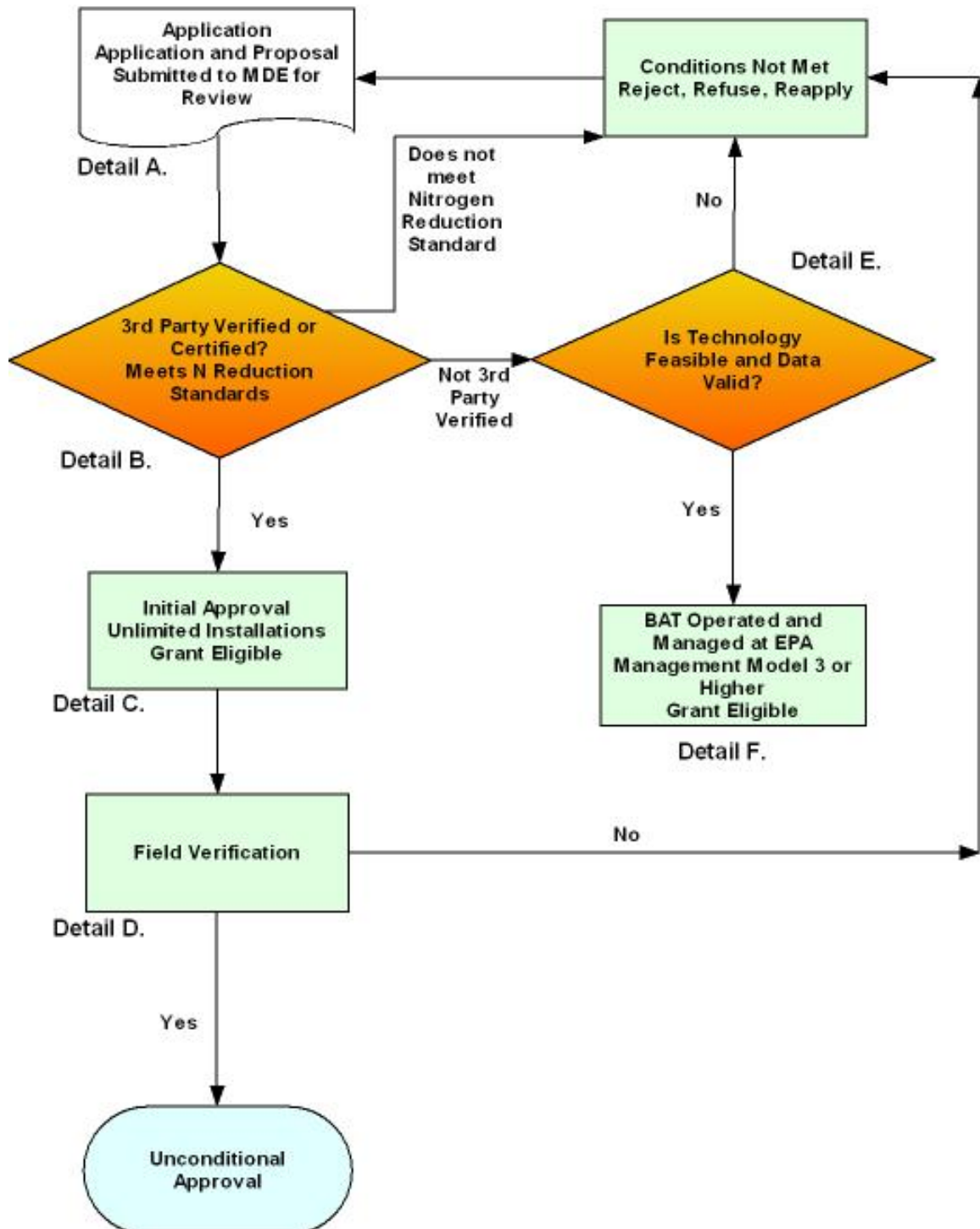


## BAT VERIFICATION PROGRAM FLOWCHART



\* Required TN standards: A TN reduction of 50% or an effluent of 20 mg/L or less based on an influent of 40 mg/L or greater.

## **BEST AVAILABLE TECHNOLOGY (BAT) VERIFICATION PROGRAM FLOWCHART DETAIL**

- Detail A.*** Submit an application for technology review to the Maryland Department of the Environment (MDE). Vendor contact, general technology description, operating manuals, existing verification information including test protocols and monitoring plans are to be included with the application. The application is reviewed by the BAT Review Team (BRT), which consists of 3 individuals with expertise and knowledge in nutrient reduction technologies.
- Detail B.*** The NSF/EPA's Environmental Technology Verification Program (ETV) is an example of a third-party testing organization that has tested several nutrient reduction residential wastewater treatment systems. The program utilizes standard test methods, independent performance evaluations and test result preparation to ultimately verify the vendor's claim. ETV evaluation protocols provide a baseline for evaluating sufficiency of other third party testing. If the results of the third party testing indicate the MDE nitrogen reduction standard can be met then the technology receives a conditional approval and proceeds to Detail C. The required TN standards are a reduction of 50% or an effluent of 20 mg/L or less based on an influent of 40 mg/L or greater. If third party testing indicated the technology cannot meet the nitrogen reduction standard the technology must reapply. If the technology is not third-party verified proceed to detail F.
- Detail C.*** Technologies initially approved enter a field verification period where an unlimited number of installations are allowed. The vendor/applicant must submit a field verification plan that includes instructions for collecting samples. All technologies must sample a minimum of 12 units 4 times each in consecutive quarters. All monitoring results must be reported. A service provider approved by the vendor and MDE shall be responsible for operating and maintaining the system and collecting and reporting the monitoring results. The vendor/applicant must submit monitoring results to MDE and the local Approving Authority on a quarterly basis. At the conclusion of the field testing period the vendor/applicant shall submit to MDE and the Approving Authority a final report that includes all monitoring information and a summary of all maintenance activities.
- Detail D.*** The BAT Review team is responsible for evaluating the final report submitted by the applicant/vendor at the conclusion of the field verification period. 48 TN effluent data points or greater per technology must be graphed, with the x- axis representing Percent Rank and the y- axis representing either TN Effluent in mg/l or percent nitrogen reduction. At the 75 percentile the TN shall be less than or equal to 20 mg/l or show a minimum of a 50% reduction. If the nitrogen reduction standard has been met the technology receives an unconditional approval. The unconditional approval is good for a minimum of five years from the date the technology first entered the field verification period. Spot sampling may still be required of technologies with unconditional approval. Systems not meeting the nitrogen removal standard will either be rejected or remain in a modified field verification program. Any modified field verification program must be proposed by the vendor/applicant and approved by the BAT Team.
- Detail E.*** For non-proprietary technologies the vendor/applicant must provide a detailed description of the technology process, which illustrates sound scientific fundamentals and engineering practice. Non-proprietary technologies which have undergone independent field verification through national demonstration projects, university research studies or other formal state verification programs may be approved as a highly managed system and enter Detail F. Technologies not demonstrated to meet the nitrogen removal standard are rejected.
- Detail F.*** Highly managed systems have either renewable operating permits or a responsible management entity or a combination of both. Provisions must be made for sampling, reporting, maintenance and enforcement. Nitrogen reduction standard established for third party verified/certified systems must be met.