The Professional Services Agreement is supplemented to include the following agreement of the parties.

Engineer shall provide Basic and Additional Services as set forth below.

PART 1 – BASIC SERVICES

PROJECT OBJECTIVES AND DESCRIPTION

The Engineer shall provide an evaluation of the Northwest WTP comparing water treatment technology effectiveness to determine which treatment approach is recommended for enhancing treatment and removal of target contaminants that are found in the source water from the Cape Fear River. The target contaminants have been identified as perfluoroalkyl substances (PFAS) compounds (GenX, etc.), 1,4-dioxane, N-Nitroso-dimethylamine (NDMA), Hexavalent Chromium, and general background Pharmaceuticals and Personal Care Products (PPCPs), along with up to four other possible contaminants of emerging concern (CEC) that may be identified during the project work. The Project objectives are as follows:

- Determine a subset of the target contaminants of emerging concern (TCEC) from the lower Cape Fear River that will be the focus of the project, including but not limited to PFAS, GENX, 1,4-dioxane, Hexavalent Chromium, NDMA, and PPCPs.
- Establish treatment goals for the TCEC based on published guidelines for health risks.
- Evaluate viable treatment alternatives for the removal of TCEC at the Northwest WTP.
- Create a plan to improve treatment and the removal of TCEC at the Northwest WTP, including planning level cost opinions.
- Assist the County with communicating the results of the study and the plan for treatment improvements to project stakeholders.
- Provide County with budgetary level opinion of cost to expand the Northwest WTP to 36-mgd

The Project will involve the following major tasks, each of which are described in the subsequent sections:

- Task 01 - Project and Quality Management
- Task 02 – Desktop Treatment Alternative Analysis
- Task 03 – Pilot and Bench Testing
- Task 04 – Treatment Recommendation and Final Report
- Task 05 - Pre-Permit Application Services
- Task 06 - Concentrate Discharge Dilution Study, Toxicity Testing, and NPDES Permit Submittal
- Task 07 –Laboratory Services
- Task 08 – Additional Consulting Services

A1.01 *Task 1 - Project and Quality Management*

This task covers managing the project team, coordinating the work, tracking budget/work progress, invoicing and accounting, providing regular updates to the Owner, managing scope compliance, oversight of technical products, and quality assurance checks on work and deliverables. Accounting and administrative support to achieve the project tasks listed herein are also included in this task.

Task Deliverables:

- None

A1.02 *Task 2 - Desktop Treatment Alternative Analysis*

The objective of the Desktop Treatment Alternative Analysis (DTAA) is to efficiently identify the TCEC for the study, identify most appropriate treatment alternatives for removal of these contaminants based on published information and vendor data, and complete a desktop level evaluation of the treatment alternatives for meeting the County's treatment goal criteria. Additionally, limitations associated with implementing the treatment technologies at the Northwest WTP will be evaluated.

1.02.01 Fast-Start Workshop

The Engineer will conduct a Fast-Start Workshop with the Owner, which will incorporate elements of a project kickoff meeting as well as elements of a full technical workshop. The Fast-Start Workshop will cover the following critical path technical topics:

- Project scope and schedule review
- Project critical success factors
- List of potential TCEC
- Preliminary treatment goals for TCEC
- Preliminary Treatment alternatives and key assumptions for desktop analysis
- Pilot study plan for testing technologies (LPRO/NF, UV-AOP)
- Plan for addressing regulatory issues
- Data needs and review of key owner inputs/preferences

1.02.02 Identifying TCEC and Setting Preliminary Treatment Goals

The first step in the DTAA is to determine the list of TCEC that will be focused on in the treatment evaluation. To do this, the Engineer will evaluate both a current sample of raw water taken ahead of the Northwest WTP, as well as evaluate available data on the water quality in lower Cape Fear River basin. Examples sources of information that will be reviewed include (1) historical WTP data, (2) UCMR data (3) select/relevant studies, (4) select/relevant academic research, and (5) data collected by NC Department of Environmental Quality (NCDEQ) on Cape Fear River contamination. The initial list of contaminants found in the Cape Fear River will be cross referenced with the following criteria to develop a target contaminant list:

- Contaminants believed to have negative impacts on human health as indicated by an established limit or health advisory level at the federal or state level, including values from other states
- Contaminants at or above concentrations that are regulated (EPA, other states) for health impacts
- Contaminants that have approved methods for being measured in a lab
- Contaminants being evaluated for future regulations by the EPA (UCMR-3, -4)

The Engineer will assist the County in setting draft treatment goals at the kickoff meeting for TCEC, and then revisiting these goals at the two subsequent project workshops.

The Engineer will gather relevant health criteria to support the goal setting decision, and summarize this information for the County in the report, including:

- Federal/EPA Maximum Contaminant Levels
- State-specific Maximum Contaminant Levels
- Federal/EPA Health Advisory Levels
- State-specific Health Advisory Levels
- EPA Integrated Risk Information System (IRIS) Database
- Agency for Toxic Substances and Disease Registry Minimal Risk Levels
- EPA Cancer Risk Assessment Levels

1.02.03 Selecting and Evaluating Treatment Alternatives

The Engineer will perform a DTAA of treatment alternatives to remove the TCEC from the Cape Fear River to acceptable levels. Based on a review of the source water data, the preliminary treatment goals, and constraints of the existing Northwest WTP; a screening exercise will result in identifying up to three most feasible treatment supplements/improvements for evaluation. Consideration will be given to the following treatment technologies, and others the Engineer determines meet the above criteria:

- Membranes: Low Pressure Reverse Osmosis or Nanofiltration (LPRO/NF)
- Ultraviolet – Advanced Oxidation Process (UV-AOP)
- Ion Exchange (IX)
- Granular Activated Carbone (GAC)
- Powdered Activated Carbon (PAC)
- Ozone – Advanced Oxidation Process (O_3-AOP)
- Biologically Active Filtration (BAF)

In the DTAA, the Engineer will evaluate whether coupling technologies is required for meeting treatment goals and which technologies work well when combined. Data for LPRO/NF and UV-AOP is not available on the Cape Fear River water, therefore testing will be completed to generate treatment performance data. The Engineer will utilize available data from the Cape Fear River basin or other similar water sources (WTPs, pilot studies, etc.) to project likely treatment performance of the treatment being evaluated.

1.02.04 Opinion of cost to expand the Northwest WTP

Engineer will provide to the County with a budgetary level opinion of cost to expand the Northwest WTP to 36-mgd, including the following major systems: high rating the sedimentation basins to Super-Pulsators, addition of new filters, and addition of new rapid mix basins. The list of assumed minor improvements for this expansion will be provided by the County and reviewed by the Engineer. Since the purpose of this task is to identify budgetary costs for the total expansion, the Engineers review will not include design work for new facilities. Design of these facilities is assumed to be in a subsequent project or phase.

1.02.05 Treatment Comparison Workshop and Draft Report

Following the desktop analysis, CDM Smith will conduct a Treatment Comparison Workshop (to be combined with Pilot Test Planning Workshop) where the results of the DTAA will be reviewed and discussed. After receiving comments from the Owner on the analysis, the Engineer will begin writing a report to summarize the treatment options and analysis, budgetary level cost comparison, and recommendations for the Northwest WTP.

Task A1.02 Deliverables:

- Fast Start Workshop and Meeting Minutes
- Treatment Comparison Workshop and Meeting Minutes
- Draft Report for Advanced Treatment Options, Cost, and Recommendations

A1.03 *Task 3 - Pilot and Bench Testing*

The Engineer will provide, install, operate, and evaluate the performance of a membrane pilot unit at the Northwest WTP to remove the TCEC from the filtered water, and compare the performance to other treatment options evaluated in the DTAA. The membranes shall be either low pressure reverse osmosis (LPRO) with greater than 99% salt rejection or nanofiltration (NF) with 60-80% salt rejection, and the type and other characteristics of the membranes to be tested shall be selected by the Engineer based on experience, past performance of similar systems, and manufacturer recommendations. Either LPRO or NF will be selected for the membrane filtration process in the pilot test.

The Engineer will coordinate and provide UV-AOP (with peroxide) bench testing as a supplemental treatment technology.

1.03.01 Pilot Plan and Testing Protocol

The Engineer will prepare a Pilot Plan and Testing Protocol. This document contains a plan for pilot site layout, source water connection point, operation details, materials and utilities, chemicals, safety, staffing, handling of waste generated by the pilot, startup/shutdown procedures, daily data collection, and a detailed plan for sampling and laboratory analysis.

The Engineer will provide a draft version of this document to the Owner for review and comment.

1.03.02 LPRO/NF Pilot Study

The Engineer will provide an existing trailer mounted two stage LPRO/NF pilot unit owned by CDM Smith for **four** months, complete with chemical feed system, SCADA, on-line and manual instrumentation, and suitable for testing a range of operating conditions typical for LPRO/NF systems. The following specifications will be provided:

- The LPRO/NF membrane pilot unit is housed in approximately 24-foot long, 8-foot wide, self-contained cargo trailer. The trailer requires connections to the source water feed line, to the drain line, and to a 480 V three phase electrical power source, each are to be provided by the Owner. The Owner will provide a location to park and stage the trailer mounted pilot unit, electrical service and power during testing, filtered water pumped to the trailer, and provide site security for the unit while it is on the Northwest WTP site.
- The trailer-mounted pilot unit will be configured to simulate a two-stage membrane process arrangement. In a two-stage configuration, pressure vessels containing the membrane elements are operated in series where the concentrate (reject water) from the first stage pressure vessels serve as the feedwater to the second stage pressure vessels. The source water for the LPRO pilot trailer will be the filtered water from Northwest WTP. The filtered water will be supplied by a booster pump, provided by the Owner, to ensure an adequate pressure is maintained through the pretreatment system.
- Mineral scaling, fouling and oxidation in the membrane system will be controlled by adjusting the pH, use of a scale inhibitor and dechlorination or chloramination. The dosage of acid, antiscalant, and other chemicals will be determined during the project. Drums of corrosive or hazardous chemicals (acids, etc.) and metering pumps will be stored in a lockable outside storage and containment structure ("dog-box"). The antiscalant system and other chemicals will be located inside the trailer and consists of double containment storage tanks and metering pumps.
- Cartridge filtration will be provided to prevent sand, silt, or other suspended material from entering the membranes.
- The feedwater will be boosted to the necessary operational pressure by a variable-speed pump. The pressure of the feedwater will be controlled by manually adjusting the speed of the drive to maintain the required permeate flowrate.
- The first stage consists of two parallel pressure vessels with eight - 4-inch diameter standard commercial RO elements in series. The second stage consists of a single pressure vessel with eight 4-inch diameter RO elements in series. Concentrate water from the first stage pressure vessels is combined and serve as the feedwater to the second stage pressure vessel. Overall, this system represents a 2:1 pressure vessel array, which mimics the anticipated full-scale array and element configuration.
- Feed, interstage, permeate, and concentrate pressures within each series of pressure vessels will be monitored.

- The Permeate (product water) from the first stage is combined with the permeate from the second stage to form the "total composite permeate", which is the product water. During the pilot study, the total permeate will be combined with the final concentrate and directed to a single waste line within the pilot trailer that can be discharged to the plant process drain system. Handling and treatment of the process waste from the pilot unit will be provided by the Owner.
- The trailer can be heated for cold weather conditions, however, the feed and waste lines outside the trailer may require insulation and/or heat trace if the ambient air temperature drops below freezing temperatures. The Owner will monitor and provide insulation and/or heat trace for these lines if required.

1.03.03 Pilot Plant Assembly, Startup, Training, and Operation

The Engineer will provide pilot plant assembly services, startup testing and troubleshooting of the pilot facilities and general coordination during pilot testing operations. The Engineer and Owner will collaboratively operate the pilot equipment continuously (except for periodic shutdowns for equipment maintenance and membrane chemical cleaning), 7-days per week, for 13-weeks. The Engineer has assumed that after startup and successful operation, the Engineer will provide visual observation and onsite assistance 2-days per week for the first 7-weeks of the pilot testing, and 1-day per week for the remaining 6-weeks of the pilot testing. The Engineer will provide the Owner's staff with training on operation and monitoring of the pilot facility. The Owner will provide staff for monitoring the pilot plant multiple times each day, making minor adjustments as needed, consulting with the Engineer on issues, recording data in daily logs.

During the pilot plant operation, the following routine monitoring, sampling, and testing activities will be performed:

- The pilot system will be monitored daily to record operating parameters, routine water quality parameters, and to conduct routine equipment inspections/adjustments. This will be provided by the Owner's staff, with training and guidance provided by the Engineer.
- The Engineer, with the Owner's assistance, will sample various process streams every 7-10 days for additional water quality analyses to be performed at the WTP laboratory. These analyses will include: color, pH, hardness, and alkalinity for four pilot process locations, (1) source water, (2) feedwater, (3) total permeate, and (4) concentrate.

The Engineer, with the Owner's assistance, will periodically sample various process streams for additional water quality analyses. These analyses will include the TCEC list established in the DTAA, which are likely to include unregulated chemicals such as PFCs, GenX, 1,4-dioxane, Hexavalent Chromium, NDMA, and PPCPs). Feedwater, total permeate, and concentrate samples will be collected up to a total of three times during the pilot test at the following approximate intervals:

- 1 day after initiation of pilot operation

- 30 days after initiation of pilot operation
- Between 60-90 days after initiation of pilot operations

The Engineer will coordinate, with the Owner's assistance, a minimum of one grab sample to be taken from the feedwater and concentrate streams during each TCEC sampling event, which will be distributed as follows:

- Testing outside-contracted laboratory A

The Engineer will coordinate, with the Owner's assistance, a minimum of two grab samples to be taken from the total permeate stream during each sampling event, which will be distributed as follows:

- Testing outside-contracted laboratory A
- CDM Smith laboratory to bench test UV-AOP (peroxide). Samples will then be taken and sent to outside-contracted laboratory A for testing of parameters susceptible to UV-AOP treatment that are not removed to desired levels by the membranes.

The Engineer will coordinate, with the Owner's assistance, a minimum of one grab (or composite) sample to be taken from the raw water entering the Northeast WTP. The sample will be distributed to an outside-contracted laboratory for analysis.

1.03.04 Bench Test for UV-AOP

The Engineer will provide a Bench-Scale test evaluation of UV-AOP (peroxide) for three of the permeate stream samples that is taken from the LPRO/NF pilot test. The samples from the LPRO/NF will be collected and shipped by the Engineer to the Engineer's laboratory for testing and additional sample collection. The process will involve using a batch UV reactor, and simulating the chemical addition of peroxide to enhance the oxidation process. A total three separate UV-AOP bench tests will be completed with the first three TCEC sampling events for the LPRO/NF pilot. For the first of the three UV-AOP bench tests, the Engineer will test two different concentrations of peroxide and two different doses of UV irradiation, in order to establish an optimum dose for subsequent testing. This will result in 4 discrete samples that will be sent to the Laboratory A for analysis. For the second and third UV-AOP test only one dose of peroxide and UV will be tested.

1.03.05 Technical Memo to Summarize Pilot and Bench Test Results

At the end of the pilot and bench test task the Engineer will prepare a Technical Memorandum summarizing the results of the tests. This document will capture important data that will be utilized for preliminary and final design, should the piloted technology be the preferred alternative at the end of the project.

Task A1.03 Deliverables:

- Pilot Plan and Testing Protocol
- Pilot Study Technical Memorandum

A1.04 *Task 4 - Treatment Recommendation and Final Report*

1.04.01 Reviewing Pilot Data and Treatment Recommendation Workshop

The Engineer will compile the qualitative and quantitative results of the DTAA and the Pilot/Bench study. This information will then be utilized to compare up to 3 alternatives for achieving the established treatment goals. This includes evaluating which alternatives achieve the County's set treatment goals. Additionally, the preliminary treatment goals will be re-evaluated at this point to determine whether the goals are attainable and adequate.

The Engineer will conduct a workshop with the County to review the treatment goals, pilot results, and draft recommendations.

1.04.02 Treatment Recommendation and Final Report

The information and analysis described above will be incorporated in the Draft-Final Report, including updating the cost opinion for the three treatment alternatives that were evaluated. The draft report will be provided to the Owner for review.

After receiving comments from the Owner, the Engineer will revise and issue a Final Report for the County.

Task A1.04 Deliverables:

- Final Report for Advanced Treatment Options, Cost, and Recommendations

A1.05 *Task 5 - Pre-Permit Application Services*

Following completion of this study, the Owner intends to modify and expand the Northwest WTP with significant changes to the water treatment process, to remove the TCEC. Prior to beginning this effort it is necessary to verify that the required permits to modify the treatment process and facility will be attainable through NC Department of Environmental Quality (NCDEQ), Division of Water Resources (DWR). The Engineer will provide services related to pre-permit application due diligence for determining whether membrane or other treatment technologies will be permitted for the Northwest WTP by the NCDEQ, and whether the primary waste stream for this new process (RO or NF concentrate) can be disposed of by discharging the concentrate into the Cape Fear River.

1.05.01 Regulatory Data Collection and Permit Feasibility Framework

The Engineer will gather information on feasible locations for receiving streams (discharge locations) and will review other RO discharge permits in the area. The Engineer will review related data on surface water classifications, impaired waters, available water quality data, basin-wide water quality plans, and other data that will affect the selection of a receiving stream.

1.05.02 Meet with DWR

The Engineer will coordinate with the DWR NPDES Unit to discuss the project and schedule a preliminary meeting to discuss options for the concentrate discharge. This task also includes coordination with the DEQ Customer Service Center (CSC) to schedule the clearinghouse-type meeting, which is required for NF and RO discharges. This meeting will serve as notification to 10 other departments and agencies of the Owner's plan to submit an NPDES permit application. After the CSC inter-departmental and agency meeting, the Engineer will prepare meeting minutes and an assessment of the path forward for the Owner.

1.05.03 Prepare Draft Engineering Alternatives Analysis

The Engineer will prepare a draft Engineering Alternatives Analysis (EAA) in support of the NPDES permit application as required by DWR. The EAA must provide justification and demonstration of the need for the expected flow volume, and it must include a summary of waste treatment and disposal alternatives options that were considered and why the proposed system and proposed alternative were selected. As required by DWR, the draft EAA will include the following:

- Description of project and applicant contact information
- Summary of proposed discharge flow projections based on WTP design
- USGS map showing proposed discharge location
- Evaluation of technologically feasible alternatives, including the following:
    - Connection to an existing wastewater treatment system
    - Land application
    - Wastewater reuse
    - Direct discharge to surface waters
    - Combination of alternatives
- Evaluation of economic feasibility of alternatives identified as technologically feasible, including a 20-year Present Value of Costs Analysis.

The Engineer will submit the draft EAA to the Owner for review. It is anticipated that the EAA cannot be finalized until the completion of the dilution study and toxicity testing, described in task A1.06. However, preparing the draft EAA early will allow the results of the study, modeling, and testing to be submitted along with the EAA to DWR once it has all been completed.

1.05.03 Prepare Permitting Technical Memorandum

CDM Smith will summarize the regulatory and permitting requirements for an RO/NF treatment alternative in a technical memorandum. The technical memorandum can be incorporated into the overall report, by addendum, once it is completed. The permitting memorandum will include a table listing permits needed for the RO/NF treatment alternative, a description of the permits and regulatory requirements, a summary of the coordination with DWR, and a recommendation for the path forward and next steps in obtaining permits.

Task A1.05 Deliverables:

- Draft EAA, without sections on Dilution Study and Toxicity Testing
- Permitting Technical Memorandum

A1.06 *Task 6 - Concentrate Discharge Dilution Study, Toxicity Testing, and NPDES Permit Submittal*

A dilution study and toxicity testing will be required by DWR to complete the EAA. The scope of the dilution study and toxicity testing will be further defined during discussions with DWR staff. The task is likely to include the following components:

- Dispersion modeling analysis using CORMIX model
- Meetings with DWR
- Background sampling in the receiving water body
- Toxicity testing using pilot water treatment concentrate

Following the completion of DWRs requirements for the Dilution Study and Toxicity Testing, the Engineer will complete the EAA by adding information about the Dilution Study and Toxicity Testing. Then the Engineer will submit a draft application for NPDES permit to DWR. The Engineer will provide coordination with DWR, including public notice of permit application and a public hearing.

Task A1.06 Deliverables:

- Draft EAA
- NPDES Permit Application

A1.07 *Task 7 - Laboratory Services*

The Engineer will manage all laboratory services utilized in the project. Laboratories will provide analysis of water samples related to the project, to determine background water quality and to determine the effectiveness of treatment technologies being evaluated. The engineer will coordinate the work and provide procurement of laboratory services.

Laboratory A has been identified as Eurofins Lab. The engineer will select additional qualified laboratories to complete the laboratory work for the project.

The table provided below shows the Engineer's assumption of approximate laboratory testing parameters.

Analyte	No. of Raw Water Samples	No. of Filtered Water Samples	No. of RO Permeate Samples	No. of RO Concentrate Samples	No. of UV-AOP Samples
PFCs	1	3	3	3	0
1,4-dioxane	1	3	3	3	0
Hexavalent Chromium	1	3	3	3	0
NDMA	1	3	3	3	8
PPCP	1	3	3	3	8
UCMR3	1	3	3	3	0
UCMR4	1	3	3	3	0

Task A1.07 Deliverables:

- None

A1.08 *Task 8 – Unspecified Services*

The Engineer will provide unspecified additional services to assist the Owner, when requested and approved in writing, including but not limited to the following examples:

- Additional pilot testing, bench testing, and/or laboratory testing services
- Extended analysis of health impacts resulting from contaminant exposure
- Presentations made to the County Commissioners and public meetings
- Developing or assisting with public information, public engagement, and related meetings
- Provide expert witness testimony
- Further services to obtain permits
- Provide consulting services outside the scope of work described in Part 1 – Basic Services

All work under this task shall be authorized in writing by the Owner prior to beginning work.

Task A1.08 Deliverables:

- None

PART 2 – ADDITIONAL SERVICES

A2.01 *Additional Services Requiring Owner's Written Authorization - NONE*

PART 3 – ASSUMPTIONS, EXCLUSIONS, AND OWNERS RESPONSIBILITIES

A3.01 *The following summarizes assumptions and exclusions with respect to the scope of work, as well as the Owners Responsibilities as it relates to the Engineer's performance of the Project.*

ASSUMPTIONS FOR BASIC SERVICES

- All tasks that are compensated as Cost Plus Fee have been assigned an Upper Limit. The scope and costs of the work in these tasks cannot be fully defined and therefore it is unknown if the set Upper Limit is sufficient to fund the completion of the work described in these tasks. The Engineer will not work beyond the Upper Limit of the task and does not guarantee completion of the work described in the task. If additional funding is required, the Engineer will provide the Owner with a proposal for Amendment to complete the work.
- The purpose of the project is to identify a feasible treatment approach for the NWTP that will achieve the Owner's treatment goals.
- Health goals will be established based on limited literature review for health impacts believed to be associated with contaminant exposure. Extended evaluation and in-depth analysis is not included in Lump Sum services.
- It is assumed that an environmental document (Environmental Assessment or Environmental Impact Statement) will not be required in accordance with changes made in NC General Assembly Session Law 2015-90.
- This scope of work does not include addressing DWR comments on the draft NPDES permit or submittal of a final NPDES permit application to DWR. It is anticipated that these steps would be undertaken under an amended scope of work.
- This scope of work does not include any endangered/protected species surveys.
- This scope of work does not include any Clean Water Act Section 404/401 or Rivers and Harbors Act stream and wetland permitting activities, other than coordination with agencies during the initial interagency meeting.
- Design of diffuser for river discharge is not included. If required by DWR with the NPDES permit application, then these services will be undertaken under an amended scope of work.

- Work and expenses related to making presentations to the Board of Commissioners shall be included under Task A1.08 Additional Services Contingency

EXCLUSIONS FOR BASIC SERVICES

- Any work that is not explicitly described as included in the Engineers scope of work
- Preliminary Engineering of treatment facility improvements or expansion are excluded, as they are intended to be completed in a subsequent project.
- Detailed cost estimates for facilities as associated with preliminary engineering services
- Facility design or layout of expansion or new treatment facilities, as associated with preliminary design/engineering services
- Surveying, geotechnical, or condition assessments

OWNERS RESPONSIBILITIES

- Provide Engineer with timely response to requests for information, data, or decisions
- Review and provide comments on test plans, reports and technical memos within 1-week
- Participation of decision-makers in meetings and workshops to facilitate project progression
- Provide Engineer with access to the Northwest WTP as needed to complete the Project
- Provide Owner staff and laboratory support services for the pilot and bench testing tasks, including; setup/startup, daily maintenance tasks, daily pilot equipment data recording and creating daily monitoring logs
- Provide a suitable location at the Northwest WTP for staging the pilot study
- Provide all control and power connections needed to run the pilot equipment
- Provide continuous combined filter effluent water (pump and piping/hose) to the pilot trailer at approximately 25-gpm. In the event of cold weather, provide insulation and/or heat trace to prevent the feedwater from freezing.
- Provide continuous removal of pilot drain/waste water, assumed to be approximately 25gpm in a 3-4" pipe/hose to collect and transmit the wastewater to the nearest process drain. In the event of cold weather, provide insulation and/or heat trace to prevent the drain water from freezing.