

UNITED STATES  
 DEPARTMENT OF THE INTERIOR  
 BUREAU OF LAND MANAGEMENT  
~~GEOTHERMAL DRILLING PERMIT~~ MISCELLANEOUS

FORM APPROVED  
 OMB NO. 1004-0132  
 Expires: September 30, 1990

Bureau of Land Management (BLM) requires this form or other BLM approved forms to be prepared and filed in duplicate with requisite attachments with the authorized officer. The authorized officer must approve this permit prior to any lease operation.

7. Lease Serial No. OR-48203

8. Surface Manager:  BLM  FLS  Other

9. Unit Agreement Name

10. Well No. ESI-A-S-ALT | 11. Permit No.

12. Field or Area Vale

13. Sec., T., R., B. & M. Sec. 33 T18S R45E

14. County Malheur

15. State Oregon

16. Approx. Starting Date Sept. 1993

17. Acres Assigned (Well Spacing)

Type of Work:  Drill New Well  Redrill  Deepen  Plug Back  Directionally Drill  Other

Well Type:  Production  Injection  Heat Exchange  Observation  Water Supply  Other Exploration

Well Status: New Well

Name of Lessee/Operator Trans-Pacific Geothermal Corp.

Address of Lessee/Operator 1901 Harrison, Ste 1590, Oakland, CA 94612-3501

Location of Well  
 At surface NW 1/4, NE 1/4, Sec. 33 T18S R45E  
 At proposed prod. zone Same

Distance from Proposed Location to Nearest Property or Lease Line  
 prox. 3,350 Ft. East, 100 Ft. South from NW Corner Sec 33

Distance from Proposed Location to Nearest Well, or Previously Applied for Well Location on this Lease

Drilling Media and Characteristics:  Air  Water  Mud  Foam  Other

19. Proposed Depth  
 Measured: 5,000 ft.  
 True Vertical: 5,000 ft.

20. Elevations:  Estimated  Final  
 2,510  
 Reference Datum:  NGR  MAT  DDF  KKS  ORT  
 Casinghead Flange  Other

Existing and/or Proposed Casing and Cementing Program (List existing program first, followed by proposed program, and separate by a sufficient space to clearly distinguish the two programs).

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	COUPLING (Collars & Threads)	GRADE	SETTING DEPTH		QUANTITY OF CEMENT
					Top	Bottom	
1/2"	13-3/8"	Steel conductor	—	K-55	0	± 30 ft.	Sufficient to circulate
1/4"	9-5/8"	36 lb ft	Buttress	K-55	0	± 400 ft.	250 cubic ft. (100% excess)
1/4"	7"	23 lb ft	Buttress	K-55	0	± 2,000 ft.	614 cubic ft. (100% excess)
1/4"	5"	15 lb ft	Hydril FJ	K-55	± 2,000	± 5,000 ft.	None hung liner

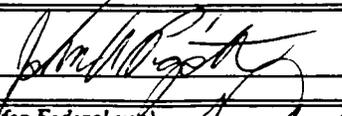
Proposed Work Summary

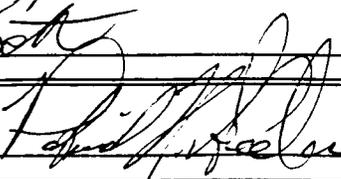
Drilling at the Vale Geothermal Prospect will be undertaken with the objective of completing exploratory wells with diameters specifically designed to allow the wells to flow with minimum restriction, for purposes of testing and gathering of reservoir data. The target zones are located at depths between 4,500 and 5,000 feet (maximum drilled depth would be 5,000 feet).

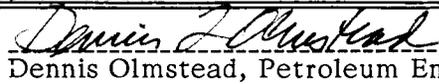
The wells to be drilled are exploratory wells, aimed principally to assess the geologic and reservoir characteristics of the Vale Geothermal Prospect, Oregon.

Temperatures in the order of 350°F are expected to occur at depths below 3,000 feet. The drilling plan and well design criteria are based on data obtained from geophysical and geologic data, as well as from several shallow and deep holes drilled in the same general area.

It may be necessary to use bottomhole and BOP assemblies different from those specified in order to accommodate specific rig sizes and configurations. Any such modifications, however, must be approved by the project drilling engineer. See below.

Approved by:  Vice President | 7-23-93 | Date

Approved by:  Deputy State Director for Mineral Resources | 11-10-93 | Date

Conditions of Approval, if any:  
 Modifications must be approved by DOGAMI and BLM.  11-18-93  
 Dennis Olmstead, Petroleum Engineer

18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.