TOWNSHIP OF POLK

MONROE COUNTY, PENNSYLVANIA

ORDINANCE NO. 2023- \_\_\_\_\_

**AN ORDINANCE AMENDING THE POLK TOWNSHIP ZONING ORDINANCE**

**ADDING REGULATIONS PERTAINING TO GROUND SOURCE HEAT PUMPS**

 WHEREAS, the Polk Township Board of Supervisors are authorized pursuant to 53 P.S. §10609 of the Pennsylvania Municipality’s Planning Code to amend the Township Zoning Ordinance; and

WHEREAS, in 2020 the Township of Polk, a Second Class Township situate in Monroe County, Commonwealth of Pennsylvania, adopted a Zoning Ordinance (hereinafter “ZO”) which revised existing Ordinances; and,

 WHEREAS, said Ordinances were adopted pursuant to the Pennsylvania Municipalities Planning Code which provides for periodic amendment of such Ordinances; and

 WHEREAS, the ZO may be amended by the Board of Supervisors in accordance with Section 400-1216 of the Zoning Ordinance; and

WHEREAS, The Board of Supervisors seek to promote the general health, safety and welfare of the community by adopting and implementing this Ordinance providing for the proper installation, construction and operation of ground source heat pumps; and

WHEREAS, the Board of Supervisors desire to amend portions of the Polk Township Zoning Ordinance to set regulations for ground source heat pumps; and

NOW, THEREFORE, be it ENACTED and ORDAINED as follows:

Section 1. Amend Section 400 Attachments 1:1 Schedule of Uses- RR Rural Residential District, 1:2 Schedule of Uses R-1 Residential District, 1:3 Schedule of Uses- R2 Rural/Village Residential District, 1:4 Schedule of Uses- R-3 Village Center District, 1:5 Schedule of Uses- C Commercial District, and 1:6 Schedule of Uses- I Industrial District to add “Ground Source Heat Pumps” to the list of “Accessory Uses”.

Section 2. Add Section 400-507 Ground Source Heat Pumps (GSHP) as follows:

1. Applicability. No person shall install, construct, modify, drill, or excavate to facilitate the construction/installation and modification of a GSHP without first obtaining from the Township a zoning permit.

A permit under the provision of this chapter shall be required prior to any person:

1. Constructing or modifying a GSHP.
2. Drilling or re-drilling any vertical GSHP.
3. Decommissioning or abandoning an existing GSHP.
4. Definitions.

GROUND SOURCE HEAT PUMP (GSHP) - A mechanical/electrical/electronic device, also known as Geothermal Heat Pump or Geoexchange System, which uses the geothermal exchange properties and the relatively constant temperature of earth formations for heating and/or cooling a building space. A GSHP generally includes the heat pump unit, a heat exchanger and a heating/cooling distribution system.

CLOSED-LOOP GSHP - A geothermal heat exchanger that circulates a nontoxic antifreeze heat transfer fluid through a loop or multiple loops of piping installed below the ground surface or within a surface water body.

CLOSED-LOOP, HORIZONTAL - A Closed-Loop GSHP in which the loops of pipe are placed horizontally in subsurface trenches.

CLOSED-LOOP, VERTICAL - A Closed-Loop GSHP in which the loops of pipe are installed vertically within well borings.

OPEN-LOOP GSHP - A geothermal heat exchanger that withdraws groundwater from a supply well, or surface water, passes the water through a heat pump, and discharges the water back to the ground in a return well, to the ground surface, or into surface water.

1. Closed-loop systems. All ground source heat pump systems shall be closed-loop systems. Open-loop GSHP systems shall not be permitted.

GSHP systems shall be designed and constructed in accordance with the International Ground Source Heat Pump Association (hereafter IGSHPA) Installation Standards.

1. Minimum isolation requirements. The perimeter of the GSHP subsurface loops, vertical or horizontal, shall meet the following minimum isolation requirements.

(1) 100 feet from any existing or proposed drinking water wells;

(2) 25 feet from any existing or proposed individual or community on-lot sewage disposal system including any primary or alternate drain field sites;

(3) 25 feet from property lines, rights-of-way; and

(4) 25 feet from existing or proposed structures

1. Subsurface loops. With respect to the subsurface loop of the GSHP systems:
2. The subsurface loop piping for same must be made of polyethylene or a substitute similar material approved for use by the IGSHPA. All joints shall be sealed by heat fusion or IGSHPA certified process;
3. GSHP systems shall be equipped with an automatic shutdown device to prevent circulating fluids or oil leaks from migrating;
4. Visual and audible alarms shall be installed in the building or structure in the event of a system malfunction or leakage;
5. Warning labels shall be prominently posted near the interior mechanical system; and
6. For closed-loop GSHP systems, only water or mixture of water and food-grade propylene glycol may be used as the circulating fluid unless a similarly inert fluid is approved for use by the IGSHPA.
7. Plan requirement. A written plan shall provide for the operation and periodic inspections of the GSHP system proposed by the system designer and approved by the property owner which, among, other matters, provides that:
8. Any GSHP system leaks or released will be reported by the owner to the Township within 2 hours of the discovery of same, and the owner shall covenant and agree to take all necessary appropriate action to minimize any fluid release to the ground and to promptly repair any system leaks; and
9. A system closure plan for use in the event of the discontinuance of the use of the GSHP system.
10. Standards for vertical closed-loop GSHP systems.
11. Vertical closed-loop GSHP systems.
12. GSHP well drilling shall only be undertaken by a Pennsylvania licensed well driller.
13. Well shall be grouted to protect against degradation or contamination of the ground water of intermingling of separate aquifers.
14. Grouting shall be mixed, pumped and placed in accordance with the procedures recommended by the International Ground Source Heat Pump Association. Acceptable grout materials are as follows:
15. High solids bentonite grout with a minimum of 30% solids (not bentonite gel).
16. A material approved for use by the IGSHPA.
17. Grouting shall be placed in the borehole from the bottom to the top. Grouting shall be pumped into place via a tremie pipe.
18. Prior to activation of the system with respect to each vertical GSHP will installation, the Pennsylvania licensed well driller and/or system installer shall provide to the Township Zoning Officer:
19. An accurate written drilling record and a written geologic log; and
20. An accurate record of the grouting used for each such well; and
21. As-build plans and related documentation for each such system and well location; and
22. Written documentation of the GSHP system testing and certification.
23. Wells for closed-loops systems shall not be placed within a Special Flood Hazard Area (floodplain) or within wetlands.
24. Standards for horizontal closed-loop systems.
25. Care shall be taken that no rocks are in contact with piping. In rocky soils, pipe shall be placed in a bed of sand or limestone screenings at the bottom of the trenches.
26. Flowable backfill consisting of water, sand and cement may be used to surround the pipe in the trench.
27. Metallic pipe location tape shall be placed 12 inches below the ground surface to alert future owners and excavators to the presence and location of the system.
28. The depth of the tubing or heat transfer element must be at least 30 inches below the surface of the ground.
29. Loop piping shall be subsurface, placed within the ground. No loop piping shall be placed within surface waters.
30. Loop piping shall not be placed within a Special Flood hazard Area (floodplain) or within wetlands.
31. Inspections.
32. Fees to cover the cost of plan review and inspections shall by set by the Board of Supervisors and included in the Polk Township Fees Schedule, which may be amended from time to time by resolution.
33. Piping shall be flow and pressure tested before vertical borings are sealed or before horizontal trenches are backfilled. The Township Zoning Officer or his or her designee shall observe pressure testing.
34. The Township Zoning Officer, or his or her designee, shall observe grouting of the vertical boreholes of the GSHP wells.
35. GSHP system installer shall contact the Township Zoning Officer, or his or her designee, a minimum of 24 hours in advance to inspect grouting pond piping and to verify pressure testing.

This Ordinance shall be effective immediately.

IN WITNESS WHEREOF, the Polk Township Board of Supervisors hereby ADOPTS this Ordinance this \_\_\_\_\_ day of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, 2023.

 **POLK TOWNSHIP BOARD OF SUPERVISORS**

 By: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Brian K. Ahner, Chairman

 By:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Michael D. Hurley, Vice Chairman

 By: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Carl S. Heckman, Supervisor

ATTEST:

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Rebecca Tippett, Secretary