



INSTRUCTIONS FOR GEOTHERMAL DRILLING APPLICANTS

All geothermal resource and core-hole drilling, re-drilling, or deepening operations in the state require a drilling permit. A blanket permit is also required for seismic shot holes. If drilling is to be on state-owned land, the agency that owns or manages the land will be the lead agency and will start the State Environmental Policy Act (SEPA) process. The drilling permit will be obtained from the Department of Natural Resources, Division of Geology and Earth Resources (DNR-DGER), MS 47007, Olympia, WA 98504-7007.

PERMIT APPLICATION

The applicant for a drilling, re-drilling, or deepening permit shall:

1. Obtain from the DNR a copy of the Geothermal Resources Act (Chapter 78.60 RCW); Rules and Regulations (Chapter 332-17 WAC); Notice of Intention to Drill, Re-drill, or Deepen; approved performance bond; and SEPA environmental checklist.
2. Submit the completed form, environmental checklist, performance bond, and fee (cash or a check drawn upon or issued by a Washington State qualified public depository) to DNR-DGER.

- a. Fees:

To drill, re-drill, or deepen	\$200.00
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- b. Minimum bond requirements for geothermal resource wells:

Single well	\$15,000
Blanket bond (two or more wells)	\$50,000

 Minimum bond requirements for core holes

Bond for core holes (temperature gradient hole)	\$5,000
Blanket bond (two or more wells)	\$25,000

Note: In lieu of a bond, the applicant may submit a cash deposit, assignment of a savings account, or a certificate of deposit in a Washington bank.

- c. Required Information:
The applicant shall provide with the application the following information (see WAC 332-17):
 - Drill site layout, blowout prevention equipment details, mud program, casing and cementing program, and mud pit details.
 - A map by a licensed surveyor of the well location.
 - Location and source of water supply.
 - Topographic features of well site area, including drainage patterns and associated surface waters and wetlands.
 - Narrative statement describing proposed measures to be used for protection of the environment, including but not limited to: fires, soil erosion, pollution of surface and ground waters, damage to fish and wildlife or other natural resources, air and noise pollution, hazards to public health and safety, site restoration, and methods and site for disposal of waste materials.

PERMIT ISSUANCE

1. Upon receipt of the above material, DNR-DGER will notify other agencies with jurisdiction and cause an inspection to be made of the proposed site.

Note: The applicant or designated representative should plan to be present during the inspection or provide adequate instructions as to the location of the proposed site.

INSTRUCTIONS FOR GEOTHERMAL DRILLING APPLICANTS (Cont'd)

2. DNR-DGER, upon completion of the application and site evaluation, will make a determination of significance or non-significance (SEPA process) for those applications where the Department of Natural Resources is the lead agency. For sites that are on state-owned land or where local government has jurisdiction, the lead agency for the SEPA process will be DNR-DGER. A determination of non-significance will be posted for 15 days. A drilling permit will be issued at the conclusion of the posting period if no significant adverse impacts to the environment are noted during the posting period. If a determination of non-significance cannot be made, the applicant will be so advised. The applicant may be required to submit additional information or be notified that an Environmental Impact Statement is required.

PERMIT REQUIREMENTS

1. The applicant shall give adequate notice to DNR-DGER to permit witnessing of all tests, including drill stem, water shutoff, and production tests, running of casing, plugging operations, and final site reclamation.
2. A record and log of the well, on a WELL RECORD OR HISTORY form, shall be presented to the DNR-DGER within 30 days of the completion or abandonment of the well (see WAC 332-17), and a detailed description of lithology shall be furnished within 30 days after completion or abandonment of any exploratory or wildcat well.
3. The owner or operator of any well or core hole shall keep or cause to be kept careful and accurate logs, including but not restricted to heat-flow, temperature-gradient, and rock-conductivity logs, records, descriptions, and histories of the drilling, re-drilling, or deepening of the well.

All logs, including but not restricted to heat-flow, temperature-gradient, and rock-conductivity logs, records, histories, and descriptions referred to in subsection (1) of Chapter 78.60.200 RCW shall be kept in the local office of the owner or operator, and together with other reports of the owner or operator shall be subject to inspection by DNR-DGER during business hours. Upon written request from DNR-DGER, each owner or operator shall file with DNR-DGER one paper and one electronic copy of the logs, including but not restricted to heat flow, temperature gradient, and rock conductivity logs, records, histories, descriptions, or other records or portions thereof pertaining to the geothermal drilling or operation underway or suspended.

4. Upon completion or plugging and abandonment of any well or core hole or upon the suspension of operations conducted with respect to any well or core hole for a period of at least six months, one paper and one electronic copy of logs, including but not restricted to heat flow, temperature gradient, and rock conductivity logs, core, cuttings, electric log, history, and all other logs and surveys that may have been run on the well, shall be filed with the department within 30 days after such completion, plugging and abandonment, or 6 months suspension.
5. The applicant shall give notice to DNR-DGER on a NOTICE OF INTENTION TO ABANDON AND PLUG WELL form prior to initiating abandoning and plugging procedures (see WAC 332-17).
6. Within 15 days after plugging the well, the applicant shall file a REPORT ON RESULTS OF PLUGGING WELL form with the DNR-DGER, giving the results of the plugging procedure (see WAC 332-17).
7. Release of the bond requires approval by DNR-DGER of the plugging of the well or wells and reclamation of the well site or sites (see WAC 332-17).



Geothermal Exploration Permit Application

GEOHERMAL TEST WELL:

DRILL _____
 REDRILL _____
 DEEPEN _____

Application to drill must be submitted to the Department of Natural Resources, Division of Geology & Earth Resources and approval must be obtained before drilling begins. Submit this application in duplicate, accompanied by a completed State Environmental Policy Act (SEPA) checklist, performance bond and appropriate permit fee which shall be in cash, or check drawn upon or issued by a Washington State qualified depository payable to the Department of Natural Resources.

DRILLING PERMIT FEE SCHEDULE

Fees:

To drill, re-drill, or deepen..... \$200.00

Each person who succeeds to the rights and obligations under this permit shall, within 10 days after the rights are acquired, notify the DNR-DGER in writing thereof.

PREMITTEE INFORMATION

Name: _____

Address: _____

City: _____

Telephone: _____ Fax: _____

Email: _____

Prepared by: _____

On site Contact: _____

Phone (day): _____ Phone (night): _____ Cell: _____

WELL INFORMATION

Well Name: _____

Geothermal Permit number: _____

Proposed work

Deepen _____
 Rework _____
 Abandon _____
 Other _____

DESCRIPTION OF LEASE OR PROPERTY

Name and address of fee owner: _____

Number of acres: _____ Well name and no.: _____

Name and address of surface owner if other than mineral owner: _____

Number of wells on lease: _____ Acres assigned to well: _____

LOCATION OF WELL

Field or general vicinity: _____ County: _____

Well location: _____

(Give section, township, and range, and give footage from section lines.)

Latitude _____ (Decimal degrees 5 places)

Longitude _____ (Decimal degrees 5 places)

Nearest distance from proposed well to property or lease line: _____ ft.

Distance from proposed well to nearest completed or applied for well on same lease: _____ ft.

Proposed depth to be drilled: _____ ft. Elevation of surface: _____ ft.

LOCATION OF WELL (Continued)

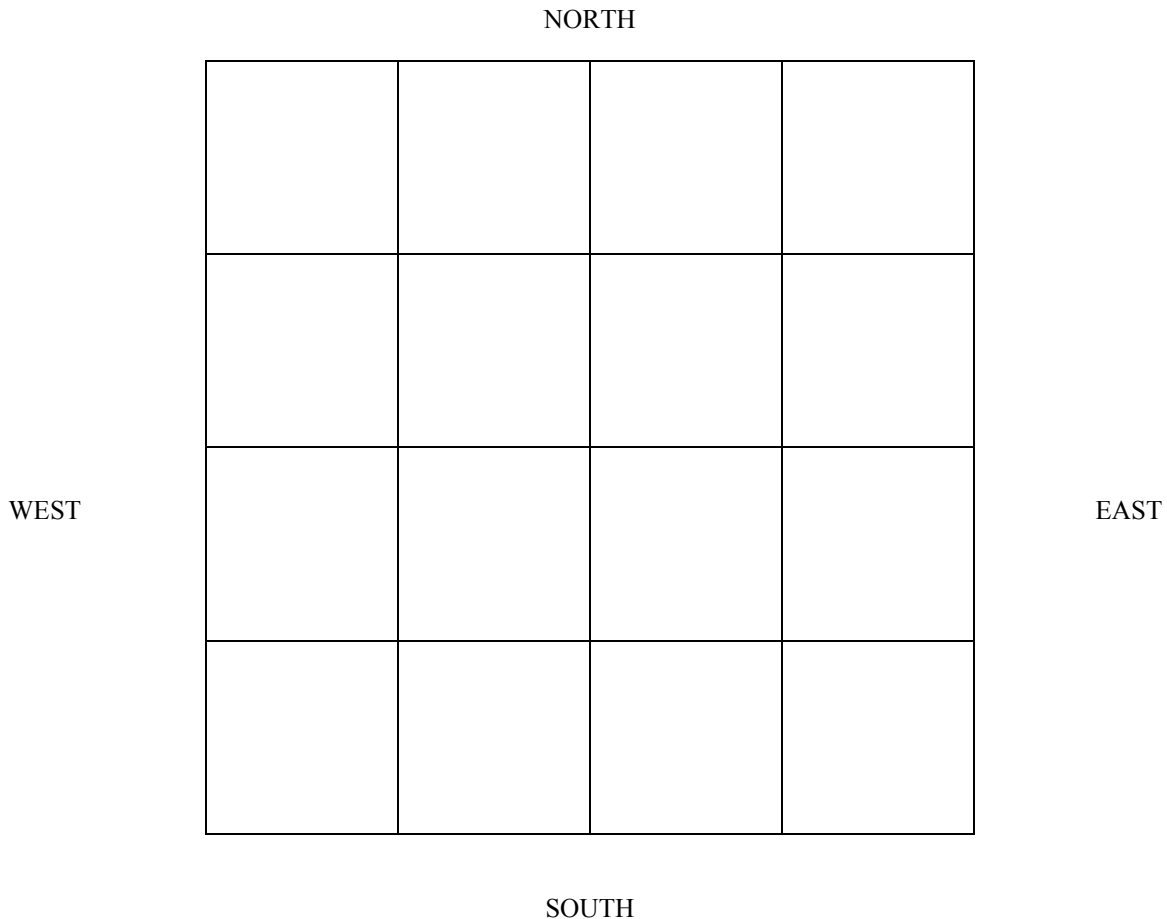
Draw sketch in space below and attach a map, by a licensed surveyor, of the well location. The sketch must show the location of the proposed well and show distances and direction from the well to:

- (1) the nearest section lines, both north (or south) and east (or west)
- (2) the nearest lease lines on all sides of this location
- (3) the nearest wells on all sides of this location

Give names of adjoining lease or property owners and designate property lines. Indicate scale used.

Section _____, T. _____ N., R. _____ (E.) (W.)

If different from the above named company or operator, give name to which correspondence regarding this well should be addressed: _____



AFFIDAVIT

I, _____, being first duly sworn on oath, state that to the best of my knowledge and belief the facts and matter contained on this form are true and correct.

Name _____

Title _____

Subscribed and sworn to this _____ day of _____

Notary Public

My commission expires: _____ County

Address: _____

_____, Washington

ACTION OF AGENCY

Approved: _____

Denied: _____

Washington Department of Natural Resources
Division of Geology and Earth Resources

By _____

Name: _____

Title: _____

Permit No. _____ To be filled in by DNR-DGER. This number should always be used in correspondence relating to this well.

This permit issued under bond dated _____

By _____, Principal



WELL RECORD OR HISTORY

Mail to Department of Natural Resources, Division of Geology and Earth Resources, P O Box 47007, Olympia, WA., 98504-7007, not more than thirty (30) days after completion of well. Indicate questionable data by following it with (?).

Company or Operator Lease

Field or vicinity _____ Well No _____ in _____ of Sec _____
 T _____ R _____ County. Well is _____ feet
 (north) (north) (east) (east)
 (south) of the (south) line and _____ feet (west) of the (west) line of Section _____

The lessor is _____, Address _____
 The lessee is _____, Address _____

Drilling commenced on _____ Drilling was completed on _____

Name of drilling contractor _____, Address _____

Elevation above sea level at top of casing _____ feet. Total depth _____ feet

LITHOLOGY

No. 1, from _____ to _____ No. 4, from _____ to _____
 No. 2, from _____ to _____ No. 5, from _____ to _____
 No. 3, from _____ to _____ No. 6, from _____ to _____

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation water rose in hole.

No. 1 _____ to _____ feet _____
 No. 2 _____ to _____ feet _____
 No. 3 _____ to _____ feet _____
 No. 4 _____ to _____ feet _____

CASING, LINER, AND TUBING RECORD

<u>String</u>	<u>Size</u>	<u>Wt./Ft.</u>	<u>Name & Type</u>	<u>Amount</u> <u>Ft. In.</u>	<u>Depth</u> <u>Set At</u>	<u>Perforated</u> <u>From</u>	<u>To</u>

CEMENT AND TESTING RECORD

<u>Size Of</u> <u>Hole</u>	<u>String</u>	<u>Where Cement</u> <u>Placed</u>	<u>No. Sacks</u> <u>Cement</u>	<u>Method</u>	<u>Pressure</u> <u>In Testing</u>	<u>Hardness</u> <u>Of Cement</u>	<u>Kind Of</u> <u>Cement</u>

PLUGS AND ADAPTERS

RECORD OF SHOOTING OR CHEMICAL TREATMENT

<u>Size</u>	<u>Shell Used</u>	<u>Explosive Or</u> <u>Chemical Used</u>	<u>Quantity</u>	<u>Date</u>	<u>Depth Shot</u> <u>Or Treated</u>	<u>Depth</u> <u>Cleaned</u>

RECORD OF DRILL-STEM AND SPECIAL TESTS

If drill stem or other special tests or deviation or electrical surveys were made, submit report on separate sheet and attach hereto.

TOOLS USED

Rotary tools were used from _____ feet to _____ feet, and from _____ feet to _____ feet.

Cable tools were used from _____ feet to _____ feet, and from _____ feet to _____ feet.

RECORD OF DRILLING MUD

Provide the volumes and general chemical composition of drilling mud and additives used

PRODUCTION

Put to producing on _____ The production of the first 24 hours was _____

EMPLOYEES

_____, Driller _____, Driller
_____, Driller _____, Driller

I HEREBY SWEAR OR AFFIRM THAT THE INFORMATION GIVEN HEREWITH IS A COMPLETE AND CORRECT RECORD OF THE WELL AND ALL WORK DONE ON IT SO FAR AS CAN BE DETERMINED FROM AVAILABLE RECORDS.

Subscribed and sworn to before me
This _____ day of _____

Notary Public

My commission expires _____

Place Date

Name _____

Position _____

Representing _____
Company or Operator

Address _____

WELL RECORD OR HISTORY (Cont.)

FORMATION RECORD

From	To	Thickness in feet	Formation



NOTICE OF INTENTION TO ABANDON AND PLUG WELL

File with the Department of Natural Resources, Division of Geology and Earth Resources, P O Box 47007, Olympia, Washington, 98504-7007. A copy will be returned with approval or denial.

Field or vicinity: _____ County: _____

Operator: _____ Address _____

Lease: _____ Well No: _____

Location: _____

Kind of well: _____ Total depth: _____

Allowable (if assigned): _____

Last production test: _____

Production horizon: _____ Producing from: _____ to _____

Date of commencing proposed operations: _____

Name of party plugging well: _____

Address: _____

Correspondence should be sent to: _____

Name: _____ Title: _____

Attach narrative description of the proposed plan of plugging. Include full details of length and depth of plugs, plans for mudding, cementing, testing, and removing casing, and any other information to assist the agency in the evaluation of this proposal.

ACTION OF AGENCY

Approved: _____

Denied: _____

Washington State Department of Natural Resources
 Division of Geology and Earth Resources

By: _____

Name: _____

Title: _____



Permit No. _____

REPORT ON RESULTS ON PLUGGING WELL

This report must be filed with the Department of Natural Resources, Division of Geology and Earth Resources, P O Box 47007, Olympia, Washington, 98504-7007, within fifteen (15) days after plugging has been completed.

You are hereby notified of the completion of the plugging of a well known as: _____

Well No: _____ in _____ of section _____ T. _____ R. _____. County: _____

Total depth of this well is _____ feet. Spud date: _____

Date of plugging: began _____; completed _____

Attach a detailed narrative account of the manner in which work was performed. Including descriptions of the nature and quantities of materials used in plugging; the depths and lengths of the various plugs; records of any tests or measurements made; amount, size and depth of all casing left in the well; volume and gravity of mud—laden fluid used; pressures retained in mudding; and a complete record of any shooting done.

Name and address of person in charge of plugging: _____

I hereby swear or affirm that the information given herewith is a complete and correct record of the well and all work done on it so far as can be determined from available records.

Subscribed and sworn to before me
 on this _____ day of _____

 Notary Public

My commission expires _____

 Place Date

Name: _____

Position: _____

Representing: _____
 Company or Operator

Address: _____

STATE OF WASHINGTON
GEOTHERMAL BLANKET DRILLING BOND

Bond No. _____

KNOW ALL PEOPLE by these presents that we, _____, as Principal, and _____ a corporation duly authorized to transact Surety business in the State of Washington, in the sum of _____, lawful money of the United States, for the payment of which sum we bind ourselves, and each of our legal representatives, heirs, executors, administrators, successors and assigns jointly and severally, firmly by these presents.

_____, Principal has made and/or will make applications for permits to drill for geothermal research under RCW 78.60 and WAC 332-17, which are enforced by the Washington Department of Natural Resources (DNR). A list of currently identifiable sites and well locations is attached hereto as Exhibit A. As a statewide blanket bond under WAC 332-17, this bond covers all of the Principal's current and future permitted geothermal permits and the associated wells and related operations regulated by DNR. The surety's failure to know, currently or in the future, of Principal's, geothermal permits and their associated wells and related operations regulated by DNR does not prevent the applicability of this bond to said permits, wells, or operations.

THE PRINCIPAL desires to give this bond as required by RCW 78.60 and WAC 332-17. In accordance with RCW 78.60 and WAC 332-17, this bond secures the Principal's complete performance of all obligations under said geothermal permits pursuant to RCW 78.60 and WAC 332-17 and the orders, regulations, and the permit conditions adopted by the DNR.

THIS BOND may be drawn upon by DNR to the extent necessary to bring the well and/or related operations into compliance with RCW 78.60, WAC 332-17, and the orders, regulations, and permit conditions adopted by the DNR, as determined by DNR.

NOW THEREFORE if said Principal fully complies with all of its permits, RCW 78.60, WAC 332-17, and the orders, regulations, and permit conditions adopted by the DNR governing geothermal resources drilling, and operations AND if Principal procures from the DNR of approval for abandonment of each well drilled by the Principal, then the above obligations shall be void; otherwise, it shall remain in full force and effect.

PROVIDED THAT the total liability of the surety hereunder for all causes of action arising under this bond shall not exceed the total sum of _____ dollars.

IN WITNESS whereof the said Principal has hereunder set his hand and seal, and the surety caused these presents to be signed by its duly authorized officers and its corporate seal to be hereto affixed this ____ day of _____.

Attorney-in-fact (type name below line)

By: _____
Principal (Type name of person signing for Principal)

Surety

Title

Mailing address

Mailing address

Name & Address, Local Office of Agent (if applicable)

Approved as to form _____, 20____

Assistant Attorney General