

## **ARTICLE N. G GEOTHERMAL DEVELOPMENT OVERLAY ZONE**

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**6-3N-1: PURPOSE AND INTENT:**

A. The County Court and the Planning Commission have adopted a resolution stating general public policy surrounding the initiation of geothermal development within this County. This policy is interim in nature in that it calls for the development of a general plan for the total development of the geothermal resource within the County. In addition, this policy provides for the initiation of geothermal development by allowing various agencies, both public and private, to commence their own initial development projects.

B. It is the intent of this policy to encourage exploration and development projects and to increase the store of knowledge surrounding this resource. It is also the intent of this policy that there be coordination of existing and anticipated data so that the end result may be general planning that will provide for the optimum development of the available resource.

C. The Geothermal Overlay Zone covers all land within Malheur County. It does not allow commercial or industrial development of the resource which is not consistent with the primary zone classification.

D. In many areas of the State, the geothermal resources are under study and in one area are already producing energy for heating. Current explorations in most areas are pointed chiefly at the energy field and property so as there is much need for a clean source of energy for the development of electrical power. However, it must not be overlooked that there is a possibility for a new source of potable water and mineral recovery. Additional research is needed in all fields if this geothermal resource is to be developed to its ultimate.

E. The early studies show that much of the geothermal resource in this area lies below the floor of the Malheur and Willow Creek Valley. This Valley is a major agricultural area and its preservation is necessary for the continued economy of the County and to provide food and fibre for the populace.

F. The University of Oregon and other State agencies, several Federal agencies, most prominently the Department of the Interior, and industry are all involved in research and study programs surrounding the development of this geothermal resource. Many industries have stated their desire to continue to explore and begin production of the resource.

G. It is recognized that a general plan providing for total development of the resource is needed but that it cannot be a comprehensive general plan without the input of additional research and data.

It is, therefore, the intent of this policy to allow for the complete development of a series of initial projects in addition to exploratory well drilling and testing. To accomplish this, the following are terms and conditions designed: a) to allow these initial developments; b) to provide for the optimum use of the land; c) to protect the environment; and d) to provide for cooperation in the development of a comprehensive general plan for geothermal development through application of this Overlay Zoning district. (Ord. 86, 12-7-1993)

## **6-3N-2: DEFINITIONS:**

When used in this Article, the following words and terms shall have the meanings ascribed to them in this Section:

**EXPLORATORY GEOTHERMAL WELL:** Includes the right to explore for the test geothermal resource within an area designated by the Planning Commission.

**G-ZONE:** Geothermal Development Zone is a land classification zone overlay permitting additional uses within other zones including geothermal well operation (after obtaining a conditional use permit or other permit applicable to the primary zone).

**GEOTHERMAL PRODUCTION PROJECT:** Includes the right to explore for, test product, process, transport and sell geothermal resources and by-products such as electrical power.

**OPERATOR:** Any person, firm or corporation drilling, maintaining, operating, pumping or in control of any well or related facilities for power generation, mineral extraction, desalination or any other use of geothermal resources.

**PERMIT FOR GEOTHERMAL DEVELOPMENT PROJECT:** A conditional use permit to produce geothermal well or wells in EFU, ERU, EFFU, RSC, M-1 and M-2 Zones.

**PERMIT FOR GEOTHERMAL EXPLORATORY WELL:** A permit allowable in all zones within the County.

**TEST FACILITIES:** Lines, pumps, separators, metering facilities, ponds and sumps used during the testing of an exploratory geothermal well or injection well. (Ord. 86, 12-7-1993)

## **6-3N-3: SCOPE OF TERMS AND CONDITIONS:**

The terms and conditions prescribed shall be for a particular project and will pertain to that project only. Future projects may receive additional and/or different terms and conditions. (Ord. 86, 12-7-1993)

## **6-3N-4: COMPLIANCE REQUIRED:**

- A. **Procedures And Standards:** All applicants will be required to comply with governmental procedures and standards applicable to the particular phase of work.
- B. **Law:** The operator engaged in the drilling, production, maintenance and abandonment of geothermal wells and related facilities including the disposal of waste products shall comply with all applicable local, State and Federal laws and ordinances in effect or subsequently duly enacted.
- C. **General Compliance:** All well drilling, plant construction, testing and operations shall be conducted so as to be in harmony with the area and not conflict with the public health, safety, comfort, convenience and general welfare.
- D. **Commencement Of Work:** Prior to commencing any operation, all governmental conditions and standards applicable to the particular phase of work contemplated shall be complied with.
- E. **Application Reservation:** The Planning Commission reserves the right following rezoning to deny an application for development if it will not be compatible with the area or that, in its findings, some of the terms and conditions are not met satisfactorily. (Ord. 86, 12-7-1993)

## **6-3N-5: PROCEDURES AND PERMITS:**

### **6-3N-5-1: PROPOSAL:**

A definite detailed proposal for a geothermal development project shall be submitted in accordance with the procedures and standards. This proposal shall include geologic and engineering evidence that gives reasonable assurance of success. This information may then serve as the basis for attaching this Geothermal Overlay Zone to the property or portion thereof where development of the resource is proposed. (Ord. 86, 12-7-1993)

### **6-3N-5-2: GEOTHERMAL PRODUCTION PROJECT:**

A. To obtain a geothermal production project permit, an operator must submit the following to the Planning Department for placement upon the Planning Commission agenda:

1. A rezoning application for the Geothermal "G" Overlay Zone if necessary.
  2. A permit application for a geothermal exploratory well or copy of existing permit.
  3. A conditional use permit application for a geothermal production project.
- B. As a part of the application, the operator must submit to the Planning Commission for its approval a definite proposal for total development which includes the following data but is not limited to:
1. Name, location, elevation of well or wells to be drilled.
  2. Name, address and telephone number of the operator's designated agent.
  3. A surface plat of the property to be developed including:
    - a. Surface location sites of the proposed well, including the size and shape of location and access roads;
    - b. North arrow, scale, date and contours of land where the grade exceeds two percent (2%);
    - c. The locations of existing roads, waterways, and cultural features including the present use of the property to be developed, and use of the surrounding property;
    - d. The boundary of the parcel to be explored;

- e. The location of test facilities including complete engineering data concerning any holding pond or reservoir proposed in conjunction with testing and waste discharge requirements; and
  - f. A tentative plan showing the size and location of power generation, mineral extraction, desalination and other surface facilities including their relationship to known active faults.
4. A general geologic and engineering presentation showing enough data to demonstrate that the area contains geothermal resources.
  5. A timetable showing a schedule of projected development.
  6. Proof that the program for well or wells has been approved by the State Division of Oil and Gas and that all test and waste discharge operations have been filed with the Oregon Department of Environmental Quality.
  7. Submit for approval any additional anticipated land use needs such as extra facilities and proposed sites for new industry. (Ord. 86, 12-7-1993)

#### **6-3N-5-3: PUBLIC HEARING:**

Upon receipt of applications and the required secondary information, the County Planning Department will set a public hearing for the Planning Commission, notify appropriate property owners, agencies and individuals of said hearing. Planning Commission will consider testimony of all interested parties and then take appropriate action on the various applications. (Ord. 86, 12-7-1993)

#### **6-3N-5-4: CONDITIONS OF PERMITS; EXPIRATION:**

All permits shall contain terms and conditions. Abandonment of a project for six (6) months shall cause the permit then in effect to expire and to become null and void. (Ord. 86, 12-7-1993)

#### **6-3N-6: BOND AND INSURANCE REQUIREMENTS:**

A. Bond: Each operator of a geothermal production project and/or exploratory geothermal well shall file and furnish with the County an indemnity bond in the sum of fifty thousand dollars (\$50,000.00) for each well drilled or abandoned well re-entered or a blanket bond in the sum of one hundred fifty thousand dollars (\$150,000.00) for any number of wells drilled or re-entered. The bond will indemnify the County for any costs incurred by the County in repairing any drill, test or production facility site, as near as possible to its original state and in abating any public nuisance caused by the principal's exploratory, testing or producing operations. This bond shall be submitted for approval of the County Counsel.

B. Insurance: Before commencing or continuing any geothermal operations, the owner or operator shall show the County Counsel continuing evidence of insurance against liability in tort in a minimum amount of one million dollars (\$1,000,000.00) arising from the production activities or operations incidental thereto conducted or carried on under, or by virtue of any law or ordinance. Such insurance shall be kept in full force and effect during the period of such operations. (Ord. 86, 12-7-1993)

#### **6-3N-7: PREMISES CONDITIONS AND STANDARDS:**

A. Cleanup: Upon completion of any phase of the project, the site shall be cleaned up in accordance with the standards, and insofar as practical, the land returned to its original condition.

B. Waste Disposal: All waste, whether liquid or solid, must be disposed of in compliance with the existing County, State and Federal rules and regulations.

C. Noise And Vibration Suppression: The operation of temporary or permanent equipment and all other operation performed on the premises shall be done in a manner so as to suppress all noise and vibration to an acceptable level.

D. Electronic Interference: No operator shall operate electrical equipment or transmission facilities that will have a detrimental effect on the transmission of radio or television signals.

E. Air Pollution: All operations shall be conducted in compliance with the requirements of the Oregon Department of Environmental Quality.

F. Aesthetic Requirements: All permanent installation and premises including power, steam and/or fluid transmission lines, shall be harmonious in appearance with the area and not of obnoxious, undesirable or unsightly appearance as determined by the Planning Director.

G. Land Use: Site development plan and land use shall provide for maximum surface land usage including preservation of productive farm land and shall be in accordance with the standards as determined by the Planning Director.

H. Odor And Gas Control: All operators shall take steps to insure that no harmful or obnoxious gases be released as a result of their operations. (Ord. 86, 12-7-1993)

#### **6-3N-8: PUBLIC ACCESS FACILITIES:**

If location or site of the proposed project is such as to require additional public access facilities, the operator shall be required to provide where necessary, rights of way on property he controls and to provide the necessary road work. (Ord. 86, 12-7-1993)

#### **6-3N-9: OPERATION PERSONNEL:**

All development operations shall be conducted under the direction of a responsible engineer or agent. The operator shall insure that a maintenance crew is immediately available to insure compliance with the conditions and standards required. (Ord. 86, 12-7-1993)

#### **6-3N-10: STANDARDS:**

### **6-3N-10-1: PLANNING STANDARDS:**

A. Size: All geothermal drilling sites including test facilities and ponds shall be as small as possible and in no case larger than five (5) acres on arable land. Exceptions will be allowed if two (2) or more wells are drilled on the same site.

B. Agricultural Preservation; Well Density: Every site shall be designed to retain the maximum amount of usable agricultural land and the site shall not interfere with the irrigation and drainage pattern. Drill sites shall be constructed adjacent to existing roads insofar as possible. Well density shall be justified and in accordance with good reservoir engineering practices.

#### C. Location Of Wells And Appurtenances:

1. Unless specifically waived by the Planning Commission where legally permissible, the following minimum distances shall be observed in siting a well:

|                           | <u>Feet</u> |
|---------------------------|-------------|
|                           | <u>Feet</u> |
| Outer Boundary of Parcel  | 100         |
| Permanent Public Waterway | 50          |
| Public Roads              | 100         |
| Residence                 | 300         |
| School                    | 1,320       |
| Hospital                  | 5,280       |
| Any other development     | 500         |

2. Production facilities shall, where possible, be located in centralized areas to serve the maximum number of wells. These shall include but are not limited to power plants, extraction plants and separators.

3. All electrical transmission lines shall be constructed on existing right of way whenever possible.

D. Ponds: The plans for all permanent sumps, brine ponds, waste holding ponds and any other ponds, shall include a soils investigation and shall be designed and constructed under the supervision of a registered civil engineer. The following are considered minimum criteria:

1. Pond bottoms and dikes shall be either impervious or shall be lined to prevent seepage;
2. Earthen dikes shall be three to one (3:1) slopes;
3. Dikes shall be designed to provide three feet (3') freeboard when at design capacity;
4. Plan should minimize wave and wind erosion; and
5. Protect from any flood hazard.

The plans shall be submitted to the County for approval.

E. Plot Plan: A reproducible copy of the plot plan shall be submitted on suitable material. It shall be eighteen inches by twenty six inches (18" x 26") with an appropriate scale and shall be prepared in accordance with good engineering and drafting techniques. It shall show all existing topography and facilities and shall clearly show proposed development. (Ord. 86, 12-7-1993)

### **6-3N-10-2: DRILLING STANDARDS:**

#### A. General Drilling Standards:

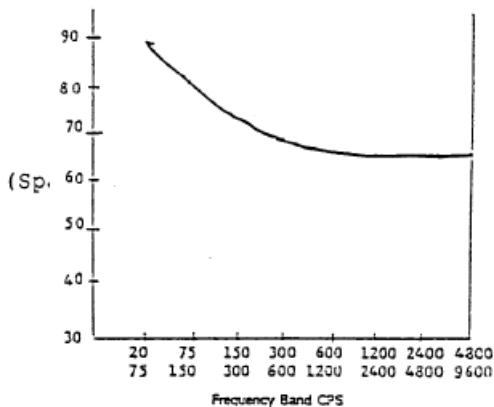
1. Sign: All geothermal well sites shall have a sign having a surface of not less than two (2) square feet and not more than six (6) square feet bearing the current name and number of the well; emergency telephone number of agent; name and/or insignia of the operator and the owner and this sign shall be displayed at all times from the commencement of drilling operations until the well has been abandoned.

#### 2. Noise:

a. Each operator shall limit the continuous generation of wide band noise to that shown on the charge. The level shown may be exceeded by ten percent (10%) if the noise is intermittent and during daylight hours. The noise levels shall be measured at the parcel boundary.

b. Sound pressure levels shall be measured at the points specified and shall be measured with a sound level meter and associated octave band analyzer conforming to standards prescribed by the United States of America Standards Institute.

c. The following graph shall conform to standard units of measurement in accordance with United States of America Standards Institute Code, S-1.11-1966, Appendix A.



3. Drilling Wastes: Within sixty (60) days after the completion of the drilling of a well, all drilling wastes must be removed from the drilling site and disposed of, in accordance with County and State regulations.

4. Sanitary Facilities: Suitable and adequate sanitary facilities as approved by the Malheur County Department of Environmental Health shall be installed and maintained in a clean and sanitary condition at all times.

5. Drilling To Continue; Completion: Drilling operations shall be diligently pursued until each well is completed or abandoned. All drilling equipment including derrick shall be removed from the premises within sixty (60) days after completion of any well.

6. Abandonment Of Drilling Site: Prior to abandonment, it shall be the responsibility of the operator to comply with all regulations of the geothermal resources law of the State in regards to subsurface sections. In addition, the following surface requirements are imposed. These surface requirements shall also apply when the well or wells go on production and auxiliary facilities are no longer necessary:

- a. The derrick and all appurtenant equipment thereto shall be removed;
- b. All tanks, towers, other surface installations shall be removed;
- c. All concrete, pipe, wood or other foreign materials shall be removed from the drill site to a depth of six feet (6') below grade;
- d. All holes and depressions shall be filled and packed with native earth. All waste material shall be removed from the drill site;
- e. In agriculture or potential agriculture areas, any brine holding ponds shall be purged of brine, the salts shall be removed from the dikes and bottom and the berms leveled to the satisfaction of the County.

#### B. Additional Drilling Standards Applicable To Sites Within One-Half Mile Of A Residence:

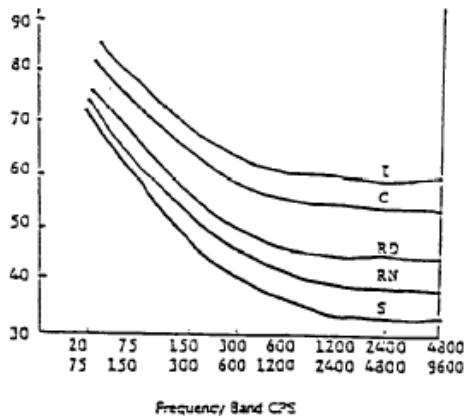
##### 1. Hours Of Operation:

- a. All work in preparation of the site for drilling shall be done between the hours of seven o'clock (7:00) A.M. and seven o'clock (7:00) P.M.
- b. The delivery or removal of equipment or material shall be limited to the hours from seven o'clock (7:00) A.M. to seven o'clock (7:00) P.M., except in the case of emergencies.
- c. No drill pipe shall be racked or made up except between the hours of seven o'clock (7:00) A.M. to seven o'clock (7:00) P.M. Exception to this is allowed where soundproofing is provided or in case of emergency.

2. Fences: All unattended well sites shall be enclosed by a steel chain link type fence, six feet (6') high. There shall be no opening below such fence greater than four inches (4"). The gate shall be placed at a nonhazardous location and shall be locked at all times.

##### 3. Noise Control:

- a. The Department of Environmental Quality shall direct which noise level curve as shown on the chart shall apply. Each operator shall limit the continuous generation of wide band noise to that required. The level may be exceeded to ten percent (10%) for any one occurrence if the noise is intermittent and during daylight hours.
- b. Sound pressure levels shall be measured at the points specified and shall be measured with a sound level meter and associated octave band analyzer conforming to standards prescribed by the United States of America Standards Institute.
- c. The following graph shall conform to standard units of measurement in accordance with United States of America Standards Institute Code, S-1.11-1966, Appendix A.



4. Off-Street Parking: Off-street parking shall be provided with not less than five (5) spaces for each well site.
5. Lighting: All lights shall be directed or shielded so as to confine the direct rays to the site.
6. Dust And Mud: The drilling site shall be treated to eliminate dust and mud.
7. Twenty Four Hour Drilling: Drilling may be on a twenty four (24) hour basis providing above is met. (Ord. 86, 12-7-1993)

#### **6-3N-10-3: PRODUCTION STANDARDS:**

##### A. General Production Standards:

1. Compliance With Drilling Standards: All requirements imposed by the drilling standards of Section 6-3N-10-2 of this Article shall remain in effect.
2. Building Permit: All construction work will require a building permit. The fees and procedures will be based on the current Building Code adopted by the State of Oregon.
3. Construction Plans: All construction plans shall be prepared in accordance with the architectural design requirements of Malheur County.
4. Noise Control: Continuous and intermittent sound shall be controlled to the levels listed under subsection 6-3N-10-2B3a of this Article, Drilling Noise Standards for Class 1.
5. Benchmark: The operator shall install a minimum of one permanent benchmark per well as directed by the County Surveyor in order to participate in the subsidence detection program. The benchmark shall be constructed of concrete and firmly set. A brass cap as furnished by the County Surveyor shall be placed in the monument. The operator shall tie this benchmark into the nearest point of the USGS level net by first order leveling techniques.
6. Power Lines: Power lines shall be constructed on existing power right of ways where possible. Efforts shall be made to share existing facilities. Any new power line installations shall conform with County optimum land use and aesthetic requirements.
7. Paved Roads And Parking Areas: All on-site roads and parking areas shall be paved. On-site parking shall be provided for all employees, customers or clients.
8. Landscaping Shrubs: Shrubs, trees and ground cover shall be planted and maintained to complement the appearance of the project where soil conditions permit.

##### B. Additional Production Standards Applicable To Sites Within One-Half Mile Of A Residence:

1. Compliance With Drilling Standards: All applicable requirements imposed by the drilling standards of Section 6-3N-10-2 of this Article shall remain in effect.
2. Collection Pipelines: All off-site collection pipe lines shall be buried and shall utilize and share existing dedicated right of ways. On-site collection pipe lines shall be painted and/or landscaped to blend with the environment. (Ord. 86, 12-7-1993)

#### **6-3N-11: PARTICIPATION IN SUBSIDENCE PREVENTION AND DETECTION PROGRAM:**

Any operator of a geothermal production project shall participate in a geothermal subsidence prevention and detection program developed by the County, State or Federal government. (Ord. 86, 12-7-1993)

#### **6-3N-12: INSPECTIONS; ENTRY POWERS:**

The County reserves the right to enter the premises under the control of the operator of any geothermal operation to make appropriate inspections to determine if the conditions of this policy are being fulfilled. (Ord. 86, 12-7-1993)