June 11, 2019

Arjuna Weragoda, P.E.
Indian River County Department of Utility Services
1801 27th Street,
Vero Beach 32960-3388
Email: aweragoda@ircgov.com

Subject: Indian River County for Due Diligence and Project Review
Premier Citrus, LLC Property
Summary Letter Report

Dear Mr. Weragoda:

As requested by Indian River County Division of Utility Services (IRCDUS), Tetra Tech, Inc. (Tetra Tech) is pleased to provide this summary to describe the due diligence completed for the proposed purchase of a property located at 200 90th Avenue, 8250 1st Street, and 375 82nd Avenue, Vero Beach, Florida, 32968 (Site). IRCDUS is proposing to use this property for storage and/or disposal of treated wastewater from the West Regional Wastewater Treatment Facility (WRWWTF). This work was performed in accordance with our proposal, dated March 14, 2019.

BACKGROUND

IRCDUS needs additional storage/disposal options for the WRWWTF, especially during the rainy season when the demand for reuse water is reduced. The WRWWTF is sized for a treatment capacity of 6 million gallons per day (MGD), with it currently receiving and treating just over 2 MGD. Treated effluent from the WRWWTF is either sent out to the Reuse system, discharged to the Wetlands from which it can be further treated and discharged to the surface water, or sent to the Rapid Infiltration Basins (RIBs) for disposal. During the dry times, the permitted 6.97 MGD slow rate reuse system receives much of the flow, relying on the Wetlands with surface water discharge, and RIBs as backups. During the wet weather when the Reuse system is not an option for effluent disposal, the WRWWTF has to rely on the back-up sites for treatment/disposal. With a permitted treatment capacity of 4.0 MGD, the Wetlands further treats the effluent prior to discharge to surface waters. A portion of the capacity of the Wetlands (2.0 MGD) is also permitted as a disposal site for the Utility Department's South Wastewater Treatment Facility (SWWTF), effectively reducing the WRWWTFs disposal ability to discharge to the Wetlands by that volume used by the SWWTF. As the treated water flows through the Wetlands to the surface water discharge location, the permitted surface water discharge volume of 4.0 MGD is superseded by the requirement that the WRWWTF adhere to the annual Waste Load Allocation (WLA) assigned to the permit. The WLA was assigned during a timeframe when the WRWWTF was operating at a fraction of the permitted capacity and did not consider any growth of the wastewater collection system. The established WLA effectively reduces the volume of water that can be discharged out of the Wetlands down to approximately 0.4 MGD.

Wet weather conditions reduce the capacity of the wetlands and reduce or eliminate the demand for discharge via reuse water. Furthermore, WLA significantly reduce the remaining discharge capacity

throughout the year. The goal of this proposed reclaimed water storage/disposal project will be to provide sufficient capacity to store water during the wet season, supply reuse water in the dry season, and to achieve a zero discharge to the surface water.

The county has identified the Site, which is an approximately 286.14-acre property immediately to the south of the WRWWTF, as a potential site for the treated water storage. The Site is zoned RS-3 and is a former citrus grove. The County contacted Tetra Tech to complete the due diligence required to assess this potential project, zoning and permitting issues associated with project, geotechnical conditions, limitations from Federal Aviation Administration (FAA) or other agencies, and other business and environmental risks associated with the purchase of the proposed parcel.

We have reviewed the following permits and data made available to us including:

- Florida Domestic Wastewater Facility Permit FL0041637 from April 12, 2016 for the WRWWTF;
- Monthly average flow data from January 2012 to December 2018;
- Effluent quality data from January 2013 through July 2018.

TETRA TECH PREPARED PROJECT REPORTS

In order to assist IRCDUS in the due diligence process, evaluate the potential liabilities for the property purchase, and the feasibility for the proposed project, Tetra Tech has completed several assessments and prepared reports under separate cover, as summarized below.

Phase I Environmental Site Assessment

A Phase I Environmental Site Assessment (ESA) was conducted in accordance with ASTM International (ASTM) Standard Practice E 1527-13 and incorporates the United States Environmental Protection Agency (USEPA) All Appropriate Inquiry (AAI) Rule for evaluation of commercial real estate. This report provides a summary of available information as of May 31, 2019. The goal of this ESA is to identify whether Recognized Environmental Conditions (RECs) and/or business environmental risks are present on the property.

The Phase I ESA concluded the following:

- Potential for asbestos-containing material (ACM) due to the original age of the building dating back to 1964: any building materials such as structural steel fireproofing, acoustic finishes, ceiling texture, ceiling tile, suspended ceiling panels, textured and elastomeric paints, window putty, flexible duct connectors, rubbery pipe insulation tape, building wiring insulation, pipe, boiler, and vessel insulation, interior plaster, and duct insulation commonly contained asbestos until the late 1970s. Other types of ACM were commonly used until the middle to late 1980s such as drywall joint, compound, exterior stucco, sheet vinyl flooring, vinyl flooring products, flooring and other mastics (adhesives), roof tiles and coatings, asbestos-cement products and flues.
- Potential for lead-based paint (LBP) due to the original age of the building dating back to 1964: The federal department of Housing and Urban development estimates that 75% of homes built in the United States prior to 1978 contain LBP.

- Potential for mold due to water intrusion in the eastern residential building.

- The potential for soil and groundwater impacts from current and former petroleum and/or pesticide and herbicide ASTs, former USTs storing petroleum and/or pesticides and herbicides, and application of pesticides and herbicides, are potential RECs for the Site.

- Tetra Tech recommends additional investigation for the Site, including investigation of potential ACM, LBP, and mold. Investigation is also recommended for potential for soil and groundwater impact from the storage of petroleum and storage and application of pesticides and herbicides across the Site, which are potential RECs for the Site.

Phase II Environmental Site Assessment

Based on the Phase I ESA, three areas were identified for further investigation to determine the presence or absence of chemicals of potential environmental concern. These locations include 1) areas where historic citrus production occurred, 2) an above ground storage tank (AST) laydown area, and 3) an AST containment area and former underground storage tank (UST) area. The historic citrus production was broken down into the Grove area, to assess normal application across the site, and wash out areas, to assess best management practices associated with washout and mixing practices on site. The ACM, LBP, and mold assessments were not completed. Soil and groundwater sampling locations and a summary of results exceeding applicable cleanup target levels are provided on Figures 1 and 2.

AST Containment Area

Soil total recoverable petroleum hydrocarbons (TRPH) concentrations in exceedance of the Leachability Based on Groundwater Soil Cleanup Criteria (SCTL) for TRPH and dieldrin and benzo(a)pyrene total equivalents (BAP TEQ) concentrations in exceedance of the Residential Direct Exposure SCTL are present in the AST Containment Area. No field indications of contaminants were detected in the surface soils, and both SCTL exceedances were detected in the samples from the 2 to 4 feet. Field indications of soil impact were only observed on the north side of the AST containment area in the soils deeper than 2 feet. This location is in the vicinity of the gasoline dispenser and may be indicative of poor management practices during filling equipment on the pervious soil. The depth of the impact may be indicative of a release from the USTs that were located in this vicinity prior to 1989.

Groundwater impact in exceedance of the GCTLs was detected in temporary well AST-TMW-04, including ethylbenzene and naphthalene.

In an August 1, 2017 letter, The University of Florida presented a Residential Alternative Soil Cleanup Target Level (ASCTL) of 1 mg/kg for BAP TEQs, based on updated toxicity values and exposure assumptions. Detected concentrations of BAP TEQ were less than the 1 mg/kg Residential ASCTL; therefore, remediation of the BAP TEQ contaminated soil may not be required, based on the ASCTL. However, delineation of the soil impact to the most stringent (0.1 mg/kg) SCTL will be required in order to satisfy the requirements established in 62-780, F.A.C. Additional delineation is also required for TRPH in the vicinity of AST-04.

Tetra Tech recommends completing soil borings within 10 feet and on all four sides of soil samples AST-01 and AST-04 and collecting soil samples in each boring at the depth corresponding the highest photoionization detector (PID) reading with analysis for TRPH; polycyclic aromatic hydrocarbons (PAHs);

and benzene, toluene, ethylbenzene, and xylenes (BTEX). Additional borings are recommended if field screening above 10 parts per million (ppm) is detected in any boring. Once the soil delineation is complete additional recommendations will be required to address the groundwater impact identified in ATS-TMW-04.

Tetra Tech also recommends completing one soil boring along each side of the AST containment area. A soil sample will be collected at the 2- to 3- foot and 4- to 5- foot depth interval from each boring. Each sample collected from the 2- to 3- foot interval will be analyzed for dieldrin, and the 4- to 5- foot sample will be held for contingent analysis for dieldrin to vertically delineate any identified impact. Additional borings may be required to complete the delineation.

Tank Laydown Area

Soil arsenic concentrations in exceedance of the Industrial Direct Exposure SCTL are present in the Tank Laydown Area. The sample was collected from the subsurface composite sample; therefore, the location of the impact is not known. Additional assessment is required to delineate the arsenic impact in this area.

Tetra Tech recommends completing three soil boring along the north and south sides and one soil boring on the east and west sides of the Tank Laydown Area. A soil sample will be collected at the 2- to 3- foot and 4- to 5- foot depth interval from each boring. Each sample collected from the 2- to 3- foot interval will be analyzed for arsenic, and the 4- to 5- foot sample will be held for contingent analysis for arsenic to vertically delineate any identified impact. Additional borings may be required to complete the delineation.

Grove

No contaminants of concern were detected in exceedance of the most stringent SCTL in any surface soil sample collected from the Grove. Tetra Tech recommends no additional assessment in the Grove.

Wash Out Areas

Soil arsenic concentrations in exceedance of the Residential Direct Exposure SCTL are present in Washout Area 2, located adjacent to the artesian well at the corner of 4th Street and 90th Avenue. The sample was collected from the 1- to 2-foot depth interval. Additional assessment is required to delineate the arsenic impact in this area.

Tetra Tech recommends completing soil borings within 10 feet and on all four sides of soil sample WO2-S-1-2. A soil sample will be collected at the 1- to 2-foot and 4- to 5-foot depth interval from each boring. Each sample collected from the 1- to 2-foot interval will be analyzed for arsenic, and the 4- to 5-foot sample will be held for contingent analysis for arsenic to vertically delineate any identified impact. Additional borings may be required to complete the delineation.

Future Assessment and Remediation Costs

Determining exact costs for remediation of contaminated soil and groundwater is difficult without a complete site assessment. The recommended soil and groundwater sampling will be the first step towards completing the site assessment. Assuming petroleum contaminants are associated with the former USTs or historic surface releases at the dispenser, and assuming the excavation will not impact the containment area, a total cost of assessment and remediation of the known areas of concern would be $205,000. This cost includes all reasonably assumed assessment, sampling, soil excavation,

disposal, and reporting costs. This assessment does not include assessment or remediation of ACM, LBP, or mold, as the initial assessment of these items has not been conducted. This cost also excludes any demolition, tank abandonment, and restoration costs.

Figure 1 – Soil Sample Locations

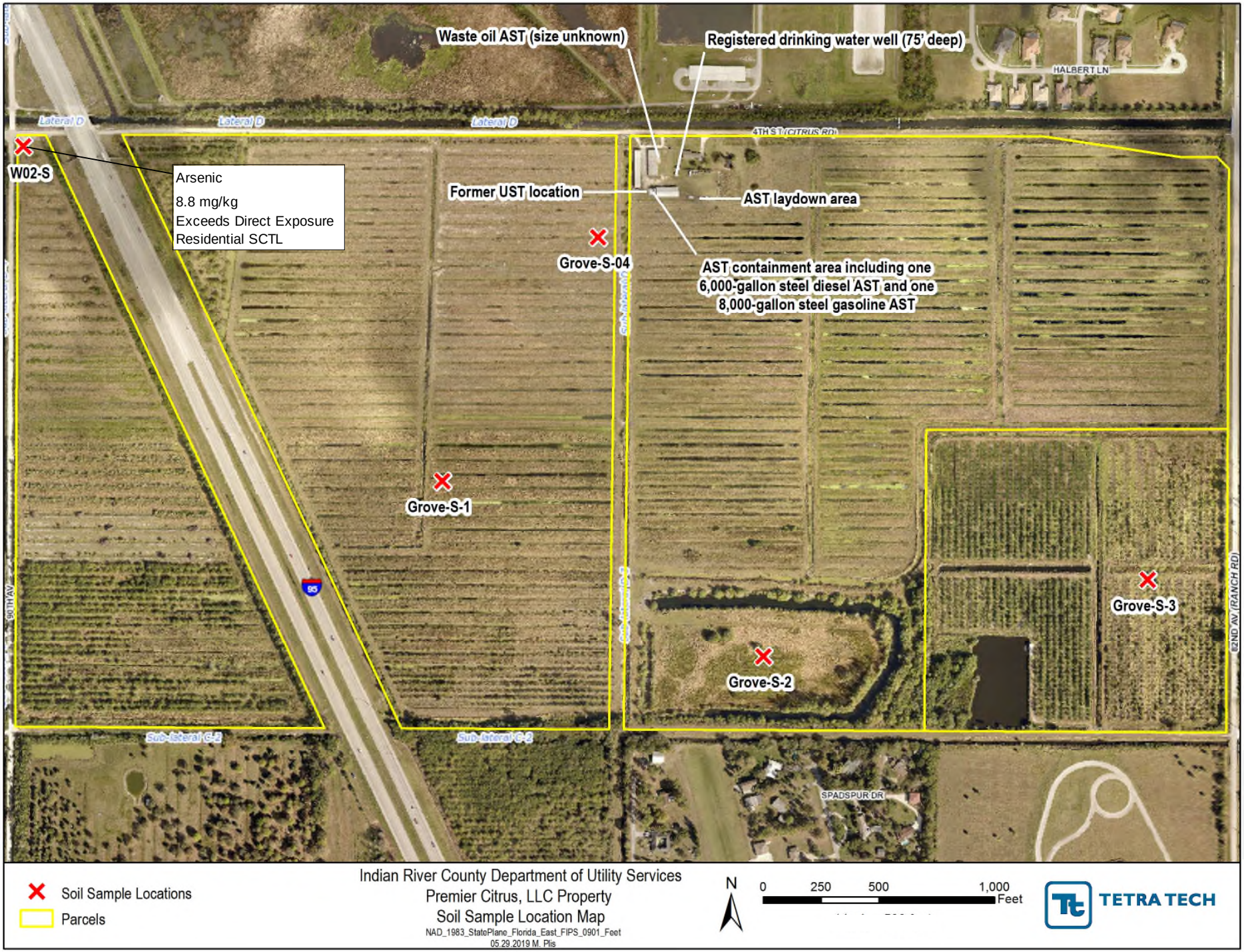
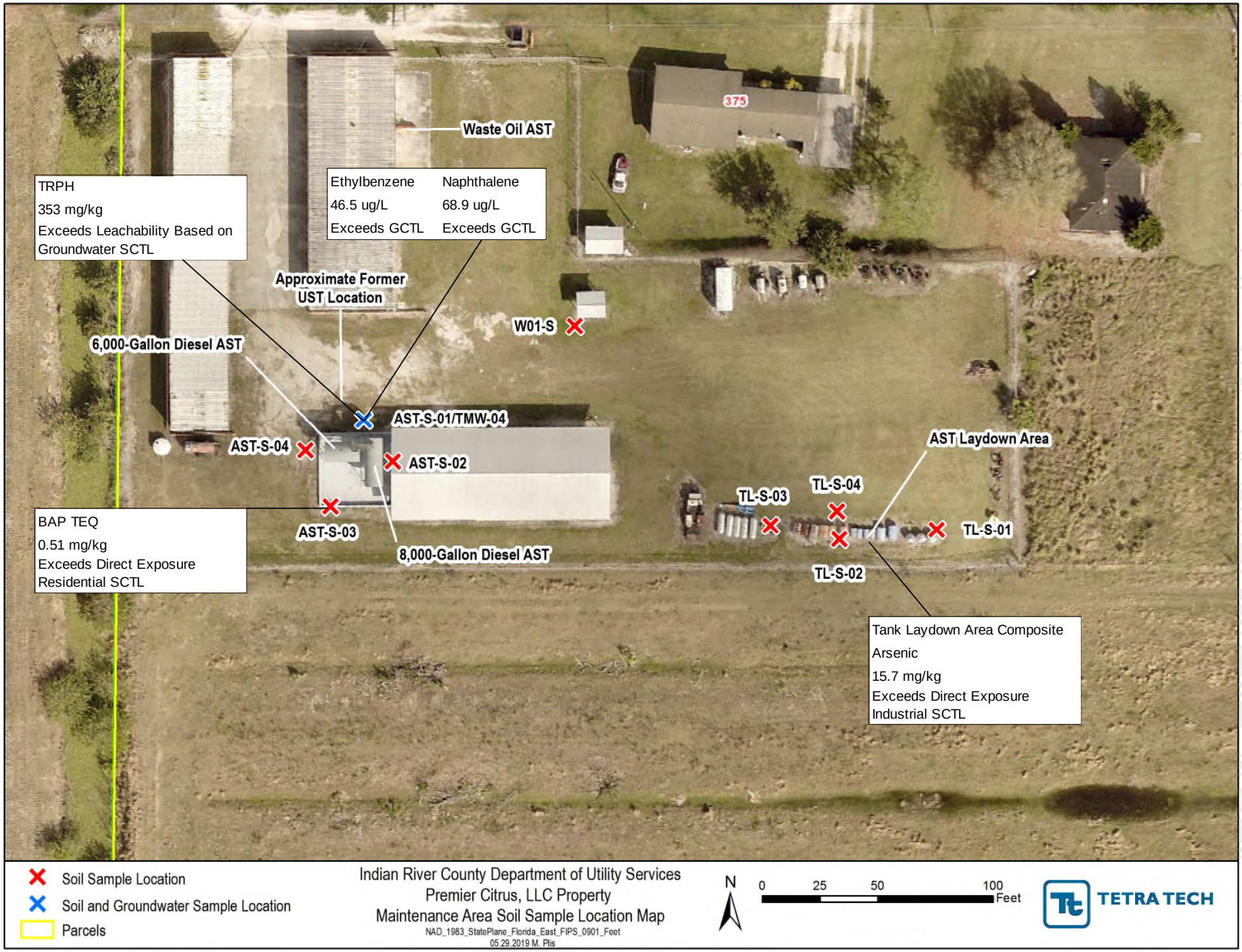


Figure 2 – Maintenance Area Soil Sample Locations



Desktop Ecological Assessment

A Desktop Ecological Assessment was completed, including review of surface waters and wetlands and threatened and endangered species for the study area. The report identified wetland and surface water areas on the Site. The presence of these features will require delineation and concurrence from regulators prior to development. Permits would be required for any impacts to these areas. Buffers may be established to limit the impacts to the features:

- For the state, the pond and wetland in southeast corner will require 15 foot minimum and 25-foot average buffer around what is to remain in post-development, to avoid secondary impacts.

- IRC land development code states that an upland buffer remaining around wetlands must comprise a minimum of ten square feet for each linear foot of wetland habitat that lies adjacent to uplands. Additionally, the upland edge buffer shall be located such that no less than fifty percent of the total shoreline is buffered by a minimum width of ten feet of upland habitat. Under county code, the wetland in southeast corner would need to meet this buffer; however, the code does not apply buffers to ditches, ponds, etc.

- Regarding ditch/canal surface water directly north of the site, this appears to be approximately 30 feet from the project boundary; therefore, any buffer requirements of state and county are satisfied.

The potential for multiple threatened and endangered species exists on the property. A biological field survey should be completed to confirm the presence or absence of these species to identify potential development constraints.

Preliminary Subsurface Soil Exploration

A Preliminary Subsurface Soil Exploration report was provided for the Site by Ardaman and Associates, a Tetra Tech Company. A total of eight standard penetration test (SPT) borings were advanced to a depth of 60 feet below land surface (bls). Soil samples were collected to visually classify in accordance with the United Soil Classification System and perform laboratory analysis for percent fines content, natural moisture content and organic content. Typically, the soils encountered in the SPT borings consisted of very loose to medium dense fine sand (Unified Soil Classification SP), fine sand with silt (SP-SM), fine sand with clay (SP-SC), and clayey fine sand (SC) to a depth of 20 feet below the existing ground surface. These soils were followed by medium dense to very dense fine sand (SP), fine sand with silt (SP-SM), fine sand with clay (SP-SC) and clayey fine sand (SC) with varying amounts of shell and cemented sand to the boring termination depth of 60 feet below the existing ground surface.

The soil profile for boring B-2 was anomalous from the other borings, with organic silt (67% and 55% organic contents with 324% and 251% moisture contents) encountered at approximate depths ranging from 33.5 to 60 feet. This soil condition needs to be further explored and evaluated and considered for suitability of impoundment berm support.

Groundwater was encountered at 5 to 6 feet below ground surface. Wells were installed in six of the borings for in-situ permeability (slug) testing. The results of the slug testing are provided in Table 1.

TABLE 1
RESULTS OF IN-SITU PERMEABLITY TESTING

Boring	Well Depth (feet bls)	Screened Interval (feet bls)	Static Water Level (feet bls)	Hydraulic Conductivity, Kh (feet/day)	Soil Description
B-1	12	7 to 12	3.9	1.25	Fine sand to fine sand with silt
B-2	11	6 to 11	3.0	1.17	Clayey fine sand
B-4	15	10 to 15	4.8	0.04	Clayey fine sand with some shell and cemented sand
B-6	20	15 to 20	2.9	4.52	Fine sand with clay and cemented sand
B-7	10	5 to 10	3.1	0.09	Fine sand with silt/clay
B-8	13	8 to 13	4.3	0.13	Fine sand

Based on review of a conceptual design of the site the crest of the impoundment berm will be approximately 12 feet wide at Elevation 30 feet NAVD, with interior and exterior side slopes at 3 horizontal to 1 vertical (3H:1V). The maximum height of the berm is anticipated to be around 10 feet above adjacent grades.

The perimeter berm will be constructed by excavating sandy soils with varying amounts of silts and clays from areas within the impoundment and placing the embankment fill in compacted lifts along the berm alignment. The excavation areas for berm embankment fill should be located a minimum distance of 100 feet from the inside toe of the perimeter berm. The soil borings generally encountered varying layers of relatively permeable fine sands with varying amounts of silty and clayey soils to less permeable clayey soils and organic silt. Some of the sandier soils if used for berm embankment will allow seepage through the berm unless thoroughly mixed with low permeability soils or a seepage barrier or liner is incorporated in the design.

OTHER LIMITATIONS AND CONSIDERATIONS

Zoning – The Site is zoned as District RS-3. In accordance with Indian River County Code of Ordinances, Title IX Chapter 911.07(4), limited public and private utilities and public and private utilities heavy have a special use exemption in RS-3 Districts.

Flood plain review – Review of the flood plain map provided by EDR shows the majority of the southern Site boundary, the western half of the northern Site boundary, and the area around the pond in the southern portion of the Site to be located in the 100-year flood plain. The Flood Plain Map is provided in the EDR NEPA Check Report, provided as Attachment A.

Sublateral D3 - The canal known as Sublateral D3 runs north to south through the center of the 375 82nd Avenue parcel. This canal is specifically excluded from the subject property and is owned by the Indian River Farms Water Control District. A 30-foot buffer is required from this feature for development. However, according to the Indian River Farms Water Control District, the section of Sublateral D3 within the Site is disconnected from the rest of the Indian River Farms Water Control District to the south. The

County may purchase this property, fill the canal, and develop over it, with proper permits, as was proposed in the Indian Spring PD in 2007.

Aerodrome FL 74 and FAA requirements – There is no avigation easement recorded or in any other way provided to Tetra Tech for the Site. A notice was filed in the County Record on December 5, 1989, to notify surrounding property owners of the overflight of their lands. In 2007, a letter from an IRC Senior Planner required an avigation easement to be established as a condition of approval for a planned development on the Site, but no avigation easement was filed. The Aerodrome runway is less than 3,200 feet in length (2,600 feet); therefore, in accordance with Title 14 of the Code of Federal Regulations, Section 77.9, The FAA requires notification if construction or alteration more than 200 feet above ground level or encroaches a plane outward 50 feet and upward 1 foot within 10,000 feet from the nearest point of the nearest landing and takeoff area. Additional information and a copy of the documents mentioned above are provided in the Phase I ESA.

CONCEPTUAL DESIGN

In order to address the storage and disposal limitations currently in place at the WRWWTF, Tetra Tech has prepared a conceptual design of a diked retention area on the eastern half of the property. The WRWWTF is sized for a treatment capacity of 6 MGD. The total WRWWTF effluent is currently operating at approximately 2 MGD. Reuse or disposal at the plant includes a wetland permitted for a total of 4 MGD discharge to surface water and land application; of that 4 MGD, up to 2.0 MGD of capacity can be taken up by the SWWTF. However, only approximately 0.4 MGD can be discharged to the drainage ditch without exceeding the total maximum daily load allocations for the surface water discharge to the Lateral D Canal. The plant is also permitted for an additional 0.1 MGD of land application via rapid infiltration basins, plus an additional 6.97 MGD of land application through a slow rate reuse system and rapid infiltration basins. Permitted and average discharge rates are provided in Table 2. The goal of the proposed reclaimed water storage will be to provide sufficient capacity to store water during the wet season, supply reuse water in the dry season, and achieve a zero discharge to the relief canal.

TABLE 2
PERMITTED AND AVERAGE DISCHARGES
DATA PROVIDED BY IRCDUS

Location	Permitted Discharge MGD	Average Discharge 1/2012-12/2018 MGD	Notes
Surface Water D-001	4.00*	0.31	Discharge from wetlands R-001 limited by Phosphorus TMDL allocation to approximately 0.4 MGD.
Land Application R-001	4.00*	1.16	The wetlands (R-001) can receive a maximum of 4 MGD total, of that, up to 2 MGD can be used for the SWWTF disposal.
Land Application R-002	6.97	1.05	Permit includes: 6.57 slow rate reuse distribution and 0.4 MGD RIBS
Land Application R-003	0.10	0.04	Permit includes 3 RIBs
Total	**11.07**	**2.56**	**N/A**

Notes: Permitted discharge for R-001 includes up to 2 MGD from the SWWTF
Average discharge noted above includes 0.052 MGD from the SWWTF
* - A total discharge of 4.00 MGD can be distributed to the wetlands system

Based on the above reports, Tetra Tech has created a conceptual design with buffers 30 feet from the canal, 25 feet from ponds and wetlands, and 15 feet from any property boundary. While purchase, filling, and development across the Sublateral D3 Canal is possible, the conceptual design provided a conservative assumption that the Sublateral D3 Canal will remain in place.

The conceptual design includes a reservoir with an earthen berm 10 feet in height, with side slopes 3 feet horizontally to 1 foot vertically (3H:1V) and top crest width of 12 feet. The conceptual design may differ from the final design and is presented as a simplified model of one potential option to achieve the project goals. If a reservoir is selected for the final design, it would likely include cells within the reservoir. The creation of these cells will reduce the capacity within the footprint, but they will allow for greater control of wave action and provide flexibility for discharge and maintenance of the reservoir. The berm slopes may be increased to 4:1 for ease of mowing, less maintenance, increased stability and decreased seepage. The crest width may be increased to increase stability, decrease seepage, and provide easier access for maintenance.

The conceptual reservoir covers an area approximately 107 acres. Based on a 3-foot freeboard in the reservoir, the reservoir capacity when loaded with 7.0 feet of water will store 28,455,111 $feet^3$ or 212.8 million gallons (MG) of water. The downstream (outside) slope and crest of the berm will be stabilized with grass and the upstream (inside) slope will be stabilized with a turf reinforcement mat. Fill from within the reservoir bottom will be used to build the berms, where possible. Additional fill will be brought from an outside source to create the earthen berm. Soils from excavations that may be necessary to remediate soil contamination described in the Phase II ESA may also be used in the creation of the berms, if proper

permitting form the Florida Department of Environmental Protection (FDEP) is obtained. The grading plan for the conceptual design is provided in Attachment B.

Simplified Water Balance

A simple water balance model was prepared to evaluate the Indian River County reservoir project. First the model was constructed to estimate an average hydrograph for the subject project using normal rainfall and temperature data. Aquifer recharge was simulated using 30-year normal rainfall data (*NOAA 1971-2000*) for the Vero Beach Municipal Airport located about 5.5 miles east-northeast of the site. The normal precipitation for this NOAA station is 51.93 inches/year. Normal temperature data from the same NOAA station was used to estimate the evapotranspiration (ET) rate using the Thornthwaite method. The calculated potential annual ET rate for the model area was 49.51 inches/year. The evapotranspiration rate in the water balance model had an applied ET extinction depth of 13 feet where the ET rate is essentially 0% at this depth and it increases evenly from that depth to 100% of the calculated rate at land surface. Table 3 shows the distribution of precipitation and the Thornthwaite potential evapotranspiration rate throughout a normal year.

A synthetic hydrograph was produced using the normal precipitation, calculated ET, an assumed 20% porosity for the surficial aquifer, and an estimated drainage factor 0.38 feet/week to account for vertical and horizontal flow from the site. The starting water table was set at 2.5 feet below land surface (bls). The water table fluctuated throughout the year between 1.38 and 4.32 feet bls, and it averaged 2.91 feet bls. Figure 3 shows the synthetic hydrograph produced.

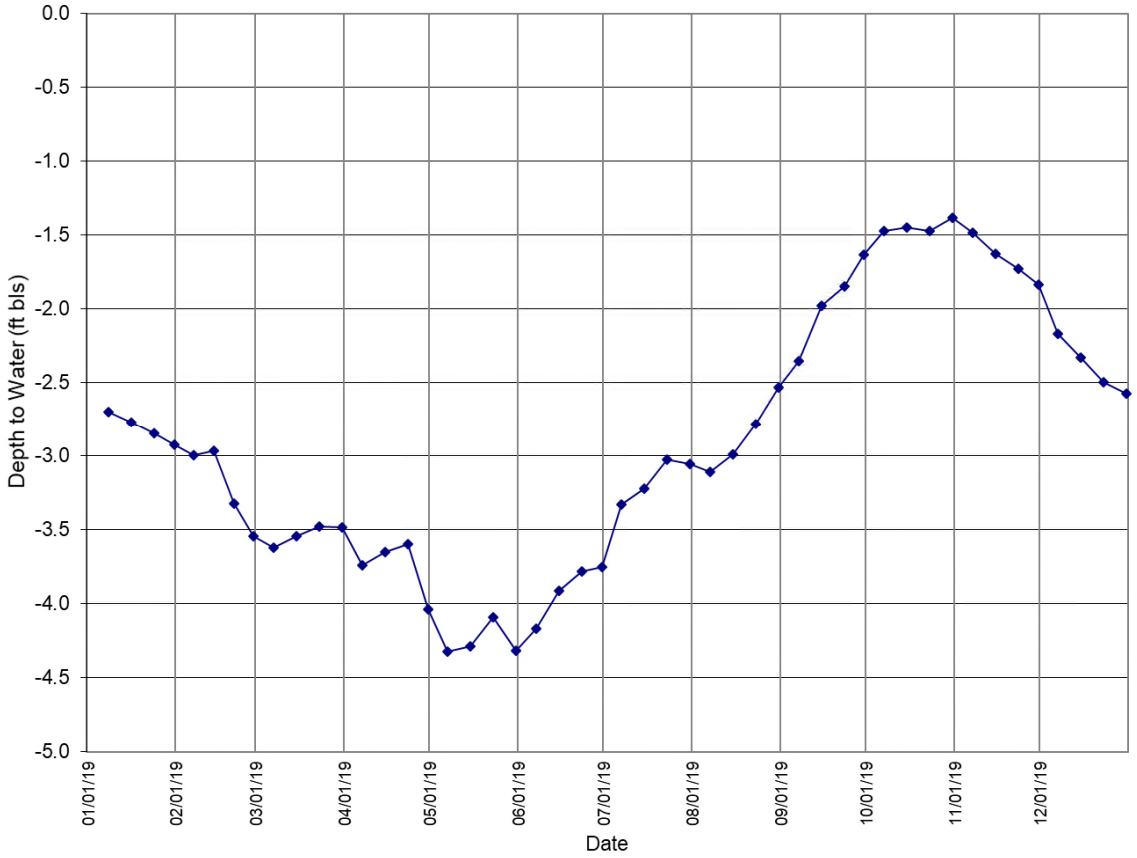


Figure 3. Synthetic Hydrograph for Indian River County Reservoir Project

Next a loading water balance model was constructed to simulate the loading of the reservoir at the proposed rate of 5.0 MGD. The precipitation and evapotranspiration rates for the previous model were also used in this loading model. The standard penetration test boring locations surrounding the proposed reservoir (B-4, B-6, B-7, and B-8) where slug tests were performed were used to estimate the hydraulic conductivity of the surficial aquifer in the area. The average horizontal hydraulic conductivity (K_h) is 1.2 feet/day, and the geometric mean for the same set of test results is 0.21 feet/day. To be conservative the geometric mean K_h was used in the model. The mean static water level in the same borings was 3.78 feet bls with an estimated average water elevation of 19.98 feet National Geodetic Vertical Datum (NGVD).

The proposed reservoir has a bottom elevation of 20 feet NGVD with an area of 3,972,345 feet^2 (91.19 acres). The reservoir will have 10-foot high berms with 3 feet of free board. At the elevation of 27 feet NGVD, the reservoir area is 4,158,139 feet^2 (95.46 acres). When loaded with 7.0 feet of water, the total storage of the reservoir is 28,455,111 feet^3 (212.8 MG). Without precipitation and evapotranspiration taken into account or horizontal and vertical groundwater flow away from the reservoir, the reservoir has a capacity to hold 42.6 days of plant flow at 5.0 MGD.

The loading model started with the water table at the bottom of the reservoir (20.0 feet NGVD). The model was run with weekly time steps similar to the simple water balance model. Precipitation was added to the water table elevation and the evapotranspiration rate was subtracted from that elevation. Next the

reclaimed water was added to storage for that week and the change in elevation was calculated to estimate the groundwater flow out from the reservoir using the Darcy equation. The hydraulic gradient was assumed to be the difference of the head above the 20-foot elevation over a 200-foot horizontal distance. As the reservoir level rose, the gradient and the groundwater flow increased.

Results from the loading water balance model are presented in Figure 4. The reservoir is loaded at the 5 MGD loading rate to the 27-foot elevation allowing for the maintenance of the 3-foot freeboard in approximately 100 days. For comparison, the loading water balance model was also run with a 4 MGD loading rate as presented in Figure 4, and the results show that the reservoir appears to maintain water levels below the 3-foot freeboard for the entire year.

As the design phase continues for the reservoir project, a detailed 3-dimensional groundwater flow model such as MODFLOW should be constructed to better address the loading of the site and the movement of stored water from the reservoir. Additional borings should also be constructed within the proposed reservoir area, and more slug tests and aquifer performance tests should be performed to collect necessary hydrogeologic parameters for the groundwater flow model.

TABLE 3
DISTRIBUTION OF PRECIPITATION AND
THORNTHWAITE POTENTIAL EVAPOTRANSPIRATION RATES
CLIMATE DATA FROM VERO BEACH REGIONAL AIRPORT NOAA STATION (1971-2000)

Month	Precipitation (inches)	Precipitation (feet)	Daily Average Temp (°F)	Daily Average Temp (°C)	Heat Index IM	Unadjusted Potential ET Month (inches)	30 Degree Latitude Daylight Factor	Adjusted Potential ET Month (inches)	Adjusted Potential ET Day (feet)
January	2.89	0.24083	63.00	17.22	6.50	1.66	0.90	1.50	0.00402
February	2.45	0.20417	63.90	17.72	6.79	1.80	0.87	1.56	0.00465
March	4.20	0.35000	67.70	19.83	8.05	2.44	1.03	2.52	0.00677
April	2.88	0.24000	71.50	21.94	9.39	3.22	1.08	3.48	0.00967
May	3.80	0.31667	76.20	24.56	11.13	4.38	1.18	5.17	0.01391
June	6.03	0.50250	80.40	26.89	12.77	5.62	1.17	6.58	0.01826
July	6.53	0.54417	81.70	27.61	13.29	6.04	1.20	7.25	0.01949
August	6.04	0.50333	81.60	27.56	13.25	6.01	1.14	6.85	0.01842
September	6.84	0.57000	80.70	27.06	12.89	5.72	1.03	5.89	0.01635
October	5.04	0.42000	76.40	24.67	11.21	4.44	0.98	4.35	0.01169
November	3.04	0.25333	70.50	21.39	9.03	3.01	0.89	2.67	0.00743
December	2.19	0.18250	64.70	18.17	7.05	1.92	0.88	1.69	0.00455

Annual (inches) 51.93 Annual (inches) 49.51

Daily (feet) 0.01186 Daily (feet) 0.01130

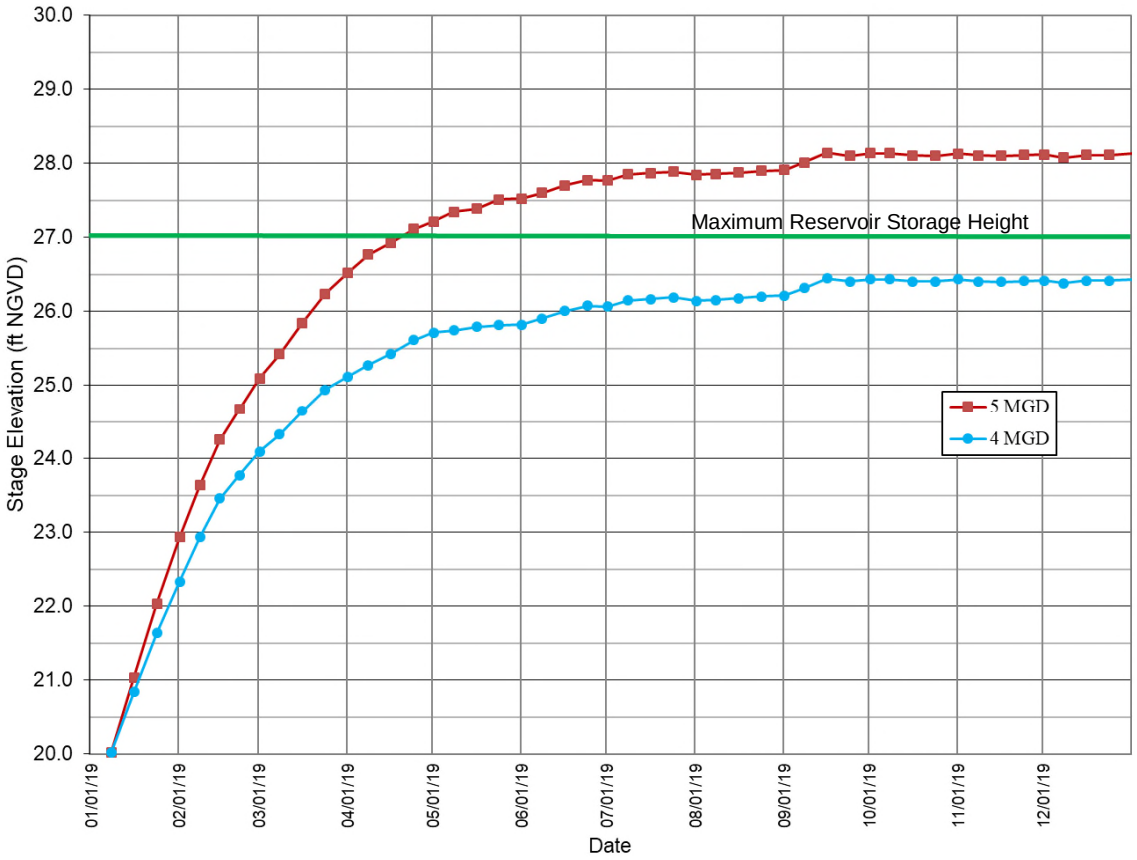


Figure 4. Loading Water Balance Model Hydrograph at 5 MGD and 4 MGD for Indian River County Reservoir Project.

Permits Required

An Environmental Resource Permit (ERP) and US Army Corp of Engineers (USACE) Section 404 permit would be required to address the environmental and stormwater related issues. The ERP will require a full review of site conditions for wetland determination/delineation and listed species. The Desktop Ecological Assessment has provided a summary of the ecological issues anticipated for the Site. An EDR NEPA Check Report is also provided as Attachment A. No historical sites were identified in the NEPA Check Report. The site may discharge stormwater into the Indian River County Water Control District structures, which will require a separate permit.

Indian River Farms Water Control District Permits are required for all new developments with a stormwater discharge limitation of 2 inches per 24 hours for a 25-year storm event. Drainage calculations and two (2) sets of signed and sealed plans must be submitted with the permit applications. All culverts or utilities that cross over/under District right-of-way must be permitted through the District office. Any other structures (gates, signs, pumps, etc.) must also be permitted by the District. No flap gates are allowed on outfall discharge pipes or structures. The District does not own or supply any culverts in or across its right-of-way.

A FDEP Permit to Discharge Process Wastewater from Domestic Wastewater Facilities will be required to discharge reclaimed water to the reservoir or other structure. In order to fully understand the needs of the plant, the storage and disposal requirements, and to comply with permitting requirements to discharge reclaimed water a water balance should be completed for the treatment process at the WRWWTF. This water balance should show the flow through the facility and operations contributing wastewater to the effluent. The water balance should also show average daily flows at intake and discharge points. Further, the balance will need to reflect seasonal variations in effluent production as well as variations in reclaimed water needs. Pursuant to FAC Chapter 62-610 a water balance for the "wettest year in 10" must be used to estimate the permitted effluent disposal capacity. Form 62-620.910(1) and Wastewater Application Form 2A, Permit for Domestic Wastewater Facilities will be required.

A total of 7 wells are present on the Site, installed to 250 feet deep, with consumptive use permits. One well is located on the site, drilled to 75 feet deep, and has a consumptive use permit. There is also a consumptive use permit for withdraw from the canal at the southern end of the Site. These permits will require a transfer of ownership upon purchase of the Site. In addition to the on-Site wells, at least 13 off site surface withdraws and two wells (250 feet and 300 feet deep) with consumptive use permits have been identified within one mile of the Site. In addition, domestic supply wells are located within 500 feet of the Site. Domestic supply wells in the area are typically approximately 75 feet deep. The groundwater flow model for final construction and permitting should account for potential water quality impacts to these wells.

Permitting timeframes for ERP, USACE Section 404, and FDEP Wastewater permits may require 12-18 months, including site investigations, design preparation, application submittals, reviews by the regulatory agencies, public hearings, and responses to agency requests for additional information. This estimate on timeframe assumes no public opposition. Note, a variety of other circumstances may affect permitting timeframes.

Note, these determinations were made by review of publicly available information. Land use, permitting, and publicly available information is subject to change, and formal determinations for land use and compliance would need to be discussed with state and local officials in pre-application meetings.

Cost

The total estimated cost for the conceptual reservoir is provided in Table 4. A detailed breakdown of costs is provided in Attachment C.

TABLE 4
SUMMARY OF COSTS

Component	Opt. 1	Opt. 1A	Opt.2	Opt. 2A
Engineering, Design, and Construction Oversight	$467,988	$497,338	$584,985	$629,010
Construction	$4,208,338	$5,243,622	$6,271,175	$7,864,401
Total Cost Estimate for 3:1 slope with 12' peak width on berm	**$4,676,326**	**$5,740,960**	**$6,856,160**	**$8,493,411**
Total Cost Estimate for 4:1 slope with 15' peak width on berm	**$6,079,224**	**$7,143,858**	**$8,913,008**	**$10,550,259**

Notes: Opt. 1 – 107-acre reservoir with no internal cells
Opt. 1A – 107-acre reservoir with 6 internal cells
Opt.2 – 159-acre reservoir with no internal cells
Opt. 2A – 159-acre reservoir with 8 internal cells

The above costs are for improvements on the subject Site only, and do not include mechanical improvements and transmission to or from the WRWWTF. The estimates presented in Table 4 are general order of magnitude costs, without detailed engineering data and subsequently have wide accuracy ranges. This level of cost estimating is intended for project screening and concept evaluation. It is assumed that a detailed design analysis and subsequent value engineering will occur during the planning phase and a more detailed cost estimate will be completed at that time.

CONCLUSION

Site conditions appear to be permittable by the FDEP, USACE, and St. John's River Water Management District, though new information and evaluation would be required in order to prepare and submit new applications for the expansion concept.

There are known contaminants of concern on the site in exceedance of applicable FDEP Soil and Groundwater Cleanup Criteria, and ACM, LBP, and mold are also likely to be present in the structures at the Site. To date, assessment of these contaminants of concern has been limited. Additional assessment and remediation of will be required at the Site. ACM, LBP, and mold will need to be evaluated prior to renovation or demolition of site structures to determine the risks and mitigation requirements.

Based on the published information related to flood plain, ponds, streams, and wetland locations, there is adequate land to create the conceptual expansion. Additional ecological and geotechnical evaluations will be required. Based on the simple water balance completed with the limited available information on the concept, the conceptual design would be able to accept approximately 4 MGD average daily flow, providing significant additional capacity for the WRWWTF. The conceptual design and water balance are simplified, and the final design would likely contain multiple cells, thereby limiting the storage capacity in the same given area. The conceptual design used approximately 107 of the 286 acres of available land for water storage, leaving additional opportunities for the evaluation and use of wetlands, RIBs, tanks, reservoir storage, spray fields and/or other technologies for future expansion. Cost options for additional reservoir space are presented above. Models for the additional reservoir space and alternate berm construction have not been run on these specific options. Further assessment can be conducted to provide the most efficient use of the available land; however, this conceptual design and evaluation show

that there is sufficient land and Site conditions to provide storage options for flexibility in the operations of the WRWWTF at full plant capacity.

Should you have any questions or require additional information, please feel free to contact me at (321) 636-6470.

Sincerely,

TETRA TECH, INC.

Matt Shelton
Project Manager

C: Rick Shmurak, P.E.
Megan Berg, P.E.

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