

PARSONS

DRINKING WATER COMPLIANCE PLAN

**CHEMOURS FAYETTEVILLE WORKS
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ACRONYMS

Acronym	Definition / Description
AA	Access Agreement
COC	Constituent of concern
GAC	Granular Activated Carbon
HFPO-DA	Hexafluoropropylene Oxide Dimer Acid
LCS	Laboratory control samples
MS/MSD	Matrix spike/matrix spike duplicates
ng/L	Nanograms per liter
NCDEQ	North Carolina Department of Environmental Quality
PFAS	Per - and polyfluoroalkyl substances
PFC	Perfluorinated Compounds
REP	Replicate
RO	Reverse Osmosis
Site	Fayetteville Works Facility
RAP	Remedial Action Plan

1.0 INTRODUCTION

Parsons has prepared this *Drinking Water Compliance Plan* on behalf of the Chemours Fayetteville Works facility (Site) located in Fayetteville, North Carolina (Figures 1 and 2). This document presents a proposed plan for additional activities to be conducted at the Site as required by Paragraph 24 of the Consent Order (CO) between Chemours, the North Carolina Department of Environmental Quality (NCDEQ), and Cape Fear River Watch (CFRW), which was entered by the Court on February 25, 2019.

This plan is based on current knowledge and understanding of how best to meet the CO Paragraph 24 requirements. This plan may be modified in the future as new information is available and/or more efficient means or methods are identified in order to continue to meet the CO requirements.

1.1 Consent Order

This plan presents the activities that will be conducted to comply with Section F (Compliance Measures – Replacement Drinking Water Supplies) of the CO, and it is intended to meet the following CO Paragraph 24 requirements:

“By no later than sixty (60) days after entry of this Order, Chemours shall submit a plan for compliance with paragraphs 19-23 to DEQ for approval. This plan shall include a detailed schedule with milestones for Chemours to fund a third party to (1) sample private drinking water wells, (2) flush the drinking water supply plumbing (including flushing hot water heaters to remove solids) and replace, when deemed necessary by DEQ, previously installed water treatment systems (such as water softeners or filters) for any building receiving permanent replacement drinking water supplies under paragraph 19, (3) implement a testing program of finished water, as acceptable to DEQ, to demonstrate the effectiveness of filter systems, and (4) maintain filtration systems installed pursuant to paragraph 19 or 20 for a minimum of 20 years or until such a time as testing of groundwater demonstrates that each PFAS listed in Attachment C is below any applicable health advisory, whichever is longer.”

In addition to addressing the 4 requirements identified in the second sentence above, this plan also addresses the requirements identified in CO paragraphs 19-23 as follows:

- Paragraph 19. Provision of Public Water Supplies or Whole Building Filtration Systems (see Section 5)
- Paragraph 20. Provision of Reverse Osmosis Drinking Water Systems (see Section 4)
- Paragraph 21. Private Well Testing (see Section 2)
- Paragraph 22. Provision of Sampling Results (see Section 2.4)
- Paragraph 23. Interim Replacement of Private Drinking Water Supplies (see Section 3)

1.2 Call Line

Chemours has established an information call line to answer questions about the activities covered in this plan. Participants can call (910) 678-1101 at any time to leave a message requesting additional information or to leave questions, comments, or concerns about any step in the drinking water replacement process. Messages to the

call line are monitored during regular business hours (Monday through Friday, 9am to 5pm). Calls requiring follow up are usually returned within 24 to 48 hours starting on the next business day.

2.0 PRIVATE WELL TESTING

Parsons has been retained as an Environmental Contractor to assist Chemours with ongoing activities at the Site and, as part of these activities, Parsons representatives have conducted four phases of residential and private drinking water well sampling in the areas around the Site. The private drinking water well sampling program commenced on September 6, 2017 and is ongoing. Samples previously collected during this investigation were analyzed for the target compound hexafluoropropylene oxide dimer acid (HFPO-DA; CAS number 13252-13-6). Future laboratory analysis will also include additional PFAS compounds (as listed in Attachment C of the CO and included in Table 1 of this plan).

As stated in CO Paragraph 21, additional private well testing is now required:

“Chemours shall fund sampling by a third party laboratory approved by DEQ of drinking water wells for a distance of at least one-quarter (1/4) mile beyond the nearest well with test results showing a quantifiable level of any PFAS listed in Attachment C above 10 ng/L. Such testing shall be completed within eighteen (18) months of entry of this Order. Additionally, by December 31, 2018, Chemours shall fund re-analysis by a third party laboratory approved by DEQ for all PFAS listed in Attachment C of any previously collected groundwater samples that were analyzed only for GenX, GenX Compounds, or a subset of the PFAS listed in Attachment C. Chemours shall retest annually to determine the extent of PFAS contamination. Chemours shall request incorporation of a plan to carry out this requirement in its Corrective Action Plan.”

The third party laboratory approval request was submitted in a letter from Mr. Brian Long (Chemours) to Ms. Sheila Holman, Assistant Secretary for the Environment (NCDEQ) on December 18, 2018. To fulfill the remaining requirements of CO Paragraph 21, Chemours will perform additional residential and private drinking water well testing as described below.

2.1 Additional Drinking Water Well Testing

CO Paragraph 21 requires sampling and analysis of water samples from private drinking water wells to a distance of at least one-quarter (1/4) mile beyond the nearest private well with any PFAS compounds listed in CO Attachment C above 10 nanograms per liter (ng/L). This testing is required to be completed no later than 18 months after the February 25, 2019 entry of the CO (i.e., by August 26, 2020). Additionally, the spatial extent of the PFAS listed in CO Attachment C that will be detected in the private wells above 10 ng/L is unknown. Therefore, Chemours proposes an “Adaptive Step Out and Infill Sampling Program” (the Program) to delineate the extent of CO Attachment C PFAS above 10 ng/L in private drinking water wells and to sample all private wells within the delineated area within the CO Paragraph 21 18-month timeframe. Appendix A describes the design and implementation of the Program and provides details on the standard residential sampling procedures that will be used during the Program. A brief summary of the Program is presented in the remainder of this section.

The Program is comprised of two concurrent sampling programs: (i) Adaptive Step Out Sampling Plan to characterize the extent of sampling potentially required and (ii) Infill Sampling Plan to collect samples from all private drinking water wells per Paragraph 21 requirements. The results of the Adaptive Step Out Sampling Plan are intended to

provide Chemours and its contractors with the information needed to form plans to accomplish the Infill Sampling Plan in the CO specified time period of 18 months.

The Adaptive Step Out Sampling Plan will be conducted in iterative stages. Each stage will involve collection of successively more distant samples as needed to estimate the extent of CO Attachment C PFAS above 10 ng/L. The offsite area will be divided into sixteen sectors, where each sector will represent a 22.5-degree angular distance from the center of the Site (e.g., Sector 1 will be north, 0 degrees, to north northeast, 22.5 degrees). Distance intervals within the sectors for each stage will be defined by successive one-mile rings from the center of the Site. For each of the sixteen sectors during a stage of sampling, ten private drinking water wells will be selected for testing within the one-mile interval. Hence, the initial stage of the step out sampling program will consist of collecting approximately 160 private well samples (16 sectors x 10 samples).

Upon receipt of analytical data from each stage of the Adaptive Step Out Sampling Plan, the results will be reviewed, and the Chemours team will evaluate whether additional step out sampling (i.e., move outwards at least one or more miles) is needed on a sector by sector basis. Subsequent stages of step out sampling will continue until there are no more detections above the established criteria. Hence, step out sampling may be conducted to different distances in different direction sectors depending upon sample results. Once there are no more PFAS detections within a sector, then an additional ten confirmatory samples will be collected within a ¼-mile interval. These results from the ten confirmatory samples will be used to establish the expected Infill Sampling limits of the ¼-mile distance requirement stipulated in CO Paragraph 21. Each stage of sampling will last approximately one month, where the first week will consist of Adaptive Step Out sampling and the other three weeks will consist of Infill Sampling.

The Infill Sampling Plan involves collecting samples at all private wells within the defined sector and one-mile area with known PFAS detections above 10 ng/L. The Infill Sampling will occur systematically within each sector and will continue until all private wells have been tested within the delineated sector, i.e., even after the Adaptive Step Out Sampling has been completed.

During implementation, data will be reviewed monthly and modifications made as needed to support achieving sampling timeframes. Modifications may potentially include adjusting the number of private wells sampled within each sector, distance intervals per stage (i.e., distance between rings), and number of sampling teams collecting step out and/or infill samples.

As presently described, the Adaptive Step Out Sampling Plan will allow for the collection of samples, if necessary based on earlier sample results, to a distance of 10.5 miles from the center of the Site by December 2019. The potential step out distance of 10.5 miles by December 2019 assumes (a) sampling starts in May 2019, (b) analytical data turnaround times are one-month and (c) samples need to be collected to this distance based on data from earlier stages. Chemours will provide updates to NCDEQ describing the progress of these sampling programs and any potential modifications as part of quarterly reports submitted as required by CO Paragraph 28.

2.2 Re-Analysis of Previously-Collected Groundwater Samples

As required in CO Paragraph 21, Chemours will re-analyze the retained sample aliquots of any previously collected groundwater samples that were only analyzed for HFPO-DA or a subset of the PFAS listed in Attachment C of the CO. The samples will be re-

analyzed for all the PFAS listed in Attachment C of the CO (which are included as Table 1 in this plan).

2.3 Annual Re-Testing

As required by CO Paragraph 21, Chemours is required to retest a representative subset of the previously-sampled wells on an annual basis. For 2019 and 2020, the priority will be to complete the initial delineation and first round of sampling as described in Section 2.1. In addition, in 2019 and 2020, Chemours will randomly select and retest 10 locations that were previously tested and had no detections above 10 ng/l. Within 60 days after completion of and receipt of final laboratory analytical data from the initial delineation testing, Chemours will propose a plan for annual retesting thereafter based on those results.

2.4 Provision of Sampling Results

As required by CO Paragraph 22, on an ongoing basis and within seven days of receipt of final laboratory results, Chemours will provide any new groundwater sampling results to NCDEQ, with samples identified by both address and sample identification code. In addition, within seven days of receipt of final laboratory results, Chemours will also provide the results in the form of a certified summary certificate to the party who had their well tested. A chart showing the flow of sampling data and results is included as Figure 3.

Correspondence will be sent to each well owner explaining the reason for the letter and providing them with their sampling results. The mailings began upon entry of the CO and are ongoing. Parsons will also attempt to hand deliver any returned letters. Example residential results letters were submitted to NCDEQ for review on January 28, 2019. For parties represented by counsel, communications will be made among counsel.

2.5 Verification of Vacant Properties

As new and/or updated information about residential properties in the sampling program is received, the project database will be updated as soon as possible with the new information. The project team will keep a list of any residences that are discovered to be vacant and will visit those properties on a quarterly basis to determine if the residences remain vacant. The follow up visits will be documented in the project database. If the properties are found to have become re-occupied, appropriate steps will be taken to collect a sample of any private drinking water wells on the property and/or provide the resident with replacement drinking water supplies, if required (as described below in Sections 3.0 to 5.0).

3.0 INTERIM REPLACEMENT OF PRIVATE DRINKING WATER SUPPLIES

3.1 Replacement Drinking Water Supplies

CO Paragraph 19 requires that permanent replacement water supplies shall be established by connection to a public water supply except when an affected party (a) elects GAC or Reverse Osmosis (RO), (b) declines permanent replacement drinking water, or (c) when connection to public water is cost-prohibitive, over \$75,000. Permanent replacement drinking water supplies must be provided and maintained for any party with a private drinking water well that has been found to have a concentration of GenX compounds in exceedance of 140 ng/L or any applicable health advisory, whichever is lower. CO Paragraph 20 states that Chemours must provide up to three under-sink RO drinking water systems for any resident whose drinking water supply well contains combined quantifiable concentrations of the PFAS listed in CO Attachment C (also listed in Table 1 of this plan) in exceedance of 70 ng/L or any individual of those PFAS in exceedance of 10 ng/L. The installation of the RO systems and permanent replacement drinking water supplies are described in Sections 4 and 5, respectively, of this plan.

Paragraph 23 of the CO requires that, within 3 days of becoming aware that a party qualifies for permanent replacement of private drinking water, Chemours must offer temporary replacement water supplies until the permanent replacement water supplies have been put into place. For parties whose wells were previously tested and who now qualify for permanent replacement of private drinking water under the requirements of the CO, Chemours offered temporary replacement water supplies within 30 days of entry of the CO. The sections below describe the procedure for ongoing interim replacement of drinking water supplies, and a chart illustrating the process is included in Figure 3.

3.2 Initial Replacement of Private Drinking Water Supplies

Upon notification that a resident qualifies for replacement drinking water supplies, the Parsons project team will provide initial replacement drinking water within 3 days by visiting the residence and delivering up to five cases of bottled water along with a letter explaining the path forward for interim bottled water delivery set-up and permanent water replacement options. The letter will also include instructions for additional bottled water delivery and/or pick up if needed. If the team is not able to deliver the initial replacement drinking water, a Parsons scheduler will attempt to call the resident and make an appointment for the team to return and make the delivery. If the scheduler is unable to reach the resident, the team will make another in-person attempt to deliver the water within the 3-day timeframe. If the team is not able to contact the resident, the team will attempt to contact the resident by phone once a quarter for a period of one year.

Water and letter delivery, as well as all delivery attempts, messages, and conversations, will be documented in the project database. Example initial replacement drinking water offer letters have been included as Appendix B.

3.3 On-going Interim Replacement of Private Drinking Water Supplies

After initial bottled water drop off, the resident's contact information will be provided to a local bottled water delivery service (currently Crystal Springs or Le Bleu), and the

resident will be offered bottled water delivery through the service at no cost to the resident. Bottled water delivery will begin as soon as the resident can be scheduled, and the water delivery service will work directly with the resident to develop a plan for water delivery (e.g., specific delivery day/time, location for water drop-off, etc.).

Bottled water delivery service will continue until the permanent replacement water system has been installed. If a resident is eligible for permanent replacement system but declines to receive it, then Chemours will provide bottled water for three months after receiving written confirmation that the party has declined a water filtration system.

In the event there is a problem with a weekly delivery, Chemours will continue to offer water at the Fayetteville Works facility on a limited basis for those residents qualifying for replacement water. In addition, residents may also call the Chemours call line at (910) 678-1101 with any questions, comments, or concerns about the water delivery service or to request delivery of additional bottled water.

4.0 REVERSE OSMOSIS DRINKING WATER SYSTEMS

Per Paragraph 20 of the CO, Chemours will provide up to three under-sink RO drinking water systems for any resident (i.e., household) and will provide RO water systems for each drinking faucet and sink at public buildings (e.g., schools or government buildings) that does not qualify for permanent replacement drinking water supplies as described in Section 3.1 above, but whose drinking water supply well contains combined quantifiable concentrations of the PFAS listed in Table 1 (from Attachment C of the CO) in exceedance of 70 ng/L or any individual PFAS in exceedance of 10 ng/L. The RO systems for these parties will be installed within six months from the date Chemours becomes aware that the party qualifies (or within six months from the date the CO is entered for those whose results are already known). Residences that qualify for an RO system will be evaluated to determine if a public water supply is nearby. In those cases, public water supply will be offered in lieu of the RO system.

Advanced Water Systems (AWS) is the regional authorized distributor and qualified installer of the Kinetico K5 RO system that has been selected for this project and will be responsible for installation and maintenance of the RO systems. AWS will be referred to as Kinetico to reduce confusion with the Kinetico-branded product that will be installed. AWS will be opening a new Kinetico office in the Fayetteville area dedicated to supporting the K5 RO systems installed for this project.

The steps developed for the RO installation and maintenance process are represented in Figure 3 including the flow of data from Kinetico field staff to the project database. A summary of each RO installation step is also included below. The Kinetico K5 RO system was selected because it has high water generation capacity, long cartridge service life, automated filter service indicator, and strong product service and support capabilities by AWS. This system was approved for installation by DEQ in a letter dated March 25, 2019. The Kinetico K5 RO system will have an additional re-mineralization cartridge added to the standard set of filter cartridges. The optional re-mineralization cartridge is added to reduce resident's concerns related to consuming water with reduced essential minerals or water with taste noticeably different than their previous well water.

The RO Implementation Plan described in the sections below was developed based upon discussions with AWS (the RO system provider) and lessons learned from coordinating Granular Activated Carbon (GAC) system installations with residents. Detailed RO installation Standard Operating Procedures (SOPs) are included in Appendix C. Detailed Kinetico K5 RO specifications are included in Appendix D.

4.1 Initial RO Qualification Notification

Upon confirmation of a qualifying analytical result, a Chemours/Parsons representative will mail or deliver a letter to the property owner indicating that the resident qualifies for RO units. The letter will include contact information for residents to schedule an in-home meeting and may also include a summary of the resident's test results and information related to the Kinetico K5 RO unit (see example letter included as Appendix E). Interested residents will be able to use the contact information provided in the letter to call and get additional information and/or schedule an in-home interview with Kinetico to further discuss the RO system and schedule installation. If after 30 days, the resident has not contacted Chemours/Parsons about the RO offer, a second letter will be mailed. Parsons will make one attempt to hand deliver any returned letters. If Parsons is still unable to contact the resident, the team will make an additional effort via mailed letter

once a quarter for a period of one year. All letter deliveries, messages, and conversations will be documented in electronic logs and uploaded to the project database.

4.1.1 Initial Scheduling Phone Call to Resident

Residents who respond to the letter and request an RO system will have their information sent to Kinetico, who will then contact the residents and schedule an in-home meeting with a Kinetico representative. All telephone conversations between the resident and Parsons, as well as between the resident and Kinetico, will be documented in electronic logs and Kinetico will have access to upload them directly to the project database on a daily basis. During this initial call, Kinetico will be able to answer most of the common questions residents have related to the RO systems and will describe the installation process.

4.1.2 In-Home Interview/Informational Visit

A Kinetico representative will complete an in-home interview/informational visit with the resident at the date and time previously scheduled during the initial call. Information related to the number of RO units, installation locations, special considerations, and faucet color selection will be collected during this meeting to plan RO installation. Measurements of available space, existing water pressure, and basic water chemistry (Fe and sediment) may also be collected in addition to photographs of the installation locations. The Kinetico representative will walk the resident through the RO installation process and annual maintenance procedures. If the resident agrees with the RO installation process, Kinetico will have the resident review and sign an installation agreement (Appendix F) and schedule an installation date. If the resident would like additional time to review the information provided, Kinetico will make a follow-up visit to pick up the signed installation agreement. All data collected during the interview will be recorded on Kinetico installation forms to be uploaded to the project database.

4.2 RO System Installation

A Kinetico team will install the K5 RO units at each home at the previously confirmed locations identified during the in-home visit. All Kinetico K5 units will be installed by Kinetico plumbers and technicians per Kinetico specifications. All work will be completed when residents are at home, and Kinetico staff will give a basic tutorial on how to use the K5 unit, provide contact information to schedule filter replacement, and answer any questions the residents may have. Completed installation forms and resident comments will be uploaded to the project database. Specifications for the Kinetico K5 RO unit and selected modular filters are included in Appendix D.

4.2.1 RO System Quality Assurance

Parsons will conduct a quality assurance (QA) follow-up phone interview with 10 residents, selected randomly, who received a Kinetico K5 RO system to discuss the installation process and confirm that it was completed professionally and that the RO system is functioning as intended. Parsons will also follow-up with all residents who leave messages in the general call line voice mailbox related to RO system operation by forwarding the message on to Kinetico or following up with the resident and making an in-home visit, if necessary.

In addition, Chemours will implement a representative QA testing program for finished water from the RO filter systems that will include sampling of water from 10 homes with RO systems to demonstrate the effectiveness of these systems. The homes will be selected to monitor RO performance of compounds listed in Table 1. One performance evaluation sample will be collected at each of the 10 residences from the kitchen sink following standard residential sampling procedures. In the event that one or more of the tests show that the system is not operating effectively (in that the sample contains combined quantifiable concentrations of the PFAS listed in Table 1 in exceedance of 70 ng/L or any individual of those PFAS in exceedance of 10 ng/L) Chemours will submit a plan as required by paragraph 24(c) of the CO within 30 days to address the matter.

4.2.2 Long-Term RO System Maintenance

The Kinetico K5 RO system is designed to automatically reduce flow when the operational service life of the final carbon polishing cartridge reaches 500 gallons. When residents notice a 75% reduction in flow they will contact Kinetico directly at the numbers provided on the installation agreement and attached to the K5 unit to schedule a filter change. Sediment removal and carbon polishing cartridges will need to be exchanged approximately every 1 to 1.5 years based on average household drinking water usage rates. The primary RO membrane will need to be replaced every 3 to 5 years based upon the amount of water used tracked by the number of sediment and carbon polishing filter changeouts. AWS will complete all K5 RO filter changes and service on behalf of Chemours.

Chemours and/or their subcontractors will maintain the installed RO filtration systems for a minimum of 20 years or until such a time as testing of groundwater demonstrates that each PFAS listed in Attachment C of the CO is below any applicable health advisory, whichever is longer.

5.0 PERMANENT REPLACEMENT OF DRINKING WATER SUPPLIES

In accordance with Paragraph 19 of the CO, Chemours will provide and maintain permanent replacement drinking water supplies for any party with a private drinking water well that has been found to have a concentration of GenX compounds in exceedance of 140 nanograms per liter (ng/L) or any applicable health advisory, whichever is lower. The replacement supplies will be installed within nine months from the date Chemours becomes aware that the party qualifies (or within nine months from the date the CO is entered for those whose results are already known). The replacement may be in the form of connection to public water, to the extent that connection is not cost prohibitive and/or deemed unsafe, or, if public water is not appropriate, either a whole building filtration system (a GAC system) or a RO system as described in the following sections.

5.1 Public Water Supplies

Permanent replacement water supplies will be established through public water supply connections unless, as described in Paragraph 19 c., “DEQ determines that the connection to public water would be cost-prohibitive or unsafe” or unless the affected party chooses a whole building or RO system or declines any permanent replacement drinking water supply.

At the request of Chemours, Parsons previously analyzed and prepared a comprehensive report that explored the extent to which public water connections are feasible for the homes that have been found to exceed the 140 ng/L health advisory limit. In a letter dated March 11, 2019, Chemours provided NCDEQ with the updated cost and technical feasibility information and a proposed process for providing public water to qualifying residents in order to obtain NCDEQ’s concurrence. NCDEQ has not yet acted on this proposal. A summary of the findings contained in the letter is provided below.

In both Bladen and Cumberland Counties on the east side of the Cape Fear River, municipal water is not technically feasible because: (1) there is no existing source for water, (2) the long distance between possible sources and the low density of houses means that there would be poor water quality, and (3) there is little to no infrastructure, and it would be many years before municipal water could be installed. These challenges also result in costs that are prohibitive. Chemours has proposed moving forward with offering homeowners in these areas the option of either a whole house (GAC) filtration system or RO systems on every kitchen and bathroom sink.

As of March 11, 2019, there were 84 homes in Cumberland County west of the river that are above the NC provisional health standard. The lack of existing infrastructure results in the provision of municipal water to these residences exceeding the threshold for cost prohibitive. Therefore, Chemours has proposed moving forward with the option of offering for these homes whole house (GAC) filtration or RO systems on every kitchen and bathroom sink.

As of March 11, 2019, there were 49 homes in Bladen County west of the river that are above the NC provisional health standard. Based on information provided by Bladen County, Chemours estimates the cost of installing municipal water to all 49 homes in Bladen County west of the Cape Fear River at \$3,470,000 -- approximately \$70,816 per home. Based on discussions with Bladen County officials, it is estimated that

construction of the system would require two to four years to complete (assuming the State will expedite the permitting process).

Of the 49 homes, there are approximately 13 homes that have an existing water main in front of the property and would require only installation of a lateral connection. Providing these homes with water can be accomplished quickly and with only minimal costs (within 9 months and below the \$75,000 per home threshold). The remaining 36 homes require significant infrastructure installation to connect to public water. In addition, for the cost to stay below the “cost prohibitive” threshold, at least 30 of these homes would have to agree to be connected to public water. Therefore, Chemours recommended the following approach:

- The 13 homes requiring only a lateral connection would be offered either a public water hook up (with water bills of up to \$75 per month to be paid by Chemours for 20 years), a whole house (GAC) filtration system, or RO systems on every kitchen and bathroom sink.
- For the remaining 36 homes, assuming that NCDEQ agrees to an extension to the time required for installation (which is listed as 9 months in paragraph 19 of the CO), Chemours would ask the homeowners preference, and if at least 30 homeowners opted for public water, then that option would be available (assuming that Bladen County agrees). If fewer than 30 of homes agree to be connected to public water, all homes would be provided with the options of a GAC system or RO units on every kitchen or bathroom sink.
- If no extension for implementation is granted, the 36 homes would be provided with the options of a GAC system or RO units on every kitchen or bathroom sink.
- If a sufficient number of homes agree to a public water connection such that the cost remains below the “cost prohibitive” threshold, these homes would be offered RO systems while waiting for the installation of public water.
- Where a home that is entitled to an RO system is located next to a public water line and connection to that line requires only a lateral connection, Chemours will provide a connection to public water instead of an RO system.

5.2 Whole Building Filtration System – GAC Implementation Plan

If the qualified resident elects to have a whole building filtration system installed, then the GAC Implementation Plan described in the sections below would apply. The plan was developed from the Carbon Implementation Plan (Parsons, January 2018), as well as findings from the installation of the Pilot GAC systems and ongoing GAC installations. A GAC Implementation Flow Chart was developed to maximize installation efficiency based on lessons learned from previous GAC installations and is presented on Figure 3. All steps developed for complete GAC installation are represented in the figure including a representation of the flow of data between Parsons field staff, Parsons project management staff, and the project database. A summary of each GAC task step is included below. All subcontracted construction tasks described below will be overseen by a Parsons representative. Detailed GAC construction and implementation SOPs are included in Appendix G, and this system was approved for installation by DEQ in a letter dated March 25, 2019. Residences that qualify for a GAC system will be evaluated to determine if a public water supply is nearby. In those cases, public water supply will be offered in lieu of the GAC system.

5.2.1 Initial GAC Qualification Notification

Upon confirmation of a qualifying analytical result in exceedance of the CO criteria in Paragraph 19, a Chemours/Parsons representative will mail or deliver a letter to the property owner indicating that the property qualifies for a GAC (or RO) unit. Parsons will make one attempt to hand deliver any returned letters. The letter will provide contact information for those interested in installation of a GAC system (see example letter included as Appendix H). If after 30 days, the resident has not contacted Chemours/Parsons about the GAC system offer, a second letter will be mailed. If Parsons is still unable to contact the resident, the team will make an additional effort via mailed letter once a quarter for a period of one year.

Interested residents will be able to use the contact information provided in the letter to call the call line (910-678-1101) to get additional information and/or schedule an in-home interview with a Parsons team member to further discuss the GAC system offered. All telephone conversations will be summarized in written electronic logs that are uploaded to the project database. During this initial call, Parsons will be able to answer most of the common questions residents have related to the GAC systems and will describe the GAC installation process. If residents elect to have RO systems installed as an alternative to the GAC system, the RO Implementation Plan (Section 4.0) will be implemented.

5.2.2 In-Home Interview/Informational Visit

Parsons will then complete an in-home interview/informational visit with the resident at the date and time scheduled during the initial call. Information from the resident related to the home/property layout, water use, and well system will be collected during this interview and will be used to plan the GAC system installation. Measurements of water flow and basic water chemistry may also be collected, along with photographs and/or sketches of the area(s) on the property where the GAC shed can be sited. Parsons representatives will walk the resident through the GAC installation process and give the resident an informational packet with a description of the construction steps including images of installed systems and contact numbers. In addition, an access agreement (AA), which will allow Chemours and/or Parsons representatives to access and perform GAC installation and maintenance activities on the resident's property, will be provided and reviewed with the resident during the in-home visit. The resident can sign the AA during the visit or take additional time to review the document. However, work on the system installation will not begin until the signed AA is received from the resident.

All data collected during the visit will be uploaded to the project database from the field. Parsons will have additional copies of the AA on hand during the visit and will have a scanner (or equivalent) available to provide residents with additional scanned copies of their AA, as needed. If residents would like additional time to review the information provided, Parsons will schedule a follow-up visit to pick up the signed AA.

5.2.3 Public Utility (811) Notification and Private Locate

Following completion of the initial interview and receipt of a signed AA the Parsons utility locate team leader will contact the public utility excavation notification service (811) and contact the resident to schedule a private utility locate. Parsons is registered as a Master Contractor within the North Carolina 811 system with authority to request utility clearances on behalf of our subcontractors.

Following or concurrent with the public utility notification Parsons will oversee a private utility survey of the property. Telephone correspondence logs, 811 locate request tickets, private utility locate work order, utility maps, invoices, oversight notes, and photos will be uploaded to the project database. If utility paint marks or pin flags are disturbed before the associated GAC excavation steps are completed, Parsons will contact 811 and the private locate subcontractor for re-marks. The Parsons task leader will be responsible for scheduling and maintaining the utility marks as well as contacting the resident with updates on when staff will be accessing the property.

5.2.4 GAC Permitting

All construction work associated with GAC installation will be completed under the proper permits required by Cumberland and Bladen Counties or any other county where GAC system installation will be completed. Prior to the start of work, permits are pulled by the licensed contractor assigned to the task. Permits are then approved and filed after the appropriate County inspections complete their onsite inspection of the work. GAC systems are not considered complete until the appropriate permits have been approved. Copies of approved permits are kept on file in the project database and on file at the appropriate County Offices. Electrical and plumbing permits are the most common type of permit needed for GAC system installation. Additional permits will be required if residential leach fields need to be disturbed and restored for GAC trench installation or if residential wells need to be reinstalled.

5.2.5 GAC Shed Installation

Following completion of the public and private utility locate, the Parsons shed task leader will contact the resident to schedule delivery and installation of the small shed that will house the GAC filtration system. The GAC system is housed within a specially fabricated, prebuilt 6-foot x 8-foot shed that is delivered and installed by Handi-Houses of Fayetteville, NC. The GAC shed arrives on a small tilt bed utility truck and is moved across the resident's property on four-inch PVC pipes used as rollers. The shed is pushed by hand into position by the Handi-House representative with Parsons assisting as necessary.

Once at the location agreed to by the resident during the initial interview, the shed is anchored into position with soil augers and readied for the plumbing and electrical installation steps. It is then secured with a padlock. The Parsons team leader will be responsible for scheduling and coordinating shed installation and access with the resident as well as uploading phone correspondence logs, oversight notes, installation photos and vendor invoices to the project database.

5.2.6 GAC Plumbing Completion

Following completion of the shed installation, the Parsons plumbing task leader will contact the resident to schedule a date for GAC system plumbing connection and will notify the resident of a pre-installation site visit with the licensed plumber. Prior to all GAC plumbing work, the Parsons plumbing team leader will complete a job site walk through with the licensed plumber to review the installation setting, locations of known utilities, and the condition of existing well pump equipment. The resident does not need to be onsite during this job site walk through but is welcome to participate if they so wish.

After the job site walk through, the licensed plumber will return on the scheduled date and, working under constant oversight of a Parsons Construction Manager (or their

designee), will connect the GAC system to the resident's water supply. This may require installation of a shallow trench(es) to contain the water lines connecting the GAC system to the well and home (depending on system installation location). During this time, the licensed plumber may also, at no cost to the resident, upgrade the existing well pump, pressure tank, or hardware to facilitate use of the GAC system if deemed necessary during the initial in-home interview or the pre-installation site visit with the plumber. All plumbing work will be completed by the licensed plumber in compliance with local codes under the appropriate county-specific plumbing permit. The plumber will inspect any GAC piping and filters pre-assembled by Parsons technicians and will monitor the system for leaks or concerns once connected to the resident's water supply and re-pressurized.

Once the GAC system is online, Parsons staff will begin flushing sediment from the hot water heater bottom drain valve by flushing two tank volumes of water through the bottom drain valve. If the hot water heater is in a state of disrepair or not accessible so as flushing is not possible or if the method of hot water heater installation and plumbing make the process unsafe then Parsons staff will flush at least two water heater tank volumes of hot water from the kitchen sink. The resident will need to be at home to allow Parsons entry for flushing the hot water heater so a return visit (after installation) for water heater flushing may be required if flushing cannot be scheduled the day of GAC plumbing installation. Parsons will then run all of the hot and cold taps for 5 minutes and collect samples of finished water from the hot and cold taps at one sink.

After installation is complete the shallow trench(es) containing the water lines connecting the GAC system to the well and home will be left open in a few select locations to facilitate permit approval by the County inspector. The limited locations where the trench(es) must stay open will be marked with caution tape and demarcation stakes. Upon completion, the Parsons task leader will contact the resident to confirm the GAC system has been connected satisfactorily and to answer any remaining questions. A copy of the approved permit will be sent to Parsons from the plumbing contractor for review by the Parsons task leader. A copy of the permit will be attached to the interior of the GAC shed during the initial GAC sampling event and a copy will be given to the resident, if requested.

The limited locations where the shallow trench is kept open for permit approval will be backfilled by Parsons when a copy of the approved permit is received or during the first GAC sampling event after the GAC system goes online. The Parsons task leader and their support staff will be responsible for uploading phone correspondence logs, oversight notes, installation photos, approved permits, and plumber invoices to the project database.

A detailed SOP for GAC installation is included in Appendix G, a piping and instrumentation diagram (P&ID) is included as Figure 4 and specifications for primary GAC components are included in Appendix I.

5.2.7 GAC Electrical Connection

During the system installation process, the Parsons electrical task leader will contact the resident to schedule a date for GAC system electrical connection and will notify the resident of a pre-installation site visit with the licensed electrician. Attempts will be made to complete the GAC electrical work simultaneously with the plumbing work when possible to minimize the number of disruptions to the resident. However, the electrical

task can be completed before or after the plumbing task. In some instances, the resident will need to be at home to give the electrician access to the breaker panel.

Prior to all GAC electrical work, the Parsons electrical team leader will complete a job site walk through with the licensed electrician to review the installation setting, locations of known underground utilities, and the condition of the existing electrical panel and associated equipment. In most cases the resident does not need to be onsite during this job site walk through unless the main electrical panel is located within the home. A licensed electrician working under constant oversight of a Parsons Construction Manager (or their designee) will connect the GAC system to two new 20-amp circuits added to the resident's electrical supply panel. This may require installation of a shallow trench(es) to contain the electrical wires. During this time, the electrician may also need to install some additional electrical equipment to meet current electrical code for the additional circuits added to support the GAC system. All electrical work will be completed by the licensed electrician in compliance with local codes under the appropriate county-specific electrical permit requirements. Once the electrical work is complete, the new circuits will be energized and new ground-fault circuit interrupter (GFCI) outlets tested. The Parsons staff overseeing the electrical work will install a heater (with a thermostat to facilitate shut off when not needed) in the GAC system shed at this time. In addition, a booster pump (to increase water pressure) may also be installed.

After installation is complete, the shallow trench containing the electrical wires will be left open in a few select locations to facilitate permit approval by the county inspector. The limited locations where the trench must stay open will be marked with caution tape and demarcation stakes. The Parsons task leader will contact the resident to confirm the GAC system has been electrified and answer any remaining questions. A copy of the approved electrical permit will be sent to Parsons from the electrician for review by the Parsons task leader. A copy of the permit will be attached to the interior of the GAC shed during the initial GAC sampling event and a copy can be given to the resident if requested. The limited locations where the shallow trench stayed open for permit approval will be backfilled by Parsons when a copy of the approved permit is received or during the first GAC sampling event two weeks after the GAC system goes online. The Parsons task leader and their support staff will be responsible for uploading phone correspondence logs, oversight notes, installation photos, approved permits and electrician invoices to the project database.

Chemours will pay \$25 per year per home to cover the estimated additional electrical costs created by the heating of the GAC system. The details of the electrical payment calculation were submitted to NCDEQ in an email on January 9, 2019. As set out in that email, the purpose of the heater is to maintain a minimum temperature of 40 °F inside the shed to prevent freezing of piping. In order to determine the power consumption of the heater, the number of Heating Degree Days was determined for an average year (from www.degreedays.net for the Fayetteville Regional Airport). Heating Degree Days is the measure of how much (in degrees), and for how long (in days), the outside temperature was below the specified base temperature (in this case 40 °F). The heat lost to the environment was then calculated using the Heating Degree Days, building surface area, and heat transfer properties of the building materials. Air infiltration was accounted for assuming a maximum leak rate of 20 cubic feet per minute. Neglecting any heat added to the shed from operation of the booster pump, it was calculated that the space would require 116 kilowatt-hours (kW-h) per year for heating.

In order to calculate the electricity usage of the booster pump, an average household size of four people consuming 400 gallons of water per day was utilized. This consumption rate is in line with current consumption of homes in the pilot program. The selected booster pump operates at 2 gallons per minute and requires 78.25 watts to operate which calculates to an annual energy consumption of 95 kW-h. The total annual electric consumption is therefore estimated at 211 kW-h. At a residential electrical rate of \$0.11/kW-h the annual cost to operate the heater and pump is estimated at \$23.21 yearly. Chemours will adjust this \$25 estimate every three years, based on current electrical cost information.

As part of GAC installation, where a resident has a water softener plumbed after the GAC system, Chemours will test water exiting the water softener after installation of the GAC system during the initial sampling event described below in Section 5.2.8. Where the sample results exceed 10 ng/L for one PFAS or 70 ng/L for a combination of PFAS, Chemours will provide an in-kind replacement of the water softener.

If a resident has a whole house carbon filtration system plumbed after the GAC system Parsons and/or its subcontractors will remove the filter cartridge or install a bypass around high volume carbon filters. Existing carbon filters need to be removed from service or bypassed due to the potential for desorption of compounds listed in Attachment C of the CO.

5.2.8 GAC System Sample Collection

Once a GAC system is online, one raw water, one mid-carbon (between the two GAC vessels), one finished kitchen hot and one finished kitchen cold water sample for the PFAS listed in Table 1 will be collected for performance confirmation after installation and water heater flushing. Following the initial confirmation sample, one raw water and one mid-carbon sample will be collected from the GAC system on a quarterly basis thereafter. Initially, both GAC vessels will be changed upon a detection of greater than 100 ng/L of any constituent after the first carbon vessel. As additional data is collected, the sampling and changeout schedule may be modified to maximize GAC service life.

The Parsons team leader will be responsible for coordinating sample bottle orders and sample deliveries with the Chemours laboratory representative, as well as notifying the resident of upcoming GAC sampling events. After the initial sampling, the resident does not need to be onsite during the sampling activities but is welcome to be if they so wish. All phone correspondence logs, field sampling notes, chain of custody sampling forms and other field data will be uploaded to the project database.

The results of the system sampling will be provided to the resident and the state once final data are available.

5.2.9 GAC Special Tasks

Some GAC systems will have unique tasks specific to the setting where the GAC system must be installed and/or due to requests from residents. Unique tasks may include painting sheds to match home owner association (HOAs) requirements or other resident requests where appropriate. In some instances, landscaping must be disturbed to install the GAC shed or due to trenching requirements for water and electrical connections. Many of the special tasks will be identified during the initial in-home interview or during plumbing or electrical pre-installation site walks. The Parsons team leader will assess the scope of the special task(s) and determine if a subcontractor is needed or if it will be more efficient for the Parsons field team to self-perform. If a painting or landscaping

subcontractor is required, all work will be completed under complete oversight by a Parsons technician.

The Parsons team leader will be responsible for assessing the scope of the special task, contacting the resident and notifying them of the schedule, and following up with the resident to ensure the work was completed to their satisfaction. All phone correspondence logs, field notes, photographs and vendor invoices will be uploaded to the project database.

5.2.10 GAC System Operations, Maintenance, and Monitoring (OM&M)

Once a GAC system is online and has been sampled, it will enter the long-term OM&M phase. The OM&M phase consists of quarterly sampling from the same GAC locations and for the same parameters as described in Section 5.2.8 (above). In addition to collecting quarterly samples, Parsons will monitor iron levels and the efficacy of iron removal from the prefilters as well as changes to flow and pressure through the GAC system compared to baseline levels. Iron filters will be changed as necessary and the pre-filter change-out scheduled may be adjusted based on field observations. Reductions in flow and increases in backpressure through the GAC vessel may trigger the installation of a booster pump to maintain baseline rates. Both GAC vessels will be replaced when analytical data collected from the midpoint sample port (SP-3) indicates a detection of greater than 100 ng/L of any PFAS constituent listed in Table 1. As additional data are collected, the sampling and changeout schedule may be modified to maximize GAC service life.

At locations where carbon canisters are required to be changed out more frequently than once per year due to measured breakthrough after the first carbon canister, Chemours may install a third carbon canister in series. In this case, monitoring for breakthrough will be measured between the second and third carbon canister. When the concentration leaving the second canister exceeds the breakthrough criteria (a detection of greater than 100 ng/L of any PFAS constituent listed in Table 1.), the first canister will be removed and the canisters rotated up one position (canister 2 will become the lead, canister 3 will move to the second position, and a new canister will be installed in the tertiary position). This will allow for more efficient use of the carbon while providing an equivalent level of protection.

A 24-hour emergency phone service has been established with MAP Communications (1-800-673-7096). The 24-hour emergency phone number will be attached to the exterior of all GAC sheds. Residents that have an emergency related to the GAC system or their water supply can contact the number and will speak to an operator that will collect their emergency information and confirm the location. During the call, the MAP Communications operator will place the resident in immediate contact with our 24-hour emergency plumbing subcontractor. MAP Communications will provide an immediate text and email alert notification to the Parsons project managers and task leaders who will follow-up with the resident and plumber to resolve the emergency.

The Parsons task leader will be responsible for coordinating sample bottle orders and sample deliveries and ensuring all field data is uploaded to the project database. The Parsons team leader will be responsible for assessing any system needs, contacting the resident and notifying them of the schedules and following up with the resident to ensure all work was completed to their satisfaction. All phone correspondence logs, field notes, photographs and vendor invoices will be uploaded to the project database. GAC samples will be collected per the GAC sampling SOP included in Appendix G.

Chemours and/or their subcontractors will maintain the installed filtration systems for a minimum of 20 years or until such a time as testing of groundwater demonstrates that each PFAS listed in Attachment C of the CO is below any applicable health advisory, whichever is longer.

5.3 RO Systems

A resident who qualifies for permanent replacement drinking water system (due to GenX compounds at or above 140 ng/L as described in Section 5.0, above) may choose to have under-sink RO systems installed as their permanent replacement drinking water supply in place of public water or a whole building filtration (GAC) system. These residents will be offered an under-sink RO drinking water system installed at every kitchen and bathroom sink. If the qualified resident elects to have RO systems installed, the RO Implementation Plan described in Section 4.0 (above) will be followed.

6.0 SCHEDULE AND REPORTING

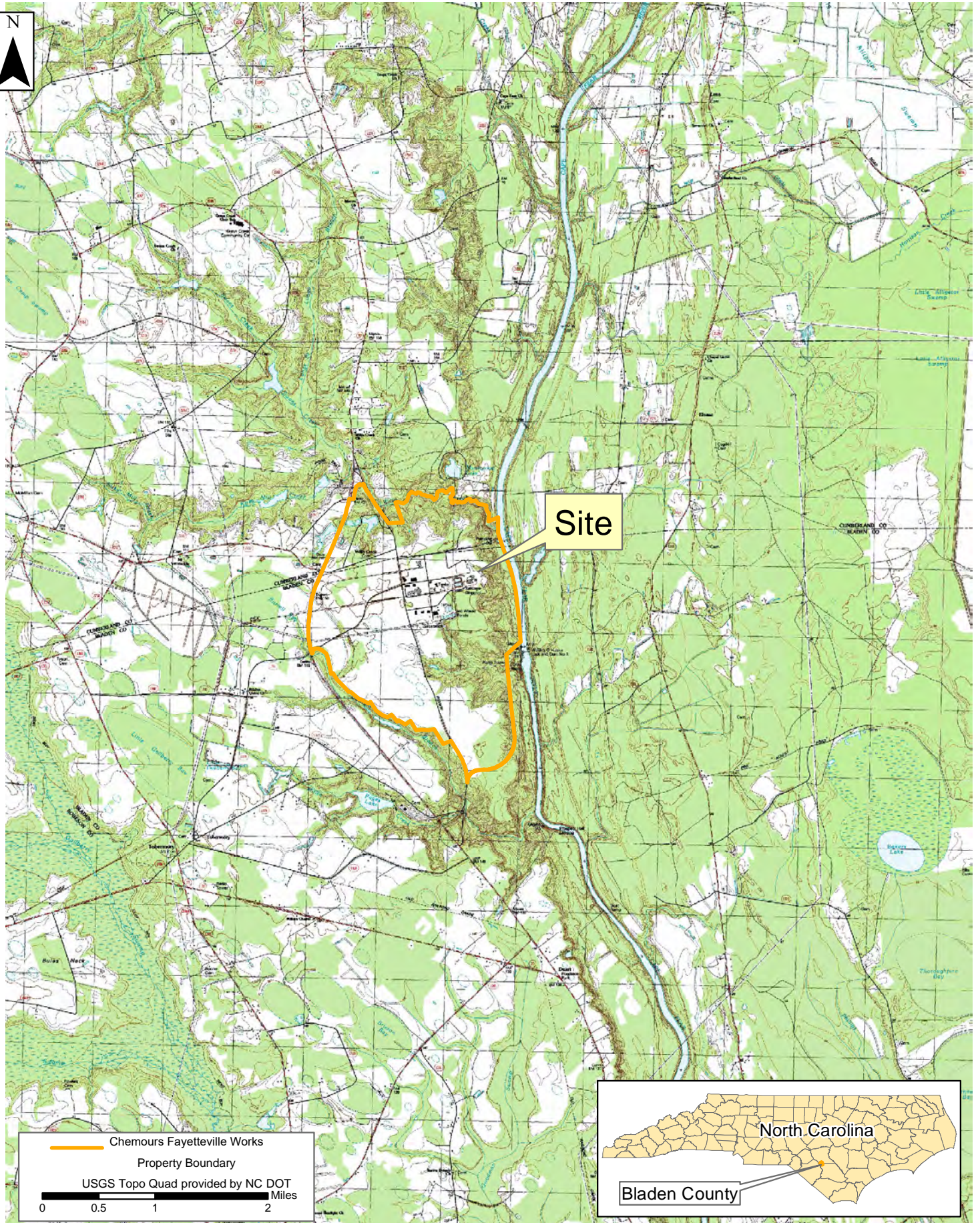
6.1 Schedule

The activities in this plan began once the CO was entered by the court on February 25, 2019 and are ongoing. A detailed schedule for this project has been provided as Figure 5.

6.2 Reporting

Sample results will be provided to each resident and to the State when final data are available. In addition, quarterly reports (as specified in Paragraph 28) will document the implementation of the Drinking Water Compliance Plan. Specifically, the quarterly reports will include summaries and detailed backup information that document that the bottled water, RO, and GAC activities have been conducted consistent with this plan and the CO.

FIGURES



Chemours Fayetteville Works
 Property Boundary
 USGS Topo Quad provided by NC DOT
 Miles
 0 0.5 1 2

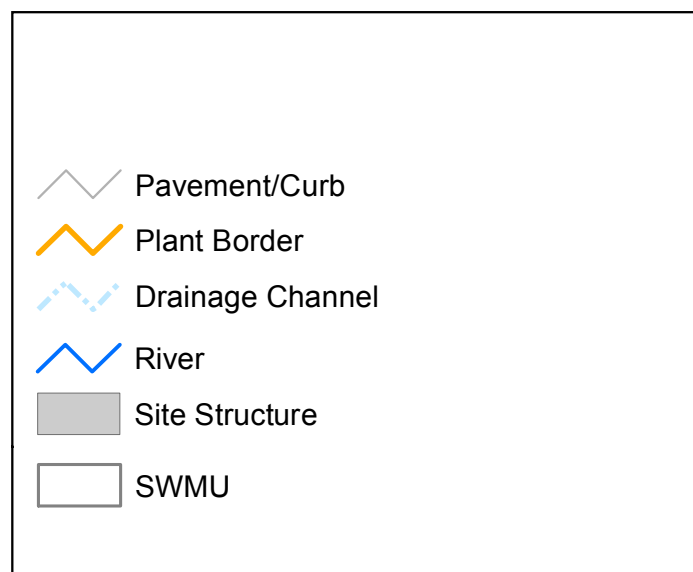
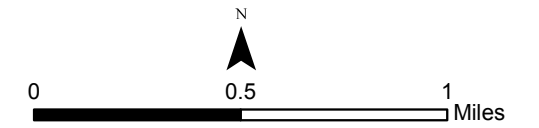
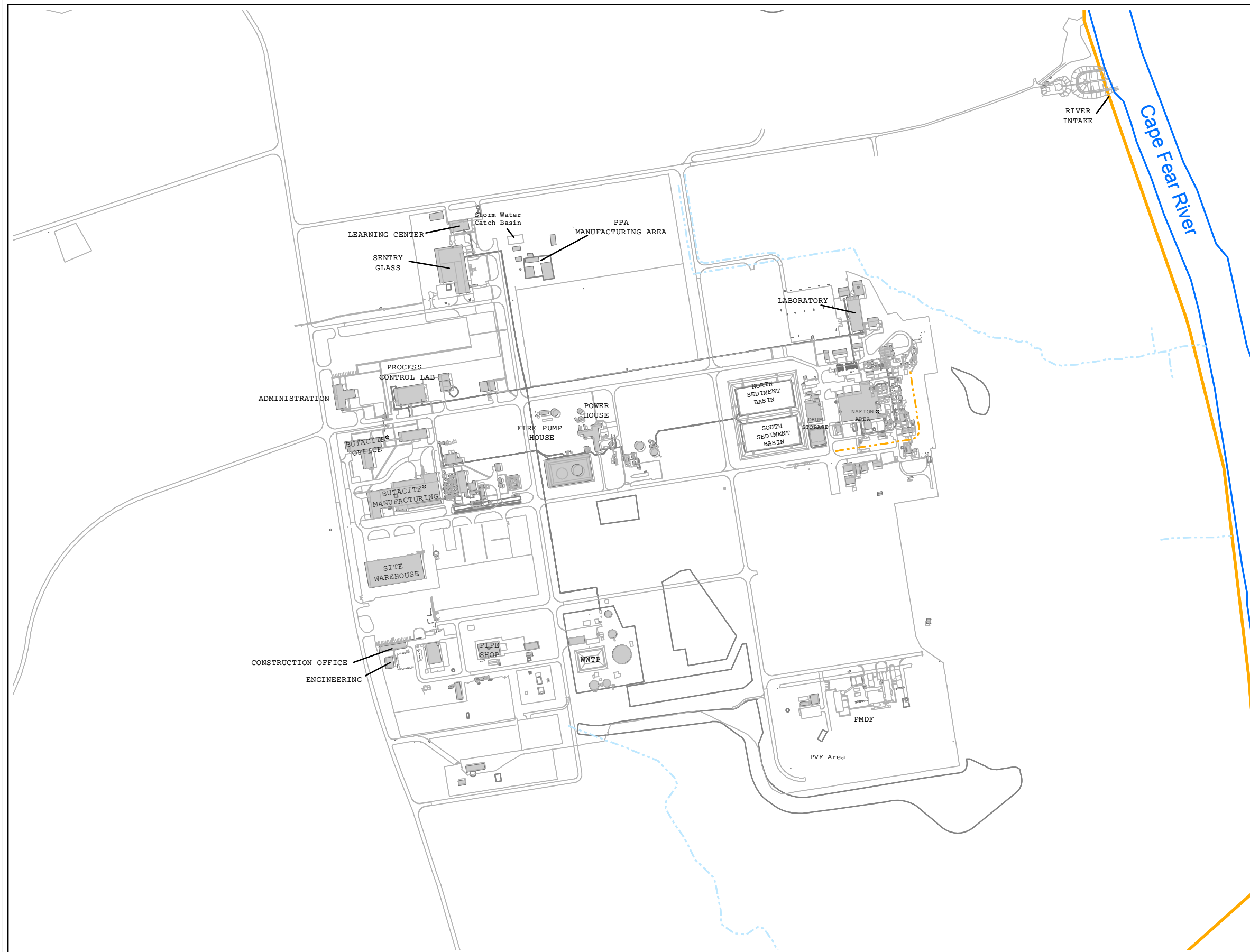


PARSONS

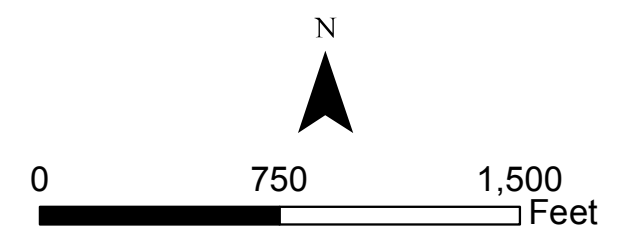
PE&I
4701 Hedgemore Dr.
Charlotte, NC 28209

Site Location Map
Drinking Water Compliance Plan
Fayetteville Works Facility
Fayetteville, North Carolina

DRAWN: C. Oneal	DATE: 12/4/2018	PROJECT NO.
REVISION: 0	FIGURE NO.: 1	PARSONS NO.: 449338.01050
FILE NAME: Site Location Map		



Aerial Photograph provided by DuPont, taken 12/2005



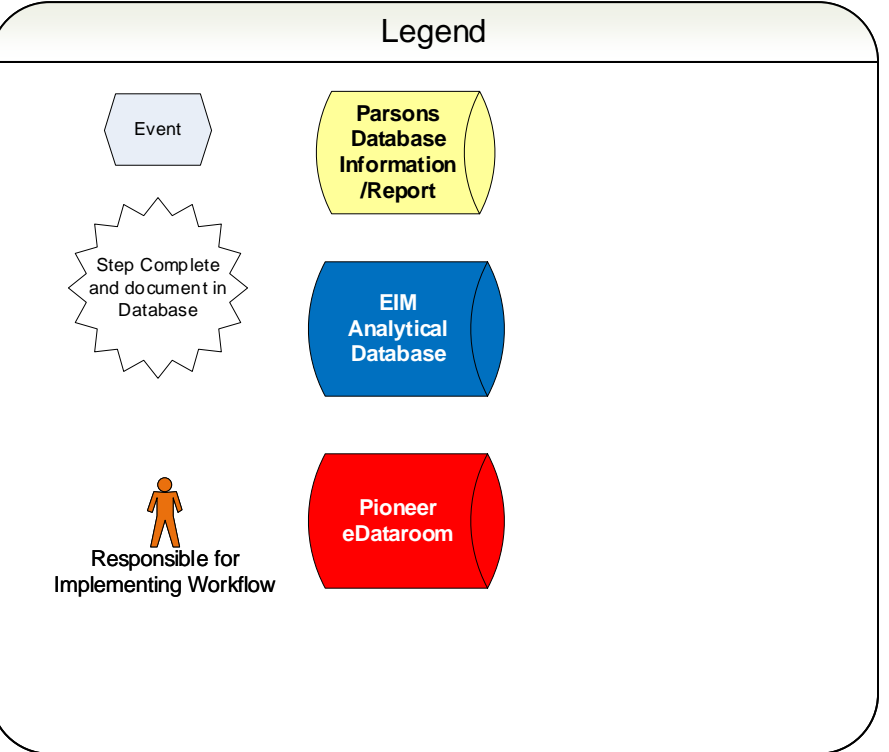
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PARSONS
PE&I
4701 Hedgemore Dr.
Charlotte, NC 28209

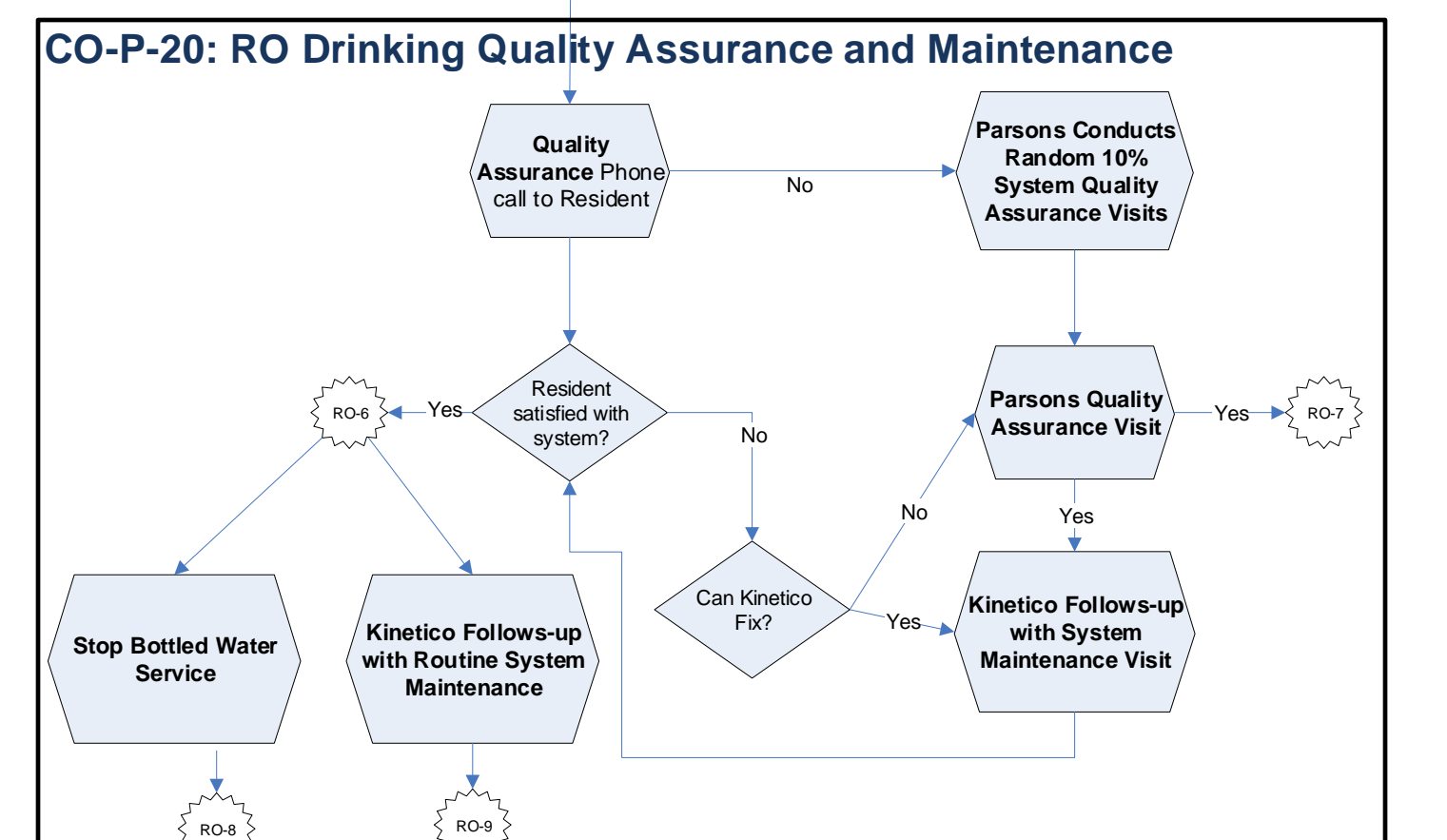
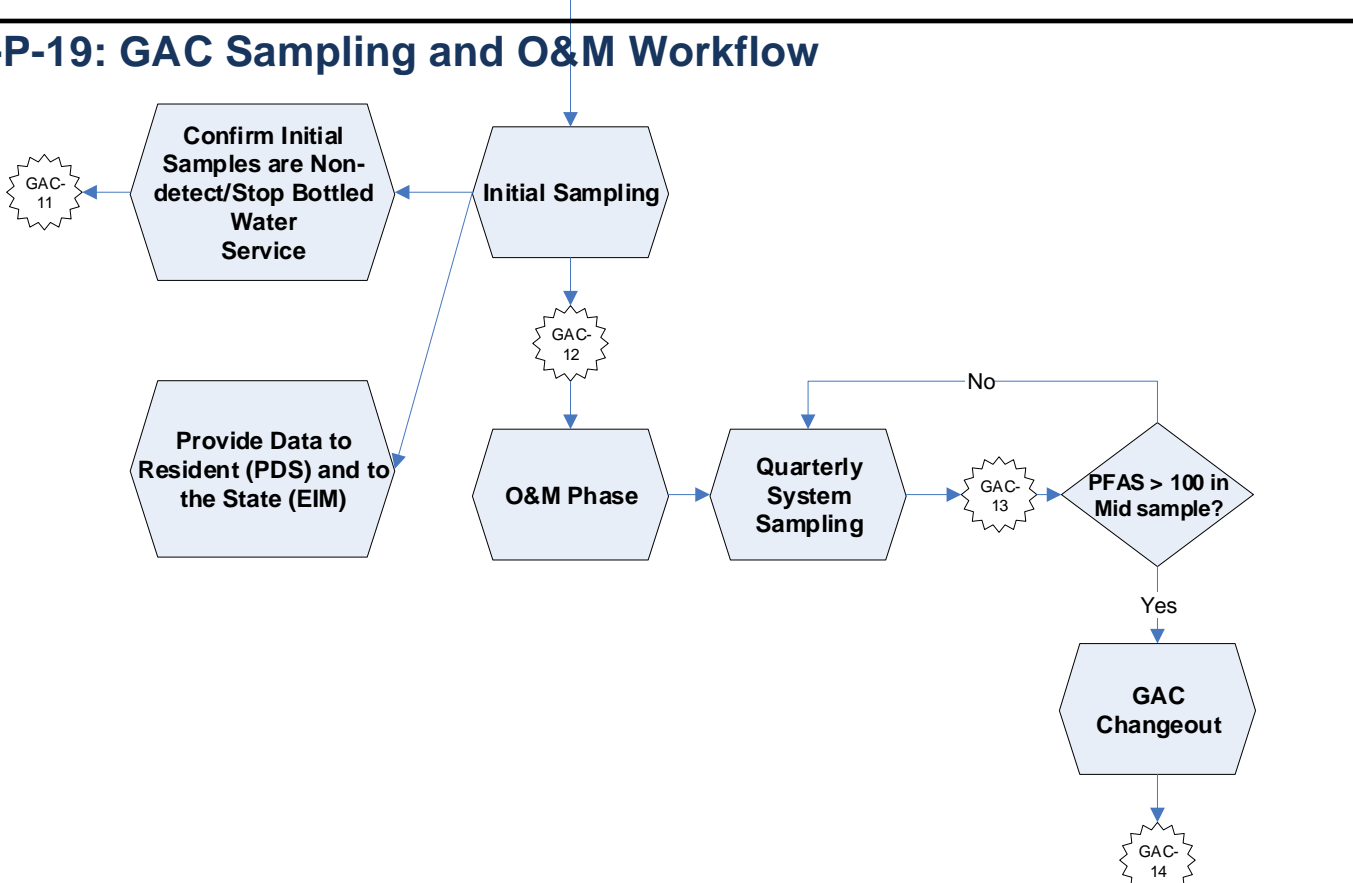
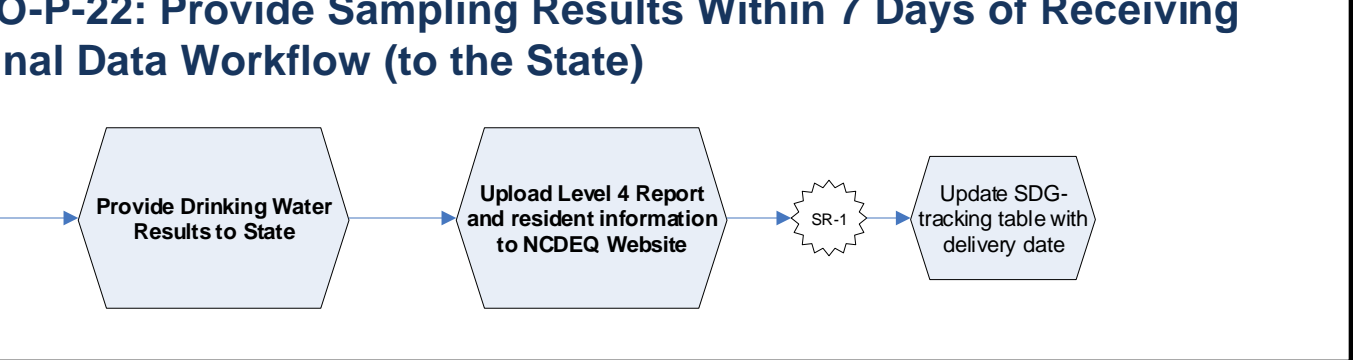
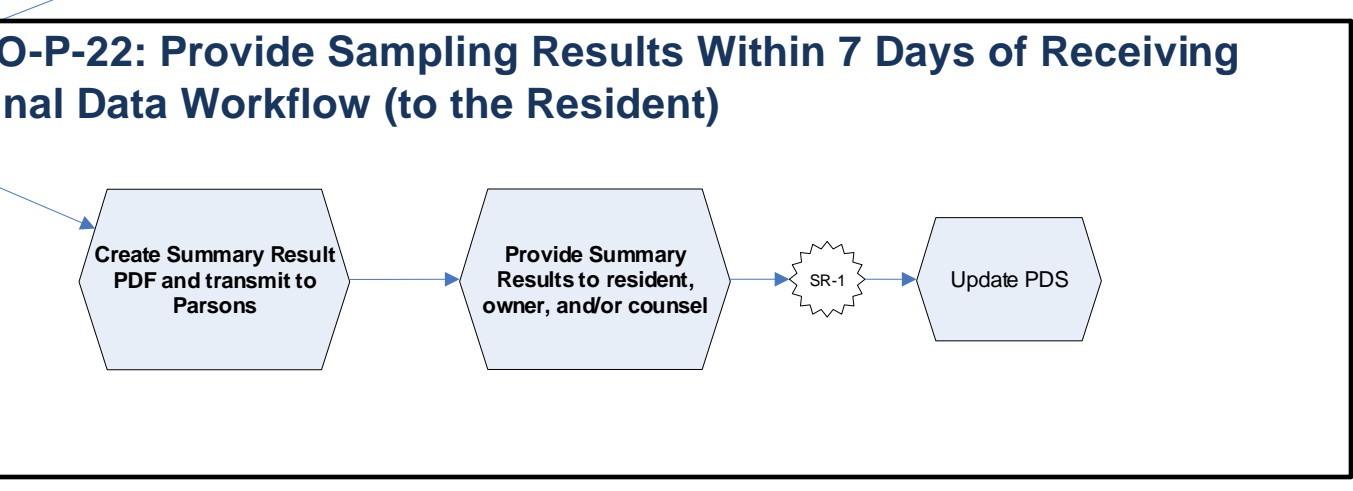
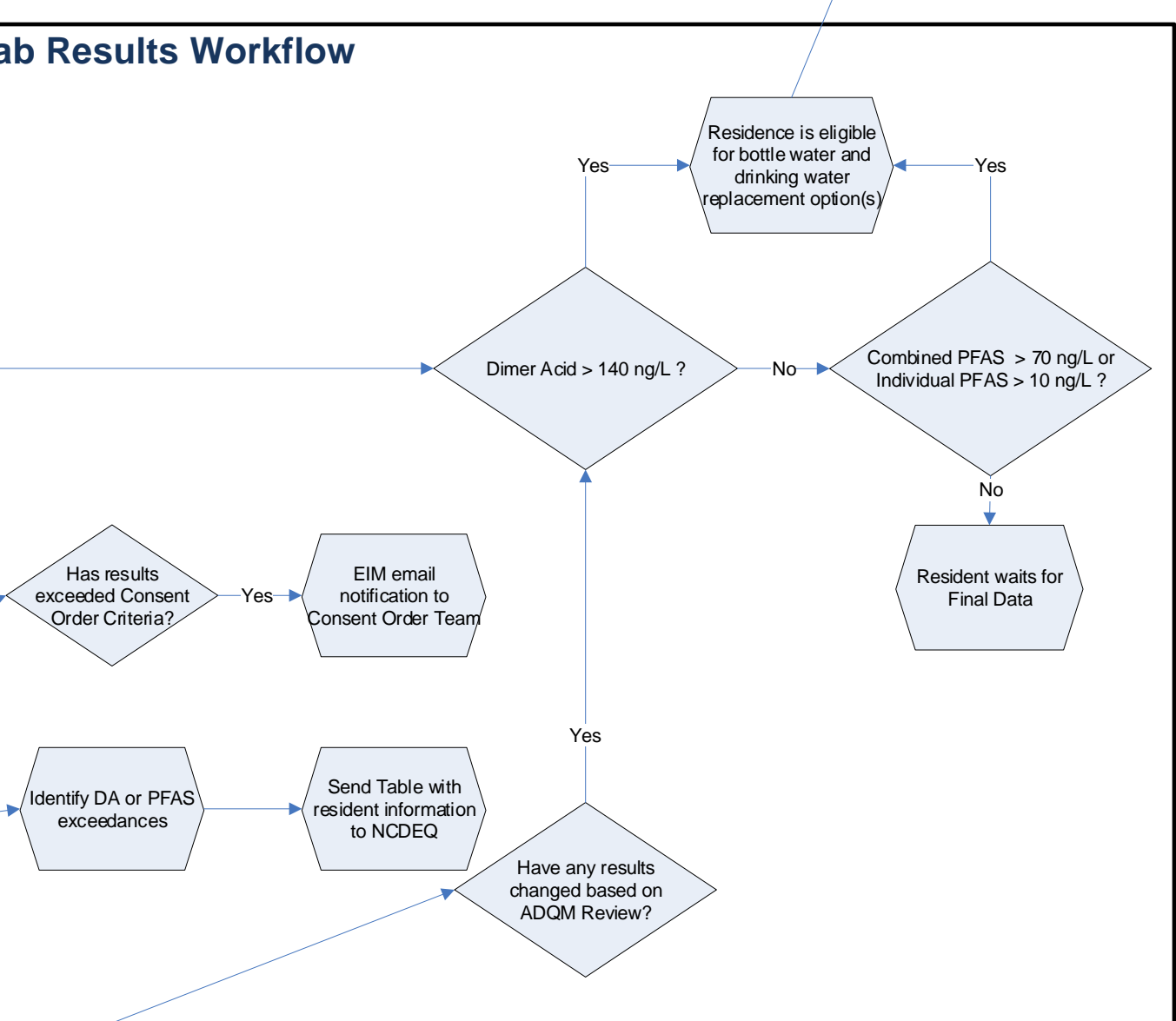
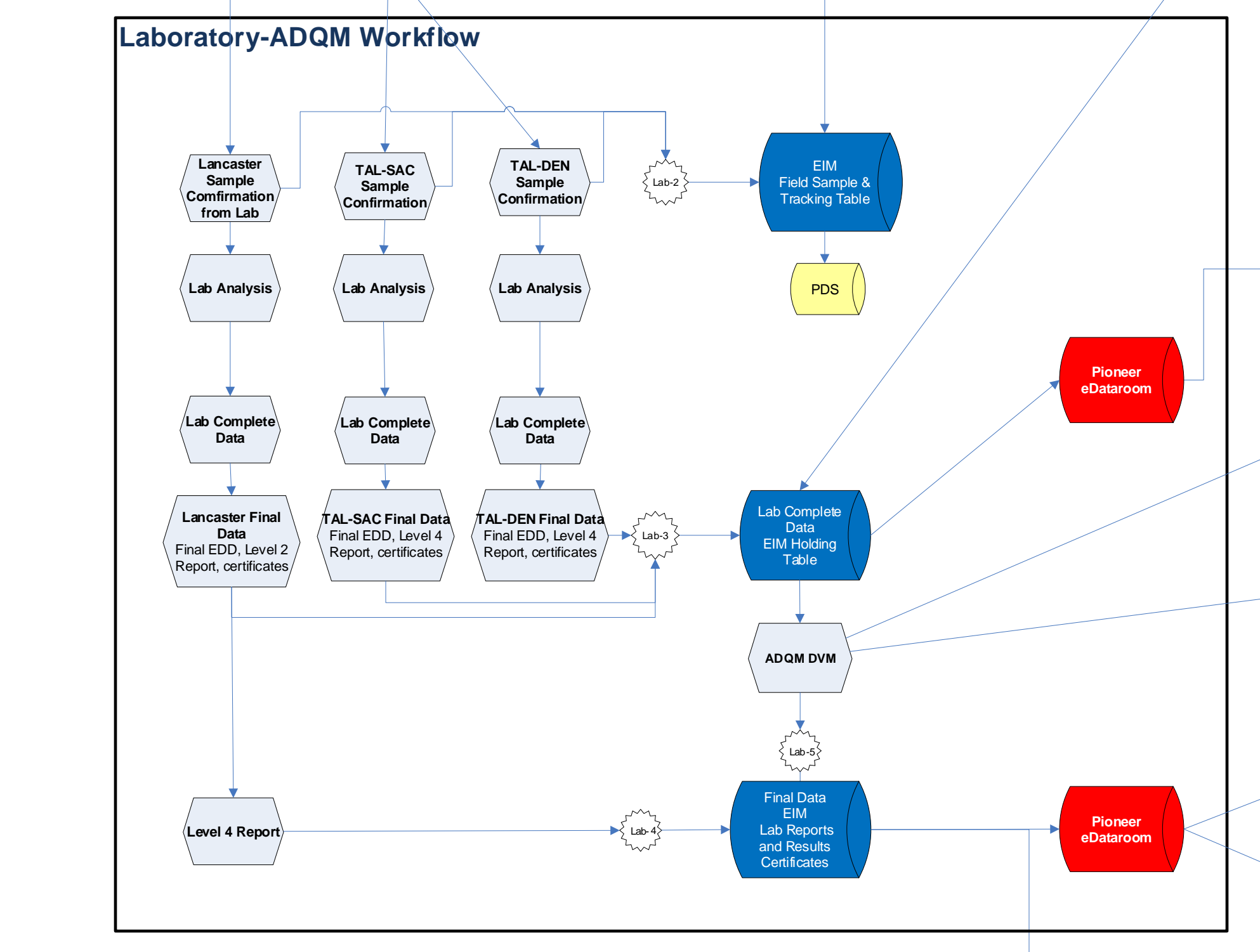
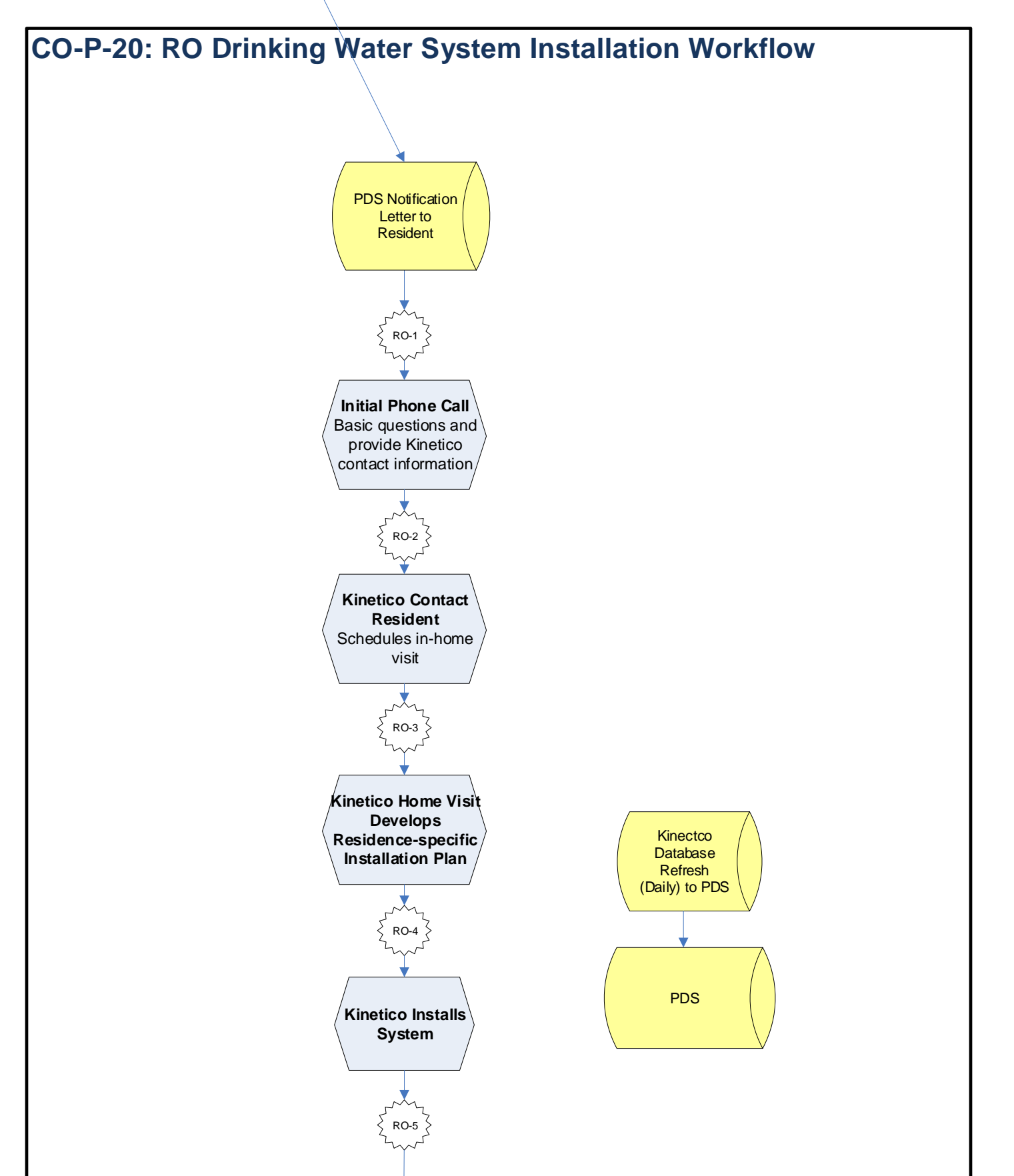
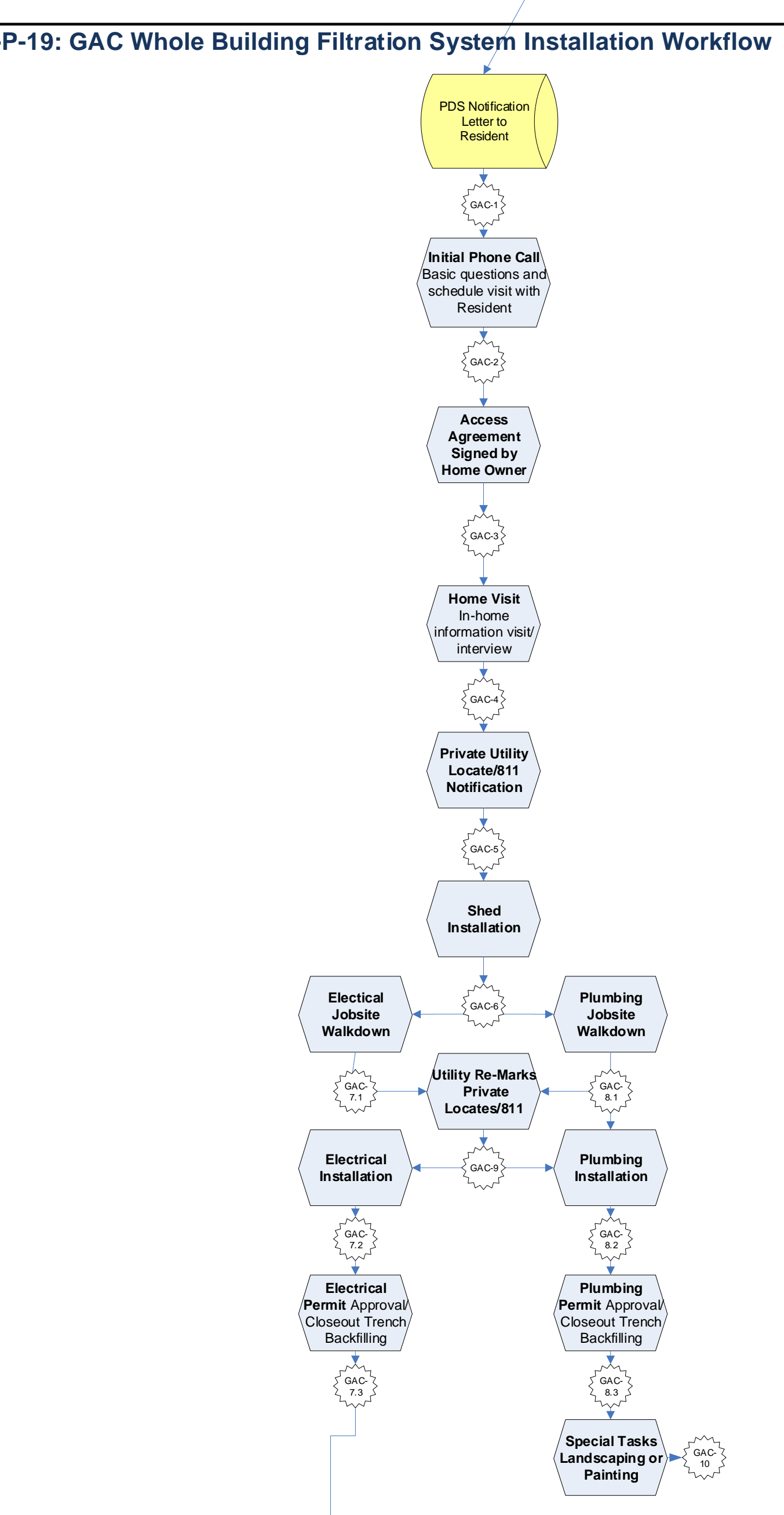
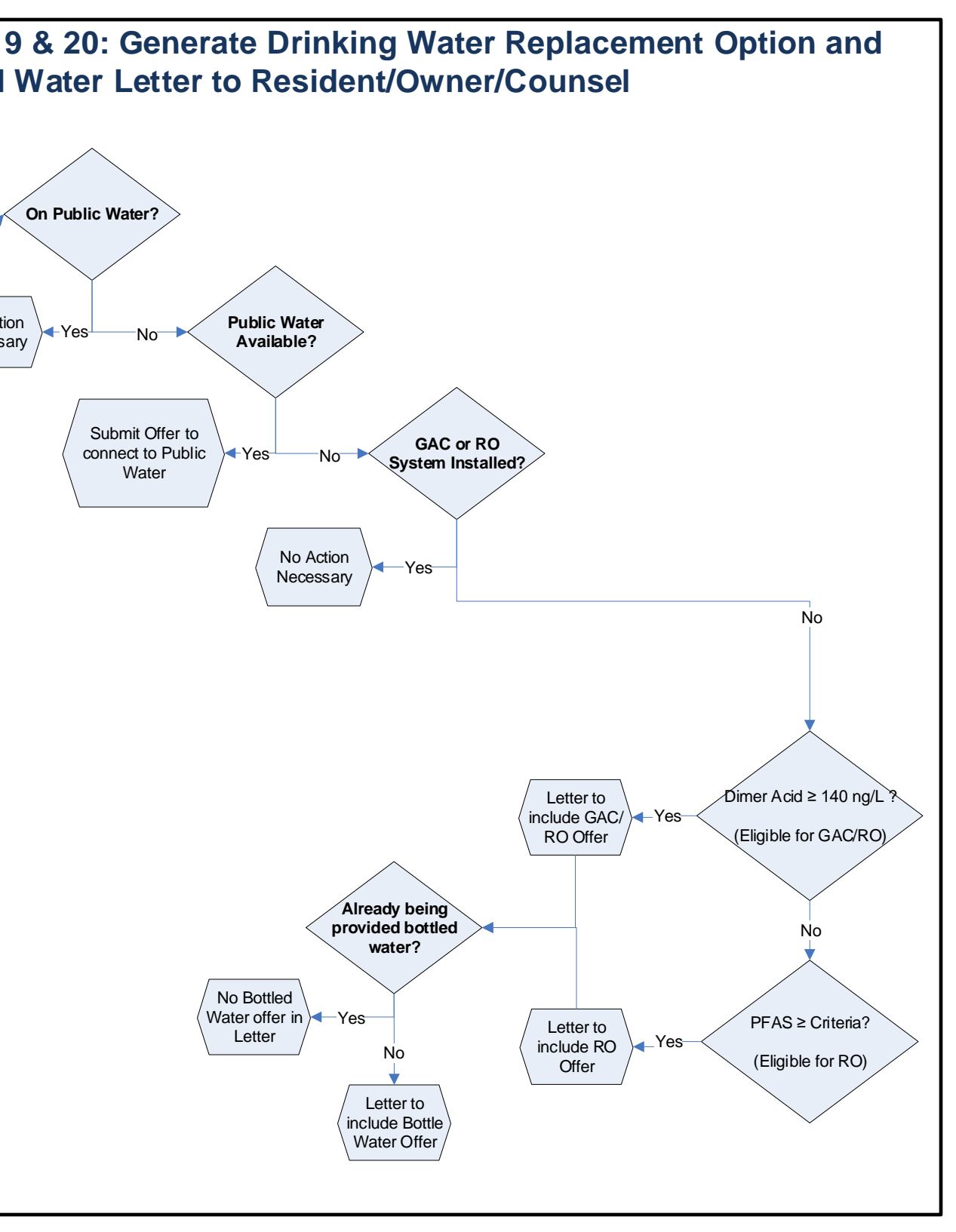
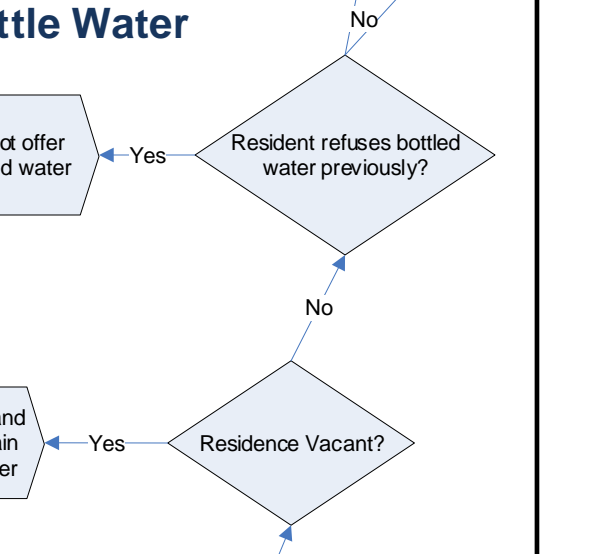
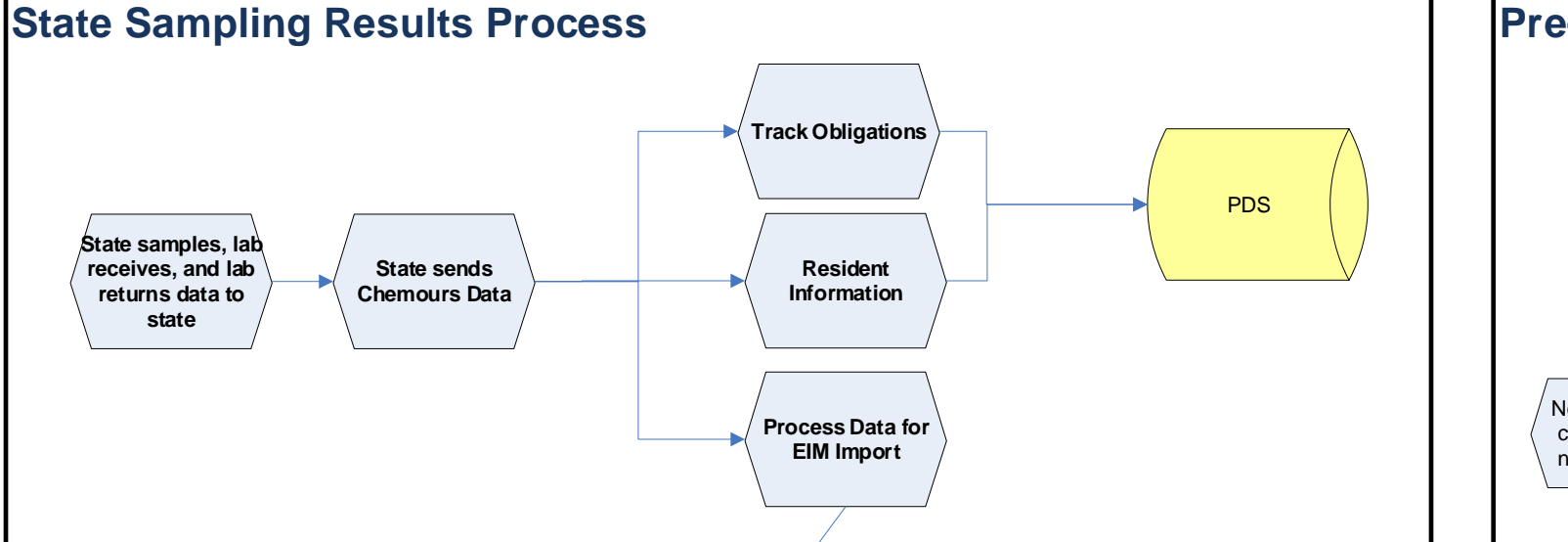
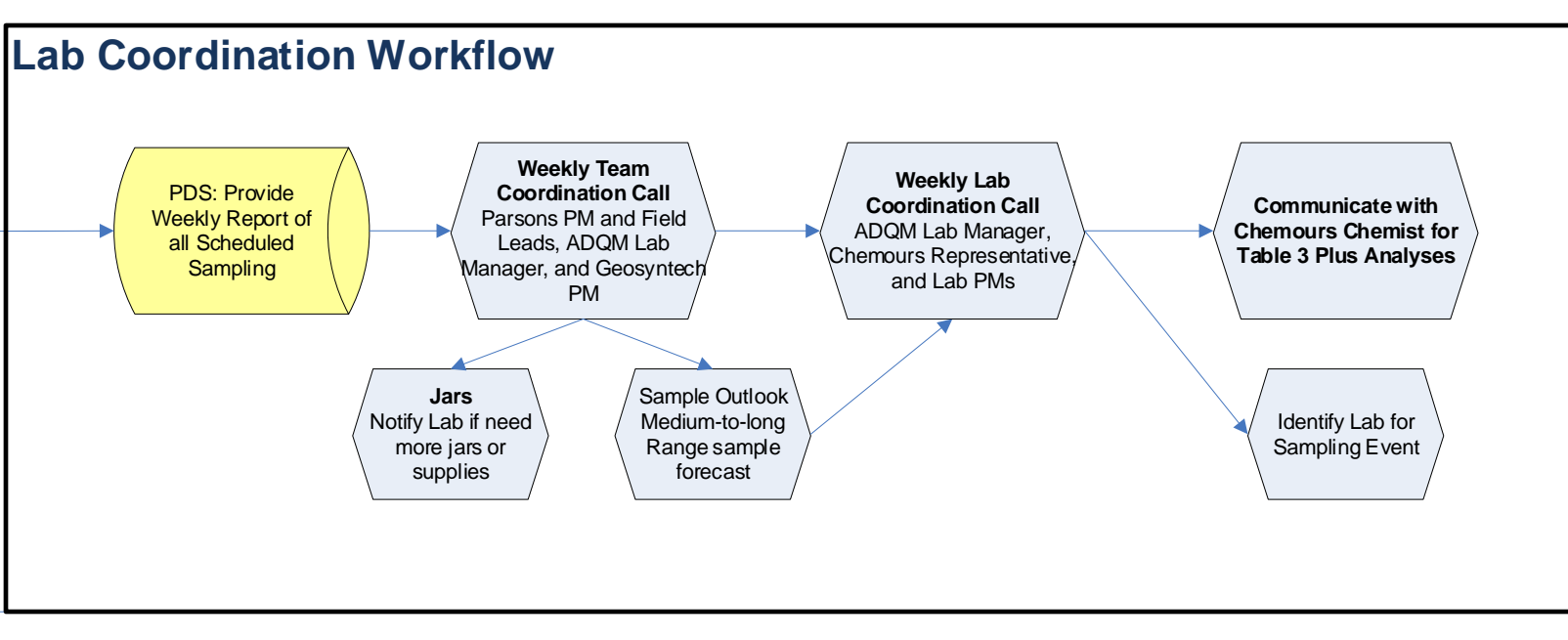
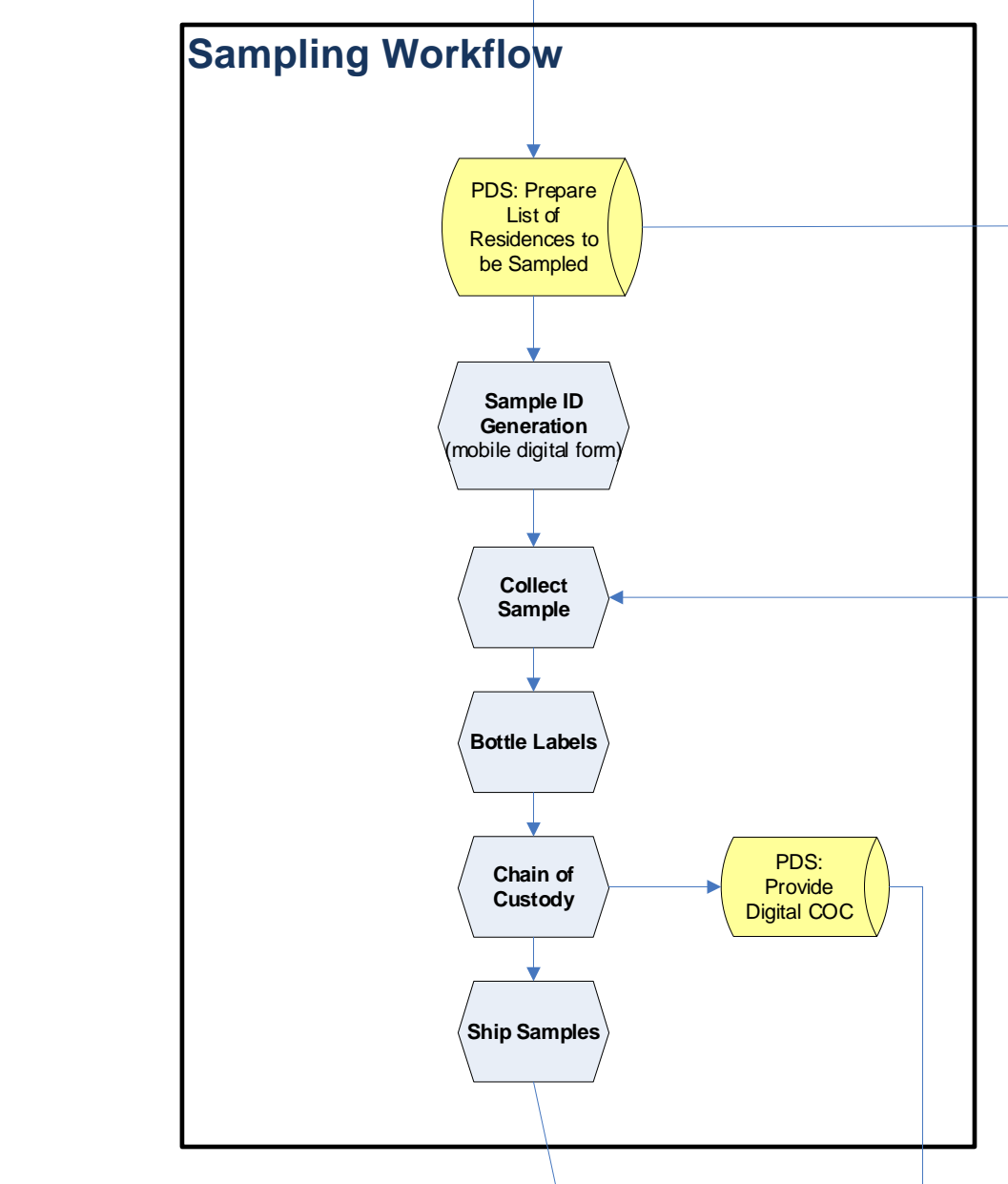
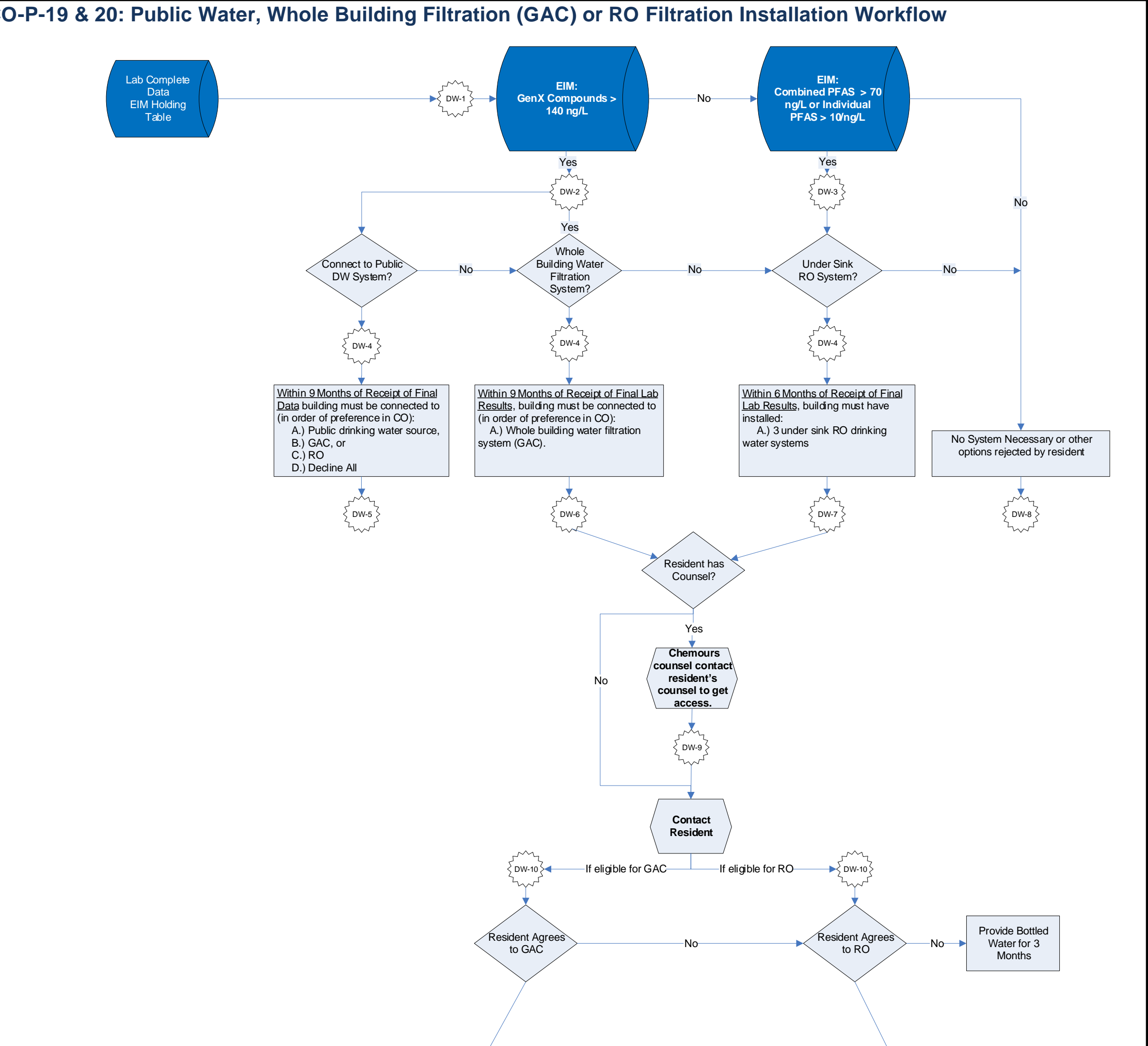
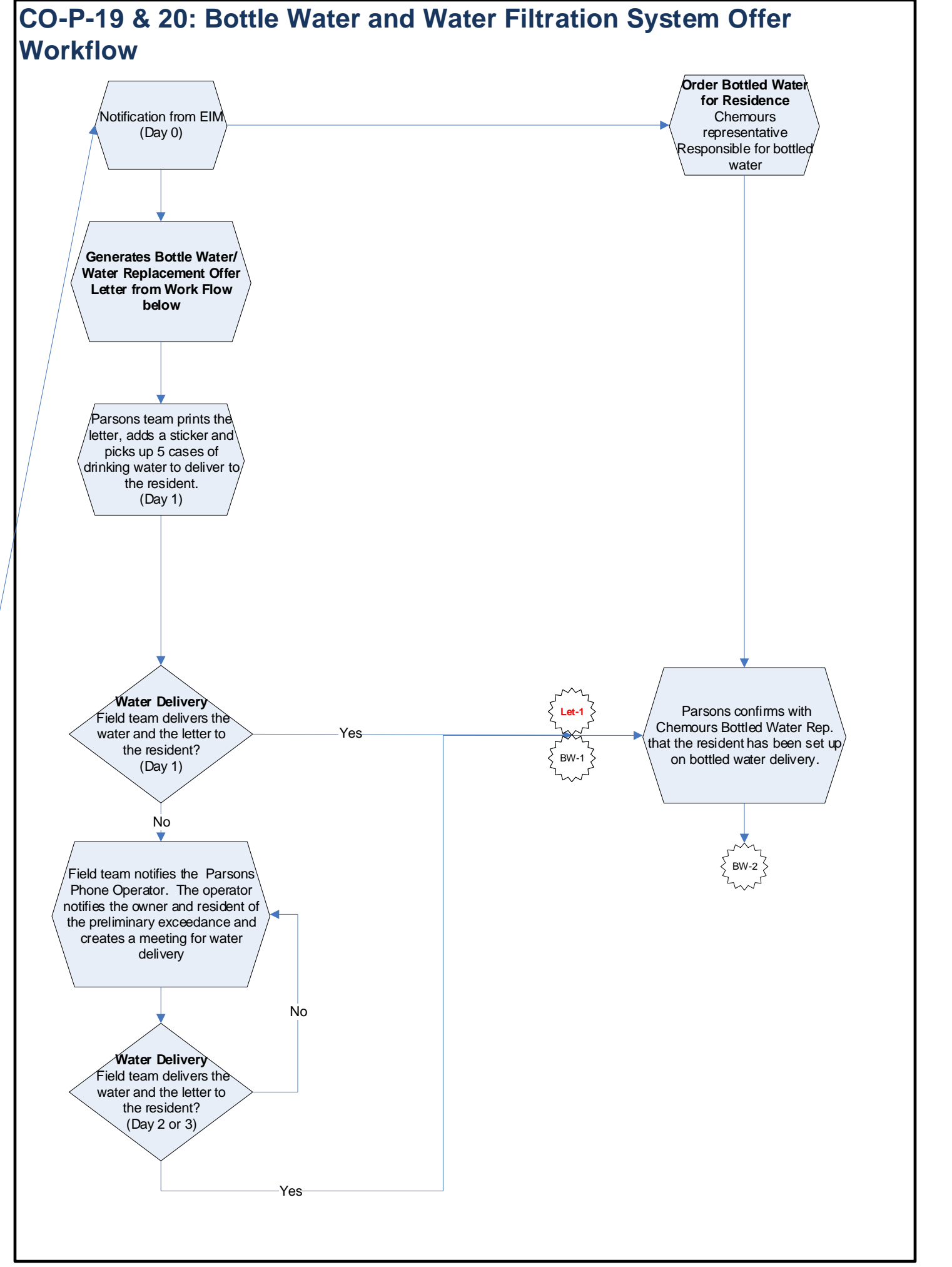
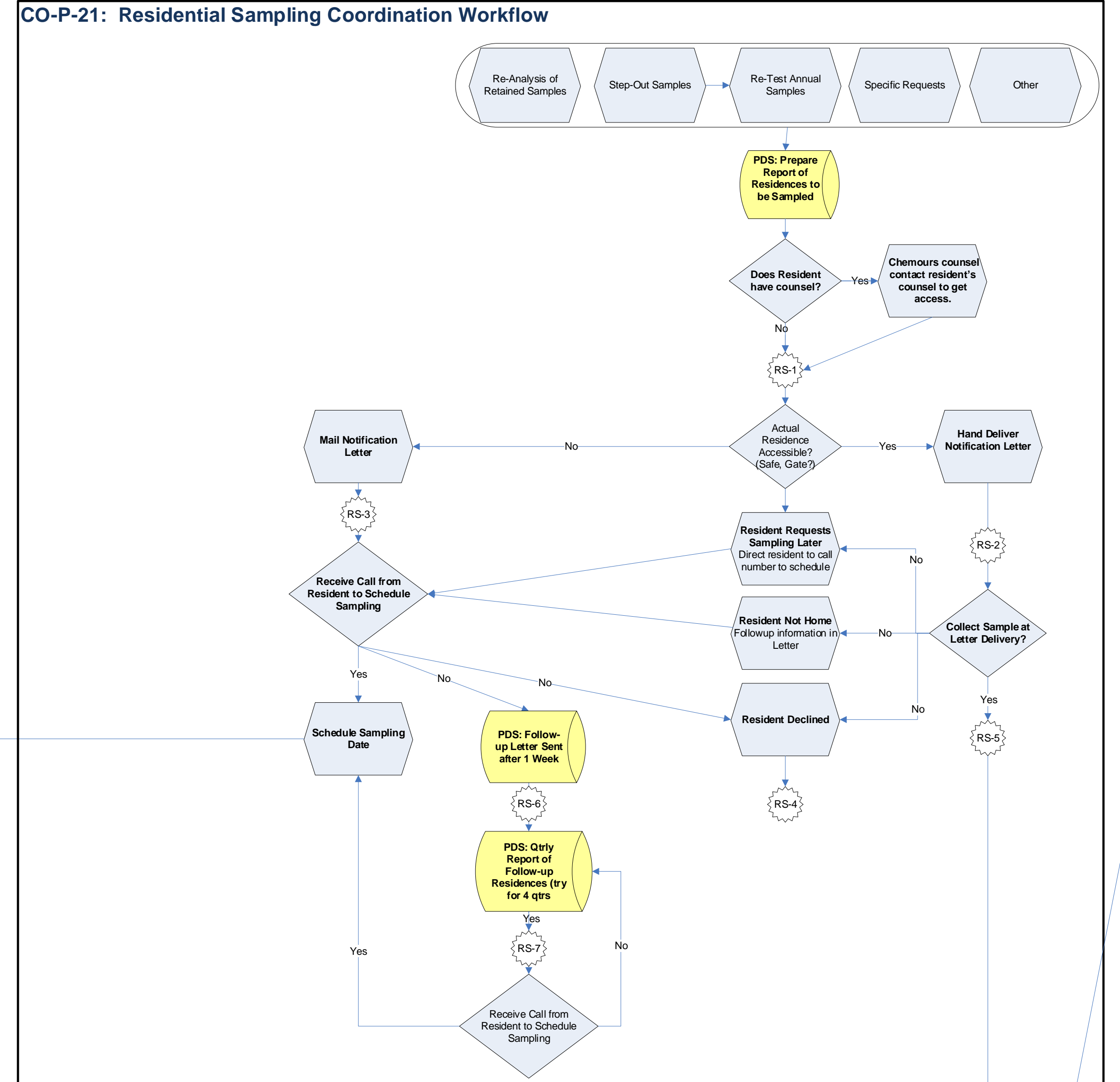
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Drinking Water Compliance Plan
Fayetteville Works Facility
Fayetteville, North Carolina

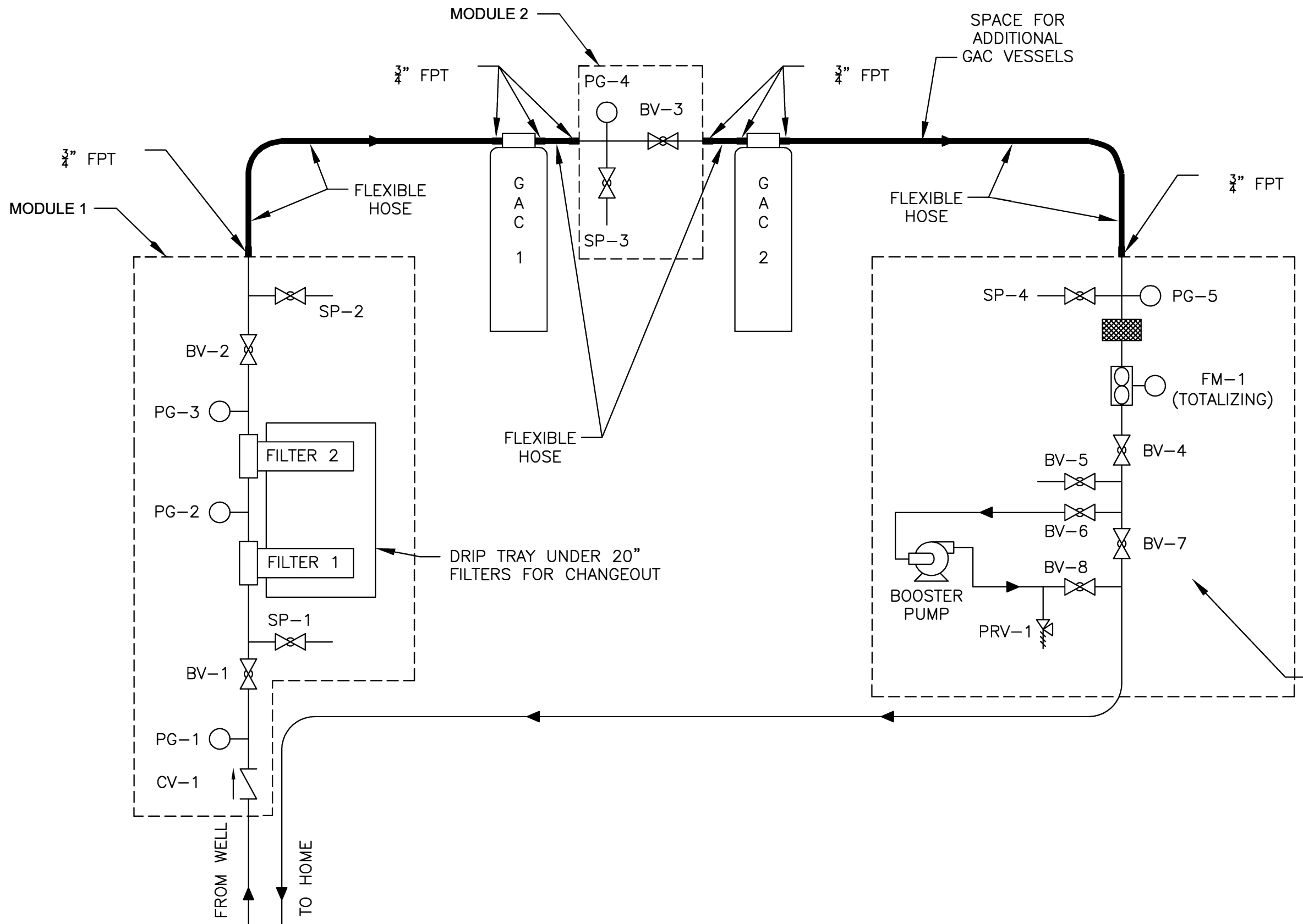
DRAWN: C. Oneal	DATE: 12/4/2018	DUPONT NO.:
REVISION: 1	FIGURE NO.:	PARSONS NO.:
		449338.01020
Name: Fay_Site_Layout		

Figure 3: Drinking Water Compliance Plan Implementation Flow Chart



Notes:
 These workflows will be updated as workflows are further defined or revised.
 CO = Consent Order
 P = Paraglyph
 GAC = Granular activated carbon
 RO = Reverse osmosis
 PDS = Parsons Data Store
 TAL = TestAmerica
 DEN = Denver
 SAC = Sacramento





LEGEND




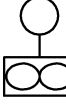

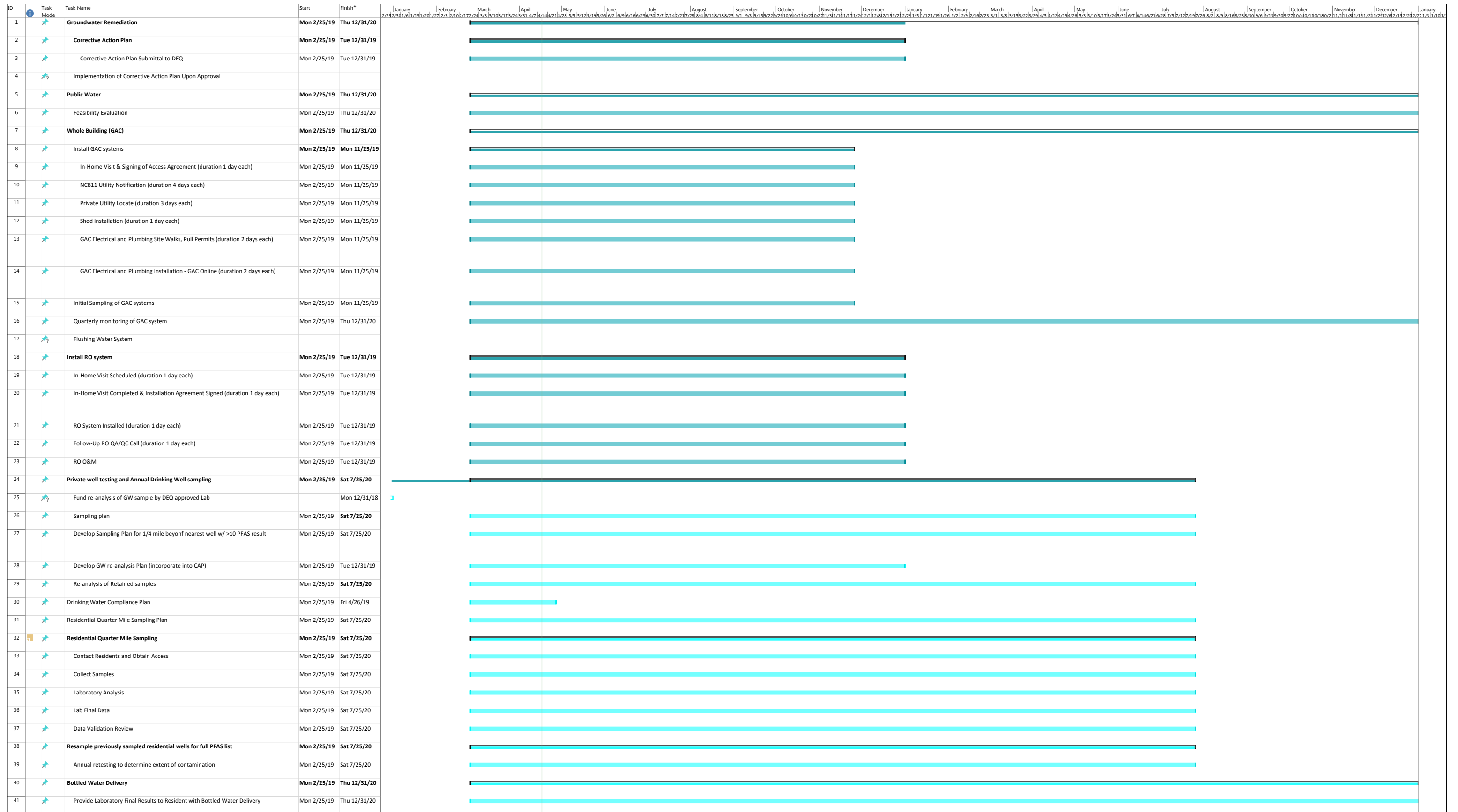
-  BALL VALVE
-  PRESSURE GAUGE
-  CHECK VALVE/BACK FLOW PREVENTER
-  POSITIVE DISPLACEMENT FLOW METER WITH TOTALIZER
-  STAINLESS STEEL HIGH-CAPACITY T-STRAINER (50 MESH)
- SP SAMPLE POINT
- GAC GRANULAR ACTIVATED CARBON

FIGURE 4
GRANULAR ACTIVATED CARBON, FILTRATION SYSTEM, P&ID

CHEMOURS
 FAYETTEVILLE, NC

PARSONS
 4701 HEDGEMORE DRIVE, CHARLOTTE, NC 28209, PHONE: 704-529-6246

Figure 5: Detailed Project Schedule



*Note: GAC and RO systems will be installed consistent with the schedule identified in the Consent Order. The above schedule is based on GAC and RO eligible residences that were identified when the CO was initiated. GAC and RO systems will be installed in newly eligible residences within 9 months (GAC) or 6 months (RO).

TABLE

Table 1: Sample Analyte List

CAS_NO	Common Name	Analytical Method	Chemical Formula	Chemical Name	Comment
13252-13-6	C3 Dimer Acid	EPA Method 8321A or 537 Mod. or Table 3 Lab SOP	C6HF11O3	2,3,3,3-Tetrafluoro-2 (1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid)	
674-13-5	PFMOAA	Table 3 Lab SOP	C3HF5O3	Perfluoro-2-methoxyacetic acid	
13140-29-9	PMPA	Table 3 Lab SOP	C4HF7O3	Perfluoro-2-methoxypropanoic acid	
377-73-1	PFMOPrA (PFECA-F)	Not reported by lab.	C4HF7O3	Perfluoro-3-methoxypropanoic acid	Listed as PFECA F in original Table 3 SOP. Now PMPA (CAS 13140-29-9). Going forward, will only present results for PMPA (13140-29-9)
39492-88-1	PFO2HXA	Table 3 Lab SOP	C4HF7O4	Perfluoro(3,5-dioxahexanoic) acid	
267239-61-2	PEPA	Table 3 Lab SOP	C5HF9O3	2,3,3,3-Tetrafluoro-2-(pentafluoroethoxy) propanoic acid	
863090-89-5	PFMOBA	Not reported by lab.	C5HF9O3	Perfluoro-4-methoxybutanoic acid	Listed as PFECA A in original Table 3 SOP. Now PEPA (CAS 267239-61-2). Going forward, will only present results for PEPA (267239-61-2).
39492-89-2	PFO3OA	Table 3 Lab SOP	C5HF9O5	Perfluoro(3,5,7-trioxaoctanoic) acid	
39492-90-5	PFO4DA	Table 3 Lab SOP	C6HF11O6	Perfluoro(3,5,7,9-tetraoxadecanoic) acid	
66796-30-3	Nafion BP #1	Not reported by lab.	C7HF13O5S	Nafion Byproduct 1	29311-67-9 shown in Table 3 SOP. Unclear why 66796-30-3 is on the CO list.
29311-67-9	PFESA-BP1	Table 3 Lab SOP	C7HF13O5S	Nafion Byproduct 1	
749836-20-2	PFESA-BP2 / Nafion BP #2	Table 3 Lab SOP	C7H2F14O5S	Nafion Byproduct 2	
174767-10-3	PFECA-G	Not reported by lab.	C7HF13O3	Hexanoic acid, 2,2,3,3,4,4,5,5,6,6-decafluoro-6-(trifluoromethoxy)-;	801212-59-9 shown in Table 3 SOP. Going forward, will only present results for for 801212-59-9.
801212-59-9	PFECA-G	Table 3 Lab SOP	C7HF13O3	Butanoic acid, 2,2,3,3,4,4- hexafluoro-4-[1,2,2,2-tetrafluoro-1- (trifluoromethyl)ethoxy]-	
39492-91-6	TAFN4	Table 3 Lab SOP	C7HF13O7	Perfluoro(3,5,7,9,11-pentadodecanoic) acid	
375-85-9	PFHpA	EPA Method 537 Mod	C7HF13O2	Perfluoroheptanoic acid	

Notes:

SOP = Standard Operating Procedure

APPENDICES

APPENDIX A



Geosyntec Consultants of NC, PC

CHEMOURS FAYETTEVILLE WORKS CONSENT ORDER PARAGRAPH 21 ADAPTIVE STEP OUT AND INFILL SAMPLING PROGRAM

Prepared for

The Chemours Company FC, LLC
Fayetteville Works
22828 NC Highway 87 W
Fayetteville, NC 28306

Prepared by

Geosyntec Consultants of NC, PC
2501 Blue Ridge Road, Suite 430
Raleigh, NC 27607

Geosyntec Project Number TR0795

April 2019

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ACRONYMS AND ABBREVIATIONS

Chemours	The Chemours Company FC, LLC
CO	Consent Order
ft	feet
Geosyntec	Geosyntec Consultants of NC, PC
HFPO-DA	hexafluoropropylene oxide dimer acid
NCDEQ	North Carolina Department of Environmental Quality
ng/L	nanograms per liter
PFAS	Per- and polyfluoroalkyl substances
SELCL	Southern Environmental Law Center

1. INTRODUCTION AND OBJECTIVES

Geosyntec Consultants of NC, P.C. (Geosyntec) has prepared this Sampling Plan for The Chemours Company FC, LLC (Chemours) to be included as Appendix A in the *Drinking Water Compliance Plan* prepared by Parsons. This document presents the proposed Adaptive Step Out and Infill Sampling Program (the Program) for the testing of private drinking water wells in the area surrounding the Chemours Fayetteville Works facility (Site) as required by Paragraph 21 of the Consent Order (CO) between Chemours, the North Carolina Department of Environmental Quality (NCDEQ), and the Southern Environmental Law Center (SEL) and entered by the Court on February 25, 2019.

More specifically, the Program presented in this appendix was designed to address the following requirement stated in CO Paragraph 21:

“Chemours shall fund sampling by a third party laboratory approved by DEQ of drinking water wells for a distance of at least one-quarter (1/4) mile beyond the nearest well with test results showing a quantifiable level of any PFAS listed in Attachment C above 10 ng/L. Such testing shall be completed within eighteen (18) months of entry of this Order.”

Therefore, the goal of the Program is to delineate the extent of CO Attachment C Per- and polyfluoroalkyl substances (PFAS) above 10 ng/L in private drinking water wells and to sample all private wells within the delineated area within the CO Paragraph 21 18-month timeframe. The purpose of this appendix is to describe the design and implementation of the Program and to provide details on the standard residential sampling procedures that will be used during the Program.

2. ADAPTIVE STEP OUT AND INFILL SAMPLING PROGRAM

The Program is comprised of two concurrent sampling programs: (i) Adaptive Step Out Sampling Plan to characterize the extent of sampling potentially required and (ii) Infill Sampling Plan to collect samples from all private drinking water wells (private wells) per Paragraph 21 requirements. The results of the Step Out Sampling are intended to provide Chemours and its contractors with the information needed to form plans to complete the Infill Sampling in the CO specified time period of 18 months. Samples will be collected according to guidelines set out in the PFAS Quality Assurance Project Plan (AECOM, 2018) and are described in Section 3. Private well samples will be analyzed for PFAS listed in CO Attachment C using Method Table 3 standard operating protocol.

2.1 Program Design

For the Step Out Sampling Plan, an adaptive sampling design was selected to delineate the lateral extent of PFAS contamination in the offsite area. An adaptive sampling design consists of multistage sampling, where the results of the first and subsequent stages of sampling are used to inform the next stage of step out sampling (USEPA, 2002). The process continues until all newly collected samples meet a predefined criterion, i.e., private well PFAS detections are below 10 ng/L. A common application of adaptive sampling involves subdividing the region of interest (i.e., offsite private wells) into areas and randomly selecting a subset of private wells for testing. Note that the term "random" does not mean haphazard; rather, it has the explicit meaning of equiprobable selection. Selecting private wells using a random sampling strategy ensures that the resulting data will be representative of the area of interest.

Accordingly, the offsite area will be divided into sixteen sectors (see Figure A1), where each sector will represent a 22.5-degree angular distance from the center of the Site (e.g., Sector 1 will be north, 0 degrees, to north northeast, 22.5 degrees). Distance intervals within the sectors will be defined by successive one-mile rings from the center of the Site. Each sector will be sampled separately using the adaptive sampling design described above. A subset of ten private wells will be randomly selected within an area defined by a direction sector and a one-mile interval at each stage of the Adaptive Step Out Sampling. Figure A1 shows the sixteen direction sectors and the one-mile rings up to a distance of 10.5 miles from the center of the Site.

The initial stage of the Adaptive Step Out Sampling Plan will vary by sector depending on the available sector-specific private well data. Figure A2 shows the one-mile interval where the initial stage of sampling for each sector will occur based on the distribution of detects for hexafluoropropylene oxide dimer acid (HFPO-DA). For example, in Sector 1 the initial stage of sampling will begin at the 4.5 to 5.5-mile interval, while in Sector 4, the first stage of sampling will begin at the 2.5 to 3.5-mile interval, and so on. The initial stage will consist of collecting approximately 160 private well samples across all sectors (16 sectors × 10 samples per sector).

The number of additional stages of the Adaptive Step Out Sampling Plan will also vary by sector based on the presence of PFAS detections above 10 ng/L within a one-mile interval. For example, Sector 1 may require two stages of sampling (4.5 to 5.5-mile and 5.5 to 6.5-mile intervals) while Sector 4 may only require one stage of sampling (2.5 to 3.5-mile interval). Therefore, upon receipt of analytical data from each stage of the Adaptive Step Out Sampling Plan, the results will be reviewed and the Chemours team will evaluate whether additional step out sampling (i.e., move outwards at least one or more miles) is needed on a sector by sector basis.

If all private wells within a sector and one-mile step out interval have no PFAS detections above 10 ng/L, then an additional ten confirmatory samples will be collected within a ¼-mile interval. These results from the ten confirmatory samples will be used to establish the expected Infill Sampling limits of the ¼-mile distance requirement stipulated in CO Paragraph 21.

Each stage of sampling will last approximately one month, where the first week will consist of Adaptive Step Out sampling and the other three weeks will consist of Infill Sampling. For example, in Sector 1, the first stage of Adaptive Step Out Sampling will occur during the first week within the 4.5 to 5.5-mile interval, while the Infill Sampling will occur during the remaining three weeks of the month in 1.5 to 4.5-mile.

The Infill Sampling Plan involves collecting samples at all private wells within the defined sector and one-mile area with known PFAS detections above 10 ng/L. The Infill Sampling will occur systematically within each sector and will continue until all private wells have been tested within the delineated sector, i.e., even after the Adaptive Step Out Sampling has been completed.

2.2 Implementation of the Program

Each stage of the Program will consist of the following seven-step workflow (Figure A3). For each sector, start at the initial one-mile interval with no (or limited) private well data (as shown in Figure A2):

1. Randomly select 10 residential wells for sampling
2. Sample the 10 residential wells, collect well metadata, e.g., well depth, etc., and submit samples for analysis.
3. Move to Infill Sampling until step out sample results are received from the lab.
4. Compare sample results against 10 ng/L CO 21 requirement. If any sample is above 10 ng/L, go to Step 5, otherwise go to Step 6
5. Step out to next one-mile interval and return to Step 1.

6. Collect ten confirmatory samples within a ¼-mile interval.
7. If all samples are below 10 ng/L, terminate Step Out sampling and return to Infill Sampling until all private wells have been sampled, otherwise go to Step 5.

During implementation, modifications will be made as data is reviewed and as needed to support achieving sampling timeframes. Modifications may potentially include adjusting the number of private wells sampled within each sector, distance intervals per stage (i.e., distance between rings) and number of sampling teams collecting Step Out and/or Infill samples.

3. PRIVATE DRINKING WELL SAMPLING PROCEDURES

Parsons has provided the following text which details the general sampling procedures to be used throughout the proposed Program.

3.1 Sampling Notification and Documentation

To conduct the sampling, Chemours subcontractor representatives (Parsons) will go to the identified residence, knock on the door, and deliver a notification letter from Chemours. The notification letter (i) describes the private well sampling program; (ii) requests the resident's participation if applicable; and (iii) includes a phone number that the resident can call to request information about the program and/or to schedule sampling of their private well. Notifications and responses to notifications (e.g., accept or decline) will be documented on electronic field forms.

If the resident is at home and accepts the offer to have their private well sampled, then the resident can choose to either have the sample collected at that time or reschedule sampling for a later time. If the resident declines the offer of sampling, then the decline will be noted in the electronic field form.

If no one is home, the sampling team will leave the notification letter in a prominent location and the notification will be noted in the electronic field form.

For residents that either have not called to request sampling or whose residence was inaccessible, Chemours subcontractor representatives will attempt to make contact again via a mailed letter sent within one week of the initial visit. The mailed letter will again offer sampling of private wells. If needed, the project team may also make a return visit to the residence to deliver another copy of the notification letter. If no communication is received from the resident after the letter is mailed, follow-up letters will be sent each quarter for the next three quarters (a total of 4 letters will be mailed to the resident).

Chemours subcontractor representatives will maintain a database that includes addresses, the dates and status of attempts to contact each resident, resident's contact information (name, mailing address, phone number), sampling completed, and any declines of the offer to sample.

3.2 Sample Collection Methodology

The procedure for sampling private wells is as follows:

1. Record available information about the resident (name, contact number, etc.), the property owner, and the well (well age, depth, construction history, presence/location of any filters or other systems, etc.).

2. Don a new pair of powderless, disposable nitrile (or similar) gloves for each sample being collected.
3. Find the spigot closest to the well head.
4. Turn on water at the selected spigot and purge the well until the pump turns on (usually approximately 5 to 10 minutes).
5. Hold the high-density polypropylene sampling bottle by the body. Do not touch or handle the bottle by the neck and mouth. Remove the bottle cap and do not set it down at any point, place the bottle under the spigot, and fill completely. Do not allow the neck or the mouth of the bottle to touch the spigot. Do not use a secondary container to fill the bottle.
6. Recap the sample bottle and secure cap completely.
7. Affix a pre-printed sample label to the bottle (unless already affixed by the laboratory). If the label is not pre-printed, fill out relevant sample information on the label.
8. Place the sample in a cooler of wet ice.
9. Record the sample name, date, and time in the electronic field form.
10. Complete the chain of custody form(s), secure the cooler, and ship the samples to the analytical laboratory.

Information related to collection of each private well sample will be recorded on an electronic data collection form. Drinking water will be sampled directly from the well head (or as close as possible) at private wells. To ensure against cross-contamination between drinking water sampling locations, the sampler collecting the samples will wear clean, disposable latex and/or nitrile gloves and limit his/her contact with the samples. Sample bottles and containers appropriate for PFAS analysis will be prepared by the contracted laboratory and will be sealed to ensure cleanliness. Sample bottles will not be cleaned or reused in the field.

3.2.1 Preservation and Handling of Samples

Each containerized sample will be labeled and placed as soon as possible into an insulated sample cooler. The cooler will serve as a shipping container and will be provided by the laboratory along with the appropriate sample containers. Wet ice will be placed in the sample containers within heavy-duty plastic bags. Samples will be maintained at a cool temperature (optimum 4°C □ 2°C) from the time of collection until the coolers arrive at the laboratory (if required). Plastic “bubble wrap” and/or polystyrene foam may also be used to protect the samples during shipping.

Prior to shipment of the samples to the laboratory, a chain of custody form will be completed by the sample team. Sample locations, sample identification numbers, description of samples, number of samples collected, and specific laboratory analyses to be run on each sample will be recorded on the chain of custody form.

3.2.2 Quality Assurance/Quality Control

Associated quality control samples as required by the laboratory/analytical method will be collected and analyzed throughout the duration of the project. These may include field duplicates, matrix spikes/duplicates, and field blanks.

4. SCHEDULE AND REPORTING

As presently described, the Adaptive Step Out Sampling Program will be able to collect samples, if necessary, based on earlier sample results, to a distance of 10.5 miles from the center of the Site by December 2019. The potential step out distance of 10.5 miles by December 2019 assumes (a) sampling starts in May 2019, (b) analytical data turnaround times are one-month and (c) samples need to be collected to this distance based on data from earlier stages.

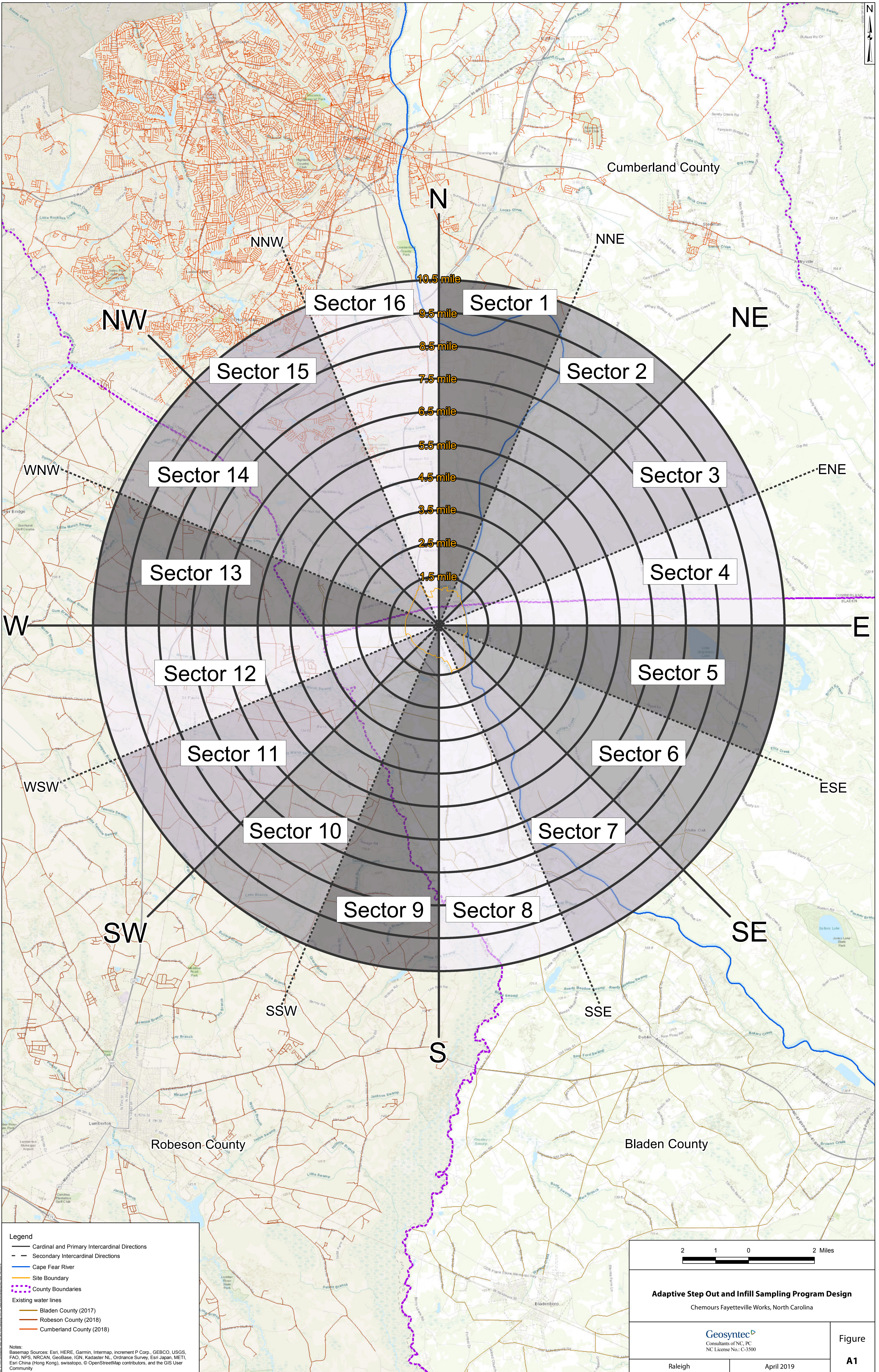
Chemours will provide updates to NCDEQ describing the progress of the Program and any potential modifications as part of quarterly reports submitted as required by CO Paragraph 28.

5. REFERENCES

AECOM, 2018. Poly and Perfluoroalkyl Substance Quality Assurance Project Plan for the Chemours Corporate Remediation Group.

United States Environmental Protection Agency (USEPA), 2000. Guidance for Data Quality Assessment: Practical Methods for Data Analysis, EPA QA/G-9.

FIGURES



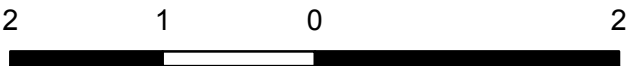
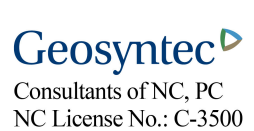
Legend

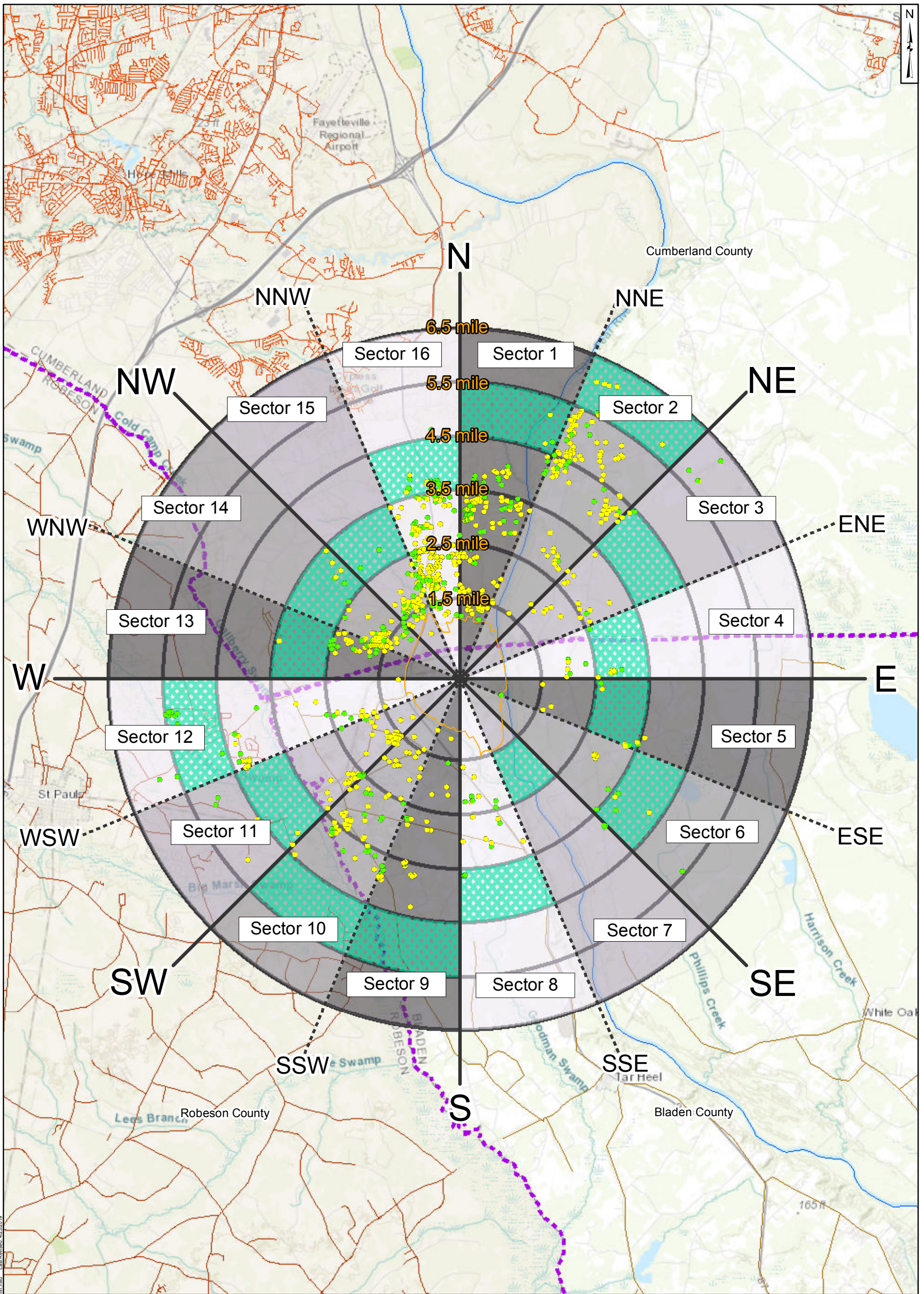
- Cardinal and Primary Intercardinal Directions
- - Secondary Intercardinal Directions
- Cape Fear River
- Site Boundary
- County Boundaries

Existing water lines

- Bladen County (2017)
- Robeson County (2018)
- Cumberland County (2018)

Notes:
 Basemap Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeBCO, IGN, Kartestor, Ordnance Survey, Esri, Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

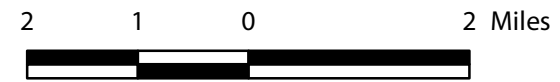
	
<p>Adaptive Step Out and Infill Sampling Program Design Chemours Fayetteville Works, North Carolina</p>	
 <p>Geosyntec Consultants of NC, PC NC License No.: C-3500</p>	<p>Figure A1</p>
<p>Raleigh</p>	<p>April 2019</p>



- Legend**
- HFPO-DA Detect
 - HFPO-DA Non-Detect
 - Cardinal and Primary Intercardinal Directions
 - - - Secondary Intercardinal Directions
 - Cape Fear River
 - Site Boundary
 - County Boundaries
 - ▤ One-mile interval to commence initial stage of Step Out Sampling

- Existing water lines**
- Bladen County (2017)
 - Robeson County (2018)
 - Cumberland County (2018)

Notes:
 Basemap Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community



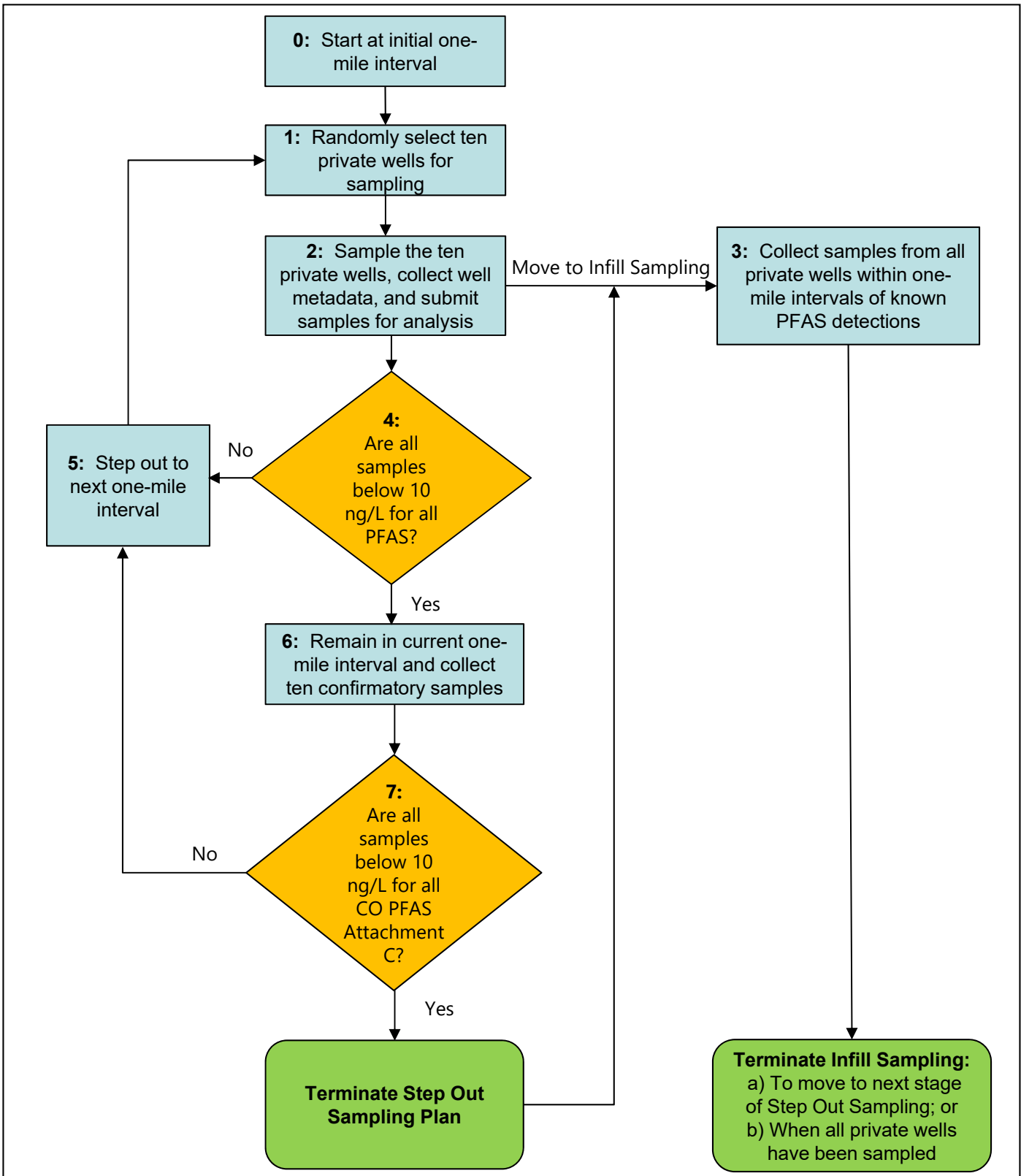
Initial Stage of Adaptive Step Out Sampling Plan
 Chemours Fayetteville Works, North Carolina

Geosyntec
 Consultants of NC, PC
 NC License No.: C-3500

Raleigh April 2019

Figure
A2

Path: E:\191076\Adaptive Step Out and Initial Sampling\191076_SiteCharacterization_2019.mxd Last Revised: 4/23/2019



Notes:

Modifications will be made as data is reviewed and as needed to support achieving sampling timeframes. Modifications may potentially include:

- 1) Number of randomly selected wells for testing; and/or
- 2) Step out distance intervals.

Sector-specific Workflow for Adaptive Step Out and Infill Sampling Program

Chemours Fayetteville Works, North Carolina



Consultants of NC, PC
NC License No.: C-3500

Figure

A3

Raleigh

April 2019

APPENDIX B



The Chemours Company
Fayetteville Works
22828 NC Highway 87 W
Fayetteville, NC 28306

Date

Resident Address

Re: Reverse Osmosis System for Your Residential Drinking Water

Dear Well Resident:

Since early September 2017, Chemours—in consultation and cooperation with the North Carolina Department of Environmental Quality—has been conducting a residential well sampling program near the Fayetteville Works facility. The drinking water for your home was previously tested for the presence of HFPO Dimer Acid (commonly known as GenX) and you should have previously received the results from those tests. Because testing of your drinking water shows levels of HFPO Dimer Acid below 140 parts per trillion (ppt), which is North Carolina's provisional health goal, you have not previously been offered a water treatment system.

Chemours has entered into a Consent Order with NCDEQ and Cape Fear River Watch, which was approved by the Superior Court for Bladen County on February 25, 2019. Pursuant to Paragraph 20 of the Consent Order, Chemours has agreed to provide reverse osmosis drinking water systems to any household with per- and polyfluoroalkyl substances (PFAS) that are (1) at or above 10 ppt for any one PFAS, or (2) at or above 70 ppt for total PFAS. Although, there is no indication of any harmful health effects of PFAS at these low levels, Chemours has agreed to this program to provide further protection to residents with even very low levels of PFAS in their drinking water. Results of testing at your well indicate that one of those two criteria is met, so Chemours is now offering you a reverse osmosis drinking water system, which would be purchased and installed, if you so elect, at the company's sole expense. Reverse osmosis systems are effective at removing PFAS, including the substances detected in your drinking water. These systems are installed under a sink and filter the water from that sink. As required by the Consent Order, Chemours is prepared to install up to three such systems in your home.

You are not required to have this technology installed, and may choose to decline this offer, or to have fewer than three systems installed. If you are interested in having a reverse osmosis system installed, please call 910-678-1101. A representative will return your call within 24 hours. If you do want a reverse osmosis system installed, the system manufacturer will contact you about installation.

Until we can install reverse osmosis systems in your home, Chemours will provide you with bottled water. We are offering an initial delivery of bottled water with this letter, and

Chemours has hired a water delivery service to provide future deliveries of drinking water to you (up to 15 gallons per week). In addition, supplemental water is available to be picked up from our plant site if residents do not receive their scheduled delivery of water through water delivery vendors, or if you are waiting to get set up on bottled water home delivery. Please note the following regarding water pick-up:

- Pick-up of supplemental water will be available from **2-6 p.m. every Monday**.
- Residents must bring this letter with them as the barcode is specific to your address.
- Copies of this letter will not be accepted.
- A maximum of two cases of supplemental water will be allowed per residence, per week (each case has six one-gallon bottles). ***This service is intended to be a supplemental supply only and not a routine weekly supply.***
- Park near the site's main gate entrance (directions below). The attendant will scan the barcode sticker at the top of this letter and provide you with up to two cases of supplemental water.

Directions to Chemours Fayetteville Works, 22828 NC 87 Hwy, Fayetteville, NC 28306

- Turn onto the plant site where County Line Road meets NC 87 Hwy.
- Travel about 1 mile - road will bend to the right. Take a right and continue straight.
- You will pass a sign pointing to Chemours. Continue straight until you reach the Administration Building. Go past the Administration Building and turn left to the Main Guardhouse.

Finally, Chemours' records do not indicate that you are represented by an attorney in connection with this matter, and so we are contacting you directly. If you are in fact represented by an attorney, please provide your attorney with this letter.

We are committed to assisting you and your family with speed and transparency and regret any inconvenience resulting from this situation.

Sincerely,



Brian Long
Plant Manager
Chemours – Fayetteville Works

APPENDIX C

STANDARD OPERATING PROCEDURE – RO SYSTEM INSTALLATION

I. PURPOSE

Provide a procedure for consistently installing reverse osmosis (RO) point of use filtration systems at a variety of Residential properties. RO installation installation work will be completed by Plumbers and/or Technicians from Advanced Water Systems the regional authorized distributor and installer of Kinetico water systems also referred to as “K-AWS”.

II. SAFETY

All Parsons and K-AWS safety rules and procedures described in the Parsons Project Specific Health and Safety Plan (PSHEP), project and task specific Activity Hazard Assessments (AHAs) and Chemours Health and Safety expectations apply to all work steps and phases described in this document. All Parsons and K-AWS staff executing the work steps described below will complete an onsite, scope of work and safety orientation with the Parsons construction manager or K-AWS safety manager before performing any work. All work at residential homes will be completed by K-AWS staff that have completed a project orientation and are background checked and vetted by K-AWS. All K-AWS staff working inside residential homes will wear uniforms with the company’s name, logo and workers name presented on the uniform. K-AWS staff will wear boot covers while inside residential homes.

Minimum Personal Protective Equipment (PPE):

- Cut and/or chemical resistant work gloves appropriate for the task
- Safety glasses
- Appropriate clothing as described above with disposable boot covers when working inside residential homes
- Dust masks, knee pads, and hearing protection or other specialized PPE as needed.

In addition to the PPE listed above, all project vehicles will display Kinetico and/or K-AWS on the sides when working on residential properties.

III. RO INSTALLATION PROCEDURE:

1. **RO System Offer Notification** – Chemours/Parsons will notify all Owner/Residents that qualify for RO systems via formal letter delivered by mail or a hand delivered letter. The notification letter will include Parsons contact information. Parsons will assist Owner/Residents with initial RO questions and may forward K-AWS contact information to Owners/Residents that have additional technical questions. No less than on a weekly basis Parsons will send K-AWS an updated list of Owner/Residents that have requested RO installations via the project information line (910-678-1101).
2. **Onsite Kinetico Visit Scheduling (RO Task 1)** – K-AWS administrative staff will receive calls from Owner/Residents qualifying for RO systems and will answer basic questions regarding the RO system functionality, installation process and will schedule an onsite initial visit with a K-AWS technician. Parsons will provide project history training to K-AWS staff to assist with communications and scheduling with residents. K-AWS will update the Parsons project database with a call log for the date the in-home visit is scheduled.

STANDARD OPERATING PROCEDURE – RO SYSTEM INSTALLATION

3. **Onsite Visit with Owner/Resident (RO Task 2)** – K-AWS staff will visit Owner/Residents at the date and time previously scheduled. The following exchange of information will be completed with the resident during the meeting.
 - a. Overview of how RO filtration works with cut sheets for the RO system offered to the resident
 - b. Overview on the RO equipment selected for the project and special features including the remineralization cartridge.
 - c. Overview of the operation and maintenance procedures on the RO system that will be completed by Chemours with no cost to the Owner/Resident.
 - d. Inspection of all the qualifying point of use locations in the home, Parsons will provide K-AWS with a list identifying the total number of RO systems each address is entitled to
 - e. Assessment of where the RO systems will be located, selection of the appropriate sized pressure tank for each installation, the Owner/Residents faucet color choices, specific installation requests and notes on special installation requirements unique to the home will be recorded by the K-AWS technician on the service agreement.
 - f. K-AWS will provide the Owner/Resident with an installation agreement and will schedule the installation during the home visit if the Owner/Resident agrees to the RO system. K-AWS will leave the resident a copy of the signed K-AWS installation agreement during the initial visit.
 - g. K-AWS will leave the Owner/Resident the names of the K-AWS staff making the visit, confirm the voicemail call-in mailbox number established by Chemours and K-AWS service/contact numbers with the Owner/Residents if they have further questions.
 - h. Prior to leaving the property or within 24-hrs, the K-AWS representative or administrative staff will upload one PDF document containing the installation form/service agreement, technical notes and technical photos. K-AWS photographs of the selected installation locations will not include images of the resident.

4. **RO Installation (RO Task 3)** – K-AWS staff will install the specific number of RO systems at the locations previously identified during RO Task 2. RO specifications are included in Appendix C. The following items will be completed during RO installation:
 - a. K-AWS will make a courtesy notification call to Owner/Resident at least 24hrs prior to the scheduled appointment.
 - b. K-AWS staff will review the installation process with the Owner/Resident upon arrival and exchange/confirm contact information, installers names, warranty and service contact information.
 - c. RO systems will be installed per the internal procedures developed by K-AWS unique to the RO system and K-AWS products
 - d. If Owner/Residents request changes to the locations, colors or other details agreed during the initial in-home visit the K-AWS staff will be prepared with surplus materials to appropriately meet the Owner/Residents requested changes.
 - e. K-AWS staff will photograph the installation site of each RO unit prior to installation.
 - f. Following installation, K-AWS staff will appropriately purge/prime all RO systems and photograph the post-installation site once the system is determined to be operating correctly
 - g. K-AWS staff will give each Owner/Resident a brief tutorial on how the RO system operates, including the filter service indicator. K-AWS staff will confirm with the Owner/Resident they do not need to service any components within the RO system.
 - h. K-AWS staff will attach tamper indicating security seals to the RO access panels prior to demobilization.

STANDARD OPERATING PROCEDURE – RO SYSTEM INSTALLATION

- i. At the end of each day, all K-AWS installation documents and photographs will be transmitted to the K-AWS project Administrator for upload the Parsons project database within 24 hrs.
5. **RO Maintenance (RO Task 4)**—When an Owner/Resident's RO system indicates a filter change is required they will contact K-AWS directly at the service contact number provided during the initial in-home interview and attached to the side of the RO unit.
- a. K-AWS administrative staff will receive service request calls from Owners/Residents and schedule service appointments directly.
 - b. K-AWS administrative staff will upload a telephone correspondence log to the Parsons project database.
 - c. K-AWS will make a courtesy notification call to Owner/Resident at least 24hrs prior to the scheduled appointment.
 - d. K-AWS will assess the type of service required: carbon polishing service, RO membrane service, RO housing/equipment service and if the work is routine maintenance or covered under the K-AWS warranty.

APPENDIX D

Taste the Kinetico Difference

K5 Drinking Water Station



 **Kinetico**[®]
home water systems

Protection against a wide variety of contaminants

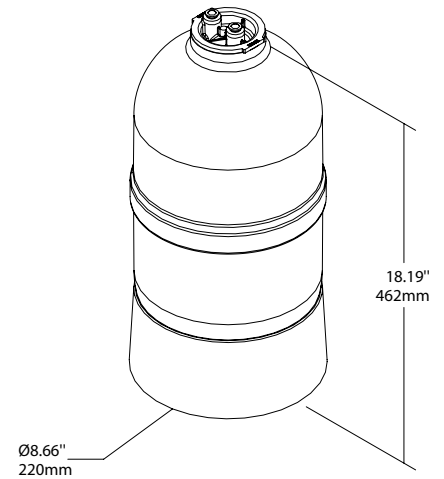
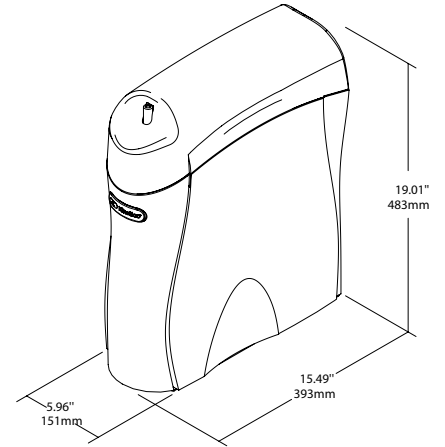
Maximum water efficiency

Flexible and expandable to meet any drinking water need

Flow from faucet is up to two times greater than any other drinking water system

What Makes The Kinetico K5 Drinking Water Station Different?

- 1. Cartridge Options.** Eight different options to meet your removal needs now and in the future. Includes the Purefecta[®] Virus/Bacteria Guard* for microbiologically pure water. The Mineral Plus⁺ cartridge improves the taste and health benefits of water by adding magnesium and calcium into the treated water. Cartridges also available for arsenic, chloramines⁺, chlorine/sediment, sediment, perchlorate⁺ and VOC reduction. Final polish with carbon post filter.
- 2. QuickFlo Technology.** Delivers a strong flow of water from the faucet. Allows system to produce more water in less time.
- 3. High Daily Production.** Can produce more than 40 gallons per day.
- 4. Quick Disconnect Sanitary Filter Cartridges.** Makes changing filters easy.
- 5. Patented, Exclusive EverClean[®] Rinse.** Consistently-high water quality. Increases membrane life - lowers maintenance cost.
- 6. PureMometer[®] Filter Life Indicator.** Shows filter capacity.
- 7. Patented, Tamper-Proof MACguard[®] Filter.** No more wondering when to change cartridges. Assures high quality water and peace of mind.
- 8. Automatic System Shutdown.** Conserves water - doesn't run water continuously to drain.
- 9. Exclusive Designer Faucet.** Lead-free, stylish design available in a variety of finishes.
- 10. Non-Electric, Totally Automatic.** No electrical problems.
- 11. Efficient Operation.** Conserves water, lower operating costs.
- 12. Outstanding Warranty.** Dependability, peace of mind.



*Tested and certified by WQA against NSF P231- microbiological water purifiers.

*Tested and verified by independent laboratory testing.

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facebook.com/KineticoWater
twitter.com/KineticoHQ

Independent Laboratory Certification

The K5 Drinking Water Station is tested and certified by WQA against NSF/ANSI Standards 42, 53 and 58 for the reduction of claims specified on the Performance Data Sheet. Also conforms to CSA Standard B483.1-Drinking Water Treatment Systems (Refer to the Performance Data Sheet for individual contaminants and reduction performance).



C USA

PERFORMANCE DATA SHEET

K5 Drinking Water Station



IMPORTANT

- Installation of this product must comply with all applicable laws.
- Provisions for an antisiphon air gap should be part of the installation to prevent a cross connection between the water system and the waste system.
- Do not use on water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system. Systems certified for cyst reduction may be used on disinfected water that may contain filterable cysts.
- Do not use on water that contains more than 0.1 ppm iron, more than 10 gpg hardness, more than 3000 ppm TDS or falls outside the pH range of 3 to 11.
- Do not use systems with sediment prefilters on water that contains chlorine.
- If a noticeable change in product water production, taste or odor occurs, contact your authorized Kinetico dealer.
- Models used for nitrate reduction are acceptable for treatment of influent concentrations of no more than 27 mg/L nitrate and 3 mg/L nitrite in combination measured as N and is certified for nitrate/nitrite reduction only for water supplies with a pressure of 280 kPa (40 psig) or greater (with test kit – part no. 7329). If you purchased your system specifically for nitrate reduction, Kinetico recommends periodic (quarterly) testing with a test kit #7329 to assure that nitrate/nitrites are being reduced to acceptable levels.
- This system shall only be used for arsenic reduction on chlorinated water supplies containing detectable residual free chlorine at the system inlet.

SPECIFICATIONS

Minimum/Maximum Operating Temperature: 2°C-38°C (36°F-100°F)
 Ambient Temperature, Operating Conditions: 32°C/90°F
 Minimum/Maximum Operating Pressure: 241.3-827.37 kPa (35/120 psi)
 Discharge Water/Product Water Ratio: 3 to 1
 Product Water Production Rate: 131 L/day (34.6 gpd); 193 L/day (51.0 gpd) with the wow (Water Over Water) tank that employs QuickFlo® technology

PERFORMANCE and MAINTENANCE

This reverse osmosis system contains a replaceable treatment component critical to the efficiency of the system. Replacement of the reverse osmosis component should be with one of identical specifications, as defined by the manufacturer, to ensure the same efficiency and contaminant reduction performance. This component is also critical for the effective reduction of total dissolved solids (TDS). Test the product water quarterly to verify that the system is performing satisfactorily. The flow from the faucet will shut off or slow to a trickle. This shut down prevents the effluent contaminant level from exceeding the EPA's maximum contaminant level under normal operating conditions. To restore service, replace both the prefilter and postfilter cartridges and any auxiliary cartridges that may be installed on your system. Annual replacement is recommended even if your system has not yet shut down. See chart below to select cartridges for your system. These cartridges are available through your local Kinetico dealer. You may opt to have the product water tested at this time to verify performance. For operation and maintenance information, consult the owner's manual. Installation instructions are available for review from your authorized Kinetico dealer.

WARRANTY COVERAGE

The Kinetico K5 Drinking Water Station carries a limited manufacturer's warranty. If the Kinetico K5 Drinking Water Station is installed in conjunction with a Kinetico Water Conditioner, the warranty covers the parts of the Kinetico K5 Drinking Water Station for ten years and the reverse osmosis membrane for ten years. If the Kinetico K5 Drinking Water Station is installed without a Kinetico Water Conditioner, the K5 Drinking Water Station parts are covered for ten years and the membrane is covered for four years. For complete details, see the actual warranty. The warranty will be void if influent water conditions exceed those specified in the system parameters.

Replacement Cartridges

Membrane Cartridge	Prefilter		MACguard® Postfilter
	CHLORINATED WATER SUPPLIES (City Water or Chlorinated Well)	NON-CHLORINATED WATER SUPPLIES	
ALL WATER SUPPLIES (City Water or Well)	CHLORINATED WATER SUPPLIES (City Water or Chlorinated Well)	NON-CHLORINATED WATER SUPPLIES	ALL WATER SUPPLIES (City Water or Well)
75 gpd/285 Lpd RO Membrane (Part No. 12752)	Carbon/Sediment Prefilter (Part No. 9461A)	Sediment Prefilter (Part No. 9309A)	Taste & Odor Postfilter (Part No. 9306B)

Auxiliary Cartridges

Auxiliary Cartridge Name	Part Number	Auxiliary Position	Capacity	Comments
VOC Filter	9307A	#1 or #2	500	Removes volatile organic compounds.
Purefecta® Virus/Bacteria Guard	12873B	#1 or #2	500	For use as a certified microbiological purifier, the system can only be used with an air charge tank. When used with the water on water tank, the system must be installed on microbiologically safe water.
Arsenic Guard®	11781A	#1 or #2	500	Works with the RO membrane to remove Arsenic III and Arsenic V. See the Arsenic facts section on page 4 of this document.
Perchlorate Guard	11682	#1 or #2	500	Removes perchlorate, a by-product of rocket fuel.
Chloramine Guard	13766	#1 or #2	500	Removes chloramine, a chemical used to treat approximately 1/3 of US municipal water sources.
Mineral Plus	13041	#1 or #2	500	Adds calcium and magnesium to your water.

CONTAMINANT REDUCTION CAPABILITIES

IMPORTANT NOTICE! Read this performance data sheet and compare the capabilities of the K5 unit with your actual water treatment needs. Please note that the contaminants listed below are not necessarily in your water and that while testing was performed under standard laboratory conditions, actual performance may vary. It is recommended that before purchasing a water treatment unit, you have your water supply tested to determine your actual water treatment needs. The system has been tested according to NSF/ANSI 42 and 58 for reduction of the substances listed below. The concentration of the indicated substances in water entering the system was reduced to a concentration less than or equal to the permissible limit for water leaving the system, as specified in NSF/ANSI 58. The chart below contains the following information based on test results:

- A list of substances that will be reduced by a Kinetico K5 Drinking Water Station
- The percent of reduction that can be expected
- Conditions under which the units were tested (pressure, pH and temperature)
- Influent and effluent levels of contaminated tested water
- The EPA's maximum contaminant level (MCL)

K5 Drinking Water Station

SUBSTANCE	Test Pressure (psi)	Flow Rate (gpm)	Temperature (°F)	pH	Average Influent Level (mg/L)	Average Effluent Level (mg/L)	Maximum Effluent Level	Average Percent Reduction	Minimum Percent Reduction	EPA MCL (mg/L)	Influent Challenge Concentration mg/L	Effluent Concentrations Or Percent Reduction Requirement	Max. Permissible Effluent Concentrations Or Percent Reduction
Pentavalent Arsenic *	50	0.75	75.2	5.58	0.29	0.002	0.003	99.3	---	0.010	0.30 ± 10%	0.010	
Barium	50	0.75	75.2	5.58	9.5	0.14	0.35	98.5	---	2.0	10.0 ± 10%	2.0	
Hexavalent Chromium	50	0.75	75.2	5.58	0.30	0.007	0.013	97.7	---	.05	0.3 ± 10%	0.1	
Trivalent Chromium	50	0.75	75.2	5.58	0.31	0.003	0.006	99.0	---	.05	0.3 ± 10%	0.1	
Cadmium	50	0.75	75.2	5.58	0.031	0.0006	0.0011	98.1	---	0.005	0.03 ± 10%	0.005	
Copper	50	0.75	75.2	5.58	3.0	0.038	0.069	98.7	---	---	3.0 ± 10%	1.3	
Fluoride	50	0.75	75.2	5.58	8.6	0.39	0.51	95.5	94.1	4.0	8.0 ± 10%	1.5	
Radium 226/228	50	0.75	75.2	5.58	25 pCi/L	5 pCi/L	5	80	---	5 pCi/L	25 pCi/L ± 10%	5 pCi/L	
Selenium	50	0.75	75.2	5.58	0.10	<0.006	<0.006	>94	---	0.05	0.10 ± 10%	0.05	
Lead	50	0.75	75.2	5.58	0.16	0.003	0.019	98.1	---	.015	0.15 ± 10%	0.010	
Turbidity	50	0.75	75.2	5.58	11 NTU	0.08 NTU	0.26	99.3	97.9	---	11 ± 1 NTU	0.5 NTU	


* See page 4 for additional arsenic treatment facts.

MTBE, Standard 53 Reduction Claims

Substance	Influent challenge concentration mg/L	Maximum permissible product water concentration mg/L
alachlor	0.04 ± 10%	0.002
arsenic (pentavalent)	0.050 ± 10%	0.010
arsenic (pentavalent)	0.30 ± 10%	0.010
atrazine	0.009 ± 10%	0.003
barium	10 ± 10%	2
benzene	0.015 ± 10%	0.005
cadmium	0.03 ± 10%	0.005
carbofuran	0.08 ± 10%	0.04
carbon tetrachloride	0.015 ± 10%	0.005
chlordane	0.04 ± 10%	0.002
chlorobenzene	2.0 ± 10%	0.1
chromium (hexavalent)	0.3 ± 10%	0.1
chromium (trivalent)	0.3 ± 10%	0.1
chromium (hexavalent and trivalent)	0.3 ± 10%	0.05 (hexavalent) and 0.05 (trivalent)
copper	3.0 ± 10%	1.3
2,4-D	0.210 ± 10%	0.07
dibromochloropropane	0.004 ± 10%	0.0002
o-dichlorobenzene	1.8 ± 10%	0.6
p-dichlorobenzene	0.225 ± 10%	0.075
1,2-dichloroethane	0.015 ± 10%	0.005
1,1-dichloroethylene	0.021 ± 10%	0.007
cis-1,2-dichloroethylene	1.4 ± 10%	0.07
trans-1,2-dichloroethylene	2.0 ± 10%	0.1
1,2-dichloropropane	0.015 ± 10%	0.005
dinoseb	0.021 ± 10%	0.007
endrin	0.006 ± 10%	0.002
ethylbenzene	2.1 ± 10%	0.7
ethylene dibromide	0.001 ± 10%	0.00005
fluoride	8.0 ± 10%	1.5
heptachlor (H-34, heptox)	0.08 ± 10%	0.0004
heptachlor epoxide	0.004 ± 10%	0.0002
hexachlorocyclopentadiene	0.15 ± 10%	0.05
lead	0.15 ± 10%	0.010
lindane	0.002 ± 10%	0.0002
mercury	0.006 ± 10%	0.002
methoxychlor	0.12 ± 10%	0.04
methyl tert-butyl ether	0.015 ± 20%	0.005
nitrate plus nitrite	30 ± 10%	10
nitrate	27 ± 10%	10
nitrite	3 ± 10%	1
pentachlorophenol	0.01 ± 10%	0.001
polychlorinated biphenyls (PCBs, aroclor 1260)	0.01 ± 10%	0.0005
radon	4000 ± 1000 pCi/L	300 pCi/L
selenium	0.10 ± 10%	0.05
simazine	0.012 ± 10%	0.004
styrene	2.0 ± 10%	0.1
2,4,5-TP(silvex)	0.15 ± 10%	0.05
tetrachloroethylene	0.015 ± 10%	0.005
toluene	3.0 ± 10%	1
toxaphene	0.015 ± 10%	0.003
1,2,4-trichlorobenzene	0.21 ± 10%	0.07
1,1,1-trichloroethane	0.6 ± 10%	0.2
1,1,2-trichloroethane	0.015 ± 10%	0.005
trichloroethylene	0.300 ± 10%	0.005
TTHM (as chloroform)	0.45 ± 20%	0.080
xylene	30 ± 10%	10.0
turbidity	11 ± 1 NTU	0.5 NTU

VOC, Standard 58 Reduction Claims

Substance	Influent challenge concentration mg/L	Maximum permissible product water concentration mg/L
alachlor	0.050	0.001
atrazine	0.100	0.003
benzene	0.081	0.001
carbofuran	0.190	0.001
carbon tetrachloride	0.078	0.0018
chlorobenzene	0.077	0.001
chloropicrin	0.015	0.0002
2,4-D	0.110	0.0017
dibromochloropropane (DBCP)	0.052	0.00002
o-dichlorobenzene	0.080	0.001
p-dichlorobenzene	0.040	0.001
1,2-dichloroethane	0.088	0.0048
1,1-dichloroethylene	0.083	0.001
cis-1,2-dichloroethylene	0.170	0.0005
trans-1,2-dichloroethylene	0.086	0.001
1,2-dichloropropane	0.080	0.001
cis-1,3-dichloropropylene	0.079	0.001
dinoseb	0.170	0.0002
endrin	0.053	0.00059
ethylbenzene	0.088	0.001
ethylene dibromide (EDB)	0.044	0.00002
haloacetonitriles (HAN):		
bromochloroacetonitrile	0.022	0.0005
dibromoacetonitrile	0.024	0.0006
dichloroacetonitrile	0.0096	0.0002
trichloroacetonitrile	0.015	0.0003
haloketones (HK):		
1,1-dichloro-2-propanone	0.0072	0.0001
1,1,1-trichloro-2-propanone	0.0082	0.0003
heptachlor	0.025	0.00001
heptachlor epoxide	0.011	0.0002
hexachlorobutadiene	0.044	0.001
hexachlorocyclopentadiene	0.060	0.000002
lindane	0.055	0.00001
methoxychlor	0.050	0.0001
pentachlorophenol	0.096	0.001
simazine	0.120	0.004
styrene	0.150	0.0005
1,1,2,2-tetrachloroethane	0.081	0.001
tetrachloroethylene	0.081	0.001
toluene	0.078	0.001
2,4,5-TP (silvex)	0.270	0.0016
tribromoacetic acid	0.042	0.001
1,2,4-trichlorobenzene	0.160	0.0005
1,1,1-trichloroethane	0.084	0.0046
1,1,2-trichloroethane	0.150	0.0005
trichloroethylene	0.180	0.001
trihalomethanes (includes):		
chloroform (surrogate chemical)	0.300	0.015
bromoform		
bromodichloromethane		
chlorodibromomethane		
xylene (total)	0.070	0.001

 Tested and certified by WQA against NSF/ANSI Standards 42, 53 and 58 for the reduction of claims specified on the Performance Data Sheet. Conforms to CSA Standard B483.1 – Drinking Water Treatment Systems (refer to the Performance Data Sheet for individual contaminants and reduction performance).

Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system. Systems certified for cyst reduction may be used on disinfected water that may contain filterable cysts.

The Kineticico K5 Drinking Water Station is acceptable for treatment of influent concentrations of no more than 27 mg/L nitrate and 3 mg/L nitrite in combination measured as N and are certified for nitrate/nitrite reduction only for water supplies with a pressure of 280 kPa (40 psi) or greater.

WQA certified our product performance, and reviewed our manufacturing facility and procedures to assure product consistency and integrity. They also assure that our literature accurately reflects our product capabilities. The system and installation must comply with state/provincial and local laws and regulations.

* The K5 system with Purefecta Virus/Bacteria Guard cartridge is Tested and Certified by WQA against NSF P231-Microbiological Water Purifiers based on recommendations set forth in the USEPA Guide Standard and Protocol for Microbiological Water Purifiers (OPP Task Force Report, 1987). The K5 with the Purefecta cartridge is not intended to convert wastewater or raw sewage into drinking water

Conforms to NSF/ANSI 58 for pentavalent arsenic reduction. See performance data sheet and Arsenic facts sheet section for an explanation of reduction performance. The following cartridges are not NSF or WQA Certified: Arsenic Guard, Perchlorate Guard, Chloramine Guard, and Mineral Plus.

This system has been tested for the treatment of water containing pentavalent arsenic (also known as As(V), As(+5), or arsenate) at concentrations of 0.30 mg/L or less. This system reduces pentavalent arsenic, but may not remove other forms of arsenic. This system is to be used on water supplies containing a detectable free chlorine residual or on water supplies that have been demonstrated to contain only pentavalent arsenic. Treatment with chloramine (combined chlorine) is not sufficient to ensure complete conversion of trivalent arsenic to pentavalent arsenic. Please see the Arsenic Facts section of the Performance Data Sheet for further information.

ARSENIC TREATMENT SYSTEM FACTS

This system has been tested for the treatment of water containing pentavalent arsenic (also known as As(V), As(+5), and arsenate) at concentrations of 0.30 mg/L or less. This system reduces pentavalent arsenic, but may not remove other forms of arsenic. This system is to be used on water supplies containing a detectable free chlorine residual at the system inlet or on water supplies that have been demonstrated to contain only pentavalent arsenic. Treatment with chloramine (combined chlorine) is not sufficient to ensure complete conversion of trivalent arsenic to pentavalent arsenic.

Arsenic (abbreviated As) is found naturally in some well water. Arsenic in water has no color, taste or odor. It must be measured by a lab test. Public water utilities must have their water tested for arsenic. You can get the results from your water utility. If you have your own well, you can have the water tested. Your local health department or state environmental health agency can provide a list of certified labs. The cost is typically \$15 to \$30. You can find information about arsenic in water on the Internet at the US Environmental Protection Agency website: www.epa.gov/safewater/arsenic.html.

There are two forms of arsenic: pentavalent arsenic (also called As(V),As(+5) and arsenate) and trivalent arsenic (also called As(III), As(+3) and arsenite). In well water, arsenic may be pentavalent, trivalent or a combination of both. Labs require special sampling procedures to determine what type and how much of each type of arsenic is in the water. Check with the labs in your area to see if they can provide this type of service.

Reverse osmosis (RO) water treatment systems do not remove trivalent arsenic from water very well. RO systems are very effective at removing pentavalent arsenic. A free chlorine residual will rapidly convert trivalent arsenic to pentavalent arsenic. Other water treatment chemicals such as ozone and potassium permanganate will also change trivalent arsenic to pentavalent arsenic. A combined chlorine residual (also called chloramine) may not convert all the trivalent arsenic. If you get your water from a public water utility, contact the utility to find out if free chlorine or combined chlorine is used in the water system.

The Kineticico K5 Drinking Water Station is designed to remove pentavalent arsenic. It will not convert trivalent arsenic to pentavalent arsenic. The system was tested in a lab. Under those conditions, the system reduced 0.30 mg/L (ppm) pentavalent arsenic to 0.010 mg/L (ppm) (the USEPA standard for drinking water) or less. The performance of the system may be different at your installation. Have the treated water tested for arsenic to check if the system is working properly.

You must periodically replace the RO component* of the Kineticico K5 Drinking Water Station to ensure the system will continue to remove pentavalent arsenic. The component identification and locations where you can purchase the component are listed in this Performance Data Sheet, the Owner's Manual and the installation instructions for your system.

In most drinking water sources, the inorganic form of arsenic tends to be more predominant than organic forms. Inorganic arsenic in drinking water can exert toxic effects after acute (short-term) or chronic (long-term) exposure. Although acute exposures to high doses of inorganic arsenic can cause adverse effects, such exposures do not occur from public water supplies in the U.S. at the current MCL of 50 µg/L. EPA's proposed drinking water regulation addresses the long-term, chronic effects of exposure to low concentrations of inorganic arsenic in drinking water. Chronic effects at low concentrations include:

- Cancer Effects: skin, bladder, lung and prostate cancer
- Non-cancer Effects: skin, pigmentation and keratosis, (callus-like skin growths seen earliest and most often), gastrointestinal, cardiovascular, hormonal (e.g. diabetes), hematological (e.g. anemia), pulmonary, neurological, immunological, reproductive/developmental functions.

The contamination of a drinking water source by arsenic can result from either natural or human activities. Arsenic is an element that occurs naturally in rocks and soil, water, air, plants and animals. Volcanic activity, the erosion of rocks and minerals and forest fires are natural sources that can release arsenic into the environment. Although about 90 percent of the arsenic used by industry in the United States is used for wood preservative purposes, arsenic is also used in paints, drugs, dyes, soaps, metals and semi-conductors. Burning fossil fuels and wastes, paper production, glass manufacturing, cement manufacturing, mining and smelting can also release arsenic. While arsenic can no longer be used in making pesticides, weed killers and embalming fluids, the Agency is aware that prior to this ban these substances have contributed to drinking water contamination.

* See Warranty coverage on page 2.

GENERAL SPECIFICATIONS (ALL MODELS):

Minimum/Maximum Operating Temperature: 2°C - 38°C (36°F - 100°F)
Ambient Temperature, Operating Conditions: 32°C (90°F)
Minimum/Maximum Operating Pressure: 241.3 - 827.37 kPa (35 -120 psi)

MODEL SPECIFIC INFORMATION:

Model Name: K5 Drinking Water Station with 3 Gallon WOW Tank
Product Water Production Rate (Daily Production Rate): 51 gpd (193 Lpd)
Recovery Rating*: 38.8%
Efficiency Rating**: 20.7%

SUBSTANCE	Test Pressure (psi)	Flow Rate (gpm)	Temperature (°F)	pH	Average Influent Level (mg/l)	Average Effluent Level (mg/l)	Maximum Effluent Level	Average Percent Reduction	Minimum Percent Reduction	EPA MCL (mg/l)	Influent Challenge Concentration mg/L	Max. Permissible Effluent Concentrations Or Percent Reduction Requirement
Nitrate/Nitrite both as N	50	0.75	77	7.42	31	7.3	11	76.1	---	10.0	30.0 ± 10%	10
Nitrate-N	50	0.75	77	7.42	28	6.7	9.8	75.8	---	10.0	27.0 ±10%	10.0
Nitrite-N	50	0.75	77	7.42	2.8	0.66	0.87	76.8	---	1.0	3.0±10%	1.0
TDS ***	50	0.75	75.2	5.58	770	46	61	93.7	90	500	750±40	187 mg/L/ 75%
Cyst	50	0.75	75.2	7.41	160000/mL	8/mL	24/mL	99.99	99.98	---	Minimum 50000/mL	99.95%

Model Name: K5 Drinking Water Station with 3 Gallon Standard Tank
Product Water Production Rate (Daily Production Rate): 34.6 gpd (130.97 Lpd)
Recovery Rating*: 36.1%
Efficiency Rating**: 20.6%

SUBSTANCE	Test Pressure (psi)	Flow Rate (gpm)	Temperature (°F)	pH	Average Influent Level (mg/l)	Average Effluent Level (mg/l)	Maximum Effluent Level	Average Percent Reduction	Minimum Percent Reduction	EPA MCL (mg/l)	Influent Challenge Concentration mg/L	Max. Permissible Effluent Concentrations Or Percent Reduction Requirement
Nitrate/Nitrite both as N	50	0.75	77	7.42	31	7.3	11	76.1	---	10.0	0.30 ± 10%	10
Nitrate-N	50	0.75	77	7.42	28	6.7	9.8	75.8	---	10.0	27.0 ±10%	10
Nitrite-N	50	0.75	77	7.42	2.8	0.66	0.87	76.8	---	1.0	3.0±10%	1
TDS ***	50	0.75	77	7.01	760	61	110	91.9	90	500	750±40	187 mg/L/ 75%
Cyst	50	0.75	75.2	7.13	170000	5	16	>99.99	>99.99	---	Minimum 50000/mL	99.95%

* Recovery Rating means the percentage of the influent water to the membrane portion of the system that is available to the user as reverse osmosis treated water when the system is operated without a storage tank or when the storage tank is by-passed.

** Efficiency Rating means the percentage of the influent water to the system that is available to the user as reverse osmosis treated water under operating conditions that approximate typical daily usage.

*** TDS (Total Dissolved Solids) is commonly comprised of calcium, magnesium, sodium, iron, manganese, bicarbonate, chloride, sulfate and carbonate.

Kineticico K5 Drinking Water Station will reduce the levels of certain substances in drinking water. These substances are not necessarily in your water. Because we make these claims, the attached information was compiled to help you better understand how these products will perform in your home.

Contaminant reduction tests were conducted by NSF International in accordance with the testing protocols of the Environmental Protection Agency (EPA). Given certain influent levels, Kineticico Drinking Water Systems will reduce the contaminant levels below those set by the EPA. These products conform to the Drinking Water Standards of your state. If you would like more information, contact your authorized Kineticico dealer.

Please sign below to verify that you've read and understand the attached information.

CONSUMER COPY

CONSUMER
_____ Signature
_____ Name (please print)
_____ Address
_____ City, State, Postal Code

AUTHORIZED KINETICO DEALER REPRESENTATIVE
_____ Signature
_____ Salesperson's Name (please print)
_____ Dealer's Name
_____ Dealer's Address
_____ City, State, Postal Code
_____ Dealer's Phone Number

Kineticico K5 Drinking Water Station will reduce the levels of certain substances in drinking water. These substances are not necessarily in your water. Because we make these claims, the attached information was compiled to help you better understand how these products will perform in your home.

Contaminant reduction tests were conducted by NSF International in accordance with the testing protocols of the Environmental Protection Agency (EPA). Given certain influent levels, Kineticico Drinking Water Systems will reduce the contaminant levels below those set by the EPA. These products conform to the Drinking Water Standards of your state. If you would like more information, contact your authorized Kineticico dealer.

Please sign below to verify that you've read and understand the attached information.

DEALER COPY

CONSUMER
_____ Signature
_____ Name (please print)
_____ Address
_____ City, State, Postal Code

AUTHORIZED KINETICO DEALER REPRESENTATIVE
_____ Signature
_____ Salesperson's Name (please print)
_____ Dealer's Name
_____ Dealer's Address
_____ City, State, Postal Code
_____ Dealer's Phone Number

FICHE TECHNIQUE DES PERFORMANCES

Système de purification d'eau potable K5



ATTENTION!

- L'installation de ce produit doit être conforme à toutes les lois applicables.
- Des dispositions pour un intervalle d'air et un tuyau d'évent doivent être incluses dans l'installation pour éviter une connexion croisée entre le système d'eau potable et le système d'eau usée.
- N'utilisez pas ce produit avec de l'eau microbiologiquement dangereuse ou dont la qualité n'est pas assurée par une désinfection adéquate en amont ou en aval du système. Les systèmes certifiés conformes aux normes définies en matière de réduction de sporocystes peuvent être utilisés avec de l'eau désinfectée susceptible de contenir des sporocystes filtrables.
- N'utilisez pas ce produit avec une eau qui contient une quantité de fer supérieure à 0,1 ppm, dont la dureté dépasse les 10 gpg, dont le niveau de TDS est supérieur à 3000 ppm ou dont la plage de pH n'est pas comprise entre 3 et 11.
- N'utilisez pas les systèmes dotés de préfiltres à sédiments avec de l'eau qui contient du chlore.
- Si vous remarquez un changement prononcé dans l'eau produite, dans son goût ou son odeur, communiquez avec votre distributeur agréé Kinetico.
- Les modèles utilisés pour la réduction des nitrates sont acceptables pour le traitement de concentrations maximales influentes combinées de 27 mg/l (nitrates) et de 3 mg/l (nitrites), mesurées comme « N », en ce qui concerne la réduction de nitrates et de nitrites, leur conformité étant certifiée pour les approvisionnements en eau d'une pression égale ou supérieure à 280 kPa (40 psig) (avec nécessaire de test - n° de pièce 7329). Si vous avez acheté votre système spécifiquement pour la réduction des nitrates, Kinetico recommande d'effectuer des tests périodiques (trimestriels) à l'aide du nécessaire de test n° 7329 afin de vous assurer que la teneur en nitrates/nitrites de votre eau est réduite à un niveau acceptable.
- Le présent système ne doit être utilisé que pour la réduction de la teneur en arsenic dans les approvisionnements d'eau chlorée dont la concentration résiduelle de chlore libre à l'entrée du système est détectable.

SPÉCIFICATIONS

Température min./max. de fonctionnement : 2 °C à 38 °C (36 °F à 100° F)
 Température ambiante; conditions de fonctionnement : 32 °C/90 °F
 Pression min./max. de fonctionnement : 241,3 à 827,37 kPa (35/120 psi)
 Eau de décharge/débit d'eau produite : 3 à 1
 Débit d'eau produite : 131 l/jour (34,6 gpi); 193 l/jour (51.0 gpi) avec réservoir
 « WOW » (Water Over Water ou « eau sur eau ») utilisant la technologie QuickFlo®.

PERFORMANCES ET ENTRETIEN

Le système à osmose inverse comporte un composant remplaçable de traitement essentiel pour l'efficacité du système. Le composant d'osmose inverse doit être remplacé par un composant aux spécifications identiques, tel que défini par le fabricant, afin de garantir le même niveau d'efficacité et de réduction des contaminants. Ce composant est également crucial pour la réduction efficace de la quantité totale des matières solides dissoutes (TDS, *Total Dissolved Solids*). Testez l'eau produite trimestriellement afin de vérifier que le système fonctionne de manière satisfaisante. Avec le temps, le débit d'eau du robinet deviendra un mince filet ou s'arrêtera totalement. Cet arrêt empêchera le niveau de contaminants de l'eau effluente de dépasser le niveau maximal de contaminants établi par l'agence de protection de l'environnement des États-Unis (EPA) dans des conditions de fonctionnement normales. Pour rétablir le débit de service, remplacez les cartouches du préfiltre et du post-filtre et toute cartouche auxiliaire installée dans votre système. Il est recommandé de remplacer les cartouches une fois par an même si votre système ne s'est pas encore arrêté. Consultez le tableau ci-dessous pour sélectionner les cartouches qui conviennent pour votre système. Vous pouvez vous les procurer auprès de votre distributeur local Kinetico. Vous pouvez par la même occasion demander de faire tester l'eau produite afin de vérifier le bon fonctionnement. Pour plus de détails sur le fonctionnement et l'entretien du système, consultez le guide d'utilisation. Les instructions d'installation sont disponibles chez votre distributeur agréé Kinetico.

COUVERTURE EN VERTU DE LA GARANTIE

Le système de purification d'eau potable K5 de Kinetico est appuyé d'une garantie limitée du fabricant. Si le système de purification d'eau potable K5 de Kinetico est installé de pair avec un système de conditionnement de l'eau de Kinetico, la garantie couvre les pièces du système de purification d'eau potable K5 de Kinetico, ainsi que la membrane d'osmose inverse, pendant une période de dix (10) ans. Si le système de purification d'eau potable K5 de Kinetico n'est pas installé de pair avec un système de conditionnement de l'eau de Kinetico, les pièces du système de purification d'eau potable K5 sont couvertes par la garantie pendant une période de dix (10) ans et la membrane, pendant quatre (4) ans. Pour plus de détail, consultez l'intégralité de la garantie. La garantie sera nulle et non avenue si les conditions de l'eau affluente dépassent celles spécifiées dans les paramètres du système.

Cartouches de recharge

Cartouche à membrane	Préfiltre		Post-filtre MACguard®
TOUS LES APPROVISIONNEMENTS D'EAU (eau municipale ou eau de puits)	APPROVISIONNEMENT D'EAU CHLORÉE (eau municipale ou eau chlorée de puits)	APPROVISIONNEMENT D'EAU NON CHLORÉE	TOUS LES APPROVISIONNEMENTS D'EAU (EAU MUNICIPALE OU EAU DE PUIITS)
75 gpi/285 l/j Membrane à osmose inverse (N° de pièce 12752)	Préfiltre à charbon/sédiments (N° de pièce 9461A)	Préfiltre à sédiments (N° de pièce 9309A)	Post-filtre d'atténuation de saveur et d'odeur (N° de pièce 9306B)

Cartouches auxiliaires

Répertoire Cartouches auxiliaires	N° de pièce	Position cartouche auxiliaire	Capacité	Commentaires
Filtre VOC Guard	9307A	n° 1 ou n° 2	500	Élimine les composés organiques volatils
Purefecta® Virus/Bacteria Guard	12873B	n° 1 ou n° 2	500	Si le système sert de purificateur microbiologique certifié, il doit être utilisé uniquement avec un réservoir d'admission d'air. S'il est utilisé avec le réservoir « eau sur eau », il doit être installé sur une eau salubre sur le plan microbiologique.
Arsenic Guard®	11781A	n° 1 ou n° 2	500	Fonctionne de pair avec la membrane à osmose inverse afin d'éliminer l'arsenic III et l'arsenic V. Consultez la section portant sur le traitement de l'arsenic présent dans l'eau en page 4 du présent document.
Perchlorate Guard	11682	n° 1 ou n° 2	500	Élimine le perchlorate, un sous-produit du propergol.
Chloramine Guard	13766	n° 1 ou n° 2	500	Élimine la chloramine, une substance chimique utilisée pour traiter environ 1/3 des sources d'eau municipale aux États-Unis et/ou au Canada.
Mineral Plus	13041	n° 1 ou n° 2	500	Additionne votre eau de calcium et de magnésium.

CAPACITÉ DE RÉDUCTION DES CONTAMINANTS

AVIS IMPORTANT! Lisez la fiche technique des performances et comparez les capacités du système K5 à vos besoins réels en matière de traitement de l'eau. Veuillez noter que les contaminants énumérés ci-dessous ne sont pas nécessairement présents dans votre eau et, bien que le système K5 ait été soumis à des tests dans des conditions de laboratoire, les performances peuvent varier. Avant d'acheter un système de purification d'eau, il est recommandé de faire tester votre approvisionnement d'eau afin de déterminer vos besoins réels en matière de traitement. Le système a été testé conformément aux normes NSF/ANSI 42 et 58 quant à la réduction des substances énumérées ci-dessous. La concentration des substances indiquées dans l'eau qui entre dans le système a été réduite à une concentration inférieure ou égale à la limite admissible pour l'eau sortant le système, ainsi qu'il est précisé dans la norme NSF/ANSI 58. Le tableau ci-dessous renferme les informations suivantes fondées sur les résultats des analyses :

- La liste des substances réduites par le système de purification d'eau potable K5 de Kinetico
- Le pourcentage de réduction attendu
- Les conditions dans lesquelles les systèmes ont été testés (pression, pH et température)
- Les niveaux influent et effluent de l'eau contaminée testée
- Le niveau maximal de contaminants (MCL, *Maximum Contaminant Level*) établi par EPA

Système de purification d'eau potable K5

SUBSTANCE	Pression de test (psi)	Débit (gpm)	Température (°F)	pH	Niveau influent moyen (mg/l)	Niveau effluent moyen (mg/l)	Niveau effluent maximal	Pourcentage de réduction moyen	Pourcentage de réduction minimal	MCL établi par EPA (mg/l)	Concentration de provocation dans l'eau influente mg/l	Concentrations maximales admissibles dans l'eau effluente Ou exigences en termes de pourcentage de réduction
Arsenic pentavalent *	50	0,75	75,2	5,58	0,29	0,002	0,003	99,3	---	0,010	0,30 ± 10 %	0,010
Baryum	50	0,75	75,2	5,58	9,5	0,14	0,35	98,5	---	2,0	10,0 ± 10 %	2,0
Chrome hexavalent	50	0,75	75,2	5,58	0,30	0,007	0,013	97,7	---	0,05	0,3 ± 10 %	0,1
Chrome trivalent	50	0,75	75,2	5,58	0,31	0,003	0,006	99,0	---	0,05	0,3 ± 10 %	0,1
Cadmium	50	0,75	75,2	5,58	0,031	0,0006	0,0011	98,1	---	0,005	0,03 ± 10 %	0,005
Cuivre	50	0,75	75,2	5,58	3,0	0,038	0,069	98,7	---	---	3,0 ± 10 %	1,3
Fluorure	50	0,75	75,2	5,58	8,6	0,39	0,51	95,5	94,1	4,0	8,0 ± 10 %	1,5
Radium 226/228	50	0,75	75,2	5,58	25 pCi/l	5 pCi/l	5	80	---	5 pCi/L	25 pCi/l ± 10 %	5 pCi/l
Sélénium	50	0,75	75,2	5,58	0,10	<0,006	<0,006	>94	---	0,05	0,10 ± 10 %	0,05
Plomb	50	0,75	75,2	5,58	0,16	0,003	0,019	98,1	---	0,015	0,15 ± 10 %	0,010
Turbidité	50	0,75	75,2	5,58	11 NTU	0,08 NTU	0,26	99,3	97,9	---	11 ± 1 NTU	0,5 NTU


* Voir page 4 pour connaître des procédés de traitement supplémentaires de l'arsenic.

Éther tert-butylque méthylique (ETBM), Norme 53 – Réduction des contaminants

Substance	Concentration de provocation dans l'eau influente mg/l	Concentration maximale admissible dans l'eau produite mg/l
alachlore	0,04 ± 10 %	0,002
arsenic (pentavalent)	0,050 ± 10 %	0,010
arsenic (pentavalent)	0,30 ± 10 %	0,010
atrazine	0,009 ± 10 %	0,003
baryum	10 ± 10 %	2
benzène	0,015 ± 10 %	0,005
cadmium	0,03 ± 10 %	0,005
carbofuran	0,08 ± 10 %	0,04
tétrachlorure de carbone	0,015 ± 10 %	0,005
chlordan	0,04 ± 10 %	0,002
chlorobenzène	2,0 ± 10 %	0,1
chrome (hexavalent)	0,3 ± 10 %	0,1
chrome (trivalent)	0,3 ± 10 %	0,1
chrome (hexavalent et trivalent)	0,3 ± 10 %	0,05 (hexavalent) et 0,05 (trivalent)
cuivre	3,0 ± 10 %	1,3
2,4-D	0,210 ± 10 %	0,07
dibromo-chloropropane	0,004 ± 10 %	0,0002
o-dichlorobenzène	1,8 ± 10 %	0,6
p-dichlorobenzène	0,225 ± 10 %	0,075
1,2-dichloroéthane	0,015 ± 10 %	0,005
1,1-dichloroéthylène	0,021 ± 10 %	0,007
cis-1,2-dichloroéthylène	1,4 ± 10 %	0,07
trans-1,2-dichloroéthylène	2,0 ± 10 %	0,1
1,2-dichloropropane	0,015 ± 10 %	0,005
dinosèbe	0,021 ± 10 %	0,007
endrine	0,006 ± 10 %	0,002
éthylbenzène	2,1 ± 10 %	0,7
dibromure d'éthylène	0,001 ± 10 %	0,00005
fluorure	8,0 ± 10 %	1,5
heptachlore (H-34, heptox)	0,08 ± 10 %	0,0004
heptachlor époxyde	0,004 ± 10 %	0,0002
hexachlorocyclopentadiène	0,15 ± 10 %	0,05
plomb	0,15 ± 10 %	0,010
lindane	0,002 ± 10 %	0,0002
mercure	0,006 ± 10 %	0,002
méthoxychlore	0,12 ± 10 %	0,04
éter tert-butylque méthylique	0,015 ± 20 %	0,005
nitrate plus nitrite	30 ± 10 %	10
nitrate	27 ± 10 %	10
nitrite	3 ± 10 %	1
pentachlorophénol	0,01 ± 10 %	0,001
diphényles polychlorés (PCB, aroclor 1260)	0,01 ± 10 %	0,0005
radon	4000 ± 1000 pCi/L	300 pCi/L
sélénium	0,10 ± 10 %	0,05
simazine	0,012 ± 10 %	0,004
styrène	2,0 ± 10 %	0,1
2,4,5-TP (silvex)	0,15 ± 10 %	0,05
Tétrachloroéthylène	0,015 ± 10 %	0,005
toluène	3,0 ± 10 %	1
toxaphène	0,015 ± 10 %	0,003
1,2,4-trichlorobenzène	0,21 ± 10 %	0,07
1,1,1-trichloroéthane	0,6 ± 10 %	0,2
1,1,2-trichloroéthane	0,015 ± 10 %	0,005
trichloroéthylène	0,300 ± 10 %	0,005
trihalométhanes totaux (comme chloroforme)	0,45 ± 20 %	0,080
xylènes	30 ± 10 %	10,0
turbidité	11 ± 1 NTU	0,5 NTU

Composés organiques volatils (ETBM), Norme 58 – Réduction des contaminants

Substance	Concentration de provocation dans l'eau influente mg/l	Concentration maximale admissible dans l'eau produite mg/l
alachlore	0,050	0,001
atrazine	0,100	0,003
benzène	0,081	0,001
carbofuran	0,190	0,001
tétrachlorure de carbone	0,078	0,0018
chlorobenzène	0,077	0,001
chloropicrine	0,015	0,0002
2,4-D	0,110	0,0017
Dibromo-chloropropane (DBCP)	0,052	0,00002
o-dichlorobenzène	0,080	0,001
p-dichlorobenzène	0,040	0,001
1,2-dichloroéthane	0,088	0,0048
1,1-dichloroéthylène	0,083	0,001
cis-1,2-dichloroéthylène	0,170	0,0005
trans-1,2-dichloroéthylène	0,086	0,001
1,2-dichloropropane	0,080	0,001
cis-1,3-dichloropropylène	0,079	0,001
dinosèbe	0,170	0,0002
endrine	0,053	0,00059
éthylbenzène	0,088	0,001
dibromure d'éthylène (DBE)	0,044	0,00002
haloacétonitriles (HAN):		
bromochloroacétonitrile	0,022	0,0005
dibromoacétonitrile	0,024	0,0006
dichloroacétonitrile	0,0096	0,0002
trichloroacétonitrile	0,015	0,0003
halogénocétones (HK):		
1,1-dichloro-2-propanone	0,0072	0,0001
1,1,1-trichloro-2-propanone	0,0082	0,0003
heptachlore	0,025	0,00001
heptachlor époxyde	0,011	0,0002
hexachlorobutadiène	0,044	0,001
hexachlorocyclopentadiène	0,060	0,000002
lindane	0,055	0,00001
méthoxychlore	0,050	0,0001
pentachlorophénol	0,096	0,001
simazine	0,120	0,004
styrène	0,150	0,0005
1,1,2,2-tétrachloroéthane	0,081	0,001
tétrachloroéthylène	0,081	0,001
toluène	0,078	0,001
2,4,5-TP (silvex)	0,270	0,0016
acide tribromoacétique	0,042	0,001
1,2,4-trichlorobenzène	0,160	0,0005
1,1,1-trichloroéthane	0,084	0,0046
1,1,2-trichloroéthane	0,150	0,0005
trichloroéthylène	0,180	0,001
trihalométhanes (comprennent):		
chloroforme (substance chimique de substitution)		
bromoforme	0,300	0,015
bromodichlorométhane		
chlorodibromométhane		
xylènes (total)	0,070	0,001



Testé et certifié par WQA comme étant conforme aux normes NSF/ANSI 42, 53 et 58 quant aux performances de réduction des contaminants précises dans la fiche technique des performances. Conforme à la norme CSA B483.1 – Systèmes de purification d'eau potable (consulter la fiche technique des performances pour connaître les contaminants individuels et les performances de réduction).

Ne pas utiliser ce produit avec de l'eau microbiologiquement dangereuse ou dont la qualité n'est pas assurée par une désinfection adéquate en amont ou en aval du système. Les systèmes certifiés conformes aux normes définies en matière de réduction de sporocystes peuvent être utilisés avec de l'eau désinfectée susceptible de contenir des sporocystes filtrables.

Le système de purification d'eau potable K5 de Kinetico est applicable au traitement d'une concentration maximale d'influent combiné de 27 mg/L (nitrates) et 3 mg/L (nitrites) mesuré comme N. En ce qui concerne la réduction de nitrates et de nitrites, sa conformité est certifiée pour des approvisionnements en eau d'une pression égale ou supérieure à 280 kPa (40 psi).

WQA a certifié les performances de nos produits et contrôlé nos installations et procédures de fabrication, afin de garantir la qualité constante et l'intégrité de nos produits. NSF International vérifie également notre documentation reflète avec exactitude les capacités de nos produits. Le système et son installation doivent respecter les lois et réglementations des États/provinces ainsi que les lois et réglementations locales.

* Le système K5 avec la cartouche Purefecta Virus/Bacteria Guard est testé et certifié par le WQA selon la norme NSF P231 des purificateurs d'eau microbiologiques basés sur les recommandations émises dans le Protocole et norme du guide de l'USEPA pour les purificateurs d'eau microbiologiques (Rapport du groupe de travail OPP, 1987). Le système K5 avec la cartouche Purefecta n'est pas conçu pour convertir l'eau résiduaire ou les eaux usées brutes en de l'eau potable.

Conforme à la norme NSF/ANSI 58 sur la réduction de l'arsenic pentavalent. Consulter la fiche technique des performances et la section de la fiche technique sur l'arsenic pour obtenir une explication des performances de réduction. Les cartouches suivantes ne sont pas certifiées NSF et WQA : Arsenic Guard, Perchlorate Guard, Chloramine Guard et Mineral Plus.

Ce système a été testé relativement au traitement de l'eau contenant de l'arsenic pentavalent (aussi appelé As(V), As(+5) ou arséniate) à des concentrations de 0,30 mg/L ou moins. Ce système réduit la teneur en arsenic pentavalent, mais pourrait ne pas éliminer d'autres formes d'arsenic. Ce système doit être utilisé pour des approvisionnements d'eau contenant des résidus détectables de chlore libre ou pour des approvisionnements d'eau dont il a été démontré qu'ils ne contiennent que de l'arsenic pentavalent. Le traitement à la chloramine (chlore combiné) n'est pas suffisant pour assurer une conversion complète de l'arsenic trivalent en arsenic pentavalent. Pour plus d'informations, consulter la section sur l'arsenic dans la fiche technique des performances.

Nom de modèle : Système de purification d'eau potable K5 avec réservoir standard
Débit d'eau produite (débit de production journalier) : 34,6 gpi (130,97 lpi)
Taux de récupération* : 36,1%
Taux d'efficacité** : 20,6%

SUBSTANCE	Pression de test (psi)	Débit (gpm)	Température (°F)	pH	Niveau influent moyen (mg/l)	Niveau effluent maximal (mg/l)	Niveau effluent moyen (mg/l)	Pourcentage de réduction moyenne	Pourcentage de réduction minimal	MCL établi par EPA (mg/l)	Concentration de provocation dans l'eau influente mg/l	Concentration maximale admissible dans l'eau effluente Ou exigence en termes de pourcentage de réduction
Nitrate/nitrite les deux comme « N »	50	0,75	77	7,42	31	7,3	11	76,1	---	10,0	0,30 ± 10%	10
Nitrate-N	50	0,75	77	7,42	28	6,7	9,8	75,8	---	10,0	27,0 ± 10%	10
Nitrite-N	50	0,75	77	7,42	2,8	0,66	0,87	76,8	---	1,0	3,0 ± 10%	1
MDT ***	50	0,75	77	7,01	760	61	110	91,9	90	500	750 ± 40	187 mg/l/ 75%
Sporocystes	50	0,75	75,2	7,13	170 000	5	16	>99,99	>99,99	---	Minimum 50 000/ml	99,95 %

* Taux de récupération signifie pourcentage de l'eau influente vers la membrane du système, disponible à l'utilisateur comme eau traitée à l'osmose inverse lorsque le système est activé sans le réservoir d'emmagasinement or lorsque celui-ci est outrepassé.

** Taux d'efficacité signifie pourcentage de l'eau influente vers le système, disponible à l'utilisateur comme eau traitée à l'osmose inverse dans des conditions de fonctionnement qui se rapprochent de l'usage journalier typique.

*** La TDS (Total Dissolved Solids) ou quantité totale des matières solides dissoutes, est normalement composée de calcium, magnésium, sodium, fer, manganèse, bicarbonate, chlorure, sulfate et carbonate.

TRAITEMENT DE L'ARSENIC PRÉSENT DANS L'EAU

Ce système a été testé relativement au traitement de l'eau contenant de l'arsenic pentavalent (abréviation chimique As(V), As(+5) ou arséniate) à des concentrations de 0,30 mg/L ou moins. Ce système réduit la teneur en arsenic pentavalent, mais pourrait ne pas éliminer d'autres formes d'arsenic. Ce système doit être utilisé pour des approvisionnements d'eau contenant des résidus détectables de chlore libre à l'entrée du système ou pour des approvisionnements d'eau dont il a été démontré qu'ils ne contiennent que de l'arsenic pentavalent. Le traitement à la chloramine (chlore combiné) n'est pas suffisant pour assurer une conversion complète de l'arsenic trivalent en arsenic pentavalent.

L'arsenic (abréviation As) est naturellement présent dans certaines eaux de puits. L'arsenic dans l'eau est incolore, inodore et sans goût. Il doit être mesuré dans des tests de laboratoire. Les services publics d'approvisionnement en eau doivent effectuer des analyses de dépistage d'arsenic. Vous pouvez obtenir les résultats auprès de vos services publics d'approvisionnement en eau. Si vous avez votre propre puits, vous pouvez faire tester l'eau. Votre service de santé local ou l'agence des services de santé de votre province peut vous fournir une liste des laboratoires certifiés. Le coût d'un tel test varie en général de 15 \$ à 30 \$. Vous trouverez des informations sur la présence d'arsenic dans l'eau sur le site Web de l'Environmental Protection Agency aux États-Unis : www.epa.gov/safewater/arsenic.html.

Il existe deux types d'arsenic : l'arsenic pentavalent (abréviation chimique As(V), As(+5) ou arséniate) et l'arsenic trivalent (abréviation chimique As(III), As(+3) ou arsénite). Dans l'eau de puits, l'arsenic pourrait être pentavalent, trivalent ou une combinaison des deux. Les laboratoires exigent des procédures d'échantillonnage précises afin de déterminer le type d'arsenic et la quantité de chaque type dans l'eau. Renseignez-vous à ce sujet auprès des laboratoires dans votre localité pour savoir s'ils peuvent fournir ce genre de service.

Les systèmes de traitement à osmose inverse n'éliminent pas très bien l'arsenic trivalent dans l'eau de puits. Ces systèmes sont très efficaces pour l'élimination de l'arsenic pentavalent. Les résidus de chlore libre convertissent rapidement l'arsenic trivalent en arsenic pentavalent. Les autres substances chimiques utilisées pour le traitement de l'eau, comme l'ozone et le potassium permanganate, transforment également l'arsenic trivalent en arsenic pentavalent. Les résidus de chlore combiné (la chloramine) peuvent convertir la totalité de l'arsenic trivalent en arsenic pentavalent. Si vous obtenez votre eau des services publics d'approvisionnement en eau, contactez-les pour savoir si le chlore libre ou le chlore combiné est utilisé dans leur système de purification d'eau.

Le système de purification d'eau potable K5 Kinetico est conçu pour éliminer l'arsenic pentavalent. Il ne convertit pas l'arsenic trivalent en arsenic pentavalent. Le système a été soumis à des essais de laboratoire. Dans ces conditions, le système réduit 0,30 mg/l (ppm) d'arsenic pentavalent à 0,010 mg/l (ppm) ou moins (selon la norme USEPA régissant l'eau potable). Les performances du système pourraient être différentes dans vos installations. Faites tester l'eau traitée pour la présence éventuelle d'arsenic afin de vérifier que votre système fonctionne correctement.

Vous devez périodiquement remplacer le composant à osmose inverse* du système de purification d'eau potable K5 Kinetico pour vous assurer que le système continue à éliminer l'arsenic pentavalent. Les données d'identification du composant et les emplacements où vous pouvez vous en procurer un sont énumérés dans cette fiche technique des performances, le guide d'utilisation et les instructions d'installation de votre système.

Dans la plupart des sources d'eau potable, la forme inorganique de l'arsenic tend à être plus prédominante que la forme organique. L'arsenic inorganique dans l'eau potable peut entraîner des effets toxiques après une exposition aiguë (à court terme) ou une exposition chronique (à long terme). Bien que les expositions aiguës à des doses élevées d'arsenic inorganique puissent causer des effets néfastes, ces expositions ne se produisent pas dans le cas des approvisionnements publics en eau aux États-Unis et/ou au Canada, dont le niveau maximal de contaminants actuel s'établit à 50 µg/l. Les règlements relatifs à l'eau potable proposés par l'EPA portent sur les effets chroniques à long terme provoqués par l'exposition à de faibles concentrations d'arsenic inorganique dans l'eau potable. Les effets chroniques à de faibles concentrations comprennent :

- > Effets cancérogènes : cancer de la peau, de la vessie, de poumons et de la prostate
- > Effets non cancérogènes : maladies de la peau, défauts de pigmentation et kératose (callosités apparaissant très tôt et le plus fréquemment), dysfonctionnement gastro-intestinal, cardiovasculaire, hormonal (diabète), hématologique (anémie), pulmonaire, neurologique, immunologique, reproductif ou développemental.

La contamination d'une source d'eau potable par l'arsenic peut être le résultat d'activités naturelles ou humaines. L'arsenic est un élément naturellement présent dans la roche, le sol, l'eau, l'air, les plantes et les animaux. L'activité volcanique, l'érosion des roches et des minéraux, ainsi que les incendies de forêt, sont des sources naturelles susceptibles de relâcher de l'arsenic dans l'environnement. Bien qu'environ 90 pour cent de l'arsenic utilisé par l'industrie aux États-Unis et/ou au Canada serve à des fins de préservation du bois, l'arsenic s'utilise aussi dans les peintures, les médicaments, les teintures, les savons, les métaux et les semi-conducteurs. La combustion des combustibles fossiles et des déchets, la production de papier, la fabrication de verre et de ciment, ainsi que les activités minières et des fonderies peuvent également dégager de l'arsenic. Même si il est désormais interdit d'utiliser l'arsenic dans la fabrication des pesticides, des herbicides et des liquides d'embaumement, l'agence est consciente que, avant cette interdiction, ces substances ont contribué à la contamination de l'eau potable.

* Voir la garantie en page 2.

SPÉCIFICATIONS GÉNÉRALES (TOUS LES MODÈLES) :

Températures min./max. de fonctionnement : 2 °C à 38 °C (36 °F à 100 °F)
Température ambiante; conditions de fonctionnement : 32 °C (90 °F)
Pression min./max. de fonctionnement : 241,3 à 827,37 kPa (35 à 120 psi)

INFORMATIONS SPÉCIFIQUES AU MODÈLE :

Nom de modèle : Système de purification d'eau potable K5 avec réservoir « WOW » (eau sur eau) de 3 gallons
Débit d'eau produite (débit de production journalier) : 51,0 gpi (193 lpi)
Taux de récupération* : 38,8 %
Taux d'efficacité** : 20,7 %

SUBSTANCE	Pression de test (psi)	Débit (gpm)	Température (°F)	pH	Niveau influent moyen (mg/l)	Niveau effluent maximal (mg/l)	Niveau effluent moyen (mg/l)	Pourcentage de réduction moyenne	Pourcentage de réduction minimal	MCL établi par EPA (mg/l)	Concentration de provocation dans l'eau influente mg/l	Concentration maximale admissible dans l'eau effluente Ou exigence en termes de pourcentage de réduction
Nitrate/nitrite les deux comme « N »	50	0,75	77	7,42	31	7,3	11	76,1	---	10	30,0 ± 10%	10
Nitrate-N	50	0,75	77	7,42	28	6,7	9,8	75,8	---	10,0	27,0 ± 10%	10,0
Nitrite-N	50	0,75	77	7,42	2,8	0,66	0,87	76,8	---	1,0	3,0 ± 10%	1,0
MDT ***	50	0,75	75,2	5,58	770	48	61	93,7	90	500	750 ± 40	187 mg/l/ 75%
Sporocystes	50	0,75	75,2	7,41	160 000/ml	8/ml	24/ml	99,99	99,98	---	Minimum 50 000/ml	99,95 %

Le système de purification d'eau potable K5 Kinetico réduit les niveaux de certaines substances dans l'eau potable. Ces substances ne sont pas nécessairement présentes dans votre eau. Puisque nous émettons ces affirmations, les informations ci-annexées ont été réunies afin de vous aider à mieux comprendre le fonctionnement de ces produits dans votre demeure.

Des tests sur la capacité de réduire les contaminants ont été effectués par NSF International conformément aux protocoles régissant les tests, établis par l'EPA (*Environmental Protection Agency*). Dans le cas de certains niveaux d'eau influente, les systèmes de purification d'eau potable Kinetico réduisent les niveaux de contaminants à des niveaux inférieurs à ceux établis par l'EPA. Ces produits sont conformes aux normes régissant l'eau potable dans votre province. Pour obtenir de plus amples renseignements à ce sujet, communiquez avec votre distributeur agréé Kinetico.

Veuillez signer ci-dessous pour attester que vous avez lu et compris les informations ci-annexées.

EXEMPLAIRE DU CONSOMMATEUR

CONSOMMATEUR
_____ Signature
_____ Nom (en caractères d'imprimerie)
_____ Adresse
_____ Ville, province, code postal

REPRÉSENTANT DU DISTRIBUTEUR AGRÉÉ KINETICO
_____ Signature
_____ Nom du représentant (en caractères d'imprimerie)
_____ Nom du distributeur
_____ Adresse du distributeur
_____ Ville, province, code postal
_____ N° de téléphone du distributeur

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Veuillez signer ci-dessous pour attester que vous avez lu et compris les informations ci-annexées.

EXEMPLAIRE DU DISTRIBUTEUR

CONSOMMATEUR
_____ Signature
_____ Nom (en caractères d'imprimerie)
_____ Adresse
_____ Ville, province, code postal

REPRÉSENTANT DU DISTRIBUTEUR AGRÉÉ KINETICO
_____ Signature
_____ Nom du représentant (en caractères d'imprimerie)
_____ Nom du distributeur
_____ Adresse du distributeur
_____ Ville, province, code postal
_____ N° de téléphone du distributeur

HOJA DE DATOS DE RENDIMIENTO

Estación de Tratamiento de Agua para Beber K5



IMPORTANTE

- La instalación de este producto debe cumplir con todas las leyes correspondientes.
- Durante la instalación, se debe verificar que no existan espacios de aire antisifón para evitar que se instale una conexión cruzada entre el sistema de agua y el sistema de desecho.
- No lo use en agua que no es segura desde el punto de vista microbiológico, o si se
- No debe usarse en agua que contenga más de 0.1 ppm de hierro, una dureza de más de 10 gpg, más de 3000 ppm de sólidos totales disueltos o que tiene un pH de 3 a 11.
- No debe usar sistemas con prefiltros de sedimento en agua que contiene cloro.
- Si ocurre un cambio evidente en la producción de agua típica, en el sabor u olor, consulte a su distribuidor autorizado Kinetico.
- Los modelos que se usan para reducción de nitrato se aceptan para el tratamiento de concentraciones afluentes de no más de 27 mg/l de nitrato y 3 mg/l de nitrito en una combinación evaluada como N y se encuentran certificados para reducción de nitrato/nitrito sólo para suministros de agua con una presión de 280 kPa (40 psig) o más (con el equipo de pruebas, parte no. 7329). Si compró el sistema específicamente para reducir el contenido de nitrato, Kinetico recomienda probarlo regularmente (cada trimestre) con un equipo de pruebas No. 7329 para garantizar que se han reducido los nitratos/nitritos hasta un nivel aceptable.
- Este sistema sólo debe usarse para reducción de arsénico en suministros de agua clorada que contengan una cantidad libre residual de cloro capaz de ser detectada en la entrada del sistema.

ESPECIFICACIONES

Temperatura mínima/máxima de funcionamiento: 2 °C-38 °C (36 °F-100 °F)

Temperatura ambiente, condiciones de operación: 32 °C/90 °F

Presión mínima/máxima de funcionamiento: 241.3-827.37 kPa (35/120 psi)

Proporción de agua de descarga/agua del producto: 3 a 1

Tasa de producción de agua del producto: 131 litros/día (34.6 galones por día); 193 litros/día (51.0 galones por día) con el tanque agua sobre agua que emplea la tecnología QuickFlo®

RENDIMIENTO Y MANTENIMIENTO

El sistema de ósmosis inversa contiene un componente de tratamiento reemplazable de importancia fundamental para la eficiencia del sistema. El reemplazo del componente de ósmosis inversa debe tener especificaciones idénticas, según la definición del fabricante, para garantizar la misma eficiencia y rendimiento de reducción de contaminantes. Este componente también es de importancia fundamental para la reducción eficaz de los sólidos totales disueltos (o TDS, por su sigla en inglés). Realice pruebas del agua del producto cada trimestre para verificar que el sistema esté funcionando satisfactoriamente. El flujo del grifo se cortará o disminuirá hasta convertirse en goteo. Este corte del agua evita que el nivel de contaminantes del efluente supere el nivel de contaminantes máximos establecidos por la Agencia de Protección Ambiental de los Estados Unidos (EPA) en condiciones de funcionamiento normal. Para restaurar el servicio, reemplace los cartuchos del prefiltro y postfiltro, y cualquier cartucho auxiliar que se encuentre instalado en su sistema. Si recomienda el reemplazo anual, aun si su sistema no ha sido apagado. Consulte el cuadro siguiente para seleccionar los cartuchos para su sistema. Estos cartuchos se encuentran disponibles con su distribuidor local Kinetico. Puede optar por realizar las pruebas del agua del producto en este momento para verificar el rendimiento. Consulte el manual del usuario para obtener información acerca del funcionamiento y mantenimiento. Las instrucciones de instalación están disponibles para su revisión con su distribuidor autorizado Kinetico.

COBERTURA DE LA GARANTÍA

La estación de tratamiento de agua para beber Kinetico K5 incluye una garantía limitada del fabricante. Si se instala la estación de tratamiento de agua para beber Kinetico K5 junto con un acondicionador de agua Kinetico, la garantía cubre las piezas de la estación de tratamiento de agua para beber Kinetico K5 por diez años y la membrana de ósmosis inversa por diez años. Si se instala la estación de tratamiento de agua para beber Kinetico K5 sin un acondicionador de agua Kinetico, las piezas de la estación de tratamiento de agua para beber K5 se encuentran cubiertas por diez años y la membrana sólo por cuatro años. Consulte el documento de garantía para ver los detalles completos. La garantía se anulará si las condiciones del agua afluente superan las especificaciones de los parámetros del sistema.

Cartuchos de repuesto

Cartucho de membrana	Prefiltro		Postfiltro MACGuard®
TODOS LOS SUMINISTROS DE AGUA (Agua de pozo o del sistema municipal)	SUMINISTRO DE AGUA CLORADA (Agua de pozo clorada o del sistema municipal)	SUMINISTRO DE AGUA NO CLORADA	TODOS LOS SUMINISTROS DE AGUA (AGUA DE POZO O DEL SISTEMA MUNICIPAL)
75 gpd (285 lpd) Membrana de ósmosis inversa (Parte No. 12752)	Prefiltro de carbón/sedimento (Parte No. 9461A)	Prefiltro de sedimento (Parte No. 9309A)	Postfiltro de sabor y olor (Parte No. 9306B)

Cartuchos auxiliares

Nombre del cartucho auxiliar	Número de parte	Posición auxiliar	Capacidad	Comentarios
Filtro COV	9307A	No. 1 ó 2	500	Elimina los compuestos orgánicos volátiles.
Purefecta® Protección contra virus y bacterias	12873B	No. 1 ó 2	500	Para usarlo como purificador microbiológico certificado, sólo puede utilizarse el sistema con un depósito de aire de alimentación. Si se utiliza con el tanque agua sobre agua, debe instalarse el sistema en suministros de agua microbiológicamente seguros.
Arsenic Guard®	11781A	No. 1 ó 2	500	Funciona junto con la membrana de ósmosis inversa para eliminar al arsénico III y arsénico V. Consulte la sección de información sobre el arsénico en la página 4 de este documento.
Protección contra perclorato	11682	No. 1 ó 2	500	Elimina esta sustancia, que es un producto derivado del combustible para cohetes.
Protección contra cloramina	13766	No. 1 ó 2	500	Elimina la cloramina, una sustancia química que se utiliza para tratar aproximadamente un tercio (1/3) de los recursos de agua municipal en los EE.UU.
Mineral Plus	13041	No. 1 ó 2	500	Añade calcio y magnesio al agua para beber.

CAPACIDAD DE REDUCCIÓN DE CONTAMINANTES

¡AVISO IMPORTANTE! Lea esta hoja de datos de rendimiento y compare la capacidad de la unidad K5 con sus necesidades de tratamiento de agua actuales. Tenga en cuenta que los contaminantes que se enumeran a continuación no necesariamente estarán presentes en su agua, y aunque la prueba fue realizada en condiciones de laboratorio estándar, el rendimiento real puede variar. Antes de comprar un sistema de tratamiento de agua, debe probarlo para determinar las necesidades de tratamiento de agua que realmente necesita. El sistema ha sido sometido a pruebas según las normas NSF/ANSI 42 y 58 para la reducción de las sustancias enumeradas a continuación. La concentración de las sustancias indicadas en el agua de entrada al sistema fue reducida hasta una concentración menor que o igual al límite permisible para el agua que sale del sistema, según lo especificado en la norma NSF/ANSI 58. El cuadro a continuación contiene la información siguiente en base a los resultados de la prueba:

- Una lista de sustancias que serán reducidas por la estación de tratamiento de agua para beber Kinetico K5
- El porcentaje de reducción que se puede esperar
- Las condiciones bajo las cuales se realizaron las pruebas (presión, pH y temperatura)
- Niveles de afluentes y efluentes de agua contaminada sometida a pruebas
- Nivel de contaminantes máximos (MCL, por su sigla en inglés) de la Agencia de Protección Ambiental de los Estados Unidos (EPA)

Estación de Tratamiento de Agua para Beber K5

SUSTANCIA	Presión de prueba (psi)	Velocidad de flujo (gpm)	Temperatura (°F)	pH	Nivel promedio de afluentes (mg/l)	Nivel promedio de efluentes (mg/l)	Nivel máximo de efluentes	Porcentaje promedio de reducción	Porcentaje mínimo de reducción	EPA MCL (mg/l)	Concentración de riesgo de afluentes (mg/l)	Concentraciones máximas de efluentes permitidas o porcentaje de reducción requerido
Arsénico pentavalente *	50	0.75	75.2	5.58	0.29	0.002	0.003	99.3	---	0.010	0.30 ± 10%	0.010
Bario	50	0.75	75.2	5.58	9.5	0.14	0.35	98.5	---	2.0	10.0 ± 10%	2.0
Cromo hexavalente	50	0.75	75.2	5.58	0.30	0.007	0.013	97.7	---	.05	0.3 ± 10%	0.1
Cromo trivalente	50	0.75	75.2	5.58	0.31	0.003	0.006	99.0	---	.05	0.3 ± 10%	0.1
Cadmio	50	0.75	75.2	5.58	0.031	0.0006	0.0011	98.1	---	0.005	0.03 ± 10%	0.005
Cobre	50	0.75	75.2	5.58	3.0	0.038	0.069	98.7	---	---	3.0 ± 10%	1.3
Fluoruro	50	0.75	75.2	5.58	8.6	0.39	0.51	95.5	94.1	4.0	8.0 ± 10%	1.5
Radio 226/228	50	0.75	75.2	5.58	25 pCi/l	5 pCi/l	5	80	---	5 pCi/l	25pCi/l ± 10%	5 pCi/l
Selenio	50	0.75	75.2	5.58	0.10	<0.006	<0.006	>94	---	0.05	0.10 ± 10%	0.05
Plomo	50	0.75	75.2	5.58	0.16	0.003	0.019	98.1	---	.015	0.15 ± 10%	0.010
Turbiedad	50	0.75	75.2	5.58	11 NTU	0.08 NTU	0.26	99.3	97.9	---	11±1 NTU	0.5 NTU


* Consulte la página 4 para ver información adicional sobre el tratamiento para el arsénico.

Afirmaciones de la norma 53 para la reducción de metilbutil éter (MTBE)

Sustancia	Concentración de riesgo de afluentes mg/l	Concentración máxima de agua del producto permitida mg/l
alacloro	0.04 ± 10%	0.002
arsénico (pentavalente)	0.050 ± 10%	0.010
arsénico (pentavalente)	0.30 ± 10%	0.010
atrazina	0.009 ± 10%	0.003
bario	10 ± 10%	2
benceno	0.015 ± 10%	0.005
cadmio	0.03 ± 10%	0.005
carbofurano	0.08 ± 10%	0.04
tetracloruro de carbono	0.015 ± 10%	0.005
clordano	0.04 ± 10%	0.002
clorobenceno	2.0 ± 10%	0.1
romo (hexavalente)	0.3 ± 10%	0.1
romo (trivalente)	0.3 ± 10%	0.1
romo (hexavalente y trivalente)	0.3 ± 10%	0.05 (hexavalente) y 0.05 (trivalente)
cobre	3.0 ± 10%	1.3
2,4-D	0.210 ± 10%	0.07
dibromocloropropano	0.004 ± 10%	0.0002
o-diclorobenceno	1.8 ± 10%	0.6
p-diclorobenceno	0.225 ± 10%	0.075
1,2-dicloroetano	0.015 ± 10%	0.005
1,1-dicloroetileno	0.021 ± 10%	0.007
cis-1,2-dicloroetileno	1.4 ± 10%	0.07
trans-1,2-dicloroetileno	2.0 ± 10%	0.1
1,2-dicloropropano	0.015 ± 10%	0.005
dinoseb	0.021 ± 10%	0.007
endrina	0.006 ± 10%	0.002
etilbenceno	2.1 ± 10%	0.7
dibromuro de etileno	0.001 ± 10%	0.00005
flurouro	8.0 ± 10%	1.5
heptacloro (H-34, heptox)	0.08 ± 10%	0.0004
heptacloro epóxido	0.004 ± 10%	0.0002
hexaclorociclopentadieno	0.15 ± 10%	0.05
plomo	0.15 ± 10%	0.010
lindano	0.002 ± 10%	0.0002
mercurio	0.006 ± 10%	0.002
metoxicloro	0.12 ± 10%	0.04
metiliterbutil éter	0.015 ± 20%	0.005
nitrato más nitrito	30 ± 10%	10
nitrato	27 ± 10%	10
nitrito	3 ± 10%	1
pentaclorofenol	0.01 ± 10%	0.001
bifenilos policlorados (PCBs, aroclor 1260)	0.01 ± 10%	0.0005
radón	4000 ± 1000 pCi/l	300 pCi/l
selenio	0.10 ± 10%	0.05
simazina	0.012 ± 10%	0.004
estireno	2.0 ± 10%	0.1
2,4,5-TP (silvex)	0.15 ± 10%	0.05
tetracloroetileno	0.015 ± 10%	0.005
tolueno	3.0 ± 10%	1
toxafeno	0.015 ± 10%	0.003
1,2,4-triclorobenceno	0.21 ± 10%	0.07
1,1,1-tricloroetano	0.6 ± 10%	0.2
1,1,2-tricloroetano	0.015 ± 10%	0.005
tricloroetileno	0.300 ± 10%	0.005
trihalometanos (como cloroformo)	0.45 ± 20%	0.080
xilenos	30 ± 10%	10.0
turbiedad	11 ± 1 NTU	0.5 NTU

Afirmaciones de la norma 58 para la reducción de COV

Sustancia	Concentración de riesgo de afluentes mg/l	Concentración máxima de agua del producto permitida mg/l
alacloro	0.050	0.001
atrazina	0.100	0.003
benceno	0.081	0.001
carbofurano	0.190	0.001
tetracloruro de carbono	0.078	0.0018
clorobenceno	0.077	0.001
cloropicrina	0.015	0.0002
2,4-D	0.110	0.0017
dibromocloropropano (DBCP)	0.052	0.00002
o-diclorobenceno	0.080	0.001
p-diclorobenceno	0.040	0.001
1,2-dicloroetano	0.088	0.0048
1,1-dicloroetileno	0.083	0.001
cis-1,2-dicloroetileno	0.170	0.0005
trans-1,2-dicloroetileno	0.086	0.001
1,2-dicloropropano	0.080	0.001
cis-1,3-dicloropropileno	0.079	0.001
dinoseb	0.170	0.0002
endrina	0.053	0.00059
etilbenceno	0.088	0.001
dibromuro de etileno (EDB)	0.044	0.00002
haloacetoneitrilos (HAN):		
bromocloroacetoneitrilo	0.022	0.0005
dibromoacetoneitrilo	0.024	0.0006
dicloroacetoneitrilo	0.0096	0.0002
tricloroacetoneitrilo	0.015	0.0003
haloquetonas (HK):		
1,1-dicloro-2-propanona	0.0072	0.0001
1,1,1-tricloro-2-propanona	0.0082	0.0003
heptacloro	0.025	0.00001
heptacloro epóxido	0.011	0.0002
hexaclorobutadieno	0.044	0.001
hexaclorociclopentadieno	0.060	0.00002
lindano	0.055	0.00001
metoxicloro	0.050	0.0001
pentaclorofenol	0.096	0.001
simazina	0.120	0.004
estireno	0.150	0.0005
1,1,2,2-tetracloroetano	0.081	0.001
tetracloroetileno	0.081	0.001
tolueno	0.078	0.001
2,4,5-TP (silvex)	0.270	0.0016
ácido tribromoacético	0.042	0.001
1,2,4-triclorobenceno	0.160	0.0005
1,1,1-tricloroetano	0.084	0.0046
1,1,2-tricloroetano	0.150	0.0005
tricloroetileno	0.180	0.001
trihalometanos (incluyen):		
Cloroformo (sustancia química sustituta)		
bromoformo	0.300	0.015
bromodichlorometano		
clorodibromometano		
xilenos (totales)	0.070	0.001



Sometido a pruebas y certificado por WQA de acuerdo con las normas de NSF/ANSI 42, 53 y 58 de reducción de las afirmaciones especificadas en la Hoja de Datos de Rendimiento. Cumple con los requisitos de la norma B483.1 de la CSA – Sistemas de Tratamiento de Agua para Beber (consulte la Hoja de Datos de Rendimiento para conocer los contaminantes individuales y la disminución del rendimiento).

No lo use para agua que no es segura desde el punto de vista microbiológico, o si se desconoce la calidad, sin un sistema de desinfección adecuado instalado antes o después de este sistema. Los sistemas certificados para reducción de quistes pueden usarse para agua desinfectada que pudiera contener quistes filtrables.

La estación de tratamiento de agua para beber Kinetico K5 se acepta para el tratamiento de concentraciones afluentes de no más de 27 mg/l de nitrato y 3 mg/l de nitrito en una combinación evaluada como N y se encuentra certificada para reducción de nitrato/nitrito sólo para suministros de agua con una presión de 280 kPa (40 psi) o más.

WQA ha certificado el rendimiento de nuestro producto y ha revisado nuestros procedimientos y la planta de fabricación para garantizar la regularidad e integridad del producto. También se asegura que nuestro material publicado refleje las capacidades de nuestro producto de manera exacta. El sistema y su instalación deben cumplir con las leyes y reglamentos estatales/provinciales y locales.

* El sistema K5 con el cartucho de protección contra virus y bacterias de Purefecta está probado y certificado por la WQA según la norma NSF-P231-Purificadores Microbiológicos de Agua, de acuerdo con las recomendaciones establecidas en el Estándar y Protocolo para Purificadores Microbiológicos de Agua de la Guía USEPA (Reporte del Equipo de Trabajo OPP, 1987). El K5 con el cartucho Purefecta no está diseñado para convertir agua de desecho o de alcantarilla en agua potable.

Cumple con los requisitos de la norma 58 de NSF/ANSI para la reducción de arsénico pentavalente. Consulte la explicación acerca de la disminución del desempeño en la hoja de datos de rendimiento y en la sección correspondiente a la información sobre el arsénico. Los cartuchos que se enumeran a continuación no cuentan con la certificación de NSF o WQA: protección contra arsénico, perclorato, cloramina y Mineral Plus.

Este sistema ha sido sometido a pruebas para el tratamiento de agua que contiene arsénico pentavalente (conocido también como As(V), As(+5), o arseniato) a concentraciones de 0.30 mg/L o menos. Este sistema disminuye el arsénico pentavalente, pero es posible que no elimine otras formas de arsénico. Este sistema debe utilizarse en suministros de agua que contengan una cantidad libre residual de cloro capaz de ser detectada, o en suministros de agua en los cuales se ha demostrado que sólo contienen arsénico pentavalente. El tratamiento con cloramina (cloro combinado) no es suficiente para garantizar la conversión completa de arsénico trivalente a arsénico pentavalente. Para obtener más información consulte la sección de información sobre el arsénico en la Hoja de Datos de Rendimiento.

Nombre del modelo: Estación de Tratamiento de Agua para Beber K5 con Tanque de Agua Estándar de 3 Galones
Tasa de producción de agua del producto (Tasa de producción diaria): 34.6 galones por día (130.97 litros por día)
Clasificación de recuperación*: 36.1%
Clasificación de eficiencia**: 20.6%

SUSTANCIA	Presión de prueba (psi)	Velocidad de flujo (gpm)	Temperatura (°F)	pH	Nivel promedio de afluentes (mg/l)	Nivel promedio de efluentes (mg/l)	Nivel máximo de efluentes (mg/l)	Porcentaje promedio de reducción	Porcentaje mínimo de reducción	EPA MCL (mg/l)	Concentración de riesgo de afluentes (mg/l)	Concentraciones máximas efluentes o Porcentaje de reducción requerido
Nitrato/Nitrito ambos como N	50	0.75	77	7.42	31	7.3	11	76.1	---	10.0	0.30 ± 10%	10
Nitrato-N	50	0.75	77	7.42	28	6.7	9.8	75.8	---	10.0	27.0 ± 10%	10
Nitrito	50	0.75	77	7.42	2.8	0.66	0.87	76.8	---	1.0	3.0 ± 10%	1
Sólidos totales disueltos ***	50	0.75	77	7.01	760	61	110	91.9	90	500	750 ± 40	187 mg/l/ 75%
Quistes	50	0.75	75.2	7.13	170000	5	16	>99.99	>99.99	---	Mínimo 50000/ml	99.95%

* Clasificación de recuperación denota el porcentaje del agua afluente en la porción de la membrana del sistema, que se encuentra disponible para el usuario como agua tratada por ósmosis inversa cuando el sistema funciona sin un tanque de almacenamiento, o si el agua no pasa por el tanque.
** Clasificación de eficiencia denota el porcentaje del agua afluente en el sistema que se encuentra disponible para el usuario como agua tratada por ósmosis inversa bajo condiciones de funcionamiento que son bastante semejantes al uso diario habitual.
*** Sólidos totales disueltos (TDS por su sigla en inglés) son compuestos comúnmente de calcio, magnesio, sodio, hierro, manganeso, bicarbonato, cloruro, sulfato y carbonato.

INFORMACIÓN DEL SISTEMA SOBRE EL TRATAMIENTO DEL ARSÉNICO

Este sistema ha sido sometido a pruebas para el tratamiento de agua que contiene arsénico pentavalente (conocido también como As(V), As(+5), o arseniato) a concentraciones de 0.30 mg/l o menos. Este sistema disminuye el arsénico pentavalente, pero es posible que no elimine otras formas de arsénico. Este sistema debe utilizarse en suministros de agua que contengan una cantidad libre residual de cloro capaz de ser detectada en la entrada del sistema, o en suministros de agua en los cuales se ha demostrado que sólo contienen arsénico pentavalente. El tratamiento con cloramina (cloro combinado) no es suficiente para garantizar la conversión completa de arsénico trivalente a arsénico pentavalente.

El arsénico (abreviado As) se encuentra de manera natural en el agua de algunos pozos. El arsénico en el agua no tiene color, sabor, ni olor. Debe medirse mediante una prueba de laboratorio. Los servicios de agua pública deben realizar pruebas del agua en busca de arsénico. Usted puede obtener los resultados de la prueba solicitándolos a la entidad municipal que le provee el servicio de agua. Si es propietario de un pozo, puede solicitar una prueba del agua. Su departamento de salud local o la agencia estatal de salud ambiental puede darle una lista de laboratorios certificados. El costo generalmente es de \$15 a \$30. Puede encontrar más información sobre el arsénico en el agua en Internet, en el sitio web de la Agencia de Protección Ambiental de los Estados Unidos: www.epa.gov/safewater/arsenic.html.

Hay dos formas de arsénico: el arsénico pentavalente (conocido también como As(V), As(+5) y arseniato) y el arsénico trivalente (conocido también como As(III), As(+3) y arsenito). En el agua de pozos, el arsénico puede ser pentavalente, trivalente o una combinación de ambos. Los laboratorios requieren procedimientos especiales de muestreo para determinar el tipo de arsénico y la cantidad de cada tipo de arsénico presente en el agua. Consulte con los laboratorios de su área para ver si pueden ofrecerle este tipo de servicio.

Los sistemas de tratamiento de agua por ósmosis inversa (RO) no eliminan el arsénico trivalente de manera satisfactoria. Los sistemas de ósmosis inversa son muy eficaces para la eliminación del arsénico pentavalente. Una cantidad libre residual de cloro puede convertir rápidamente el arsénico trivalente en arsénico pentavalente. Otras sustancias químicas para el tratamiento del agua, por ejemplo, el ozono y el permanganato potásico también modifican el arsénico trivalente a arsénico pentavalente. Una cantidad residual de cloro combinado (también conocida como cloramina) no puede convertir todo el arsénico trivalente. Si usted recibe el suministro de agua a través del servicio de agua pública, contacte a esta entidad para saber si utilizan cloro libre o combinado en el sistema de tratamiento del agua.

La estación de tratamiento de agua para beber Kinetico K5 ha sido diseñada para eliminar el arsénico pentavalente. No convierte el arsénico trivalente en arsénico pentavalente. El sistema ha sido sometido a pruebas en un laboratorio. Bajo estas condiciones, el sistema redujo el arsénico pentavalente de 0.30 mg/l (ppm) a 0.010 mg/l (ppm) (la norma de la Agencia de Protección Ambiental de los Estados Unidos (USEPA) del agua para beber) o menos. El rendimiento del sistema podría ser diferente en su lugar de instalación. Realice pruebas del agua tratada en busca de arsénico para verificar que el sistema funciona correctamente.

Debe reemplazar regularmente el componente de ósmosis inversa (RO)* de la estación de tratamiento de agua para beber Kinetico K5 para garantizar que el sistema continuará eliminando el arsénico pentavalente. La identificación específica del componente y los comercios en que puede adquirirlo se enumeran en la Hoja de Datos de Rendimiento, el Manual del usuario y las instrucciones de instalación de su sistema.

En la mayoría de fuentes de agua para beber, el arsénico inorgánico tiene a predominar sobre las formas orgánicas. El arsénico inorgánico en el agua para beber puede ocasionar efectos tóxicos después de una exposición aguda (de corto plazo) o crónica (de largo plazo). Si bien la exposición aguda a dosis altas de arsénico inorgánico puede ocasionar efectos adversos, tales exposiciones no se deben al suministro de agua pública en los Estados Unidos con una concentración de MCL de 50 µg/l. El reglamento del agua para beber propuesto por la EPA aborda los efectos crónicos de una exposición a largo plazo a bajas concentraciones de arsénico inorgánico en el agua para beber. Los efectos crónicos a bajas concentraciones incluyen:

- Efectos cancerígenos: cáncer de la piel, la vejiga, los pulmones y la próstata
- Efectos no cancerígenos: en la piel, pigmentación y queratosis, (se han visto crecimientos de la piel semejantes a callos más temprano y más a menudo), afecciones gastrointestinales, cardiovasculares, hormonales (por ejemplo, diabetes), hematológicos (como anemia, por ejemplo), pulmonares, neurológicas, inmunológicas, reproductivas y en las funciones de desarrollo.

La contaminación de una fuente de agua para beber con arsénico puede resultar de actividades naturales o humanas. El arsénico es un elemento presente de manera natural en las rocas y el suelo, el agua, aire, plantas y animales. La actividad volcánica, la erosión de las rocas y minerales, y los incendios forestales son fuentes naturales que pueden liberar arsénico en el medio ambiente. Si bien alrededor del 90 por ciento del arsénico utilizado por la industria en los Estados Unidos se usa para fines de conservación de la madera, también se utiliza en pinturas, medicamentos, tintes, jabones, metales y semiconductoros. Quemar combustibles fósiles y desechos, la producción de papel, la fabricación de vidrio y cemento, la minería y fundición también puede liberar arsénico. Aunque el arsénico ya no puede utilizarse en la elaboración de pesticidas, matamalezas y fluidos para embalsamamiento, la EPA es consciente de que antes de la prohibición de estas sustancias han contribuido a la contaminación del agua para beber.

* Consulte la garantía en la página 2.

ESPECIFICACIONES GENERALES (TODOS LOS MODELOS):

Temperatura mínima/máxima de funcionamiento: 2 °C - 38 °C (36 °F - 100 °F)
Temperatura ambiente, condiciones de operación: 32 °C (90 °F)
Presión mínima/máxima de funcionamiento: 241.3 - 827.37 kPa (35 - 120 psi)

INFORMACIÓN ESPECÍFICA DEL MODELO:

Nombre del modelo: Estación de Tratamiento de Agua para Beber K5 con Tanque Agua sobre Agua de 3 Galones
Tasa de producción de agua del producto (Tasa de producción diaria): 51.0 galones por día (93 litros por día)
Clasificación de recuperación*: 38.8%
Clasificación de eficiencia**: 20.7%

SUSTANCIA	Presión de prueba (psi)	Velocidad de flujo (gpm)	Temperatura (°F)	pH	Nivel promedio de afluentes (mg/l)	Nivel promedio de efluentes (mg/l)	Nivel máximo de efluentes (mg/l)	Porcentaje promedio de reducción	Porcentaje mínimo de reducción	EPA MCL (mg/l)	Concentración de riesgo de afluentes (mg/l)	Concentraciones máximas efluentes permitidas (mg/l) o Porcentaje de reducción requerido
Nitrato/Nitrito ambos como N	50	0.75	77	7.42	31	7.3	11	76.1	---	10.0	30.0 ± 10%	10
Nitrato-N	50	0.75	77	7.42	28	6.7	9.8	75.8	---	10.0	27.0 ± 10%	10.0
Nitrito-N	50	0.75	77	7.42	2.8	0.66	0.87	76.8	---	1.0	3.0 ± 10%	1.0
Sólidos totales disueltos ***	50	0.75	75.2	5.58	770	48	61	93.7	90	500	750 ± 40	187 mg/l/ 75%
Quistes	50	0.75	75.2	7.41	160000/ml	8/ml	24/ml	99.99	99.98	---	Mínimo 50000/ml	99.95%

La estación de tratamiento de agua para beber Kinetic K5 reduce los niveles de ciertas sustancias presentes en el agua para beber. Estas sustancias no necesariamente estarán presentes en su agua. Debido a las afirmaciones antedichas, la información que se anexa fue recopilada para ayudarle a comprender la manera en que estos productos funcionarán en su hogar.

La NSF Internacional realizó pruebas de reducción de contaminantes de conformidad con los protocolos de pruebas de la Agencia de Protección Ambiental de los Estados Unidos (EPA). Con ciertos niveles de afluentes, los sistemas de agua para beber Kinetic reducirán los niveles de contaminantes por debajo de los establecidos por la EPA. Estos productos cumplen con las normas de agua para beber de su estado. Si desea obtener más información, consulte a su distribuidor autorizado Kinetic.

Favor de firmar abajo para verificar que ha leído y entiende la información que se anexa.

COPIA DEL CONSUMIDOR

CONSUMIDOR
_____ Firma
_____ Nombre (en letra de molde)
_____ Dirección
_____ Ciudad, estado, código postal

REPRESENTANTE DEL DISTRIBUIDOR AUTORIZADO KINETICO
_____ Firma
_____ Nombre del vendedor (en letra de molde)
_____ Nombre del distribuidor
_____ Dirección del distribuidor
_____ Ciudad, estado, código postal
_____ Número de teléfono del distribuidor

La estación de tratamiento de agua para beber Kinetic K5 reduce los niveles de ciertas sustancias presentes en el agua para beber. Estas sustancias no necesariamente estarán presentes en su agua. Debido a las afirmaciones antedichas, la información que se anexa fue recopilada para ayudarle a comprender la manera en que estos productos funcionarán en su hogar.

La NSF Internacional realizó pruebas de reducción de contaminantes de conformidad con los protocolos de pruebas de la Agencia de Protección Ambiental de los Estados Unidos (EPA). Con ciertos niveles de afluentes, los sistemas de agua para beber Kinetic reducirán los niveles de contaminantes por debajo de los establecidos por la EPA. Estos productos cumplen con las normas de agua para beber de su estado. Si desea obtener más información, consulte a su distribuidor autorizado Kinetic.

Favor de firmar abajo para verificar que ha leído y entiende la información que se anexa.

COPIA DEL DISTRIBUIDOR

CONSUMIDOR
_____ Firma
_____ Nombre (en letra de molde)
_____ Dirección
_____ Ciudad, estado, código postal

REPRESENTANTE DEL DISTRIBUIDOR AUTORIZADO KINETICO
_____ Firma
_____ Nombre del vendedor (en letra de molde)
_____ Nombre del distribuidor
_____ Dirección del distribuidor
_____ Ciudad, estado, código postal
_____ Número de teléfono del distribuidor

APPENDIX E



The Chemours Company
Fayetteville Works
22828 NC Highway 87 W
Fayetteville, NC 28306

Date

Owner Address

Re: Reverse Osmosis System for Your Residential Drinking Water

Dear Owner:

Since early September 2017, Chemours—in consultation and cooperation with the North Carolina Department of Environmental Quality (NCDEQ)—has been conducting a residential well sampling program in the vicinity of the Fayetteville Works facility. The drinking water for your home was previously tested for the presence of HFPO Dimer Acid (commonly known as GenX), and you should have received the results from those tests from the State. Because testing of your drinking water shows levels of HFPO Dimer Acid below 140 parts per trillion (ppt), which is North Carolina’s health goal value, you have not previously been offered a water treatment system.

Chemours recently re-tested the water from your well for Table 3 per- and polyfluoroalkyl substances (“PFAS”) constituents. Those results are enclosed.

Chemours has entered into a Consent Order with the NCDEQ and Cape Fear River Watch, which was approved by the Superior Court for Bladen County on February 25, 2019. Pursuant to that Consent Order, Chemours has agreed with North Carolina to provide reverse osmosis drinking water systems to any household with per- and polyfluoroalkyl substances (PFAS) that are (1) at or above 10 ppt for any one PFAS, or (2) at or above 70 ppt for total PFAS. Although there is no indication of any harmful health effects of PFAS at these low levels, Chemours’ has agreed to this program to provide further protection to residents with even very low levels of PFAS in their drinking water. Your recent results indicate you meet one of those two criteria, so Chemours is now offering you a reverse osmosis drinking water system, which will be purchased and installed, if you so elect, at the company’s sole expense. Reverse osmosis systems are effective at removing PFAS, including the substances detected in your drinking water. These systems are installed under the sink and filter the water from that sink. As specified in the Consent Order, Chemours is prepared to install up to three such systems in your home.

You are not required to have this technology installed, and may choose to decline this offer or to have fewer than three systems installed. If you are interested in having a reverse osmosis system installed, please call 910-678-1101 and leave your name and contact information. A representative will return your call within two business days. If you do want a reverse osmosis system installed, the system manufacturer will contact you about installation.

Until we can install reverse osmosis systems in your home, Chemours will provide you with bottled water. We are offering an initial delivery of bottled water with this letter, and Chemours has hired a

water delivery service to provide future deliveries of drinking water to you (up to fifteen gallons per week). In addition, supplemental water is available to be picked up from our plant site if residents do not receive their scheduled delivery of water through water delivery vendors, or if you are waiting to get set up on bottled water home delivery. Please note the following regarding water pick-up:

- Pick-up of supplemental water will be available from 2-6 p.m. every Monday.
- Residents must bring this letter with them as the barcode is specific to your address.
- Copies of this letter will not be accepted.
- A maximum of two cases of supplemental water will be allowed per residence, per week (each case has six one-gallon bottles).
- Park near the site's main gate entrance (directions below). The attendant will scan the barcode sticker at the top of this letter and provide you with up to two cases of supplemental water.

Directions to Chemours Fayetteville Works, 22828 NC 87 Hwy, Fayetteville, NC 28306

- Turn onto the plant site where County Line Road meets NC 87 Hwy.
- Travel about 1 mile - road will bend to the right. Take a right and continue straight.
- You will pass a sign pointing to Chemours. Continue straight until you reach the Administration Building. Go past the Administration Building and turn left to the Main Guardhouse.

Finally, Chemours' records do not indicate that you are represented by an attorney in connection with this matter, and so we are contacting you directly. If you are in fact represented by an attorney, please provide your attorney with this letter.

We are committed to assisting you and your family with speed and transparency and regret any inconvenience resulting from this situation.

Sincerely,



Brian Long
Plant Manager
Chemours – Fayetteville Works

APPENDIX F



Note to Customer: By reviewing and signing this document you are agreeing to the Scope of Work defined by the details on this Installation Form, which have been thoroughly discussed with you by your Kineticco Representative. Your signature represents your Authorization for our professional installers to enter your home and carry out the installation. Any additional work requested by you that is not represented on this Installation Form can be accomplished upon discussion with the installer, but may be subject to additional charges.

Customer Name: _____ Address: _____

Phone #: _____ City, State, Zip Code: _____

Whole House Equipment Installation Information:

Where is equipment to be located? Crawlspace Garage Basement Pump house Mech. room Other
 Indicate pipe types PEX Quest (Polybutylene) copper CPVC PVC
 Indicate pipe sizes ¾" 1" 1 ¼" 1 ½" Other type
 Okay to convert pipe types? Yes No From What Size _____ TO What Size _____

Comments: _____

Drain Line Options:

Where is drain to be run? Septic system Gutter drain Crawlspace drain Trench to woods Existing
 How far is drain line run (feet) _____ If to septic, give pipe sizes needed _____

RO installation details:

Where is RO to be located? Under main kitchen sink Under prep sink In crawl space In garage
 Where to run RO lines? Main kitchen sink Main fridge Other sink Other fridge
 Faucet finishes Chrome Satin nickel Oil-rubbed bronze White Black Brushed Stainless

Comments on RO install: _____

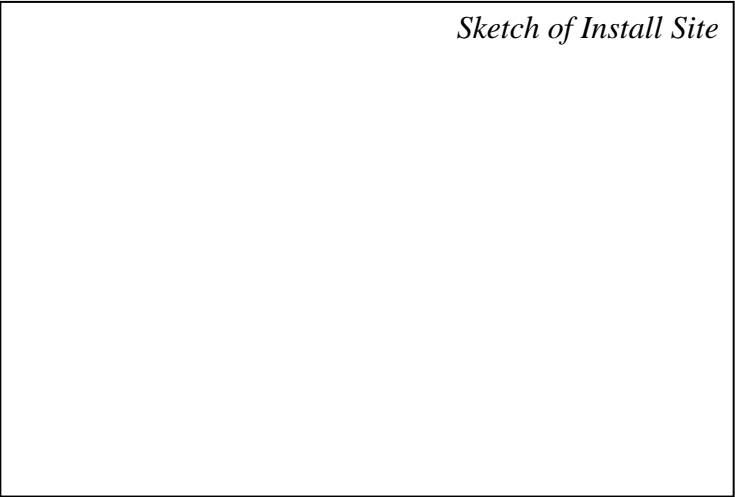
Fridge Information: Brand _____ Model # _____ Filter Yes No

Installation Options:

Separate hose bibbs? Yes No
 How many and where? _____
 Well tank check? _____
 Cost/Hose bib? _____
 Other Comments: _____

Other Tools Needed:

Ladder Shovels/picks Power drill Light



Customer Signature: _____ Date: _____

APPENDIX G

STANDARD OPERATING PROCEDURE – GAC SYSTEM INSTALLATION

I. PURPOSE

Provide a procedure for consistently installing granular activated carbon (GAC) filtration systems at a variety of Residential properties.

II. SAFETY

All Parsons and Subcontractor safety rules and procedures described in the Parsons Project Specific Health and Safety Plan (PSHEP), project and task specific Activity Hazard Assessments (AHAs) and Chemours Health and Safety expectations apply to all work steps and phases described in this document. All Parsons and Subcontractor staff executing the work steps described below will complete an onsite, scope of work and safety orientation by the Parsons construction manager or onsite safety manager before performing any work. All Subcontractors will work under the supervision of a Parsons construction manager, environmental scientist or technician. All work at residential homes will be completed using the buddy system.

Parsons Personal Protective Equipment (PPE):

- ANSI Z87.1 approved safety glasses with side shields
- ASTM F2412 or F2413 Approved safety toe boots
- Work Gloves appropriate to the task
- High visibility vest or clothing

In addition to the PPE listed above, all project vehicles will display the name of the Subcontractor company when working on residential properties.

III. GAC CONSTRUCTION PROCEDURE:

1. **GAC System Offer Notification** – Parsons will call each Owner/Resident that qualifies for a GAC unit and schedule a site visit with two Parsons staff and the Owner or Resident to discuss the GAC system. This step is completed after Chemours has sent the Owner/Resident a certified letter notifying them of their sample results and informing the resident they qualify for a GAC or RO system.
2. **Onsite Visit with Owner/Resident (GAC Task1)** – The Parsons GAC Task 1 team will visit the resident to discuss the GAC installation, operation and maintenance procedure at the previously scheduled interview date and time. The following minimum exchange of information will be completed with the resident during the interview.
 - o Provide O&M agreement to Owner/Resident
 - o Discuss installation procedure and steps, use photographs of various GAC installation steps during discussion with Owner/Resident
 - o Answer Owners/Residents questions leave Owner/Resident with an informational packet that contains photographs of the GAC installation process and confirms appropriate contact numbers and resources for the Owner/Resident to obtain additional information
 - o Complete assessment checklist if Owner/Residents accepts GAC

STANDARD OPERATING PROCEDURE – GAC SYSTEM INSTALLATION

- Appropriately record special requests such as preferred shed color, preferred shed location, or preferred direction of shed door, and any concerns with sensitive landscape installations or other misc. items. Collect specific paint color information (color code and paint mfg.).
 - Mark the Owner/Residents preferred GAC shed location with paint and/or pin flags
 - Determine if the Owner/Resident is aware of any underground utilities they installed or the location of the septic leach field
 - Determine if as-built drawings for septic system and leach field are available from the resident.
 - Inspect condition of existing well pump, yard, landscaping and access routes to preliminary location for GAC shed. Determine if there are any overhead (trees) or ground conditions (steep slopes) that prevent the installation of the GAC shed at the residents preferred location.
 - Determine pre-existing flow and pressure conditions:
 1. Connect a flowmeter to a garden spigot, open the valve completely, monitor and record flow rate as the well pump cycles between on and off setpoints. Record max. and min. flow rates.
 2. As the well pump cycles, monitor and record the pressure setting on the well pump, ex. 20-40, 40-60 or other pressure range (psi).
 - Collect total and ferrous iron data from raw well water, perform dilutions if necessary if Fe levels exceed test range. (Chemetrics K-6210)
 - Determine if the home has a water treatment system, the type of water treatment (water softener, Fe filter, sediment filter, carbon filtration or other), and the location of the filtration equipment.
 - Determine if the resident prefers a 24hr notice for all site visits, just for intrusive work such as electrical or plumbing trenching or does not want to be onsite during GAC installation.
 - Complete all relevant fields on the electronic form
 - Give the resident the names of the Parsons staff making the visit, leave the informational packet with photos of the process, and confirm the voicemail call-in mailbox number with the residents if they have questions.
 - Prior to leaving the property or by COB, the Parsons representative will upload the interview form and photos to the project database.
 - The initial interview questionnaire form is included in Appendix A.
3. **Public Utility Locate Request - NC 811 (GAC Task 2)** – Parsons is registered as a master contractor with the North Carolina 811 service and will notify 811 three working days before any GAC subcontractors perform excavation work (including shed anchor installations). 811 tickets will be emailed directly to Parsons and will be uploaded to the project database as well made available to the field team completing the private locate (paper copy). After notifying 811, excavation work can begin three working days after the date the notification was made. Example: If notification was made on Monday, excavation work could begin on Friday after 811 had Tuesday, Wednesday and Thursday to complete the marks. Saturday and Sundays are excluded from the working day period. Parsons will request to update locates weekly or anytime the marks are disturbed by weather or resident activities until the work is completed. The Parsons task leader is responsible for placing 811 locate requests, tracking open requests, requesting remarks and documenting all 811 activities via the project database. Public utility locates are scheduled by NC 811 and will not be overseen by Parsons.

STANDARD OPERATING PROCEDURE – GAC SYSTEM INSTALLATION

4. **Private Utility Locate (GAC Task 2)** – Parsons will oversee a private utility locate at every residential home prior to performing any excavation work. The following minimum items will be completed during the private locate:
- The Parsons task leader will make a courtesy notification call to the Resident and/or Owner 24hrs prior to the private locate site visit unless the resident indicated a notification was not necessary during the initial interview.
 - Private utility locator will survey a 20'x20' box near the proposed shed location as determined with the Owner/Resident and marked with paint/pin flags during the initial site visit.
 - The private utility locator will survey along the proposed water line trench from the existing well to the proposed GAC system shed foot print and back to the home if necessary. The survey will encompass an area 20' wide (10' on either side of the proposed trench). Some GAC sheds will only require trenching to the well, other installations will require trenching from the well to the GAC shed site and then to the home.
 - The private utility locator will survey along the proposed electrical trench from the existing well to the proposed GAC system shed foot print. The survey will encompass an area 20' wide (10' on either side of the proposed trench).
 - The proposed trenching locations may change during the initial electrical and plumbing walk throughs in GAC Tasks 4a and 5a. The GAC task 4 and 5 leaders will determine if a second private locate is needed at that time and will contact the GAC task 2 leader.
 - The private locator will also confirm the location of public utilities (electric and telecom) across the property that have not been previously identified by the public utility locator to confirm they do not cross the proposed excavation areas.
 - The private locator will mark privately owned underground utilities such as landscape lighting, propane lines, outbuilding power lines and leach field lines previously mentioned by the Owner/Resident during the initial interview.
 - The private locator will make all attempts to confirm the septic leach field and associated piping systems are not in the work area. *If the location of the leach field cannot be confirmed a Septic Subcontractor will be contacted to make a site visit and pull county records in order to find the septic system.*
 - The field team will use best practices and inspect the home and property for signs of public utilities, private utilities, and any septic leach field or associated piping systems.
 - All private utility locate work will be overseen by Parsons.
 - Prior to leaving the property or by COB, the Parsons representative will upload the electronic field notes, site photographs and a photograph of the completed utility locate work order form and utility sketch to the project database.
5. **Shed delivery and installation (GAC Task 3)** – Parsons will oversee delivery and installation of the GAC shed in preparation for plumbing and electrical tasks. Sheds are being constructed with custom features for the project such as increased number of wall joists and roof rafters as well as pre-installation of dual poly faced fiberglass batt insulation on the walls and ceiling. Shed specifications are included in Appendix B. The following items will be completed during GAC shed delivery and installation:
- The Parsons Task 3 leader will make a courtesy notification call to Owner/Resident 24hrs prior to visit unless the resident indicated prior notification was not necessary during the initial interview.

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- The Parsons Task 3 leader will communicate the installation schedule and coordinate shed delivery with the vendor.
- Parsons will be onsite prior to shed delivery to determine if conditions have changed since the private locate and initial interview would affect the shed installation plan. Conditions such as parked cars in the residential driveway may require an alternate plan for moving the shed around the property and will be assessed at this time. This includes confirmation that the site and path to position the shed is clear of overhead utilities.
- The sheds will be delivered by the vendor on a compact roll-back truck or trailer that will not need to drive across Owner/Resident's property in most circumstances.
- The sheds will be transported across the Owner/Resident's property/yard by rolling them on 3" to 4" PVC pipes. This method is preferred by the vendor to prevent any damage to the property caused by delivery vehicle or heavy equipment ground pressure. Parsons staff will assist the shed delivery vendor to position the shed in place.
- In a very limited number of circumstances the sheds will be secured to a utility vehicle or compact track skid steer via a nylon strap to safely guide the shed up or down slopes without risking injury to GAC installation staff. These conditions will be identified during the initial interview and the GAC Task 3 leader will develop a specific shed installation plan that will be documented in the electronic field forms uploaded to the project files.
- The shed delivery vendor will level the shed if necessary, using ground contact rated wood shims, concrete pavers or concrete blocks.
- Once the Parsons representative confirms the shed is positioned correctly the Parsons representative will review the utility locate notes that are available on the project database, reviewed with the Locate Team leader and in the field as a paper copy. The Parsons representative will confirm all identified private and public underground utility marks are still visible and the locations described/mapped match field conditions before the shed anchors are installed into the subsurface. If there is any concern with the condition of field marks, the shed will be left in place but not anchored until the public and private locators can re-mark the site.
- Once the shed is leveled and with the Parsons representative's approval, the shed vendor will install 30" soil anchors (auger type) to secure the shed from movement during high winds. The following procedure is used by the shed vendor to install the soil anchors:
 1. Soil anchors are installed with a specialty heavy duty electric auger. The shed vendor or Parsons will supply 120V electric power if required for the electric auger via power inverter connected to a project vehicle or a compact portable generator.
 2. Two soil anchors will be installed, one on each sidewall of the shed. The shed will be positioned so the soil anchors will be installed at least 4' away from the centerline of any identified underground utilities.
 3. The soil anchors will be connected to galvanized metal straps (hurricane straps) that wrap up and around 4" x 6" pressure treated timbers to which the shed floor joists are secured.
- Prior to demobilization, the Parsons representative will inspect the shed for proper installation – level and free of play, proper tightness of the hurricane straps and any minor damage to the turf or landscaping. If any damage to the turf is noticed, it will be photographed, and the Task 3 leader will be notified.
- The Parsons representative or Task 3 leader will contact the Resident/Owner to confirm the shed was installed. If any minor damage to turf or landscaping was observed Parsons will

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provide a description of the proposed remedy such as application of topsoil and matching seed mix during this call.

- During shed installation GAC piping modules and carbon vessels may be installed in preparation for the plumbing task.
- The shed will be locked and only Parsons, Chemours and the emergency response plumbing contractor will retain keys. Parsons will provide Residents and/or Owner's with a tour of the shed upon request, but they will not be given keys or have access to the GAC system for the following reasons:
 1. To prevent tip over injuries - GAC vessels weigh over 300lbs when full.
 2. To prevent vandalism to or manipulation of the GAC system that could stop the supply of water to the home.
 3. To prevent the GAC system shed from being used for storage that could include fuel cans gas/diesel, herbicides, pesticides, fertilizers and other chemicals with the potential to cross-contaminate the residents drinking water supply or create a fire hazard.
- Prior to leaving the property, the Parsons representative will upload the electronic field notes, site photographs, and a photograph of the shed vendors delivery receipt.

6. **GAC Electrical Installation (GAC Task 4)** – The GAC system sheds will have two 20A GFCI receptacles installed by a Licensed Professional Electrician. Each receptacle is connected to a dedicated 20A circuit that will be added to the Resident/Owners existing electrical panel. The circuits are being added to provide power to an oil filled heater to prevent freezing during winter months and to power a booster pump that will compensate for pressure losses created by long piping runs at some locations. In addition, the electrical circuits can provide power for potential upgrades such as iron removal systems and telemetry. The GAC electrical installation is composed of three primary sub-tasks: Task 4a – Preliminary site walk with the Parsons task leader and the licensed Electrician to develop a specific installation plan, Task 4b – GAC electrical connection including trenching and Task 4c – GAC electrical closeout including county permit inspection/approval, trench backfilling and site restoration. Each subtask is described in further detail below.

- **Task 4a – Preliminary Site Walk**

1. The Parsons task leader or their designee will make a courtesy notification call to the resident 24hrs prior to visit unless the resident indicated prior notification was not necessary during the initial interview.
2. The Parsons task leader or their designee will complete a site walk with the licensed Electrician selected for the location to determine existing conditions that effect the GAC electrification plan. During the site walk, the Electrician will evaluate the location, condition and number of open positions on the existing electrical panel as well as the trench length and other field conditions.
3. Using marking paint, the contractor and Parsons representative will mark the final proposed trench location. The location will be photographed and documented in the field notes. Deviation from the initial proposed location will require an additional utility locate to be coordinated with the GAC Task 2 Leader.
4. Observations from the site walk, and site-specific design changes or needs will be documented in the electronic field notes. Site specific design changes may include the need to install a sub-panel if the main panel is inside the home or if the main panel does not have any available circuit breaker slots. Local code requirements may dictate some design changes based on the existing electrical construction available.

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5. The Parsons representative will upload all notes, photos and sketches of electrical design changes to the project database and will contact the task leader to discuss electrical needs specific to the Resident/Owner home.
- **Task 4b – General GAC Electrical Installation Procedure**
1. The Parsons task leader or their designee will make a courtesy notification call to the resident 24hrs prior to visit unless the resident indicated prior notification was not necessary during the initial interview. The Parsons representative will remind the resident that power will need to be disconnected for a short period of time during electrical installation. If the main electrical panel is located inside the home, the work will need to be scheduled when the resident will be home to give the Electrician access to the panel.
 2. The Parsons representative will review the site-specific electrical scope of work and confirm the previously identified utilities are still marked.
 3. All GAC electrical tasks will be performed to code by the licensed Electrical Subcontractor referred to as “Electrician” who will secure the appropriate permits prior to the start of work.
 4. The Electrician will hand dig within 5’ of underground utilities or until utilities that were identified during the private locate have been confirmed.
 5. Mechanical excavation equipment will not be utilized until all identified utilities that cross the proposed trench have been exposed using soft dig/hand dig methods.
 6. The Electrician will use a compact, walk behind trenching machine to install the direct bury cable from the GAC shed to the electrical panel at the home. Larger excavation equipment such as a mini-excavator may also be used when appropriate for site conditions but must be approved by the Parsons representative prior to the start of work.
 7. The appropriate gauge of direct bury cable will be selected by the Electrician based upon the length of the cable run. The depth of the cable will be determined by local county code.
 8. Topsoil and landscape plantings will be segregated from the surface if necessary, prior to trenching for restoration of landscape turf.
 9. At the residence/structure, new electrical cable will exit the trench in conduit and will be connected to (2) new 20A circuit breakers. The new circuit breakers will be installed in open slots on the existing electrical panel if it is located on the exterior of the home and as is commonly found in the project area and if open slots are available. If the existing panel does not have open slots a subpanel may be installed to permit the addition of new circuits.
 10. At the GAC shed, new electrical cable will exit the trench in conduit and transition to metal clad cable (or similar that meets local codes) and terminate in 20A GFCI receptacles.
 11. Electrical material selection including but not limited to: direct bury cable, wire, conduit, metal clad cable, sub panels, disconnect switches and receptacles will be determined by the Electrician to ensure compatibility with existing electrical construction at the residence/home and compliance with local electrical codes.
 12. The Electrician will disconnect the power briefly at the main panel or master disconnect during the installation of new circuit breakers. If the main panel is located within the home, the Resident/Owner will need to provide access.

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13. Once the new electrical circuits are installed, cables in the trench will be backfilled with the excavated soil and compacted in 6" lifts.
 14. The trench will be left open for the county electrical inspector to confirm cable depth during permit approval.
 15. All sections of the shallow trench left open for county inspection will be demarcated with caution tape secured to stakes or posts. Sections of the trench that are in high foot traffic locations (Ex. Sidewalks) will be covered with 3/4 – inch plywood sheets.
 16. Topsoil and landscape plantings will be returned to grade. Parsons will add additional topsoil and appropriate matching seed type as necessary and as approved by the resident.
 17. If additional landscaping restoration is required, the Parsons Special Tasks team leader will be notified, and Parsons will coordinate with the Owner/Resident for additional restoration needs.
 18. At no time will a trench be left open without caution tape unless a Parsons representative is onsite.
 19. When the electrical work is complete, the Electrician will energize the system and check voltage and proper ground at the new GFCI receptacles.
 20. Parsons personnel along with the Electrician will verify that installed breakers are functional and compatible with service entrance.
 21. Prior to leaving the property or by COB, the Parsons representative will upload the electronic field notes, photographs and completed work order from the Electrician and ensure sections of the trench left open for the county inspection are demarcated with caution tape and stakes. The GAC shed will remain unlocked to allow the county inspector access to complete the permit inspection.
- **Task 4c - Permit approval, pothole backfill and final walkthrough**
1. The Parsons task leader or their designee will make a courtesy notification call to the resident 24hrs prior to visit unless the resident indicated prior notification was not necessary during the initial interview.
 2. Once the county code enforcement office has completed the electrical inspection, approved the permit, and notified the electrical subcontractor. Parsons will return to the site to backfill sections of the trench left open for the inspection. During the final walkthrough matching turf seed will be applied to disturbed areas by Parsons if approved by the resident/owner.
 3. Parsons will remove caution tape, stakes, temporary plywood hole covers and utility pin flags from the property.
 4. Parsons will upload electronic field notes and photographs of the restored area to the project database.
 5. Attempts will be made to complete Task 4c and Task 5c during one site visit to minimize disruption to the Resident/Owner.
7. **GAC Plumbing Installation (GAC Task 5)** – GAC plumbing connection is composed of three primary sub-tasks similar to Task 4 (GAC Electrical Installation): Task 5a – Preliminary site walk with the Parsons and the licensed Plumber to develop a specific installation plan, Task 5b – GAC plumbing connection including trenching, final GAC assembly, purging and testing and Task 5c – GAC plumbing closeout including county permit inspection/approval, trench backfilling, and site restoration.

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GAC equipment specifications are included in Appendix B, a P&ID layout of the GAC shed filtration system is included as Figure 1. Each subtask is described in further detail below.

○ **Task 5a – Preliminary Site Walk**

1. The Parsons task leader or their designee will make a courtesy notification call to the resident 24hrs prior to visit unless the resident indicated prior notification was not necessary during the initial interview.
2. The Parsons task leader or their designee will complete a site walk with the licensed Plumber selected for the location to determine existing conditions that effect the GAC installation plan. During the site walk, the Plumber will evaluate the existing well pump system, lengths of piping runs and other field conditions.
3. Using marking paint, the contractor and Parsons representative will mark the final proposed trench location. The location will be photographed and documented in the field notes. Deviation from the initial proposed location will require an additional utility locate to be coordinated with the GAC Task 2 Leader.
4. Observations from the site walk, and site-specific design changes or needs will be documented in the electronic field notes. Site specific design changes may include the need for 1" PEX pipe and booster pump due to the length of the trench, or the need to replace a pre-existing faulty well pressure tank and switch.
5. The Parsons representative will upload all notes, photos and sketches of plumbing design changes to the project database and will contact the task 4 leader to discuss plumbing needs specific to the Resident/Owner home.

○ **Task 5b – General GAC Plumbing Installation Procedure**

1. The Parsons task leader or their designee will make a courtesy notification call to the Owner/Resident 24hrs prior to visit unless the Resident indicated prior notification was not necessary during the initial interview.
2. The Parsons representative will review the site-specific plumbing scope of work and confirm the previously identified utilities are still marked.
3. All GAC plumbing tasks will be performed to code by the licensed Plumbing Subcontractor referred to as "Plumber" who will secure the appropriate permits prior to the start of work.
4. The Plumber will hand dig within 5' of underground utilities or until utilities that were identified during the private locate have been confirmed.
5. Mechanical excavation equipment will not be utilized until all identified utilities that cross the proposed trench have been exposed using soft dig/hand dig methods.
6. The Plumber will use a compact, walk behind trenching machine to install the shallow trench connecting the GAC shed to the water supply and home. Larger excavation equipment such as a mini-excavator may also be used when appropriate for site conditions but must be approved by the Parsons representative prior to the start of work.
7. The appropriate pipe or tubing type and diameter (per code and licensed Plumbers recommendation for site conditions) for the new water lines will be installed in the shallow trench but will likely be ¾ to 1 – inch PEX pipe.
8. The depth of the new lines will be installed per code. If local permits do not stipulate a minimum depth, the new line will be installed 18" below grade as is typical for local construction methods.

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9. Topsoil and landscape plantings will be segregated from the surface if necessary, prior to trenching for restoration of landscape turf.
10. The Plumber will hand dig in the area where the new water lines will be connected to the existing well water supply (to GAC filter) and the existing waterline running into the home (from the GAC filter).
11. Prior to connecting the new GAC water lines to the existing water lines the well pump will be isolated by unplugging it from power supply and/or isolating it by closing the valve located on the pump discharge piping. Once isolated, pressure will be removed from the system by opening a garden spigot. The Plumber will select the appropriate type of permit approved fittings to connect the new PEX water lines to the existing water lines.
12. Once the new water lines are installed, they will be backfilled with the excavated soil and compacted in 6" lifts when possible.
13. Isolated areas of the trench will be left open for the county plumbing inspectors to confirm pipe depth during permit approval. The number and location of these inspection points will be determined by the Plumber but will include the trench piping ends that connect to the GAC shed and the existing residential piping as well as at least one location along the center of the trench.
14. All sections of the shallow trench left open for county inspection will be demarcated with caution tape secured to stakes or posts. Sections of the trench that are in high foot traffic locations (Ex. Sidewalks) will be covered with 3/4 – inch plywood sheets.
15. Topsoil and landscape plantings will be returned to grade. Parsons will add additional topsoil and appropriate matching seed type as necessary and as approved by the resident.
16. If additional landscaping restoration is required, the Parsons Special Tasks team leader will be notified, and Parsons will coordinate with the Owner/Resident for additional restoration needs.
17. At no time will a trench be left open without caution tape unless a Parsons representative is onsite.
18. Once the trench piping is in place the Plumber will connect the new water lines to the existing water supply lines and connect the GAC filter assembly located in the GAC shed. A Piping and Instrumentation Diagram (P&ID) for the three modules of the GAC filter system is included as Figure 1.
19. Parsons will pre-assemble the GAC modules described above at the Parsons field office located at the Chemours Fayetteville Plant or offsite Parsons project office. Pre-assembly of the modules will be completed by Parsons technicians trained by a Senior Parsons Technician or Parsons Construction Manager.
20. GAC modules and carbon vessels may be pre-installed in the GAC shed during the shed installation task or will be installed by the Plumber.
21. The GAC piping in the shed will be connected to the new underground water lines via PEX tubing that will pass through the shed floor in a protected conduit consisting of 4" PVC that extends 12" below grade. GAC tubing is protected inside a 4" PVC conduit to prevent damage from rodents.
22. When the GAC system is connected to the Residential water supply it will be initially purged and pressurized following the procedures listed below:
 - **Particulate and Iron Filter Purge**
 - Initial valve positions: BV-1 closed, BV-2 closed, SP-1 closed.
 - Disconnect the flexible influent line from GAC 1 and connect a temporary hose to direct purge water out of the shed and into a portable

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WHS-200 GAC vessel filled with F600 carbon to treat any purge water generated onsite.

- Open BV-2, slowly open BV-1 no more than ¼ turn and allow water to pass through Filter 1 (Iron) and Filter 2 (Particulate).
- Monitor the filter canisters for leaks and bleed off trapped air using the red bleed valves located on the top of each filter housing.
- When air has been purged from the filter housings and is no longer being discharged from GAC 1 influent line close BV-2.
- Open BV-1 completely and monitor Filter 1 and Filter 2 for leaks for a few minutes.
- Open BV-2 ¼ turn and allow any remaining air to escape.
- If leaks are observed from Filter 1 or 2, close BV-1 until the pressure has dropped, unscrew the filter sump using the supplied tool and re-apply high vacuum, NSF approved silicone grease.
- If additional silicone grease was needed, repeat steps 1 through 7.
- **GAC Vessel 1 and 2 Purging and Priming**
 - Filter 1 and Filter 2 must be primed as described above before GAC 1 and GAC 2 can be purged and primed.
 - Initial valve positions: BV-1 open, BV-2 closed, BV-3 closed, BV-4 closed, BV-5 closed, SP-1 closed, SP-2 closed, SP-3 closed, SP-4 closed.
 - Disconnect the flexible influent line from GAC 1 and connect to the effluent side of GAC 1. This step creates a temporary backflush to properly purge air and carbon dust from the vessel.
 - Connect a temporary hose to the influent side of GAC 1 to direct purge water out of the shed system and into the portable WHS-200 GAC vessel.
 - Slowly open BV-2 no more than ¼ turn and allow water to rise from the bottom of GAC 1 column purging air and carbon dust as it escapes out the influent side with the temporary hose connected.
 - Monitor for visible carbon dust and air bubbles to decrease in the water stream via the clear sight glass on the WHS-200, 5 – 10 minutes.
 - Close BV-2, remove the temporary hose from GAC 1 and reconnect the flexible water lines in the correct sequence at GAC 1. GAC 1 is now purged.
 - Repeat the process at GAC 2. Keep BV-2 open and open BV-3 ¼ turn with the flexible hoses and temporary hose connected to GAC 2 in the same manner used for GAC 1 (keep SP-2 closed).
 - Once GAC-2 is purged of visible air and carbon dust, close BV-3 and reconnect the flexible water lines in the correct sequence at GAC 2.
 - Alternative Pre-Hydrated GAC Method:
 - Vessels pre-hydrated and flushed with treated city water may be brought to the site to eliminate the steps described above and prevent the generation of any purge water that needs to be filtered with a portable WHS-200 GAC vessel.
- **Discharge Piping and Totalizer Purging**
 - Before the remaining discharge piping and totalizer can be purged of air Filter 1, Filter 2, GAC 1 and GAC 2 must be purged and primed as described above.

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- When GAC 2 is reconnected, close BV-3, open BV-1, open BV-2, open BV-4, close BV-6, connect a temporary discharge hose to BV-5 and place the hose outside the shed.
 - Slowly open BV-3 ¼ turn and allow water to pass through GAC 2 and into the remaining piping and totalizer until discharging through BV-5 and out of the shed.
 - Continue purging the system until air bubbles have decreased to the maximum extent possible.
 - Close BV-5, remove the temporary hose and slowly open BV-6 allowing treated water to flow to the Residential home.
 - Monitor all fittings and connections for leaks/drips. The Plumber Subcontractor will monitor connections to the Residential water line during initial water pressure restoration if necessary, based on their professional judgement before the below grade connections are backfilled.
 - (New GAC will retain a small amount of air that will gradually decline over time as water passes through the GAC. Owner/Resident's will be notified of these small amounts of air that will gradually be released during the initial visit with Parsons).
 - **Initial Flow and Pressure Measurements**
 - To monitor flow capacity and pressure drop connect a temporary discharge hose to BV-5 and route purge water away from the shed
 - Close BV-6 and open BV-5 and record pressures at PG-1 through PG-5 when the flow rate is adjusted to 4gpm by adjusting BV-5. Data is collected at an adjusted flow of 4 gpm so system performance can be compared to other GAC systems at a standardized flow rate.
 - Calculate flow rate by monitoring the gallons used on the totalizer in one minute and repeat 3X or until the deviation between readings is less than 10%.
 - Perform the steps above at the flow rate when BV-5 is wide open to record minimum and maximum flow and pressure data the residential home will receive.
 - Partially close GV-1 to achieve a flow rate between 6 and 7gpm and record pressure readings at PG-1 through PG-5.
 - When all readings have been collected, open GV-1 completely. Do not leave flow restricted after readings have been collected.
 - Ensure flow at the household spigot matches baseline flow conditions
23. The licensed Plumbing Subcontractor will remain onsite until the system is fully purged and pressurized to ensure no leaks from the below grade connections are observed. If a booster pump was deemed necessary during Task 5a it will be adjusted until the flow/pressure matches pre-GAC system installation data recorded during the initial interview.
24. Once the system is functioning properly Parsons staff will flush the hot water heater tank of accumulated sediments using the following procedure:
- Inspect the hot water heater and determine if the tank was constructed to allow flushing from a bottom drain valve.
 - Determine if the bottom drain valve is in a condition where valve operation is possible by visual inspection.

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- Attach a ball valve to the tank drain and close the valve.
 - Turn off the water heater (when possible) and begin flushing hot water from the kitchen sink until the temperature drops to a safe level, (<120F)
 - Connect a garden hose to the ball valve and run the hose outside of the property to a portable WHS-200 GAC vessel.
 - Isolate the water heater discharge when possible and close all water fixtures in the home.
 - Slowly open the tank drain valve with the newly installed ball valve closed. Do not use excessive force to open the tank drain valve.
 - If the valve cannot be opened, then resume purging the hot water heater until two tank volumes have been purged.
 - If the tank valve opens, then slowly open the newly installed ball valve and begin flushing the water heater. Continue until two water heater tank volumes have been flushed.
 - Close the water heater drain valve. If the water heater drain valve does not close completely, then close the newly installed ball valve that now acts as the tank drain valve.
 - Remove the hose and all materials from the home but keep the newly installed ball valve in place if necessary, as described above.
 - Open the water heater effluent/discharge if closed.
 - Purge approximately 5-gallons from all hot water faucets in the home to remove any air bubbles from the system after flushing.
 - Return the hot water heater to service if turned off as described above.
 - In some instances, the ball valve must remain in place due to a faulty or corroded tank drain valve that cannot be closed. Discuss this situation with the resident and make arrangements to have a licensed plumber replace the existing drain valve or determine if a new water heater is the only approved repair due to the condition of the water heater. See step 8 above, do not attempt to force a seized tank drain valve open.
25. Prior to leaving the property or by COB, the Parsons representative will upload the electronic field notes, photographs and completed work order from the Plumber and ensure sections of the trench left open for the county inspection are demarcated with caution tape and staked. The GAC shed will remain unlocked to allow the county inspector access to complete the permit inspection.
26. Once the plumbing permit is approved Parsons will return to the site to finish backfilling the piping trench, lock the GAC shed, and complete minor landscape repairs once the permit is approved.
- **Task 5c - Permit approval, pothole backfill and final walkthrough**
 1. The Parsons task leader or their designee will make a courtesy notification call to the resident 24hrs prior to visit unless the resident indicated prior notification was not necessary during the initial interview.
 2. Parsons will return to the site to backfill sections of the trench left open for the inspection once the county code enforcement office has completed the electrical inspection, approved the permit, and notified the Plumber.

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3. Parsons will remove caution tape, stakes, temporary plywood hole covers and utility pin flags from the property. During this visit, final compaction and leveling of soil over the trench as well as application of matching turf seed will be completed.
 4. Parsons will upload electronic field notes and photographs of the restored area to the project database.
 5. Attempts will be made to complete Task 4c and Task 5c during one site visit to minimize disruption to the Resident/Owner.

8. **GAC Initial Sampling (GAC Task 6)** – Once a GAC system is online, one raw water and one mid-carbon (between the two GAC vessels) sample will be collected for performance confirmation at least one week but no more than two weeks after installation. One finished water sample will be collected from the kitchen hot and kitchen faucet following water heater flushing. Following the initial confirmation sample, the GAC will be sampled quarterly thereafter. All samples will be analyzed for the compounds listed in Table 1. The Parsons team leader will be responsible for coordinating sample bottle orders and sample deliveries with Mike Aucoin of AECOM and/or the selected analytical lab.
 - The Parsons task leader or their designee will make a courtesy notification call to the resident 24hrs prior to visit unless the resident indicated prior notification was not necessary during the initial interview.
 - Analytical samples will be collected from SP-1 and SP-3 after the GAC has been allowed to purge for 5 minutes from BV-5.
 - Treated water from BV-5 will be routed out of the GAC shed via a garden hose during the purge cycle.
 - During the purge cycle total and ferrous iron samples will be collected from SP-1, SP-2, SP-3, and SP-4 to determine iron prefilter performance.
 - Finished water samples will be collected after water heater flushing is completed and will be collected after the kitchen hot and cold water lines are flushed for 5 minutes.
 - All phone correspondence logs, field sampling notes, chain of custody sampling forms and other field data will be uploaded to the project database daily.

9. **GAC Special Task (GAC Task 7)** – Some GAC systems will have unique tasks specific to the setting where the GAC system must be installed and/or due to requests from residents. Unique tasks may include painting sheds to match Homeowners Association (HOAs) requirements or resident requests. In some instances, landscaping must be disturbed to install the GAC shed or due to trenching requirements for water and electrical connections. Many of the special tasks will be identified during the initial in-home interview or during plumbing or electrical pre-installation site walks.
 - Due to the nature of special requests from residents or requirements due to the installation setting a defined SOP cannot be generated.
 - The Task 7 leader will work with the resident and Chemours to ensure the unique needs such as HOA requirements are met.
 - The Parsons team leader will assess the scope of the special task and determine if a subcontractor is needed or if Parsons is qualified and if it will be more efficient for the Parsons field team to self-perform the task.
 - If a painting or landscaping subcontractor is required all work will be completed under complete oversight by a Parsons technician.

STANDARD OPERATING PROCEDURE – GAC SYSTEM INSTALLATION

- Due to the nature of the special task a defined SOP cannot be generated.
- All phone correspondence logs, field notes, photos and subcontractor invoices will be uploaded to the project database daily.

10. **GAC Operation, Monitoring and Maintenance (GAC Task 8)** – Once a GAC system is online and has been sampled it will enter the long-term OM&M phase. The OM&M phase consists of quarterly sampling from the same GAC locations and for the same parameters as described in GAC Task 6. In addition to collecting quarterly samples, Parsons will monitor iron levels and the efficacy of iron removal from the prefilters as well as changes to flow and pressure through the GAC system compared to baseline levels. Iron filters will be changed as necessary and the pre-filter change-out scheduled may be adjusted based on field observations. Reductions in flow and increases in backpressure through the GAC vessel may trigger the installation of a booster pump to maintain baseline rates. Both GAC vessels will be replaced when analytical data collected from the midpoint sample port (SP-3) indicates a detection of greater than 100 ppt of any constituent. As additional data is collected the sampling and changeout schedule will change to maximize GAC service life. All field data will be uploaded to the project database for trend monitoring via PowerBI and other data assessment tools. The Parsons task leader will be responsible for coordinating sample bottle orders and sample deliveries with Mike Aucoin of AECOM and/or the selected analytical lab and ensuring all field data is uploaded to the project database.

- The Parsons task leader or their designee will make a courtesy notification call to the resident 24hrs prior to visit unless the resident indicated prior notification was not necessary during the initial interview.
- Analytical samples will be collected from SP-1 and SP-3 after the GAC has been allowed to purge for 5 minutes from BV-5.
- Treated water from BV-5 will be routed out of the GAC shed via a garden hose during the purge cycle.
- During the purge cycle total and ferrous iron samples will be collected from SP-1, SP-2, SP-3, and SP-4 to determine iron prefilter performance.
- If analytical data indicate the carbon vessels should be changed out the following procedure will be followed:
 1. Isolate the carbon vessels by closing BV-2 and BV-4
 2. Relieve pressure in the vessels by opening SP-3
 3. Disconnect vessels GAC 1 and GAC 2 from the threaded, flexible hoses
 4. Using a portable, flexible impeller pump, remove water from each vessel by pumping from the influent port of the vessel using a length of flexible hose
 5. Once the maximum amount of free water is removed from each vessel, disconnect the safety chain and remove the vessel from the GAC shed with the appropriately rated hand truck and portable ramp placed at the GAC shed entrance.
 6. Install new GAC vessels and follow the purge steps listed in Task 5b – GAC Vessel 1 and 2 Purging and Priming.
 7. Re-pressurize the system and monitor for leaks at all connections.
 8. Prior to demobilization, ensure flow at the household spigot matches baseline flow conditions.
- All phone correspondence logs, field sampling notes, chain of custody sampling forms and other field data will be uploaded to the project database daily.

APPENDIX H



The Chemours Company
Fayetteville Works
22828 NC Highway 87 W
Fayetteville, NC 28306

Date

Owner Address

RE: PFAS Testing of Your Residential Drinking Water

Dear Owner:

Since early September 2017, Chemours—in consultation and cooperation with the North Carolina Department of Environmental Quality (NCDEQ)—has been conducting a residential well sampling program in the vicinity of the Fayetteville Works facility.

Chemours entered into a Consent Order with NCDEQ and Cape Fear River Watch, which was approved by the Superior Court for Bladen County on February 25, 2019. Pursuant to that Consent Order, Chemours has agreed to connect certain homes to public water supply if the costs of doing so are determined by NCDEQ to not exceed \$75,000. It is estimated that for your residence the cost of such installation will exceed \$75,000, and that determination is being reviewed by NCDEQ. If NCDEQ agrees that the installation of public water is cost prohibitive, you will still be eligible to elect to have a granular activated carbon (GAC) filter treatment system installed.

Testing of your drinking water showed levels of HFPO Dimer Acid above 140 parts per trillion (ppt), which is North Carolina's provisional health goal, therefore you are being offered a GAC filter treatment system at the company's expense. Please be assured that the GAC technology will remove the additional PFAS compounds from your drinking water. GAC systems provide an efficient and effective long-term solution to treating drinking water and are an excellent choice for relieving homeowners of the inconveniences associated with bottled water.

If you prefer to have a reverse osmosis filter installed in the home on each kitchen and bathroom sink to treat the presence of PFAS rather than a GAC filter treatment system, Chemours will provide these systems to you free of charge. The primary difference between a reverse osmosis system and a GAC unit is that a reverse osmosis system would be installed at each kitchen and bathroom sink inside the home and treat water as it flows through the tap, and a GAC unit would be installed outside the home and treat all the water flowing through the pipes into your home. Both technologies are effective at eliminating PFAS from drinking water.

If you are interested in having a GAC system or reverse osmosis system installed, or in learning more about the drinking water treatment options available to you, please call **910-678-1101** and leave your contact information. A representative will return your call within two business days.

Finally, Chemours' records do not indicate that you are represented by an attorney in connection with this matter, and so we are contacting you directly. If you are in fact represented by an attorney, please provide your attorney with this letter.

We are committed to assisting you and your family with speed and transparency and regret any inconvenience resulting from this situation.

Sincerely,

A handwritten signature in black ink that reads "Brian Long". The signature is written in a cursive style with a large initial "B" and a long, sweeping tail.

Brian Long
Plant Manager
Chemours – Fayetteville Works

Attachments: RO Information Sheet, GAC Fact Sheet

APPENDIX I

BIG BLUE HEAVY DUTY SERIES FILTER HOUSINGS

FOR LARGE-CAPACITY, HIGH FLOW APPLICATIONS



Big Black not shown

Pentair Big Blue[®] and Big Black Heavy Duty Filter Housings offer the versatility to meet all of your large-capacity filtration needs, including high-flow and heavy-sediment applications. The extra large housing allows for greater cartridge capacity, reducing the number of vessels required for high flow-rate applications. Sumps are available in both 10" and 20" lengths.

The High-Flow Polypropylene (HFPP) cap is available with 3/4", 1" or 1-1/2" NPT inlet and outlet ports. The 1-1/2" internal port allows a greater volume of liquid to pass through the HFPP cap more rapidly.

Big Blue and Big Black Housings are compatible with a broad range of chemicals and are available with or without a pressure relief button. They accept a wide variety of 4-1/2" diameter cartridges.

FEATURES/BENEFITS

Large capacity housing suitable for high flow applications	Pressure relief/bleed on inlet side of cap
Available in 10" and 20" lengths	Accepts up to 4-1/2" diameter cartridges

SPECIFICATIONS

Housing – Polypropylene	Temperature Rating- 40-100°F (4.4-37.8°C)
Cap – Polypropylene (HFPP)	
Button Assembly – 300-Series stainless steel, EPDM, and polypropylene	Maximum Pressure- 10" : 100 psi (6.9 bar) 20" : 90 psi (6.2 bar)
O-Ring – EPDM	



The 150233, 150234, 150235, 150236, 150237, 150238, 150239, 150240, 150467, 150468, 150469, and 150470 are Tested and Certified by NSF International to NSF/ANSI Standard 42 for material and structural integrity requirements.

SPECIFICATIONS AND PERFORMANCE

PART #	DESCRIPTION	MAXIMUM DIMENSIONS	INITIAL ΔP (PSI) @ FLOW RATE (GPM)
150469*	3/4" #10 Big Blue Black/Blue HFPP w/PR	12.75" x 7.38" (324 x 187 mm)	2 psi @ 15 gpm (0.14 bar @ 57 Lpm)
150470*	3/4" #10 Big Blue Black/Blue HFPP w/o PR	12.75" x 7.38" (324 x 187 mm)	2 psi @ 15 gpm (0.14 bar @ 57 Lpm)
150467*	3/4" #20 Big Blue Black/Blue HFPP w/PR	23.04" x 7.38" (585 x 187 mm)	2 psi @ 15 gpm (0.14 bar @ 57 Lpm)
150468*	3/4" #20 Big Blue Black/Blue HFPP w/o PR	23.04" x 7.38" (585 x 187 mm)	2 psi @ 15 gpm (0.14 bar @ 57 Lpm)
158799*	3/4" #20 Big Blue Black/White HFPP w/PR	23.04" x 7.38" (585 x 187 mm)	2 psi @ 15 gpm (0.14 bar @ 57 Lpm)
150237*	1" #10 Big Blue Black/Blue HFPP w/PR	13.30" x 7.45" (338 x 189 mm)	1 psi @ 15 gpm (0.07 bar @ 57 Lpm)
150238*	1" #10 Big Blue Black/Blue HFPP w/o PR	13.30" x 7.45" (338 x 189 mm)	1 psi @ 15 gpm (0.07 bar @ 57 Lpm)
150233*	1" #20 Big Blue Black/Blue HFPP w/PR	23.22" x 7.45" (590 x 189 mm)	1 psi @ 15 gpm (0.07 bar @ 57 Lpm)
150234*	1" #20 Big Blue Black/Blue HFPP w/o PR	23.22" x 7.45" (590 x 189 mm)	1 psi @ 15 gpm (0.07 bar @ 57 Lpm)
150239*	1-1/2" #10 Big Blue Black/Blue HFPP w/PR	13.45" x 7.45" (342 x 189 mm)	1 psi @ 20 gpm (0.07 bar @ 76 Lpm)
150240*	1-1/2" #10 Big Blue Black/Blue HFPP w/o PR	13.45" x 7.45" (342 x 189 mm)	1 psi @ 20 gpm (0.07 bar @ 76 Lpm)
150235*	1-1/2" #20 Big Blue Black/Blue HFPP w/PR	23.74" x 7.45" (603 x 189 mm)	1 psi @ 20 gpm (0.07 bar @ 76 Lpm)
150236*	1-1/2" #20 Big Blue Black/Blue HFPP w/o PR	23.74" x 7.45" (603 x 189 mm)	1 psi @ 20 gpm (0.07 bar @ 76 Lpm)
150671	1" #10 Big Blue Black/Black HFPP w/o PR	13.30" x 7.45" (338 x 189 mm)	1 psi @ 15 gpm (0.07 bar @ 57 Lpm)
150426	1" #10 Big Blue Black/Black HFPP w/PR	13.30" x 7.45" (338 x 189 mm)	1 psi @ 15 gpm (0.07 bar @ 57 Lpm)
150383	1" #20 Big Blue Black/Black HFPP w/PR	23.22" x 7.45" (590 x 189 mm)	1 psi @ 15 gpm (0.07 bar @ 57 Lpm)
150672	1" #20 Big Blue Black/Black HFPP w/o PR	23.22" x 7.45" (590 x 189 mm)	1 psi @ 15 gpm (0.07 bar @ 57 Lpm)
150639	1-1/2" #20 Big Blue Black/Black HFPP w/o PR	23.74" x 7.45" (603 x 189 mm)	1 psi @ 15 gpm (0.07 bar @ 57 Lpm)

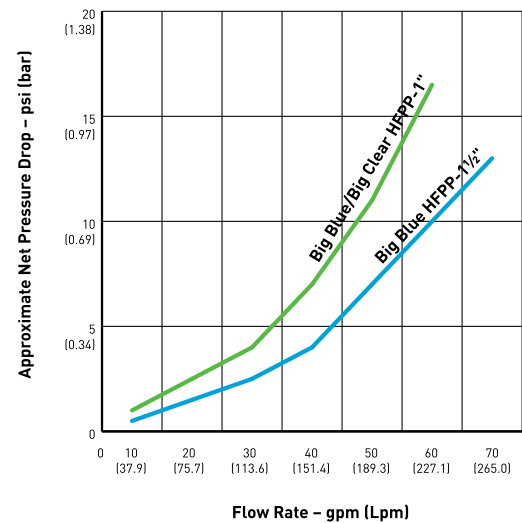
*NSF component listed

CAUTION: Protect against freezing to prevent cracking of the filter and water leakage.

ACCESSORIES

PART #	DESCRIPTION
150296	SW-3 Wrench for 10" Big Blue
144368	SW-4 Wrench for 20" Big Blue
SH144229	Cartridge Coupler for 4-1/2" Cartridges
151122	EPDM O-ring for Big Blue
244718	WB-ZP - Zinc Plated Bracket ONLY
150061	WB-ZP Kit - Zinc Plated Bracket
357639	WB-SS - Stainless Steel Bracket ONLY
357640	WB-SS Kit - Stainless Steel Bracket
144928	WB-PC Kit - Powder Coated White Bracket
144258	Two-Housing Bracket
144259	Three-Housing Bracket
160210	Big Blue /Big White/Big Clear Skid, Fiberglass Hardware Kit (Assembly Required)

PRESSURE DROP VS FLOW RATE



13845 BISHOPS DR., SUITE 200, BROOKFIELD, WI 53005 USA

P: 262.238.4400 | WATERPURIFICATION.PENTAIR.COM

CUSTOMER CARE: 800.279.9404 | tech-supportpentair.com

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310053 Rev F DE17

PENTEK RFFE10-BB, RFFE20-BB RADIAL FLOW IRON REDUCTION CARTRIDGE

IMPROVES WATER TASTE AND PROVIDES PLUMBING PROTECTION



The Pentair[‡] Pentek[‡] RFFE10-BB and RFFE20-BB Filter Cartridges are designed to provide an easy and effective method of reducing dissolved iron from water, which greatly improves the taste.

This cartridge helps to eliminate the orange and brown stains often found in sinks, toilets, tubs and other plumbing fixtures. It also reduces the possibility of damage to pipes and water heaters and reduces up to 3 ppm dissolved iron.

It adds no harmful chemicals to the water, making it completely safe for drinking water applications.

The Pentek RFFE20-BB Cartridge is designed for use in the Pentek 20-inch Big Blue Filter Housing and should be installed on the main cold water line after the pressure tank or water meter. The RFFE10-BB Cartridge is designed for use in the Pentek 10-inch Big Blue Filter Housing. For best results, pre-sediment and post-carbon treatment is recommended.

FEATURES/BENEFITS

Easily and effectively reduces up to 3 ppm of dissolved iron from water

Improves flavor and reduces the metallic taste caused by iron

Reduces the possibility of pipe and water heater damage

For use in Pentek 10- and 20-inch Big Blue filter housings

RECOMMENDED OPERATING CONDITIONS

pH – >7.0

Silica – <100 ppm

Manganese – <1 ppm

Iron – <3 ppm

Iron Bacteria – None

Hydrogen Sulfide – None

SPECIFICATIONS AND PERFORMANCE

MODEL #	PART #	RATING (NOMINAL)*
RFFE10-BB	655005-43	NR
RFFE20-BB	155263-43	NR

RFFE20-BB
Specified for initial
GAC system

APPROXIMATE LIFE OF SYSTEM*				
IRON LEVEL IN WATER	TOTAL GALLONS WATER USED	250 GPD (FOUR PEOPLE)	125 GPD (TWO PEOPLE)	75 GPD (ONE PERSON)
3 ppm	26,000 gal	104 days	208 days	416 days
2 ppm	40,000 gal	160 days	320 days	640 days
1 ppm	80,000 gal	320 days	640 days	1,280 days
0.5 ppm	160,000 gal	640 days	1,280 days	N/A

*Test results were obtained by using the Pentek RFFE20-BB in combination with an RFC20-BB Cartridge.

NOTES: Water conditions outside of the above specified limits may lead to a shortened filtration life. If you water contains iron bacteria, shock chlorination is recommended. Cartridges may contain a very small amount of carbon fines (very fine black powder). After installation, follow the instructions for flushing the cartridge to remove the fines before using the water. You should flush the tap at least 20 seconds prior to using water for drinking or cooking purposes. This is particularly important if the tap has not been used daily.

WARNING: Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

CAUTION: Protect against freezing to prevent cracking of the filter and water leakage.



WATER QUALITY SYSTEMS

5730 NORTH GLEN PARK ROAD, MILWAUKEE, WI 53209

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310086 REV B MY15

PENTEK R SERIES PLEATED POLYESTER CARTRIDGES

VERSATILE, REUSABLE DESIGN WITH SUPERIOR DIRT HOLDING CAPACITY



Pentair[®] Pentek[®] R Series Cartridges are manufactured from a durable, non-woven and reusable polyester fabric that is suitable for a wide range of filtration uses.

The media is pleated around a polypropylene core for added strength. The pleated endcaps of the standard cartridges are immersed in a thermo-setting vinyl plastisol. The Big Blue cartridges have a molded endcap with gaskets. The pleated ends are sealed to the endcap with a thermoplastic adhesive. The overlap seam is sonically welded to reduce internal bypass improving filtration efficiency.

The standard 9.75" length cartridge has more than four square feet of polyester fabric, while the larger Big Blue version has more than 16 square feet. The media is pleated to maximize dirt holding capacity and extend the time period between changes or cleaning.

R Series Cartridges are resistant to both bacteria and chemical attack making them suitable for a variety of residential, commercial and industrial applications.

FEATURES/BENEFITS

Pleated design maximizes dirt holding capacity

Versatile and reusable, allowing for a variety of uses

Durable polyester media is bacteria- and chemical-resistant

R30: Nominal 30 micron rating
R50: Nominal 50 micron rating

Lengths: 4.88", 10", 20"

SPECIFICATIONS

Filter Media – Non-woven polyester

Standard Endcaps – Vinyl plastisol

Big Blue Endcaps – Polypropylene

Core – Polypropylene

Temperature Rating –
40-125°F (4.4-51.7°C)

SPECIFICATIONS AND PERFORMANCE

MODEL #	PART #	MAXIMUM DIMENSIONS	RATING* (NOMINAL)	INITIAL ΔP (PSI) @ FLOW RATE (GPM)
R30-478	155031-43	2.63" x 4.88" (67 mm x 124 mm)	30 micron	<1 psi @ 10 gpm (<0.07 bar @ 38 Lpm)
R30	155017-43	2.63" x 9.75" (67 mm x 248 mm)	30 micron	<1 psi @ 10 gpm (<0.07 bar @ 38 Lpm)
R50	155038-43	2.63" x 9.75" (67 mm x 248 mm)	50 micron	<1 psi @ 10 gpm (<0.07 bar @ 38 Lpm)
R30-20	155416-43	2.63" x 20" (67 mm x 508 mm)	30 micron	<1 psi @ 10 gpm (<0.07 bar @ 38 Lpm)
R30-BB	155101-43	4.50" x 9.75" (114 mm x 248 mm)	30 micron	<1 psi @ 10 gpm (<0.07 bar @ 38 Lpm)
R50-BB	155053-43	4.50" x 9.75" (114 mm x 248 mm)	50 micron	<1 psi @ 10 gpm (<0.07 bar @ 38 Lpm)
R30-20BB	155430-43	4.50" x 20" (114 mm x 508 mm)	30 micron	<1 psi @ 20 gpm (<0.07 bar @ 76 Lpm)

*Based on manufacturer's internal testing.

WARNING: Do not use with water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

R30-20BB initial specification for GAC systems.



WATER QUALITY SYSTEMS

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310066 REV D MY15

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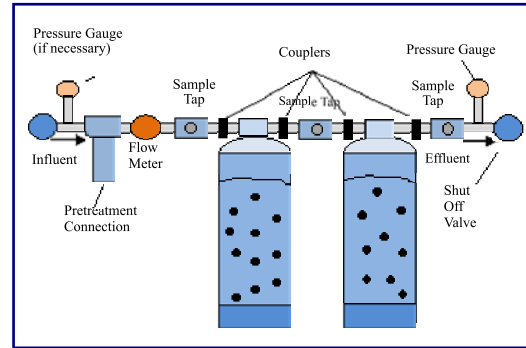
WHS-200/WHS-400 EPA

[< Return to Product List](#)

System Features:

- 2 NSF fiberglass pressure rated reinforced vessels.
- Pressure controlled operation from 0–125 psi.
- A pre-filter assembly (50 micron) for the removal of sediment, sand and particulate matter.
- A totalizing meter to monitor gallon usage.
- Sample ports to monitor performance and allow sampling of influent, interim and effluent.
- Adaptable to any type of plumbing configuration.

Point of Entry Filtration



System Operation and Contaminant Breakthrough Protection:

The system has no bypass thereby preventing accidental use of contaminated water. The first vessel in the series is the gross removal unit and the second vessel acts as a polishing unit and safety buffer. The system design allows up to 10 gallons per minute of contact time on the filter media and is effective on large concentrations of dangerous organic chemicals. This is more than sufficient to support the needs of an average household.

Testing has shown that the lead vessel is normally depleted at 100,000 gallons, or approximately one year from start up. At this time, the first vessel is removed for regeneration, the second "safety" vessel is placed in the first position, and a vessel of fresh carbon is placed as the secondary vessel. This ensures a safety buffer of 100,000 gallons of usage on the new vessel's fresh carbon. If 100,000 gallons has not been used and break through has not occurred at year's end, a one-tank filter change is still done to prevent any risk of bacterial growth.



Installation:

- Systems are installed by licensed plumbers in accordance with applicable plumbing codes.
- Systems are generally installed at the well head prior to softeners and conditioning units.
- Always installed upstream of all water taps or other consumer use connections in the residence.
- Quick couplers allow easy change-out of vessels.
- Additional vessels can be utilized for higher gpm.

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FILTRASORB® 600

Granular Activated Carbon

Applications



Groundwater



Surface Water



Bottle & Brewing



Water Processing



Environmental Water



Food & Beverage



Ultra Pure Water



Remediation Water Treatment

With its enhanced high energy pore structure, FILTRASORB 600 is ideally suited for trace removal applications and offers a significant performance advantage over traditional activated carbon products used in these types of applications.

Specific applications include:

- Removal of MTBE
- Removal of DBCP
- Removal of THMs
- Removal of pesticides and herbicides
- Removal of other organics at concentrations < 1 ppm
- Potable water treatment
- Groundwater treatment
- Ultrapure water treatment
- PFAS treatment

Description

FILTRASORB 600 is a granular activated carbon for the removal of dissolved organic compounds from water and wastewater as well as industrial and food processing streams. These contaminants include taste and odor compounds, organic color, total organic carbon (TOC), and industrial organic compounds such as TCE and PCE.

This activated carbon is made from select grades of bituminous coal through a process known as reagglomeration to produce a high activity, durable, granular product capable of withstanding the abrasion associated with repeated backwashing, hydraulic transport, and reactivation for reuse. Activation is carefully controlled to produce a significant volume of both low and high energy pores for effective adsorption of a broad range of high and low molecular weight organic contaminants.

FILTRASORB 600 is formulated to comply with all the applicable provisions of the AWWA Standard for Granular Activated Carbon (B604) and Food Chemicals Codex. This product may also be certified to the requirements of ANSI/NSF Standard 61 for use in municipal water treatment facilities. Only products bearing the

NSF Mark are certified to the NSF/ANSI 61 - Drinking Water System Components - Health Effects standard. Certified Products will bear the NSF Mark on packaging or documentation shipped with

the product Features / Benefits

- Produced from a pulverized blend of high quality bituminous coals resulting in a consistent, high quality product.
- Carbon granules are uniformly activated through the whole granule, not just the outside, resulting in excellent adsorption properties and constant adsorption kinetics.
- The reagglomerated structure ensures proper wetting while also eliminating floating material.
- High mechanical strength relative to other raw materials, thereby reducing the generation of fines during backwashing and hydraulic transport.
- Carbon bed segregation is retained after repeated backwashing, ensuring the adsorption profile remains unchanged and therefore maximizing the bed life.
- Reagglomerated with a high abrasion resistance, which provides excellent reactivation performance.
- High density carbon resulting in a greater adsorption capacity per unit volume.

Specifications¹

FILTRASORB 600

Iodine Number, mg/g	850 (min)
Moisture by Weight	2% (max)
Abrasion Number	80 (min)
Trace Capacity Number, mg/g	16 (min)
Screen Size by Weight, US Sieve Series	
On 12 mesh	5% (max)
Through 40 mesh	4% (max)

¹Calgon Carbon test method

Typical Properties*

FILTRASORB 600

Apparent Density (tamped)	0.62 g/cc
Water Extractables	<1%
Non-Wettable	<1%

*For general information only, not to be used as purchase specifications.

Safety Message

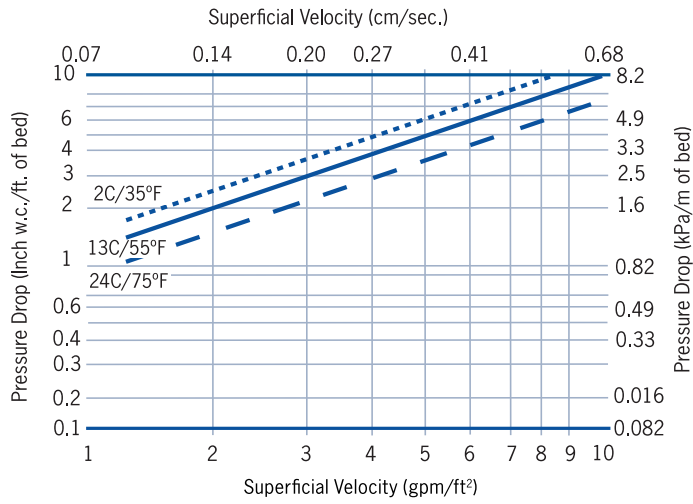
Wet activated carbon can deplete oxygen from air in enclosed spaces. If use in an enclosed space is required, procedures for work in an oxygen deficient environment should be followed.

1.800.4CARBON calgoncarbon.com

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DS-FILTRA60017-EIN-E1

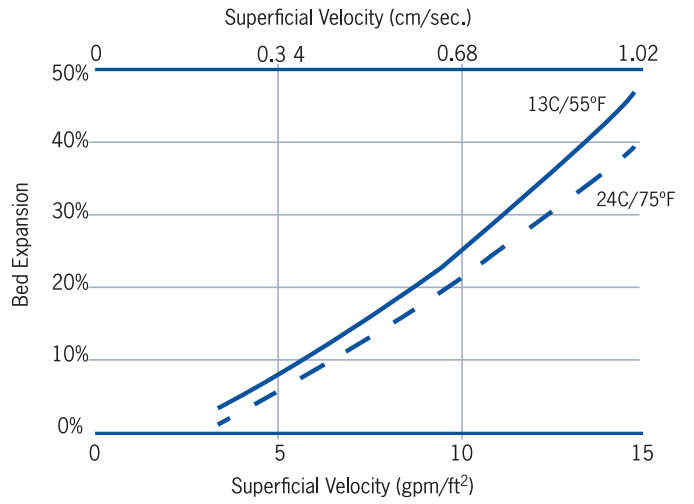
Typical Pressure Drop

Based on a backwashed and segregated bed



Typical Bed Expansion During Backwash

Based on a backwashed and segregated bed



Safety Message

Wet activated carbon can deplete oxygen from air in enclosed spaces. If use in an enclosed space is required, procedures for work in an oxygen deficient environment should be followed.

1.800.4CARBON calgoncarbon.com

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DS-FILTRA60017-EIN-E1

Every T-10® water meter meets or exceeds the latest AWWA C700 Standard. Its nutating disc, positive displacement principle has been time-proven for accuracy and dependability since 1892, ensuring maximum utility revenue.



T-10® water meters are warranted for performance, materials, and workmanship.

The T-10 water meter consists of three major assemblies: a register, a lead free, high-copper alloy maincase, and a nutating disc measuring chamber.

The T-10 meter is available with a variety of register types. For reading convenience, the register can be mounted in one of four positions on the meter.

The corrosion-resistant, lead free, high-copper alloy maincase will withstand most service conditions; internal water pressure, rough handling, and in-line piping stress.

The innovative floating chamber design of the nutating disc measuring element protects the chamber from frost damage while the unique chamber seal extends the low-flow accuracy by sealing the chamber outlet port to the maincase outlet port. The nutating disc measuring element utilizes corrosion-resistant materials throughout and a thrust roller to minimize wear.

Neptune provides a limited warranty with respect to its T-10 water meters for performance, materials, and workmanship.

When desired, maintenance is easily accomplished either by replacement of major assemblies or individual components.

All T-10 water meters are guaranteed adaptable to our ARB®V, ProRead™ (ARB VI) AutoDetect, E-CODER® (ARB VII), E-CODER®)R900i™, E-CODER®)R450i™, TRICON®/S, TRICON/E®3, and Neptune meter reading systems without removing the meter from service.

KEY FEATURES

- Register
 - Magnetic drive, low-torque registration ensures accuracy
 - Impact-resistant register
 - High-resolution, low-flow leak detection
 - Bayonet-style register mount allows in-line serviceability
 - Tamperproof seal pin deters theft
 - Date of manufacture, size, and model stamped on dial face

- Lead Free Maincase
 - Made from lead free, high-copper alloy
 - NSF/ANSI 372 certified and NSF/ANSI 61 compliant
 - Lifetime guarantee
 - Resists internal pressure stresses and external damage
 - Handles in-line piping variations and stresses
 - Lead free, high-copper alloy provides residual value vs. plastic or composite
 - Electrical grounding continuity

- Nutating Disc Measuring Chamber
 - Positive displacement
 - Widest effective flow range for maximum revenue
 - Proprietary polymer materials maximize long-term accuracy
 - Floating chamber design is unaffected by meter position or in-line piping stresses

Adaptability to all present and future systems for flexibility is available only with Neptune's ARB® Utility Management Systems™.

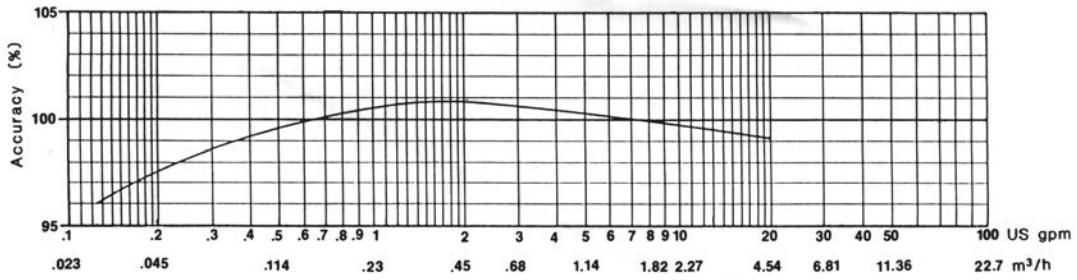
CONSTRUCTION

WARRANTY

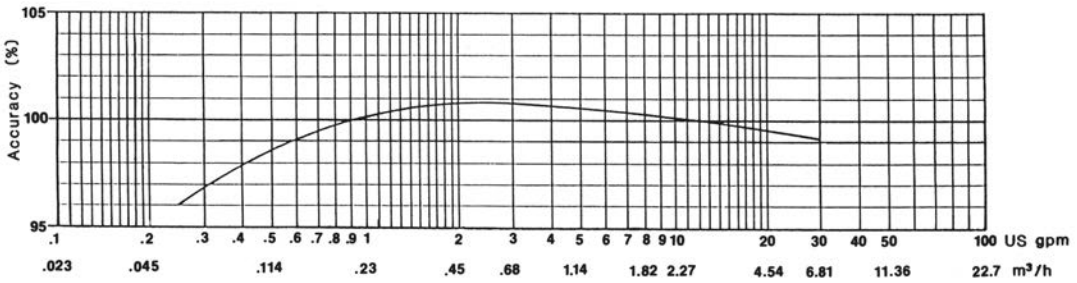
GUARANTEED SYSTEMS COMPATIBILITY

SYSTEMS COMPATIBILITY

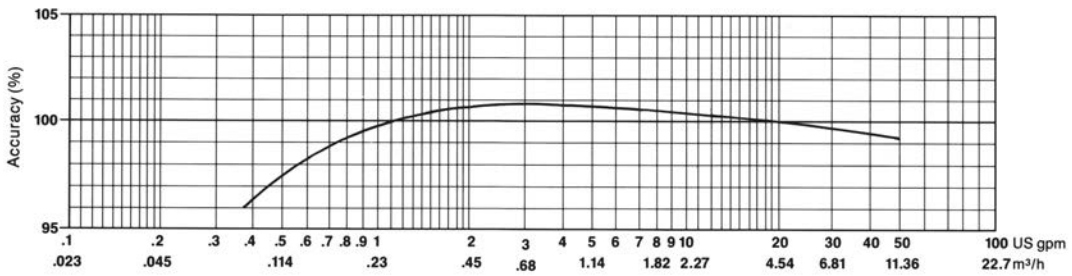
5/8" ACCURACY



3/4" ACCURACY



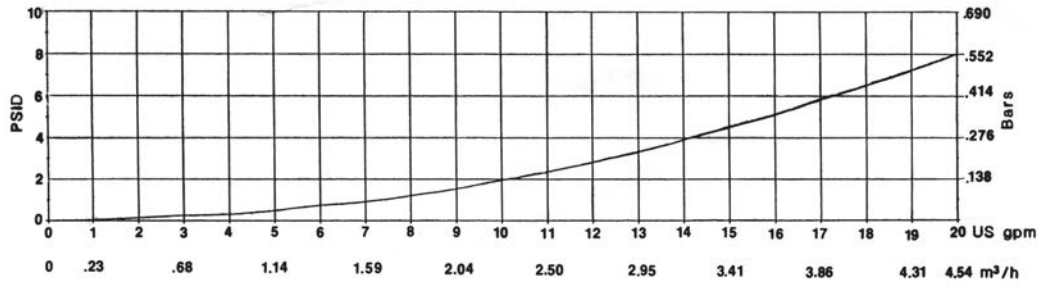
1" ACCURACY



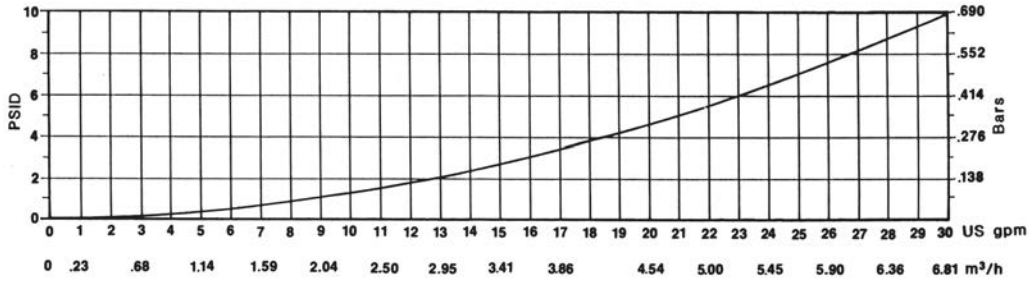
DIMENSIONS

	A	B	C			D		E	Weight
Meter Size	in/mm	in/mm	Std. in/mm	ARB in/mm	E-CODER®R9007™ or E-CODER®R4507™	Threads per inch	OD in/mm	in/mm	lbs/kg
5/8"	7 1/2 191	3 5/8 92	4 3/8 111	5 1/4 133	5 1/4 133	14	1.03 26	1 1/2 38	3 1/4 1.4
5/8" x 3/4"	7 1/2 191	3 5/8 92	4 3/8 111	5 1/4 133	5 1/4 133	11 1/2	1.29 33	1 1/2 38	3 3/8 1.5
Pre 2011 5/8"	7 1/2 191	3 5/8 92	4 7/8 124	5 1/2 146	5 1/2 139	14	1.03 26	1 5/8 41	3 3/4 1.7
Pre 2011 5/8" x 3/4"	7 1/2 191	3 5/8 92	4 7/8 124	5 1/2 146	5 1/2 139	11 1/2	1.29 33	1 5/8 41	4 1.8
3/4"	9 229	4 3/8 111	5 1/2 140	6 1/4 159	6 1/4 159	11 1/2	1.29 33	1 7/8 48	6 2.7
3/4" SL	7 1/2 911	4 3/8 111	5 1/2 140	6 1/4 159	6 1/4 159	11 1/2	1.29 33	1 7/8 48	5 1/2 2.5
3/4" x 1"	9 229	4 3/8 111	5 1/2 140	6 1/4 159	6 1/4 159	11 1/2	1.62 41	1 7/8 48	6 1/2 2.9
1"	10 3/4 273	6 1/2 165	6 3/8 162	7 178	7 178	11 1/2	1.62 41	2 1/8 54	9 3/4 4.4
1" x 1 1/4"	10 3/4 273	6 1/2 165	6 3/8 162	7 178	7 178	11 1/2	1.86 47	2 1/8 54	10 1/4 4.6

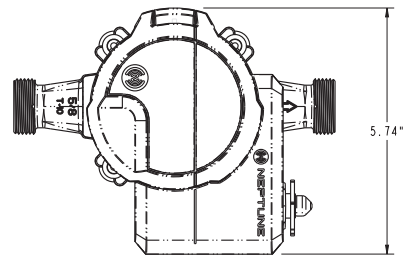
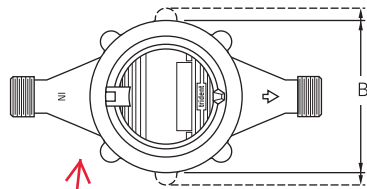
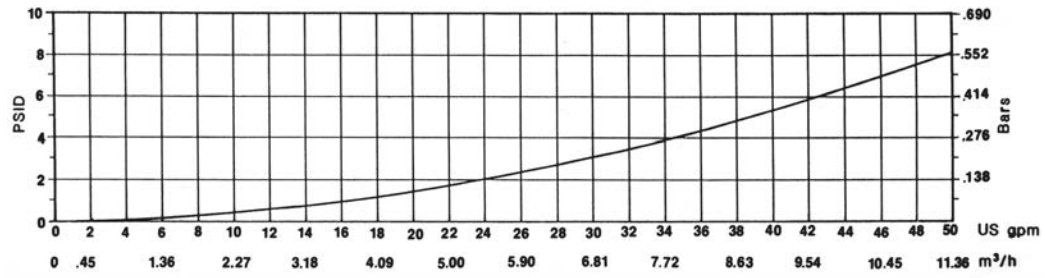
5/8" PRESSURE LOSS



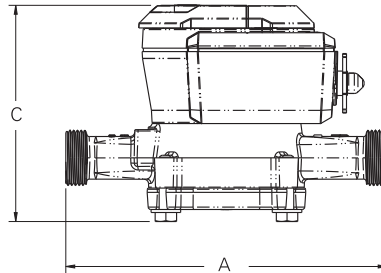
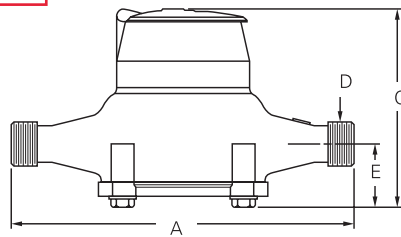
3/4" PRESSURE LOSS



1" PRESSURE LOSS



Mechanical display specified for initial GAC system.



OPERATING CHARACTERISTICS:

Meter Size	Normal Operating Range @ 100% Accuracy (+/- 1.5%)	AWWA Standard	Low Flow @ 95% Accuracy
5/8"	1/2 to 20 US gpm 0.11 to 4.55 m ³ /h	1 to 20 US gpm 0.23 to 4.5 m ³ /h	1/8 US gpm 0.03 m ³ /h
3/4"	3/4 to 30 US gpm 0.17 to 6.82 m ³ /h	2 to 30 US gpm 0.45 to 6.8 m ³ /h	1/4 US gpm 0.06 m ³ /h
1"	1 to 50 US gpm 0.23 to 11.36 m ³ /h	3 to 50 US gpm 0.68 to 11.4 m ³ /h	3/8 US gpm 0.09 m ³ /h

REGISTRATION:

ProRead Registration (per sweep hand revolution)		5/8"	3/4" & 1"
10	US Gallons	√	√
10	Imperial Gallons	√	√
1	Cubic Foot	√	√
0.1	Cubic Metre	√	√
0.01	Cubic Metre	√	

Register Capacity ProRead & E-CODER		5/8"	3/4" & 1"
10,000,000	US Gallons	√	√
10,000,000	Imperial Gallons	√	√
1,000,000	Cubic Feet	√	√
100,000	Cubic Metres	√	√
10,000	Cubic Metres	√	

E-CODER High Resolution (8-digit reading)		5/8"	3/4" & 1"
0.1	US Gallons	√	√
0.1	Imperial Gallons	√	√
0.01	Cubic Feet	√	√
0.001	Cubic Metres	√	√

SPECIFICATIONS

- NSF/ANSI 372 certified and NSF/ANSI 61 compliant
- National Type Evaluation Program (NTEP) certification
- Application: Cold water measurement of flow in one direction in residential service applications
- Maximum operating water pressure: 150 psi (1034 kPa)
- Maximum operating water temperature: 80°F
- Measuring chamber: Nutating disc technology design made from proprietary synthetic polymer

OPTIONS

- Sizes:
 - 5/8", 5/8" x 3/4"
 - 3/4", 3/4" SL, 3/4" x 1"
 - 1", 1" x 1 1/4"
- Units of measure: U.S. gallons, imperial gallons, cubic feet, cubic metres
- Register types:
 - Direct reading: bronze box and cover (standard)
 - Remote reading: ProRead, E-CODER, E-CODER)R900i; E-CODER)R450i; TRICON/S, TRICON/E3
 - Reclaim
- Bottom caps:
 - Synthetic polymer (5/8" only)
 - Cast iron
 - Lead free, high-copper alloy
- Connections:
 - Lead free, high-copper alloy, straight or bent
- Environmental conditions:
 - Operating temperature: +33° F to +149° F (0° C to +65° C)
 - Storage temperature: +33° F to +158° F (0° C to +70° C)

Neptune Technology Group Inc.
1600 Alabama Highway 229
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Fax: (334) 283-7293

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7275 West Credit Avenue
Mississauga, Ontario
L5N 5M9
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Tel: (905) 858-4211
Fax: (905) 858-0428

Neptune Technology Group Inc.
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Mexico D.F.
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(525) 5203-5294
Fax: (525) 5203-6503

NEPTUNE
TECHNOLOGY GROUP

neptunetg.com

Handi-Houses
2175 Skibo Rd
Fayetteville, NC 28314
910-822-6708

Date: 02/05/18

Re: 100 ea Buildings, fully assembled 4 x 8 or 6 x 8

To be fully assembled, then delivered locally (Cumberland and Hoke Counties, NC)

Each built to the following specifications:

- 1) All aluminum exterior walls and roof.
- 2) Pressure treated flooring systems.
- 3) 2 x 4 construction for framing, 16" on center walls and roof
- 4) Galvanized metal strapping (connectors) securing each and every wall stud to the floor system and securing each and every wall stud to rafter studs. All to be nailed with galvanized or stainless steel nails.
- 5) Floor decking to be 23/32" plywood, tongue and groove.
- 6) All 4 corners of walls to have double studs, for extra strength and rigidity.
- 7) End rafters to be connected by 2 ea galvanized Simpson (or equal) gusset toothed fastener plate, and to be supported by vertical drop 2 x 4's.
- 8) Center rafters to be connected by 6 ea galvanized Simpson (or equal) gusset toothed fastener plate, to include the connection of the rafters by a single, horizontal bottom connecting chord 2 x 4.
- 9) Door, 1 ea, to be 4' wide by 6' tall, our standard.
Door framing to be extruded aluminum with galvanized 1/2" tubing cross members.
Door handle to be hinged by steel piano hinge, standard placement on right side.
Door handle to be "T" type with built-in keyed tumbler lock with 2 keys.
- 10) Walls to be insulated with polyback type insulation, R-15 value, batts with sound barrier properties. Brand Owens-Corning or equal.
- 11) Each building to be anchored with 2 each 30" long, 5/8" diameter, double 4" helix plate anchors, connected by a mobile home galvanized 1 1/4" strap extending over treated skids under floor of building, each end bolted by a 1/2" x 3" split bolt.

HANDI-HOUSE OF FAYETTEVILLE
2175 SKIBO RD., FAYETTEVILLE, NC. 28314
Phone (910) 822-6708 Fax (910) 822-8559

HANDI-HOUSE BUILDING FEATURES

Limited LIFETIME Warranty on pressure treated floor system (no termites or rotting)

Limited 20 YEAR Warranty on all aluminum siding against rust or corrosion.

Limited 5 YEAR Warranty against defects in workmanship.

Handi-Houses are laboratory tested, proven and meet the requirements of both the Southern Standard Building Code **and** the South Florida Building Code.

Floors are built with treated 2 x 4 or 2 x 6 joists, decked with 5/8" or 3/4" tongue and groove plywood.

Floor joists are mounted on 4"x 6" pressure treated skids, notched out for each joist to be set in place.

This feature is concealed under the floor, but so important in the strength of any floor. Our larger buildings have 3 SKIDS and 2 x 6 treated joists, 16"o.c., resulting in a Super-Strong floor system.

ALL Wood Frame Buildings (wall & rafters) are constructed with 2"x 4" spruce lumber (24" o.c.) Which has proven to be straighter and cleaner than typical construction studs? We use 1" x 4" lumber for horizontal framing which is **notched** into the 2 x 4 framing. Wood frame buildings have an "extra" stud in each corner, for strength and rigidity. This feature alone has an annual production cost of well over \$100,000, but **Handi-House** knows it is well worth the cost to deliver a better product to our customers.

Steel Stud Buildings are computer-engineered and designed, framed with galvanized "cees", 24" on center.

Wiring for electricity is encased and protected by galvanized electrical metallic (steel) conduit. Basic wiring starts as low as \$90.00. Windows are bronze aluminum, single-hung, with locks and screens. They are also very reasonably priced at only \$50.00 each, including frame-out, installation, and trim. Most building prices already **INCLUDE** wiring and window(s). Prices stated are for adding optional wiring and/or windows.

Type of siding available: Aluminum, Galvalume Steel, Cedar, Hardi-Plank, T1-11 Wood Siding and Vinyl Siding in several building styles. Many choices in main body and trim colors

Types of Roofs: Aluminum (standard w/choice of silver, white or beige). Asphalt shingles, Galvalume Steel

Aluminum buildings are cool. Our aluminum roofs reflect about 80% of the sun's radiant heat.

Free local standard delivery: Buildings leveled on 2' or 4' concrete blocks. Concrete pad not required.

Anchoring is optional using 30" double-helix mobile home anchors which are slowly screwed into the ground with a special auger machine. Anchors are strapped across the skids; each 1 1/4" wide galvanized strap yielding over 4,725 lbs. breaking strength. Handi-Houses are engineered to withstand 110 mph winds.

Handi-House Mfg. is an industry leader in Customization, Special Orders, and Super-FAST Turnaround. We CAN build it! Get it to you FAST! And do it RIGHT.

Handi-House of Fayetteville
2175 Skibo Rd., Fayetteville, NC 28314
(910)822-6708

www.handihouses.com

ABOUT US:

In business for over **40 years**

Family owned and operated

Same ownership for **40 years**

Same name for **38 years**

A North Carolina Corporation

Incorporated in 1983

Accredited Member of the Better Business Bureau

BBB Rating of A+

See us on Google maps and Google Earth