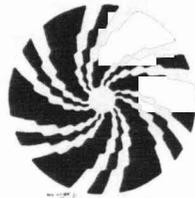


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DEPARTMENT OF LAND & NATURAL RESOURCES

FEB 25 1991 11:47

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February 25, 1991

Mr. William Paty, Chairman
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Re: Request for authorization to plug and suspend KS-7

Dear Mr. Paty:

During the drilling of injection well KS-7, PGV has encountered a high temperature, high pressure zone at depth of 1600'. This zone caused the fluid and steam release on the afternoon of February 21, 1991. Since that time the well has been shut in and is being kept in a stable condition by continuous pumping of cold water into the well bore. During this period equipment and personnel were assembled in order to plug the well.

PGV is hereby requesting authorization to execute plugging and monitoring operations that we feel are required to bring the well to a stable and safe condition for the long term. This program is described in the attached document and figures. We request that you act on this request immediately because safety considerations dictate that the plan be implemented as soon as possible. Your representative on site, Eric Tanaka, is fully apprised of the situation and the proposed program.

If you have any questions regarding this material, please give me a call. Thank you for your assistance in this matter.

Sincerely,
PUNA GEOTHERMAL VENTURE

William J. Teplow
Field Manager

- cc: Norman Clark
- Maurice Richard
- Terry Crowson
- Dean Nekano

PUNA GEOTHERMAL VENTURE CONSTRUCTION

PLUGGING PROCEDURES
AND SUSPENSION OF DRILLING
OPERATIONS FOR INJECTION WELL KS-7

1. Current Well Status

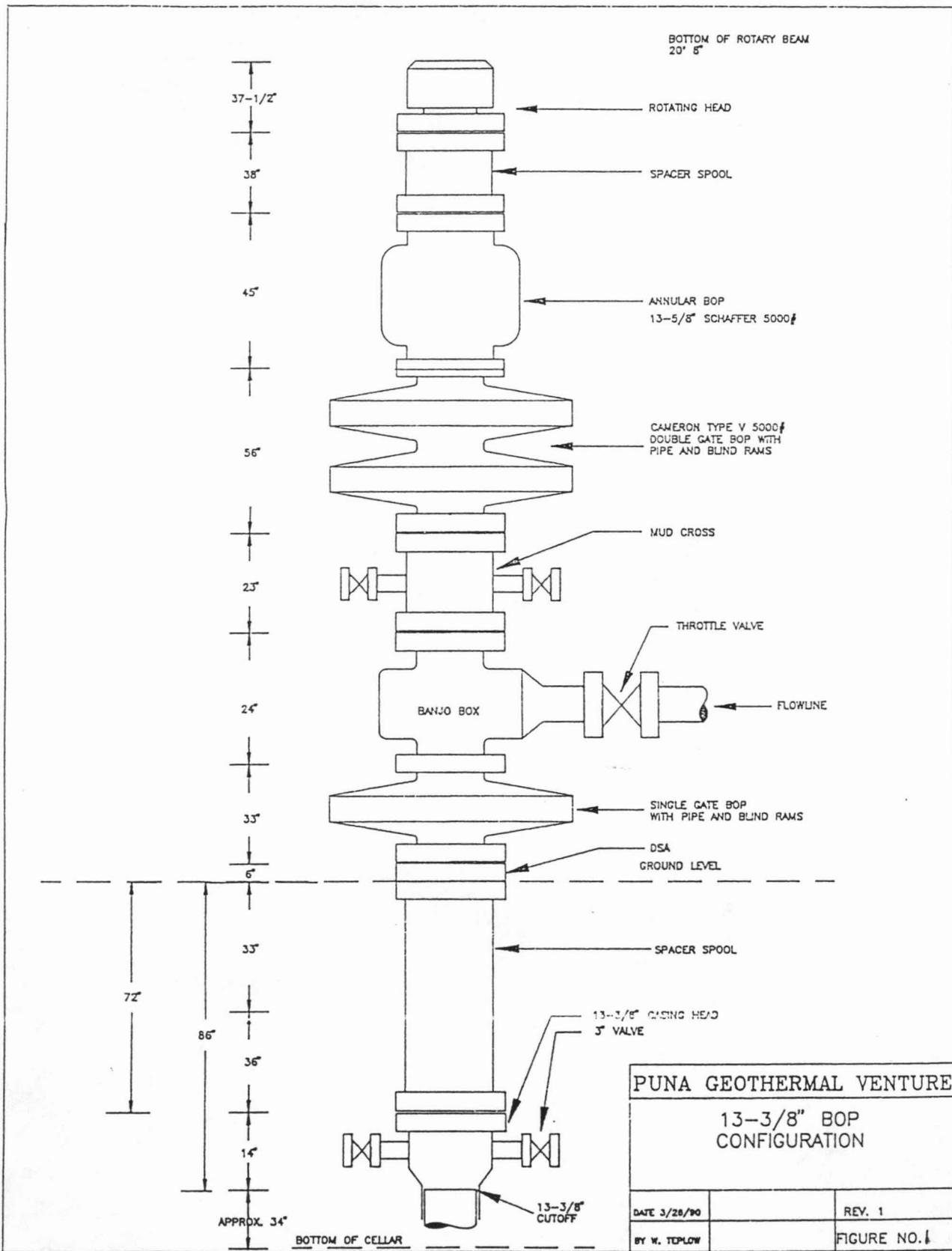
- 1.1 13-3/8" 54.5# K-55 BT&C casing set to 1021' and cemented to surface. Open 12-1/4" hole to 1678'
- 1.2 900 series 13-3/8" casinghead and two 3" 3000# side valves installed on 13-3/8" casing
- 1.3 BOP as shown in Figure 1 installed on casinghead.
- 1.4 Four stands of drill pipe with string float totalling 375' are currently in the hole, with kelly attached. Pipe rams and annular preventer are closed.
- 1.5 Water is being pumped in the well at a rate of 100 to 150 gpm to cool the well and control pressure.

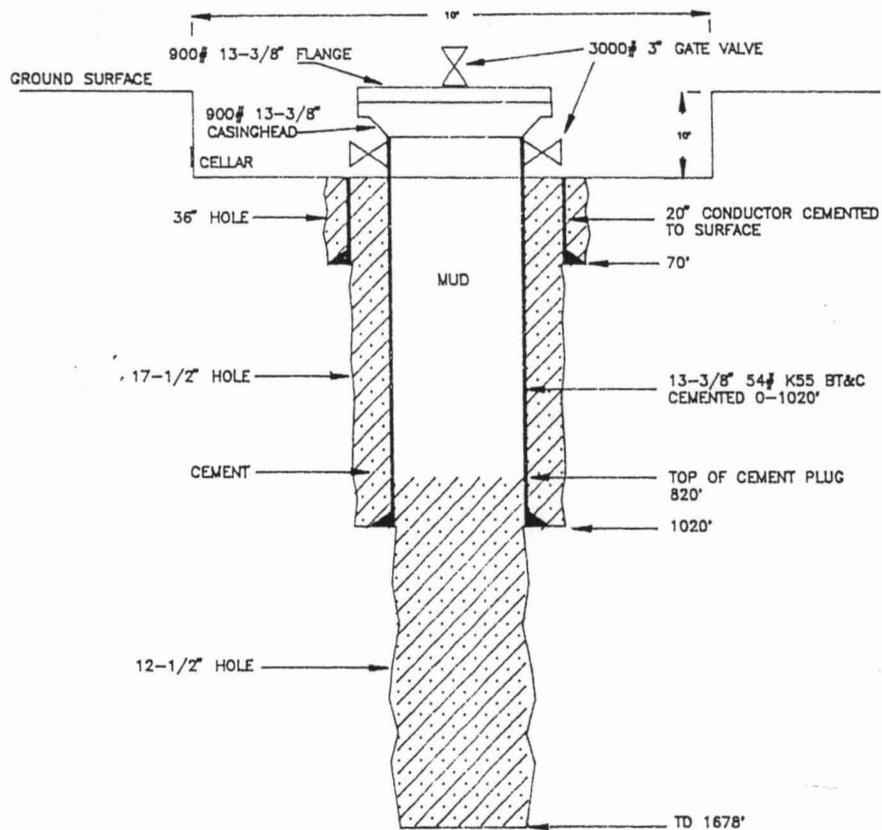
2. Proposed Kill and Plug Operation

- 2.1 Mix 800 bbls. of 9.5 lb/gal mud using barite. Pump in heavy mud to kill well.
- 2.2 When well is killed, open BOP while continuously filling hole from annulus. Pullout one joint and lay down. Install string pressure control valve and trip in hole to TD.
- 2.3 Attach kelly and pump water for 1 hour through drill string to cool well.
- 2.4 Set cement plug through drill string from TD. Use Hawaii Type II cement, 40% silica flour, .65% CCFR, 15.5 ppg, 526 cu.ft.(325 sks).
- 2.5 POH. WOC. Pick up bit. RIH, tag top of cement plug, polish cement. POH. RIH with open ended drill pipe and set cement plug as required to reach 200' inside 13-3/8" casing. Use same cement as specified in 2.4. POH. WOC. RIH and tag top of cement.

3. Observation and Assessment

- 3.1 Standby with rig on hole.
- 3.2 Measure water level or wellhead pressure hourly for first 24 hours, then 4 time per day thereafter.
- 3.3 Run temperature logs once daily until temperature has stabilized.
- 3.4 When pressure and temperature conditions stabilize in a condition satisfactory to PGV, DOH, and DLNR, remove BOP and install 13-3/8" flange and 3" 3000# valve on wellhead (Figure 2).
- 3.5 Move rig off hole. Monitoring wellhead pressure and run temperature logs on a weekly to monthly basis as needed.

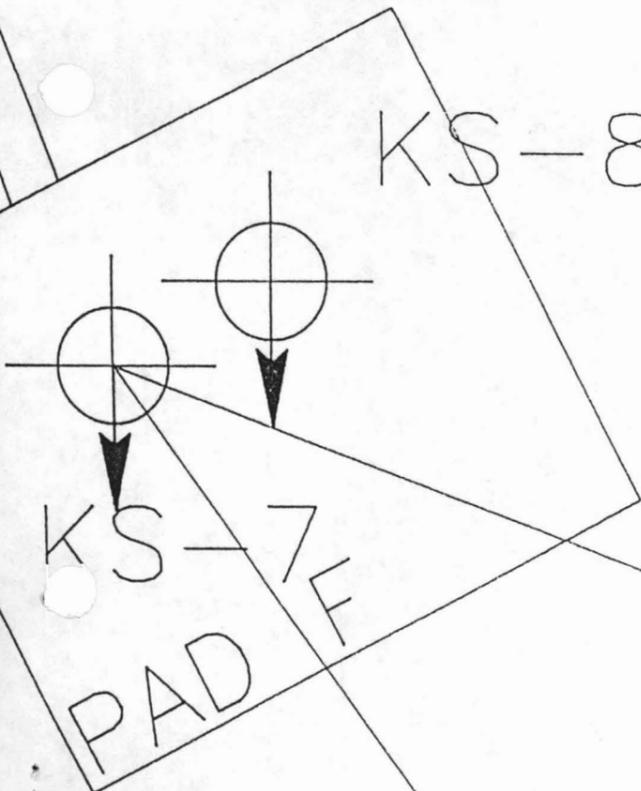




PUNA GEOTHERMAL VENTURE		
INJECTION WELL KS-7 CEMENT PLUG AND WELLHEAD SCHEMATIC		
DATE 2/24/91		REV. 1
BY W. TEFLOW		FIGURE NO. 2

KS-7 WELLHEAD COORDS.
 10728.27E
 8367.61N
 ELEV. 617' GROUND LEVEL

KS-8



7" CASING
 SHOE, 4000' MD

REVISED TARGET
 1/30/91
 830' E
 310' S
 6000' TVD

MONITORING WELL
 MW-2

TARGET
 393' E
 550' S
 5000' TVD

100' OFFSET

PROPERTY
 BOUNDARY

Scale: 1" = 100'



PUNA GEOTHERMAL VENTURE

PLAN VIEW
 KS-7 DIRECTIONAL
 PROGRAM

DATE 2/4/91

File: pgv\3dwells.dwg

BY W. TELOW

FIGURE NO.