DRAFT ZONING AMENDMENT

UPPER MOUNT BETHEL TOWNSHIP

WATER WELL PERMITTING ORDINANCE

DATED: March 24, 2025

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Appendix

ORDINANCE OF THE TOWNSHIP OF UPPER MOUNT BETHEL, NORTHAMPTON COUNTY, PENNSYLVANIA AMENDING ORDINANCE 2004-01, THE UPPER MOUNT BETHEL ZONING ORDINANCE TO INCLUDE PROVISIONS THAT PROTECT THE QUALITY AND QUANTITY OF THE WATER RESOURCES OF UPPER MOUNT BETHEL TOWNSHIP BY REQUIRING THE PERMITTING AND IMPLEMENTING CONSTRUCTION STANDARDS OF NEW WELLS AND MODIFICATIONS TO EXISTING WELLS ALONG WITH WATER QUANTITY AND WATER QUALITY PROVISIONS AND PROVISIONS TO ENFORCE THE ORDINANCE.

WHEREAS, Upper Mount Bethel Township is a political subdivision situate within the County of Northampton, Commonwealth of Pennsylvania, is a Township of the Second Class and has offices located at 387 Ye Olde Highway, Mt. Bethel, PA 18343; and,

WHEREAS, the Second Class Township Code (hereinafter referred to as "Code") provides that the Board may adopt ordinances in which general or specific powers of the township may be exercised and can include the protection of the health, safety and welfare of the Township residents (53 P.S. Section 66601 and 66506); and,

WHEREAS, the Code allows ordinances to inter alia regulate the "... construction, alteration, repair ... water supply ..." (53 P.S. Section 66517); and,

WHEREAS, the Municipalities Planning Code [53 P.S. Section 10603 (d) and 10604(1]authorizes a municipality to regulate the siting, density and design of residential, commercial and other developments to ensure the availability of safe and adequate water supplies; and,

WHEREAS, the PA Constitution recites that "The people have a [constitutional] right to ... pure water ..." See Article I, Section 27 of the PA Constitution; and,

WHEREAS, the purpose of the ordinance is to inter alia ensure the availability of reliable, safe and adequate water supplies to support the intended use within the capacity of available water resources and to protect the aquifer; and,

WHEREAS the Code specifically authorizes municipal regulation of zoning and subdivision and land development ordinances – 53 P.S. Section 66516 - which promote and facilitate inter alia access to adequate water. This ordinance aims at resolving some of the problems of providing a safe and adequate water supply to our residents; and,

WHEREAS, this ordinance is an amendment to the Township's zoning ordinance and will apply to all zoning districts; and,

WHEREAS, in order to protect the quality and quantity of the water resources of Upper Mount Bethel Township, the Board of Supervisors, with the assistance of its committees, has completed a study of the current factors affecting the Township's water resources. Furthermore, Upper Mount Bethel Township abuts the Delaware River, and its streams discharge into the River, which has been designated Special Protection Waters by the Delaware River Basin Commission. It is also a commonly accepted fact that there is linkage between ground water and surface water in a basin; and,

WHEREAS, the Township's consultants have determined that to maintain an adequate water supply the first step in managing water resources to protect the citizens of the Township is to require well drilling permits and set standards for wells.

NOW, THEREFORE, BE IT ENACTED AND ORDAINED, and it is hereby ENACTED AND ORDAINED by the Board of Supervisors of Upper Mount Bethel Township, Northampton County, Pennsylvania, as follows:

A. Definitions.

50-YEAR DROUGHT: the 1-in-50 chance (2%) of a certain level of precipitation deficiency resulting in a water shortage occurring each year

ABANDONED WELL-A Well which is no longer used or intended to be used in the foreseeable future to produce water.

ADEQUATE WATER SUPPLY: that where obtainable, the yield of a Well or the capacity of a pump and distribution system shall be sufficient to meet the requirements which the user has stated are necessary for drinking, food preparation, bathing, clothes washing, and other purposes for which well water is intended to be used.

ANSI: American National Standards Institute.

APPLICANT: A landowner or developer or authorized agent of either that files for a permit under this ordinance.

APPROVED: sanctioned by Upper Mount Bethel Township, in conformity with applicable laws and regulations.

AQUIFER: A formation, group of formations, or part of a formation, that contains sufficient saturated permeable material to yield significant quantities of water to wells and spring. (USGS)

ASSURED TIME: time it will take to pump the assured volume from the well at the peak demand rate.

AWWA: American Water Works Association.

BMP: Best management Practice

BOS: Upper Mount Bethel Township Board of Supervisors.

CLASS I APPLICANTS – an applicant applying for a permit for an individual regulated well where no subdivision of land (whether minor or major) and no land development (whether large or small) is proposed. Class I is intended to be for a single-family residential dwelling that is not part of a subdivision or land development noted herein. It shall also not include the projected water use in excess of one thousand (1000) gallons of flow per day (gpd).

CLASS II APPLICANTS – an applicant (developer) proposing water use in excess of one thousand (1000) but less than four thousand (4000) gallons per day (gpd) or seeking installation of a well or wells in conjunction with a minor subdivision (less than five lots) or a small land development.

CLASS III APPLICANTS – an applicant (developer) proposing water use in excess of four thousand (4000) gallons per day (gpd) or seeking installation of a well or wells in conjunction with a major subdivision (five (5) or greater lots) or a large land development. If a parcel of land is subdivided sequentially, it becomes a major subdivision when the fourth (4^{th}) parcel division is applied for, i.e. so that there will be five (5) parcels in total.

CONE OF DEPRESSION (COD): refer to Zone of Influence (ZOI).

CONTAMINATION: any organic of inorganic constituent which will render water unsafe for human consumption.

DRAWDOWN: extent of lowering of the water level or potentiometric level in a well when water flows or is pumped from it. Measured from the static water level prior to artesian flow or pumping.

DRBC: Delaware River Basin Commission.

FEMA: Federal Emergency Management Agency.

FLUSHING: act of causing a rapid flow of water from a well by pumping, bailing, blowing with compressed air, or similar operation.

gpd: gallons of flow per day.

HYDROFRACTURING: A water well development process that involves injecting high pressure water via the well into the bedrock formation immediately surrounding it. This procedure is intended to widen existing fractures in the bedrock and/or extend them further into the formation thereby increasing the yield by enlarging the network of water bearing fractures supplying water to the well.

LAND DEVELOPMENT: and of the following activities:

1. The improvement of one (1) lot or two (2) or more contiguous lots, tracts or parcels of land for any purpose involving:
   a) a group of two (2) or more residential or nonresidential buildings, whether proposed initially or cumulatively, or a single nonresidential building on a lot or lots regardless of the number of occupants or tenure, or
   b) the division or allocation of land or space, whether initially or cumulatively, between or among two (2) or more existing or prospective occupants by means of or for the purpose of streets, common areas, leaseholds, condominiums, building groups or other features.
2. A subdivision of land.
3. Development in accordance with section 503(1.1) of the Municipalities Planning Code.

LARGE LAND DEVELOPMENT: land developments involving a projected water use in excess of two thousand (2,000) gallons of water use per day. Also, the drilling of wells or the withdrawal

of ground water for a water supply system by a licensed public utility, a homeowners' or property owners' association or a municipal corporation or municipal authority.

LICENSED TO DO BUSINESS WITHIN THE COMMONWEALTH OF PENNSYLVANIA a license or certification issued by the Commonwealth of Pennsylvania that is in good standing and is not suspended, revoked or otherwise not in effect and where the person or entity is authorized to do business within Pennsylvania.

MAJOR SUBDIVISION: any division or re-division of a lot, tract or parcel of land by any means into five (5) lots or more. The residual tract is considered a lot.

MINOR SUBDIVISION: any division or re-division of a lot, tract or parcel of land by any means into four (4) lots or less. The residual tract is considered a lot.

OBSERVATION WELL-A water well which purpose is to measure the groundwater, and water table level, and/or quality relative to the Production Well. "Monitoring Well" is sometimes used interchangeably.

PA DCNR: Pennsylvania Department of Conservation and Natural Resources.

PA DEP: Pennsylvania Department of Environmental Protection.

PEAK DEMAND RATE: maximum rate of water use during peak demand periods.

PEAK DEMAND TEST: a pumping test conducted to evaluate the capability of a well to supply peak demand needs of a use. The test is conducted at a rate equal to or greater than the peak demand rate for the peak time.

PEAK TIME: length in minutes of each of two (2) daily peak demand periods.

PERSON: Any individual, partnership, corporation, limited partnership, limited liability company, estate, trust or any other entity.

PLOT PLAN: A plat of a lot(s) drawn to scale showing the actual measurements and containing the information required by this Ordinance. A plot plan for a Class I or a II Applicant is not as extensive as a plot plan for a Class III Applicant. See Section B. Well Drilling Permit, No. 4, B.

POTABILITY: fit or suitable for drinking. Potable is from the Latin *potare* to drink.

POTENTIOMETRIC SURFACE: an imaginary surface representing the static head of ground water and defined by the level to which water will rise in a tightly cased well.

PRODUCTION WELL-A water well which purpose is to utilize groundwater for water supply. "Pumping Well" is sometimes utilized interchangeably.

PUBLIC WATER SYSTEM: A PWS is a system that provides water to the public for human consumption, and which has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.

RECOVERY TEST: measures the aquifer's ability to recover from the peak demand testing.

RE-DRILLING: does not mean repairing, maintenance or cleaning of a well. It does mean drilling deeper in the same well casing or well hole or well head or reconstructing a new well or drilling a well in a new hole.

REGULATED WELLS: include all new wells and wells associated with new uses where there is a significant increase in water use. This term includes existing wells only when they are being reactivated or re-drilled.

SANITARY CONDITION:

1. When referring to a well, it means that the construction of the well and the installation of the pumping equipment are such that the well is effectively protected against entrance of contaminating matter in the opinion of Township.

2. When referring to the surrounding of a well, it means that the location and surrounding area are free from debris or filth of any character and not subject to flooding.

SMALL LAND DEVELOPMENT: land development that involves a projected water use of two thousand (2,000) gallons, or less, of water use per day.

STATIC LEVEL: water level in a well before a pumping test when all effects of drilling and previous pumping on the aquifer have dissipated and the well is in equilibrium with atmospheric pressure.

STATIC WATER LEVEL: means that elevation of the surface of the water in a well when no water flows or is being pumped there from.

TWO PART PUMPING TEST: peak demand test, followed by the recovery test.

TOWNSHIP: Board of Supervisors of Upper Mount Bethel Township or any properly authorized official to Upper Mount Bethel Township who may be designated to act for the Township by the Board.

TOWNSHIP OFFICIAL: The person(s) or entity(ies) designated by resolution of the Township Board of Supervisors as the officer(s) responsible for applying, monitoring and enforcement of this ordinance.

TRANSMISSIVITY: a measure of the capability of the entire thickness of an aquifer to transmit water. Also known as the coefficient of transmissivity.

USGS: United States Geologic Survey.

VERTICAL ZONE OF CONTAMINATION: vertical extent of groundwater containing contaminants at concentrations exceeding Federal or State water-quality standards.

WATER TABLE: The level below the land surface at which the subsurface material is fully saturated with water, the depth of the water table reflects the minimum level to which wells must be drilled for water extraction. The water table is the surface where the pressure head is equal to atmospheric pressure.

WELL: For this Ordinance, the word "Well" should be understood to apply to water related functions. Any excavation whether drilled, bored, driven, or cored that is less in its diameter than its depth. This definition is meant to include test wells.

WELL ENFORCEMENT OFFICER (WEO): that Township Official appointed to oversee enforcement of the Well Permitting Ordinance.

WELL SEAL: an approved, removable arrangement or device used to cap a well or to establish and maintain a junction between the casing or curving of a well and the piping or equipment installed therein, so as to prevent water from entering the well at the upper terminal.

WELL STORAGE: volume of water stored within a well which is available for pumping.

YIELD: quantity of water per unit of time, which may flow or be pumped from a well at a constant specified drawdown.

ZONE OF CAPTURE (ZOC): aerial extent of the waters (i.e., ground water, surface water, etc.) captured by the pumping waters.

ZONE OF INFLUENCE (ZOI): the area of groundwater which is affected by the pumping of a well. Specifically, the area of land above the COD or the maximum distance from a pumping well up to which the influence of pumping is significant.

B. Purpose and Applicability

1. Purpose.

The purpose of this ordinance is to assure the availability of reliable, safe and adequate water supplies to support the intended land uses within the capacity of available water resources; to provide for the collection of accurate groundwater information; and to implement Article I, Section 27, of the Constitution of the Commonwealth of Pennsylvania, which decrees that the people have a right to pure water.

2. Applicability.

A. No person within Upper Mount Bethel Township shall drill a well or withdraw groundwater for any purpose by use of a well drilled (or redrilled) after the effective date of this ordinance except as permitted by this Ordinance and within the regulations herein set forth.

B. Wells that have been drilled and cased prior to the effective date of this ordinance shall not be subject to this ordinance. However, re-drilling of those wells shall be subject to this ordinance.

C. An occupancy permit for a new residential or nonresidential principal building, structure or use, or addition to a nonresidential building which is to be served by a regulated well shall not be issued, unless the regulated well meets the requirements of the Ordinance and those of the PA Department of Environmental Protection (PA DEP), the Delaware River Basin Commission (DRBC) and the US Environmental Protection Agency (US EPA).

D. Prior to obtaining preliminary plan approval of a minor or major subdivision or a small or large land development, an applicant shall satisfactorily complete all the well testing studies required herein.

E. Where a system is deemed to meet the criteria of a Public Water System, it will then be regulated by PA DEP and US EPA regulations. It still must be **coordinated** with the Township and meet Township minimum standards. Water quality must then meet National Primary Drinking Water Regulations and acknowledge that it should meet National Secondary Drinking Water Regulations (although the latter is not required).

F. DRBC requires approval of ground water withdrawals if the daily average gross withdrawal during any 30 consecutive day period will exceed 100,000 gallons. For wells and water systems subject to DRBC approval, complete copies of the docket, docket application, and supporting hydrogeological report, shall be submitted for the Township's review prior to issuance of an occupancy permit.

C. Well Drilling Permit

1. Applicability.

A well drilling permit shall be required for any well drilled or existing well-redrilled in Upper Mount Bethel Township after the effective date of this Ordinance. The drilling permit allows for the drilling of the well but not its use. The use permit is covered by Part C – Well Utilization Permit of this Chapter.

2. Categories of Applicants.

A. Class I Applicants – an applicant applying for a permit for an individual regulated well where no subdivision of land (whether minor or major) and no land development (whether large or small) is proposed. Class I is intended to be for a single-family residential dwelling that is not part of a subdivision or land development noted herein. It shall also not include the projected water use in excess of one thousand (1000) gallons of flow per day (gpd).

B. Class II Applicants – an applicant (developer) proposing water use in excess of one thousand (1000) but less than four thousand (4000) gallons per day (gpd) or seeking installation of a well or wells in conjunction with a minor subdivision (less than five lots) or a small land development.

C. Class III Applicants – an applicant (developer) proposing water use in excess of four thousand (4,000) gallons per day (gpd) or seeking installation of a well or wells in conjunction with a major subdivision (five or greater lots) or a large land development.

D. Public Water Systems- Those systems qualifying as either a community or noncommunity system. They will need to meet requirements which will be in addition to those of Class I, II, or III Applicants.

E. Exemption: Geothermal – an applicant who is drilling a geothermal well for heating or cooling utilizing a closed loop system or zero net water withdrawal need not do the well pump test, hydrogeological survey or quality analysis but must obtain a Well Drilling Permit and follow geothermal well construction practices which prevent groundwater contamination from heat transfer fluids (as propylene glycol and its additives).

F. Exemption: Repairs and Maintenance - Well maintenance, well repairs or well cleaning (that do not require re-drilling) are exempt from this ordinance.

3. Permit Application Procedure.

A. An application for a Well Drilling Permit (Attachment D) – along with the required fee and all supporting documents - shall be filed with the Township Office. Three copies are required to be filed. The office staff will distribute two to the Township officials. The applicant can retain one stamped copy.

B. Class II and Class III Applicants shall submit a Well Drilling Permit simultaneously with (or after) the submission of any application under Upper Mount Bethel Township's Subdivision and Land Development Ordinance ("SALDO") concerning any property which the well(s) is(are) to serve. The drilling of the well must be accomplished, and a Well Utilization Permit (Attachment E) must be issued, prior to the building permit being issued.

4. Well Drilling Permit Application Requirements.

No permit shall be issued and no well shall be constructed unless the person or entity selected by the applicant to perform the well construction, reconstruction or repair has first registered with the Township and certified on a form provided by the Township that, in addition to any other requirements of law, all well construction, reconstruction, or repair performed by the person or entity in the Township will be in accordance with standards and requirements set forth in the UMBT Well Ordinance.

A. The following shall be submitted with the Well drilling permit application for all applicants:

1. Applicant's name, address and telephone number.

2. The well drilling permit application fee paid to the Township, for the use of the Township, in accordance with the fee schedule adopted by resolution of the Board of Supervisors upon enactment of this Ordinance or as such schedule may be amended from time to time.

3. Location of the proposed well using USGS Coordinates.

4. Well driller's name, address and telephone number.

B. For a Class II Applicant, a plot plan (that does not have to be prepared by a surveyor or professional engineer) shall be submitted. Plot plans shall include at a minimum, property boundaries, all existing and proposed structures, sanitary sewage disposal facilities, and building setback lines. An applicant for a well reconstruction or re-drilling which does not alter the existing well location, is not subject to the requirement for a plot plan. However, the well location shall be documented to the satisfaction of the well permitting authority.

C. For a Class III Applicant, in addition to the plot plan, a copy of the proposed subdivision or land development plan filed or to be filed under Upper Mount Bethel Township's SALDO concerning any property which the well(s) is(are) to serve shall be supplied to the Township. The plot plan shall provide at least the following information (unless the subdivision or land development provides the same information; and, in that event, the subdivision or land development plan shall be sufficient) and shall be prepared by a surveyor or professional engineer.

1. Property lines.

2. Location of proposed and existing buildings on the property on which the proposed well is to be located and within two thousand five hundred (2,500) feet of the proposed well.

3. Streets abutting the property on which the proposed well is to be located.

4. Well location(s) – The well(s) must be field located and verified prior to drilling.

5. Wastewater disposal area(s) on the property on which the proposed well is to be located and within two hundred (200) feet of its boundaries and reported in latitude/longitude (NAD 83).

6. Separation distances as applicable to on-lot water supply and on-lot sewage disposal.

7. Site geology according to geologic maps.

8. The static water levels and likely groundwater flow directions beneath the site.

9. Fracture traces depicting the surficial expression of underlying bedrock fractures plotted on a map of the site.

10. Wells and wastewater systems on adjoining properties.

11. A description of the well development method proposed.

12. Projected water quantity requirements for the proposed use.

13. A separate map shall be submitted showing the location of the proposed well(s) and information of all monitoring well(s), if applicable.

14. Topography of the drainage area and property including wells, springs, streams, wetlands, dams and reservoirs; the location, dimensions and elevations of structures and piping.

15. Work plan including information required pursuant to Minimum Water Yields section of this ordinance.

5. Site Inspection.

Upon receipt of a complete application with all supporting documents for a well permit, the Township shall, within thirty (30) calendar days, review the site plan showing the location of the proposed well or wells and supplemental information, and perform an inspection of the premises on which the well is to be constructed to determine if the location, which must be staked by the applicant, conforms to the standards hereof. The inspection shall be conducted by the Township in accordance with the provisions of the Ordinance and the provisions of any and all other relevant ordinances of the Township. If an emergency situation occurs where supply of water to residents, and wells would affect health and safety, effort will be made to act immediately. Upon completion of the inspection, the Township shall either:

A. Issue a permit to the applicant indicating the approved location for the well and special instructions for construction, if any.

B. Deny the said permit, and, in such event, shall provide the applicant with written reasons for such refusal.

If the location of any proposed well is altered, notification of the re-location shall be submitted to the Township for review.

6. Permit Approval.

A. The Township shall examine the completed application with all supporting documents, complete the site inspection, if a site inspection is required, and approve or disapprove the application, in writing, within thirty (30) calendar days from the receipt of the application.

Where the capacity of any new well or wells, or the total capacity of old and new wells on or for use on one property is in excess of two thousand (2,000) gpd, or where close spacing of wells in an area causes hydraulic interference, that in taking action on the application, the Board shall have the authority to impose such conditions and make such requirements and limitations as may in their opinion be both reasonable and necessary to protect the health and safety of people.

B.

Township well permits shall be valid for three years from the date of issuance. If they are not used within that time they need to reapply.

7. Need for Hydrogeological Analysis

For each project containing proposed production wells, where one of the following occurs, a local hydrogeological analysis, shall be submitted to the Township prior to approval:

A. A subdivision (major or minor) or land development (small or large)

B. Greater than four thousand (4,000) gpd proposed cumulative withdrawal, or

The proposed development need only perform an initial hydrogeological analysis without actual pump testing if by using recharge and current withdrawals in a water budget, it shows that the proposed withdrawal will not exceed 50% of the water available to the property (based on acreage of the proposed subdivision) during a 50-year drought. The sources of information may include but are not restricted to the UMBT Groundwater Availability Study dated 4/21/11, USGS records, DRBC records and DEP records which are analyzed by a licensed Hydrogeologist. If the above condition is met, completion of a development wide aquifer test will not be required. Demand and recovery testing of each residential well proposed is still required in the same manner as specified for Class I applicants.

Otherwise, for each project the hydrogeological analysis shall include but not be limited to, a pump and aquifer test, those items listed in this ordinance as being required to be provided (i.e. the items listed in above Section C.4), water quality analysis, a recommendation concerning the ability of well(s) to provide the water required for its intended use along with any potential off-site impacts, copies of all data generated during the analysis, a plot plan showing the location of the well(s) as drilled and any additional information requested by the Township. The analysis shall provide a hydrogeologically quantified estimate of the maximum aquifer depletion caused by the proposed wells after a period of one year and five years. The analysis shall include values for the maximum cumulative pumping rates for all wells in the subdivision and water budget estimates for precipitation, evapotranspiration, and recharge or baseflow. The analysis shall include an estimate of the effects of pumping on local ground-water level and stream baseflow during a fifty (50) year drought event. This analysis must be performed by a certified licensed geologist knowledgeable of groundwater hydrologic analysis and licensed to work in Pennsylvania. (ATTACHMENT A: DEVELOPMENT WIDE AQUIFER TESTING PROCEDURES)

For DRBC-regulated withdrawals, the DRBC requires a long-term monitoring program be established to obtain data on groundwater and surface water hydraulic conditions in the project area, and that a report be submitted annually by a hydrogeologist that assesses the effects of well withdrawals on hydrogeologic conditions. The Township shall be copied on all such reports when they are submitted to the DRBC.

8. Quality Analysis

The hydrogeologic analysis, where triggered above in Paragraph C.7, shall include a quality analysis. Class I and Class II applicants need to perform the biological analysis, while Class III must perform Physical, Chemical and Biological Analyses as delineated in D.1.F.

9. Methodology

The standards for conducting the above-mentioned studies shall be those adopted from time to time by the Board of Supervisors based on the most up to date standards of PA DEP, engineering, geological or hydrogeological standards. The initial standards are attached hereto as Attachment B – PA DCNR Well Completion Report (or WebDriller) and Attachment C – Water Analysis Report and shall be changed by the Board of Supervisors by resolution from time to time. The applicant may employ an equivalent or better analytical methodology, as may be accepted by the Board as such, upon the advice of the Township engineer, and associated other applicable professional review, upon request of the applicant documenting the proposed methodology.

10. Changes in Methodology

The assumptions to be utilized in the analysis shall be set forth by the Board of Supervisors from time to time and in the absence thereof, by accepted or demonstrated professional standards. The applicant may utilize other assumptions than those set forth by the Board, if any, if the applicant establishes it to the Board, upon the advice of the Township Engineer, and other applicable professional, that different assumptions are warranted.

11. Report and Registration.

All well drillers, upon completion of the drilling of any well, shall file the Pa DCNR Water Well Completion Report. The sample report is attached to this Ordinance as Attachment A. This report should be filed with the Township within 45 days.

12. Emergency Permits.

Emergency permits may be issued for the correction of problems to an existing well that cause disruption of the availability of potable water. Any property owner requiring such an emergency permit shall notify the Township of such water loss. The Township shall immediately issue an emergency permit upon confirmation of such an emergency. The emergency permit shall be effective for thirty (30) days after which the regular permit must be obtained. However, application for an emergency permit shall be at the Applicant's own risk as there is no guarantee that a regular permit will be issued unless and until there is compliance with the ordinance.

13. Minimum Water Yields.

A. A water system which does not provide an adequate supply of water for the proposed use, considering both quality and quantity, adversely affects nearby wells or streams, or does not provide for adequate groundwater recharge, shall not be approved by the Township.

B. The adequacy of the water supply shall be determined as follows:

1. All wells should generally have a minimum yield of three (3) gallons per minute.

2. Applicants of all classes of a regulated well must determine the yield in GPM and depth to static groundwater level. This may be done by commonly used procedures for developing private wells which entails blowing and flushing for yield estimates and groundwater level at 24 hours.

3. All applicants of all classes proposing the installation of a regulated well must perform and satisfactorily complete the following two-part certification pump test.

Pump Test Requirements

Purpose: the purpose of the two-part pumping test is to determine if the underlying aquifer provides sufficient yield for the proposed water usage needs. The developer or developer's contractor must conduct the pumping test.

Test: the required pumping test consists of two consecutive parts. The second part must be performed immediately upon completion of the first part.

The first portion of the pump test is the Peak Demand Test and it measures the ability of the well to meet the predicted water demand of a household during the twice-daily peak use periods, or the estimated peak usage for nonresidential uses. The use of water storage in the system to meet peak demand requirements is permitted. The well casing may be considered as part of the storage potential of the system.

The second part of the pump test is the Recovery Test, and it measures the aquifer's ability to recover from pumping and allows for an evaluation of the potential to mine water or dewater fractures.

a. Perform peak demand pumping test:

Measure static water level in the well prior to the initiation of pumping; pump at peak demand rate for peak time and measure the water level in the well at the completion of the test. To pass the test, the well must be able to supply water at the peak demand rate for the peak time. Only the Peak Demand Pumping Test is required for Class I & II wells.

b. Recovery Test:

Upon completion of the peak demand pumping test, the pump shall be shut off and water level recovery must be measured. All pumping equipment must have sufficient check valves to prevent backflow into the well from the water in the piping once the pump is shut down. If water drains back into the well from the piping, the test will be deemed to have failed, and all three steps of the test must be repeated. Water level recovery in the well must be measured once per minute for the first two (2) minutes, then once per two (2) minutes for the next twenty (20) minutes, then once per five (5) minutes for the next thirty (30) minutes, then once per ten (10) minutes until the water level has recovered at least ninety (90) percent of the total drawdown as determined by subtracting from the final depth to water level measurement made at the end of the peak demand test the static level prior to the start of the peak-demand test.

c. Flushing and testing.

The well shall be flushed at a rate at least equal to 200 percent of the expected pump capacity for a minimum of two (2) hours, or until the water discharging is clear and free from sand. During the flushing operation the amount of drawdown and stability of the yield shall be determined.

4. Class III Applicant Aquifer Test: All Class III Applicants and those where withdrawals shall exceed four thousand (4000) gpd, must perform the two part pumping test listed above in Subsection 13.B.1and 13.B.2.

of this section for individual production wells and must also perform a development-wide aquifer test as follows:

a. Procedure

1. Purpose: the purpose of the development-wide aquifer test is to collect the data necessary to determine aquifer characteristics and evaluate the effects of the water use on groundwater and surface-water resources, other users of these resources, and other natural resources on and off the site. This may be deemed unnecessary if a hydrogeologist has evaluated the project for C.7. Need for Hydrogeologist and Analysis.

2. Plan: Class III Applicants must submit a work plan for the aquifer test to Upper Mount Bethel Township and written approval must be granted prior to the initiation of the test. The plan must designate the location of the test well(s) proposed for building lots or structures. The Applicant shall provide at least forty-eight (48) hours' notice prior to commencement of the development wide aquifer test to Upper Mount Bethel Township. The work plan shall include estimates of initiation and completion dates of the tests.

3..Required Information: The pumping test must be conducted by a well driller licensed to do business in the Commonwealth of Pennsylvania and registered to do business in UMBT under the guidance of a professional engineer, or professional geologist, licensed to do business within the Commonwealth of Pennsylvania, who are qualified to perform work of a Hydrogeological nature, who shall supply the following information (work plan) at least forty-five (45) calendar days prior to the pumping test to allow adequate time for Township review.
Attachment A contains the Development Wide detailed Procedures for characterizing the aquifer.

b. Additional Requirements. After successful completion of this development-wide aquifer test at twice the anticipated demand, the individual production wells, when drilled, need to be tested by the 2-Part pumping test of Sections C.13.B.1, C.13.B.2 and C.13.B.3. above, prior to plan recordation.

D. Well Utilization Permit

Following the approval of the well drilling permit and the drilling of the well, testing is required for each well to receive a well utilization permit. A well utilization permit is not needed for monitoring or observation well. The following test requirements apply as well as other requirements as referenced.

1. Water Quality Analysis.

A. Each applicant applying for a permit pertaining to a regulated well shall perform a water quality analysis. The groundwater quality analyses shall be conducted on a pumped water sample collected just prior to the completion of the pump test as described in this Ordinance.

B. The analysis shall contain the interpolated (for the site) values, range of values, and drinking water standard values as set forth in the Federal Safe Drinking Water Act. All laboratory analyses shall be performed by a PA DEP certified laboratory and shall be included in this study.

C. The analysis shall contain any available water quality data that is obtained from nearby adjacent groundwater sources including data collected/from PA DEP, United States Geologic Survey (USGS), State Water Plan, well drillers, Upper Mount Bethel Township, or from other studies performed for other developments with the Township or within 1 mile of the perimeter of the site, where the proposed withdrawal exceeds four thousand (4,000) gpd.

D. The analysis shall indicate the location and design of all on-site sewage disposal systems, on the subject property, and on adjacent properties where the proposed well withdrawal will exceed four thousand (4,000) gpd.

E. Class I and II Applicants need to only analyze the water for the Bacteriological Characteristics listed in Section D.1.F.3, except if the proposed withdrawal is to exceed four thousand (4,000) GPD. For Class III Applicants and where withdrawals shall exceed four thousand (4,000) GPD, the analysis shall include a groundwater quality analysis for the full list of Characteristics including Physical, Chemical and Bacteriological as shown in Sections D.1.F.1, F.2, and F.3. The analysis shall also include an estimate of the nitrate nitrogen concentration in the ground water beneath the subject property and downgradient property boundaries. Public Water System Wells must test water according to the Maximum Contaminant Level (MCL) standards for drinking water.

F. The quality of the water produced by the well shall be tested as set forth in subsection A. and B. of this section to determine compliance with the following maximum contaminant limits (as amended and/or updated by the Commonwealth or Federal standards) by a Water Quality Laboratory certified by the Department of Environmental Protection of the Commonwealth of Pennsylvania:

1. Physical Characteristics
   Turbidity.....5 NTU units
   Color.....15 Color units
   pH.....6.5 – 8.5

2. Chemical Characteristics

Arsenic	0.010 milligrams/L (ppm) (As + 3 plus As + 5)
Chloride	250 mg/L (ppm)
Nitrogen (Nitrate + Nitrite)	10 mg/L (ppm) as N
Iron	0.3 mg/L (ppm)
Manganese	0.05 mg/L (ppm)
Copper	1 mg/L (ppm)
Hardness	250 mg/L (ppm) as $CaCO_3$
Total Dissolved Solids	500 mg/L (ppm)
Lead	0.005 milligrams/L (ppm)

3. Bacteriological Characteristics

Fecal Coliform	0 colonies per ml
Total Coliform	Preferably 0 counts per ml

No building permit will be issued for any lot unless the water quality of the well meets these standards or unless the plans for the building include detailed plans for a treatment system which is certified by a professional in the field of water treatment to bring the water into compliance with these standards.

4. In addition, the applicant for a building permit must agree that in the event the water is not in compliance with the aforementioned standards, that he will give the purchasers of the property (if different than the applicant) a copy of the water certification specifying each contaminant which does not comply with the standards and a written description (including plans) of the system which could be installed to bring the water quality into compliance together with instructions as to how the system must be maintained. This section applies to the transfer for which the building permit applies.

2. Groundwater Impact

An analysis of the impact of on-site sewage system discharge to ground water is required by the PA DEP and the Township if the well cumulative withdrawal is proposed to exceed four thousand (4,000) GPD. The Applicant must report in the DEP Planning Module the impact on ground water nitrate levels using the mass balance method utilizing effluent volume and nitrate concentration assumptions, ground water recharge volumes based on local geology, recharge nitrate concentration based on local groundwater testing, and a target nitrate nitrogen concentration of ten 10 mg/L.

3. Issuance of a Well Utilization Permit.

A. Well Location Database. On or before thirty calendar thirty (30) days after completion of the well, the person or entity constructing the well shall submit a copy of the PA DCNR Water Well Completion Report (Attachment B) to the Township and such person or entity, pursuant to 18PA.CSA Section 4904 relating to unsworn falsification to authorities, shall certify that the constructed well conforms to the standards and requirements of the UMBT Ordinance. *In Lieu of the DCNR Water Well Completion Report, the Well Driller must fill out the required completion report for the Bureau of Geological Survey on WebDriller.*

All applicants or their well driller must file with the Township, the Water Well Completion Report (Attachment B) which details the well location using USGS coordinates gathered from a GPS system to within three feet accuracy, and water quality shall be reported on the Water Analysis Report (Attachment C). Additional hydrogeologic information gathered from the studies performed for the major subdivisions in question will also be required. The Township will keep these electronic files and share them with PA DEP and USGS

B. Fees. The applicant shall reimburse the Township for all reasonable and necessary administrative and professional expenses, including but not limited to engineering, legal, and other consultant fees. Prior to the filing of a well utilization permit application, the Applicant shall pay to the Township the appropriate non-refundable filing fee and an escrow deposit to defray the professional expenses incurred by the Township in accordance

with the fee schedule adopted by the Township Board of Supervisors. Thereafter, as the escrow deposit for expenses is depleted, the applicant shall make further deposits upon written notice from the Township until approval of the well utilization permit. Upon approval of the well utilization permit, the Township shall forthwith refund to the applicant any uncommitted portion of the deposit remaining after expenses incurred by the Township have been paid in full by the applicant.

C. Issuance of Permit. Upon payment of all required fees, the satisfactory completion of all testing requirements in this Part and meeting all requirements of this (along with securing of all related approvals for the well and its construction, including, but not limited to, PA DEP, and DRBC permits); the Township Official shall conduct a final inspection of the well to determine whether there has been compliance with this Ordinance. Upon completion of the inspection, the Township Official shall either issue the well utilization permit or deny the well utilization permit and provide written reasons for the denial.

4. Life of a Permit.

All well utilization permits issued by Upper Mount Bethel Township shall be in effect as of the date of issuance and shall remain in effect for a period of three (3) years. In the event that the well has not been put in service under the permit within three (3) years from the date of issuance, the permit shall expire, the validity of the permit shall cease and terminate, and all fees paid will be forfeited, unless an extension is granted by the Board of Supervisors.

E. Well Construction Requirements

1. Construction Standards –

A. The following well construction standards are required:

(1) No person shall construct or install any well on any lot on which a structure, which will be supported by such systems, is to be constructed, unless the owner or applicant has first obtained a well drilling permit pursuant to the provision in Section C, above.

(2) All wells should be of the drilled type, cased and grout sealed into the bedrock except where the well driller and the Township official determine sealing into bedrock is not feasible. However, it is commonly considered prudent to drill wells into bedrock. Some Drillers still use a pounder method of drilling, and it is acceptable. Well casing and grouting should use BMPs suitable for the existing rock and overburden.

(3) Any drilling fluid or construction material shall comply with the requirements of the Safe Drinking Water Act and other Federal and State requirements.

(4) Prior to the issuance of a well utilization permit and upon completion of the installation of any well, the Applicant for the premises upon which the well has been installed shall certify potability of water from the well, at a specified rate of flow, and depth to water. This certification shall be obtained from a licensed testing lab authorized to do business in Pennsylvania and in good standing with PA DEP. Alternatively, if the water is not certified as being potable, the owner must be notified in writing that the water does not meet UMBT standards (see section D.1.F. Water Quality Analysis, of this Ordinance).

(5) Prior to the issuance of a well utilization permit, the owner of the premises shall provide a copy of the Water Analysis Report (Attachment B) as described in D.1. Water Quality Analysis, of this Ordinance.

(6) Well Depth – All wells shall be drilled to a minimum depth of one hundred (100) feet or to a greater depth to provide adequate drawdown to satisfy the two-part pumping test stated in above, except where deemed unnecessary by the well driller and the Well Enforcement Officer.

(7) Location

a. Every well shall be located in keeping with the following principles: except that replacement wells which will serve existing uses may be located where most appropriate based on topography and property size:

i. At a point in the premises consistent with geology, soils and general layout of surroundings, but in any case, protected against surface wash and ponding; as far removed from any known or probable source of contamination as the general layout of the premises and the surroundings permit.

ii. At a distance of at least one hundred (100) feet from all septic
system absorption areas, even those absorption areas that are situate on adjoining lots, whether those lots are owned by the Applicant or others. Exceptions may be allowed by the Township Board of Supervisors if the Sewage Enforcement Officer certifies that the one hundred (100) feet distance is impractical to meet and the Applicant agrees to enter into a Release, Indemnification and Hold Harmless Agreement with the Township, where such agreement is prepared by and approved by the Township Solicitor.

iii. Not located along a fracture or set of fractures intersecting the septic system or any other potential sources of pollutants. (This determination is not necessary except where proposed well water withdrawal exceeds four thousand (4,000) gpd.)

iv. Not within the setbacks as provided in the Upper Mount Bethel Township Zoning Ordinance, and at least twenty-five (25) feet from a public road ultimate right-of-way and ten (10) feet from a property line.

v. Not located within an easement affecting the said premises, without a variance from the UMBT Board of Supervisors.

vi. If located within any floodplain identified by Federal Emergency Management Agency (FEMA) mapping and/or site-specific setbacks, protection of the well from flooding must be provided. "Protection" shall mean written proof by a licensed engineer or hydrogeologist of the well's structural integrity in the event of flooding and compliance with water quality standards of this ordinance.

vii. Not located within any riparian corridor, being measured seventy-five (75) feet from top of watercourse bank.

viii. Produce acceptable water production and quality based on best hydrogeological science as per the opinion of the well driller or a hydrogeologist.

b. Minimum distances between wells and sources of contamination shall be in accordance with requirements of the PA DEP and Upper Mount Bethel Township.

c. With respect to buildings, the location of a well shall be made as follows:

i. When a well is located adjacent to a building, it shall be located so that the centerline of the well extended vertically will clear any projection from the building by not less than two (2) feet.

ii. Every well shall be located so that it will be reasonably accessible with proper equipment for cleaning, treatment, repair, test inspection and such other attention as may be necessary.

iii. No well shall be located so that the top thereof will be within the basement neither of any building nor under a building having no basement.

2. **Well Casings** – All wells shall be cased for a minimum of ten (10) feet into bedrock or a minimum of fifty (50) feet from land surface, whichever is deeper except where the well is not extended into rock. All casings shall be provided with a pitless adapter and a sanitary seal. All casings shall be cemented in place to form a seal between the casing and the bedrock. All casings shall be raised above final grade; a minimum of eighteen (18) inches when a pitless adapter is utilized. The land adjacent to the well shall be graded to provide drainage of surface water away from the well.

3. **Well Casing Pipe** – The minimum standard of quality for well casing pipe shall be new, steel or wrought iron equivalent to American Standard Schedule 40 pipe six (6)-inch in diameter or greater. See Table 1. Well Casing Standards. If PVC material is used, it must meet American National Standards Institute (ANSI)/American Water Works Association (AWWA) A100-06 Standards for Water Wells.

4. **Connections and Joints** – All connections to a well casing shall be correctly mated threaded pipe fittings, welded connections, sanitary well seals or other approved connections.

5. **Driving or Installation of Pipe** – Well casing pipe shall be driven and installed so that no injury affecting the safety of the water supply results. A drive shoe must be welded to the bottom of the casing.

6. **Screened Wells**- Wells completed in unconsolidated or unstable materials shall be furnished with wire-wrapped or slotted pipe screen to support the borehole, with suitably sized openings in the water bearing zones to prevent fine gravel, sand, and silt from entering the well.

7. **Watertight Caps or Plugs** – Upon completion of drilling, the well will be equipped with a suitable watertight cap or plug to protect the well from tampering and the entrance of foreign matter or vermin.

8. **Preparation for Deepening** – In the preparation for deepening, any sediment or debris in the bottom of the well shall be removed. The bottom shall be disinfected by distributing a chlorine solution over the bottom or adding such solution to water in the well. A concentration of fifty (50) part per million of chlorine should be attained for disinfection.

9. **Alignment** – The centerline of a drilled or bored well shall not be out of plumb more than twelve (12) inches per one hundred (100) feet of depth.

10. **Caving Protection** – When caving or sloughing formations that would interfere with the proper functioning of a well or the pumping equipment are encountered, the entrance of foreign material shall be prevented by means of liner pipe, cementing or other approved methods.

11. **Grout** – The cased section of the well must have a two (2) inch annulus for grout for gravity grouting or a minimum one and one-half (1 ½) inch annulus for pressure grouting.

12. **Sealing** – Upon completing construction or reconstruction operations, the constructor of the well shall secure the top of the well with a watertight cap after testing and sampling procedures are completed.

13. **Blasting** – No person shall engage in the use of explosives for increasing or recovering the yield of any well.

14. **Increasing Well Yields** – No person shall engage in the use of technology such as hydrofracturing or similar means to increase the yield of any well without first giving notice of such to the Township, and without first having obtained any required license from the PA DEP and a Zoning Permit from the Township.

15. **Disinfection** – The well shall be disinfected by distributing a chlorine solution over the bottom or adding such solution to water in the well before it is put into

production. A concentration of at least fifty (50) mg/L (part per million) of chlorine should be maintained for at least 12 hours for disinfection.

F. Sealing and Abandonment

1. APPLICABILITY

All wells no longer proposed for use shall be sealed upon abandonment. Sealing and abandonment shall comply with the requirements of the PA DEP "Water Well Abandonment Procedure, Chapter 7," or shall follow the procedure outlined below, whichever is more stringent.

Wells that are unused and declared a health hazard and safety risk to residents by the Township Official shall be considered abandoned and shall be sealed.

2. NOTIFICATION

Upon deciding to abandon a well, the owner shall notify the Township in writing of this decision a minimum of ten (10) days prior to abandonment and sealing of any well.

3. WELL ABANDONMENT PROCEDURE

Unless the Township desires to acquire the well, all wells, test wells, monitoring wells, uncompleted wells, and completed wells that are to be abandoned shall be effectively sealed in accordance with the following procedures. The guide to be followed in the sealing of abandoned wells is the restoration, as far as feasible, of the controlling geographical conditions that existed prior to the well being drilled or constructed.

a. The "Water Well Abandonment Procedure, Chapter 7" as published by the PA DEP (Groundwater Monitoring Guidance Manual, DEP, December 1, 2001) or as revised, shall be followed for all well abandonment.

b. Any and all equipment present in the well shall be removed.

c. The well shall be probed for depth and the presence of any obstruction which could interfere with the sealing operation. Prior to sealing the well, measurements shall be taken to obtain the static water level.

d. If possible, the casing shall be pulled from the well to ensure placement of an effective seal. Otherwise, the casing shall be perforated and cut to approximately two (2) feet below the surface of the ground to ensure proper sealing.

e. The borehole shall be filled with cement grout or bentonite. The grout material shall be placed starting at the bottom of the well and moving slowly upward by such methods that will assure the integrity of the sealing material.

f. Accurate record of the entire abandonment and sealing procedure shall be kept to demonstrate that the well has been properly sealed. The person or entity that actually sealed the well shall submit a written report to the Township containing this record. This report shall indicate the location of the well, depth of the well, ground elevation at the well, the static water level, the depth of each layer of all sealing and backfilling materials, and amount of material used to seal the well.

g. Hand dug wells shall be filled with neat cement to within 3 feet of the existing grade and topped with compacted clean soil. All of the other abandonment procedures shall be followed.

G. Water Conservation

All residents shall comply with any and all restrictions as may be imposed by Northampton County or State drought emergency.

H. Enforcement.

1. Any person who violates or permits a violation of the Ordinance shall, upon conviction in a summary proceeding brought before a District Justice under the Commonwealth of Pennsylvania Rules of Criminal Procedures, be guilty of a summary offense and shall be punishable by a fine of not more than $1,000, plus costs of prosecution. In default of payment thereof, the defendant may be sentenced to imprisonment for a term not exceeding thirty (30) days. Each day or portion thereof that such violation continues or is permitted to continue shall constitute a separate offense, and each section of this article that is violated shall also constitute a separate offense.

2. In case any well is, or is proposed to be, drilled, constructed, reconstructed, altered, converted, repaired, maintained or used in violation of this Ordinance, the Township, in addition to other remedies, may institute any appropriate action or proceeding to enjoin, prevent, restrain, correct or abate the use of said well, or to prevent any act, conduct, business or use constituting a violation.

3. The Township shall designate a Well Enforcement Officer in charge of permitting, permit administration, and ordinance enforcement.

4. Duties of the Well Enforcement Officer will include, but not limited to the following tasks:

a. Review Site Plan
b. Inspect the proposed Well location to see that standards are met
c. Compare the Plan with other relevant Township Ordinances
d. Issue or deny permit for Well drilling and utilization
e. Verify that DCNR Well Completion Report is filed

f. Where appropriate, assure that a licensed hydrogeologist has reviewed the hydrology of the site to assure that adequate groundwater is available

g. Oversee development-wide Aquifer Testing Procedures

h. Ensure that Well construction standards are met

i. Ensure that Township records for water wells are current, and they coordinate with PAGWIS System.

I. Severability

If any provision of this ordinance is invalid for any reason, including preemption by State or Federal law, the remaining provisions of this ordinance shall nevertheless apply

J. Municipality Liability

The Township Board of Supervisors and/or its servants, agents, officers, officials, boards, committees, employees or representatives shall not, under any circumstances, be liable or responsible for damages (whether property, injury or death) caused to or suffered by any person or entity by reason of the provisions of this ordinance or by reason of the conduct of any well drilling and/or any well testing activity in compliance (or non-compliance) with the terms, conditions and provisions hereof. Moreover, compliance with this ordinance shall not constitute a representation, guarantee or consent of any kind by the Township (and/or any of its servants, agents, officers, officials, boards, committees, employees or representatives) of the practicality, safety or fitness of any particular purpose of any kind regarding the quantity or quality of any water well.

This Ordinance shall become effective on _____, 2025, five days after it is enacted by the Upper Mount Bethel Township Board of Supervisors.

ENACTED AND ORDAINED this 24th day of March, 2025, by the Upper Mount Bethel Township Board of Supervisors.

ATTEST

UPPER MOUNT BETHEL TOWNSHIP
BOARD OF SUPERVISORS

Cori Eckman

Secretary

Chairperson

APPENDICES

TABLE 1, WELL CASING STANDARDS

Nominal Size (in.)	Outside Diameter	Wall Thickness	Plain End Weight (lbs/ft)	American Standard Schedule
6	6.625	0.28	18.97	40
8	8.625	0.277	24.7	30
10	10.75	0.307	34.24	30
12	12.75	0.33	43.77	30

ATTACHMENT A: DEVELOPMENT WIDE AQUIFER TESTING PROCEDURES

A. Plan

(1.) Characterize the underlying geologic formation with available information, including literature, field observations and well logs to obtain the following:

a. Aquifer thickness;
b. Thickness of overburden;
c. Known hydraulic conditions of the aquifer such as confined, semi-confined or water-table;
d. Depth to the water table or potentiometric surface;
e. Known permeable and semi-permeable zones;
f. Orientations of joints, fractures, and bedding planes;
g. Recharge areas;
h. Anticipated values of well yield, hydraulic conductivity, transmissivity and storage coefficient;
i. Estimated ground-water flow directions;
j. Locations of off-site potable wells within a 2,500 feet radius of the new production well or wells.
k. Locations of streams, ponds, and other surface water bodies within a 2,500 feet radius of the new production well or wells.

(2.) Location(s) of the test well(s) and monitoring well network.

(3.) Notify adjacent property owners (within 1,000 feet of the property boundary) by certified mail of the anticipated pump test at least forty-five (45) days prior to the anticipated pump test and provide copies of said notification to the Township. The notification radius should be extended if the zone of influence (ZOI) is anticipated to extend beyond 1,000 feet.

(4.) Design an appropriate pumping test using best professional judgment. The pumping rate must be sufficient to supply water to meet twice the total daily water demand (or a flow which takes into account in system storage) for all the dwellings, structures and/or uses proposed in the development. If one well cannot yield sufficient water to meet the peak-day demand, then additional wells must also be tested. If additional wells are required, all additional wells to be pumped for the subsequent test shall be pumped at the same time. However, the subsequent test may not begin until static water in the well originally pumped has recovered to the initial static water level. The pumping portion of the test shall last for 72 hours. Data shall be collected following an interval equal to the time period of the pumping. Water level measurements must be collected following a logarithmic time scale during the background phase with a maximum time interval between measurements of 60 minutes and logarithmic time schedule during the pumping and recovery phases with a maximum time interval between measurements of 10 minutes. If more than one Well is used, the system must meet the peak demand with the most productive Well out of service. This may be done through additional wells or system storage.

(5.) Provide a sketch plan with pertinent hydrogeologic features of the proposed development as per Section C.7.

B. Test Procedures

(1) Township approval of the work plan must be received prior to conducting the aquifer test. The aquifer test(s) must be conducted in three (3) phases with water levels measured during each phase. The first phase is prior to pumping and is referenced as the background phase. Water level measurements made during the background phase will be used to evaluate antecedent trends and possible interference between wells located on-site and off-site. The second phase will be the pumping phase when one well is pumped at the rate equal to a minimum of twice the daily demand (or a flow which takes into account in system storage) and water levels are measured in the pumping well and all observation wells. The third phase of the aquifer test will be the recovery phase, during which water levels are measured after the pump has been shut down to evaluate the ability of the aquifer to recover from the pumping stresses. The data must be sufficient to show the long-term response to pumping. The duration of the recovery phase must be at least equal to the duration of the pumping phase and water level measurements must be collected using the same schedule that was used in the pumping phase. The applicant shall obtain a written interpretation of the aquifer yield test by a hydrogeologist.

(2) A minimum of two (2) observation wells must be installed for or used in the test. An additional well is required for each ten (10) additional houses beyond the five (5) houses which trigger a major subdivision. Existing wells may be used with approval from Upper Mount Bethel Township. If an existing well is within one thousand (1,000) feet of the property line, it is appropriate to be used as one (1) of the observation wells. If no existing wells are available for monitoring and observation, wells must be drilled. One (1) observation well should be drilled along strike, and another well drilled perpendicular to the strike of the production well being tested.

(3) Observation Wells:

a. Locks shall be installed on the top of all casing of observation wells.
b. The observation wells may coincide with locations for future potable wells and after completion of the test, be converted to potable wells.
c. A work plan must be submitted to the Township for monitoring/estimating the impact of the new well(s) on existing wells within one thousand (1,000) feet of the outside boundaries of the property to be developed. Said property owners shall be notified by certified mail of the monitoring plans.
d. Applicants shall monitor all wells within one thousand (1,000) feet of the outside boundaries of the property to be developed when requested to do so by property owners.
e. The applicant must provide a list of all property owners notified of the aquifer test and a list of all property owners requesting monitoring of water levels within their wells.
f. All digital logger data will be collected directly from loggers at the conclusion of the test jointly by the applicant's agent and an agent of Upper Mount Bethel Township.
g. All costs related to installation and monitoring all observations wells are the responsibility of the applicant.

(4) If there are any wetlands or streams on the site, the Township may require monitoring of water levels within or immediately below these natural resources through the use of weirs, stream gauges and/or shallow piezometers. The applicant must provide a map depicting streams and wetlands on the site with the aquifer test work plan and must provide a recommended plan for monitoring water levels beneath these resources within the work plan for Township review prior to implementing any phase of the aquifer test.

(5) To determine ambient conditions, water-level measurements must be collected from the pumping well(s) and observation wells for a period of at least seventy-two (72) hours during the background phase. Water level measurements should be recorded every ten minutes.

(6) During the pumping and recovery phase, water levels must be measured in the pumping well and all observation wells following a logarithmic time schedule with a minimum time interval of less than one minute at the beginning of these phases to a maximum time interval of ten (10) minutes. The frequency of measurements must be provided in the aquifer test work plan submitted to the Township for review and approval.

(7) Water from the pumping well must be discharged to an area away from the pumping well and observation wells, preferably an off-site downgradient location that will not impact the results of the test. Once the pumping rate is established within the first few minutes of the pumping phase, it must not fluctuate more than ten (10) percent. At a minimum, the pumping rate must be recorded hourly during the test and the total volume pumped each day and at the conclusion of the test must also be recorded. These pumping rates and total volumes must be submitted with the hydrogeologic report to the Township. If the pumping rate varied more than ten (10) percent from the average rate as determined by dividing the total volume pumped by the total number of minutes for the pumping phase, the test will be deemed invalid, and the applicant will be required to repeat the test in its entirety.

(8) Well casings and ground surface elevations for the pumping well and observation wells shall be surveyed to a common datum.

(9) The location of all Wells participating in the aquifer test will be recorded by latitude/longitude coordinates (NAD 83) together with USGS Da-tum elevation of the well head casing. The horizontal location of the well should be accurate within ± ten (10) feet and the elevation above the USGS Datum to within one (1) foot. A full well driller's report including reporting on the rock strata depths, yield rates by depth and total yield will be required. A driller's report is required for each of the applicant's test and observation wells.

(10) When constructed, the test and observation wells will be, at a minimum, drilled to the same base reference elevation above sea level "bottom of the well". However, an effort should be made to drill all wells to intersect the same strata beneath the site based on the geologic strike and dip of the formations. This will help to prevent measuring the static water levels from an aquifer different from the test aquifer.

(11) A DCNR Water Well Completion Report shall be provided for all wells located on all properties within one thousand (1,000) feet from the outside boundaries of the proposed development property. Said report shall include the total well depth, yield characteristics, and history. Where such information is not available, documentation to that effect shall be provided.

(12) The work plan shall identify all abutting property owners (within one thousand (1,000) feet of the outside boundaries of the proposed developments)

so that they can be offered Well data loggers to participate in monitoring of their well levels, where desired.

(13) Sonic, pressure transducer, data logger, or dropline depth measuring devices must be used to determine static water level measurements in active wells. The testing must be conducted in such a manner to assure that the measurement has not been by a depression of the water level from the recent pump withdrawal.

(14) The applicant will submit precipitation data from a rain gauge data logger in increments of 0.1 inches with the date and time recorded for each hour. The test will not be considered valid if there is snow on the ground or there is a major rain event (greater or equal to one-half (1/2) inch within 3 days of the test. (This requirement is to prevent significant changes of the groundwater level due to recharge.)

(15) All data will be reported, at minimum, in its native form as obtained from the data logger in a digital medium.

(16) Non-compliance with any of the above requirements or other applicable regulations of the Ordinance will invalidate the results of an aquifer study.

C. Reporting Requirements:

After completion of this development-wide aquifer test, the applicant shall provide:

(1) A map showing all water withdrawal points, surface-water bodies and wetland within ¼ mile of the outside boundaries of the proposed development;

(2) A scaled site map showing the locations of the pumping well and observation wells, and proposed locations of other wells expected to be installed in the development;

(3) Well logs and well construction specifications included on DCNR Water Well Completion Report;

(4) Field data, including depth to water and discharge rate, the times the measurements were taken, and the methods of obtaining the measurements;

(5) Plots of drawdown versus time for the pumping well(s) and observation wells;

(6) A plot of drawdown versus distance for specific times during the test;

(7) Method of analysis of data (such as Theis, Jacob or other applicable methodologies);

(8) The zone of capture (ZOC) and zone of influence (ZOI) (otherwise known as Cone of Depression) of the pumping well(s);

(9) Analytical results of the test and conclusions;

(10) Analytical results for all water samples:

(11) A report concerning the ability of the well(s) to provide the water required for its intended use along with any potential off-site impacts;

(12) Calculate the potential zone of capture (ZOC) and zone of influence (ZOI) of the pumping well(s). The magnitude of water-level drawdown must be calculated at the edge of the development. A drawdown of less than 3 feet must be apparent at the property boundary during the last hour of the pumping test. For drawdowns that are identified as being between 1 and 3 feet during the last hour of the pumping test, the developer shall prepare an analysis and submit it to the Township that identifies the anticipated future impact of water drawdown. This analysis must identify the anticipated impact the water drawdown will have with respect to an estimated 180-day drought drawdown under built out conditions.

(13) Copies of all data generated during the aquifer test, including the raw digital data, and the analyses of these date; and

(14) Any reasonable additional information requested by the Township that is necessary to assist in the determination to be made.

ATTACHMENT B

PA DCNR WELL COMPLETION REPORT

*The Applicant is placed on notice that this Report Form may be revised by PA DCNR; and, in that event, the latest (or most current) PA DCNR version of the Report Form is to be used.

ATTACHMENT C			
WATER ANALYSIS REPORT			
	Characteristic	**MCL**	**Reported Value**
1	**Physical Characteristics**		
	Turbidity	5 NTU units	
	Color	15 Color units	
	pH	6.5 - 8.5	
2	**Chemical Characteristics**		
	Arsenic	0.010 mg/L (ppm) (As + 3 plus As + 5)	
	Nitrogen (Nitrate + Nitrite)	10 mg/L (ppm) as N	
	Iron	0.3 mg/L (ppm)	
	Manganese	0.05 mg/L (ppm)	
	Copper	1 mg/L (ppm)	
	Hardness	250 mg/L (ppm) as CaCO3	
	Total Dissolved Solids	500 mg/L (ppm)	
	Lead	0.005 mg/L (ppm)	
3	**Bacteriological Characteristics**		
	Fecal Coliform	Absent	
	Total Coliform	Preferably absent	

Attachment D: UMBT Well Drilling Permit Form

Upper Mount Bethel Township
387 Ye Olde Highway
P.O. Box 520
Mt. Bethel, PA 18343

Phone: 570-897-6127 Fax: 570-897-0108

Official use only

Date Rec'd: _____ Rec'd B y: _____

Fee: _____ Cash: _____ Check No: _____

Receipt No: _____

Permit No: _____

Well Drilling Application

Date: _____

Applicant Name: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Phone: _____ Cell Phone: _____ Fax: _____

Property Owner: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Phone: _____ Cell Phone: _____ Fax: _____

Property Tax ID# _____

Property Address: _____

City: _____ State: _____ Zip Code: _____

Well Driller: _____ Contact Person: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Phone: _____ Cell Phone: _____ Fax: _____

Date Work Scheduled to Begin: _____ Date Work Scheduled to be completed: _____

A Plot plan must be submitted with this application.* Plan must include, at a minimum, property boundaries, all existing and proposed structures, sanitary sewage disposal facilities and building setback lines.

*An application for a well reconstruction or re-drilling, which does not alter the existing well location, is not subject to the requirement for a plot plan. However, the well location shall be documented to the satisfaction of the well permitting authority.

Owner's Signature: _____ Date: _____

Attachment E Well Utilization Permit Application

Upper Mount Bethel Township
387 Ye Olde Highway
P.O. Box 520
Mt. Bethel, PA 18343

Phone: 570-897-6127 Fax: 570-897-0108

Well Utilization Permit Application

Date: _____

Applicant Name: _____

Mailing Address: _____

City: _____ *State:* _____ *Zip Code:* _____

Phone: _____ *Cell Phone:* _____ *Fax:* _____

Property Owner: _____

Mailing Address: _____

City: _____ *State:* _____ *Zip Code:* _____

Phone: _____ *Cell Phone:* _____ *Fax:* _____

Property Tax ID# _____

Property Address: _____

City: _____ *State:* _____ *Zip Code:* _____

Well Driller: _____ *Contact Person:* _____

Mailing Address: _____

City: _____ *State:* _____ *Zip Code:* _____

Phone: _____ *Cell Phone:* _____ *Fax:* _____

Owner's Signature: _____ *Date:* _____

Official use only

Date Rec'd: _____ *Rec'd By:* _____

Fee: _____ *Cash:* _____ *Check No:* _____

Receipt No: _____

Permit No: _____

UMBT112311

Upper Mount Bethel Township
387 Ye Olde Highway
Mount Bethel, PA 18343
570-897-6127

Well Utilization Requirements: required to obtain a Well Utilization Permit and Certificate of Occupancy:

1. **Facility Type:_____(residential or commercial)**
2. **Well Type:_____**
3. **Well Drill date:_____**
4. **Completion date:_____**
5. **Well Diameter:_____**
6. **Well Depth:_____**
7. **Latitude:_____ Longitude:_____**
8. **Casting Depth:_____**
9. **Casing material:_____**
10. **GPM:_____**

Copy of CDNR Well Completion Report

UPPER MOUNT BETHEL TOWNSHIP WELL PERMIT & INSPECTION FEES
November 12, 2024

Class 1 Well Application (Up to 1,000 GPD: lot is not part of a subdivision).

Application Review per Section C.4.A.	$ 90.00
Site Inspection per Section C.5.	90.00

Class 2 Well Application (1,001 to 4,000 GPD and or 4 Lot Subdivision).

Application Review per Section C.4.A.	$ 90.00
Plot Plan Review per Section C.4.B. (new well only)	90.00
Site Inspection per Section C.5. (one time)	90.00
Hydrogeological Analysis per Section C.7.	Twp. Eng. Rate

Class 3 Well Application (Greater than 4,000 GPD and or 5 Lot Subdivision).

Application Review per Section C.4.A.	$ 90.00
Plot/Subdivision/ LD Plan Review per Section C.4.C.	90.00
Site Inspection per Section C.5. (one time)	90.00
Hydrogeological Analysis per Section C.7.	Twp. Eng. Rate

Emergency Permits.

Emergency Permit per Section C.12.	$ 150.00