

MEMBERS PRESENT:

Vice Chairman Craddock	Assemblyman Marvel
Assemblyman Chaney	Assemblyman Rusk
Assemblyman Coulter	Assemblyman Tanner
Assemblyman Dini	Assemblyman Weise
Assemblyman Bergevin	

MEMBERS ABSENT:

Chairman Price (excused)  
Assemblyman Mann (excused)

GUESTS LIST:

William V. Pennington, Oil Producer  
Peter W. Hummel, Oil, Gas & Mining Board  
George Vargas, Major Oil Companies  
Ray Knisley  
J. C. Miller, Nevada Bell  
Katie MacRill  
Bruce MacRill  
Gerald Prindiville, AARP & Common Cause  
Noel Clark, Nevada Department of Energy  
Steve Wilson  
Bill Andrews, Department of Taxation  
Clyde Scott, Department of Taxation  
Martin Booth, Nevada Mining Association and Geothermal Development Association  
Bob Sullivan, Carson River Basin Council of Governments  
Dan Miles, Deputy Fiscal Analyst

A quorum being present, Vice Chairman Craddock called the meeting to order at 3:00 p.m. He stated the purpose of the meeting to be the taking of testimony on AB 144, AJR 7 of the 59th Session and AJR 9 of the of the 59th Session. Mr. Craddock pointed out that when considering AJR 7 and AJR 9, they should keep in the mind the fact that any amending of the bills would void the work of the previous session as they must be passed as they are to complete their cycle before going to a vote of the people.

AB 144

Mr. Miles began by giving a brief background on the bill. He stated that this was a result of an interim study conducted by an oversight committee which consisted of Senator Mary Gojack and Assemblyman Craddock. This committee with the help of the Fiscal Analysis Division of LCB gathered information by use of the public hearings and a questionnaire survey and came up with the following summary and recommendations which are attached as Exhibits A and B. These pages come from Bulletin 79-16, "Assessment and Taxation of Geothermal Resources," published by the Legislative Commission of the Legislative Counsel Bureau, August 1978.

Mr. Miles continued on by stating that currently under N.R.S. possessory interests are taxable. The bulk of the geothermal resources are on federal lands. Anytime you normally exempt property, such as federal land, which is used for business purposes under state law and under the constitution the possessory interest has to be taxed. Explorers for geothermal purposes lease property either under a competitive or noncompetitive basis and they pay a tax on the possessory interests on the land that they lease from the federal government. The first recommendation of the report recommends that the state exempt those leases from taxation during exploration phase. The second recommendation deals with a producing geothermal resource. The committee felt that because of the likeness between geothermal resources and other mining and mineral activities, primarily oil and gas, they should enjoy the same taxation policy after production. This would require putting them under the net proceeds mines tax laws, where only the net revenue after expenses are deducted are taxed. Mr. Miles pointed out that AB 144 only deals with the first recommendation because Legislative Counsel feels that because of recent Supreme Court decisions that putting geothermal wells under net proceeds would probably be unconstitutional at this point in time. However, should AJR 7 of the 59th Session become law by a vote of the people Counsel feels that they would be able to put geothermal under the net proceeds law.

George Vargas, representing major oil companies marketing in Nevada, in addition to Northwest Exploration Companies producing oil and gas in Nevada, spoke in support of the bill and of the interim committee report. He presented a copy of some "pies" published in a Reno paper. One of these represents the the source of revenue in the State of Nevada and is attached to these minutes as Exhibit C. He pointed out that it should be noted that over 2/3 income comes from gaming revenue and sales and use taxes. He questioned what would happen to the economy of the state if something happened to those two revenue producing industries. He stated that they feel that the major prospect for revenue in this state lies in the discovery of petroleum resources and accordingly it should be a part of the state policy to encourage the exploration for oil and natural gas.

The points and comments which Mr. Vargas made to the committee are enclosed in a copy of a letter from him to the committee which is attached to these minutes as Exhibit D.

Mr. Vargas also requested that the committee consider amending AB 144. A copy of his proposed amendment is attached to these minutes as Exhibit E.

Mr. Vargas ended his statement by saying that they feel it would be to the interest of Nevada and the enhancement of its energy policy to include oil and natural gas leases together with geothermal leases as exempt from the original federal lease tax. He added the Noel Clark of the Department of Energy testified in the Senate Commerce and Labor Committee that even with the two wells located in Railroad Valley increasing in their production, Nevada must

import approximately 97% of its petroleum products. Mr. Vargas then introduced Mr. Peter Hummel of the Oil, Gas and Mining Board.

Mr. Hummel began by stating that he was a consulting geologist and a non-operator in Nevada although he is very active elsewhere. He encouraged the amending of the bill as proposed by Mr. Vargas. He stated that the Oil, Gas and Mining Board feels that encouraging oil and gas exploration is very much in the best interest of Nevada. They want to also encourage operators to hold oil and gas leases in this state.

Mr. Hummel explained that leases on oil and gas issued after February 1, 1977 have an annual rental fee of \$1.00/acre and the state gets one half of that fee. This is paid to the state every six months by the Bureau of Land Management. In September of 1978 this amount was \$2,500,000. He pointed out that this state is in competition with 30 other states that produce oil and gas to attract exploration. He stated that Nevada has a definite handicap in that it is a very complex state geologically. He explained that Nevada also is the hottest state in geothermal grading. Petroleum occurs inside a specific thermal window. If it is too cold or too hot petroleum will either not form or it will burn up.

Mr. Hummel further stated that the state should be doing everything possible to provide an incentive for exploration and not tax such things. He added that there was plenty of time later to impose a tax. He stated that they feel that this should be under the Net Proceeds of Mines Tax which is a very positive approach. The federal government has imposed upon the industry an avalanche of rules and regulations and it seems that about every 90 to 120 days another one emerges. This has hemmed the industry in to where cash flow problems and recaptured capital are at a crisis point. In this industry return on capital is very important and this is why the net proceeds of mines is so very meaningful.

William V. Pennington began by stating that he was an oil producer in the state of Nevada for the last 25 years. He explained that he has had nothing but difficulty with the state and federal governments. He pointed out that the federal government owns about 87% of the State of Nevada and they have enacted regulations that seem impossible to deal with. He read several articles from newspapers that pointed out that price of gasoline will go up and will probably eventually be rationed. He pointed out that it would be up to the committee to decide if the oil producer is going to have to fight the state or if they could get together and fight the federal government. He explained that when he began producing oil he received between \$3 and \$4 per barrel for oil and they netted out about \$1/barrel. Under the energy law signed by President Ford they are lucky to get \$5/barrel while presently paying \$12-14/barrel for Saudi Arabia oil and having to haul it in on tankers. Mr. Pennington stated that he feels they are being discriminated against by the federal government. He cited an article by Paul Harvey that states that in the last 10 years the drilling process cost has increased three times as much as the price per gallon has increased.

Mr. Pennington also cited an article and statement by William Randolph Hearst that there is enough oil in this country if the government would just allow the producers to produce and release them from all the restrictions. He added that many producers are now shutting down and that sometimes it is even impossible to give the lease away let alone sell them. He presented the committee with copies of a pamphlet published each month by the Bureau of Land Management which lists all of the oil leases that are being dropped and can be purchased. A sample copy of this publication is attached to these minutes as Exhibit F. A complete set of the publications that Mr. Pennington submitted may be seen in the Committee Secretary's Minute Book.

Mr. Pennington cited the situation of several major oil companies that will not come back to this state until the tax is recinded. Some of these are Sun, Shell, Empire, etc. He went on to explain about the Great Basin which extends from the Sierra Nevadas to a mountain range in Utah. The deepest part of this basin is in Nevada and it is Mr. Pennington's belief that there is a lot of oil here but that it is very deep. He suggested that there could be billions of barrels of oil if they drilled deep.

One of the worst regulations, according to Mr. Pennington, is the one which requires them to drill an additional well to put the water the comes out with the oil in. In Nevada oil wells, there is a great deal of water and instead of being allowed to let it drain unto the surrounding desert, they must, by regulation, put it back by means of another well. He stated that this is something that has to be worked out with the government. He also cited the fact that the government owns much of the state and has erected several missile cites on areas which would probably be very productive.

Mr. Hummel pointed out that although this tax is not a large amount of money it is an "obnoxious expense" and most companies would rather drop of whole thing then have to pay the tax. No other state has this tax.

Mr. Pennington stated that this law was initiated for the one purpose so Nye County could get to the Mercury project and Reynolds Aluminum and it was not intended that all other counties should get into it. No other state taxes possessory interests and so in effect they are paying \$1.10/acre here and \$1.00/acre in other states.

Mr. Dini inquired whether if they adopt this bill would it effect Nye County's ability to tax Reynolds Aluminum. Mr. Vargas stated that if the suggested amendment were adopted it would effect it. This would effect Nye County, Elko, Eureka, White Pine, and Churchill County.

Ray Knisley, representing himself, stated that he had no interest in the oil industry, did not hold any stock and received no income from it. He stated that he was in support of this bill and gave a brief background of oil in Nevada. He stated the possibilities of oil in Nevada are great. He acknowledged that the geology of the state is extremely complex and that it would only be a matter of time before Nevada could be a major producer. He stated that in Nevada, because of the high costs that will be involved, the wild catter will not be the ones who find the oil. It will be a major producer. They must have large lease holdings and so the cheaper it is for them to come in the more chance there will be that some oil and petroleum will be found.

Mr. Knisley stated that he would suggest that some thought be given to a very nominal tax, if not a total exclusion, and make it as attractive as possible for the professional to go into the field.

Noel Clark, State Department of Energy, spoke in favor of the bill. He stated that geothermal development has not progressed as it should and they believe that by amending the act will generate activity and commercial use of that resource. He stated that he would suggest the addition of some limiting language into the bill. He suggested that at the end of the new paragraph on the second page that the limitation of this tax relief extend not more than ten years. He stated that he felt there had to be some incentive to move forward with this activity otherwise some valuable property might be locked up with leases for an indefinite period of time and therefore would not become productive.

Mr. Craddock inquired whether Mr. Clark saw any deterrent to the passage of the bill with the inclusion of the amendment proposed this day. Mr. Clark stated that he could see no problem.

Mr. Marvel inquired what the difference between oil and gas lease and the geothermal lease was. Mr. Hummel stated that they are both ten year leases. Oil and gas lease rental is \$1/acre for the whole ten years and the geothermal lease rental begins to escalate after the fifth year. It starts at a \$1/acre the first five years. He pointed out that these are extremely arbitrary figures that they have selected for valuation of the leases.

Mr. Bergevin inquired whether in view of the Supreme Court ruling did Mr. Vargas feel that the this could be done statutorily. Mr. Vargas stated that he felt they could since it was imposed by statute it could be taken away by statute.

Mr. Rusk inquired whether Mr. Clark's support included the amendment as proposed by Mr. Vargas. Mr. Clark stated that they support anything that will develop natural resources in the State of Nevada and assist the energy problem. He added that some of the best geothermal leases that have been developed are on private land and there are no limitations as to time on those and the limitation would not require giving up the leases but it would certainly increase some incentive to get moving on the development of the geothermal industry.

Mr. Chaney questioned how the fiscal note would be effected by the additional of the proposed amendment. A copy of the fiscal note is attached to these minutes as Exhibit G. He questioned what additional impact it would have on the State and Counties by the addition of oil and gas. Mr. Clark stated that he would not be able to supply that information at this time. Mr. Dini pointed out that it would change the fiscal note. Mr. Craddock stated that he would attempt to find out this information.

Gerald Prindiville, representing American Association of Retired Persons and Common Cause, spoke in opposition to the bill. A copy of Mr. Prindiville's comments is attached to these minutes as Exhibit H. Also presented by Mr. Prindiville is an article entitled "Thermal Springs of the Western United States" which is attached to these minutes as Exhibit I.

Martin Booth, representing Nevada Mining Association and Geothermal Development Association, spoke in support of passage of AB 144. He stated that he did have geothermal leases in the State of Nevada and that he was a certified petroleum geologist. He stated that he did not and had never held any oil and gas leases but that he would also support the amendment as proposed. He stated that he would support the major oil companies, small oil companies, lease investors and the individuals on this bill and there are not many times that you can get all these people on the same side of the fence.

Bob Sullivan, representing the Carson River Basin Council of Governments, stated that there would be a lot more representation if they had known that the proposal was going to be made to expand this to include oil and gas. He stated that with the proposed cut back in property taxes, each little amount that the county is going to lose in revenue such as this type of revenue, is going to have to be made up some way. He used Nye County as an example he stated that the \$14,000 involved is probably double their capital improvement expenses. He stated that this is a growth resource and that counties have very few growth resources.

AJR 7 and AJR 9 of the 59th Session

Mr. Craddock pointed out that Noel Clark stated before leaving the hearing on AB 144, that the Department of Energy was in favor of both of these resolutions. There was no additional testimony to be presented on these resolutions.

As there was no further testimony to be heard, Vice Chairman Craddock adjourned the meeting.

Respectfully submitted,

*Sandra Gagnier*  
Sandra Gagnier,  
Assembly Attache

Also attached as Exhibit J is a reported submitted by Mr. Craddock  
(Committee Minutes)

ASSEMBLY TAXATION COMMITTEE

GUEST LIST

Date: February 12, 1979

NAME	REPRESENTING	WISH TO SPEAK	
		YES	NO
Wm W Pennington	Oil Produce myself	X	
Peter W Hummel	Oil, Gas & Mining Board	X	
George Edwards	MAJOR OIL CO'S	X	
RAY T. ...	...	X	
J. C. MILLER	NEVADA BELL		X
Katie MacRill	Myself		X
Bruce MacRill	SELF		X
Gerald Prindiville	AARP + <u>Common Cause</u>	X	
...	...	X	
Steve Wilson	myself		X
BILL ANDREWS	DEPT OF TAXATION		X
...	...		X
MARTIN BOOTH	Nevada Mining Association Geothermal Development Associates	X	
Bob Jukhira			

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REPORT SUMMARY

The national energy crisis has led to significant efforts to develop alternative energy sources to reduce dependence on oil and gas resources. This effort and the Geothermal Steam Act of 1970 (P.L. 91-581) have renewed interest in geothermal resources as a useful energy source. Nevada has many geothermal areas and is estimated to be second only to California in its potential for geothermal energy. This potential has led to significant exploration which could lead to the beginning of a new industry within the state for which no taxing provisions have been considered. The 59th Session of the Legislature recognized this potential problem and approved ACR 8 which requires the study of the assessment and taxation of geothermal resources.

The Legislative Commission assigned the study to the Fiscal Analysis Division with an oversight committee. The oversight committee held three meetings, took public testimony and received substantial amounts of information, data and materials on geothermal resources. In order to obtain the broadest possible public participation in the study, a questionnaire survey was conducted of the geothermal industry.

From the various input sources to the study, the oversight committee was able to draw the following general conclusions:

1. That geothermal energy is a desirable, safe and environmentally acceptable alternative to conventional energy resources.
2. Nevada is a net importer of energy and places great reliance on other states for its energy needs.
3. The geothermal industry suffers from extreme financial risk due to large capital requirements, long time lags between discovery and production and uncertain markets which makes investment capital difficult to obtain.
4. Substantial institutional and technological barriers and disincentives to geothermal development exist which threaten the success of the industry.

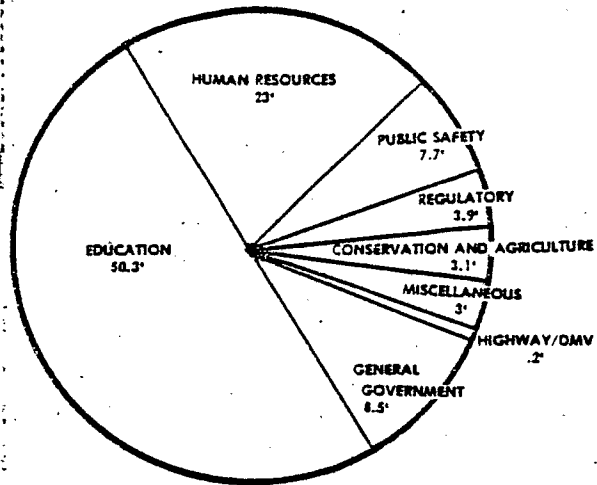
The oversight committee concluded that the economic and social welfare of Nevadans may depend to a large degree on the state's ability to solve its energy problems. Geothermal development may be an important step towards accomplishing this goal. If geothermal is to be successfully developed in the shortest possible time, the state should institute a tax policy which encourages and supports such development. Such a tax policy should recognize the inherent risk in geothermal development and the potential benefits for the state if large energy resources are discovered. The recommendations of the oversight committee reflect this attitude.



SUMMARY OF RECOMMENDATIONS

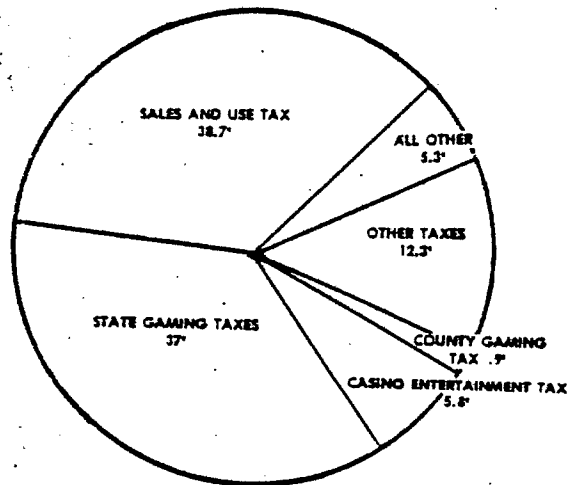
The Legislative Commission's oversight committee on the assessment and taxation of geothermal resources and byproducts recommends for the consideration of the Nevada legislature:

1. That nonproductive geothermal leases of otherwise exempt lands be exempted from ad valorem property taxation under Nevada's possessory interest statute NRS 361.157 (Appendix H).
2. That productive geothermal resources be taxed as a mine under the net proceeds of mines laws. Subsequent to the final oversight committee meeting and acceptance of the report by the Legislative Commission, Legislative Counsel determined that the recommendation to tax geothermal resources as a mine might not pass constitutional tests in light of a recent Supreme Court interpretation of a mine. Assembly Joint Resolution No. 7 which passed the 59th session of the legislature would amend the constitution to permit such a tax policy providing it also passes the 60th session and a vote of the people. The oversight committee therefore recommends that legislation placing geothermal resources under the net proceeds of mines tax laws be submitted to the 61st session of the legislature in 1981.
3. That the sale of steam or associated geothermal energy be exempted from sales and use taxes. This exemption would be accomplished automatically by placing geothermal resources under the net proceeds of mines statutes and therefore could be submitted to the 61st legislative session.
4. That byproducts of geothermal development be taxed in the same manner as the geothermal resource. Again the oversight committee recommends submission of appropriate legislation to the 61st legislature.

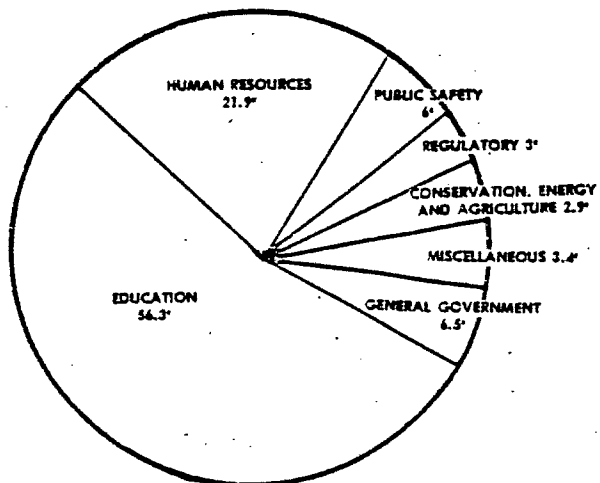


NOTES:  
 Miscellaneous function contains all salary adjustment money. This chart does not include one-shot supplemental or capital improvement recommendations.

GENERAL FUND DOLLAR  
 Revenue by Source — Fiscal 1978



GENERAL FUND DOLLAR  
 Appropriations by Function 1977-1979 Biennium



NOTES:  
 Miscellaneous function contains all salary adjustment money except that appropriated for the University of Nevada. This chart does not include one-shot supplemental or capital improvement appropriations.

RENO OFFICE  
GEORGE L. VARGAS  
JOHN C. BARTLETT  
LOUIS MEAD DIXON  
ROBERT W. MARSHALL  
JAMES P. LOGAN  
JOHN C. RENSHAW  
ALBERT F. PAGNI  
FREDERIC R. STARICH  
JOHN P. SANDE, III  
PHILIP G. SATRE  
JAMES P. LOGAN, JR.  
BRENT C. BEGLEY  
PHILLIP W. BARTLETT  
JOHN P. FOWLER  
DAVID R. GRUNDY

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CHRIS A. BEECROFT, JR.  
DEAN P. VERNON  
THOMAS F. KUMMER  
CHRISTOPHER L. KAEMPFER  
JEFFREY L. ESKIN  
DAVID D. JOHNSON

January 30, 1979

Honorable Robert E. Price, Chairman  
Assembly Taxation Committee  
Nevada State Legislature Building  
Room 240  
Carson City, Nevada 89701

Dear Mr. Price:

As registered representative of the following  
major oil companies:

Atlantic Richfield Company,  
Chevron, U.S.A.,  
Exxon Company, U.S.A.,  
Gulf Oil Corporation,  
Shell Oil Company,  
Texaco Inc., and  
Union Oil Company of California,

and as counsel for Northwest Exploration Company, as well as  
on behalf of Mr. William Pennington, Sr., and Mr. Peter  
Hummel, both of Reno, Nevada, I am requesting that your  
committee give favorable consideration to amending Assembly  
Bill 144 in accordance with the enclosed requested amend-  
ment.

I hope that notice of the hearing on this bill  
will be given sufficiently ahead of time so that both Mr.  
Pennington and Mr. Hummel will have the opportunity to  
appear before your committee and explain why the adoption of  
this amendment is in the best interest of the state.

All of the reasons and arguments which are set  
forth in the report of the Legislative Commission's Over-  
sight Committee For the Study of Assessment and Taxation of  
Geothermal Resources in Nevada are equally applicable to  
the assessment, taxation and development of oil and natural  
gas resources in this state.

Honorable Robert E. Price, Chairman  
January 30, 1979  
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Paraphrasing the four general conclusions which are set forth in the report summary of the geothermal study, Page 3, it might be noted:

(1) That the shortage of oil and natural gas resources is of major economic concern, not only to the State of Nevada, but to the country as a whole and that public policy should encourage in every way possible the expenditure of private capital in the discovery and development of oil and natural gas.

(2) With reference to oil and natural gas, Nevada is a net importer of energy and places great reliance on other states for its energy needs.

(3) A history of the attempts of private enterprise to locate and develop oil and natural gas in Nevada will clearly demonstrate that these efforts have in the past suffered, and continue to suffer, from extreme financial risk due to the great difficulties experienced in attempting to discover oil and natural gas in this state and also due to large capital requirements. This history will further demonstrate that, as the committee stated with reference to geothermal resources, long time lags between discovery and production have certainly occurred in connection with oil and natural gas resources and further, this history will demonstrate that while there is a minimal discovery situation in Nevada, the production has been so small as to require long haul to out-of-state refineries and production shutdowns even in such minimal production. Finally, that all of these circumstances make investment capital difficult to obtain. I am sure you will find that through testimony of Mr. Pennington and Mr. Hummel, this last assertion will be adequately sustained.

(4) Finally, the fourth conclusion of the geothermal report states that substantial institutional and technological barriers and disincentives to geothermal development exists which threatens the success of the industry. Again, I am sure you will learn through testimony of the gentlemen mentioned above, that technological barriers equally exist with reference to locating oil and natural gas in this state.

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The geothermal summary further states "The Oversight Committee concluded that the economic and social welfare of Nevadans may depend to a large degree on the state's ability to solve its energy problems." With the current situation in Iran, and with some of my clients finding it necessary by reason of this situation and by reason of the great complexity and confusion of federal regulation to institute gasoline allocation programs, the economic and social welfare of Nevadans may, in addition, depend to a substantial degree on the discovery of Nevada oil and natural gas.

Therefore, as is stated in the geothermal summary, and again to paraphrase, if oil and gas are to be successfully developed in the shortest possible time, the state should institute a tax policy which encourages and supports such development. Such a tax policy should recognize the inherent risk in oil and natural gas exploration in this state and the potential benefits for the state if large energy resources are discovered.

The current tax on federal oil and gas leases is diametrically opposed to such a desirable policy and if anything, tends to discourage the expenditure of funds in this state in the further and intensive effort to discover oil and natural gas.

It is ironic to contemplate at some time shortly prior to the original Eagle Springs, Nye County oil discovery, the legislature had placed on the books a law providing for a bonus of \$25,000 to the first successful producer of petroleum resources. Of course, the state's treasury was not as large in those days and perhaps it is fortunate for the state that this bonus was repealed prior to the original discovery. Nevertheless, and without regard to the rather insignificant results of the taxation imposed on federal oil and natural gas leases, the state receives substantial benefits from the continuing effort to develop petroleum resources on public lands in Nevada.

In this respect, Senators Cannon and Laxalt recently announced that Nevada's share of federal mineral leasing revenue is continuing to climb due to increased

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oil exploration in Nye County and other locations. The Senators noted that Nevada's share of lease revenues for the last half of fiscal 1978 (emphasis added) was \$2.9 million constituting a \$900,000 increase over the amount received for the first half of 1978 and nearly triple the amount received early in 1977 before recent drilling began.

It can be readily seen that the more encouragement given by the state for the continued expenditures in this area, the more the revenue to the state will increase. It would therefore seem to necessarily follow that state policy should offer every encouragement to continued and expanded exploration. From this source, the state receives 50 percent of all bonuses, royalties and rentals paid to the U. S. Bureau of Land Management for mineral leases.

As is suggested in the geotheramal resources report with reference to sale of steam, production of oil and natural gas is taxed under the Net Proceeds of Mines Statute.

My office, as counsel for Standard Oil Company of California, unsuccessfully undertook a test of the constitutionality of that portion of N.R.S. 361.175 which imposes the tax on federal oil and gas leases. Unfortunately, the decision of the Nevada Supreme Court in this case left the entire situation in a most confused state and one which is certainly not designed to clarify the difficulties, confusion and perhaps discouragement of exploration in the field of oil and natural gas.

The case is that of Standard Oil Company of California v. Pastorino, No. 9202, 94 Nev., Advance Opinion 84, decided June 7, 1978. Shortly prior to this decision, our Supreme Court held that oil and gas are minerals. Standard Oil contended in this case that oil wells and leases are in effect unpatented "mines" or "mining claims" which are exempt from property taxation pursuant to article 10, § 1 of the Nevada Constitution. The court stated, commencing at the bottom of Page 4 of the Opinion, "We need not decide this issue as proffered, however, because the sole question before this court is whether oil leases (emphasis supplied by the court) should be exempt from property taxation." This in itself is a very confusing

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statement when the court notes immediately ahead of this statement "Appellant next contends oil ... leases are unpatented 'mines' or 'mining claims'." In spite of this, the court says it need not decide this issue because the sole question before the court is whether oil leases should be exempt.

The court then defines a "mine" as contained in the legislative definition N.R.S. 512.006 of the 1975 Legislature. Then the court concludes "Thus, at least until 'mines' are created through an actual exploration or extraction, the interests in question would be taxable as any other leasehold interest. Therefore, we conclude such totally undeveloped oil leases are not exempted from property taxation within the meaning of article 10, § 1 of the Nevada Constitution."

The very confusing and anomalous situation which thus results can be readily perceived through a total lack of explanation as to what constitutes "exploration." Our Supreme Court has said that prior to "exploration" these federal leases are taxable. That immediately upon actual "exploration" they apparently become exempt from ad valorem taxation. There is, of course, "exploration" involved even in the locating of land subject to federal oil and gas leasing. It is obvious that money is not expended simply in rushing out and seeking mineral leases willy-nilly. Hence, it can well be argued that once a federal oil and gas lease is brought into existence, there has been exploration and hence, it is not subject to ad valorem taxes. The real point is - at what point does "exploration" begin so as to change the nature of the lease and hence, the nature of the tax? No one can answer this question under the current state of the law. For that reason, this has left the situation in a more muddled and confusing state than ever.

Should anything happen to gaming and its related tourism revenues, substantial discoveries of petroleum deposits in Nevada are, for the very best, and probably the only real solution, to Nevada's economic problems. Hence, it is respectfully submitted that the current nuisance tax

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on federal oil and gas leases should be repealed. I enclose  
herewith a copy of the above-referenced decision.

Sincerely,

  
George L. Vargas

GLV:mn

Enc.

cc: All Members, Assembly  
Taxation Committee  
William V. Pennington, Sr.  
Peter Hummel  
M. K. Worley  
B. G. Warren  
W. B. May  
M. L. Pitcher  
G. E. Meske  
R. L. Lindauer  
R. W. Curtis  
J. H. Augustine



REQUESTED AMENDMENT TO ASSEMBLY BILL 144

Amend Assembly Bill 144 to add after the words "geothermal resources," Line 15, Page 2, the following words: "oil or natural gas."

EXHIBIT F

NEVADA STATE OFFICE  
ROOM 3008 FEDERAL BUILDING  
300 BOOTH STREET  
RENO, NEVADA 89509

NOTICE OF LANDS AVAILABLE FOR OIL AND GAS FILING

November 20, 1978

The following described lands formerly embraced under oil and gas leases which were cancelled, relinquished, terminated, or expired, will be subject to oil and gas leasing in accordance with the regulations found in Title 43 CFR Subpart 3112 at 10:00 a.m. November 20, 1978. These lands are subject to simultaneous filings of lease offers from 10:00 a.m. November 20, 1978 to 10:00 a.m. November 28, 1978.

Each offer to lease must meet the requirements of the regulations in Title 43 CFR Group 3100. Filings must be made on an original "Simultaneous Oil and Gas Entry Card," Bureau Form 3112-1 (February 1976 or later). Reproduction of these cards is not authorized. The offeror must designate a parcel number identifying the leasing unit filed upon. A \$10.00 filing fee must accompany the Entry Card.

A public drawing to determine priorities will be held November 30, 1978, at 10:00 a.m. in accordance with Title 43 CFR 1821.2-3. The successful drawee is required to pay the advance rental of \$1.00 per acre or fraction thereof within 15 days from receipt of Notice from the Bureau of Land Management.

This office will take action as indicated below on simultaneous oil and gas offers having the defects listed below:

Unacceptable offer: Offer returned to offeror, together with filing fee:

1. Unacceptable remittance: not signed, not dated, postdated, improper payee, no payee, no amount.
2. Insufficient filing fee: e.g., ten offers with single check for nine offers; the entire group will be returned.
3. Premature or late filing.
4. Parcel deleted from list by BLM.
5. Entry Card failed to indicate the parcel number for which offeror was applying.
6. Entry Card indicated a parcel number not on the current Simultaneous Oil and Gas List.
7. Entry Card not signed.
8. No address on Entry Card.
9. Entry Card filed in wrong office.

All other entries will be included in the drawing and the filing fee retained, whether or not the offer is subsequently rejected.

All leases issued may be subject to one or more special stipulations as shown on pages 5 through 22. No lease will be issued on lands for which an environmental analysis has not been completed.

Lands listed begin on Page 2.

<u>PARCEL NO.</u>		<u>ACREAGE</u>	<u>OLD SERIAL NUMBER</u>
NV-26	T. 22 N., R. 32 E., MDM, Nevada - Churchill County sec. 28, All.	640.00	N-13020
NV-27	T. 6 N., R. 37½ E., MDM, Nevada - Esmeralda County sec. 20, All.	640.00	N-20977
NV-28	T. 31 N., R. 44 E., MDM, Nevada - Lander County sec. 28, All; sec. 32, All.	1280.00	N-15016
NV-29	T. 29 N., R. 49 E., MDM, Nevada - Eureka County sec. 18, Lots 1,2,3,4, E½NW¼, E½; sec. 30, Lots 1,2,3,4, E½NW¼, E½.	1218.08	N-15017
NV-30	T. 22 N., R. 52 E., MDM, Nevada - Eureka County sec. 2, All; sec. 11, All.	1241.00	N-20489
NV-31	T. 19 N., R. 53 E., MDM, Nevada - Eureka County sec. 1, Lots 1,2,3,4,5, S½SW¼, SW¼SE¼; sec. 2, Lots 1,2,3,4, S½S¼; sec. 3, Lots 1,2,3,4, S½S¼; sec. 4, Lots 1,2,3,4, S½S¼; sec. 5, Lots 1,2,3,4, S½S¼; sec. 6, Lots 1,2,3,4,5, SE¼SW¼, S½SE¼; sec. 7, Lots 1,2,3,4, E½NW¼, E½.	2336.55	N-20492
NV-32	sec. 8, All; sec. 9, All; sec. 10, Lots 1,2,3,4, N½, W½SW¼, N½SE¼, SE¼SE¼; sec. 11, All.	2552.77	N-20493
NV-33	T. 6 N., R. 55 E., MDM, Nevada - Nye County sec. 28, NW¼.	160.00	N-6987
NV-34	T. 11 N., R. 56 E., MDM, Nevada - Nye County sec. 26, SW¼SE¼.	40.00	N-2675
NV-35	T. 8 N., R. 57 E., MDM, Nevada - Nye County sec. 35, NW¼NW¼;	40.00	N-2682
NV-36	sec. 17, SW¼NE¼.	40.00	N-2684
NV-37	T. 21 N., R. 58 E., MDM, Nevada - White Pine County sec. 28, SE¼SE¼.	40.00	N-2685
NV-38	T. 23 N., R. 58 E., MDM, Nevada - White Pine County sec. 3, Lots 1,2,3,4, S½NW¼, S½; sec. 4, Lots 1,2,3,4, S½NW¼, S½; sec. 9, E½.	1595.60	N-14488
NV-39	T. 8 N., R. 60 E., MDM, Nevada - Nye County sec. 11, All; sec. 12, All; sec. 13, All; sec. 14, All.	2560.00	N-16164

## EXHIBIT F

<u>PARCEL NO.</u>		<u>ACREAGE</u>	<u>OLD SERIAL NUMBER</u>
	T. 23 N., R. 61 E., MDM, Nevada - White Pine County		
NV-40	sec. 4, Lots 1,2, S $\frac{1}{2}$ NE $\frac{1}{4}$ , SE $\frac{1}{4}$ ; sec. 9, A11; sec. 21, A11; sec. 29, E $\frac{1}{2}$ ; sec. 33, A11.	2559.52	N-14612
	T. 14 N., R. 62 E., MDM, Nevada - White Pine County		
NV-41	sec. 28, SW $\frac{1}{4}$ SW $\frac{1}{4}$ .	40.00	N-6913
	T. 18 N., R. 67 E., MDM, Nevada - White Pine County		
NV-42	sec. 1, Lots 1,2,3,4, S $\frac{1}{2}$ N $\frac{1}{2}$ , S $\frac{1}{2}$ ; sec. 2, Lots 1,2,3,4, S $\frac{1}{2}$ N $\frac{1}{2}$ , S $\frac{1}{2}$ ; sec. 12, A11; sec. 13, A11.	2560.74	N-15003
NV-43	sec. 24, A11; sec. 25, A11; sec. 36, A11.	1920.00	N-15004
	T. 19 N., R. 67 E., MDM, Nevada - White Pine County		
NV-44	sec. 1, Lots 1,2,3,4, S $\frac{1}{2}$ N $\frac{1}{2}$ , S $\frac{1}{2}$ ; sec. 2, Lots 1,2,3,4, S $\frac{1}{2}$ N $\frac{1}{2}$ , S $\frac{1}{2}$ ; sec. 11, A11; sec. 12, A11.	2561.60	N-15005
NV-45	sec. 13, A11; sec. 14, A11; sec. 23, A11; sec. 24, A11.	2560.00	N-15006
NV-46	sec. 25, A11; sec. 26, A11; sec. 35, A11; sec. 36, A11.	2560.00	N-15007
<u>SOUTH TOWNSHIPS</u>			
	T. 5 S., R. 57 E., MDM, Nevada - Lincoln County		
NV-47	sec. 14, A11; sec. 21, E $\frac{1}{2}$ ; sec. 26, A11.	1600.00	N-14405-A
	T. 6 S., R. 57 E., MDM, Nevada - Lincoln County		
NV-48	sec. 11, A11; sec. 24, A11; sec. 35, A11.	1920.00	N-14406
	T. 26 S., R. 59 E., MDM, Nevada - Clark County		
NV-49	sec. 23, NW $\frac{1}{4}$ NW $\frac{1}{4}$ ; sec. 25, NW $\frac{1}{4}$ NW $\frac{1}{4}$ ; sec. 34, NW $\frac{1}{4}$ SE $\frac{1}{4}$ ; sec. 35, SE $\frac{1}{4}$ SW $\frac{1}{4}$ , SE $\frac{1}{4}$ ; sec. 36, S $\frac{1}{2}$ SW $\frac{1}{4}$ .	400.00	N-17413
	T. 27 S., R. 59 E., MDM, Nevada - Clark County		
NV-50	sec. 5, SE $\frac{1}{4}$ SE $\frac{1}{4}$ .	40.00	N-17416

SAGE GROUSE SPECIAL STIPULATION

The following described lands have been identified as critical habitat for mating, nesting and brood-rearing of sage grouse. Therefore, prior to entry onto the lands, the lessee (operator) will discuss the proposed activities jointly with the Area Oil and Gas Supervisor and the surface management agency's authorized officer who may require additional measures for the protection of sage grouse. Such measures may include:

- a. No surface occupancy on the actual strutting grounds;
- b. Restriction of activity during the months of April through July in brood rearing areas.

Description of Lands

Parcel NV-30

T. 22 N., R. 52 E., MDM, Nevada  
sec. 2, All.

Parcel NV-32

T. 19 N., R. 53 E., MDM, Nevada  
sec. 11, All.

Signature \_\_\_\_\_

Date \_\_\_\_\_

KNOWN GEOTHERMAL RESOURCE AREA STIPULATION

Mining or oil and gas exploration or production operations shall not be conducted which, in the opinion of the appropriate mining or oil and gas supervisor, would unreasonably interfere with the exploration, development and production of geothermal resources under geothermal leases that may be issued for lands within a known geothermal resource area (NGRA) designated before the mining or oil and gas lease or mineral prospecting permit was issued.

Offeror: \_\_\_\_\_

\_\_\_\_\_

Date: \_\_\_\_\_

Secs. 14, 22, 26, T. 19 N., R. 27 E., of Parcel NV-17 and all of Parcels NV-19, NV-21, NV-22, NV-23, and NV-24, are subject to this stipulation.

To insure against the contamination of the waters of the ~~Basin~~  
 Newlands Project and Humboldt Project, State of Nevada, the lessee agrees that  
 the following further conditions shall apply to all drilling and operations on lands covered by this lease, which lie  
 within the flowage or drainage area of the Newlands and Humboldt Projects ~~Basin~~ as such area  
 is defined by the Bureau of Reclamation: Regional Real Estate Officer  
 2800 Cottage Way  
 Sacramento, California 95825

1. The drilling sites for any and all wells shall be approved by the ~~Supervisor of the Bureau of~~  
 or his duly authorized representative, Bureau of  
 Reclamation, Newlands and Humboldt Project, before  
 drilling begins. Sites for the construction of pipe-line rights-of-way or other authorized facilities shall  
 also be approved by the ~~Supervisor of the~~ before construction begins. (same approval as above.)
2. All drilling or operation methods or equipment shall, before their employment, be inspected  
 (same approval as Item 1.)  
 and approved by the ~~Supervisor of the~~ Newlands and Humboldt Project,  
 , and by the Supervisor of the U. S. Geological Survey having jurisdiction  
 over the area.

ARCHAEOLOGICAL STIPULATIONAntiquities and Objects of Historic Value -

To secure specific compliance with the stipulations under Sec. 2, paragraph (q) of the oil and gas lease form, the lessee shall, prior to operations, furnish to the Authorized Officer a certified statement that either no archaeological values exist or that they may exist on the leased lands to the best of the lessee's knowledge and belief and that they might be impaired by oil and gas operations. Such certified statement must be completed by a qualified archaeologist acceptable to the Authorized Officer.

If the lessee furnishes a statement that archaeological values may exist where the land is to be disturbed or occupied, the lessee will engage a qualified archaeologist, acceptable to the Authorized Officer, to survey and salvage, in advance of any operations, such archaeological values on the lands involved. The responsibility for the cost for the certificate, survey and salvage will be borne by the lessee, and such salvaged property shall remain the property of the lessor or the surface owner.

\_\_\_\_\_  
Lessee's Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

Parcels NV-17 thru NV-41, NV-47 thru NV-50 are subject to this stipulation.

(91-1)



SPECIAL STIPULATIONS FOR WILD HORSES,WILD BURROS, AND SAGE GROUSE

Critical habitat for wild horses, wild burros, and sage grouse, in all probability, exists in the lease area. Therefore, prior to the initiation of a plan of operation to include exploration or development operations under the terms of the lease, the lessee (operator) will discuss the proposed activities jointly with the Area Oil and Gas Supervisor and the Ely BLM District Manager. The environmentally sensitive areas will be outlined to the lessee (operator) and additional measures may be required for the protection of the listed wildlife species on the critical areas.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Parcels NV-42 thru NV-46 are subject to this stipulation.

PRAIRIE FALCON SPECIAL STIPULATION

The following described lands have been identified as favorable habitat supporting relatively high population densities of prairie falcons. Therefore, prior to entry onto the lands within the described areas, the lessee (operator) will discuss the proposed activities jointly with the Area Oil and Gas Supervisor and the surface management agency's authorized officer who may require additional measures for the protection of prairie falcons. Such measures may include:

- a. No surface occupancy of selected areas;
- b. Restriction of activity near nest sites during the months of March through June.

Description of Lands

Parcel NV-29

T. 29 N., R. 49 E., MDM, Nevada  
sec. 18, Lots 1,2,3,4, E $\frac{1}{2}$ W $\frac{1}{2}$ , E $\frac{1}{2}$ ;  
sec. 30, Lots 1,2,3,4, E $\frac{1}{2}$ W $\frac{1}{2}$ , E $\frac{1}{2}$ .

Signature \_\_\_\_\_

Date \_\_\_\_\_

MINA  
~~XXXXXX XXXXXX~~ ENVIRONMENTAL ANALYSIS RECORD  
STIPULATION

The Lessee shall comply with the following special conditions and stipulations unless they are modified by mutual agreement of the Lessee, the Supervisor and the Authorized Officer:

1. Surface occupancy within 500 feet (horizontal measurement) of any canal, ditch, slough, pond, lake, spring, or open body of water may be restricted or denied where deemed necessary by the appropriate surface management agency to protect wildlife and other resources. Other buffer zones and areas of restricted surface occupancy may be required to protect other resource values, including but not limited to, critical or rare or endangered species habitat.
2. The use of wide or ballon- (low pressure-) tired vehicles and/or helicopters may be required for any activities in off-road areas where deemed necessary to protect the soil and other resources.
3. Springs and water developments on Federal lands may be used only with the prior written approval of the Authorized Officer.

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Signature

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Date

Parcel NV-27 is subject to this stipulation.

SPECIAL STIPULATIONS FOR OIL AND GAS  
LEASING IN THE BATTLE MOUNTAIN DISTRICT

1. The lease area contains critical habitat for wild horses. Therefore, prior to entry on the lands, the lessee (operator) will discuss the proposed activities jointly with the Area Oil and Gas Supervisor and the District Manager who may require additional measures for the protection of the wild horses.
  
2. Federally owned or controlled springs and water developments may be used only with the prior written approval of the Authorized Officer.

\_\_\_\_\_  
Signature of Lessee

\_\_\_\_\_  
Date

Parcels NV-28, NV-30 thru NV-33, NV-35 and NV-36 are subject to this stipulation.

DEPARTMENT OF ENERGY  
Special Stipulation

This lease is issued pursuant and subject, to the extent applicable, to the terms and provisions of Section 302 of the Department of Energy Organization Act (42 U.S.C. 7152) and to the regulations of the Secretary of Energy promulgated thereunder relating to the:

- (1) fostering of competition for Federal leases (including but not limited to, prohibition on bidding for development rights by certain types of joint ventures);
- (2) implementation of alternative bidding systems authorized for the award of Federal leases;
- (3) establishment of diligence requirements for operations conducted on Federal leases (including, but not limited to, procedures relating to the granting or ordering by the Secretary of the Interior of suspension of operations or production as they relate to such requirements);
- (4) setting rates of production for Federal leases; and
- (5) specifying the procedures, terms, and conditions for the acquisition and disposition of Federal royalty interests taken in kind.

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Signature

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Date

All parcels are subject to this stipulation.

FISCAL NOTE

BDR 32-95  
A.B. 144  
S.E.

(Fiscal Note Continuation)

B.D.R. No. 32-95  
Bill No. A.B. 144

• STATE AGENCY ESTIMATES Date Prepared 11-30-78

Agency Submitting DEPARTMENT OF TAXATION

Revenue and/or Expense Items	Fiscal Year 1978-79	Fiscal Year 1979-80	Fiscal Year 1980-81	Continuing
	none	3084.	3084.	yes
Total	none	3084	3084	yes

Explanation (Use Continuation Sheets If Required)

\$.25 state tax rate on estimated assessed value of \$1,233,725.

Local Government Impact YES  NO   
(Attach Explanation)

Signature [Signature]  
W. C. ANDREWS  
Title BUDGET & STATISTICS SECTION

• DEPARTMENT OF ADMINISTRATION COMMENTS

Date December 26, 1978

The above estimate appears reasonable.

Signature [Signature]  
Howard E. Barrett  
Title Director of Administration

• LOCAL GOVERNMENT FISCAL IMPACT  
(Legislative Counsel Bureau Use Only)

Date January 22, 1979

See the table on the next page which is from Legislative Commission Bulletin No. 79-16, "Assessment and Taxation of Geothermal Resources," page 26 & 27.

Signature E. O. Schorn

GEOTHERMAL RESOURCES  
ESTIMATED TAXES UNDER NRS 361.157  
(POSSESSORY INTEREST)  
As of June 5, 1978

County	Acres	Assessment Rate	Estimated Assessed Value	Tax Rate <sup>1</sup>	Estimated Taxes
Churchill:					
Competitive	56,669.25	2.90	\$ 164,340	\$3.80	\$ 6,245
Noncompetitive	194,698.33	1.45	282,312	3.80	10,728
County	80.00	1.45	116	3.80	4
					\$16,977
Douglas:					
Noncompetitive	2,191.47	1.45	3,177	3.01	96
					\$ 96
Elko:					
Competitive	2,418.92	2.90	7,015	3.05	214
Noncompetitive	8,464.26	1.45	12,273	3.05	374
					\$ 588
Esmeralda:					
Competitive	2,546.57	2.90	7,385	3.75	277
Noncompetitive	24,446.96	1.45	35,448	3.75	1,329
					\$ 1,606
Eureka:					
Competitive	8,834.26	2.90	25,619	3.42	876
Noncompetitive	8,348.08	1.45	12,105	3.42	414
					\$ 1,290
Humboldt:					
Competitive	5,537.24	2.90	16,058	3.23	519
Noncompetitive	97,001.55	1.45	140,652	3.23	4,543
					\$ 5,062
Lander:					
Competitive	6,437.04	2.90	18,667	3.92	732
Noncompetitive	17,975.37	1.45	26,064	3.92	1,022
					\$ 1,754
Lyon:					
Competitive	13,682.04	2.90	39,678	3.914	1,553
Noncompetitive	9,126.66	1.45	13,233	3.914	518
					\$ 2,071
Mineral:					
Noncompetitive	12,373.26	1.45	17,941	5.00	897
					\$ 897
Nye:					
Competitive	1,311.90	2.90	3,805	3.70	141
Noncompetitive	53,471.17	1.45	77,533	3.70	2,869
					\$ 3,010
Pershing:					
Competitive	28,546.08	2.90	82,784	3.28	2,715
Noncompetitive	77,372.20	1.45	112,190	3.28	3,680
					\$ 6,395
Storey:					
Noncompetitive	543.22	1.45	788	4.79	38
					\$ 38
Washoe:					
Competitive	14,492.68	2.90	42,028	3.869	1,626
Noncompetitive	24,723.52	1.45	35,849	3.869	1,387
					\$ 3,013
White Pine:					
Noncompetitive	39,079.60	1.45	56,665	3.60	2,040
					\$ 2,040
					\$11,371.63 <sup>2</sup>
			\$1,233,725		\$44,837

EXHIBIT C

228

AGAINST A. B. 144

Monday, Feb. 12th

My name is Gerald Prindiville; and I'm representing both the American Association of Retired Presons, and John W. Gardner's organization for open accountable government, Common Cause. These organizations are respectfully requesting you honorable members of the Nevada State Assembly to take a position against A.B. 144, exempting geothermal development leases from property taxes.

According to Nation's Business, when R.J. Munzer, Chairman of the Board of Petrolane Corp. was asked to speak on the energy situation he told a little story about Daniel Webster. It seems that Daniel Webster had just finished one of his great pieces of oratory when Davey Crockett, the famous but unschooled frontiersman who had been in the audience, came up to the podium and said: "I was told you were a great orator, Mr. Webster, but now I doubt it. Well, I understood every word you said". Mr. Munzer then went on to make the point that perhaps, we need the clarity of expression of a Daniel Webster, and the comprehension of Davey Crockett, and the strong individualism of both, to make the energy situation in this country understandable to all, as the issues with which we are dealing are indeed very complex.

Again, according to Nation's Business, now there is no shortage of energy studies. Major oil and other energy companies, financial institutions, trade associations, and a number of governmental agencies industriously produce studies based on varying economic scenarios. Even the CIA has a study. One of the best studies on geothermal energy in Nevada is the two volume: "Thermal Springs of the Western United States" by the Lawrence Livermore Laboratory of the University of California under contract with the United States Atomic Energy Commission. On the first page is a map showing the thermal springs of Western United States. The second page consists of a map of thermal springs of Nevada and California. Each thermal spring in the State of Nevada is numbered beginning with #1 in the northwest corner of the State, and ending with #152 near Las Vegas. The following six pages has the name and precise location of the hotsprings that corresponds with the number on the map. The third column gives the temperature of the water of each spring in degrees of fahrenheit. The fourth column gives the flow of water in gallons per minute. The fifth column gives the geological formation and associated rocks. The sixth column gives references on the chemical quality of the spring. And the last column contains remarks and additional references. In 1973 the AEC allocated \$4.7 million for research into geothermal power; and in Nevada the Chevron Oil Co. signed an agreement to begin geothermal exploration in three counties.

Honorable Assemblymen, in view of the excellent available data regarding geothermal springs in Nevada, I would like to respectfully suggest that the argument for exempting geothermal development leases from property taxes because of so-called exploration costs is specious and without foundation in this instance.

By every yardstick the United States is a phenomenal user of energy. The energy consumed by Americans is almost six times the world per capita average. And the use of energy in the United States is increasing at an average of 3½ % per year. At this rate of usage, it means a doubling of present consumption in 20 years, and a quadrupling in 40 years - a fantastic example of exponential growth. (The Living Wilderness, Winter 72-3) It seems reasonable to assume that all forms of energy will be in greater and greater demand; and that Nevada has a valuable commodity in geothermal energy. The world's largest geothermal plant is located at Geyserville, California about 90 miles north of San Francisco. According to the Christian Science Monitor (Dec. 27, 1973) raw geothermal power - nothing more than smelly steam escaping with tremendous force through the crust of the earth -- currently provides 396,000 kilowatts of power to customers of the Pacific Gas and Electric Co. According to a P G & E spokesman that is the equivalent of providing for the electrical needs of 400,000 people, or most of the city of San Francisco. According to the U.S. Atomic Energy Commission study, most of the Eastern portion of the city of Klamath Falls, Oregon is heated by hot water. Present use of the hot water heat includes residences, businesses, almost all of the city schools, including the high school swimming pool, and the Oregon Institute of Technology.

There is also the question of how much geothermal energy is recoverable. According to the Washington Star News (June 30, 1974) the U.S. Dept. of Interior has estimated the nation might eventually draw about 8% of its current electrical power production capability from geothermal sources; and respected scientists in the energy field believe that the figure might be closer to 80%. It is anticipated that much of this will be accomplished by the dry rock method by drilling deep into the earth's innards to the vast quantities of dry, very hot rocks, then forcing water down the holes to become super heated steam. So, the scientific indications are that there is a vast supply of available geothermal energy.

What about the economics of geothermal energy? Both the Pacific Gas and Electric Co. (Washington Star News, June 30, 1974) and the U.S. Energy Research and Development Commission hold that an electric plant using natural geothermal steam can be built far below the capital costs for a coal or nuclear plant of the same capacity. According to P.G. & E company officials their geyser



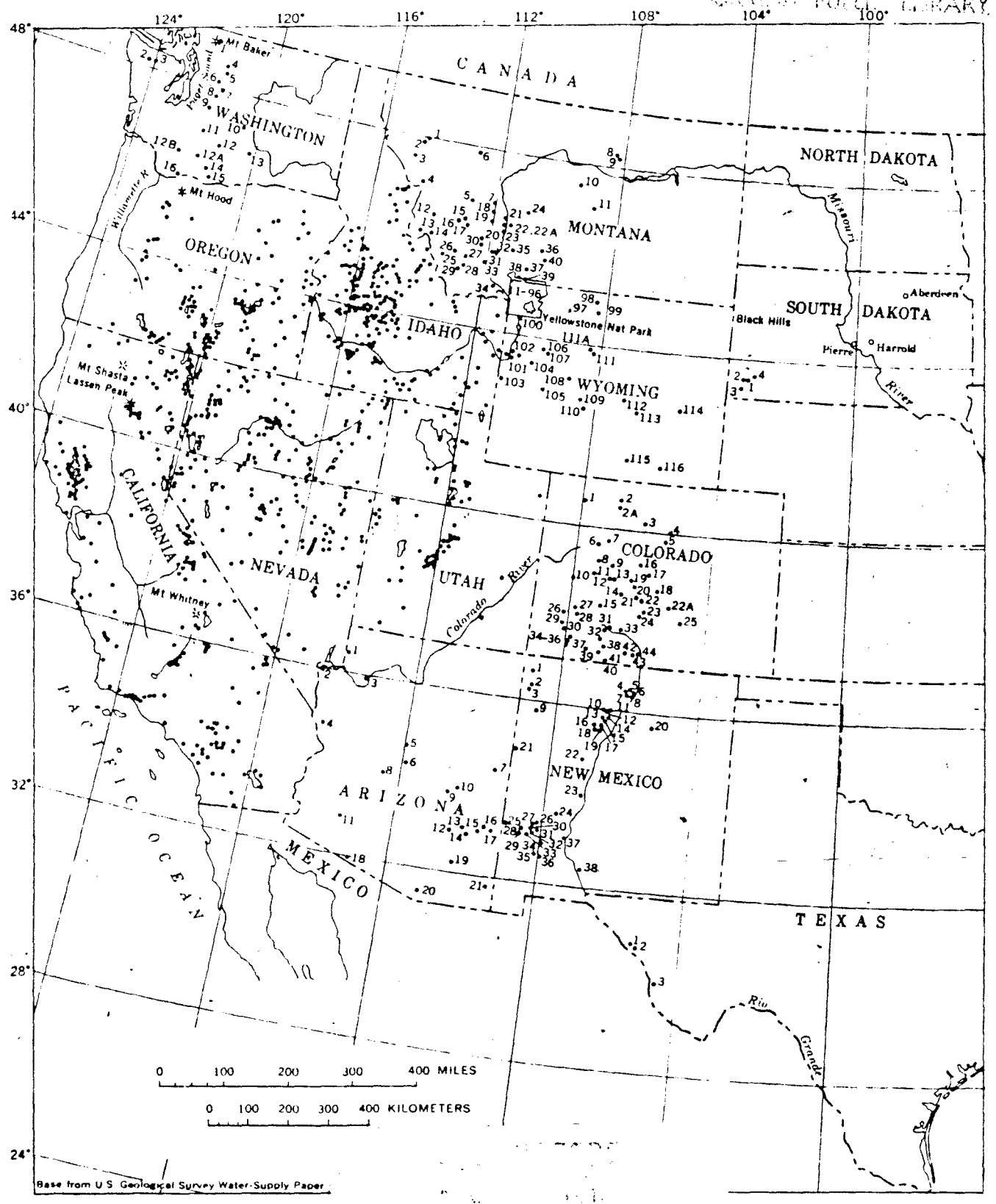
powered generating units require only a handful of maintenance workers, and produce electricity that is cheaper than coal or nuclear fired facilities. And they are cleaner than coal, and safer than nuclear fuel. At times the competition to acquire geothermal leases has been stiff with oil companies and others battling over land where there are known geyser formations, and paying as high as \$3.2 million for a ten year lease on one tract. But the returns can be proportionate to the investment. The dry rock project in Marysville, Montana is expected to yield as much as \$2.1 billion of electrical energy. (Geothermal Energy, 1975. U.S. Energy R.&D. Admin.) In fact, the geothermal vegetable dehydrating plant at Brady, Nevada, 17 miles east of Fernley will save the corporation \$287,000 per year in energy costs, according to the Nevada Department of Energy. (Energy Collector, Nev Dept. Energy, Fall 1978). With your kind permission I would like to repeat that Nevada possesses a valuable commodity in thermal energy -- far too valuable to release from property taxes.

At this point in time, no one knows how much counties and local governments will lose in future property taxes if A.B. 144 were passed. This bill would take geothermal lease land off the Nevada tax rolls, and place an additional burden upon the taxpayer, while Nevadans property taxes are already escalating to an unreasonable degree. In view of the fact that Nevada is not a welfare State, corporate welfare or otherwise, the senior citizens of Nevada respectfully request that you please vote to defeat this unnecessary and uncalled for tax giveaway. <sup>14-28-78</sup> Thank you very kindly.

# Thermal Springs of the

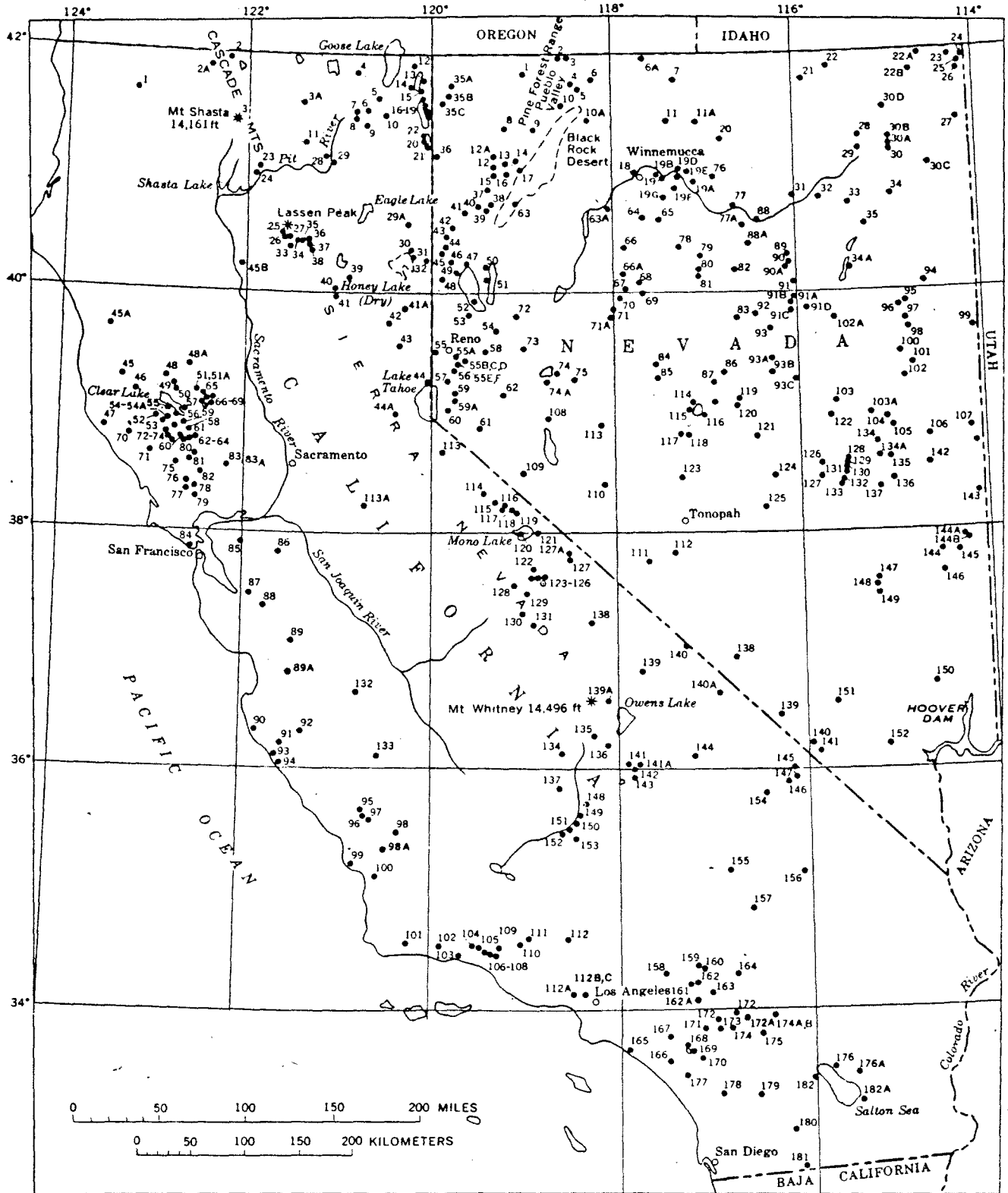
GRASSY PUBLIC LIBRARY

GEOHERMAL RESOURCES 73-1 Lawrence Livermore Laboratory, Univ. of California, 1974  
under contract with the U.S. Atomic Commission (411)



Base from U.S. Geological Survey Water-Supply Paper

# Western United States



THERMAL SPRINGS OF CALIFORNIA AND NEVADA

No. on figure	Name or location	Temperature of water (°F)	Flow (gallons per minute)	Associated rocks	References on chemical quality	Remarks and additional references
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Montana—Continued

18	Alhambra Hot Springs, 17 miles south of Helena.	90-134		Granite.....	137.....	22 springs. Resort. Refs. 133, 393.
19	Boulder Hot Springs, 3 miles southeast of Boulder.	125-157	Large	Fissured granite.....	133, 137, 393.....	Many springs. Resort. Refs. 109, 395.
20	Pipestone Springs, 20 miles southeast of Putte.	Hot		Granite.....	137.....	Several springs. Resort. Refs. 393, 395.
21	Bedford Springs, on north side of Indian Creek 3.5 miles northwest of Townsend.	74	1,400	Gravel overlying Tertiary strata.	384, 387.....	3 main and several other springs. Water used for irrigation.
22	Kimpton (Warner) Warm Springs, on branch of Crow Creek, 7 miles west of Toston.	65	100	Lake beds (Miocene).....	384, 387.....	2 springs. Water used locally. Ref. 144.
22A	Big Spring, on east bank of Missouri River 4 miles southeast of Toston.	59	29,000	Madison Limestone (Mississippian).	384, 387.....	Water used for irrigation.
23	Plunket's (Mockel, Nave's Warm) Spring, at head of Warm Creek, 10 miles southwest of Toston.	62	4,000	.....do.....	384, 387.....	Several springs. Water used for irrigation.
24	White Sulphur (Brewer's) Springs.....	95-125	500	Lake beds (Miocene) overlying Belt Series (Precambrian).	128, 133, 380, 392, 396.	9 springs. Resort.
25	Big Hole Hot Springs, at Jackson.....	132 (max)	1,500	Tertiary strata overlying Belt Series (Precambrian).		About 100 springs. Resort. Refs. 144, 386.
26	Elkhorn Hot Springs, in sec. 29, T. 4 S., R. 12 W., on Miller Creek 6 miles north of Polaris.	120-150	110	Granite.....		7 springs. Resort.
27	Ziegler Hot Springs, near Apex.....	Hot		Folded Cretaceous strata.....		Several springs. Water used locally. Ref. 391.
28	Lovell Springs, in sec. 21, T. 9 S., R. 9 W., 9 miles southwest of Dillon.	72	1,125	Lava (Tertiary).....		4 springs. Water used locally.
29	Brown (Ryan Canyon) Springs, in sec. 30, T. 8 S., R. 9 W., 11 miles southwest of Dillon.	72	360	Lava (Tertiary) overlying limestone (Carboniferous).		6 springs. Water used locally.
30	Barkel's Hot Springs, at Silverstar.....	Hot	50	Lake beds (Tertiary) overlying granite.		4 springs. Water used for bathing.
31	Clark's Warm (Potost Hot) Springs, on south branch of Willow Creek, 5 miles south of Pony.	100-120	550	Granite.....		About 10 springs. Refs. 133, 389.
32	Hapgood (Norris) Hot Springs, on Hot Spring Creek near Norris.	80-122	50	Syenite.....		5 springs. Water used for bathing. Refs. 138, 388, 389.
33	Puller's Hot Springs, on upper Ruby Creek, 10 miles northwest of Virginia City.	95; 108	150	Schist and gneiss (Precambrian).		2 springs. Resort. Refs. 133, 144.
34	Sec. 18, T. 12 S., R. 1 E., 3 miles southwest of Cliff Lake.	Warm	100	Lava (Quaternary).....		
35	Bozeman (Ferris, Matthews) Hot Springs, on West Gallatin River, 7 miles west of Bozeman.	137	250	Tertiary strata.....	128, 133, 137, 144, 390.	Resort. Ref. 389.
36	Hunter's Hot Springs, 20 miles northeast of Livingston.	148-168	1,500	Faulted Livingston Formation (Upper Cretaceous and Paleocene).	128?, 133, 137, 409?	3 groups, totaling about 25 individual springs. Deposit of gypsum. Resort. Refs. 109, 389, 394, 395.
37	Emigrant Gulch Warm Springs (Chico Spring), on Emigrant Creek near Chico.	102	240	Lava (Quaternary) overlying Precambrian rocks.	128, 144, 409.....	Water used for bathing.
38	Corwin Hot Springs, in sec. 25, T. 8 S., R. 7 E.	120 (max)		Lava overlying schist (Precambrian).		Several springs. Resort. Ref. 391.
39	Bear Creek Springs, in sec. 19, T. 9 S., R. 9 E., 3 miles south of Gardiner.	90	30	Lava (Quaternary) overlying Precambrian rocks.		2 springs. Water used locally.
40	Anderson's Spring, in sec. 29, T. 3 S., R. 13 E., near Boulder Creek 3 miles southwest of Hubble.	70	90	Limestone (Cretaceous).....		Water used for bathing. Ref. 390.

Nevada

1	T. 46 N., R. 27 E., 12 miles west of Pine Forest Range.	108	Small	Lava (Tertiary).....		Ref. 441.
2	Bog Ranch Hot Springs, on north side of Thousand Creek Valley 6 miles southwest of Denio, Oregon.	130; 190	20	Intrusive granite (Jurassic)		2 springs. Refs. 144, 403, 441.
3	T. 47 N., R. 31 E., south of Steens Mountain.	178		.....do.....		2 springs. Refs. 144, 441.
4	T. 45 N., R. 32 E., 12 miles north of Mason's Crossing of Quinn River.	118	Small	.....do.....		
5	T. 45 N., R. 32 E., 11 miles north of Quinn River (town).	130	150	.....do.....		Deposit of siliceous sinter. Ref. 440, also field notes by G. A. Waring.
6	T. 45 N., R. 33 E., on west side of King River valley.	76; 80		Lava (upper Tertiary).....		2 springs. Water used locally. Refs. 144, 441.
7	Cordero Mine.	118; 138		.....do.....		2 pumped wells, 550 and 580 ft deep. Water used at mine. Ref. 451.
8	T. 45 N., R. 41 E., at head of North Fork of Little Humboldt River.	Hot		Lava (Tertiary).....		Ref. 144.
9	T. 40 N., R. 25 E., at Soldier Meadows, 15 miles south of old Camp McGarry.	Hot		.....do.....		Several springs. Ref. 144.
10	T. 40 N., R. 28 E., west of sink of Quinn River, at west edge of Black Rock Desert.	60		Alluvium near lava.....		2 springs. Water supply for prospectors. Refs. 144, 418.
11	T. 43 N., R. 31 E., 7 miles west of Mason's Crossing of Quinn River.	155		Lava (upper Tertiary).....		Several springs. Ref. 144; also field notes by G. A. Waring.
12	Near south bank of Quinn River.....	Warm	Small	Alluvium.....		Data from field notes by G. A. Waring.
13	T. 41 N., R. 41 E., on bank of Little Humboldt River, 12 miles southeast of Paradise Valley post office.	130		.....do.....		
14	Near North and South Forks of Little Humboldt River, 25 miles east of Paradise Valley.	Hot	Small	.....do.....		
15	Double Hot Springs, in T. 37 N., R. 24 E., on west flank of Black Rock Range.	165-191	5	Faulted(?) lava (Tertiary) overlying granite.		Several springs. Refs. 144, 418, 451.

No. on figure	Name or location	Temperature of water (°F)	Flow (gallons per minute)	Associated rocks	References on chemical quality	Remarks and additional references
Nevada—Continued						
12A	Near base of west flank of Black Rock Range.	130-150	3	Faulted (?) lava (Tertiary) overlying granite.		3 springs, 1-2 miles apart. Ref. 451.
13	T. 37 N., R. 25 E., on southeast side of Black Rock Range.	Hot		do.		Several springs. Ref. 441.
14	T. 37 N., R. 26 E., in arm of Black Rock Desert.	Hot		Alluvium near lava.		Ref. 441.
15	Van Ripper, in T. 36 N., R. 24 E., on southwest side of Black Rock Range.	145	50	Lava (Tertiary) overlying granite.		3 springs. Ref. 144.
16	T. 36 N., R. 25 E., at south end of Black Rock Range, 10 miles southeast of Division Peak.	Hot		Lava (Tertiary).		Several springs. Ref. 144.
17	Secs. 16, 21, 24, 34, T. 36 N., R. 26 E., on west border of Black Rock Desert.	Hot		Alluvium (Quaternary) near lava (Tertiary).		Several springs. Refs. 144, 438.
18	2 miles north of Winnemucca.	Hot	Small	Lake beds (Tertiary) overlying Paleozoic strata.		Water used locally. Ref. 386.
19	Golconda Hot Springs, in T. 36 N., R. 40 E.	120-150	250	Alluvium.		About 12 springs. Resort. Refs. 109, 144, 422, 437.
19A	Blossom Hot Spring, in sec. 10, T. 35 N., R. 43 E., 8 miles north of Valmy.	107	70	do.		Rises in broad deep pool. Water supply for cattle.
19B						
19C						
19D	Humboldt River Valley	Warm	Small	do.		Data from field notes by G. A. Waring.
19E						
19F						
19G						
20	T. 39 N., R. 40 E., at head of South Fork of Little Humboldt River.	Hot	Small	Lava (Tertiary).		Ref. 144.
21	Sec. 30, T. 45 N., R. 54 E., 5 miles southeast of Mountain City.	104-106	20	Limestone (Paleozoic).		4 springs. Water used for bathing.
22	Sec. 23, T. 46 N., R. 56 E., 15 miles east of Mountain City.	104	55	Limestone (Paleozoic).		Several springs. Water used locally.
22A	1.5 miles north of Contact.	133	5	Lava (Tertiary).		
22B	Mineral (San Jacinto) Spring.	78-128	1,200	Lake beds (Tertiary) overlying Paleozoic strata.		Several springs and shallow wells. Water used for bathing.
23	Sec. 22, T. 47 N., R. 68 E., on west side of Goose Creek.	57	850	Cherty limestone (Paleozoic).		Water used locally.
24	Nile Spring, in sec. 30, T. 47 N., R. 70 E., on east side of Goose Creek.	106	6	Alluvium.		Forms boggy area at edge of Goose Creek Meadow.
25	Gamble's Hole, in sec. 10, T. 46 N., R. 69 E., on east side of Goose Creek.	103	8	do.		Do.
26	Sec. 26, T. 46 N., R. 69 E., at head of main fork of Spring Creek.	62	200	Rhyolite (Tertiary).		Several springs in 1-acre area.
27	T. 41 N., R. 69 E., at south end of Thousand Springs Valley.	Boiling		Carboniferous strata.		Ref. 144.
28	Hot Creek mining district in T. 39 N., R. 60 E., on Marys River 15 miles north of Death.	110-122	30	do.		4 springs. Water used for sheep dipping. Large mound of tufa. Refs. 135, 439. Also field notes by G. A. Waring.
29	Cress Ranch, in sec. 14, T. 38 N., R. 59 E., 8 miles north of Death.	Hot	Small	Near lava (Tertiary).		Data from field notes by G. A. Waring.
30	Sec. 21, T. 38 N., R. 62 E., in Emigrant Canyon, 4.2 miles north of Wells.	98	50	Faulted quartzite (Carboniferous).		Water contains much H <sub>2</sub> S. Used for bathing. Ref. 144, also field notes by G. A. Waring.
30A	5.5 miles north of Wells.	113-122	10	Carboniferous strata.		3 main springs. Large deposit of tufa. Water supply for cattle. Data from field notes by G. A. Waring.
30B	Metropolis.	102	800	Limestone (Carboniferous).		Several springs in canyon. Water used for irrigation. Data from field notes by G. A. Waring.
30C	Johnson Ranch.	73	30	Lava (Tertiary).		Water used for domestic supply and for irrigation. Ref. 451.
30D	H. D. Ranch.	142-154	600	do.		Many springs. Deposit of tufa. Ref. 451.
31	Hot Sulphur Springs, T. 33 N., R. 53 E., 9 miles northwest of Carlin.	98	15	Quartzite (Carboniferous).		3 springs. Water used for bathing. Refs. 138, 144; also field notes by G. A. Waring.
32	Elko Hot Springs, in T. 34 N., R. 55 E., 1 mile west of Elko.	192		Carboniferous strata.	137	Several springs. Water used for bathing. Ref. 138.
33	T. 33 N., R. 58 E., 8 miles southwest of Fort Halleck.	Warm		Alluvium near lava.		Several springs. Water used locally. Ref. 144.
34	T. 34 N., R. 62 E., near Warm Creek in Independence Valley.	Warm	250	Alluvium (Quaternary) near Carboniferous strata.		Water used locally. Refs. 138, 421.
34A	Near east side of Ruby Lake.	Hot	Small	Alluvium.		Several springs. Refs. 415, 418, 424.
35	Miller's Hot Springs, in T. 30 N., R. 59 E., at northeast end of Franklin Lake.	170		Alluvium (Quaternary) near lava.		Several springs. Refs. 144, 418.
35A	Hill's Warm Spring, in sec. 18, T. 44 N., R. 20 E., 10 miles north of Vya.	83	10	Alluvium.		Water irrigates meadow.
35B	Hill's Spring, in sec. 11, T. 43 N., R. 19 E., 5 miles north of Vya.	66	8	do.		Do.
35C	Twin Springs, in sec. 4, T. 42 N., R. 19 E., at Vya.	70	200	Lake beds (Pliocene?).		Water used for irrigation.
36	T. 38 N., R. 18 E., at south end of Surprise Valley.	Hot		Lava (Tertiary).		Ref. 441.
37	Wards' (Fly Ranch) Hot Springs, in T. 34 N., R. 23 E., at northwest end of Alkali Flat and 5 miles northeast of Granite Peak.	69 to boiling		Alluvium near granite.	128	Many springs in 75-acre area. Largest hot springs in northwestern part of Nevada. Water used for irrigation. Sandy mounds and deposits of tufa. Refs. 144, 409, 418.
38	Gerlach Hot Springs, 1 mile northwest of Gerlach.	188-194		do.	144, 409	Many springs. Water used for bathing. Ref. 436.
39	Mud Springs, 2 miles west of Gerlach.	Hot		do.		Several springs. Ref. 441.
40	Deep Hole Spring, in sec. 25, T. 33 N., R. 22 E., at north end of Smoke Creek Desert.	62	30	Lake beds (Quaternary).		Also several flowing wells. Water used for irrigation. Ref. 441.
41	Wall Spring, in sec. 3, T. 32 N., R. 21 E., on northwest side of Smoke Creek Desert.	Warm		do.		Do.
42	Buffalo Spring, in T. 31 N., R. 20 E., on west side of Smoke Creek Desert.	Warm		do.		Ref. 441.

No. on figure	Name or location	Temperature of water (°F)	Flow (gallons per minute)	Associated rocks	References on chemical quality	Remarks and additional references
Nevada—Continued						
6	Buckbrush Spring, in T. 29 N., R. 19 E., on west side of Smoke Creek Desert.	Warm	-----	Lake beds (Quaternary).....	-----	Ref. 441.
11	Rotten Egg Spring, in T. 29 N., R. 19 E., on southwest side of Smoke Creek Desert.	92	10	do.....	-----	Water smells strongly of H <sub>2</sub> S. Ref. 441.
6	Round Hole Spring, in sec. 31, T. 29 N., R. 19 E., on southwest side of Smoke Creek Desert.	Warm	-----	do.....	-----	Also several flowing wells. Ref. 441.
10	Ross Spring, in T. 28 N., R. 20 E., at south end of Smoke Creek Desert.	Hot	-----	Lava (Tertiary).....	-----	Refs. 144, 441.
10	T. 28 N., R. 21 E., near north end of Pyramid Lake.	Hot	-----	do.....	-----	Several springs. Refs. 144, 441.
10	Fish Spring, in T. 26 N., R. 19 E., 10 miles northwest of Pyramid railroad station.	Warm	-----	do.....	-----	Ref. 441.
10	T. 26 N., R. 20 E., on northwest side of Pyramid Lake.	206-208	-----	Faulted lava (Tertiary).....	-----	Several springs. Refs. 144, 441.
10	T. 27 N., R. 23 E., on northwest shore of Winnemucca Lake.	Warm	-----	Lava (Tertiary).....	-----	Several springs. Ref. 441.
10	T. 26 N., R. 23 E., on west shore of Winnemucca Lake.	Warm	-----	do.....	-----	Do.
10	T. 24 N., R. 22 E., on Anaho Island in Pyramid Lake.	120	-----	do.....	-----	Several springs.
10	Cottonwood Spring, in sec. 26, T. 23 N., R. 21 E., in Warm Spring Valley 3 miles south of Dewey.	Warm	-----	Lava (Tertiary) overlying granite.	-----	Water used locally.
10	T. 21 N., R. 24 E., in Dead Ox Canyon 12 miles south of Dixon.	Warm	-----	Lava (Tertiary).....	-----	
10	Lawton Hot Springs, 6 miles west of Reno.	120	250	Faulted granite.....	137	2 main springs. Water used for bathing. Resort.
10	Moana Springs, 2 miles south of Reno.	100-200	-----	Metamorphic rocks.....	-----	Wells. Water used for bathing. Ref. 451.
10	Huffaker Springs, 5 miles southeast of Moana bathing resort.	79-81	10	Alluvium.....	-----	Several springs on bank of creek. Ref. 451.
10	Zoleggi Springs, 3 miles southwest of Huffaker Springs (no. 55B).	103	125	do.....	-----	Several springs. Ref. 451.
10	Da Monte Springs, 1.5 miles east of Zoleggi Springs.	130	40	do.....	-----	On bank of creek. Ref. 451.
10	Mount Rose, 10 miles south of Reno.	Hot	-----	Metamorphic rocks.....	-----	Erupting wells. Resort. Ref. 451.
10	Reno Hot Springs, 10.5 miles south of Reno.	Hot	-----	do.....	-----	Drilled wells. Resort. Ref. 451.
10	Steamboat Springs, in sec. 33, T. 18 N., R. 20 E., 11 miles south of Reno.	167-203	300	Granite.....	20, 128, 137, 427, 452, 562.	Many springs, including 3 small geysers. Resort and sanitarium. Refs. 400, 401, 404-406, 413, 417, 418, 420, 424, 426, 436, 448-450, 453-456.
10	Bowers Mansion (Franktown Hot) Spring, 10 miles north of Carson City.	115-118	75	Faulted Granite.....	137	Resort. Ref. 144.
10	T. 19 N., R. 23 E., 10 miles southwest of Wadsworth.	73	-----	Lava (Tertiary).....	-----	Water used locally. Refs. 144, 418.
10	Carson (Swift's, Shaw's) Hot Springs, 2 miles north of Carson City.	120	75	Metamorphic rocks.....	137	Water used for bathing. Resort. Ref. 144.
10	Nevada State Prison.	Warm	-----	Lake beds (Pleistocene).....	-----	Water used locally.
10	Walley's (Genoa) Hot Springs, 6 miles northwest of Minden.	136-160	Large	Faulted granite.....	133, 137	Many springs. Resort. Refs. 125, 144, 428.
10	Hind's Hot Springs, in sec. 16, T. 12 N., R. 23 E., near Simpson.	60-143	350	Alluvium overlying granite.....	-----	Several springs. Water used for irrigation. Resort. Refs. 144, 429.
10	Wabuska Springs, in T. 15 N., R. 25 E., 1 mile north of Wabuska.	138-162	-----	Lava (Tertiary) overlying granite(?).....	-----	Several springs. Water used locally. Ref. 144.
10	Butte Spring, in T. 33 N., R. 28 E., at north end of Hot Springs Butte, 25 miles southwest of Sulphur.	182	20	Granite.....	-----	Refs. 144, 441.
10	Near Humboldt River, 2 miles north of Mill City.	Warm	Small	Alluvium.....	-----	Several springs.
10	Leach's (Pleasant Valley) Hot Springs in sec. 35, T. 32 N., R. 38 E., in Grass Valley 25 miles south of Winnemucca.	158-202	200	Alluvium overlying Mesozoic strata.....	-----	Several springs. Water used locally. Deposit of siliceous sinter. Ref. 424; also field notes by G. A. Waring.
10	Guthrie (Nelson) Springs, in sec. 36, T. 32 N., R. 38 E., 25 miles south of Winnemucca.	139-204	250	Alluvium near basalt (Quaternary).....	412	8 pools in 1-acre area; also several other springs. Water is sulfurous. Used for irrigation. Deposits of tufa and siliceous sinter. Ref. 144 and field notes by G. A. Waring.
10	Kyle's Hot Springs, in sec. 2, T. 39 N., R. 36 E., 25 miles southeast of Humboldt.	100-160	Small	Alluvium.....	-----	Several springs. Deposit of sinter. Former resort. Ref. 144.
10	Miller Ranch.	58-61	900	do.....	-----	Several springs. Water used for irrigation. Data from field notes by G. A. Waring. Ref. 438.
10	Sec. 1, T. 25 N., R. 36 E., near north end of Salt Marsh (Osobb) Valley.	Hot	-----	Contact of Mesozoic strata with underlying granite.	-----	
10	South Gilbert's Hot Springs, in sec. 29, T. 26 N., R. 38 E., near north end of Salt Marsh (Osobb) Valley.	160-185	-----	Faulted(?) lava (Tertiary).....	-----	Several springs issuing from tufa mounds in 12-acre area. Refs. 144, 418, 438, 442.
10	Cow Spring, in sec. 26, T. 25 N., R. 38 E., in Salt Marsh (Osobb) Valley.	125	Small	Lava (Tertiary).....	-----	
10	Sec. 35, T. 25 N., R. 38 E., 0.25 mile from Cow Spring, in Salt Marsh (Osobb) Valley.	-----	-----	-----	-----	
10	T. 24 N., R. 36 E., on northwest side of Salt Marsh (Osobb) Valley.	Warm	Small	Lava (Tertiary) overlying granite.....	-----	Ref. 441.
10	T. 23 N., R. 35 E., on northeast side of Pah Ute Mountains.	Hot	Small	Alluvium near granite.....	-----	Several springs.
10	5 miles south-southwest of spring No. 71.	Warm	Small	Granite.....	-----	
10	Springer's (Brady's, Fernley) Hot Springs, in sec. 12, T. 22 N., R. 26 E., on U.S. Highway 40.	158-209	50	Lake beds (Quaternary) near lava (Tertiary).....	409	Several springs. Deposit of siliceous sinter. Water used for bathing. Also as water supply for auto station.
10	Eagle Salt Works Springs, in T. 20 N., R. 27 E., 15 miles northwest of Fallon.	-----	-----	Alluvium.....	-----	Several springs. Water used locally.
10	Borat Spring, in T. 17 N., R. 30 E., 3 miles east of South Carson Lake.	178	-----	Alluvium near lava (late Tertiary).....	-----	Ref. 144.
10	Lee Springs, 15 miles south of Fallon.	172	25	do.....	-----	Deposit of siliceous sinter. Also a well. Ref. 451.

No. on figure	Name or location	Temperature of water (°F)	Flow (gallons per minute)	Associated rocks	References on chemical quality	Remarks and additional references
Nevada—Continued						
75	Sec. 6, T. 16 N., R. 32 E., 20 miles southeast of Fallon.	Hot		Lava (Tertiary)		Several springs. Water smells of H <sub>2</sub> S. Ref. 144.
76	Izenhood Ranch Springs, in T. 36 N., R. 43 E., 25 miles north of Battle Mountain.	83	1,000	do		Water level lowered 4 ft by trenching, thus doubling original discharge. Water used for irrigation. Ref. 425.
77	White Rock Spring, in sec. 8, T. 33 N., R. 47 E., 2 miles west of Rock Creek.	Warm		do		Water used locally. Refs. 144, 434.
77A	Beowawe Geysers, in sec. 5, T. 31 N., R. 48 E., in Whirlwind Valley 8 miles west of Beowawe.	120 to boiling	100	Faulted basalt (Tertiary)	435, 562	About 50 springs and mud pools on hillside tufa terrace 0.75 mile long, also 3 springs in nearby lowland. 2 or 3 springs show true geyser action, 1 spouting to height of 30 ft. Refs. 410, 414, 434, 435.
78	Sec. 24, T. 29 N., R. 41 E., in Buffalo Valley 25 miles southwest of Battle Mountain (town).	130	5	Lava (Tertiary)	446	Several springs. Ref. 438.
79	Mound Spring, in sec. 7, T. 28 N., R. 44 E., in Reese River valley 25 miles south of Battle Mountain (town).	110	3	do		Water used for roadside watering.
80	Sec. 23, T. 27 N., R. 43 E., 1 mile north of Hot Spring Ranch in Reese River valley.	124	450	do	446	Several springs. Water used for irrigation. Ref. 418.
81	Sec. 26, T. 27 N., R. 43 E., at Hot Spring Ranch.	122	50	do	446	Several springs. Water used for domestic purposes and irrigation. Ref. 418.
82	T. 27 N., R. 47 E., 10 miles south of Lander.	Hot		Lava intrusive (Tertiary) in Carboniferous strata.		Water used locally. Refs. 138, 435.
83	T. 22 N., R. 47 E., near north end of Grass Valley.	181		Devonian strata.		Water used locally. Refs. 144, 424.
84	T. 18 N., R. 39 E., in Smith Creek valley 6 miles north of Hot Springs.	Warm	Small	Lava (Tertiary)		Water used locally. Refs. 128, 144, 409, 441.
85	Sec. 25, T. 17 N., R. 40 E., on west side of Smith Creek valley.	Hot		do		Several springs. Ref. 144.
86	Spencer Hot Springs, in T. 17 N., R. 46 E., 18 miles southeast of Austin.	117-144	6	do	432	Several springs. Water used locally. Refs. 433, 447.
87	Sec. 14, T. 16 N., R. 45 E., 20 miles southeast of Austin.	Hot	5	do		7 springs. Water used for bathing.
88	Horseshoe Ranch Springs, 1 mile northeast of Beowawe.	125-132	30	Faulted lava (Tertiary)		2 springs. Water used for bathing and irrigation.
88A	Sec. 2, T. 29 N., R. 48 E., in Crescent Valley 12 miles south of Beowawe.	122	40	Lava (Tertiary) overlying Paleozoic strata.		2 springs. Water supply for cattle.
89	Sec. 12, T. 28 N., R. 52 E., at head of Hot Creek, 14 miles north of Mineral.	84	5,900	Lake beds (Pliocene) overlying Paleozoic strata.		6 springs. Water used for irrigation.
90	Carlotti Ranch Springs, in sec. 21, T. 28 N., R. 52 E., 10 miles north of Mineral.	95; 102	100	do		2 springs, 0.25 mile apart. Water used for irrigation.
90A	Brufley's (Mineral Hill) Hot Springs, in sec. 14, T. 27 N., R. 52 E., 7 miles northeast of Mineral.	108-152	50	do		6 springs. Water used for domestic purposes and irrigation. Ref. 144.
91	Flynn Ranch Springs, in sec. 5, T. 25 N., R. 53 E., in Diamond Valley.	69-78	10	Alluvium.		Deep pool and minor springs. Water used for irrigation.
91A	Siri Ranch Spring, in sec. 6, T. 24 N., R. 53 E., in Diamond Valley.	87	300	do		Water used for irrigation.
91B	Sadler (Big Shipley) Springs, in sec. 23, T. 24 N., R. 52 E., in Diamond Valley.	103-106	5,000	Alluvium near faulted Paleozoic strata.		Several springs. Water used for irrigation. Refs. 138, 144.
91C	Sulphur Springs, in sec. 36, T. 23 N., R. 52 E., on Sulphur Springs Ranch in Diamond Valley.	74	20	do		2 main springs. Water used for irrigation.
91D	Jacobson Ranch Springs, on east side of Diamond Valley.	71-75	900	do		Several springs. Water used for irrigation.
92	Sec. 15, T. 21 N., R. 47 E., on west side of Grass Valley.	Hot	Small	do		Several springs. Water supply for cattle.
93	Sec. 33, T. 21 N., R. 48 E., on east side of Grass Valley.	Hot	Small	do		Several springs.
93A	Bartine Hot Springs, in sec. 5, T. 19 N., R. 50 E., in Antelope Valley 35 miles west of Eureka.	105; 108	10	Lake beds (Tertiary) near faulted Tertiary strata.		2 springs issuing from large mound of tufa. Also a flowing well. Water used locally.
93B	Clobe Hot Spring, in sec. 28, T. 18 N., R. 50 E., in Antelope Valley, 45 miles southwest of Eureka.	142	100	Alluvium near hills of faulted lava.		Water supply for cattle.
93C	Sara Ranch Springs, in sec. 7, T. 16 N., R. 53 E., at head of Fish Creek.	66	4,000	Alluvium.		About 20 deep pools in area 0.5 mile in diameter. Water used for irrigation.
94	Collar and Elbow Spring, in sec. 27, T. 26 N., R. 65 E., near north end of Steptoe Valley.	92	20	do	406, 408	Deposit of tufa.
95	Cherry Creek (Young's) Hot Springs, in T. 23 N., R. 63 E., 1.2 miles southwest of Cherry Creek (town) in Steptoe Valley.	118-135	40	Alluvium near Paleozoic strata.	406, 408	3 springs. Water used for bathing.
96	Shellbourne Hot Springs, in T. 23 N., R. 63 E., about 100 ft from Cherry Creek (Young's) Hot Springs (No. 95).	124; 135		do	408	2 springs. Water used for bathing and irrigation.
97	Borchert John Spring, in sec. 16, T. 22 N., R. 63 E., in Steptoe Valley.	66	800	Talus deposit	408	Water used for irrigation.
98	Monte Neva (Goodrich, Melvin) Hot Springs, in sec. 24, T. 21 N., R. 63 E., 1 mile northwest of Warm Springs railroad station in Steptoe Valley.	173-193	625	Alluvium near Paleozoic strata.	406, 408	6 springs issuing from mound of siliceous sinter.
99	T. 21 N., R. 70 E., at east base of Kern Mountains.	Warm		Faulted Paleozoic strata.		Ref. 138.
100	Sec. 5, T. 19 N., R. 63 E., 10 miles northwest of McGill.	58-76	200	Carboniferous strata.	408	Several springs. Water used for irrigation.
101	McGill Warm Springs, in sec. 21, T. 18 N., R. 64 E., 0.75 mile west of McGill.	76-84	450	Alluvium near Paleozoic strata.	406, 408	3 main springs. Water used for irrigation.
102	Ely Warm Spring, in sec. 10, T. 16 N., R. 63 E., 1.5 miles northeast of Ely.	85	23	do	406	Water used for bathing. Ref. 408.
102A	Moore's Ranch Springs, in T. 23 N., R. 56 E., in Newark Valley.	65-70	200	Alluvium.		Several springs. Water used for irrigation.
103	Big Blue Spring, in sec. 23, T. 14 N., R. 56 E., near the north end of White Pine Valley.	Warm		Paleozoic strata.	144	Water used for bathing.

No. on figure	Name or location	Temperature of water (°F)	Flow (gallons per minute)	Associated rocks	References on chemical quality	Remarks and additional references
Nevada—Continued						
103A	Williams Hot Springs, in sec. 33, T. 13 N., R. 60 E., 12 miles northwest of Preston.	124; 128	185	Alluvium		2 springs. Water used for irrigation. Ref. 431.
104	Preston Springs, in sec. 1, T. 12 N., R. 61 E.	72	5,700	Alluvium near Paleozoic strata.		Several springs. Water used for domestic purposes and irrigation. Refs. 407, 421, 431.
105	Lund Spring, in sec. 33, T. 12 N., R. 62 E.	66	2,400	do		Water supply for town. Also used for irrigation. Refs. 407, 421, 431.
106	Warm Sulphur Springs, in T. 11 N., R. 65 E., at head of Warm Creek.	Warm	972	Paleozoic strata.		Several springs. Water used for irrigation. Refs. 138, 144, 421.
107	Big Spring, in T. 11 N., R. 69 E., in Snake Valley, 15 miles south of Baker.	64	8,000, 12,000	Limestone (Cambrian)		Water used for irrigation. Ref. 141.
107A	Sec. 30, T. 10 N., R. 70 E., at head of Big Springs Creek.	Warm	2,000	Alluvium		Water used for irrigation.
108	Double Spring, in T. 13 N., R. 29 E., 3 miles north of Walker Lake.	Warm		Lava (Tertiary)		Refs. 144, 441.
109	Sec. 4, T. 7 N., R. 27 E., on East Walker River, 20 miles west of Hawthorne.	Hot		Granite near lava		Several springs. Water used for bathing. State reserve.
110	T. 6 N., R. 35 E., at Sodaville	80-101	100	Alluvium		Several springs. Water used locally. Refs. 419, 423.
111	Waterworks Springs, in sec. 22, T. 2 S., R. 39 E., at Silver Peak.	69-118	500	Lava (Tertiary)	432	11 Springs. Water supply for town. Refs. 411, 444, 445.
112	Alkali Spring, in sec. 26, T. 1 S., R. 41 E., 11 miles northwest of Goldfield.	120-140	50	Alluvium near Paleozoic strata.	399, 432, 439	Deposit of tufa.
113	Wedell Springs, in sec. 7, T. 12 N., R. 34 E., 12 miles southeast of Rawhide.	129; 144	60	Alluvium overlying lava (Tertiary).		2 main springs. Water used locally. Refs. 138, 144.
114	T. 14 N., R. 43 E., 1 mile east of McLeod's Ranch in Big Smoky Valley.	Hot		Alluvium near Paleozoic strata.		Issues from large mound. Ref. 432.
115	Gendron Spring, in T. 14 N., R. 43 E., near Millett in Big Smoky Valley.	61	10	do	432	Water used locally.
116	Charnock (Big Blue) Springs, in T. 13 N., R. 44 E., near Charnock Ranch.	80	450	Alluvium overlying lava (Tertiary).		Several springs issuing from large mound. Water used for irrigation. Ref. 432.
117	Sec. 14, T. 11 N., R. 42 E., in Big Smoky Valley, 14 miles south of Millett.	Boiling	600	Faulted lava (Tertiary)		Water used locally. Refs. 144, 432.
118	Darrough Hot Springs, in sec. 17, T. 11 N., R. 43 E., on Darrough Ranch in Big Smoky Valley.	160-207	200	Alluvium near Paleozoic strata.	432	Several springs. Resort. Ref. 433.
119	Sec. 1, T. 14 N., R. 47 E., 2 miles southeast of Potts.	Warm		Lava (Tertiary)		Several springs. Water used locally.
120	Diana's Punch Bowl, in sec. 22, T. 14 N., R. 47 E., 5 miles south of Potts.	Hot	Small	Alluvium (Quaternary) near lava (Tertiary).		
121	Fish Springs, in secs. 26 and 35, T. 11 N., R. 49 E., in Fish Creek valley.	Warm		Lava (Tertiary)		Several springs. Water used locally. Ref. 144.
122	Sec. 32, T. 13 N., R. 56 E., 5 miles north of Duckwater.	Warm	Large	Alluvium		Several springs. Water used for irrigation.
123	Indian Springs, in T. 7 N., R. 42 E., near San Antonio.	Warm		Lava (Tertiary) overlying Paleozoic strata.		3 springs. Water used locally. Ref. 138.
124	T. 7 N., R. 51 E., on Hot Creek 8 miles northeast of Tybo.	Warm		do		Several springs issuing from terrace of tufa.
125	T. 4 N., R. 50 E., near south end of Hot Creek valley.	Boiling		Lava (Tertiary) overlying Silurian and Devonian strata.		2 springs. Ref. 144.
126	Lock's Springs, in sec. 15, T. 8 N., R. 55 E., on west side of Railroad Valley 20 miles southwest of Currant.	93-99	2,000	Alluvium near faulted(?) lava (Tertiary).		2 springs issuing in pools on terrace of tufa and 2 springs in meadow at base of terrace. Water used for irrigation.
127	Chimney Springs, in sec. 16, T. 7 N., R. 55 E., in Railroad Valley 6 miles south of Lock's Springs (No. 126).	130-160	100	Alluvium near faulted(?) lava (Tertiary).		3 springs issuing from mounds of tufa. Water supply for cattle.
128	Blue Eagle Springs, in sec. 11, T. 8 N., R. 57 E., on east side of Railroad Valley 18 miles south of Currant.	82	1,385	Alluvium		2 main springs. Water used for irrigation. Ref. 407.
129	Kate Spring, in sec. 14, T. 8 N., R. 57 E., 0.75 mile south of Blue Eagle Springs (No. 128).	73	14	do		Water used for domestic purposes and irrigation.
130	Butterfield Springs, in sec. 27, T. 8 N., R. 57 E., on east side of Railroad Valley.	64	227	do		2 springs. Water used for irrigation.
131	Bacon Springs, in sec. 34, T. 8 N., R. 57 E., on east side of Railroad Valley.	57	2	do		2 springs. Water supply for cattle.
132	Bullwhacker Spring, in sec. 28, T. 7 N., R. 57 E., on east side of Railroad Valley.	59	10	do		Water supply for cattle.
133	Willow Springs, in sec. 5, T. 6 N., R. 57 E., on east side of Railroad Valley.	60	30	do		2 springs. Water supply for cattle.
134	Mormon Springs, in sec. 33, T. 9 N., R. 61 E., 5 miles west of White River.	100	100	do		Several springs. Water used for irrigation. Ref. 431.
134A	Moon River Springs	92	900	do		Water used for irrigation. Ref. 431.
135	Riordan Ranch (Emigrant) Springs, in T. 9 N., R. 62 E., near White River.	70	200	do		Several springs. Water used for irrigation.
136	White River Valley (Flag, Sunnyside) Springs, in secs. 28, 31, and 32, T. 7 N., R. 62 E., on Whipple and Hendricks Ranches.	65-75	2,000	do		6 springs. Water used for irrigation. Refs. 144, 407.
137	Hot Creek Ranch Springs, in sec. 18, T. 6 N., R. 61 E., in White River valley 8 miles southwest of Sunnyside.	85-90	5,000	do		Several springs. Water used for irrigation. Refs. 144, 407, 431, 443.
138	Hicks Hot Springs, in T. 11 S., R. 47 E., 5 miles north of Beatty.	110	40	Lava (Tertiary) overlying Paleozoic strata.		5 springs. Water used for bathing. Ref. 399.
139	Ash Meadow Springs, in sec. 22, T. 17 S., R. 50 E.	76-94	450	Alluvium near Cambrian strata.		4 springs. Refs. 144, 399.
140	Pahrump Springs, in sec. 14, T. 20 S., R. 53 E., on Pahrump Ranch.	77	2,200	Alluvium near faulted Paleozoic strata.	447	2 springs. Water used for irrigation. Refs. 398, 443.
141	Manse Springs, in sec. 3, T. 21 S., R. 54 E., on Manse Ranch.	75	1,500	do	447	2 springs. Water used for irrigation. Ref. 269.
142	Geyser Ranch Springs, in T. 8 N., R. 65 E., 5 miles east of Patterson.	65-70	50	Alluvium near lava (Tertiary).	407	Several springs. Water used for irrigation. Refs. 138, 144.
143	T. 5 N., R. 70 E., on Hammond Ranch.	84		Limestone (Paleozoic)		Several springs. Water used for irrigation. Ref. 407.



No. on figure	Name or location	Temperature of water (°F)	Flow (gallons per minute)	Associated rocks	References on chemical quality	Remarks and additional references
Nevada—Continued						
144	Bennetts Springs, in T. 2 S., R. 66 E., 9 miles west of Panaca.	70	Small	Alluvium near limestone (Paleozoic).	-----	2 springs. Water supply for cattle. Ref. 407.
144A	Delmue's Springs, 10 miles north of Panaca	70	200	Lava (Tertiary).	-----	2 springs. Water used for irrigation.
144B	Flatnose Ranch.	70	100	do.	-----	Water used for irrigation.
145	Panaca Spring, in sec. 4, T. 2 S., R. 68 E.	85-88	2,500	Faulted Paleozoic strata.	407.	Several springs. Water supply for town.
146	Caliente Hot Spring, in T. 4 S., R. 67 E., 0.25 mile north of Caliente.	110	-----	do.	-----	Formerly flowed, now pumped. Water used for bathing.
147	Hiko Spring, in sec. 22, T. 4 S., R. 60 E.	90	4,000	do.	407, 441	Water used for domestic purposes and irrigation. Refs. 141, 144.
148	Crystal Spring, 1 mile northwest of Hiko.	90	9,000	do.	-----	Water used for domestic purposes and irrigation. Ref. 141.
149	Ash (Alamo) Spring, 4 miles south of Hiko.	90-97	9,000	do.	-----	6 main springs. Water used for domestic purposes and irrigation. Ref. 141.
150	T. 14 S., R. 65 E., 3 miles west of Moapa.	90	-----	Limestone (Paleozoic).	-----	Several springs. Water used for bathing and irrigation. Ref. 407.
151	Indian Spring, in sec. 16, T. 16 S., R. 56 E., 1 mile south of Indian Spring railroad station.	78	410	do.	407, 443	Water supply for railroad; also used for irrigation. Ref. 398.
152	Las Vegas Springs, in T. 20 S., R. 61 E., 2 miles west of Las Vegas.	73	2,600	Pleistocene strata	407, 421	2 springs. Water used for domestic and industrial purposes, also for irrigation. Refs. 144, 269.

New Mexico

1	Sec. 32, T. 11 N., R. 2 W., 10 miles south of Shiprock.	68	3	Mancos Shale (Upper Cretaceous) intruded by porphyry dike.	144, 328, 460	Water smells of H <sub>2</sub> S. Water supply for cattle.
2	Sec. 8, T. 7 N., R. 2 W., 5 miles north of Newcomb.	65	3	do.	-----	Do.
3	Sec. 16, T. 7 N., R. 2 W., 4 miles north of Newcomb.	67	7	do.	-----	Do.
4	Sec. 23, T. 25 N., R. 8 E., 0.75 mile northwest of La Madera.	80	10	Lake beds (Tertiary).	-----	Several springs.
5	Sec. 24, T. 25 N., R. 8 E., 1 mile northeast of La Madera.	100	5	Granite.	-----	-----
6	Sec. 25, T. 25 N., R. 8 E., 0.25 mile north of La Madera.	90	15	Lake beds (Tertiary).	-----	-----
7	Sec. 35, T. 25 N., R. 8 E., 1 mile southwest of La Madera.	100	5	Granite.	-----	-----
8	Ojo Caliente Springs, 12 miles northwest of Bartañca.	98-113	350	Gneiss intruded by dikes.	133, 137, 328, 458, 460, 463, 464.	5 springs. Tufa deposit contains fluorite. Resort.
9	Togay Springs, in sec. 33, T. 19 N., R. 15 W., 20 miles east of Tohatchie.	65	65	Mesaverde Group (Late Cretaceous).	-----	Many small pools. Water supply for cattle.
10	Murray Spring, in sec. 29, T. 20 N., R. 3 E., 15 miles north of Jemez Springs (town).	130	150	Basalt (upper Tertiary)	-----	-----
11	San Antonio Springs, in sec. 7, T. 20 N., R. 4 E., on San Antonio Creek 20 miles north of Jemez Springs (town).	120	50	do.	-----	Refs. 461, 465.
12	Sulphur Springs, in sec. 3, T. 19 N., R. 3 E., 12 miles north of Jemez Springs (town).	76-107	500	Andesite and rhyolite (Tertiary).	461, 466	8 springs. Water smells of H <sub>2</sub> S. Refs. 460, 465.
13	Soda Dam Springs, in sec. 15, T. 18 N., R. 2 E., in Canyon de San Diego, 2 miles north of Jemez Hot Springs (No. 15).	75-105	10	Limestone (Carboniferous) faulted against granite.	461, 465	Several springs. Large deposit of tufa. Refs. 457, 460, 466.
14	McCauley Spring, in sec. 4, T. 18 N., R. 3 E., 7 miles north of Jemez Springs (town).	100	110	Lava (upper Tertiary)	-----	-----
15	Jemez Hot Springs (Ojos Calientes), in sec. 22, T. 18 N., R. 2 E., 12 miles north of Jemez (pueblo).	94-168	200	Faulted Chinle Formation (Triassic).	137, 144, 460, 461, 465, 466.	1 group of 10 and another group of 40 springs. Resort. Refs. 133, 328, 457, 464.
16	Phillips Springs, in T. 16 N., R. 1 W., 10 miles west of Jemez (pueblo) and 1 mile northeast of Rio Salado.	70	Small	Fault contact between Chinle Formation (Triassic) and Carboniferous strata.	466	About 40 springs in 30-acre area. Deposits of travertine. Refs. 457, 461, 465.
17	Indian (Jemez) Springs, in T. 16 N., R. 2 E., 2 miles north of San Ysidro.	120	-----	Faulted Chinle Formation (Triassic).	-----	Several springs. Water used locally. Refs. 457, 461, 465, 466.
18	San Ysidro Hot Springs, in sec. 8, T. 15 N., R. 1 E., 7 miles southwest of San Ysidro.	86 (max)	-----	do.	460, 466	40 springs. Water is strongly carbonated. Used locally. Refs. 457, 461.
19	San Ysidro Warm Springs, in secs. 3, 9, 10, T. 15 N., R. 1 E.	68	Small	do.	137, 466	Several springs.
20	Las Vegas Hot Springs, 6 miles northwest of Las Vegas.	80-140	100	Contact of Carboniferous strata with Precambrian rocks.	133, 137, 144, 335, 345.	6 springs. Water smells of H <sub>2</sub> S. Used for bathing. Refs. 328, 459, 464.
21	Ojo Caliente Springs, in sec. 21, T. 8 N., R. 20 W., 12 miles southwest of Zuni.	80	500	Sandstone and shale (Triassic).	328	2 springs. Water used for bathing and irrigation. Refs. 144, 460.
22	Queltes Mineral Spring, in T. 8 N., R. 2 W., on north side of San Jose River 2 miles northwest of Queltes.	80	3	Sandstone (Cretaceous).	137	Water used locally. Deposit of tufa. Ref. 460.
23	Socorro Warm Springs, 1.5 miles southwest of Socorro.	93	500	Lake beds (Tertiary) near lava.	-----	Several springs. Water supply for Socorro. Refs. 460, 464, 467.
24	Ojo Caliente, in sec. 31, T. 8 S., R. 7 W., 15 miles northwest of Monticello.	85	1,200	Rhyolite (Tertiary).	-----	7 springs. Refs. 144, 460.
25	Sec. 23, T. 12 S., R. 20 W., 1 mile south of Pleasanton.	80-124	50	Lava (upper Tertiary).	-----	8 springs. Water used locally.
26	Sec. 30, T. 11 S., R. 12 W., 1 mile south of DD Bar Ranch.	80	50	Lava agglomerate (Quaternary).	-----	-----
27	Sec. 19, T. 12 S., R. 13 W., on Diamond Creek near its mouth.	151	30	Lava (Tertiary).	-----	Refs. 138, 144, 460.
28	Sec. 26, T. 13 S., R. 16 W., near Turkey Creek.	80	20	do.	-----	-----

Study urges: don't tax non-productive geothermal leases

IN AN EFFORT TO ENCOURAGE investments in the development of Nevada's extensive geothermal resources, the state's Legislative Commission has recommended that non-productive leases of lands for geothermal exploration be exempt from ad valorem (property) taxes. The recommendations will be considered by the Nevada State Legislature which goes into session January 15th.

Committee urges state to support development of Nev. energy resource

The report was drafted by an oversight subcommittee composed of Senator Mary Gojack, Assemblyman Robert Craddock, and representatives of the Legislative Counsel Bureau. Geothermal industry representative, the Nevada Bureau of Mines and Geology, and the Nevada Mining Association also provided input into the committee study.

The commission report also recommends that a net proceeds of mines tax be levied when geothermal developments become productive as an energy resource. However, inasmuch as a Supreme Court ruling suggests that a geothermal resource cannot be classified as a mine, the legislative commission recommends that the legislature amend the Nevada State Constitution to permit such tax policy. Amendment to the state constitution must be approved by the legislature at two legislative sessions and by a vote of Nevadans at a general election.

A summary of the commission report recognized that "the national energy crisis has led to significant efforts to develop alternative energy sources to reduce dependence on oil and gas resources. This effort and the Geothermal Steam Act of 1970 have renewed interest in geothermal resources as a useful energy resource. Nevada has many geothermal areas and is estimated to be second only to California in its potential for geothermal energy.

"This potential has led to significant exploration which could lead to the beginning of a new industry within the state for which no taxing provisions have been considered. The 59th session of the legislature recognized this potential problem and approved Assembly Concurrent Resolution 8 which requires the study of the assessment and taxation of geothermal resources."

Geothermal search suffers from high financial risks

The study drew the following conclusions:

1. That geothermal energy is a desirable, safe and environmentally acceptable alternative to conventional energy resources.
2. Nevada is a net importer of energy and places great reliance on other states for its energy needs.
3. The geothermal industry suffers from extreme financial risk due to large capital requirements, long time lags between discovery and production and uncertain markets which makes investment capital difficult to obtain.
4. Substantial institutional and technological barriers and disincentives to geothermal development exist which threaten the success of the industry.

The oversight committee concluded that the economic and social welfare of Nevadans may depend to a large degree on the state's ability to solve its energy problems. Geothermal development may be an important step towards accomplishing this goal. If geothermal is to be successfully developed in the shortest possible time, the state should institute a tax policy which encourages and supports such development. Such a tax policy should recognize the inherent risk in geothermal development and the potential benefits for the state if large energy resources are discovered.

Re: AB 144  
Craddock