

CALIFORNIA ENERGY CO.

(ON RECONSIDERATION)

IBLA 82-79

Decided March 6, 1985

Appeal from a decision of the California State Office, Bureau of Land Management, rejecting a high bid for a competitive geothermal resources lease. CA 11402.

Reversed.

1. Act of December 24, 1970 -- Geothermal Leases: Competitive Leases  
-- Geothermal Leases: Discretion to Lease -- Rules of Practice:  
Appeals: Burden of Proof

Where the Board has referred a high bid rejection dispute under a geothermal resources lease sale to the Hearings Division for an evidentiary hearing and decision by an Administrative Law Judge, the appropriate standard of proof is that appellant show by a preponderance of the evidence that BLM's action was improper.

2. Act of December 24, 1970 -- Geothermal Leases: Competitive Leases  
-- Geothermal Leases: Discretion to Lease

It was error for MMS to regard costs associated with the Coso Geothermal Exploratory Hole No. 1, drilled under the auspices of the Department of Energy, as not comparable to estimated costs for the drilling of a geothermal resources exploration well in another area of the Coso Known Geothermal Resources Area, for purposes of establishing the minimum acceptable bid in a competitive sale.

3. Act of December 24, 1970 -- Geothermal Leases: Competitive Leases  
-- Geothermal Leases: Discretion to Lease

It was error for MMS to estimate drilling costs for a geothermal well on the basis of costs experienced in oil and gas drilling. The two types of exploration are so dissimilar that meaningful cost comparisons cannot be made.

APPEARANCES: Kenneth Press Nemzer, Esq., Santa Rosa, California, and L. Charles Johnson, Esq., Pocatello, Idaho, for appellant; Lynn M. Cox, Esq., Office of the Regional Solicitor, U.S. Department of the Interior, Sacramento, California, for the Bureau of Land Management.

OPINION BY CHIEF ADMINISTRATIVE JUDGE HORTON

Background

This matter is before the Board on review of a recommended decision issued by Administrative Law Judge E. Kendall Clarke, issued December 15, 1983, following an evidentiary hearing held December 1 to 3, 1982, pursuant to Board order issued September 8, 1982. The foregoing order set aside a previous decision in the case, issued April 6, 1982, reversing a decision of the California State Office, Bureau of Land Management (BLM, appellee), rejecting the high bid of California Energy Company (appellant) for parcel 20 in the Coso Hot Springs competitive geothermal resources lease sale held September 15, 1981. California Energy Co., 63 IBLA 159 (1982).

In setting aside its previous decision (in response to a petition for reconsideration by BLM), the Board's September 8 order stated, "the

allegations set out in the affidavits of two employees of the Minerals Management Service [MMS] raise substantial questions as to the actual costs of drilling a geothermal well." The Board's first decision in this case accepted appellant's arguments that its high bid for parcel 20 of \$52.20 per acre was not spurious or unreasonable and that such figure was more representative of the actual value of the parcel than BLM's presale minimum acceptable bid evaluation of \$267 per acre. The recommended decision of Judge Clarke holds for appellant and directs that BLM issue a lease for parcel 20 to California Energy Company.

The record before the Board is full and complete. In addition to the prehearing record and the recommended decision, it includes 3 days of hearing transcripts, exhibits, posthearing briefs, exceptions to the recommended decision and appellant's response thereto.

#### Statement of the Issue

The issue on which a hearing was directed and which is dispositive of this appeal is whether the Government's estimate of costs for the drilling of a geothermal exploratory well in the Coso Known Geothermal Resource Area (CKGRA) that was factored into its computation of a minimum acceptable bid for parcel 20 was reasonable.

#### Discussion, Findings, and Conclusions

[1] Under the Geothermal Steam Act of 1970, 30 U.S.C. §§ 1001-1025 (1982), the Secretary of the Interior may issue leases within a known

geothermal resource area (KGRA) after competitive bidding. Id. §§ 1002-1003. The Board has affirmed the reserved authority of the Secretary to reject any bid received, as published in Departmental regulations at 43 CFR 3220.5(c), wherever the record discloses a rational basis for the conclusion that the amount of the bid is inadequate. Union Oil Co., 38 IBLA 373 (1978); Getty Oil Co., 27 IBLA 269 (1976).

Heretofore, the Board has stated that the burden of proof in a proceeding contesting BLM's rejection of a high bid for a geothermal resources lease lies with appellant to show that rejection of its bid as too low was arbitrary and capricious and that BLM had no rational basis for its action. Union Oil Co., supra. But, where the Board has referred a high bid rejection case to the Hearings Division for an evidentiary hearing and decision by an Administrative Law Judge, the appropriate standard of proof is that appellant show by a preponderance of the evidence that BLM's action was improper. See Bender v. Clark, 744 F.2d 1424 (10th Cir. 1984), holding that where the Department elects to conduct an informal hearing to consider all the evidence in determining whether a known geological structure exists for purposes of oil and gas leasing, the opposing party need overcome the Geological Survey's finding only by a preponderance of the evidence, not by "clear and definite evidence" as IBLA had required.

From our review of the record and the recommended decision, we find that California Energy Company has established by a preponderance of the evidence that its high bid should not have been rejected. The recommended

decision, which primarily consists of reference to testimony, appears to set forth two major findings.

These may be summarized as follows:

1. Although the exact valuation of the resource, if any, that may lie in parcel 20 presents an almost impossible task, the cost of obtaining the resource may be determined from evaluation of actual data derived from geothermal drilling operations similarly situated. Such evidence was shown in this case through records and testimony regarding the drilling by the Department of Energy (DOE) of Coso Geothermal Exploratory Hole No. 1 (CGEH-1 or DOE well), among other operations. This data from actual geothermal drilling activity provides a more reliable estimate of drilling costs expected on parcel 20 than subjective judgments of BLM or MMS <sup>1/</sup> based on exploration costs in oil and gas drilling.

2. If MMS had estimated drilling costs for parcel 20 on the basis of available geothermal drilling data, it would have arrived at a per acre value for the parcel that would render appellant's bid acceptable.

BLM filed the following exceptions to the recommended decision:

1. Judge Clarke overlooked significant testimony from both MMS experts and appellant's own expert witnesses that demonstrates that the costs associated with the DOE well are substantially higher than the normal costs to be expected in drilling an exploratory borehole by private industry.

2. Contrary to the conclusion stated in the recommended decision, if the figure of \$1.5 million is accepted as the cost

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<sup>1/</sup> The formal evaluation of parcel 20 was undertaken by the Geological Survey before such functions were absorbed by MMS. The report of the Geothermal Lease Sale Evaluation Committee for the subject sale, dated Sept. 14, 1981, appears as Government exhibit 1 to the hearing record.

of drilling an exploratory borehole, appellant's bid is still significantly less than the minimum acceptable bid that would be recommended by MMS and would, therefore, still be rejected by the Bureau.

We find no merit in the above-stated exceptions.

Exception No. 1:

In supporting this exception, BLM points to considerable testimony of Government witnesses regarding the DOE well project which was not discussed in the recommended decision. It is, however, a non sequitur to submit that this evidence was "overlooked" by Judge Clarke. It is not the task of the fact-finder to regurgitate in a written opinion all the testimony adduced at hearing. Rather, the Administrative Law Judge is expected to sort out the relevant facts based on all evidence received and issue a reasoned decision concerning the material issues.

The recommended decision quotes at length from testimony provided by appellant's expert witness, James Combs, who, among other things, had firsthand knowledge of the DOE well project. Combs characterized the DOE well "as a typical exploratory hole as the private industry drills." 2/

[2] The Board's de novo review of all evidence presented leads it to favor Combs' opinion on this score. One need not have been present at the hearing to find Combs' testimony credible. 3/

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2/ Tr. 291-92.

3/ In large measure, the hearing in this case entailed conflicting opinions offered by witnesses with varying degrees of experience in geothermal resource

As is evident from appellant's exhibit H, a 7-page resume regarding Combs' experience in geothermal resource studies and operations, he has a vast background in geothermal drilling. Of particular significance, he has considerable knowledge of the CKGRA, 4/ including the DOE well project, with which he was closely involved. 5/ Appellant's posthearing brief described the importance of this expert witness to this case as follows:

The only witness involved in the planning and on the site for the actual DOE drilling (and a premier and acknowledged authority (Exhibit H) in the field, being the author of one of the two articles (Exhibit 10) on which the committee report was chiefly concerned) provided at the hearing a factual description of the purpose, drilling, and actualities of the DOE well. Such witness [who] was actually involved in the drilling and preliminary study of CGEH-1, as well as in earlier research wells in the Coso area, was Dr. James Combs. Fortunately, he was available at the hearing to explain the actualities in the situation at Coso. [Appellant's emphasis; footnote omitted.]

(Posthearing Brief at 21-22).

Combs, who is not professionally associated with appellant, 6/ emphatically denied BLM's premise that the DOE well was not representative of

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fn. 3 (continued)

matters. The general rule that administrative tribunals will defer to the fact-finder's determination of witnesses' credibility, see, e.g., Sam Day IV v. Navajo Area Director, 12 IBIA 9 (1983), is of lesser importance in cases of this type because, the Board, like the trier-of-fact, can compare expert opinions against the record as a whole to discern what makes the most sense.

4/ "I would have targeted [parcel 20] at an 8,000 foot hole in this particular environment. And that's basically knowing all of the things I know from having worked in the area for the last ten years or so" (Tr. 348 quoting Combs).

5/ Tr. 287.

6/ He is presently Vice President-Exploration, for Geothermal Resources International, Inc., Menlo Park, California, and President, GRI Operator Corporation, a wholly-owned subsidiary of Geothermal Resources International.

a commercial exploratory well because it was drilled as a "government research project." 7/ He noted the similarities in detail. 8/

The similarity of costs between the DOE well and, prospectively, parcel 20, was also explained by Joseph Lefleur, a geothermal exploration geologist for appellant. 9/

The testimony by BLM's witnesses to the effect that the DOE well project is not a valid gauge for determining exploration costs for parcel 20 is not entitled to the same weight as that adduced by appellant, particularly through Combs. Michelson, Deputy Minerals Manager, Resource Evaluation, Western Region, MMS, stated he had no actual drilling experience of any kind. 10/ Isherwood acknowledged that he had not participated in the planning or testing of the DOE well. 11/ This would possibly explain his misunderstanding that the DOE well was drilled with air instead of mud 12/ at concomitant higher cost. Marshall Reed, a Government geologist who was detailed to DOE in November 1977 to work on the DOE well project, 13/ was

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7/ See testimony of William F. Isherwood, Acting Deputy Minerals Manager for Geothermal, MMS, at 118; testimony of Marshall Reed, MMS, at 215.

8/ Such as, much of the hole was drilled with mud in conventional fashion (Tr. 294); rig capability was twice that required for target depth (Tr. 296); geophysical logs were run at every casing point (Tr. 297); and overhead and management costs, but for delayed decisionmaking in the last 30 days of operations on the DOE project, were within the norm (Tr. 297-98).

9/ Tr. 471.

10/ Tr. 100. As supervisor of the evaluation committee for the September 1981 sale, Mr. Michelson's testimony was probative for other relevant purposes, however.

11/ Tr. 188.

12/ Tr. 118, 165. That mud and air were used was made clear by Combs, who participated in the drilling (Tr. 294). In addition, the Operations Plan, Coso Geothermal Exploratory Hole No. 1, dated June 1977 (Appellant's Exh. B), a public document available to the evaluation committee, identified the planned use of mud and air. Id. at 13-17.

13/ Tr. 222.

BLM's only witness who had firsthand experience with that operation. Nonetheless, he was not involved with the planning of the project and did not participate in onsite operations. 14/ While Reed's testimony, along with the other Government witnesses, was valuable for various insights, the Board is persuaded by the testimony of Combs that the DOE well was not untypical of a geothermal drilling operation as carried out by private industry in a frontier environment. 15/

Exception No. 2:

BLM's second exception is founded on a false supposition. It presumes that the recommended decision determined the cost of an exploratory borehole on parcel 20 to be \$1.5 million. From this premise, which the recommended decision does not in fact set forth, BLM seeks to demonstrate that including this figure in MMS' formula for presale evaluation of parcel 20 still renders appellant's bid unacceptable.

The recommended decision stops short of determining actual drilling costs for a geothermal well on parcel 20. With respect to appellant's evidence concerning drilling costs, two separate summaries were provided. Thus, at page 4 it is stated:

The appellant and its scientists relied on information which they had concerning the DOE or CGEH-1 well which they believed to have encountered the same type of problems and costs which would be

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14/ Tr. 222, 237.

15/ A frontier environment refers to an area where there has been no prior commercial activity, even though the area may lie in a KGRA and has undergone research. See Tr. 27-28.

expected in an industry effort to drill a similar hole and came to an estimated probable cost of a million and a half dollars. If the cost estimate by the appellant for the drilling of the well is substituted into the formula used by the MMS to obtain the minimum value of the parcel using MMS' figure for the value of the resource, the bid of the appellant is within the range of the minimum bid established by the MMS and the BLM and therefore the rejection by BLM of California Energy Company's bid should be reversed and the bid awarded to the appellant.

It is the above language from the recommended decision which BLM uses to posit that accepting \$1.5 million as the cost of an exploratory borehole on parcel 20 still establishes appellant's bid as "significantly less" than the minimum acceptable bid required by BLM. 16/

At page 14 of the recommended decision (as corrected by "errata" dated March 19, 1984), Judge Clarke, presumably continuing his review of testimony presented by Combs, states: "Two million dollars is not an unreasonable budget for a 6,000 foot well in a frontier environment such as the Coso well and as a quick way of looking at the costs of drilling a well sometimes there is assigned a dollar value per foot."

Neither of the above excerpts from the recommended decision, each of which is cited to the Board by the parties in the manner most favorable to their case, is read by the Board as constituting a determination by the Administrative Law Judge of drilling costs for parcel 20. The passage quoted from page 4 is an apparent reference to evidence presented by appellant regarding cost estimates projected by the company in September 1981

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16/ As computed by BLM, the per acre value for parcel 20 based on an exploration cost of \$1,500,000 rounds off to \$64 (or \$12 higher than appellant's bid). Exceptions to Recommended Decision, Appendix A.

for another project in the Coso area, viz., the Coso No. 1 Geothermal Well, based in part on the company's knowledge of the DOE well experience. See Appellant's Exh. D, entitled Assumption Sheet for Coso #1 Well, dated September 17, 1981, itemizing estimated drilling costs for a 5,000-foot well at \$1,334,858. 17/ Appellant's vice president for exploration, James L. Moore, testified that exhibit D reflects "direct drilling costs only" and that other costs for "exploration," "overhead," "roads and pads," and "supervision" are not included. 18/

Appellant states in its response to BLM's exceptions that "Exploration costs of \$1.5 million were neither advanced by California Energy Company nor accepted by Judge Clarke" (Response at 7). This is borne out by the record.

The quoted passage from page 14 of the recommended decision, on the other hand, stems from several statements made by Combs:

[Counsel for appellant:] You mentioned, for example, a well that costs around \$4 million in the Villes Caldera. Does that happen with some frequency these days?

[Combs:] That is more the typical example in a frontier environment. These same types of very large expenditures have been found from drilling in Nevada and Utah -- the first exploratory wells in an environment. I think some of it is caused by a lack of understanding of what the geothermal environment will be. And some people are just hard-headed enough they won't stop once they get in trouble, they continue to drill. But, in an environment which is what we would call a frontier environment -- the drilling of the first well in that environment -- the budgeting of that well for less than \$2 million is an unreasonable budget

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17/ The Authorization for Expenditure appended to the Assumption sheet cites total costs of \$1,300,296.

18/ Tr. 144. See also testimony of Robert Pryde, appellant's drilling operations manager (Tr. 397-98); Appellant's Response to Appellee's Posthearing Brief at 45-46.

for a 6,000 foot well in a frontier environment -- such as the Coso well and this first well in this area.

(Tr. 305-06).

[Counsel for BLM:] You mentioned that in your view, or maybe it's your knowledge, that geothermal wells cost in excess of -- I don't know whether you said two million or a million and a half -- but in excess of two million, let's say.

[Combs:] Yes. I very specifically said that for a 6,000 foot well in a frontier environment, that I would anticipate an expenditure of some \$2 million to complete that well in that particular circumstance.

(Tr. 341).

Since the recommended decision cites two sets of costs for geothermal drilling in an area similar to that found on parcel 20 (\$1.5 million, purportedly but not actually arrived at by appellant's scientists, 19/ and \$2 million, as set forth by Combs), the "actual cost of drilling a geothermal well" for this parcel, which the Board ordered a hearing to resolve, does not clearly emerge from the recommended decision.

However, Judge Clarke unmistakably found, and we agree, that BLM's estimate of drilling costs (\$850,000), using adjusted oil and gas well

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19/ See note 18, *supra*. Appellant summarized its position regarding the costs of an exploratory geothermal well on parcel 20 in the following way in its posthearing brief:

"California Energy Company knew in 1981, and knows now, that the actual costs and expenses of exploration of the first exploratory well on parcels, such as 20, in the Coso area, direct and indirect, approach three million dollars. The problem is how to prove such known conviction. The Judge is aware of the methods chosen by California Energy at the hearing. It is submitted the evidence clearly and convincingly demonstrates such exploration costs and expenses to be in the area of 1,600,000 dollars to \$3,000,000."

drilling costs as the determinant, was error. After highlighting relevant evidence from both parties, Judge Clarke concluded:

It is clear from the foregoing testimony that MMS erred in attempting to use adjusted gas and oil well drilling costs as the basis for the determination of the cost of drilling a geothermal well. Had the proper inquiries been made, and the proper studies been examined a much higher cost for the exploration hole forecast to be drilled to 6,000 feet in parcel 20 would have been obtained. If these costs were then subtracted from the value of the resource as estimated by MMS, the minimum bid value for parcel 20 would have been within the range per acre that was bid by the appellant herein and the bid would not have been rejected.

I therefore find that California Energy Company's bid is not spurious or unreasonable but rather is more likely to correctly reflect the actual value of the parcel. The BLM decision rejecting the high bid is hereby reversed and the matter is remanded with the direction that the lease be issued to the high bidder all else being regular.

(Recommended Decision at 14-15).

If, as the above language suggests, appellant's bid of \$52.20 per acre fairly represents the value of parcel 20, it would entail drilling costs being factored into the MMS valuation formula in the neighborhood of \$1,537,500. 20/ From the record made in this case, the Board has no difficulty finding that the foregoing figure is a minimum possible cost for geothermal drilling on parcel 20. We further find, however, that the most probable cost is more on the order of \$1,600,000. This figure approximates the cost of the DOE well

20/ Substituting MMS' well cost of \$850,000 in the formula set forth at Table 3, Sale Evaluation Report, with a cost of \$1,537,500 appears as:

$$\begin{aligned} \text{PV Risk} &= 6.815 \times 10^{-9} \times 1/1000 \times (1-0.8) - (0.8 \times \$1,537,500) \\ &= 1,363,000 - 1,230,000 \\ &= 133,000 \\ 133,000/2554 \text{ ac.} &= \$52.075/\text{ac.} \end{aligned}$$

(\$1,613,000), 21/ which represents a valid indicator of private industry costs for similar exploration. In addition, as best we can determine, \$1,600,000 approximates appellant's anticipated total costs for the Coso No. 1 Geothermal Well, a project planned by appellant contemporaneously with its bid for parcel 20. 22/

[2] In rejecting \$850,000 as a reasonable cost, we are in full agreement with appellant that the Government's reliance on oil and gas drilling data to calculate geothermal resource exploration costs was error. In its prehearing brief, appellant summarized the major distinctions in the two types of drilling, and the Board finds its summary supported by the record:

If not much can be said about overall statistical comparison, a great deal may be said, and was said in testimony, about specific items of comparison between costs of drilling geothermal as opposed to oil and gas. Significant points include the following:

- a. Sandstone and shale are typical environments for oil and gas. Geothermal resources tend to be found in significantly different subsurface environments than oil and gas. Such geothermal environments are much more difficult to drill. As Dr. Isherwood acknowledged, fractured granite is typical of geothermal environments, and is in fact what has been found at Coso KGRA. Uncontradicted testimony by drilling experts Pryde and Combs clearly demonstrated that drilling through hard granite rock is far more difficult, time consuming, and therefore costly.

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21/ See Government Exh. 8. We do not include in this figure indirect drilling costs which industry, as a matter of practice, assesses against the first well in any wildcat area, but which BLM does not include in its computations. See Tr. 496-97.

22/ Moreover, Michelson testified that MMS and BLM had employed an AEOT (Average Tract Value) analysis to the various high bids (Tr. 97-99). Without addressing the efficacy of this method of high bid analysis (but see Combs' criticism of this approach (Tr. 333-34)), lowering the MMS presale estimate to \$64 per acre and applying the AEOT would make appellant's bid acceptable.

b. In the nature of fractured rock, such as that at Coso KGRA and other geothermal areas, drilling fluids as a matter of course escape into the open cracks, causing "lost circulation" leading to interruption of drilling and costly delays. Such lost circulation conditions should be expected at all wells drilled into reservoir rock at Coso. Again, there was no significant disagreement between Dr. Isherwood, Dr. Combs, and Mr. Pryde.

c. Mr. Pryde and Dr. Combs testified, and Dr. Isherwood did not refute, that more expensive (insert) drilling bits are customary for geothermal drilling in a Coso type environment as opposed to standard (mill tooth) oil field bits.

d. Both the heat of geothermal drilling and the harder rock combine to wear out drilling tools much more quickly. This means not only replacement of expensive bits and associated down hole tools, but also requires additional "trips": the withdrawing of the entire drill string which is necessary in order to replace the worn and down hole tools. This additional "trip time" results in substantial additional expense, as detailed by both Dr. Combs and Mr. Pryde.

(Appellant's Posthearing Brief at 50-51).

It was established at the hearing that oil and gas drilling is sufficiently unlike geothermal resource exploration that meaningful cost comparisons cannot be made. 23/

Based on the record as a whole, the Board therefore finds that it was error for MMS to estimate drilling costs for a geothermal well on parcel 20 based on oil and gas well drilling data and without deference to drilling costs incurred in the DOE well project. Rather than estimating drilling

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23/ See Tr. 301, 306, 316, 317.

costs at \$850,000, a reasonable estimate would have been \$1,600,000. 24/ Substituting \$1,600,000 into MMS' formula for per acre valuation (see footnote 20) produces a value of \$32.50 per acre. Appellant's high bid of \$52.20 per acre was therefore reasonable and should not have been rejected. A lease for the parcel should be issued to appellant, all else being regular. 25/

Accordingly, pursuant to the authority delegated the Board of Land Appeals by the Secretary of the Interior, 43 CFR 4.1, the decision of the California State Office, BLM, is reversed.

Wm. Philip Horton  
Chief Administrative Judge

We concur:

Franklin D. Arness  
Administrative Judge

James L. Burski  
Administrative Judge

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24/ Though BLM would not go this far, its posthearing brief states, "Based upon the testimony of the appellant's expert witnesses MMS could very well concede that the cost for drilling a 6,000 foot exploration well was somewhat underestimated" (Posthearing Brief at 26; emphasis in original). 25/ We do not discuss or decide other alleged inadequacies in the MMS sale evaluation formula or the evaluation committee's decisionmaking process, though such matters were the focus of considerable testimony at the hearing and in written argument. Appellant has established that on the basis of the formula in use, its high bid was not unreasonable if proper estimates of geothermal drilling costs for parcel 20 had been made. The limited question for which a hearing was ordered has therefore been answered.

