**Plans, specifications and supporting documents shall be prepared in accordance with** [**15A NCAC 02H .0400**](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20h/subchapter%20h%20rules.pdf) **(if necessary),** [**15A NCAC 02L .0100**](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20l/subchapter%20l%20rules.pdf)**,** [**15A NCAC 02T .0100**](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/subchapter%20t%20rules.pdf)**,** [**15A NCAC 02T .0700**](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/subchapter%20t%20rules.pdf)**,** [**Division Policies**](http://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/non-discharge-permitting-unit/policies) **and** [**good engineering practices**](http://www.ncbels.org/rulesandlaws.html)**. Failure to submit all required items will necessitate additional processing and review time.**

##### *For more information, visit the Water Quality Permitting Section’s* [*Non-Discharge Permitting Unit website*](http://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/non-discharge-permitting)

**General** – When submitting an application to the Water Quality Permitting Section’s Non-Discharge Permitting Unit, please use the following instructions as a checklist in order to ensure all required items are submitted. Adherence to these instructions and checking the provided boxes will help produce a quicker review time and reduce the amount of requested additional information.

Unless otherwise noted, the Applicant shall submit one original and two copies of the application and supporting documentation.

1. **Cover Letter** (All Application Packages):

List all items included in the application package, as well as a brief description of the requested permitting action.

1. **Application Fee** (All New and Major Modification Application Packages):

Submit a check, money order or electronic funds transfer made payable to: North Carolina Department of Environmental Quality (NCDEQ). The appropriate fee amount for new and major modification applications may be found at: [Standard Review Project Fees](http://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/non-discharge-permitting-unit/fees).

1. **Wastewater Irrigation Systems (FORM: WWIS 06-16) Application** (All Application Packages):

Submit the completed and appropriately executed Wastewater Irrigation Systems (FORM: WWIS 06-16) application. Any unauthorized content changes to this form shall result in the application package being returned. If necessary for clarity or due to space restrictions, attachments to the application may be made, as long as the attachments are numbered to correspond to the section and item to which they refer.

If the Applicant Type in Item I.2. is a corporation or company, provide documentation it is registered for business with the [North Carolina Secretary of State](https://www.sosnc.gov/search/index/corp).

If the Applicant Type in Item I.2. is a partnership or d/b/a, enclose a copy of the certificate filed with the Register of Deeds in the county of business.

The facility name in Item II.1. shall be consistent with the facility name on the plans, specifications, agreements, etc.

The Professional Engineer’s Certification on Page 12 of the application shall be signed, sealed and dated by a [North Carolina licensed Professional Engineer](https://www.membersbase.com/ncbels-vs/public/searchdb.asp).

The Applicant’s Certification on Page 12 of the application shall be signed in accordance with [15A NCAC 02T .0106(b)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0106.pdf). Per [15A NCAC 02T .0106(c)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0106.pdf), an alternate person may be designated as the signing official if a delegation letter is provided from a person who meets the criteria in [15A NCAC 02T .0106(b)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0106.pdf).

If this project is for a renewal without modification, use the [Non-Discharge System Renewal (FORM: NDSR)](https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/LAU/NDSR%2006-16.docx) application.

1. **Property Ownership Documentation** (All Application Packages):

* Per [15A NCAC 02T .0504(f)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0504.pdf), the Applicant shall demonstrate they are the owner of all property containing the wastewater treatment, storage and irrigation facilities:

Legal documentation of ownership (i.e., [GIS](http://www.lib.ncsu.edu/gis/counties.html), deed or article of incorporation), or

Written notarized intent to purchase agreement signed by both parties with a plat or survey map, or

Written notarized lease agreement that specifically indicates the intended use of the property and has been signed by both parties, as well as a plat or survey map. Lease agreements shall adhere to the requirements of [15A NCAC 02L .0107](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20l/15a%20ncac%2002l%20.0107.pdf).

Provide all agreements, easements, setback waivers, etc. that have a direct impact on the wastewater treatment, conveyance, storage and irrigation facilities.

1. **Soil Evaluation** (All Application Packages that include new irrigation sites):

Per [15A NCAC 02T .0504(b)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20l/15a%20ncac%2002l%20.0504.pdf) and the [Soil Scientist Evaluation Policy](https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/APS%20Policies/SoilsEvaluationPolicy-20080912.pdf), submit a detailed soil evaluation that has been signed, sealed and dated by a [North Carolina Licensed Soil Scientist](http://ncblss.org/lss-directory.pdf) and includes at a minimum:

The report shall identify all the sites/fields with project name, location, and include a statement that the sites/fields were recommended for the proposed land application activity.

Field delineated detailed soils map meeting all of the requirements of the [Soil Scientist Evaluation Policy](https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/APS%20Policies/SoilsEvaluationPolicy-20080912.pdf).

Soil profile descriptions meeting all of the requirements of the [Soil Scientist Evaluation Policy](https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/APS%20Policies/SoilsEvaluationPolicy-20080912.pdf).

Provide all soil boring logs performed at the site.

Standard soil fertility analysis conducted no more than one year prior to permit application for each map unit in the soil map legend for the following parameters:

|  |  |  |
| --- | --- | --- |
| Acidity | Exchangeable sodium percentage (by calculation) | Phosphorus |
| Base saturation (by calculation) | Magnesium | Potassium |
| Calcium | Manganese | Sodium |
| Cation exchange capacity | Percent humic matter | Zinc |
| Copper | pH |  |

* Saturated hydraulic conductivity (KSAT) data that shall include at a minimum:

A minimum of three KSAT tests shall be conducted in the most restrictive horizon for each soil series in the soil map.

All KSAT tests shall be conducted in areas representative of the site.

All KSAT tests shall be run until steady-state equilibrium has been achieved.

All collected KSAT data shall be submitted, including copies of field worksheets showing all collected readings.

Submit a soil profile description for each KSAT data point that shall extend at least one foot below the tested horizon.

* Soil evaluation recommendations shall include at a minimum:

A brief summary of each map unit and its composition and identification of minor contrasting soils.

Maximum irrigation precipitation rate (in/hr) for each soil/map unit within the proposed irrigation areas.

Seasonal irrigation restrictions, if appropriate.

Identification of areas not suitable for wastewater irrigation.

Recommended geometric mean KSAT rate to be used in the water balance for each soil/map unit based upon in-situ measurement of the saturated hydraulic conductivity from the most restrictive horizon.

Recommended drainage coefficient to be used in the water balance based upon comprehensive site evaluation, review of collected onsite data, minor amounts of contrasting soils and the nature of the wastewater to be applied.

Recommended annual hydraulic loading rate (in/yr) for each soil/map unit within the proposed irrigation areas based upon in-situ KSAT measurements form the most restrictive soil horizon.

NOTE – If the soil evaluation was performed more than one year prior to the submittal of this application package, a statement shall be included indicating that the site has not changed since the original investigation.

1. **Agronomist Evaluation** (All Application Packages that include new irrigation sites or new crops for existing irrigation sites):

Per [15A NCAC 02T .0504(i)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20l/15a%20ncac%2002l%20.0504.pdf), submit an agronomist evaluation that has been signed, sealed and dated by a qualified professional and includes at a minimum:

Proposed nutrient uptake values for each cover crop based upon each field’s dominant soil series and percent slope.

Plant available nitrogen calculations for each cover crop using the designed effluent concentrations in Application Item V.1. and proposed mineralization and volatilization rates.

Historical site consideration, soil binding and plant uptake of phosphorus.

Seasonal irrigation restrictions, if appropriate.

A clear and reproducible map showing all areas investigated and their relation to proposed fields and crops.

Maintenance and management plan for all specified crops.

1. **Hydrogeologic Report** (All Application Packages treating industrial waste or having a design flow over 25,000 GPD):

Per [15A NCAC 02T .0504(e)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20l/15a%20ncac%2002l%20.0504.pdf), the [Hydrogeologic Investigation and Reporting Policy](https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/APS%20Policies/HydrogeologicInvestigationsPolicy-20070531.pdf), the [Groundwater Modeling Policy](https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/APS%20Policies/GroundwaterModelingPolicy-20070531.pdf) and the [Performance and Analysis of Aquifer Slug Tests and Pumping Tests Policy](https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/APS%20Policies/AquiferTestingPolicy-20070531.pdf), submit a detailed hydrogeologic description that has been signed, sealed and dated by a qualified professional and includes at a minimum:

A hydrogeologic description to a depth of 20 feet below land surface or bedrock, whichever is less. A greater depth of investigation is required if the respective depth is used in predictive calculations.

Representative borings within the irrigation areas and all proposed earthen impoundments.

A description of the regional and local geology and hydrogeology.

A description, based on field observations of the site, of the site topographic setting, streams, springs and other groundwater discharge features, drainage features, existing and abandoned wells, rock outcrops, and other features that may affect the movement of the contaminant plume and treated wastewater.

Changes in lithology underlying the site.

Depth to bedrock and occurrence of any rock outcrops.

The hydraulic conductivity and transmissivity of the affected aquifer(s).

Depth to the seasonal high water table (SHWT).

A discussion of the relationship between the affected aquifers of the site to local and regional geologic and hydrogeologic features.

A discussion of the groundwater flow regime of the site prior to operation of the proposed facility and post operation of the proposed facility focusing on the relationship of the system to groundwater receptors, groundwater discharge features, and groundwater flow media.

If the SHWT is within six feet of the surface, a mounding analysis to predict the level of the SHWT after wastewater application.

1. **Water Balance** (All Application Packages that include new or modified irrigation sites, changes in flow or changes in storage):

Per [15A NCAC 02T .0504(k)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20l/15a%20ncac%2002l%20.0504.pdf) and the [Water Balance Calculation Policy](https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/APS%20Policies/WaterBalanceCalculationPolicy-20080912.pdf), submit a water balance that has been signed, sealed and dated by a qualified professional and includes at a minimum:

At least a two-year iteration of data computation that considers precipitation into and evaporation from all open atmosphere storage impoundments, and uses a variable number of days per month.

Precipitation based on the 80th percentile and a minimum of 30 years of observed data.

Potential Evapotranspiration (PET) using the Thornthwaite method, or another approved methodology, using a minimum of 30 years of observed temperature data.

Soil drainage based on the geometric mean of the in-situ KSAT tests in the most restrictive horizon and a drainage coefficient ranging from 4 to 10% (unless otherwise technically documented).

* Other factors that may restrict the hydraulic loading rate when determining a water balance include:

Depth to the SHWT and groundwater lateral movement that may result in groundwater mounding.

Nutrient limitations and seasonal application times to ensure wastewater irrigation does not exceed agronomic rates.

Crop management activities resulting in cessation of irrigation for crop removal.

NOTE – Wastewater Irrigation Systems serving residential facilities shall have a minimum of 14 days of wet weather storage.

1. **Engineering** **Plans** (All Application Packages):

Per [15A NCAC 02T .0504(c)(1)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20l/15a%20ncac%2002l%20.0504.pdf), submit standard size and 11 x 17-inch plan sets that have been signed, sealed and dated by a [North Carolina licensed Professional Engineer](https://www.membersbase.com/ncbels-vs/public/searchdb.asp), and shall include at a minimum:

Table of contents with each sheet numbered.

A general location map with at least two geographic references and a vicinity map.

A process and instrumentation diagram showing all flow, recycle/return, aeration, chemical, electrical and wasting paths.

Plan and profile views of all treatment and storage units, including their piping, valves, and equipment (i.e., pumps, blowers, mixers, diffusers, flow meters, etc.), as well as their dimensions and elevations.

Details of all piping, valves, pumps, blowers, mixers, diffusers, recording devices, fencing, auxiliary power, etc.

A hydraulic profile from the treatment plant headworks to the highest irrigation point.

The irrigation area with an overlay of the suitable irrigation areas depicted in the Soil Evaluation.

Each nozzle/emitter and their wetted area influence, and each irrigation zone labeled as it will be operated.

Locations within the irrigation system of air releases, drains, control valves, highest irrigation nozzle/emitter, etc.

For automated irrigation systems, provide the location and details of the precipitation/soil moisture sensor.

Plans shall represent a completed design and not be labeled with preliminary phrases (e.g., FOR REVIEW ONLY, NOT FOR CONSTRUCTION, etc.) that indicate they are anything other than final specifications. However, the plans may be labeled with the phrase: FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION.

1. **Specifications** (All Application Packages):

Per [15A NCAC 02T .0504(c)(2)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20l/15a%20ncac%2002l%20.0504.pdf), submit specifications that have been signed, sealed and dated by a [North Carolina licensed Professional Engineer](https://www.membersbase.com/ncbels-vs/public/searchdb.asp), and shall include at a minimum:

Table of contents with each section/page numbered.

Detailed specifications for each treatment/storage/irrigation unit, as well as all piping, valves, equipment (i.e., pumps, blowers, mixers, diffusers, flow meters, etc.), nozzles/emitters, precipitation/soil moisture sensor (if applicable), audible/visual high water alarms, liner material, etc.

Site Work (i.e., earthwork, clearing, grubbing, excavation, trenching, backfilling, compacting, fencing, seeding, etc.)

Materials (i.e., concrete, masonry, steel, painting, method of construction, etc.)

Electrical (i.e., control panels, transfer switches, automatically activated standby power source, etc.)

Means for ensuring quality and integrity of the finished product, including leakage, pressure and liner testing.

Specifications shall represent a completed design and not be labeled with preliminary phrases (e.g., FOR REVIEW ONLY, NOT FOR CONSTRUCTION, etc.) that indicate they are anything other than final specifications. However, the specifications may be labeled with the phrase: FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION.

1. **Engineering Calculations** (All Application Packages):

Per [15A NCAC 02T .0504(c)(3)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20l/15a%20ncac%2002l%20.0504.pdf), submit engineering calculations that have been signed, sealed and dated by a [North Carolina licensed Professional Engineer](https://www.membersbase.com/ncbels-vs/public/searchdb.asp), and shall include at a minimum:

Hydraulic and pollutant loading calculations for each treatment unit demonstrating how the designed effluent concentrations in Application Item V.1. were determined.

Sizing criteria for each treatment unit and associated equipment (i.e., blowers, mixers, flow meters, pumps, etc.).

Total and effective storage calculations for each storage unit.

Friction/total dynamic head calculations and system curve analysis for each pump used.

Manufacturer’s information for all treatment units, pumps, blowers, mixers, diffusers, flow meters, irrigation system, etc.

Flotation calculations for all treatment and storage units constructed partially or entirely below grade.

A demonstration that the designed maximum precipitation and annual loading rates do not exceed the recommended rates.

A demonstration that the specified auxiliary power source is capable of powering all essential treatment units.

1. **Site Map** (All Application Packages):

Per [15A NCAC 02T .0504(d)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20l/15a%20ncac%2002l%20.0504.pdf), submit standard size and 11 x 17-inch site maps that have been signed, sealed and dated by a [North Carolina licensed Professional Engineer and/or Professional Land Surveyor](https://www.membersbase.com/ncbels-vs/public/searchdb.asp), and shall include at a minimum:

A scaled map of the site with topographic contour intervals not exceeding 10 feet or 25 percent of total site relief and showing all facility-related structures and fences within the wastewater treatment, storage and irrigation areas.

Soil mapping units shown on all irrigation sites.

The location of all wells (including usage and construction details if available), streams (ephemeral, intermittent, and perennial), springs, lakes, ponds, and other surface drainage features within 500 feet of all wastewater treatment, storage and irrigation sites.

Delineation of the compliance and review boundaries per [15A NCAC 02L .0107](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20l/15a%20ncac%2002l%20.0107.pdf) and [.0108](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20l/15a%20ncac%2002l%20.0108.pdf), and [15A NCAC 02T .0506(c)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0506.pdf) if applicable.

Setbacks as required by [15A NCAC 02T .0506](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0506.pdf).

Site property boundaries within 500 feet of all wastewater treatment, storage and irrigation sites.

All habitable residences or places of public assembly within 500 feet of all treatment, storage and irrigation sites.

NOTE – For clarity, multiple site maps of the facility with cut sheet annotations may be submitted.

1. **Power Reliability Plan** (All Application Packages):

Per [15A NCAC 02T .0505(l)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0505.pdf), submit documentation of power reliability that shall consist of at a minimum:

An automatically activated standby power supply onsite that is capable of powering all essential treatment units under design conditions, OR

* Approval from the Director that the facility:

Serves a private water distribution system that has automatic shut-off during power failures and has no elevated water storage tanks,

Has sufficient storage capacity that no potential for overflow exists, and

Can tolerate septic wastewater due to prolonged detention.

1. **Operation and Maintenance Plan** (All Application Packages):

Per [15A NCAC 02T .0507](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0507.pdf), submit an operation and maintenance (O&M) plan encompassing all wastewater treatment, storage and irrigation systems that shall include at a minimum a description of:

Operation of the wastewater treatment, storage and irrigation systems in sufficient detail to show what operations are necessary for the system to function and by whom the functions are to be conducted.

Anticipated maintenance of the wastewater treatment, storage and irrigation systems.

Safety measures, including restriction of access to the site and equipment.

Spill prevention provisions such as response to upsets and bypasses, including how to control, contain and remediate.

Contact information for plant personnel, emergency responders and regulatory agencies.

NOTE – A final O&M Plan shall be submitted with the partial and/or final Engineering Certification required under [15A NCAC 02T .0116](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0116.pdf), however, a preliminary O&M Plan shall be submitted with each application package.

1. **Residuals Management Plan** (All Application Packages with new, expanding or replacement wastewater treatment systems):

Per [15A NCAC 02T .0504(j)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0504.pdf) and [.0508](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0508.pdf), submit a Residuals Management Plan that shall include at a minimum:

A detailed explanation of how generated residuals (including trash, sediment and grit) will be collected, handled, processed, stored, treated, and disposed.

An evaluation of the treatment facility’s residuals storage requirements based upon the maximum anticipated residuals production rate and ability to remove residuals.

A permit for residuals utilization or a written commitment to the Applicant from a Permittee of a Department approved residuals disposal/utilization program that has adequate permitted capacity to accept the residuals or has submitted a residuals/utilization program application.

If oil/grease removal and collection are a designed unit process, submit an oil/grease disposal plan detailing how the oil/grease will be collected, handled, processed, stored and disposed.

NOTE – Per [15A NCAC 02T .0505(o)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0505.pdf), a minimum of 30 days of residual storage shall be provided.

NOTE – Per [15A NCAC 02T .0504(j)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0504.pdf), a written commitment to the Applicant from a Permittee of a Department approved residuals disposal/utilization program is not required at the time of this application, however, it shall be provided prior to operation of any permitted facilities herein.

NOTE – If an on-site restaurant or other business with food preparation is contributing wastewater to this system, an oil/grease disposal plan shall be submitted.

1. **Additional Documentation:**

* **Certificate of Public Convenience and Necessity** (All Application Packages for Privately-Owned Public Utilities):

Per [15A NCAC 02T .0115(a)(1)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0115.pdf) and [.0504(g)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0504.pdf), provide the Certificate of Public Convenience and Necessity from the [North Carolina Utilities Commission](http://www.ncuc.commerce.state.nc.us/) demonstrating the Applicant is authorized to hold the utility franchise for the area to be served by the wastewater treatment and irrigation system, or

Provide a letter from the [North Carolina Utilities Commission’s Water and Sewer Division Public Staff](http://www.pubstaff.commerce.state.nc.us/pswater/pswater.htm) stating an application for a franchise has been received and that the service area is contiguous to an existing franchised area or that franchise approval is expected.

* **Existing Permit**  (All Modification Packages):

Submit the most recently issued existing permit.

Provide a list of any items within the permit the Applicant would like the Division to address during the permit modification (i.e., compliance schedules, permit description, monitoring, permit conditions, etc.).

* **Final Environmental Document** (All Application Packages using public monies or lands subject to the North Carolina Environmental Policy Act under [15A NCAC 01C .0100 to .0400](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2001%20-%20departmental%20rules/subchapter%20c/subchapter%20c%20rules.pdf)):

Per [15A NCAC 02T .0105(c)(4)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0105.pdf), submit one copy of the environmental assessment and three copies of the final environmental document (i.e., Finding of No Significant Impact or Record of Decision).

Include information on any mitigating factors from the Environmental Assessment that impact the design and/or construction of the wastewater treatment and irrigation system.

* **Floodway Regulation Compliance** (All Application Packages where any portion of the wastewater treatment, storage and irrigation system is located within the 100-year floodplain):

Per [15A NCAC 02T .0105(c)(8)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0105.pdf), provide written documentation from all local governing entities that the facility is in compliance with all local ordinances regarding construction or operation of wastewater treatment and/or disposal facilities within the floodplain.

**P. Additional Documentation (continued):**

* **Operational Agreements** (All Application Packages for Home/Property Owners' Associations and Developers of lots to be sold):
* Home/Property Owners’ Associations

Per [15A NCAC 02T .0115(c)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0115.pdf), submit the properly executed [Operational Agreement (FORM: HOA)](https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/LAU/Agreements/HOA%2001-15.pdf).

Per [15A NCAC 02T .0115(c)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0115.pdf), submit the proposed or approved Articles of Incorporation, Declarations and By-laws.

* Developers of lots to be sold

Per [15A NCAC 02T .0115(b)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0115.pdf), submit the properly executed [Operational Agreement (FORM: DEV)](https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/LAU/Agreements/DEV%2001-15.pdf).

* **Threatened or Endangered Aquatic Species Documentation** (All Application Packages):

Per [15A NCAC 02T .0105(c)(10)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0105.pdf), submit documentation from the Department’s [Natural Heritage Program](http://www.ncnhp.org/) demonstrating the presence or absence of threatened or endangered aquatic species within the boundary of the wastewater treatment, storage and irrigation facilities.

If the facility directly impacts such species, this documentation shall provide information on the need for permit conditions pursuant to [15A NCAC 02B .0110](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20b/15a%20ncac%2002b%20.0110.pdf).

* **Wastewater Chemical Analysis** (All Application Packages treating Industrial Waste):

Per [15A NCAC 02T .0504(h)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0504.pdf), provide a complete Division certified laboratory chemical analysis of the effluent to be irrigated for the following parameters (For new facilities, an analysis from a similar facility’s effluent is acceptable):

|  |  |  |
| --- | --- | --- |
| Ammonia Nitrogen (NH3-N) | Nitrate Nitrogen (NO3-N) | Total Organic Carbon |
| Calcium | pH | Total Phosphorus |
| Chemical Oxygen Demand (COD) | Phenol | Total Trihalomethanes |
| Chloride | Sodium | Total Volatile Organic Compounds |
| Fecal Coliform | Sodium Adsorption Ratio (SAR) | Toxicity Test Parameters |
| 5-day Biochemical Oxygen Demand (BOD5) | Total Dissolved Solids |  |
| Magnesium | Total Kjeldahl Nitrogen (TKN) |  |

**THE COMPLETED APPLICATION AND SUPPORTING DOCUMENTATION SHALL BE SUBMITTED TO:**

**NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY**

###### DIVISION OF WATER RESOURCES

**WATER QUALITY PERMITTING SECTION**

**NON-DISCHARGE PERMITTING UNIT**

|  |  |
| --- | --- |
| By U.S. Postal Service: | By Courier/Special Delivery: |
| 1617 Mail Service Center | [512 N. SALISBURY ST.](http://maps.google.com/maps?q=512+North+Salisbury+Street,+Raleigh,+NC&hl=en&sll=37.0625,-95.677068&sspn=33.077336,56.162109&vpsrc=0&hnear=512+N+Salisbury+St,+Raleigh,+North+Carolina+27603&t=m&z=16) |
| RALEIGH, NORTH CAROLINA 27699-1617 | [RALEIGH, NORTH CAROLINA 27604](http://maps.google.com/maps?q=512+North+Salisbury+Street,+Raleigh,+NC&hl=en&sll=37.0625,-95.677068&sspn=33.077336,56.162109&vpsrc=0&hnear=512+N+Salisbury+St,+Raleigh,+North+Carolina+27603&t=m&z=16) |
|  |  |
| TELEPHONE NUMBER: (919) 807-6464 | FAX NUMBER: (919) 807-6496 |

1. **APPLICANT INFORMATION**:
2. Applicant's name:
3. Applicant type:  Individual  Corporation  General Partnership  Privately-Owned Public Utility

Federal  State  Municipal  County

1. Signature authority’s name:       per [15A NCAC 02T .0106(b)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0106.pdf) Title:
2. Applicant’s mailing address:

City:       State:       Zip:      -

1. Applicant’s contact information:

Phone number: (   )    -     Email Address:

1. **FACILITY INFORMATION:**
2. Facility name:
3. Facility status:
4. Facility type:
5. Facility’s physical address:

City:       State:       Zip:      -     County:

1. Wastewater Treatment Facility Coordinates (Decimal Degrees): Latitude:   .     ○ Longitude: -  .     ○

Datum: Level of accuracy: Method of measurement:

1. USGS Map Name:
2. **CONSULTANT INFORMATION:**
3. Professional Engineer:       License Number:       Firm:

Mailing address:

City:       State:       Zip:      -

Phone number: (   )    -     Email Address:

1. Soil Scientist:       License Number:       Firm:

Mailing address:

City:       State:       Zip:      -

Phone number: (   )    -     Email Address:

1. Geologist:       License Number:       Firm:

Mailing address:

City:       State:       Zip:      -

Phone number: (   )    -     Email Address:

1. Agronomist:       Firm:

Mailing address:

City:       State:       Zip:      -

Phone number: (   )    -     Email Address:

1. **GENERAL REQUIREMENTS –** [**15A NCAC 02T .0100**](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/subchapter%20t%20rules.pdf)**:**
2. Application type:  New  Major Modification  Minor Modification

If a modification, provide the existing permit number: WQ00      and most recent issuance date:

1. Application fee:
2. Does this project utilize public monies or lands?  Yes or  No

If yes, was an Environmental Assessment required under [15A NCAC 01C](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2001%20-%20departmental%20rules/subchapter%20c/subchapter%20c%20rules.pdf)?  Yes or  No

If yes, which final environmental document is submitted?  Finding of No Significant Impact or  Record of Decision

Briefly describe any mitigating factors from the Environmental Assessment that may impact this facility:

1. What is the status of the following permits/certifications applicable to the subject facility?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Permit/Certification | **Date Submitted** | **Date Approved** | **Permit/Certification Number** | **Agency Reviewer** |
| [Collection System (Q ≥ 200,000 GPD)](https://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/collection-systems/system-wide-collection-system-permitting) |  |  |  |  |
| [Dam Safety](http://deq.nc.gov/about/divisions/energy-mineral-land-resources/energy-mineral-land-permits/dam-safety) |  |  |  |  |
| [Erosion & Sedimentation Control Plan](http://deq.nc.gov/about/divisions/energy-mineral-land-resources/erosion-sediment-control) |  |  |  |  |
| [Nationwide 12 / Section 404](http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/) |  |  |  |  |
| [Pretreatment](http://deq.nc.gov/about/divisions/water-resources/water-resources-permits/percs/pretreatment-permits) |  |  |  |  |
| [Sewer System](http://deq.nc.gov/about/divisions/water-resources/water-resources-permits/percs/collection-systems-permits) |  |  |  |  |
| [Stormwater Management Plan](http://deq.nc.gov/about/divisions/energy-mineral-land-resources/energy-mineral-land-permits/stormwater-program) |  |  |  |  |
| [Wetlands 401](http://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/401-wetlands-buffer-permits) |  |  |  |  |
| Other: |  |  |  |  |

1. What is the wastewater type?  Domestic or  Industrial (See [15A NCAC 02T .0103(20)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0103.pdf))

Is there a Pretreatment Program in effect?  Yes or  No

Has a wastewater chemical analysis been submitted?  Yes or  No

1. Wastewater flow:       GPD

Limited by:  Treatment,  Storage,  Field Hydraulics,  Field Agronomics or  Groundwater Mounding

1. Explain how the wastewater flow was determined:  [15A NCAC 02T .0114](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0114.pdf) or  Representative Data

Has a flow reduction been approved under [15A NCAC 02T .0114(f)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0114.pdf)?  Yes or  No

|  |  |  |  |
| --- | --- | --- | --- |
| **Establishment Type** | **Daily Design Flow a** | **No. of Units** | Flow |
|  | gal/ |  | GPD |
|  | gal/ |  | GPD |
|  | gal/ |  | GPD |
|  | gal/ |  | GPD |
|  | gal/ |  | GPD |
|  | gal/ |  | GPD |
| Total | GPD |

a See [15A NCAC 02T .0114(b), (d), (e)(1) and (e)(2)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0114.pdf), for caveats to wastewater design flow rates (i.e., minimum flow per dwelling; proposed unknown non-residential development uses; public access facilities located near high public use areas; and residential property located south or east of the Atlantic Intracoastal Waterway to be used as vacation rentals as defined in [G.S. 42A-4](http://www.ncleg.net/EnactedLegislation/Statutes/HTML/BySection/Chapter_42A/GS_42A-4.html)).

1. **GENERAL REQUIREMENTS –** [**15A NCAC 02T .0100**](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/subchapter%20t%20rules.pdf) **(continued):**
2. What is the nearest 100-year flood elevation to the facility?       feet mean sea level. Source:

Are any treatment, storage or irrigation facilities located within the 100-year flood plain?  Yes or  No

If yes, which facilities are affected and what measures are being taken to protect them against flooding?

If yes, has the Applicant submitted written documentation of compliance with [§143 Article 21 Part 6](http://www.ncleg.net/EnactedLegislation/Statutes/HTML/ByArticle/Chapter_143/Article_21.html)?  Yes or  No

1. Has the Applicant provided documentation of the presence or absence of threatened or endangered aquatic species utilizing information provided by the Department’s [Natural Heritage Program](http://www.ncnhp.org/)?  Yes or  No
2. Does the facility have a proposed or existing groundwater monitoring well network?  Yes or  No

If no, provide an explanation as to why a groundwater monitoring well network is not proposed:

If yes, complete the following table (NOTE – This table may be expanded for additional wells):

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Well Name | **Status** | Latitude a | Longitude a | **Gradient** | **Location** |
|  |  | .     ○ | -  .     ○ |  |  |
|  |  | .     ○ | -  .     ○ |  |  |
|  |  | .     ○ | -  .     ○ |  |  |
|  |  | .     ○ | -  .     ○ |  |  |
|  |  | .     ○ | -  .     ○ |  |  |
|  |  | .     ○ | -  .     ○ |  |  |
|  |  | .     ○ | -  .     ○ |  |  |
|  |  | .     ○ | -  .     ○ |  |  |
|  |  | .     ○ | -  .     ○ |  |  |
|  |  | .     ○ | -  .     ○ |  |  |

a Provide the following latitude and longitude coordinate determination information:

Datum: Level of accuracy: Method of measurement:

1. If the Applicant is a Privately-Owned Public Utility, has a Certificate of Public Convenience and Necessity been submitted?  Yes, No or N/A
2. If the Applicant is a Developer of lots to be sold, has a [Developer’s Operational Agreement (FORM: DEV)](https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/LAU/Agreements/DEV%2001-15.pdf) been submitted?  Yes, No or N/A
3. If the Applicant is a Home/Property Owners' Association, has an [Association Operational Agreement (FORM: HOA)](https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/LAU/Agreements/HOA%2001-15.pdf) been submitted?  Yes, No or N/A
4. Demonstration of historical consideration for permit approval – [15A NCAC 02T .0120](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0120.pdf):

Has the Applicant or any parent, subsidiary or other affiliate exhibited the following?

1. Has been convicted of environmental crimes under Federal law or [G.S. 143-215.6B](http://www.ncleg.net/EnactedLegislation/Statutes/HTML/BySection/Chapter_143/GS_143-215.6B.html)?  Yes or  No
2. Has previously abandoned a wastewater treatment facility without properly closing that facility?  Yes or  No
3. Has unpaid civil penalty where all appeals have been abandoned or exhausted?  Yes or  No
4. Is non-compliant with an existing non-discharge permit, settlement agreement or order?  Yes or  No
5. Has unpaid annual fees in accordance with [15A NCAC 02T .0105(e)(2)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0105.pdf)?  Yes or  No
6. **WASTEWATER TREATMENT FACILITY DESIGN CRITERIA –** [**15A NCAC 02T .0505**](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0505.pdf)**:**
7. For the following parameters, provide the estimated influent concentrations and designed effluent concentrations as determined in the Engineering Calculations, and utilized in the Agronomic Evaluation and Groundwater Modeling (if applicable):

|  |  |  |
| --- | --- | --- |
| Parameter | **Estimated Influent Concentration** | **Designed Effluent Concentration (monthly average)** |
| Ammonia Nitrogen (NH3-N) | mg/L | mg/L |
| Biochemical Oxygen Demand (BOD5) | mg/L | mg/L |
| Fecal Coliforms |  | per 100 mL |
| Nitrate Nitrogen (NO3-N) | mg/L | mg/L |
| Nitrite Nitrogen (NO2-N) | mg/L | mg/L |
| Total Kjeldahl Nitrogen |  | mg/L |
| Total Nitrogen | mg/L | mg/L |
| Total Phosphorus | mg/L | mg/L |
| Total Suspended Solids (TSS) | mg/L | mg/L |

1. Is flow equalization of at least 25% of the average daily flow provided?  Yes or  No
2. Does the treatment facility include any bypass or overflow lines?  Yes or  No

If yes, describe what treatment units are bypassed, why this is necessary, and where the bypass discharges:

1. Are multiple pumps provided wherever pumps are used?  Yes or  No

If no, how does the Applicant intend on complying with [15A NCAC 02T .0505(k)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0505.pdf)?

1. Check the appropriate box describing how power reliability will be provided in accordance with [15A NCAC 02T .0505(l)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0505.pdf):

Automatically activated standby power supply onsite capable of powering all essential treatment units; or

Approval from the Director that the facility:

* Has a private water supply that automatically shuts off during power failures and does not contain elevated water storage tanks;
* Has sufficient storage capacity that no potential for overflow exists; and
* Can tolerate septic wastewater due to prolonged detention.

1. If the wastewater treatment system is located within the 100-year flood plain, are there water-tight seals on all treatment units or a minimum of two feet protection from the 100-year flood plain elevation?  Yes,  No or  N/A
2. In accordance with [15A NCAC 02T .0505(o)](http://portal.ncdenr.org/c/document_library/get_file?uuid=d204284d-1202-4f1a-a5ff-84d430e28912&groupId=38364#Page=29), how many days of residuals storage are provided?
3. How does the Applicant propose to prohibit public access to the wastewater treatment and storage facilities?
4. If an influent pump station is part of the proposed facility (i.e., within the wastewater treatment plant boundary), does the influent pump station meet the design criteria in [15A NCAC 02T .0305(h)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0305.pdf)?  Yes,  No,  N/A – To be permitted separately, or  N/A – Gravity fed
5. If septic tanks are part of the wastewater treatment facility, do the septic tanks adhere to the standards in [15A NCAC 18A .1900](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwi6q-jPsMvNAhXD4yYKHW6dDK8QFggcMAA&url=http%3A%2F%2Fehs.ncpublichealth.com%2Foswp%2Fdocs%2Frules%2FRulesCompleteEff10012011.pdf&usg=AFQjCNGk_vw13SPKt9LKiQmMxk6DuDefJA&sig2=xAM1S8p9Ax9br75rzI3yYA&bvm=bv.125596728,d.eWE)?  Yes,  No or  N/A
6. **WASTEWATER TREATMENT FACILITY DESIGN CRITERIA –** [**15A NCAC 02T .0505**](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0505.pdf) **(continued):**
7. Provide the requested treatment unit and mechanical equipment information:
8. PRELIMINARY / PRIMARY TREATMENT (i.e., physical removal operations and flow equalization):

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Treatment Unit | **No. of Units** | **Manufacturer or Material** | **Dimensions (ft) / Spacings (in)** | **Volume (gallons)** | **Plan Sheet Reference** | **Specification Reference** |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
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1. SECONDARY / TERTIARY TREATMENT (i.e., biological and chemical processes to remove organics and nutrients)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Treatment Unit** | **No. of Units** | **Manufacturer or Material** | **Dimensions (ft)** | **Volume (gallons)** | **Plan Sheet Reference** | **Specification Reference** |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
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1. DISINFECTION

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Treatment Unit** | **No. of Units** | **Manufacturer or Material** | **Dimensions (ft)** | **Volume (gallons)** | **Plan Sheet Reference** | **Specification Reference** |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

* If chlorination is the proposed method of disinfection, specify detention time provided:       minutes (NOTE – 30 minutes minimum required), and indicate what treatment unit chlorine contact occurs:
* If ultraviolet (UV) light is the proposed method of disinfection, specify the number of banks:      , number of lamps per bank:       and maximum disinfection capacity:       GPM.

1. RESIDUAL TREATMENT

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Treatment Unit** | **No. of Units** | **Manufacturer or Material** | **Dimensions (ft)** | **Volume (gallons)** | **Plan Sheet Reference** | **Specification Reference** |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

1. **WASTEWATER TREATMENT FACILITY DESIGN CRITERIA –** [**15A NCAC 02T .0505**](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0505.pdf) **(continued):**
2. PUMPS

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Location** | **No. of Pumps** | **Purpose** | **Manufacturer / Type** | **Capacity** | | **Plan Sheet Reference** | **Specification Reference** |
| **GPM** | **TDH** |
|  |  |  |  |  |  |  |  |
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1. BLOWERS

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Location** | **No. of Blowers** | **Units Served** | **Manufacturer / Type** | **Capacity (CFM)** | **Plan Sheet Reference** | **Specification Reference** |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
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1. MIXERS

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Location** | **No. of Mixers** | **Units Served** | **Manufacturer / Type** | **Power (hp)** | **Plan Sheet Reference** | **Specification Reference** |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

1. RECORDING DEVICES & RELIABILITY

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Device** | **No. of Units** | **Location** | **Manufacturer** | **Maximum Capacity** | **Plan Sheet Reference** | **Specification Reference** |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

1. EFFLUENT PUMP / FIELD DOSING TANK (IF APPLICABLE):

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | | | | **Plan Sheet Reference** | **Specification Reference** |
| Internal dimensions (L x W x H or φ x H) | ft | ft | | ft |  |  |
| Total volume | ft3 | | gallons | |  |  |
| Dosing volume | ft3 | | gallons | |  |  |
| Audible & visual alarms |  | | | |  |  |
| Equipment to prevent irrigation during rain events |  | | | |  |  |

1. **EARTHEN IMPOUNDMENT DESIGN CRITERIA –** [**15A NCAC 02T .0505**](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0505.pdf)**:**

IF MORE THAN ONE IMPOUNDMENT, PROVIDE ADDITIONAL COPIES OF THIS PAGE AS NECESSARY.

1. What is the earthen impoundment type?
2. Storage Impoundment Coordinates (Decimal Degrees): Latitude:   .     ○ Longitude: -  .     ○

Datum: Level of accuracy: Method of measurement:

1. Do any impoundments include a discharge point (pipe, spillway, etc)?  Yes or  No
2. Are subsurface drains present beneath or around the impoundment to control groundwater elevation?  Yes or  No
3. Is the impoundment designed to receive surface runoff?  Yes or  No

If yes, what is the drainage area?       ft2, and was this runoff incorporated into the water balance?  Yes or  No

1. If a liner is present, how will it be protected from wind driven wave action?:
2. Will the earthen impoundment water be placed directly into or in contact with GA classified groundwater?  Yes or  No

If yes, has the Applicant provided predictive calculations or modeling demonstrating that such placement will not result in a contravention of GA groundwater standards?  Yes or  No

1. What is the depth to bedrock from the earthen impoundment bottom elevation?       ft

If the depth to bedrock is less than four feet, has the Applicant provided a liner with a hydraulic conductivity no greater than 1 x 10-7 cm/s?  Yes,  No or  N/A

Has the Applicant provided predictive calculations or modeling demonstrating that surface water or groundwater standards will not be contravened?  Yes or  No

If the earthen impoundment is excavated into bedrock, has the Applicant provided predictive calculations or modeling demonstrating that surface water or groundwater standards will not be contravened?  Yes,  No or  N/A

1. If the earthen impoundment is lined and the mean seasonal high water table is higher than the impoundment bottom elevation, how will the liner be protected (e.g., bubbling, groundwater infiltration, etc.)?
2. If applicable, provide the specification page references for the liner installation and testing requirements:
3. If the earthen impoundment is located within the 100-year flood plain, has a minimum of two feet of protection (i.e., top of embankment elevation to 100-year flood plain elevation) been provided?  Yes or  No
4. Provide the requested earthen impoundment design elements and dimensions:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Earthen Impoundment Design Elements** | | | **Earthen Impoundment Dimensions** | |
| Liner type: | Clay | Synthetic | Top of embankment elevation: | ft |
| Other | Unlined |
| Liner hydraulic conductivity: | x       - cm/s | | Freeboard elevation: | ft |
| Hazard class: |  | | Toe of slope elevation: | ft |
| Designed freeboard: | ft | | Impoundment bottom elevation: | ft |
| Total volume: | ft3 | gallons | Mean seasonal high water table depth: | ft |
| Effective volume: | ft3 | gallons | Embankment slope: | : |
| Effective storage time: | days | | Top of dam water surface area: | ft2 |
| Plan Sheet Reference: |  | | Freeboard elevation water surface area: | ft2 |
| Specification Section: |  | | Bottom of impoundment surface area: | ft2 |

NOTE – The effective volume shall be the volume between the two foot freeboard elevation and the: (1) pump intake pipe elevation; (2) impoundment bottom elevation or (3) mean seasonal high water table, whichever is closest to the two foot freeboard elevation.

1. **IRRIGATION SYSTEM DESIGN CRITERIA –** [**15A NCAC 02T .0505**](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0505.pdf)**:**
2. Provide the minimum depth to the seasonal high water table within the irrigation area:

NOTE – The vertical separation between the seasonal high water table and the ground surface shall be at least one foot.

1. Are there any artificial drainage or water movement structures (e.g., surface water or groundwater) within 200 feet of the irrigation area?  Yes or  No

If yes, were these structures addressed in the Soil Evaluation and/or Hydrogeologic Report, and are these structures to be maintained or modified?

1. Soil Evaluation recommended loading rates (NOTE – This table may be expanded for additional soil series):

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Soil Series** | **Fields within Soil Series** | **Recommended Loading Rate**  **(in/hr)** | **Recommended Loading Rate**  **(in/yr)** | **Annual / Seasonal Loading** | **If Seasonal, list appropriate months** |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

1. Are the designed loading rates less than or equal to Soil Evaluation recommended loading rates?  Yes or  No

If no, how does the Applicant intend on complying with [15A NCAC 02T .0505(n)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0505.pdf)?

1. How does the Applicant propose to prohibit public access to the irrigation system?
2. Has the irrigation system been equipped with a flow meter to accurately determine the volume of effluent applied to each field as listed in VII.8.?  Yes or  No

If no, how does the Applicant intend on complying with [15A NCAC 02T .0505(t)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0505.pdf)?

1. Provide the required cover crop information and demonstrate the effluent will be applied at or below agronomic rates:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Cover Crop | Soil Series | % Slope | Nitrogen Uptake Rate (lbs/ac∙yr) | Phosphorus Uptake Rate (lbs/ac∙yr) |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

1. Specify where the nitrogen and phosphorus uptake rates for each cover crop were obtained:
2. Proposed nitrogen mineralization rate:
3. Proposed nitrogen volatilization rate:
4. Minimum irrigation area from the Agronomist Evaluation’s nitrogen balance:       ft2
5. Minimum irrigation area from the Agronomist Evaluation’s phosphorus balance:       ft2
6. Minimum irrigation area from the water balance:       ft2
7. **IRRIGATION SYSTEM DESIGN CRITERIA –** [**15A NCAC 02T .0505**](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0505.pdf) **(continued):**
8. Field Information (NOTE – This table may be expanded for additional fields):

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Field | Area (acres) | Dominant Soil Series | Designed Loading Rate (in/hr) | Designed Loading Rate (in/yr) | Latitude a | Longitude a | Waterbody Stream Index No. b | Classification |
|  |  |  |  |  | .     ○ | -  .     ○ |  |  |
|  |  |  |  |  | .     ○ | -  .     ○ |  |  |
|  |  |  |  |  | .     ○ | -  .     ○ |  |  |
|  |  |  |  |  | .     ○ | -  .     ○ |  |  |
|  |  |  |  |  | .     ○ | -  .     ○ |  |  |
|  |  |  |  |  | .     ○ | -  .     ○ |  |  |
|  |  |  |  |  | .     ○ | -  .     ○ |  |  |
|  |  |  |  |  | .     ○ | -  .     ○ |  |  |
|  |  |  |  |  | .     ○ | -  .     ○ |  |  |
|  |  |  |  |  | .     ○ | -  .     ○ |  |  |
|  |  |  |  |  | .     ○ | -  .     ○ |  |  |
|  |  |  |  |  | .     ○ | -  .     ○ |  |  |
|  |  |  |  |  | .     ○ | -  .     ○ |  |  |
|  |  |  |  |  | .     ○ | -  .     ○ |  |  |
|  |  |  |  |  | .     ○ | -  .     ○ |  |  |
|  |  |  |  |  | .     ○ | -  .     ○ |  |  |
|  |  |  |  |  | .     ○ | -  .     ○ |  |  |
|  |  |  |  |  | .     ○ | -  .     ○ |  |  |
|  |  |  |  |  | .     ○ | -  .     ○ |  |  |
|  |  |  |  |  | .     ○ | -  .     ○ |  |  |
| *Total* |  |  |  |  |  |  |  |  |

a Provide the following latitude and longitude coordinate determination information:

Datum:  Level of accuracy:  Method of measurement:

b For assistance determining the waterbody stream index number and its associated classification, instructions may be downloaded at: <http://deq.nc.gov/about/divisions/water-resources/planning/classification-standards/classifications>

|  |  |  |  |
| --- | --- | --- | --- |
| **Spray Irrigation Design Elements** | | **Drip Irrigation Design Elements** | |
| Nozzle wetted diameter: | ft | Emitter wetted area: | ft2 |
| Nozzle wetted area: | ft2 | Distance between laterals: | ft |
| Nozzle capacity: | GPM | Distance between emitters: | ft |
| Nozzle manufacturer/model: | / | Emitter capacity: | GPH |
| Elevation of highest nozzle: | ft | Emitter manufacturer/model: | / |
| Specification Section: |  | Elevation of highest emitter: | ft |
|  |  | Specification Section: |  |

1. **SETBACKS –** [**15A NCAC 02T .0506**](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0506.pdf)**:**
2. Does the project comply with all setbacks found in the river basin rules ([15A NCAC 02B .0200](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20b/subchapter%20b%20rules.pdf))?  Yes or  No

If no, list non-compliant setbacks:

1. Have any setback waivers been obtained in order to comply with [15A NCAC 02T .506(a)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0506.pdf) and [.0506(b)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0506.pdf)?  Yes or  No

If yes, have these waivers been written, notarized and signed by all parties involved and recorded with the County Register of Deeds?  Yes or  No

1. Provide the minimum field observed distances (ft) for each setback parameter to the irrigation system and treatment/storage units (NOTE – Distances greater than 500 feet may be marked N/A):

|  |  |  |
| --- | --- | --- |
| **Setback Parameter** | **Irrigation System** | Treatment / Storage Units |
| Any habitable residence or place of assembly under separate ownership or not to be maintained as part of the project site |  |  |
| Any habitable residence or place of assembly owned by the Permittee to be maintained as part of the project site |  |  |
| Any private or public water supply source |  |  |
| Surface waters (streams – intermittent and perennial, perennial waterbodies, and wetlands) |  |  |
| Groundwater lowering ditches (where the bottom of the ditch intersects the SHWT) |  |  |
| Subsurface groundwater lowering drainage systems |  |  |
| Surface water diversions (ephemeral streams, waterways, ditches) |  |  |
| Any well with exception of monitoring wells |  |  |
| Any property line |  |  |
| Top of slope of embankments or cuts of two feet or more in vertical height |  |  |
| Any water line from a disposal system |  |  |
| Any swimming pool |  |  |
| Public right of way |  |  |
| Nitrification field |  |  |
| Any building foundation or basement |  |  |
| Impounded public water supplies |  |  |
| Public shallow groundwater supply (less than 50 feet deep) |  |  |

1. Does the Applicant intend on complying with [15A NCAC 02T .0506(c)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0506.pdf) in order to have reduced irrigation setbacks to property lines?  Yes or  No

If yes, complete the following table by providing the required concentrations as determined in the Engineering Calculations:

|  |  |  |  |
| --- | --- | --- | --- |
| Parameter | **Estimated Influent Concentration** | **Designed Effluent Concentration (monthly average)** | **Designed Effluent Concentration (daily maximum)** |
| Ammonia Nitrogen (NH3-N) | mg/L | mg/L | mg/L |
| Biochemical Oxygen Demand (BOD5) | mg/L | mg/L | mg/L |
| Fecal Coliforms |  | per 100 mL | per 100 mL |
| Total Suspended Solids (TSS) | mg/L | mg/L | mg/L |
| Turbidity |  |  | NTU |

1. **COASTAL WASTE TREATMENT DISPOSAL REQUIREMENTS –** [**15A NCAC 02H .0400**](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20h/subchapter%20h%20rules.pdf)**:**
2. Is this facility located in a Coastal Area as defined per [15A NCAC 02H .0403](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20h/15a%20ncac%2002h%20.0403.pdf)?  Yes or  No

For assistance determining if the facility is located within the Coastal Area, a reference map may be downloaded at: [Coastal Areas Boundary](https://ncdenr.s3.amazonaws.com/s3fs-public/Water%20Quality/Aquifer%20Protection/LAU/Agreements/Coastal%20Area%20.0403.jpg).

1. Is this an Interim Treatment and Disposal Facility per [15A NCAC 02H .0404(g)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20h/15a%20ncac%2002h%20.0404.pdf)?  Yes or  No

NOTE – Interim facilities do not include County and Municipal area-wide collection and treatment systems.

**IF ANSWERED YES TO ITEMS IX.1. AND IX.2., THEN COMPLETE ITEMS IX.3. THROUGH IX.17.**

1. Is equalization of at least 25% of the average daily flow provided?  Yes or  No
2. How will noise and odor be controlled?
3. Is an automatically activated standby power source provided?  Yes or  No
4. Are all essential treatment units provided in duplicate?  Yes or  No

NOTE – Per [15A NCAC 02T .0103(16)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0103.pdf), essential treatment units are defined as any unit associated with the wastewater treatment process whose loss would likely render the facility incapable of meeting the required performance criteria, including aeration units or other main treatment units, clarification equipment, filters, disinfection equipment, pumps and blowers.

1. Are the disposal units (i.e., irrigation fields) provided in duplicate (e.g., more than one field)?  Yes or  No
2. Is there an impounded public surface water supply within 500 feet of the wetted area?  Yes or  No
3. Is there a public shallow groundwater supply (less than 50 feet deep) within 500 feet of the wetted area?  Yes or  No
4. Is there a private groundwater supply within 100 feet of the wetted area?  Yes or  No
5. Are there any SA classified waters within 100 feet of the wetted area?  Yes or  No
6. Are there any non-SA classified waters within 50 feet of the wetted area?  Yes or  No
7. Are there any surface water diversions (i.e., drainage ditches) within 25 feet of the wetted area?  Yes or  No
8. Per the requirements in [15A NCAC 02H .0404(g)(7)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20h/15a%20ncac%2002h%20.0404.pdf), how much green area is provided?       ft2
9. Is the green area clearly delineated on the plans?  Yes or  No
10. Is the spray irrigation wetted area within 200 feet of any adjoining properties?  Yes,  No or  N/A (i.e., drip irrigation)
11. Does the designed annual loading rate exceed 91 inches?  Yes or  No

**Professional Engineer's Certification:**

I, attest that this application for

(Professional Engineer’s name from Application Item III.1.)

(Facility name from Application Item II.1.)

has been reviewed by me and is accurate, complete and consistent with the information supplied in the plans, specifications, engineering calculations, and all other supporting documentation to the best of my knowledge. I further attest that to the best of my knowledge the proposed design has been prepared in accordance with this application package and its instructions, as well as all applicable regulations and statutes. Although other professionals may have developed certain portions of this submittal package, inclusion of these materials under my signature and seal signifies that I have reviewed this material and have judged it to be consistent with the proposed design.

**NOTE** – In accordance with General Statutes [143-215.6A](http://www.ncleg.net/EnactedLegislation/Statutes/HTML/BySection/Chapter_143/GS_143-215.6A.html) and [143-215.6B](http://www.ncleg.net/EnactedLegislation/Statutes/HTML/BySection/Chapter_143/GS_143-215.6B.html), any person who knowingly makes any false statement, representation, or certification in any application package shall be guilty of a Class 2 misdemeanor, which may include a fine not to exceed $10,000, as well as civil penalties up to $25,000 per violation.

North Carolina Professional Engineer's seal, signature, and date:

**Applicant's Certification per** [**15A NCAC 02T .0106(b)**](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0106.pdf)**:**

I, attest that this application for

(Signature Authority’s name & title from Application Item I.3.)

(Facility name from Application Item II.1.)

has been reviewed by me and is accurate and complete to the best of my knowledge. I understand that any discharge of wastewater from this non-discharge system to surface waters or the land will result in an immediate enforcement action that may include civil penalties, injunctive relief, and/or criminal prosecution. I will make no claim against the Division of Water Resources should a condition of this permit be violated. I also understand that if all required parts of this application package are not completed and that if all required supporting information and attachments are not included, this application package will be returned to me as incomplete. I further certify that the Applicant or any affiliate has not been convicted of an environmental crime, has not abandoned a wastewater facility without proper closure, does not have an outstanding civil penalty where all appeals have been exhausted or abandoned, are compliant with any active compliance schedule, and do not have any overdue annual fees per [15A NCAC 02T .0105(e)](http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20t/15a%20ncac%2002t%20.0105.pdf).

**NOTE** – In accordance with General Statutes [143-215.6A](http://www.ncleg.net/EnactedLegislation/Statutes/HTML/BySection/Chapter_143/GS_143-215.6A.html) and [143-215.6B](http://www.ncleg.net/EnactedLegislation/Statutes/HTML/BySection/Chapter_143/GS_143-215.6B.html), any person who knowingly makes any false statement, representation, or certification in any application package shall be guilty of a Class 2 misdemeanor, which may include a fine not to exceed $10,000 as well as civil penalties up to $25,000 per violation.

Signature: Date: