Form 3260-3
(September 1993)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 10040132
Expires: July 31, 1996

GEOTHERMAL SUNDRY NOTICE

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

6. Lease Serial No. OR 45505

7. Surface Manager: ☒ BLM ☐ FS ☐ Other

8. Unit Agreement Name

1a. Well Type: ☐ Production ☐ Injection ☐ Heat Exchange ☐ Observation ☒ other

1b. Well Status: in suspended status, renewed May 17, 2002

9. Well No. 23-22 | 10. Permit No.

2. Name of Lessee/Operator ORNI, LLC

11. Field or Area Newberry KGRA

3. Address of Lessee/Operator 980 Greg Street, Sparks, NV 89431

12. Sec., T., R., B. & M. T21S R12E Section 22, MB

13. County Deschutes

4. Location of Well or Facility 400' east & 1500" south of NW corner Section 22, T21S, R12E

14. State Oregon

5. Type of Work

- ☐ Change Plans
- ☐ Site and Road Construction
- ☐ Construct New Production Facilities
- ☐ Alter Existing Production Facilities
- ☐ Convert to Injection
- ☐ Fracture Test
- ☐ Shoot or Acidize
- ☐ Repair Well
- ☐ Pull or Alter Casing
- ☐ Multiple Complete
- ☒ Abandon - if necessary
- ☒ Other - mechanical integrity test

15. Describe Proposed Operations *(Use this space for well activities only. See instructions for current well conditions on reverse)*

Per the Bureau's order of October 30, 2001, Well 23-22 will be tested for mechanical integrity. Should the test fail, the well will be plugged and abandoned per the Bureau's specifications. Work will begin on or about June 13th, following completion of P&A on Well 88-21TCH which begins on or about June 3rd.

Summaries of the Test procedure and equipment and the P&A procedure are attached.

Minor road work will be required to mobilize equipment to the site. This work will be performed by local contractor Hap Taylor. The USFS representative, Alice Doremus will be contacted.

The cement work will be performed by Haliburton, out of Woodland.
The rig will be provided by Snow, out of Woodland.

Please see attached details.

16. Describe Proposed Operations (Use *this space for all activities other than well work)*

Fences will be inspected and repaired.

17. I hereby certify that the foregoing is true and correct

Signed Christy Morris Title Regulatory Affairs Administrator Date May 24, 2002

(This space for Federal use)

Approved by Title Acting Deputy State Director Date 5/31/02

Conditions of Approval, if any:

Title 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.

(Instructions on reverse)

ORNI 4, LLC

(an ORMAT Group Company)

Via Fax and US Mail

May 24, 2002

Nancy Ketrenos
Bureau of Land Management
Oregon State Office
1515 SW 5th Avenue
Portland, OR 97201

RE: Newberry Volcano Geothermal Project
Sundry Notice Request for Work on Well 23-22

Dear Ms. Ketrenos:

Please find enclosed a copy of the revised Sundry Notice for testing and/or plugging and abandonment of Well 23-22 located in T22S R12E Section 22, Deschutes County, Oregon. ORNI-4 will mobilize to complete this work in conjunction with plugging and abandonment of Well 88-21 TCH beginning June 3rd or 4th.

This Sundry includes the unchanged procedure for integrity testing as defined in the April 1, 2002 sundry submission for Well 23-22. We have modified the sundry to include procedures for a permanent plug and abandonment of the well should the integrity test fail.

Please give me a call should you need further information.

Sincerely,

Christy L. Morris
Regulatory Affairs Administrator

Encl.

cc: Mr. Richard Estabrook
Mr. Robert Houston
Mr. Dennis Olmstead

Office:
980 Greg Street
Sparks, NV 89436
Tel (775) 356-9029
Fax (775) 356-9039

Sundry coverlet2 w23-22 05-02.doc
Site:
`USFS Road 9735-600
Spurs 685 & 687
Bend, Oregon

Sundry Notice
Newberry Geothermal Project
Testing of Well 23-22

Submitted to

Nancy Ketrenos
US Department of Interior
Bureau of Land Management
Oregon State Office
1515 SW 5th Avenue

and

Richard Estabrook
US Department of Interior
Bureau of Land Management
Ukiah Field Office (CA-920)
2550 North State Street
Ukiah, CA 95482

and

Robert Houston
Oregon Department of Geology
and Mineral Industries
229 Broad Alvin Street, SW
Albany, OR 97321

Office:
980 Greg Street
Sparks, NV 89436
Tel (775) 356-9029
Fax (775) 356-9039

Attachments

Attachment A

Introduction

ORNI 4, LLC submits this Sundry Notice in accordance with the Bureau's order of October 30, 2001 wherein it was stipulated that Well 23-22 located 400' East & 1500' South of NW corner Section 22, T21S, R12E in Deschutes County, Oregon should be tested for mechanical integrity or plugged and abandoned by July 1, 2002. This well was serviced and stabilized with a nitrogen blanket for the winter in November 2001. A completion report of this work was made to the Agencies on November 12, 2001.

ORNI 4 requests the following procedures for testing Well 23-22 in the coming season.

1. Notification

The Agencies will be notified at least 3 days prior to commencement of well work.

2. Mechanical Integrity Testing

A physical inspection of the well head and valves will be completed prior to logging to assure all valves are in good working order. This well head has 0.0 pressure increased to 50 psi with the addition of the nitrogen blanket when serviced last fall. Install a 13 3/8 lubricator with a pressure packoff to the top of the well head valve. Hook up water lines to side valves, open main valve and pump in cold water. Run temperature profile to 4200 feet, pull out, check profile, pump water if needed, run in hole to 4200 feet with using a Baker Altas Vertilog while pumping water and run casing integrity test of well with tool size for the 13.375 inch casing. The magnetic flux leakage inspection tool will be used to identify and quantify internal and external corrosion of the casing. A temperature profile will be run prior to running the Vertilog tool. Cold water will be pumped into the well prior to logging to lower the temperature of the well bore sufficiently for stability of the Vertilog tool.

A mobile water truck will be used to supply water for the logging operation. A mobile

crane will be used to install lubricator and packoff and to position the logging equipment over the well head valve.

Information regarding the Baker Atlas Vertilog system is provided (hard copy).

The 13.375 inch casing runs from surface to 4418 feet. The top of the 9.625 inch casing is at 4200 feet. Ground water protection in this area on other wells stops at approximately 1500 feet depth. Per the Bureau's request, we will run the integrity test on the top 2000 feet of the well.

3. Plug and Abandon

Should the well integrity test defined above fail, ORNI 4 would move to temporarily plug and abandon the well. We will coordinate the well work with the Plug and Abandon of Well 88-21TCH which was approved by Sundry Notice 3160 (932) on December 13, 2001 which will begin on June 3rd of 4th. We will move the rig from 88-21TCH to 23-22 for the work on or about June 10th.

Attached is the outline of the proposed temporary plug and abandon procedure.

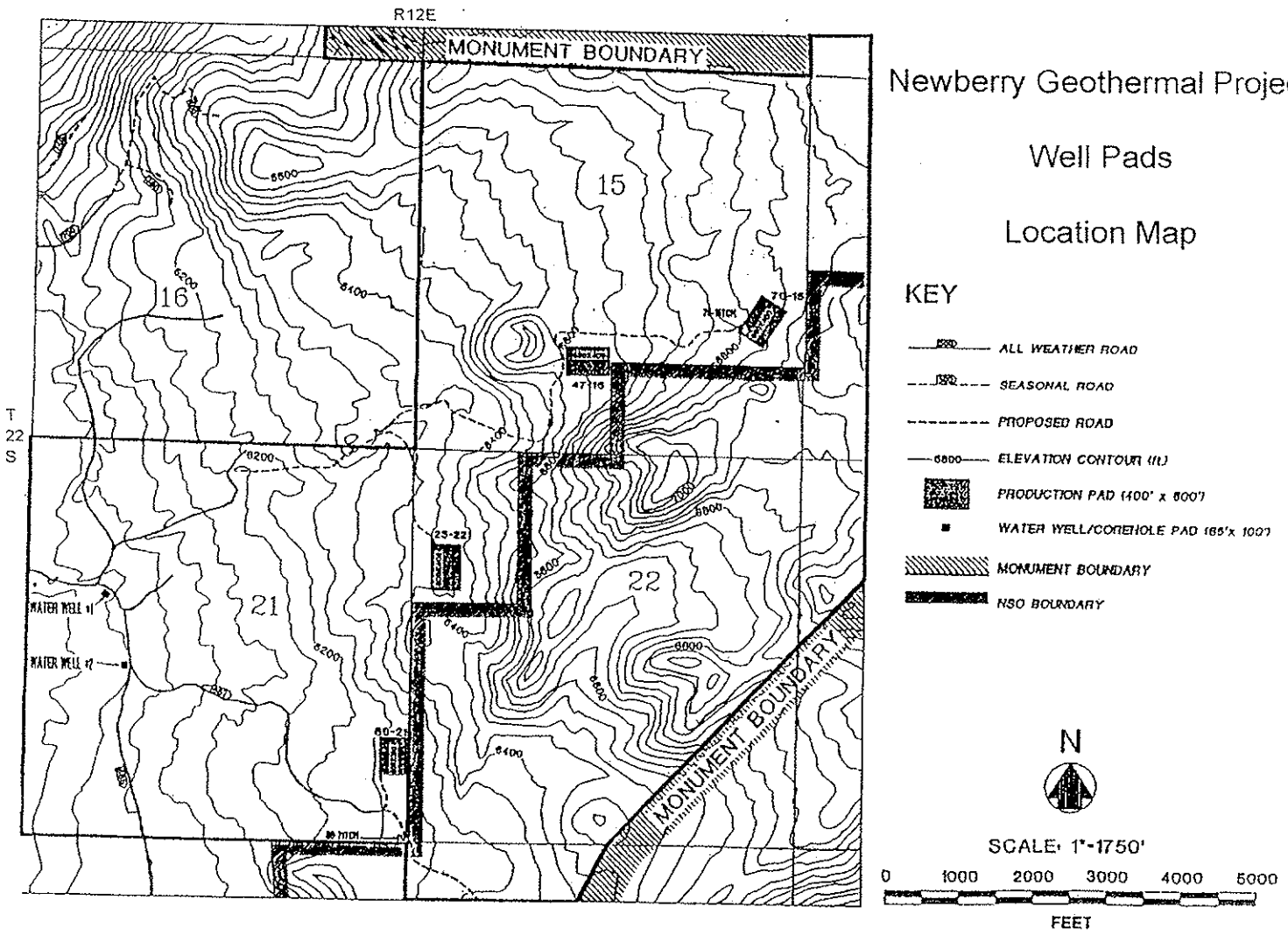
4. Reporting

ORNI 4 will provide a report detailing the well work within 30 days of completion.

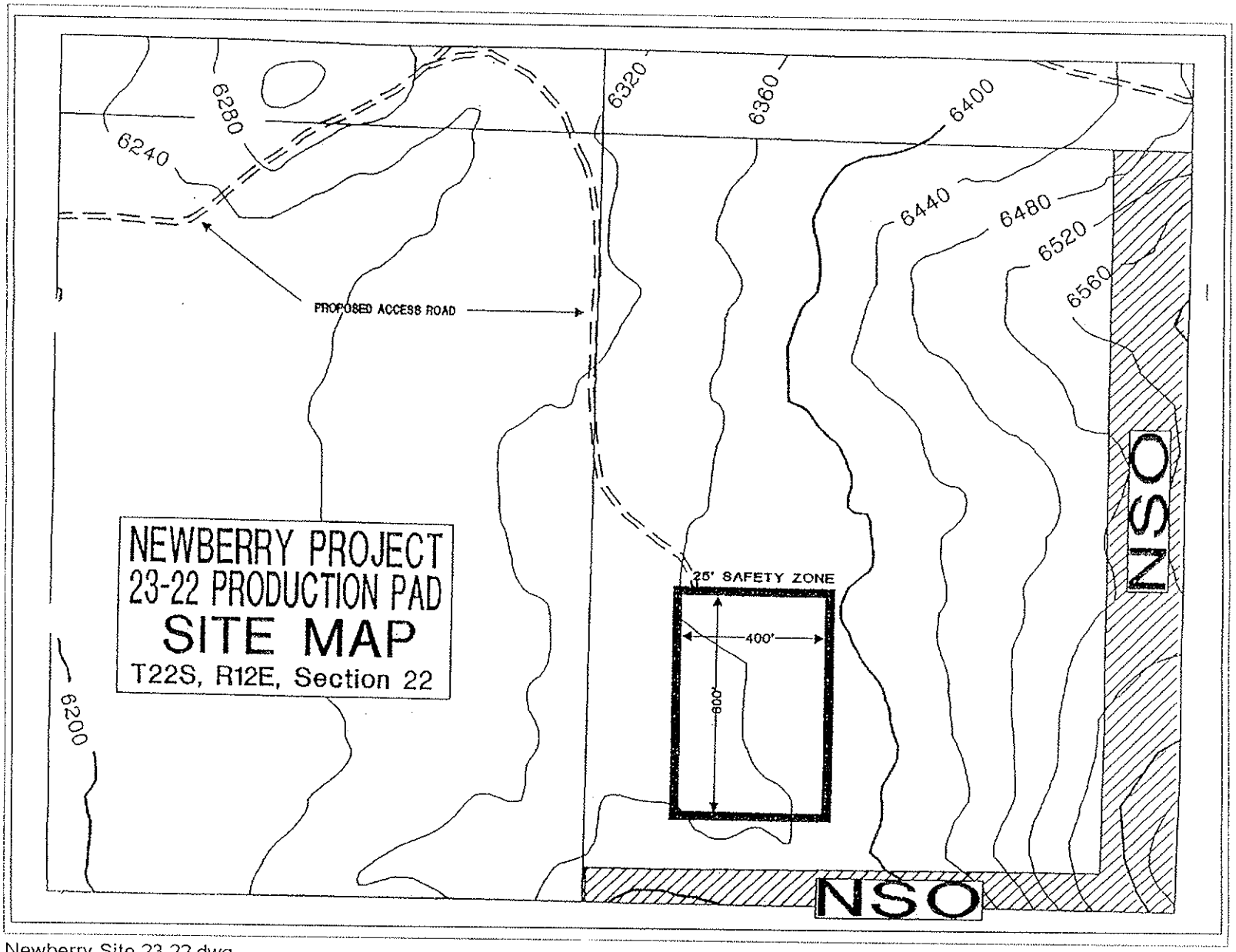
May 24, 2002

ATTACHMENT B
NEWBERRY KGRA
Well 23-22
Abandonment Procedure

1. Mobilize small work-over drill rig to location along with other equipment such as water truck, cement pumping unit, and mud trucks
2. Remove cement manhole cover from wellhead
3. Check wellhead pressure. This well is believed to have zero psig.
4. Hook up kill line to 2" wing valve
5. Kill well with cold water
6. Rig up and flange BOP Equipment to existing well head. A BOP Bag will be used capable of sealing around the coil tubing
7. All cement will be API Class G w/ 40% silica
8. To set Plug #1: at 4520' perforate 9 5/8" liner ie.100 feet below 13 3/8" casing shoe
9. Cement through annulus to 400' ie. 100' above top of hanger
10. Let cement dry for a minimum of 8 hours
11. Tag plug #1, if absent repeat step 8
12. Using drilling mud made of 9.0 lb/gal and 36 viscosity, fill well up to 900'
13. Plug with cement between 900' and 700', ie. 100' above and below the 20" casing shoe
14. Fill well with drilling mud made of 9.0 lb/gal and 36 viscosity to 80' level
15. Monitor mud fallback for at least 1 hour, fallback should not be more than 50 linear feet
16. If mud fallback exceeds 50', tag plug #2 to insure placement specified in 13
17. Cement to within 15' of surface
18. Cut off all casing 4 feet below ground level. Weld plate on 13 3/8" casing. Inscribe with well number and date.
19. Fill in hole to ground level
20. Clean pad
21. Replace any water bars
22. Secure gates



Newberry Loc Map.dwg
04-01-02



Newberry Site 23-22.dwg