June	July 31
July - December	January 31

26. The permittee must maintain all meters. In case of failure or breakdown of any meter or other flow measuring device, the District must be notified in writing within 5 days of its discovery. A defective meter must be repaired or replaced within 30 days of its discovery.

27. The permittee must have all flow meters on wells NT-1, NT-2, NT-3, NT-4, NT-5/10, NT-6, NT-7, NT-8, NT-9, NT-11, NT-12, NT-13, NT-14, NT-15, NT-35, NT-36, NT-37, NT-38, NT-39, NT-40, NT-41, NT-42, NT-43, NT-44, ET-1, ET-2, ET-3, ET-4, ET-5, ET-6, ET-7, A, Beef Plant 1, Beef Plant 2 (Station ID numbers 411770, 411771, 411772, 411773, 411774, 411775, 411776, 411777, 411778, 411779, 411780, 411781, 411782, 411783, 411784, 411804, 411805, 411806, 411807, 411808, 41180, 411810, 411811, 411812, 411813, 10819, 10820, 39777, 39874, 39875, 39876, 39877, 35878, 460649, 460650) checked for accuracy at least once every 10 years within 30 days of the anniversary date of permit issuance (7/14/2015), and recalibrated if the difference between the actual flow and the meter reading is greater than 5%. District Form No. EN-51 must be submitted to the District within 10 days of the inspection/calibration.

28. The permittee must implement the Water Conservation Plans submitted to the District on April 23, 2014 and October 3, 2016 in accordance with the schedules contained therein.
29. The lowest quality water source, such as reclaimed water or surface/storm water, must be used as irrigation water when deemed feasible pursuant to District rules and applicable state law.
30. The permittee's consumptive use shall not adversely impact wetlands, lakes, and spring flows or contribute to a violation of minimum flows and levels adopted in Chapter 40C-8, F.A.C., except as authorized by a SJRWMD-approved minimum flow or level (MFL) recovery strategy. If unanticipated adverse impacts occur, the SJRWMD shall revoke the permit in whole or in part to curtail or abate the adverse impacts, unless the impacts are mitigated by the permittee pursuant to a District-approved plan.
31. Prior to withdrawing water to irrigate a pivot area that is used for cattle grazing on the North Tract, the permittee shall construct the stormwater management system (System) authorized by permit IND-083-130588-4 in accordance with the construction sequencing document contained therein. After construction of all or part of the System, the permittee shall operate and maintain the constructed System in accordance with permit IND-083-130588-4.
32. The permittee must implement the Nutrient Management Plan for the East Tract dated April 30, 2014, and received by the District on May 2, 2014, in accordance with the schedule contained therein.
33. The permittee must conduct monitoring of wetlands and/or surface waters for each of the proposed areas listed below, including monitoring surficial, intermediate and/or Floridan aquifer groundwater levels associated with each wetland and/or surface water monitoring site. Groundwater level monitoring must be initiated at all monitoring locations by June 30, 2017.
New Monitoring Sites
 - a) Monitoring Location 1 (29°26'08" N, 82°01'31" W)
 - b) Monitoring Location 2 (29°25'54" N, 82°01'29" W)
34. Groundwater level data associated with the wetland and/or surface water monitoring must be collected for each of the sites listed in the following table and submitted electronically every six months to the District. To meet this reporting requirement, the permittee may utilize the Water Level Data-Wetland Monitoring Template for the wetland monitoring site(s), and the Water Level Data-Groundwater Template, for the Floridan and/or intermediate aquifer monitoring site(s). These templates are available through the District's e-Permitting website. Alternative submittal formats must be approved by the District. Data collected January through June must be submitted on or before July 31st of each year. Data collected July through December must be submitted on or before January 31st of each year. Groundwater level monitoring must be initiated at all monitoring locations by June 30, 2017.

Data collection must include water levels (weekly without data loggers, daily with data loggers) from wetland surficial, intermediate and Floridan aquifer monitoring wells. Data must be reported as elevation relative to North American Vertical Datum (NAVD) of 1988.

35. Wetland Monitoring Sites

Station ID	Station (wetland/surface water) Name	Source	Location
461070	MW-1	Surficial Aquifer	(29°26'08" N, 82°01'28" W)
461071	MW-2	Surficial Aquifer	(29°25'56" N, 82°01'27" W)

Groundwater Monitoring Sites

Station ID	Station (wetland/surface water) Name	Source	Location
461072	MW-3	Upper Floridan Aquifer	(29°26'02" N, 82°01'28" W)

36. Surficial aquifer monitoring wells for wetland monitoring site station ID numbers/station named

Station ID 461070/MW-1 (29°26'08" N, 82°01'28" W),

Station ID 461071/MW-2 (29°25'56" N, 82°01'27" W),

must be located in uplands near the upland/wetland interface. The surficial aquifer monitoring well design and specific locations must be approved in writing by the District prior to well construction. Surficial aquifer monitoring well depths must be at least 15 feet below the seasonal high water elevation unless prohibited by subsurface geologic conditions. The monitoring wells must be installed by or under the supervision of a licensed water well contractor.

37. Within 60 days of completion of each monitoring well installation, a Well Completion Report as well as a survey certified by a professional surveyor registered in the state of Florida shall be submitted for each monitoring well that includes:

- a) Horizontal position in latitude/longitude (degree minute second (DMS) coordinates) (YY°YY'YY.YYYY" N, XX°XX'XX.XXXX" W) relative to North American Datum (NAD) of 1983;
- b) Top of casing (TOC) vertical elevation to an accuracy of +/- 0.01 foot relative to the North American Vertical Datum (NAVD) of 1988;
- c) Land surface elevation to an accuracy of +/- 0.01 foot relative to the North American Vertical Datum (NAVD) of 1988;
- d) Top of screen depth (feet below land surface);
- e) Bottom of screen depth (feet below land surface);

- f) Depth to groundwater (feet below land surface);
 - g) Total depth of well (feet below land surface);
 - h) Mapped well location; and,
 - i) Lithologic description of subsurface soil profiles and underlying sediments.
38. By August 31, 2017, the permittee must submit to the District a detailed baseline monitoring report of the wetland hydrology and overall conditions, for Monitoring Location 1 (29°26'08" N, 82°01'31" W) and Monitoring Location 2 (29°25'54" N, 82°01'29" W), for the period from date of permit issuance to June 30, 2017. The baseline wetland monitoring report shall be submitted to the District. To meet this reporting requirement, the permittee may utilize the CUP Wetland Monitoring Template available through the District's e-Permitting website. If the CUP Wetland Monitoring Template is not available, the baseline report shall be submitted utilizing a District-approved electronic format.
39. The permittee must coordinate with District staff in order to establish and verify the following information:
- a) A survey, certified by a professional surveyor registered in the state of Florida, of location and elevation of limits of wetlands and/or surface waters as verified by District staff, pursuant to 62-340, Florida Administrative Code (F.A.C.) at multiple points (typically a minimum 3 points) around perimeter of the wetlands to be monitored.
 - b) Complete description of vegetation (including cover percentage for canopy, subcanopy, and groundcover species), hydrologic indicators and hydric soil indicators of each delineated point.
 - c) Complete soil profile description at each surface water/wetland delineated point (Reference: "Field Indicators of Hydric Soils in the United States"; USDA, NRCS).
 - d) Identification and delineation of the landward extent of where a hydric soil indicator occurs at the soil surface, if it is not at the wetland boundary point. A complete soil profile description shall be provided. Certified survey of location and elevation shall be submitted.
 - e) Identification and delineation landward extent of where a muck soil indicator (if present) occurs at the soil surface, if it is not at the wetland boundary point. A complete soil profile description shall be provided. Certified survey of location and elevation shall be submitted.
 - f) Identification of ordinary high water elevation (typically minimum of 3 data points) at each wetland boundary point. Certified survey of location and elevation for each data point shall be provided.
 - g) Photo documentation of items a. through f. above, including photographs of the surrounding area at each cardinal direction (e.g. north, east, south and west).
 - h) If the permittee elects to collect site-specific rainfall data, weekly rainfall data collected for monitoring period.
40. A hydrological and vegetative wetland/surface water monitoring report must be submitted to the District every five years subsequent to the baseline monitoring event. The five-year reports shall be submitted no later than August 31st of the submittal year and include the information, as described in the baseline monitoring report.

The five-year reports shall be submitted to the District. To meet this reporting requirement, the permittee may utilize the CUP Wetland Monitoring Template through the District's e-Permitting website. If the CUP Wetland Monitoring Template is not available, the five-year reports must be submitted utilizing a District-approved format.

41. The five-year hydrological and vegetative wetland monitoring reports must include graphs summarizing the water level data, collected rainfall data (when collected by the permittee) and wellfield pumpage data. The elevation of the surveyed upland/wetland, hydric soil at surface and/or muck soil at surface boundary locations must be indicated on the graphs. In addition, the report must include a brief analysis and discussion of trends and wetland health as well as any observed changes occurring at the location of the boundary data points that are identified in the baseline monitoring report. A double mass analysis and/or a time series analysis of rainfall, well levels, and elevations of data collection points must be included for each well and monitoring location.
42. By September 30, 2022, the permittee must meet with District staff to confirm the approach and specifics of the wetland monitoring plan for the next five-year period. By February 28, 2023, the permittee must provide any proposed changes to the wetland/surface water monitoring plan to the District for review and written approval.
43. Any re-evaluation of the wetland/surface water monitoring plan shall be completed using the most recently collected wetland, surface water and groundwater data for comparative purposes. A District-approved model to re-evaluate impacts of predicted drawdown within the surficial aquifer in the area of the wellfield to substantiate the need for any modifications of the monitoring plan may be required as part of any re-evaluation of the wetland/surface water monitoring plan.
44. If the permittee is unable to obtain or maintain legal access to any of the monitoring sites referenced above, the permittee must notify the District in writing within 15 days of concluding that access to any specific site is not possible. Within 45 days of this notification, the permittee must submit an alternative site to modify the monitoring network. Within six months of District approval of the monitoring network modification, the permittee must implement the approved change(s).
45. The permittee shall submit to the District a compliance report pursuant to subsection 373.236(4), Florida Statutes. Specifically, the compliance report shall be submitted by June 10, 2024. The report shall contain sufficient information to demonstrate that the permittee's use of water will continue to meet the conditions for issuance set forth in the District's rules that existed at the time the permit was issued for 20 years by the District. At a minimum, the compliance report must:
 - (a) Meet the submittal requirements of section 4.2 of the Applicant's Handbook: Consumptive Uses of Water, November 3, 2015;

(b) Verify that the permittee is using all available lowest quality sources of water to supply the needs of the project; and

(c) Demonstrate that the allocation is needed for efficient water use.

46. The permittee shall participate in developing and implementing any minimum flow or level (MFL) prevention/recovery strategy approved for the Silver Springs and the Silver River. The permittee's participation in developing and implementing an approved MFL prevention/recovery strategy shall be limited to offsetting or mitigating the impact of the permittee's groundwater allocation and shall not extend to offsetting or mitigating the impact of other water users. Such a prevention/recovery strategy may include without limitation any of the following actions or combinations of them:

- a) Identifying and developing additional water supplies and other actions, consistent with the authority granted under chapter 373;
- b) Promulgation of a rule or orders setting forth phasing or a time table, which will allow for the provision of sufficient water supplies for all existing and projected reasonable-beneficial uses, including development of additional water supplies and implementation of conservation and other efficiency measures concurrent with, to the extent practical, and to offset, reductions in permitted withdrawals, consistent with the provisions of chapter 373;
- c) Actions taken by the District or water users to meet the MFLs established in rule chapter 40C- 8;
- d) Elimination or reduction of permitted water uses; or

e) An impact avoidance/mitigation plan approved by the District, which offsets or mitigates the impact of the permittee's groundwater allocation on Silver Springs and the Silver River.

The District shall revoke the permit in whole or in part, if the permittee fails to implement its portion of any approved prevention/recovery strategy for these waterbodies in accordance with the schedule included in the strategy, as required by this condition.