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SPECIAL COMMITTEE ON TAXATION AND REVENUE
SENATE,

TESTIMONY OF MR. ROBERT PASCHALL ON APRIL 7, 1975

AGO 530218

SENATE RESOURCES COMMITTEE April 7, 1975

SEN.. POLAND: This is a joint meeting of the House Sub-Committee on Revenue Sources with Rep. Steve Cowper as Chairman and members Rep. Mike Hershberger and Rep. Clark Gruening, along with the Special Senate Committee on Taxation and Revenue. Sen. John Huber is Chairman and Sen. Joe Orsini and Sen. Pat Rodey are members of that, as well as the Senate Resources Committee.

SEN. HUBER: We are very happy, Madam Chairman, to have you handle everything here.

SEN. POLAND: We are here primarily today to hear from Mr. Robert Paschall and discuss SB 276 and 103 and HB 297. Mr. Paschall, if you would be so kind as to take the chair.

MR. PASCHALL: Where would you like me to sit? Right here, in the hot seat?

SEN. POLAND: Yes, please.

SEN. HUBER: The red one is the hot seat, Bob.

MR. PASCHALL: My name is Robert H. Paschall. I am a registered geologist and a registered petroleum engineer in the State of California. I am a member of several geological and petroleum engineering societies. Also I am a member, a senior member of the American Society of Appraisers and a member of the International Association of Assessing Officers. I might remark that I have had the opportunity in the past not only to testify here in Juneau about a year and a half ago, but also to serve as advisor upon request to the legislatures of California and Nevada on the taxation of oil and mining properties.

I imagine that some of you are aware in advance that you are going to be having to hear, perhaps as an unwilling auditor to the way things are done in California to some extent, because that is going to be part of the substance of my comments. And things bring to my mind a situation that prevails in California itself that I think you might appreciate. It is not uncommon to see in the assessor's office

throughout the state, particularly in the northern part of the State, a sign up on the wall that says, "We don't give a damn how they do it in Los Angeles." Now the reasons for that are probably self-evident and it may be that some people feel the same way here in Alaska about California, so you will have to forgive me, because that happens to be my bailiwick and my particular area of expertise. Another little item I encountered recently that reminded me of my own personal and professional situation at the moment, that is the case of the man who was promoted (if that is the word for it--at least his position was changed from that of a staff advisor to that of an executive in a corporation). After about three months on the job he said, "You know, I never realized how much difference there was between giving advice and making a decision." Now, all I am doing here today is giving advice, and I realize that you are the ones who are the decision makers. I don't even want to pretend to be an advocate of the things that I am telling you. It may sound on occasion as if I am an advocate, that is, of ad valorem taxation of leasehold mineral interests. Please excuse me if that appears to be the case. I want primarily to tell you how it operates, how I have seen it operate, what the costs are, the administrative and appraisal problems and benefits. If I appear to paint a rosy picture sometimes, it is just the way I have seen things and not simply because I am saying, "This is what I think you ought to do."

I would like to start, first, by remarking simply on this phrase "ad valorem" and mentioning the fact that "ad valorem" does mean "according to value," a very important consideration I believe. For example, in regard to oil and gas properties, "ad valorem" does not mean or imply a given gross income from a property, neither does it imply some given reserve of oil or gas. It means instead that according to value, the base for taxation would simply be the tax administrator's best estimate of the price that a given oil or gas property would sell for if there were a transaction between a willing and knowledgeable seller and a willing and knowledgeable buyer. Going on in that theme, I would like to remark that an ad valorem tax on oil and gas properties is not a tax on reserves. That phrase is sometimes used perhaps because it is a convenient phrase to use. It is very handy to

AGO 530220

say "a tax on reserves," but it is an improper term. Neither is an ad valorem tax a tax on oil or gas in place. Again, this is a term that has been used I think particularly here in Alaska, and I have heard the term "tax on reserves" used, I would propose incorrectly in a number of places. Instead, the ad valorem tax in this case is a tax on the value of the leasehold or other mineral interest involved. And this actually implies, and at least in California it actually is the case, that it is the value of the right to produce the oil and gas. Those of you who are attorneys and who may have worked with mineral properties, particularly with oil and gas, may be aware that they have been termed "fugacious" minerals. I think that is a lovely word, fugacious. It means fugitive. In fact, in one U. S. Supreme Court decision at one time, oil and gas were referred to as fugitives in the manner that wild animals are fugitives and go wherever they may wish. And, of course, because of the movement of oil and gas underground in a manner that doesn't take any account of property lines, it is actually, in a sense, impossible to tax oil and gas in place but it is not at all impossible to assess and tax the right to produce.

I will give you a little history of what has happened in the state where I live in the past years. Oil fields in California have always been subject to ad valorem taxation. By always, I mean, it goes back sixty or seventy years in any event. We do not a have gross production in the state so this takes the place of that in effect. Assessment and tax collection happens to be done locally in California. If I were going to make any recommendations to Alaska, I would say that if you do contemplate this kind of thing that you not contemplate local assessment. I feel that there is a great advantage to the route that you employ on your severance tax and this advantage would similarly prevail with ad valorem taxation because it's easier to have a good professional qualified group operating at the state level in a manner that can treat all the properties equally and equitably. In any event, it happens it's done locally in California, that's kind of beside the point, but it has been done for a period of sixty years time very regularly. In addition, by the way, we also, in California, levy an income tax

actually on oil corporations and on their producing propertie . My own observation is that the income tax tends to be fifty sixty percent of the level of the ad valorem taxes collected. It's not as great a burden in effect on the oil industry as the ad valorem tax. The reason actually for this, as some of you may be aware, is because of the nature of the income tax. There are certain things permissable as deductions in computing taxable income, depreciation, up until very recently depletion, that lower the income tax liability. That kind of, those types of deductions do not prevail in the course of levying an ad valorem tax.

The oil and gas field value, by the way, are reviewed and revised annually by professional staffs. Every year there is a new appraisal made by the assessing authorities You might wonder why this is done every year. After all, homes aren't reassessed every year, office buildings aren't, farms aren't. But their values aren't as given to as radical changes as oil property values. Oil property values may in the course of a year either decrease or increase rather notably because of production decline, because of an increase of an oil price for other reasons, so both industry and assessing officials have insisted for their various reasons on annual assessment and it's done as a matter of course. It happens that the market value of all fields in California last year, as of the 1974 tax lien date, was about $4,700,000,000, pretty substantial amount of money for--in the tax base. Ad valorem taxes collected were about $115,000,000.

Now, of course, the basis for the assessment is an appraisal. It's an evaluation of property and therefore the oil and gas field valuation is the main task that the assessor has relative to those properties. That is, the other tasks of enrolling the values and collecting the taxes etc., are rather minor compared to the evaluation job. Now I would suggest that the valuation of oil properties is actually less troublesome than the appraisal of a number of other types of properties. It happens that I work not only with oil properties, I also work with mining properties. I work with

a good bit in the way of heavy industrials. I worked on oil refineries appraisals, valuation of cement plants, and a number of other heavy industrial properties as steel mills. I actually found those properties, the heavy manufacturing ones, provide more in the way of valuation difficulties than oil fields do and I thought I would remark that, on the side, because I know in one instance at least in some of the testimony I believe that was given to one of your committees the statement was made that the matter of appraisal of an oil field was an exercise in futility. I would challenge that statement and I think I can give you the best reason for a challenge by remarking that every major oil company has a properties acquisition department and the people in that department of a given company have the job pretty regularly of appraising the oil properties for sale or purchase. And the manager of one of those departments would be ill-advised to tell the executives of his company that it was not possible for him to set a rational value on a given oil and gas reserve. They do it all the time.

I don't want to burden you with the details and income type valuation but I would like to give you some of the highlights of it so that you will have some feeling of what it amounts to. The valuation engineer for the oil and gas properties appraisal is interest in the present worth of future net income, present worth of anticipated future net income, we might say. Now, what is net income for oil field appraisal purposes? It is the gross income less the out of pocket operating expenses. By out of pocket I mean those that actually require writing a check. Depletion and depreciation for example are book charges that are not out of pocket charges. They are not customarily treated as an expense in computing oil field net income when appraising. The present worth is derived by discounting the future net income at a given interest rate, an interest rate that reflects the hoped-for rate of return of investors in that property. I'll go a little further in identifying or defining present worth because I'll be coming back to it just a bit later here and a very important concept with which some of you may not be familiar.

It is apparent that if you yourself were given the opportunity or were offered the privilege of being given let's say a thousand dollars ten years from now and you wanted to exercise that right much sooner, you'd like to have that money much sooner than ten years from now. You'd turn to the market generally to see whether you could get something like that at present. You'd find that nobody would be willing to give you the thousand dollars now. They would discount it. This is a bank's discounts notes. They would discount at whatever interest rate they would happen to want. They would give you something notably less than one thousand dollars. All right, now that one thousand dollars in this simple little example, would be the net income from the property, let's say, and the present worth of that future net income is much less than the net income itself.

Now, the elements that are required by the appraiser of an oil property in order to appraise are these five things:

1. estimate of the oil and gas reserves
2. future rate of production
3. prices of oil and gas
4. operating expenses
5. discount rate

Now, those of you who are at all familiar with appraisal generally realize that there are some serious, very important professional judgements that must be made regarding, I would say, essentially all of them. In fact, it's interesting to note that in my own instance I have had the greatest debates in the last couple of years, been involved in the strongest debates, over the subject of the discount rate. Generally speaking I found in working with oil and gas properties reserves estimations are not a burning issue. The parties on either side will be pretty much in agreement with a reasonable degree, let's say, of what reserves are. Some of these other things are of course, are subject to professional judgement, but it just so happens that the discount rate has been a very serious issue here in the last couple of years in our valuations in California. This has been the case

AGO 530224

because, as all of you are familiar, there have been such radical changes in the borrowing interest rate, the corporate prime rate, corporate long-term bond rate etc. And these lending rates very much influence the discount rate that a given corporation or an individual is going to demand of an investment that he makes.

Now with that very brief summary there of what an income type valuation requires, I'd like to make some general observations on value and on ad valorem taxation.

First, let me say this. Value is only a fraction of ultimate gross income. Now ultimate gross income is simply all of the barrels of oil that presumably will ever be produced in the field and all of the MCF of gas, cubic feet of gas, multiplied by their respective prices. I'll give you an example of that, an Alaska-based example. Some of you are aware that in 1973 I was employed by the North Slope Borough to appraise the Prudhoe Bay field for the purpose of ad valorem taxation. Just recently, in preparing myself to talk to you here today, I checked over my own appraisal which I have with me, a copy of which I have, and I found that my 1973 value was only 14% of the ultimate gross income from the field, about one-seventh. In other words, the gross income minus all of the expected operating expenses discounted to present worth was only 14% of this ultimate gross income itself. So you can see that there is really no relationship at all between gross income and value.

Going on, ad valorem taxes are directly tied to the profitability of a producing oil field. For example, profitability, I say profitability, profit and net income are essentially synonymous, so the higher the future net income from a given field the higher the present value. Now mind you, I did have this caveat in here that this is the case with a producing oil field. And I found myself, I drafted this relationship, I built tables of it on many occasions in past years and found this nice relationship between profitability and ad valorem taxation of a producing oil field. Now the net effect of this is that a well-administered ad valorem tax on a producing oil field is the same as the perfectly graduated severance tax. As an aside, my own concern with a

severance tax always has been that you pretty much have to pull numbers out of the air when you decide exactly what percentages are going to be applied to what levels of production. On the other hand you have this automatic nice sliding scale thing that plots out into a straight line or slightly curved line on a graph of the relationship between the severance tax paid and the actual price of a barrel of oil. And that relationship grades right down from a given high point when the field is new and with flush production, grades right down to zero at the economic limit when the field is ready to be abandoned. Typically in my own calculations I have noted that a new flush field has yielded something like, let's say, a severance tax equivalent of 9 or 10 percent of gross income. Now those calculations were made prior to the time that we had this tremendous increase in the price of oil about a year and a half ago. I haven't recomputed this kind of thing. But then it grades down very nicely so that marginal production is paying perhaps 2 or 3% of gross income in ad valorem taxes.

Now, here is another area in which I wanted to comment because I felt that misapprehension may have been in the mind of someone who spoke to you not long ago and that is this fact here--that ad valorem taxation tends to stimulate development in any type of property. I would propose this; that it actually stimulates it, whether it is oil or other, rather than retard it. Now why is this? A friend of mine who worked in South America quite a bit as a tax expert, tax advisor in South American countries, he told me that Venezuela and Columbia had hundreds of thousands of acres of very good farm land that were lying idle and unused because it was not subject to taxation and there was no reason for the very wealthy owners to generate any revenue to pay the taxes because there weren't any taxes. He commented to me and I have observed this since (I know he remarked this to me about ten years ago) that one reason for the pace of economic development in many of our cities, building new apartment houses, office buildings, etc., is because the bare land or an old building is subject to ad valorem taxation and the owner was there best advised to get an income-producing enterprise in there to pay the taxes. Actually, I have heard the ad valorem tax on oil criticized. This was in the past. It would no longer apply I

AGO 530226

would say. I have heard it criticized as an undue stimulus to development and production. If an oil company, let's say in California where only the ad valorem applies, makes a discovery and simply shuts it in, an unlikely thing these days but at one time it was possible, simply shut it in, let's say,and it was not subject to ad valorem taxation it would be no burden on them. On the other hand, if it is going to be subject to some ad valorem taxation whether producing or not it was a tremendous stimulus to the company to develop the field and get it on production. Now, of course, this was criticized at a time when we had surplus of oil in California and the State was an exporting State. I say it no longer applies simply because the supply-demand situation has changed so radically. But that doesn't change the basic concept that ad valorem taxation does tend to be a stimulus generally to development.

I see I had a note here in my notes going back to the matter of present worth again. I would like to come around from another angle and tell you something in this regard because of the effect that present worth has on reserve estimates. I know some people feel that the estimation of oil and gas reserves is a rather esoteric thing. It's not. It's not esoteric. It is difficult of course to make highly accurate reserve estimates very early in the life of field. I'll grant that, that's pretty well accepted doctrine in oil property evaluation. However, this effect of present worth greatly reduces the seriousness of the----, of mistakes in the reserve estimate. And I'll mention for example the case I encountered with my Prudhoe Bay appraisal. I chose to run the appraisal for twenty years time. And I cut it off at that time because the remaining net income, which was considerable, had so little present worth that I thought it was not worth cluttering the paper with. And yet, at the time that I cut the appraisal off and said this is as far as I'll bother to carry my computations, six hundred million barrels of oil yet remained and 15 trillion cubic feet of gas. Now I would suggest that if anybody else appraised Prudhoe Bay or had appraised it at the same time I did, they probably wouldn't have come up with exactly the same value but I can certainly guarantee you that any other appraiser would have found himself with this tremendously diminishing present worth of a future net income

from Prudhoe Bay so that he too would have had some kind of a cut off or some point beyond which the present worth is essentially nil, minimal. Now, for this reason you can see you can have pretty fair errors in reserve estimates in the early life of a property and not have nearly so serious an effect on the value estimate from a percentage standpoint.

I wanted to close with some comment on some statements made before one of your committees. I might remark that Senator Huber had furnished me with a transcript of some of the hearings and I had studied them and there were a few things that I thought would be worth responding to. For example, one witness stated his belief that you might have two fields each with a reserve of 150 million barrels but that one field had serious producing difficulties, had poor accessibility to it, and for--, because of extreme problems in development and production the 150 million barrels wouldn't be produced until 25 or 30 years had passed. Whereas, another reserve might exist that was very handy to get at and had no major drilling and production problems and therefore be possible to produce the oil in only 15 years time. Now he proposed in his testimony that both of these fields would be taxed the same and that this would constitute a serious inequitability, that is, taxed on an ad valorem basis. I believe that the remarks that I have made already will indicate to you that this inequity that he suggested would not exist. The field that is going to last 25 or 30 years would have it's present worth greatly diminished if it had the other elements present that he commented on such as serious drilling and production problems that would increase the operating expenses and development expenses and lower the net income. So just at a very rough estimate and using something like a 15% rate of return in this case I would say that the longer-life field would have a value only about one-third that of the shorter-life field. This is a demonstration to my mind of the way that ad valorem taxation can actually iron out the inequities, by taking care of this kind of thing. At the same time, let's see, both of the fields would pay the identical gross production tax or severance tax, but that wouldn't necessarily be inequitable because it would be stretched out over a longer time with a longer-life field and from the producers standpoint that severance tax would similarly have a lower present worth. At least the witness had a misapprehen-

sion. I don't believe, no, let's say I believe he was simply uninformed on the matter of ad valorem taxation of oil properties and I wanted to correct the item.

Another witness was under the impression that gross income and value were the same. Now I think that I have pretty well set it out here that gross income and value are completely unrelated and that it is only the present worth of net income that is used as an indicator of value. But taking his own figure that he employed in the testimony he actually cited a prospective tax liability that was about 20 times as great as my own estimate of reality using the figures as he gave to your committee. But that was just because of his misunderstanding of what the value of an oil producing property is, or how it's arrived at.

There is one other subject that has come up in your hearings that I think is probably a very important issue to you and one that you should be interested to hear about. There are many precedents for the assessment and ad valorem taxation of shut-in oil and gas properties. I know that such things exist in California and I myself have appraised individual gas wells which were a year or perhaps two years from being hooked up to transmission lines so that the wells were non-producing for at least a two year period while they were awaiting the chance to produce. I checked on what the current situation is or what recent cases might be in this regard and I was interested to hear that there is one gas field in the Sacramento River Delta in California that is now in its third year of assessment and taxation and it has yet to produce any gas. And yet, in 1974 a value of $15,000,000 went on the assessment role, not any big sum on Alaska terms but a very substantial tax liability, a very substantial assessment and therefore tax liability. No one protested the taxability of the oil field nor did the taxpayer involved protest the $15,000,000 value that went on the assessment role. I wanted just to inform you that there are precedents for this kind of situation.

Incidently we do have in California a quide for the appraisal of oil and gas properties for tax purposes. Some of you are probably familiar with it. I know Gerry Hier has a copy and

Jim Deagan I believe, and perhaps others in the room, and this is Senator Huber's copy that I am holding in trust here for a few days. Incidently if any of you are interested in it all you have to do is to write to the California State Board of Equalization and ask for this. Any governmental entity can get a free copy. I might remark that private parties have to pay $10 for it. But anyhow, this volume was written and published first about nine years ago. I was closely involved in it for many years. It was several years in the making and I wrote it in conjunction, that is several county petroleum appraisers and I were the co-authors of the manual, and I put it in the final form and did the editing on it. When we finally had this manual done after about five years of pulling and hauling and of course doing many other things in the interim we gave copies to California oil producing industry. They were given several copies, the opportunity to make a thorough review. In fact, they had three months time in which they reviewed it. And we then had a very productive exchange of three days time on the elements that are contained in the manual. We felt this was necessary. The taxpayer was pretty much involved, after all, in what was in the manual. So we let the industry have its input into it. They were very good in pointing a number of technical problems primarily. No major issues arose. So that when the book was finally published it was one that was published with the full understanding of all the assessing authorities and all the taxpayers involved. I think that's pretty important. That doesn't always happen with tax manuals.

Then I would like to conclude actually with a little summary on the economics of ad valorem administration of oil and gas fields in California. I already mentioned to you that in 1974 the fair market value of all the fields as about $4,700,000,000 and taxes were about $115,000,000. I know everybody involved in the work in California so I sat down and made my own estimates and for those of you who do see these, these are my own estimates which I would believe are within about 10% of correct. I came up with a total of $548,000 for the cost of administration. This is for the appraisal staffs, for the actual enrollment of the values and for the collection of taxes. In this case the cost as a percent of taxes is about .48 of 1% or conversely, the net tax collection

is 99.52%, that is, as of last year. That of course is a-- makes the ad valorem tax as it now stands in California a quite efficient tax in terms of cost of administration. One thing that helped that situation immensely, there's no doubt, is the rapid rise in price of oil. Before the price of oil went up I would say that the cost of administration was 2 to 2½ times that, i.e., 1 to perhaps 1½% of the actual tax revenues collected.

That concludes what I have to say Madam Chairman.

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SEN. POLAND: Thank you very much, Mr. Paschall. I'm sure the committee has questions that they would like to ask.

SEN. ORSINI: What about the ---, it would seem to me that it would be in the interest of, whether the owners of the field or the right of the leasee of the field, to delay a specific confirmation of the existence of reserves until such time as pretty close to being ready to produce. In particular, an oil company would say, "Well, we don't want,,,uh." At what point does it become obvious that there is in fact a certain amount of oil existing it and has a certain valuation, I suppose is part of my question?

MR PASCHALL: Well, you posed a non sequitor, Senator, in a way, because you have got to develop it before you can produce it of course. Here in Alaska where most of your new fields being found are in relatively remote areas it's going to take a fair amount of development before anybody is going to commit himself to a pipeline input. So, if a company drilled a well and made a discovery, it would be in a very difficult situation if it said, "Well, now I'm not going to do anything until there's a pipeline in there. I'm not going to drill any more wells and possibly expand the extent of estimated reserves until there's a pipeline because those people who propose to invest money in a pipeline will say, "Well, we're not going to bring in a pipeline until you drill wells." You get caught in a revolving door on that, I think.

SEN. ORSINI: If you do various non-drilling exploration and you are reasonably confident of the fact there exists some amount of oil in a certain location and you realize that it's going to be some years before you get around to develop that, how would the government agency or agencies know, or go about, saying, "Well, since there is probably some oil down there, we're going to start taxing on it." When would taxation start?

MR. PASCHALL: They wouldn't.

SEN. ORSINI: Proven Reserve?

MR. PASCHALL: Yes.

SEN ORSINI: They drill a hole,,,,

MR. PASCHALL: The extent of proven reserves. If, for example let's take Prudhoe Bay after Arcos PV number 1. You've got one well there, one well that produced, tested, ten thousand barrels a day or whatever. A person would have been ill advised to attach anything like the value that we know now exists there to that one well. That one well would have proved up only a certain amount of reserve. Geological or geophysical information, no matter how good, can't aid a valuation engineer or geologist to an opinion of value prior to drilling. It takes a hole in the ground and the oil in the tanks to provide evidence for value.

SEN. ORSINI: Using Prudhoe Bay, at what point in the development of that field would you say, we could say, "Now, we are confident that a certain amount of oil is, uh, well, we'll start taxing now."

MR. PASCHALL: Well, I've gotten involved directly in cases like that where a field is discovered. What it amounts to is, the first year you put a very modest value on it. It's tied in only to the amount of production that's there, the amount of production that you presume has been established by the thickness and quality of the oil zones and the productivity of the wells as indicated by the formation tests or production tests. So that in effect, if a field

were discovered, but is not yet hooked up to production, you don't have a line into it, a transmission line, the value of the non-producing field would expand as it was developed. There is no doubt of it.

SEN. ORSINI: I'm still not clear. If we would have had an ad valorem tax in Alaska 20 years ago, at what point in time would we start getting ad valorem taxes from Prudhoe Bay?

MR. PASCHALL: At Prudhoe Bay there would have been a basis for taxation of a very modest nature sometime in 1969. When was the discovery, wasn't it late 68?

SEN. POLAND: 69.

MR. PASCHALL: Okay, by mid 1969. So you have a well or two there and you know there's something there. It's going to be pretty puny, a very small value indeed because a pipeline at that time even was almost speculative you might say. And there were a lot of big "if's". There was a lot of discounting of income down the line, tremendous investments to be made before the field could become productive. It would have been a nominal value. A nominal value but perhaps discernible value in 1969. At that time almost the only stand a petroleum appraiser could have made in a way was to say, "Well, there's some value here because I'm sure the operators wouldn't give it away but it can't be very much yet ." It demands development to some extent in order to determine value.

SEN. BUTROVICH: You know when we had our sale, big sale in 69, Gulf bought a block of six leases and promised a hundred million bucks, bid almost a hundred million bucks for them. They probably thought there was something there too. How would you as an appraiser appraise those six leases, for example, if you had such a tax?

MR. PASCHALL: Well, you talk about another matter now, Senator. You are talking now about government leases acquired on a bonus bid, but without any development, maybe without even any wildcatting.

nothing, except the company's own geological and geophysical work of course. I have a very dim view of the value of properties like that. I tend to look at them as worth something immensely less than the bid paid for them. I've had some lively debates and I happen to disagree with several assessors in California who are strongly inclined put those properties on the role as possessor interest immediately at the price of the winning bid. But without burdening you with it here, unless you want to be burdened, I can give you the background of an analysis that was published in the Society of Petroleum Engineers book, the Journal of Petroleum Technology. It demonstrates that those bids do not, have not,represented value in the long run. The more parties bid, on the North Slope there were a great many parties involved indeed, they are more apt in the case of sealed bonus bidding, that there's a case apt to arise that the person who acquired the lease actually paid too much. It's a peculiar situation, but that's what it comes down to. I wouldn't want to advise you, let's say I don't want to advise you at all on that matter. That is an assessment problem. In California, for example, under the law the assessor can levy assessment on the possessory right that the lessee acquired when he turned in the highest bonus bid. The assessor makes his own best judgement of what he thinks it is worth and really the only thing he has to go on is the bid itself. That's a legal proposition. If it ever arose sometime when you specifically wanted my professional input on a value of a given parcel that had been acquired then I might go to work, put some time in on it and figure out what a value of it might be. But I'm addressing myself here primarily, and I think your committee is, to the matter of ad valorem taxation of established oil and gas finds, call them reserves, of whatever size.

SEN. BUTROVICH: I'm also interested in your remark about ad valorem tax stimulating development and I just wondered. I can see how that could be possible and certainly a fact. For if you do develop, you've got a pipeline to put the oil in. But when you don't have a market, in other words, when you have a product but you can't market, how do you stimulate development when you don't want what a development well is going to cost you?

MR. PASCHALL: Can you give me a specific example of this product that doesn't have a market?

SEN. Butrovich: Prudhoe Bay.

MR. PASCHALL: Well, Prudhoe Bay has a market. It just doesn't have an outlet. There is very definitely a market for the oil so that it's quite possible to make a rational appraisal of Prudhoe Bay and then consider that that net income that's going to be derived from Prudhoe Bay is not going to commence until some given later date, mid 1977 or whatever it may be. So that would diminish the value of the field below what it would be if it were producing right now or beginning to produce right now, because the income won't start until some future date. But I don't believe, sir, that it would be correct to say that it wouldn't have a market. It just doesn't have a physical outlet to that market right now.

SEN. BUTROVICH: Let's say it doesn't have a market today or next year.

MR. PASCHALL: That doesn't mean that it doesn't have value though, does it? We know it has value. None of the operators would be content to give it away. They would demand a sizable sum of money for their interest in it and that would represent the value of the property. It is quite possible that all of the evidence is at hand to make a pretty good appraisal of Prudhoe Bay.

SEN. ORSINI: What is the rate of return that they are currently using on this type of evaluation?

MR. PASCHALL: The rate of return we're using or that I would recommend using? There happens to be a difference.

SEN. ORSINI: Either or both.

MR. PASCHALL: Well, of course, this is always a difficult matter. In 1971 we made the first study that was ever made of oil property sales and actually rationally the only way to get the proper rate of return, the proper discount rate, is to analyse sales, compare the future net income that is derived to the buyer's anticipated, let's say to the buyer's sale price, compare his anticipated future

net income to his purchase price and relationship between those using what is called the discounted cash flow rate of return method would give you that rate of return, a discount rate.

Now we did that on a great many oil properties, representing sales of about $250,000,000 and came up with a rate that applied at that time in 1971. Since that time that rate has increased because of the increase in borrowing rates. More recently I've been engaged in an analysis to find out the effect on the rate that we use, the effect on it that's going to be caused by the elimination of the depletion laws. It happens that in appraising fields, the way that I happen to appraise fields, that we do in California, we use pre-income tax net income. That is, it is net income, operator's net income plus income tax. Operator's themselves use post-income tax net income. We use pre-income tax and therefore our discount rate tends to be--this tends to make it a little higher than what it would be on a after tax basis. Now the tax element itself has been changed because of the loss of the depletion allowance tax preference. And this means that we are going to have to raise the discount rate. I'll give you my opinion of the rate that should apply right here in Alaska now, let's say now, early in 1975. In fact, it's my opinion this week. I am working on the subject right now and I could change, but I think it would be somewhere around 16%.

I mention for those of you in the audience, particularly if there are any oil people here, who think the internal rates of return as 15% or so on equity and that it looks like I am really being very generous, it's not quite the case. The rate that I am talking about is a weighted average of the rate of return on debt and equity. It's a so-called total property rate of return. And when anybody buys an oil property of any consequence anyway he typically does it partly with borrowed money so you have this debt leveraging in there that has to be brought into effect. That debt is the same as the debt on your house, let's say, the mortgage on your home. It's a part of the value of the property and one has to bring together the two elements of debt and equity and their respective rates of return and balance them. It's this balance or overall total property rate of return that I am saying is about 16%. Furthermore, I'm talking now on a

pre-income tax basis where normally industry's goal of 15% is an after-income tax basis upon equity only. It's kind of an involved subject but I'm giving you some basics.

SEN. ORSINI: You are able to damp out the windfall or even the wipe out situation? Of course, recently the windfall is a rise in the value in the land.

MR. PASCHALL: Well, the windfall profit tax is, if enacted, is going to be, let's say can best be taken account of I would suggest, by the effective price of oil it produces. I would rather try to handle the windfall profit tax in the oil pricing area rather than in the discount rate area. For example, I made computations in California and have come up with, (you would come with a somewhat higher figure in the mid-continent) but I have come up with an average price of oil of something like $6.50 per barrel at the wellhead, $6.40 or $6.60, for all oil if the windfall profits tax were enacted. And I would then want to use that price in computing my gross income in an appraisal and let the discount rate be a separate issue.

SEN. HUBER: My question is could you make any comments on the applicability of a tax such as we are proposing here either in the Governor's bill or in my bill or the other ones which you have studied, how it might work on the leasehold interest of an oil company that had bought their lease and right to produce from the Federal Government in a former federal reserve, it's availability for the State to get taxation on that leasehold interest, if that's done elsewhere, in California, and how it might work?

MR PASCHALL: You are moving into a legal area here and I'm not sure just how it is handled in your own constitution or statutes. Again, in California, the position of the lessor doesn't concern us whatsoever. We have many on-shore federal leases. Calvin Hill, which was discovered in 1928 is about 50% USL, United States Land, with a nice 12½% royalty rate on it. It happens that even under our law which is different from yours, I think ours is a little harsh in this regard, really, the federal royalty isn't even taken into account as a cost. The leasehold interest is

treated as if it were 100% ownership and the entire value of the lease is determined on that basis. But, let's say someone looking at it from the operator's standpoint would say, "Well, this is definite cost. It goes to the federal government. It's nothing that we can in any way profit from." But even if that standpoint were adopted, the case would still remain in California that there would be an 87½% leasehold interest there that would be subject to taxation as a possessory interest or possessory right.

SEN HUBER: This in effect, then, gets to taxing the valuation of the possessory interest of companies in what is actually federal land.

MR. PASCHALL: That's right. This applies also with our state off-shore lands, and it will apply with the OCS lands in California. And it's not only the case with oil properties. We have substantial mining properties. For the last few years I've been appraising a large tungsten mine in the California eastern desert area. It's entirely on unpatented mining claims. When the operator gets through there, major mining company gets through, they'll just walk off and leave the mining claim. They don't own them, but that is completely ignored in the process of appraising the property. It's just as if the mining company itself owned the land.

SEN. ORSINI: One thing that concerns a number of people is native corporation owned land. Oil or whatever is discovered there, who pays the taxes and how is the tax derived in the condition where the native corporations own the sub-surface rights also?

SEN. HUBER: Madam Chairman, if I may interrup you, I don't believe that our witness here today has that legal expertise and I have went over with him whether he was competent to testify in those areas and I would like to suggest that there probably will be people here who will have this.

MR. PASCHALL: I decided not to become an expert on the Native Claims Settlement Act.

SEN. POLAND: Back to what I believe Sen. Butrovich had in mind when he was speaking of assessing Prudhoe Bay, starting back in

maybe 1969, when although there might have been a market for the product there was no way of getting the product to market through no fault of the companies. Would you still act?

MR. PASCHALL: Madam Chairman, when you say through no fault of the company, we're putting an issue into it that is outside of my area of expertise. Let's say, all I would say is this, if an ad valorem tax system prevailed in Alaska on oil and gas properties of a nature similar to the one that I was telling you about here earlier, it would have been possible and proper to appraise Prudhoe Bay and subject it to ad valorem taxation in the same way, I would suggest, as this gas field that I mentioned to you that has been shut in for three years down in California. The value of it I remarked would have been quite nominal in 1969 and the value of it would have increased each year for two reasons. One is that the operators were continuing to drill wells and thereby expand their knowledge and feeling of the reserve so it was known better and better how much oil was there and what the productive capability of the field was. And the other is that each year you're moving one year closer to the time when that production would start and this enhanced the present worth, that future income at a higher present worth as it moved nearer capture, nearer reality. In that remark, again this might help you. I'll get out the table that I made out. This table right here is my economic analysis of the income and expenses for Prudhoe Bay. Now it required this much paper because there are just all kinds of expenses that I put in here. I might remark that prospective future capital expenditures are just as important to the appraiser as prospective future operating expenses. So I brought in such things here as future costs for oil gathering centers and all sorts of things that weren't at Prudhoe at the date of my appraisal. The day of appraisal was in January, 1973. You will notice, actually, that although there are some things here which begin in the first year, and I think those must be well drilling costs, it is not until the fifth or sixth year following the date of my appraisal that I ran in the first production, because I assumed at that time that 1978 was actually going to be the first year of production, even though I was making the appraisal as of January 1, 1973. So, here I had oil pro-

AGO 530239

duction, gross income minus all this great array of expenses coming over to net income, and those of you who are close enough can see that the first four years net income are in brackets, meaning that actually, the field would be running at a net loss for the first four years following the date of my appraisal.

SENATOR HUBER: Five on there.

MR. PASCHALL: Five? Is that it? Five. Yes, that is correct. Thank you. And then finally, on the sixth year I show the field moving into the black, in effect beginning to generate a positive net income and continuing thereon, and after about three, or it looks like, looking through the paper here, about seven or eight years of constant income, by then began declining income in line with my estimate of the decline in production. So here's a case, perhaps, Sen. Butrovich, this will clarify the matter for you if it hadn't before, here's the way that I handled the matter, or let's say that anybody would have handled the matter, of appraising an oil field which is not yet productive but whose presence is actually known. Any of you are welcome to have a look at this in detail afterward. And I might remark that after coming over to the net income I was using a discount rate of that time of 13%, by the way, I have here in this next to last column the present worth factors that were applied at 13% to each year's net income. And finally the right hand column is the present worth of each year's net income. I think you'll find this pretty standard procedure, the thing that I have done here.

SEN. HUBER: I'd like to expand on your question if I could a moment. I think that it's an important consideration. Assume that at the time you assessed this and with all the problems that arose with the trans-Alaska gas line, and as you know they tried the ice-breaker and the Manhattan made the trip and carried one barrel of oil out at the cost of many millions of dollars and gave that idea up, let's say, to this present time the oil companies had developed the field well enough to tell they get a nine or ten million barrel field there or more and that instead of a pipeline being built it was now determined economically infeasible until some future time and they don't know when that would be, to have any way to economically get it out of there. If you were the assessor responsible,

what kind of effect would that have on the value of the field?

MR. PASCHALL: Are you talking about the oil or the gas now?

SEN. HUBER: Oil or gas, either one. Let's say that it was determined that at this time, even right now, that they couldn't build the line and there was no way to get it out of there, which is ridiculous, but let's say that they did. I'd like you to recite what you think it would do to the value of your assessment.

MR. PASCHALL: Well, such things occur. Similar things have occurred. In fact, I'll tell you about one fascinating case that I am following with great interest. It's the case of the Elk Hills oil field in Kern County. Elk Hills is presently producing 2500 barrels a day and has a capacity right now of 150,000 which can probably be boosted fairly well above that, to 200 or a little better, a substantial oil field that is shut-in and has been since all of us, just about everybody were very small children. Now the field happens to be owned and always has been owned 80% by the Federal Government and 20% by Standard Oil Co. of California. Standard itself acquired the sections, their property, in turn from the Southern Pacific Railroad clear back around the turn of the century. Well, when the Navy decided in the 1920's that ultimately all wars were going to be won by battleships fueled with oil they set up Elk Hills as a naval petroleum reserve and shut it in with very firm stipulations of what would be required to open it. It was kind of fascinating. I was called in by the county assessor one time to assist him in figuring out when that thing was going to be opened. And this is similar kind of problem. It may sound different but it's not. I was shown a document, one of the Standard Oil lawyers showed me a document that stated that the field could go on production only if the Secretary of the Navy requested it, the President counter-signed it and Congress said it was O.K.. Now that's about as tight as you can turn a valve and so, this is about eight or nine years ago, I shook my head when I saw that because the price of oil was pretty low then and we really didn't have any of the problems that we have now. I considered it was very remote indeed. I told the assessor, "Aw heck, give it 20 years," which put the present worth of it down at a very low level indeed. Now he has a full

time professional on his staff to help him and I'm not back in on that act anymore. But I know the man who does do the work and he told me, "Boy, two years ago when this embargo hit and the price of oil went up I decided that the opening of Elk Hills was pretty imminent." And maybe he is right, but you can speculate on these things. So he has made his best estimate which, instead of 15 or 20 years, is something like three years away. But what is it? It's nothing but his best estimate of a very complex political and economic situation. Maybe it's going around the horn telling you that but it's kind of a fascinating little tale. If the assessor were stuck with that same kind of a situation, any assessing officer relative to Prudhoe Bay with the situation that you proposed, Senator, he would just have to exercise his best judgement and fight it out, that's all. Work it out.

SEN. BUTROVICH: It would end up being a very low valuation.

MR. PASCHALL: Yes sir, that's correct. It would very definitely lower the value, because it would make more and more remote the time at which the property could generate a net income.

REP. GRUENING: Thank you, Madam Chairman. To follow that up, since the discount rate, discount factor is tied to the time when you can have the oil flowing, to what extent would you, to what extent do you feel that an ad valorem tax, just oil, would have an incentive to delay on the part of Alyeska. I don't know if that maybe takes in a lot of factors, but is there any possibility that it would some delay?

MR PASCHALL: Well, this is a matter of opinion, now. I've been trying you know to stick to facts as best I can but you have asked me here for an opinion. I can't see why the prospect of an ad valorem tax would delay or retard the completion of the line or the hook-up of the field at all. In fact I would think that they would just be knocking themselves out to get to producing as fast as they could in order to get off the ad valorem tax and go on to the severance tax. Let's say and generate income with which to pay the tax. I'd better put it that way, that would be a better way to put it. Right now the field is not generating any inccome so any tax that they pay right now would be paid from revenue

from some other cource and naturally that's disadvantageous to them and would be to anybody. So the operators would therefore be highly desirous to get to producing and pay Prudhoe Bay taxes with Purdhoe Bay money.

REP. GRUENING: I guess what I'm saying is that, I haven't looked at the chart yet, but I guess the amount of tax they would be paying up until the time the oil starts to flow is such that it would encourage them, in other words, by stepping up the time that oil flows,in other words if it flows in 78 as opposed to 77 they would be paying, let's say in 76, a lesser tax. Tied with the price of oil which maybe, if they anticipate the price of oil is going up, maybe there would be an incentive to delay. I don't know what or to what extent.

MR PASCHALL: Well, now, as to whether they pay a lesser tax or not, I don't know because that is up to your legislative body here as to tax rates etc.. But I'd go back to stipulate that the big overwhelming consideration of the operator would be to be paying his taxes on that particular field from income derived from that field and not from elsewhere. It's just providing a drag on let's say the entire corporation to have to get money from elsewhere to pay tax on a non revenue producing enterprise. Now you mentioned something else here that is very critical that I wanted to get to and it has escaped me for the moment. You went on to something else that you closed with.

REP. GRUENING: The price of oil.

MR. PASCHALL: Oh yes. I've heard the oil industry accused of, in California and throughout the U. S., in some instances of holding back on production till the price went up. I can't quite go along with that. I think that most people in the oil industry feel that from the price standpoint they never had it so good. The price has gone up and they are generating excellent revenue from the fields that they are producing. Furthermore, with the present price of money generally, the price of oil would have to go up at 10% per year, let's say, just to make up for the loss in interest on the money that they might otherwise have gotten. And right now, we're not at all sure

that the price of oil is going up, are we? The net profits tax wouldn't do that to presently exempt oil. It would reduce the income from it. So I don't believe that, just my own professional impression from observing the industry, I don't believe that you are going to have any hold-back on production because somebody is waiting around to get a higher price. I don't believe that makes current economic sense.

REP. GRUENING: Madam Chairman, could we have some extra copies of that chart? I'm curious to look at it.

SEN. POLAND: We could have some zeroxed.

REP. GRUENING: Not now. I just mean at sometime.

MR. PASCHALL: You mean my appraisal sheet here? Sure.

SEN.POLAND: Are there any further questions of Mr. Paschall?

SEN. RADER: Mr. Paschall, we are talking about a short call on our revenues occuring maybe next March or April, a possibility. It has been suggested to us that we could, that we <u>should</u> enact a tax, set up our levy, make our assessments and perhaps when we come back in January establish our mill rate at that time for collection of money within several months. Is that a feasible time schedule, to set something like this up and get in operation make the assessment, send out your notices?

MR.PASCHALL: Between now and next January 1st?

SEN. RADER: Yes.

MR. PASCHALL: Yes, Sir. Yes it is.

SEN. RADER; Now, what if we didn't do anything now, but next January 20th enacted a basic law. What kind of a time schedule would you have, do you think before you could make assessments, get your notices out, have your boards of equalization appeals, whatever you have to do?

MR. PASCHALL: How many fields, one thing I've been meaning to ask

someone and I haven't done so, how many fields are in this category that would be subject to such a tax, to enact this legislation? How big is the job? Roughly. The number of fields would give me a pretty good hint this way.

SEN. RADER: The suggestion was that we would exempt any field for a period of five years after discovery or after lease. I think that that would probably, if you limit it only to oil and not to gas, which is another problem I want to ask you about, limit it only to oil and not to gas.

MR. PASCHALL: Limit what?

SEN.RADER: Limit the tax only to oil, the right to produce oil and not on the right to produce gas. The reason for that is that we have some gas fields in Cook Inlet which have been capped for more than five years and it was intended by at least some people that this bill would apply only to Prudhoe Bay and wanted to work out exemptions which would be constitutional as between property owners but that they really only intended to apply to Prudhoe Bay.

Before we get into that, let me ask you this. How about the five year exemption for example. Is that a reasonable exemption in this type of taxation?

MR. PASCHALL: I was a little puzzled by the wording in one of the bills in that it said something about "the time that the discovery is made or from one other time, whichever comes first." And for the life of me, I couldn't figure how one of them might have come before the other. I have forgotten which it was now.

SEN: HUBER: It was lease, five years from the time of lease or discovery whichever comes first.

SEN. RADER: Well, joint venture, contract, or any other agreement that is made for the oil and gas development of a part or all the lands subject to that lease or property. Any other agreement, I wonder if that would mean that an agreement that occurred five years before that, some people joint ventures bidding seismic

work. I'm looking at two sets.

MR. PASCHALL: That's what puzzled me, Senator. I was wondering how an agreement might precede discovery.

SEN: RADER: The same thing occurred to me. I was going to ask you that too.

MR. PASCHALL: I couldn't understand it.

SEN: RADER: Let me ask you this. Do you think we could write a definition here which would be reasonably certain to give in effect a five year release I'd say from the time of discovery probably, tied on to some time. Have you ever seen a bill written like that?

MR PASCHALL: That's your option. Really, I don't know whether I'd really care to express an opinion on it.

SEN RADER: You don't see anything particularly wrong from an assessor's point of view?

MR. PASCHALL: No. You'd have the assurance in all likelihood that if a discovery of any consequence was made that you'd know by that time just about what you had there. That is, the assessor's job should not be too difficult by that time in estimating a value on the property, as opposed to estimating a value immediately after discovery, which is very difficult indeed.

SEN. RADER: Do you have any feel as to what descriptive term we should use as a triggering mechanism to start the running of the five year period?

MR. PASCHALL: I'd want to get off in the corner and think about it. I hate to just throw something out here.

SEN. RADER: O.K. Let's assume you made it from discovery,then. Let's assume that for discussion here, because we have that in our bill, and my question was, in case we got down, what if we don't

do anything and passed a bill say next January 20? How long would it take to go through your procedures of assessment, valuation, notices, boards of equalization, appeals, some kind of appelate procedure and then the collection of taxes?

MR. PASCHALL: Are you talking about just Prudhoe Bay itself, now?

SEN RADER: Probably, that's what you've got into these other things. Well, let me ask you even if you had several, you'd get more assessors.

MR. PASCHALL: I'd want a minimum of three months, at least that, three or four on the first time around, because there are a lot of people to see on something like that and a lot of things to do.

SEN RADER: Three months from the time that the bill was enacted until you could expect the paid notices to go out?

MR PASCHALL: Three months from the time somebody started to work on it. Now, if there were much of a delay between the time of enactment and the time somebody was employed to start the job it would impose a terrible burden on him. Incidently, I'll just have to say this without regard to the dry gas fields in the Kenai, I'd hate to appraise Prudhoe Bay and be told to ignore the gas in doing it. This really poses a peculiar situation for an oil property, or appraiser of oil and gas property.

SEN RADER: Would you care to discuss that?

MR. PASCHALL: Well, it's simply that the two are mixed in the resevoir, for one thing, to a great extent. There is a gas cap at Prudhoe Bay plus a lot of oil-associated gas. They are produced together to a great extent. There's going to be a cost, in the early years at least, injecting gas back into the resevoir prior to the time the gas pipeline is built, if one is built. So you have--it's just one big ball of wax--and it's pretty hard to take it apart and apply a value just to the oil and not to the gas. Gas is undoubtedly, is probably a very valuable item, although I saw the results of a study here recently that indicated it might not be. I'd always thought of it as an element of considerable value.

SEN RADER: Are you saying that you don't think it could satisfactorily be broken out as a matter of assessment or that it just would be difficult?

MR. PASCHALL: It would not just be difficult, it would be arbitrary. I could do it but it would be arbitrary. I'd have to make some arbitrary decisions. Now, arbitrary decisions are not necessarily difficult. Sometimes they are very easy to make, but they are hard to justify. And this is the problem you'd be up against in my mind, slicing it up that way.

SEN BUTROVICH: Well, if I heard you right, in the beginning you were talking about appraising leases, fields, and you were talking about value and I can't figure out how you could value them properly if you didn't value both the gas and oil.

MR. PASCHALL: Well, that's what I'm saying Senator. I don't think I could either. If I were ordered to do it, in effect, by somebody in some situation, I could do it and say, "Here's what I've done. I'm not sure if I believe it but here it is." You know, this kind of thing.

SEN. HUBER: Madam Chairman, could we expand right in this same idea. I think that we were getting into a capped in, shut in gas wells in the Cook Inlet area that do exist and would be subject to a tax. I'd like Bob to comment on them because my understanding of what he has explained here would be that if those wells are some distance away from production yet due to various economic or other kind of factors, legal factors, whether a market exists, how long it takes to build a liquification plant or something like that, wouldn't those be self-adjusting if I understand this right? The value would be lower and lower and lower unless you were looking at how soon it could be produced. In this case maybe they're getting close to production. Isn't it a self-adjusting thing?

MR. PASCHALL: I would say so. Yes.

Unless there are some special circumstances that prevail that you could tell me about, I'm not sure how, let's say why the gas field should differ, the dry gas fields in the Kenai, should differ in

economic character from Prudhoe Bay. It may be longer until they are hooked up, the price in general and the ultimate gross income may be lower, and the value lower etc., but in principle, from the standpoint of valuation, they are the same kind of thing.

SEN. HUBER: They are probably contrary. They are probably now, because there is some liquification plants and stuff there and some shipment going out of there, and smaller fields, they are ---

SEN. RADER: I guess so. But I don't know that much about it.

SEN. HUBER: I'm not sure of what the situation is down there. I'm sure there are some people that would tell us why they shouldn't be taxed around there.

SEN.RADER: Have you chanced to actually look at these various bills that we have before us, as to workability? Have you had a chance to read them?

MR. PASCHALL: The bills? Yes, sir, I have. I don't have them with me. I had some marginal notes on them and I didn't bring them along. In fact, they are over in Sen. Huber's office. I had some comments on them. There is one item I might mention. It is a little one, but as a professional I was a little unhappy with it. And that is, at one point, and I think everybody, I've looked at all four of them, refers to the discounted value of a future net income, something like that. I wanted to bring this to somebody's attention that it is not values that are discounted. I was remarking on this earlier. It is the net income that is discounted and the discounted net income becomes the value. So actually the proper wording there in the bill there should be the value of the discounted net income, rather than the discounted value of the net income. It's a minor but rather important point relative to financial analysis, let's say. If you wanted to ask me about some specific items, I might be able to respond to them but I don't have my copies with me.

SEN. RADER: I was just wondering if there were any particular items in it that you felt to be unworkable, not understandable.

MR. PASCHALL: Well, there was one of the bills, I responded to Senator Huber in a letter on it, there was one of the bills that

I felt was unworkable and I believe that you can tell me which one it was, Senator. I found myself in a revolving door in trying to figure out how to work it. And as I made a rough attempt to figure out how each of them would be administered. Now by this, I mean if you get, for one thing, this tax offset, a matter of a prospective offset of future severance taxes by current ad valorem taxes if the bill were enacted. But one of them had an offset of the severance tax by the ad valorem and vice versa and I couldn't get myself out of the labyrinth in trying to work that one out. I didn't see how it was possible to have this dual offset business.

SEN. HUBER: Some of the problems, if I may, some of the problems that arose were that the present tax law, which of course was written for the oil properties and pipeline transportation tax, was basically used on several of the bills as the foundation figuring that this would be a proper foundation and you'd do certain things to it. That's true in my bill and it's true in at least one or two of the bills in the House, and I don't know if it's true in Steve's final bill or not, but if you recall the administration did bring in the last bill. When it came to several areas like this some of us fellows who had wading around in the swamp draining it and the alligators were chewing away you know, by that time we got enough of the water out of the swamp that the administration got up on top a little bit and came up with some better ideas and some of the better ideas they came up with is putting this in a whole new chapter because of certain other things that will take place, that we keep running into. And so, the administration bill is a little further along in some of the things than the other bills are. Each is built on the other and I don't believe it probably will be the final perfect product, if there is such a thing.

REP. COWPER: Madam Chairman, I would like to respectfully demur from Sen. Huber's characterization of our bill as being final. It may change colors a lot. (Laughter)

MR PASCHALL: I might mention, Senator Rader, without reference to any specific bill, I did comment earlier when I was making my general presentation on the incorrectness of the use of the terms "tax on reserves" or "tax on oil in place" because I had in mind statements made in one or two of the bills. I'm not sure it is

present in all of them but this would be one area, for example, where I believe it would be advisable to watch the terminology very carefully and be sure that the bill states exactly what is to be subject to ad valorem taxation. I didn't see any problems generally in administration because there were fairly simple statements of what had to be done.

SEN: POLAND: Are there further questions?

SEN HUBER: Madam Chairman, before he leaves you might see that it is quite obvious from the fact that we have so many bills before us, even here we are talking about three, and there's more than that before the legislature on the same subject, that the principles that Mr. Paschall is talking about needs applying, the practical principles of ad valorem taxation, needs applying to the actual bills. And so, probably there would be some changes made. I can see some. I would suggest that this committee think of listening to a final or a near final bill later in the week. I suspect that something like that is in the making, with more ideas probably, than Mr. Paschall has said too. I think he has some others to hear from.

SEN. POLAND: Thank you very much Mr. Paschall.

WACO SHELLEY May I ask one more question? I am Waco Shelley of the Mobil Oil Corporation. You mentioned that someone had testified here that the amount of tax had been missed by a factor of about 20. Do you have what you think this tax would amount to on Prudhoe Bay, per year? Do you have a number?

MR PASCHALL: No sir. I can tell you that my value, as about two years ago was $4,768,000,000. Now I think, let's say it's a fair assumption to state that the value of Prudhoe Bay would now probably be greater than that. But, there are all kinds of things operating on it. We do have in all likelihood, regardless of the threat of an excess profit tax, we do have the prospect of a higher price of oil than I used in my appraisal. We also are much closer to the time at which Prudhoe Bay will begin to produce. We also, let's say, the operators also have behind them a great deal in the way of capital investments that I was anticipating as of two years ago. Those

three things all indicate an increase in the value of the fields. On the other hand the increased cost of the pipeline has a deleterious effect on the wellhead price so maybe I was wrong in my first statement on price. Also I would contemplate using a higher discount rate than I did in my appraisal of two years ago were I to reappraise the field myself right now. You can see it's a mixed bag and I would not want at all to just say, you know, Prudhoe Bay is now worth about so much. It would demand considerable work and considerable revision of what I did earlier to know, but I would estimate it would probably be higher. Now as to taxes, of course, this is another issue and I refuse to concern myself in that now. We get into mill rates and other budgetary and decisions.

REP. COWPER: Madam Chairman. I think, Mr. Shelley, that overstatement by 20 times was in reference to a figure used by Mr. Tom Kelly in reference to Kemik field, Artic Slope region. He gave a figure and Mr. Paschall reviewed that figure, I believe, and came up with something that was about 5% of the figure thatwas given by Mr. Kelly.

MR. PASCHALL: Sir, if I may comment on that further. Now I remember exactly what it was and I'll be a little more precise. It was actually Mr. Adams, I believe, of the Native Corporation who was speaking and he was tying value into gross income. Now, he did it on two counts. He was thinking of the entire field and he was also considering the Native Corporation's possible tax liability if their net profit interest was subject to taxation. So I made some roundhouse approaches to the text of those two situations, the entire field and the net profits interest if it was subject to taxation. On the entire field basis, his overstatement would have been about 8 times. Looking at the net profits interest tax aspect of it, my rough estimate was that his estimate tax was 20 times too great. You see, we are looking at two different elements there, the net profits interest and the total field.

SEN. HUBER: We can thank Mr. Shelley for the right questions again. That came from testimony before our committee if you remember, and there was a two point,,,, we had a little discussion of this prior to getting in here, there was a 2.1 million dollar

estimate and the remark that went with it is, that would break us. And that same figure, from the 2.1 million, I believe Mr. Paschall broke that down to $89,000. That's quite a fling between 2.1 million dollars and $89,000 and that's where that figure came from. We want to thank Mr. Shelley for really bringing the right question up again. He always comes up that way.

MR. SHELLEY: Thank you, Senator.

REP. ITTA: I'd like to inform this committee since you are mentioning about the Arctic Slope Regional Corporation that they will be down here again this week and they'll be providing the people that are concerned with taxes with additional information as to how it affects our region.

SEN. ORSINI: Despite your attempt at avoidance of how much money you could raise on the North Slope, I think that it is a very pertinent question as far as the legislature is concerned. If in fact, you could only raise a few thousand or even a few hundred thousand dollars, we obviously would have to look a lot further to try to find some money. If several hundred billion dollars is available in property ad valorem tax, then perhaps we need look no further. Really, the amount of money that we could be expected to get within the next couple of years is very critical, as far as we are concerned, on decisions on these concepts. And I don't know if it's our function or what but I would sure like to know how much we would, either say some 20 mills or some other such arbitrary mill rate, how much we could raise in the next couple of years.

MR. PASCHALL: Mr. Shelley's comments too bore on that and specifically on my value here and again I'll say, and this is just a roundhouse estimate at present, that the value of the field is probably greater now than it was two years ago, just about certainly greater. How much greater, I don't know but looking at this figure two years ago I would say that five billion dollars would be a rock bottom figure for the value of the field now. And of course, that's only a 5% increase over what I estimated two years ago. It's probably greater than that increase. Just an estimate, and believe me Senator, it is just an estimate now. Right now you'd be looking at a floor, a value floor of about five billion dollars on Prudhoe Bay.

AGO 530253

SEN. ORSINI: That's the present value at which we would tax?

MR. PASCHALL: If you have 100% assessment ratio. Yes, sir.

SEN ORSINI: We do. So then, probably now if we had a 20 mill 100% rate we would get one billion dollars.

MR. PASCHALL: One h..dred million. I think I got my decimal point right.

SEN. ORSINI: Right, O.K.

MR. PASCHALL: One hundred million would be 20 mill rate of five billion dollars.

SEN. ORSINI: No, 20 mill rate would be one billion.

MR. PASCHALL: No sir, one billion would be 20 cents. Move it over another notch there.

SEN. RADER: Incidently, what kind of rate, how many mills, what's your assessment situation in California?

MR. PASCHALL: It varies radically, because the local tax rate prevails on property down there. As a result we have rates that vary. Now we talk in terms of dollars per hundred dollars of assessed value, a levy on assessed value. We have a 25% ratio. I'll try to make some quick conversions. We go from as low as 16 mills to as high as 36 mills.

SEN. RADER: On 100% valuation?

MR. PASCHALL: Yes, sir, on 100% valuation. And again this depends completely on the local jurisdictions. In some areas, particularly in very highly urbanized areas in both Los Angeles and Orange Counties, they are up in the 36 mills range. In the rural communities in the western side of the San Joaquin Valley, in the Sacramento Valley and the gas fields area, it's more of the nature of 16 mills, something like that.

AGO 530254

SEN. RADER: Is that mill rate the mill rate the same that's applied to business buildings, homes etc.?

MR. PASCHALL: Yes, it is. For anything within that particular taxing jurisdiction. And the taxing jurisdictions, I might mention, are an absolute mess. We have something over twenty thousand tax rate areas, they are called, and each tax rate area is a unique combination of the rates that apply on schools, county general rate, special district rates like water districts, sewer districts. There are tremendous number of these areas.

SEN. RADER: How about the situation, I understand that Texas and Louisiana, other states, use this type of a tax in different areas. Are you familar with their methods or procedures?

MR. PASCHALL: No sir I am not. I might mention that we had, i.e., local jurisdictions had the right to set any mill rate levy that they wanted up until a year or two ago. And now there's been a lid put on it with special provisions for higher rates under certain circumstances. I don't even know what they are. I haven't bothered to learn the technical reasons that would allow a school district, for example, to exceed its limit. So that most tax increases, most property tax increases in California are resulting now from rising assessments and not from rising tax levels. That wouldn't necessarily apply to oil properties, of course.

SEN POLAND: Thank you very much, Mr. Paschall.

(Unrecognized speaker): I have one question. Is Mr. Paschall up as a technical advisor to your committee? Were his expenses paid by this committee or state legislature or what?

SEN. POLAND: Legislative Counsel.

(same as above.): So the state of Alaska is paying for it?

SEN. HUBER: Madam Chairman, I can answer that. He is engaged under the authority of our special committee, Senate Committee on Taxation and Revenue, and the funds are made available through a grant by the legislative counsel.

AGO 530255

The state of Alaska is paying for Mr. Paschall's trip here and his salary to be here. I think maybe the committee should establish, I think, that we had to get permission for Bob to be here. I think that his employer should be stated in California.

MR. PASCHALL: I am actually serving as a consultant to Sen. Huber's Special Committee but I am doing it on my vacation time as a moonlighting venture, in effect, from the California State Board of Equilization for which I work on a regular basis.

MR. EUGENE WILES: I would like to ask Mr. Paschall, as I understand it, your valuation is on net profits interest, is that correct? This evaluation of the five billion dollars?

MR. PASCHALL: It's what I term the net operating net income for the property. That was what was discounted.

MR. WILES: Operating net income? And how do you reach operating net income when the pipeline hasn't been built and you don't know what it's going to cost? You don't know what it's going to cost for a barrel of oil. What production figures do you have to come into that?

MR. PASCHALL: Well, for example, you mentioned that you don't know what it costs to bring out a barrel of oil. There were some field rules hearings before the state Division of Oil and Gas several years ago in which the companies provided certain information to the State. One of the things they provided were three estimates of the rate of decline of the typical Prudhoe Bay well and of course this was immensely helpful to me in my own estimates of the prospective future rate of production. There's undoubtedly a lot of hard work that had gone into that, that I was able to take advantage of.

MR. WILES: Basically, this is shown on your paper there, isn't it?

MR. PASCHALL: Yes sir, or in the report I stipulate in the report the reasons for the selection of every one of the estimates I employed.

MR. WILES: Are these quesstimates, are you guessing at what

the production is? Are you guessing at what the pipeline is going to cost us? What I'm trying to get is, how do you get an operating net profit from something that isn't operating?

MR. PASCHALL: We don't call them quesses, sir. We call them professional estimates. A while ago, you mentioned the operating costs. I was a little baffled at first, on operating expenses and it's a very important element and then I realized that the information provided to the state Division of Oil and Gas allowed me to back into an operating cost. It amounted to this, that on their own presentations, industry had indicated an economic limit of 100 barrels per day wells. For those of you who are not familiar with it, the economic limit is the time at which daily gross income and daily expenses meet and you are no longer generating a net income per day at the well. All right, they stipulated the 100 barrels per day economic limit. It also happens that I made the professional estimate, the professional judgement, that the wellhead price of oil would be $2.95 at that time. So here all I had to do was multiply $2.95 x 100 and 365 days a year and I had an operating expense of about $108,000 per well per year. So on the industry's own data I had a pretty good tool to work with and came up with a figure that was a pretty sizeable one and it seemed like it would be in the ball park for that kind of operation. I made similar judgements for everything else that's cranked into the --- (interruption)

MR. WILES: If an appraiser were hired under this situation, would he use that same information, or what? Or, how would he get his information other than that?

MR. PASCHALL: Well, he wouldn't certainly not at this time. You're asking, for example, if an ad valorem tax were enacted by the state and somebody was employed by the state to make the appraisal, would he use that same information?

MR. WILES: Could he use it?

MR. PASCHALL: No, sir. He would by this time be able to acquire much later, much more consequential, much more precise information.

MR. WILES: But he would make his evaluation as a result of it.

MR PASCHALL: That's correct. He would still have to engage in some estimates in judgement. But every appraisal, I don't care if it's even of your own home, is an estimate of value and the appraiser in any instance has to engage in estimates in arriving at a value.

MR. WILES: Thank you very much. I'm just sort of baffled about having operating net expenses or net profit if you don't have anything operating.

MR. PASCHALL: Those are anticipated future net income.

SEN. HUBER: Bob, just to get a little further on the question. Just a very few years back, I had an electronic business in Fairbanks that was serving quite a few people that were active on the North Slope, geophysical companies many of them, including some of the producing companies etc., and it was in a two-way radio business that had buildings and facilities etc., is the problems basically different here than those of the North Star Borough in Fairbanks if they had hired you to place an estimated value on my property for purposing of taxation?

MR PASCHALL: Only in that I might have appraised your property using your replacement costs less depreciation approach to value rather than the income approach. I might mention in that regard, I stress the income approach to value to you here today. I haven't talked about anything else. There are two other fundamental approaches to value of property, generally. One is the cost approach, that is roughly that property is worth what it costs, or it is worth what it originally cost less depreciation that has occurred since the time it was built or bought. That's the cost approach to value. The other is the sales approach to value. We have all used, or most of us have used the sales approach to value ourselves, personally, in buying a home. We go out to buy a home and we test the market and we pay for a house about what we find houses are selling for. We're looking at the direct market here and here's the sales comparison approach to value. When you get to oil properties generally and a property like Prudhoe Bay particularly, it's obvious that cost is completely irrelevant. The costs of

developing Prudhoe Bay has to my mind no reference to it's value. We can't use the sales approach directly because we don't have sales of properties like Prudhoe Bay and we aren't apt to have one. The only thing like it is the East Texas field and it has hundreds of operators versus the handful here and there are no comparable sales. So this turns the appraiser directly to the income approach to value. I would stipulate that this is not bad because this is what the oil industry itself does in buying oil properties and is what banks do when they loan on oil properties. They too make income type appraisals, recognizing their pitfalls and recognizing that professional judgement has to prevail on many occasions.

SEN. BUTROVICH: Do you remember what the rate was on that field that you say was blocked off for quite a few years by the federal government? What rate they used in taxing?

MR. PASCHALL: Elk Fields? Now, do you mean the mill rate here, Sen. Butrovich, or what?

SEN. BUTROVICH: Yes.

MR. PASCHALL: I don't know what it is out there. I think,-- I understand that tax rates are fairly high in western Kern County and I think it's about, (let's see, translating really gets me. I'm not to used to that.) What would 2½% be, 30 mill or 25? O.K. It's right around 23 or 24, just a little less than 2½% of value, something like that. Now, there I might remark, if the assessor has now gone in and put a substantial value on this little 2500 hundred barrels a day production, (I don't know what it is. I think he has put $70,000,000 and is proposing to raise that); he is simply anticipating that this thing is going to start producing full bore in the not distant future.

SEN. BUTROVICH: That's on federal land isn't it?

MR. PASCHALL: Well, no the property that he is actually assessing is Standard Oil Company feed property. It happens to be surrounded or intermingled with federal land but it is fee property in that case. That's not really consequential, it's not relevant to the situation, but it is fee property.

SEN. POLAND: Any further questions? If not, we have a couple of gentlemen from the administration.

Thank you very much, Mr. Paschall.

PLEASE NOTE: THE PRECEDING PAGES WERE TREATED AS A UNIT IN THE ORIGINAL DOCUMENT.

Paschall

EDUCATION

B.A. in Geology, Univ. of Calif. at Los Angeles, 1933
Graduate Work, U.C.L.A. and Oregon State Univ., 1940 & 1947
Courses in the income approach to value and the appraisal of industrial properties and of machinery and equipment given by the State Board of Equalization of California, the American Institute of Real Estate Appraisers, and the American Society of Appraisers

EXPERIENCE

Twenty years in petroleum geology in California. Latest industry job was as Senior Geologist, Offshore Area, Signal Oil and Gas Company.
Eleven years as Senior Petroleum Appraisal Engineer (present permanent position) and Principal Property Appraiser, State Board of Equalization, Sacramento. Engage in writing and lecturing on and appraising oil and gas and mining properties. Have appraised oil and gas fields in 15 California counties for property tax purposes. These fields include San Ardo, Kettleman Hills, Kern River, and Rio Vista.

PROFESSIONAL LICENSES AND MEMBERSHIPS

Registered Petroleum Engineer, State of California (No. 537)
Registered Geologist, State of California (No. 8)
Certified Property Tax Appraiser, State of California (No. 15)
Member, Society of Petroleum Engineers of AIME
Member, Amer. Assoc. of Petroleum Geologists
Member, Amer. Institute of Professional Geologists
Member, International Assoc. of Assessing Officers
Associate Member, American Society of Appraisers

RECENT TEACHING EXPERIENCE

Lecturer, I.A.A.O. Seminar on the Valuation of Oil and Mineral Rights, Phoenix, Ariz., December 1971
Speaker, meeting of the Society of Petroleum Accountants, Los Angeles, November 1972
Speaker, Society of Real Estate Appraisers seminar on mineral rights, Modesto, Calif., April 1973
Speaker, Amer. Society of Appraisers seminar on Oil and Mining Property, Toronto, Canada, June 1973

RELEVANT AUTHORSHIP

Co-author and editor of Valuation of Oil and Gas Producing Properties, 1966 (revised 1972), State Board of Equalization, Sacramento, Calif.
Valuation of an Oil and Gas Producing Property, in The Valuation of Oil and Mineral Rights, I.A.A.O., Chicago, Ill. 1972.

MALONE

Sacramento, Calif.
14 October 1973

North Slope Borough
Barrow, Alaska

Gentlemen:

Here is my appraisal of the Prudhoe Bay oilfield for ad valorem tax purposes as of January 1, 1973. All value computations are shown on Appendix A, which is in the pocket at the back of the report. The reasons for the use of the items listed on Appendix A may be found in the body of the appraisal report.

It is possible that my value conclusion of $4,768 million may be challenged on the ground that I had inadequate data. We should keep in mind in this regard that the operators of Prudhoe Bay received interrogatories asking for detailed information on reservoir data, drilling costs and operating expenses, and the correlative rights of the several lessees. Those interrogatories were ignored.

The report makes it evident that relative paucity of data was not a serious handicap in appraising the field. The value would be 92 percent of that shown on Appendix A if production were carried only through the year 1990. That is the case in the face of the fact that only 77 percent of my oil reserves estimate will then have been produced; that is, more than two billion barrels of reserves will still remain. In short, the effect of present worth minimizes possible errors in reserves estimation, as my report points out.

The lack of precise data on expenses is not a serious matter, either. Net income is so high a percent of gross income (about 66 percent in the first few years) that a notable underestimation of expenses would not seriously increase the field's value estimate.

This brings us to the decisions that were most critical to the value determination. There are three of them:

1. The time at which oil production will begin.

2. The first few years' rate of oil production.

3. The price of oil.

AGO 530262

All of these things are speculative at present, and do not depend on technical data that are available to some and denied to others. The commencement of production has already been delayed politically, and a further delay of five years from the date of appraisal now seems reasonable. The rate of oil production can be estimated with considerable confidence, and the details are spelled out in the report. Finally, the price of oil in 1978 will depend on global and national economics and politics, and one informed person's estimate is as good as another's.

Sincerely

Robert H. Paschall

Robert H. Paschall
Consulting Valuation Geologist
and Engineer
Reg. Petrol.Engr.Calif.No. 537
Reg. Geologist Calif. No. 8

REPORT ON THE APPRAISAL OF THE

PRUDHOE BAY OILFIELD

TABLE OF CONTENTS

I. OBJECT OF APPRAISAL AND MARKET VALUE ESTIMATE 1

II. APPROACH TO VALUE 1

III. APPRAISAL ELEMENTS
- A. OIL AND GAS RESERVES DEFINED 4
- B. OIL RESERVES ESTIMATE 5
- C. GAS RESERVES ESTIMATE 6
- D. GROSS INCOME
  - 1. Sources of Oilfield Income 6
  - 2. Proudhoe Bay Product Prices
    - a. Oil 7
    - b. Dry Gas 10
  - 3. Oil Production Rate and Decline Rate 10
  - 4. Gas Production Rate 11
  - 5. The Economic Limit and Present Worth 12
- E. CAPITAL COSTS AND OPERATING EXPENSES
  - 1. Definition of Net Income 12
  - 2. Capital Costs 12
    - a. Well-Drilling Costs 13
    - b. Oil-Gathering Centers 13
    - c. Gas Injection Equipment 13
  - 3. Expenses
    - a. Oil and Gas Production Direct Operating 13
    - b. Gas Injection 14
    - c. Gas Production Direct Operating 14
    - d. Well Remedial and Redrill Work 14
  - 4. Property Taxes and Gross Production Tax 14
  - 5. Royalty Payments 15
- F. CAPITALIZATION RATE AND TIME DEFERMENT OF INCOME 16

IV. A MATTER OF SIZE 16

V. BIBLIOGRAPHY 18

APPENDIX
- A- VALUE COMPUTATION SHEET (in pocket)
- B- COMPUTATION OF OIL AND GAS RESERVES ESTIMATES
  - 1. Oil Reserves 19
  - 2. Gas Reserves 21
- C- APPRAISER'S PROFESSIONAL QUALIFICATIONS 24
- D- ALLOCATION OF TOTAL PROPERTY VALUE

REPORT ON THE APPRAISAL OF
THE PRUDHOE BAY OILFIELD
NORTH SLOPE BOROUGH, ALASKA*

I. OBJECT OF APPRAISAL AND MARKET VALUE ESTIMATE

The object of the appraisal was to estimate the market value of the Prudhoe Bay oilfield as of January 1, 1973 for ad valorem tax purposes, and to allocate the value between (1) the various assessment parcels and (2) possessory rights in land on the one hand and improvements and personal property on the other. The value of the field is estimated to be

FOUR BILLION SEVEN HUNDRED AND
SIXTY-EIGHT MILLION DOLLARS
($4,768,000,000)

The allocation of this total value to parcels and to land, improvements, and personal property is shown in Appendix D to this report.

II. APPROACH TO VALUE

The value estimate was made using the income approach to value. Only the income approach was used because (1) it is the approach used exclusively by the petroleum industry, whose member corporations are the only prospective purchasers of all or part of the Prudhoe Bay field, (2) all oil properties appraisal literature stresses the income approach virtually to the exclusion of other approaches, and (3) the other standard approaches to value-- cost and sales-- are inapplicable to Prudhoe Bay. They are not applicable because neither past nor prospective future costs reflect the present value of an oil or gas property and because sales data on properties comparable to Prudhoe Bay are nonexistent. Here are some comments relative to value approaches that may be found in the books listed in the bibliography to this report.

John Campbell's Oil Property Evaluation is the most authoritative book of this type in the commercial field. Campbell takes the income approach so much for granted that it is not possible to quote him regarding its *relative* importance. That is, he discusses nothing but the income approach in his chapters on "Elements of Oil Property Valuation," "Factors Influencing Oil Economics," and "The Value

*By Robert H. Paschal, Consulting Valuation Geologist and Engineer, Sacramento, California. The date of this report is October 14, 1973. See Appendix E for professional qualifications.

AGO 530265

of Money." The latter chapter deals with the present worth concept and the time value of money, which are relevant only to the income approach to value.

Paul Paine's Oil Property Valuation preceded Campbell's work as an industry guide to appraisal. Paine had these things to say on page 9 in the section on "Valuation Methods" in his chapter on "The Scope of Valuation."

> "Replacement cost is very seldom workable for oil properties. No two properties are precisely alike..."
>
> "Sales of the same or of similar properties do provide a means of valuation which can be followed on many occasions for oil properties."
>
> "The capitalization of income derivable from a property provides a theoretical approach which has been the basis of most oil-producing property valuations. This is the so-called 'engineering' or analytical appraisal...(The) use of the expected income as a basis for the determination of value has been developed to a high degree...It has found ready acceptance in oilfield practice."
>
> (Underlining added in all of the above cases.)

The Society of Petroleum Engineers of AIME has published a series of articles jointly titled Oil and Gas Property Evaluation and Reserves Estimates. These remarks are made on page 152:

> "Where (as is usually the case) the investor has a choice of ventures in which he can invest his money, he will need a single yardstick to rank these ventures according to their profitability. Several yardsticks are being used in the oil industry which more or less approach this criterion. In the present paper, only two will be considered-- the present-day value (or deferred value) of the total profit, and the internal rate of return..."
>
> (Note: the underlined portion is italicized in the original.)

AGO 530266

Finally, the California State Board of Equalization's Assessors' Handbook 566, Valuation of Oil and Gas Producing Properties, comments on all three of the standard approaches to value. Parenthetically, this volume has served since 1966 as a guide to the appraisal of petroleum properties for ad valorem tax purposes in California; the author of this appraisal report was the editor and a co-author of the book.

> "(The cost approach) is not applicable to the appraisal of oil and gas properties." (p.14)

"Market value" is defined at length on pages 13-14, and the comparable sales approach to appraisal is discussed on pages 14-15. It is important here to note this remark:

> "...scarcity of sales will usually require that every evidence of market data be investigated and analyzed. There is no excuse for the appraiser to overlook pertinent market data in areas for which this information is scarce."

It is obvious that sales data in the Prudhoe Bay area are sufficiently scarce to invalidate this approach at the present.

The income approach to value is dealt with on pages 16-24. A few quotations are germane to the present appraisal. The quotations within the quotation come from Assessors' Handbook 501, General Appraisal Manual.

> "Oil and gas producing properties are generally appraised by the income approach... 'A basic assumption of the income approach is that people purchase property for the income that it will yield...The relevant income that should be used in the income approach is the expected future net income. Past income is not a consideration, except insofar as it may be a guide to future income...The proper income to be used is the one which the typical purchaser and seller would anticipate over the remaining life of the property...'"

The principles contained in those quotations were employed in the valuation of the Prudhoe Bay oilfield.

III. APPRAISAL ELEMENTS

A. OIL AND GAS RESERVES DEFINED

The word "reserves" is defined in this manner by the American Petroleum Institute:

> "These are the volumes of crude oil and natural gas which geological and engineering information indicate, beyond reasonable doubt, to be recoverable in the future from oil and gas reservoirs under existing economic and operating conditions. They represent strictly technical judgments and are not knowingly influenced by policies of conservatism or optimism. They are limited only by the definition of the term 'proved.' They do not include what are commonly referred to as 'probable' or 'possible' reserves."

The production and sale of the oil and gas reserves provides the gross income from the property. The estimation of reserves, then, is highly important to oil and gas properties appraisal even though it is, strictly speaking, a technical as well as an economic matter. At the same time, the need for accuracy in the reserves estimate diminishes with the length of time that will be required to produce the oil and gas; this is the case because the present value of oil and gas that are to be produced many years from now is modest. For example, if net income is discounted to present worth at a 13 percent rate, as it is in this appraisal, the present value of a barrel of oil that is produced in the first year is 35 times as great as the value of a barrel that will be produced 30 years from now. With that caveat in regard to the economic significance of reserves, here are some comments on methods of estimation.

Reserves may be estimated variously by the volumetric, material balance, and decline curve methods, which assume a different order of importance at different stages in the life of an oilfield.

The volumetric method is appropriately used only in the earliest portion of the life of a field. In simple terms, the volume of the oil in place is estimated by measuring and/or estimating the total volume of the oil reservoir and the fraction of the reservoir that is occupied by oil (and gas). The key data used in computing the volume consist of (1) the area of the field, (2) the average thickness of the oil reservoir rock (which is a series of sandstones at Prudhoe Bay),

AGO 530268

(3) the porosity of the reservoir-- that is, the portion of the rock which consists of open pore spaces, and (4) the fraction of the pore spaces which is occupied by oil, gas, or water. Then, in order to derive the oil reserves estimate, an oil recovery factor must be applied to the volume of oil originally in place.

The material balance method requires the use of a complex equation that relates the volume of oil originally in place to changes in cumulative oil production, the ratio of the volume of gas to the volume of oil, and the effects of the presence of gas on the volume of reservoir oil. It is evident, without being any more technical than that, that some production history is required to make the material balance method useful.

The decline curve method of oil reserves estimation is actually a family of methods, wherein one may graph the relationships variously of (1) the oil production rate versus time, (2) cumulative oil production versus cumulative gas production, et al. Appropriate extrapolation of various curves may afford an estimate of either oil or gas reserves. Again, like the material balance method, the decline curve methods require a history of production in order to be useful.

B. OIL RESERVES ESTIMATE

The preceding paragraphs make it evident that only the volumetric method of reserves estimation is presently available at the Prudhoe Bay oilfield. That is the case, then, with the four estimates cited below.

1. A letter from the president of Atlantic Richfield Oil Corporation to BP Oil and Humble (now Exxon) Oil Corporation, dated August 6 1969, proposed at one point that annual oil production be at a level that is three percent of the original oil in place. Conservation File No. 83 of the Alaska Oil and Gas Conservation Commission, dated November 13-14, 1969, says on page 59 that "...early pipeline capacity could be as high as two million barrels per day." (or 730 million barrels per year). If one combines these two statements, the indicated oil in place is 24.3 billion barrels-- that is, 730 million divided by .03. If one applies a 40 percent recovery factor to this volume of oil in place, the indicated reserve is

9.72 billion barrels.

2. The Oil and Gas Journal, an authoritative trade magazine, noted in an article on the Alyeska pipeline dated

AGO 530269

April 23, 1973 that Prudhoe Bay reserves are about

10 billion barrels.

3. I made a volumetric estimate using the geological contour map, cross-sections, and reservoir information that were submitted at the 1969 and 1971 Field Rules Hearings. The details of my estimate may be found in Appendix B of this appraisal report. My estimate of oil reserves is

9.94 billion barrels.

The estimated rate of oil production for the first 25 years of the field's operation is listed on Appendix A. The economic limit of oil production is not yet reached, and production then totalled

9.39 billion barrels.

That production constitutes 94 percent of my volumetric estimate of 9.94 billion barrels and essentially all of its present worth.

C. GAS RESERVES ESTIMATE

The estimate of gas reserves is set out in Appendix B. It is estimated that the amount of gas originally in place is 33.6 billion MCF ("MCF" is the abbreviation for "1,000 cubic feet). Gas originally in place can also be stated as 33.6 trillion cubic feet. It is further estimated that 75 percent of this amount can be produced economically, yielding a reserve of

25.2 billion MCF.

Appendix A, the Value Computation Sheet, reveals indirectly that only 9.6 billion MCF will have been produced at the end of 30 years from the date of appraisal. That is the product of four times the gas revenue of $2.4 billion. Appendix A also reveals that the present worth of gas production distant more than 30 years is minimal.

D. GROSS INCOME

1. Sources of Oilfield Income

The annual gross income from an oil property is the product of the barrels produced multiplied by the price per barrel. If natural gas (mainly methane) provides income, the annual production in MCF is multiplied by the price per MCF.

AGO 530270

It is assumed here that dry gas will provide some income at Prudhoe Bay beginning two years after oil production commences. This presumes that a gas pipeline will be installed parallel to the proposed oil pipeline from the field to Valdez. Good reservoir practice will probably require the injection of most of the gas back into the reservoir in order to maintain pressure and maximize oil recovery. Gas injection may not be required if it is found that an active water drive is present, but some production history is required to resolve that issue.

2. Prudhoe Bay Product Prices

a. Oil

A price of $2.95 per barrel is used to compute the gross income from oil. The use of this price constitutes a departure from normal appraisal practice, which typically calls for the use of current price, which would be less than the price that is used. However, an oilfield appraisal normally also involves current production, but it is believed that the Prudhoe Bay field will not begin to produce until 1978. It would be erroneous to employ the current price in computing 1978 and later income when it is evident that upward pressure on oil prices now exists on an international scale.

Oil price rises have been meteoric in the weeks just prior to writing this report. The price of 28-gravity oil rose 20 percent in California between May and September, and even greater increases have been recorded by Mid-East oil. Moreover, the prospect is that, by 1978, the influence of the Arab nations on worldwide oil pricing will be much greater than it is at present.

It is appropriate, however, to use information as close as possible in time to the date of appraisal in computing the price of oil. The writer's experience in property tax appraisal has been in a setting that permits the use of post-lien date information that seriously influences value. The only limitation on use is the closing of the assessor's roll, an action that takes place in California about three and one-half months after the lien date. Alaska law and practice do not provide for a closing date; in other words, it is an open-ended matter. It still seemed advisable not to depart unduly from the lien date in seeking critical information.

Here is the rationale for the oil price determination. The Oil and Gas Journal reported on April 16, 1973 about a meeting in Denver of the American Petroleum Institute. One of the speakers is quoted as saying:

AGO 530271

"...(we) peg Persian Gulf crude prices at $7-10/bbl by 1980."

In early 1973 comparable 28-gravity oil brought $3.05 per barrel at Cook Inlet oilfields. (It had risen to $3.45 per barrel for "old" oil at the time of this writing, and the price for "new" oil is now subject to negotiation at a price undoubtedly much higher than $3.45.) Oil is an international commodity, of course, so Cook Inlet and Persian Gulf oil are at least partly in competition with one another. The well-publicized impending domestic shortage of crude oil, which will be only partially alleviated by Prudhoe Bay production, will place ever-greater upward pressure on the price of American oil. The prospect is offered, then, that Cook Inlet production will be worth about $8.50 per barrel in 1980--the mean of the price range proposed at the A.P.I. meeting. If the indicated 15 percent compounded annual price increase is computed in reverse, a Cook Inlet price of $6.43 per barrel is suggested for 1978.

But, Prudhoe Bay oil will not bring as high a wellhead price as Cook Inlet oil because it must be transported 789 miles by pipeline to a marine terminal that will put it on an economic level with Cook Inlet oil. Pipeline costs are computed here in this manner.

(1) An article on page 118 of the Oil and Gas Journal of June 12, 1972 deals with pipeline costs. It says "Current estimates of the cost of the line to be built by Alyeska Pipeline Service Company run close to $3 billion." As an aside, it is likely that total costs will exceed this amount, but that is the result of unanticipated carrying charges stemming from the delay in construction. Only replacement costs should be considered in this sort of analysis, so the earlier estimate of $3 billion will be employed.

(2) The article also states that the system operated by Colonial Pipeline, the largest in the Lower 48 states, cost $500 million for an annual capacity of 483 billion barrel-miles. Alyeska's pipeline will cost $3 billion for an annual capacity of 576 billion barrel-miles (at its stated 2,000,000 B/D capacity). Alyeska's line, then, will cost

$$\frac{3000}{500} \times \frac{483}{576}$$, or 5.04 times as much as Colonial's per barrel-mile of capacity.

(3) The Lower 48's oil and products pipelines grossed $1.25 billion in 1971, and had a throughput of 1,427 billion barrel-miles (this assumes that the top six carriers, which are listed in the Journal article, had 85 percent of

total throughput. The average cost per barrel-mile in 1971, then, was

$.000876.

(4) The cost per barrel-mile will be 5.04 times as great as that for the Alyeska pipeline, or

$.0044.

(5) The total cost per barrel is the preceding figure multiplied by 789, the number of miles from Prudhoe Bay to the pipeline terminal at Valdez:

$.0044 x 789 = $3.48.

(6) Finally, the estimated wellhead price of Prudhoe Bay oil in 1978 is the Cook Inlet price of $6.43 minus the transportation cost of $3.48, or

$2.95 per barrel.

For those who are interested, the total cost of $3.48 per barrel can be separated into components for (1) pipeline amortization and return on investment and (2) operating expenses. Pipelines are typically regulated by some government agency, and the rate of return is computed on a net after-tax basis. Moreover, the rate of return is a weighted average of debt and equity. Here are the assumptions and computations for the case at hand. Really should be 30-35 year

(1) Economic life of line — 25 years

(2) Capital structure:
60 percent debt
40 percent equity

(3) Debt interest rate (<u>in January 1973</u>) — 7.0%

(4) After-tax and -depreciation return on equity — 12.5%

(5) Weighted average return on total capital — 9.2%

(6) Capital recovery factor for 9.2% and 25 years — .1035

(7) Cost per year for amortization and return on capital is:
.1035 x $3,000,000, or — $310,500,000

(8) Total cost in 25 years' time is
25 x $310,500,000, or — $7,762,500,000

AGO 530273

(9) Total cost divided by reserves of 9.9 billion barrels yields a cost per barrel of $.78.

(10) The cost per barrel for operating expenses is $3.48 minus $.78, or $2.70.

b. Dry Gas

The price of natural gas is escalating rapidly at the present time, in recognition of past underpricing and present shortages. Its price at Prudhoe Bay, however, will continue to be minimized because (1) an expensive line must be built to carry it and (2) it must undergo expensive liquefaction at Valdez before it can be exported from Alaska. Therefore, although a wellhead price exceeding 50 cents per MCF (thousand cubic feet) has already been established in several parts of the Lower 48 states, and will very likely exceed 70 cents per MCF by 1978, a Prudhoe Bay price of 25 cents ($.25) is used in this appraisal.

3. Oil Production Rate and Decline Rate

It was remarked earlier that one of the operators suggested that a maximum production rate of 2,000,000 B/D of oil might be attained. In this regard, an item on the third page of the Oil and Gas Journal's "Newsletter" of June 18, 1973 said:

> "State of Alaska and producers there are cooperating to maximize the initial flow when Alyeska pipeline is ready rather than gradually building up throughput."

It is assumed, then, that wells will be drilled as the pipeline is being built (indeed, they are now being drilled), so that the field's initial production rate will be the same as the maximum rate. The current belief of the State Division of Oil and Gas[1] is that the initial rate will be about 1,800,000 B/D, and the Division's apparently conservative estimate is adopted for use in this appraisal.

A set of oil production curves was included in the evidence presented at the February 9, 1971 Prudhoe Bay Field Rules Hearings before the Alaska Oil and Gas Conservation Commission. These annual production decline rates were stated to apply to a well whose initial producing capacity is 1,000 B/D and whose economic limit is 100 B/D:

[1] Personal communication from Division engineers.

Constant percentage decline:
3.5 percent for 71 years

Pressure maintenance by natural water drive:
Zero decline for 25 years
35 percent decline for 10 years

Pressure maintenance by water injection:
650 B/D at zero decline for 39 years
35 percent decline for 9 years

The above estimates are only generally useful for the purposes of this appraisal. The Prudhoe Bay field had 79 Sadlerochit zone wells at the beginning of 1973, versus 51 at the beginning of 1972. The present rate of well completions-- 28 per year-- will result in the field's having 219 wells at the time that production begins in 1978. It is the writer's opinion that those wells will provide an initial production of 1,800,000 B/D.

Division of Oil and Gas engineers state that a total of about 400 wells will be drilled in the Prudhoe Bay field. This means that 181 wells will be drilled after the time that the field begins to produce. It is proposed here that their completion will sustain the initial production rate for a period of seven years, that is, through 1984.

It will be noted in Column 7 of Appendix A that the production rate <u>per well</u> declines at 8 to 10 percent annually through 1983. It is estimated that, upon the cessation of drilling, the <u>field's</u> producing rate will then decline at an exponential annual rate of 10 percent for 13 years' time. About 91 percent of the oil reserves will then have been produced. It is judged that gas "blowdown" will then be initiated, that is, reservoir pressure will no longer be maintained by gas injection. The conclusion is that the oil production decline rate will increase to 25 percent at that time.

4. Gas Production Rate

The benefits of gas injection in maximizing oil production were cited earlier. The judgment is made that <u>net</u> gas production will be only 25 percent of total production; that is, 75 percent of produced gas will be returned to the reservoir during the first 20 years of the life of the field.

It is also believed that gas production will not begin until 1980, two years later than oil production. Furthermore, the gas production rate will be one MCF per barrel of oil.[1]

[1] Alaska Oil and Gas Conservation File No. 83, p. 119, November 1969

AGO 530275

Therefore, annual gas sales in MCF for the years 1980-1997 will be one-fourth the number of barrels of oil produced.

It is assumed that this rate will increase beginning in 1998. Gas will no longer be returned to the reservoir, but instead will be produced at such a rate that the remaining reserves will be depleted in 15 years' time.

5. The Economic Limit and Present Worth

The term "economic limit" was used earlier but not defined. It is that point in the producing life of an oil or gas field when gross income is exactly matched by direct operating expenses. The economic limit of Prudhoe Bay oil production would occur in the year 2004 if all 400 wells were retained, but the economic limit for gas production will occur much later.

About 15 billion MCF of gas will remain when oil production becomes uneconomic. The gross revenue from that gas will be very large indeed-- almost $4 billion. Its present worth, however, is insignificant when compared with the present value of the Prudhoe Bay oilfield itself. In fact, it can be noted on Appendix A that the present value of both oil and gas production for the year 2002 is only $11 million, which is a minute fraction of the field's value. As a result, value computations were not carried beyond the year 2002.

E. CAPITAL COSTS AND OPERATING EXPENSES

1. Definition of Net Income

It was remarked in section II of this report that "The relevant income that should be used...is the expected future net income." The operating net income that is capitalized into value in this appraisal is the gross income minus all out-of-pocket expenses except income taxes and interest on debt. Both income tax and interest charges are accounted for in the capitalization rate (see following section F). Depletion, depreciation, and amortization "expenses" are book charges that do not require the outlay of cash, and actually contribute to the cash flow from an income-producing property; in turn, cash flow is the money remaining in an entrepreneur's pocket after all expenses. Therefore, these book charges are not subtracted from gross income.

2. Capital Costs

Capital costs comprise money outlays that, for income tax purposes, must be recaptured by the investor over a period of time through book charges to either depletion or

depreciation. Practically speaking, capital costs in this appraisal are treated the same as operating expenses. This treatment is conservative in that it tends to reduce the value of the property. The reason for this conservative treatment is based on the assumption that a purchaser of Prudhoe Bay would have to engage in most of the required capital investments prior to the time that production and income will begin. As a result, payment for the investments would have to come, at least originally, from corporate resources other than Prudhoe Bay. This suggests that the capital outlays would be paid for with cash on hand or with the proceeds from a short-term loan. It was decided, therefore, to expense the investments rather than to spread their cost out over the typical period of repayment of an equipment loan.

a. Well-Drilling Costs

An earlier section of this report noted that 79 Sadlerochit zone wells had been completed by the date of appraisal and that a total of 400 wells would be required to develop the field. Opinions variously expressed at the Field Rules Hearings in 1971 and by the Division of Oil and Gas indicate that the total drilling and completion cost per well will be about $1,500,000. That amount is used in this appraisal (see Appendix A).

b. Oil-Gathering Centers

The gathering centers will receive all produced oil and gas, and will contain three-stage separators and other equipment. Three gathering center units have already been installed at a cost of about $54,000,000. It is estimated that a further expenditure of $54,000,000 will be required. That expenditure is divided between the years 1976 and 1977.

c. Gas Injection Equipment

The compressor plant and other facilities related to the injection of gas back into the reservoir will cost an estimated $200 to $300 million, according to an article in the August 10, 1970 issue of the Oil and Gas Journal. The latter figure is used, and is divided between the years 1976 and 1977.

3. <u>Expenses</u>

a. Oil and Gas Production Direct Operating

No experience is available on which to base an estimate of direct well-operating expenses, which include labor,

power, fuel, workovers, salt water disposal, routine contract work, et al. However, an economic limit for oil of 100 B/D was cited earlier, as well as an oil price of $2.95 per barrel. Combining these two numbers provides a daily cost per well of $295 and an annual cost per well of 365 times $295, or $108,000. The operating expenses listed for each year on Appendix A, the Value Computation Sheet, are the product of $108,000 times the number of wells in existence at the beginning of the year, through the year 1997.

b. Gas Injection

Strictly speaking, the expense of returning dry gas to the reservoir depends on the gas volume and on the reservoir pressure which must be overcome to effect injection. It is estimated that this expense will be $.10 per MCF for the 20-year period prior to blowdown.

c. Gas Production Direct Operating

Direct field operating expenses will still be incurred to produce the gas after blowdown begins. It is assumed here that only 100 wells in the structurally highest area will be required to produce the gas. The writer makes the professional judgment that the operating cost per well-year will be $25,000.

d. Well Remedial Work and Redrills

Oilwells commonly require maintenance work that varies from field to field depending on such things as casing corrosion, invasion of the well-bore by formation sand, with subsequent destruction of tubing, and other factors. The assumption is made in this appraisal that remedial work will (1) begin the year after all wells have been drilled, (2) end at the twentieth year, when gas blowdown begins, (3) affect ten percent of all wells each year, and (4) incur a cost that is one-third the cost of drilling a new well. In short, beginning in 1985 remedial costs of $20 million will be incurred each year through 1997. This amount is computed thus:

.10 x 400 x $500,000 = $20,000,000.

4. Property Taxes and Gross Production Tax

The prospective property taxes are so small in relation to the total value of the Prudhoe Bay oilfield that their effect on value is ignored. It is contended here that they are accounted for in the capitalization rate.

Section 43.55.010 of the Alaska Statutes supplement sets out the terms of the gross prduction tax to which produced oil

AGO 530278

and gas are subject. That tax will be a levy against future gross income, just as are the expenses set out above. The manner in which it is computed in the appraisal <u>for oil only</u> is as follows:

First 300 B/D/Well:
B/D/Well x 365 x .03 x $2.95 x No. of wells

301st to 1000th B/D/Well:
(B/D/Well of 1000 or less, but greater than 300, minus 300) x .05 x 365 x $2.95 x No. of Wells

1001st to 2500th B/D/Well:
(B/D/Well of 2500 or less, but greater than 1000, minus 1000) x 365 x .06 x $2.95 x No. of wells

More than 2,500 B/D/Well:
(Field average B/D/Well minus 2500) x 365 x .08 x $2.95 x No. of Wells

The gross production tax on natural gas is much simpler to compute. That tax amounts to a flat four percent of the gross income from gas sold. That gross income is listed for each year on the Appraisal Computation Sheet.

It will be noted that the/first year's effective production tax on oil is 7.1 percent. The levy declines every year, as the production per well declines; for example, it amounts to 6.4 percent of the gross value of oil production in 1985, and to 4.9 percent in 1995.

5. <u>Royalty Payments</u>

Royalty must be paid to the State of Alaska at the rate of 12½ percent of the gross value of production. A legal question exists in the State of California regarding the ad valorem taxability of the government interest. This stems from the fact that royalty is deemed equivalent to rent and rent should not be subtracted from a property's gross income in computing net income; <u>in fact</u>, net income commonly derives from rent.

However, that issue is still unresolved in California. Moreover, a private oil company cannot buy Alaska's royalty interest nor is it apt to pay another private party for the value of that interest. As a result, royalty is treated as an expense in this appraisal.

F. CAPITALIZATION RATE AND THE TIME DEFERMENT OF INCOME

The future net income from an oil property must be reduced to its present worth in order to obtain an estimate of market value. A prospective buyer will pay for the future net income an amount that will permit him to recapture his invested capital and realize a profit on it at his "target" rate of return. His future profit (return) is the difference between the total net income and the price (present worth) that he pays for the property.

Future net income is reduced to present worth by "discounting" it at the investor's anticipated rate of return. That return is also called the capitalization rate.

The capitalization rate used in this appraisal is 13 percent. The rate is weighted for the rate of return on equity capital and the interest rate on debt. It is assumed that Prudhoe Bay, like any other large mineral or industrial property, would be purchased partly with the use of borrowed money. Since it offers a level of risk that is greater than that of most oilfields, it is assumed here that a purchase would be made 50 percent with equity capital and 50 percent with borrowed money. This is a higher percentage of equity capital than usually prevails in the purchase of oil-producing properties.

An analysis was made in California in 1970-71 of the sales of 175 oil- and gas-producing properties.[1] That analysis revealed an average 18.5 percent pre-income tax cash flow rate of return on equity. Also, it was found that the oil industry typically borrows money at a rate that is equal to the corporate prime rate plus three-quarters of one percent to one percent. That fact reveals a loan interest rate of 7.0 (seven) percent on the date of appraisal. The computation of the total-property capitalization rate follows.

Capital Item	Capital Fraction	Rate	Weighted Product
Equity	.50	.185	.0925
Debt	.50	.07	.035
TOTAL CAPITALIZATION RATE			.1275

that is, 12.75 percent, rounded up to 13 percent.

The present worth factors used in the appraisal may be found in Assessors' Handbook 566, Valuation of Oil and Gas Producing Properties.

1/ "The Determination of a Total Property Capitalization Rate from the Analysis of Market Data," March 1971, a report to the Standards Committee of the California Association of County Assessors from its Petroleum Standards Advisory Committee.

AGO 530280

It will be noted that income from Prudhoe Bay is not anticipated until 1978. The Oil and Gas Journal, on April 16, 1973, quoted a speaker at an American Petroleum Institute meeting as saying:

> "...until North Slope production becomes available, perhaps in 1978."

Also, an article in the Journal of May 7, 1973 said:

> "Alyeska (pipeline) still hopes to begin construction...by summer 1974. But...work could be delayed two years..."

The effect of the delay in production on the present value of the field is conspicuous. The present worth factor for the year 1978 is .510, which means that the first dollar's worth of net income from oil was worth only 51 cents in January 1973.

Another rather impressive fact: if the date of appraisal was January 1978, and the field was just beginning to produce, its value would be in excess of $9,500,000,000 because of the more immediate receipt of the net income, and because all major capital expenditures would have been made.

IV. A MATTER OF SIZE

One should keep in mind that Prudhoe Bay is a giant oil and gas field with prospective monumental gross income and awesome operating costs. Dealing with Prudhoe Bay numbers has something in common with dealing with astronomy or the national debt. As a result, the valuation equivalent of a light-year is used on the Value Computation Sheet. It consists of stating production and income and expenses in terms of millions. Thus, Prudhoe Bay's first 20 years of production of 9,389,000,000 barrels is stated as 9,389 barrels.

This approach obviously offers computational advantages and saves paper. It is also mathematically rational and in accordance with good appraisal practice. For example, assume that the first 20 years' production was challenged as being excessive to the extent of 40,000,000 barrels and $118,000,000 gross revenue, a not inconsiderable sum. In most cases this would constitute a drastic professional challenge. In this instance, however, it would amount simply to a claim that production and revenue were overstated by 44/100 of one percent, that is, they were only 99.56 percent correct. Such a challenge may be unanswerable, but it is also unprovable.

AGO 530281

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AGO 530282

APPENDIX B- COMPUTATION OF OIL AND GAS RESERVES ESTIMATES

1. OIL RESERVES

The volumetric estimation of oil reserves is made with the use of the formula:

$$\text{Reserves} = \frac{A \times h \times \phi \times (1-S_W) \times 7758}{FVF} \times RE$$

where the symbols have these meanings:

A	area in acres
h	net oil sand thickness
ϕ	average porosity (rock volume pore space as a percent of total rock volume)
S_W	water saturation as a percent of pore space
7758	number of 42-gal. barrels in one acre-foot
FVF	formation volume factor, which is the number of barrels of space taken up in the reservoir by one barrel of oil and its included gas
RE	Recovery efficiency, expressed as the percent recoverable of the original oil in place

These elements are assumed to be constants for the Sadlerochit reservoir sands at Prudhoe Bay:

ϕ	22 percent, that is, .22
S_W	20 percent, so that $(1-S_W)$ is 80 percent, or .80
7758	
FVF	1.40

The product of these constants is another constant, 975, which represents the barrels of oil in place per acre-foot of formation. This constant is multiplied by A and h for each of several areas at Prudhoe Bay.

The geologic contour map, cross-sections, and reservoir data that were presented at the Field Rules Hearings in February 1971 were used in the following computations. A professional petroleum geologist or engineer will recognize the cited areas by referring to the map, which is not included in this report.

All of the listed numbers of barrels of oil in place are stated in millions. That is, the first figure listed is actually 13,455 million, or 13.455 billion.

AGO 530283

a. <u>Main Area, underlying gas cap</u>

A 46,000
h 300

Oil originally in place:

46,000 x 300 x 974 = 13,455 barrels.

b. <u>Main Area, oil ring</u>

A 44,000
h 150

Oil originally in place:

44,000 x 150 x 975 = 6,435 barrels.

c. <u>Unresolved shaded area, including only probable area above oil/water contact:</u>

A 13,000
h 150 (rough approximation)

Oil originally in place:

13,000 x 150 x 975 = 1,901 barrels.

d. <u>Small fault closure in SE part of T12N-R12E</u>

A 3,900
h 175

Oil originally in place:

3,900 x 175 x 975 = 665 barrels.

e. <u>Far western fault closure</u>

A 14,000
h 175 (rough approximation)

14,000 x 175 x 975 = 2,389 barrels.

TOTAL OIL ORIGINALLY IN PLACE 24,845 barrels.

OIL RESERVES AT 40% RECOVERY EFFICIENCY 9,938 barrels.

The recovery efficiency was computed using the formula on page 109 of Craft and Hawkins' <u>Applied Petroleum Reservoir Engineering</u>. That formula assumes a water-drive recovery mech-

anism. The mechanism is not yet known at Prudhoe Bay, but the large structural relief and the presence of a giant gas cap point toward high oil recovery. The elements in the recovery efficiency formula and their values at Prudhoe Bay follow.

k (permeability)	265 millidarcies
S_w (water saturation)	.20 (given for Kuparuk River pool in Field Rules Hearings report)
μ (viscosity)	0.81 (at bubble-point)
ϕ (porosity)	.224
h	200 feet (average)

The formula is:

$$RE = 0.114 + (0.272 \log k) + (0.256\ S_w) - (0.136 \log \mu) - (1.538\ \phi) - (0.00035\ h)$$

and the computation is:

$$RE = 0.114 + (0.272 \times 2.4232) + (0.256 \times .20) - (0.136 \times 0.0908) - (1.538 \times 0.224) - (0.00035 \times 200)$$

$$= 0.3979$$, that is, 39.79 percent, rounded to 40 percent.

This estimate of recovery efficiency can be confirmed generally by reference to the empirical factors listed in J.J. Arps' "A Statistical Study of Reservoir Efficiency" (Amer. Petroleum Institute Bulletin D-14, First Edition, 1967, Division of Production, Dallas, Texas). Arps' median recovery efficiency for sandstone reservoirs was 33.8 percent, and the maximum was 67 percent. The reservoir with the maximum RE was better than the median, relative to Prudhoe Bay, in regard to permeability and porosity, but less favorable in regard to water saturation and oil viscosity. Overall, Arps' empirically derived graphs justify the 40 percent RE computed using the formula presented by Craft and Hawkins.

2. GAS RESERVES

The estimation of gas reserves employing the volumetric method has these elements in common with oil reserves estimation:

A
h
ϕ
S_w

In addition, the natural gas volume must be corrected for the effects of pressure, temperature, and the gas's compressibility factor, which depends on the gas composition as well as on pressure and temperature. This formula is used to compute the corrections cited:

$$\frac{PR}{Psc} \times \frac{Tsc}{Tres} \times \frac{1}{z}$$

where the above abbreviations are defined thus:

PR	average original reservoir pressure
Psc	standard pressure of 14.7 psi
Tsc	standard temperature of 60°F
Tres	average reservoir temperature
z	the compressibility factor at average reservoir conditions

The corrections for the Prudhoe Bay reservoir are:

$$\frac{4125 + 14.7}{14.7} \times \frac{460 + 60}{460 + 190} \times \frac{1}{1.054}$$

A multiplication must also be made by 43,560 to obtain the number of cubic feet in an acre-foot. Then, a division may be made by 1,000,000,000 to reduce the answer from cubic feet to MMMCF, that is, billions of cubic feet. This reduction can be made directly by using .0004356 instead of 43,560.

The product of all corrections for porosity, water saturation, pressure, temperature, compressibility factor, and cubic feet is 0.001639. That constant can be used in conjunction with the area in acres and the net sand thickness in feet to compute the original volume of gas in place.

a. Area of Gas Cap only (no oil present)

A 12,000
h 225

Gas originally in place:

12,000 x 225 x .001639 = 4,425 MMMCF

b. Gas Cap Gas above oil ring (Main Area)

A 46,000
h 120 average

Gas originally in place:

46,000 x 120 x .001639 = 9,047 MMMCF

c. Oil-associated Gas (all areas except a and b, above)

The estimate of oil-associated gas in place is computed by multiplying the estimate of oil-originally-in-place by the reservoir gas/oil ratio:

$$24,845 \times \frac{810}{1000} = 20,124 \text{ MMMCF}$$

d. TOTAL GAS ORIGINALLY IN PLACE: 33,597 MMMCF

e. GAS RESERVES AT 75 PERCENT OF GAS ORIGINALLY IN PLACE: 25,198 MMMCF

Not uncommonly 90 percent or more of gas-in-place is produced from fields in the Lower 48 states. That level of recovery might be expected of Prudhoe Bay if it were not for the very high cost of production. In any event, the percent recovery of gas used here does not affect the field's present value; this fact was discussed in section III-D-5 of the appraisal report. The same value would have accrued had a recovery efficiency of only 50 percent been used.

AGO 530287

Year	Production 1,000,000 bbls. (2)	Revenue at $2.95 per bbl.	Natural Gas Revenue at $.25 per MCF (4)	TOTAL REVENUE	No. of wells at end of year	Average BOPD per well
1973					107	
74					135	
75					163	
76					191	
77					219	
78	657	$1938	$	$1938	247	7287
79	657	1938		1938	275	6545
80	657	1938	42	1980	303	5940
81	657	1938	42	1980	331	5438
82	657	1938	42	1980	359	5014
83	657	1938	42	1980	387	4651
84	657	1938	42	1980	400	4500
85	591	1743	38	1781	"	4047
86	532	1569	34	1603	"	3642
87	479	1413	30	1443	"	3280
88	431	1271	27	1298	"	2952
89	388	1145	25	1170	"	2657
90	349	1030	22	1052	"	2390
91	314	926	20	946	"	2150
92	283	835	18	853	"	1938
93	254	749	16	765	"	1740
94	229	676	14	690	"	1568
95	206	608	13	621	"	1410
96	185	546	12	558	"	1267
97	167	493	11	504	"	1144
98	125	369	382	751	100	3425
99	94	277	382	659	"	2575
2000	70	206	382	588	"	1918
01	53	156	382	538	"	1452
02	40	118	382	500	"	1096
	9,389	$27,696	$2,400	$30,096		

COLUMN FOOTNOTES

(2) Zero decline until new-well drilling ceases; decline of [illegible] end of 20th year; decline of 25 percent per year [illegible]

(4) Net production rate is 25% that of oil through 1997, [illegible] per year as blowdown begins.

(12) Year 1998 includes $15 MM for abandonment of 300 wells [illegible]

(13) At $.10 per [illegible] for 75 percent of gross production un[illegible]

ALL OTHER ITEMS ARE EXPLAINED I[illegible]

AGO 530288

CAPITAL COSTS Well-drilling	Gathering Centers	Injection Eqpmnt.	EXPENSES Well-Operating	Remedial Work (12)	Gas Injection (13)	PRODUCTION TAX On Oil (variable)	On Gas (at 4%)	ROYALTY at 12½% of Total Rev.	TOTAL COSTS, EXP., TAXES, ROYALTY	OPERATING NET INCOME	Present Worth Factors at 13%	PRESENT WORTH
$ 42									$ 42	$ (42)	.941	$ (40)
42									42	(42)	.832	(35)
42									42	(42)	.737	(31)
42	$ 27	$150							219	(219)	.652	(143)
42	27	150							219	(219)	.577	(126)
42			$ 27		$ 50	$ 138		$242	499	1439	.510	734
42			30		50	136		242	500	1438	.452	650
42			33		50	133	$ 2	248	508	1472	.400	589
42			36		50	132	2	248	510	1470	.354	520
42			39		50	130	2	248	511	1469	.313	460
42			42		50	128	2	248	512	1468	.277	407
20			43		50	127	2	248	490	1490	.245	365
			43	$ 20	45	111	2	227	448	1333	.217	289
			43	20	41	97	1	200	402	1201	.192	231
			43	20	37	85	1	180	366	1077	.170	183
			43	20	33	74	1	162	333	965	.150	145
			43	20	30	63	1	146	303	867	.133	115
			43	20	27	55	1	132	278	774	.118	91
			43	20	24	49	1	118	255	691	.104	72
			43	20	22	45	1	107	238	615	.092	57
			43	20	19	38	1	96	217	548	.082	45
			43	20	17	34	1	86	201	489	.072	35
			43	20	16	30	1	78	188	433	.064	28
			43	20	14	28	ø	70	175	383	.056	21
			43	20	13	23	ø	63	162	342	.050	17
			3	20		23	15	94	155	595	.044	26
			3	5		16	15	82	121	538	.039	21
			3	5		11	15	74	108	480	.035	17
			3	5		8	15	67	98	440	.031	14
			3	5		6	15	62	91	409	.027	11
						$1,720	$97	$3341	$8,234	$21,862		$4,768

that is, $4,768,000,000

10 percent per year until
thereafter.
hen rises to 1.53 billion MCF

at $50M each.
ntil blowdown begins.

N TEXT OF RE[illegible]RT.

October 1973
Robert H. Paschall
Sacramento Calif.
Reg. Petroleum Engr. (No. 537)
Reg. Geologist (No. 8)
State of California

AGO 530289

460 Lovella Way
Sacramento CA 95819
16 February 1976

Senator John Huber, Chairman
Special Committee on Taxation and Revenue
Pouch V
Juneau Alaska 99811

Dear John:

This letter contains my comments on the three proposed bills that you sent to me on February 10. I believe that I can make some useful contributions to the first two. Also, I thought that you might be interested in an economic analysis in which I engaged to indicate the oil industry's approximate position at Prudhoe Bay relative to the return of their investment following the commencement of production in 1977. That analysis is attached to this letter.

SENATE BILL No. 567, PRODUCTION TAX

I will make only one comment on the level of taxation that will be effected by the change in rates. If Prudhoe Bay production commences at a rate of 1,200,000 barrels per day from 400 wells, the net effective tax rate will be 8.2 percent of gross income, versus an effective rate of 5.8 percent under existing law. The ad valorem property tax in California equates with a rate of about 5.5 percent. You have information in your office on comparable rates in Texas, Louisiana, and elsewhere. Now to specific comments.

Page 2, line 3

This line should conclude

> "...of the gas and liquidproducts produced each month and not injected back into the reservoir."

For some time most of the gas produced from Prudhoe Bay will be returned to the reservoir ("reinjected," in normal if incorrect parlance). As a result, the present wording of the bill would result in its being taxed time after time. It is only net production of gas-- that produced less that returned to the reservoir-- that should be subjected to taxation. The wording that I propose will take care of taxation of flared gas, as it should, and gas either used at the field or shipped out in a pipeline.

Page 2, lines 5-22

The cents-per-barrel tax confuses me every time that I encounter it. Is it an alternative tax on production (at an obviously lower level) or an added tax? It reads like an added tax, which puts the production tax at a very high level, indeed. Just asking.

AGO 530290

Page 3, lines 8-9

Here and later is the same case that was noted on page 2. Beginning with the last two words on line 8, this should read

> "on oil produced or gas produced and not injected back into the reservoir..."

Page 3, lines 13-15

Same problem. These lines should be revised to read

> "(e) Gas produced is considered, for the purpose of this chapter, as gas produced from a lease or property and not injected back into the reservoir."

Page 3, line 26

Same problem. Line 26 should read

> "(3) the gross amount of oil produced or gas produced from the property, and in the case of gas, not injected back into the reservoir..."

Page 4, line 1

Same problem. Line 1 should read:

> "(4) the total value of the oil produced or gas produced but not injected back into the reservoir..."

SENATE BILL 620, NET PROCEEDS TAX

Essentially all of my comments here were also stated in my report to you of February 8. They bear mainly, though not entirely, on the differences that should be maintained relative to the meanings of the words price, income, and value. Except for Section 43.22.040 my comments are not momentous, but I believe they will contribute to the proper intent and language of a net proceeds tax bill.

Page 1, lines 14-16

These lines should be revised to read

> "...collection of a tax based on the operating income to the property from oil and gas, and to provide a rate of taxation on the operating income to the property from oil and gas..." (and conclude line 16 and line 17 as they stand)

AGO 530291

It is simply not proper to speak of an "ad valorem tax" on "income," It serves to confuse two types of taxation. Moreover, the use of the word "operating" is necessary to differentiate "net proceeds" from either "gross income" or "net income." "Operating income" or even "operating net income" are essentially synonymous with "net proceeds." On the other hand, gross income is the starting point in computing net proceeds, while "net income" is the level at which the corporate income tax is usually assumed to apply. This may seem like nit-picking, but I have gotten into horrendous disagreements because another person and I were thinking about two different levels of income.

Page 1, lines 21-23

These lines should be revised to read:

> "...February 1, with the department a statement showing the gross income from production and the operating and development expenses for each well or field owned or..."

As it stands, without regard for things that follow, an extremely important element is omitted. It might not hurt to add "and net proceeds" after "expenses," but it is not really necessary, because its computation is automatic once one has the gross income and expenses.

Page 2, lines 8,9, 17, 19, and 25

The word "value" should be changed to "income"in each case.

Page 2, lines 23 and 25

The word "well" should be changed to "property" in each case. The net proceeds tax applies to properties, oil people think in terms of properties' incomes, and, also, the word "well" does not take account of multi-well properties.

Page 3, new line 1

A minor item, but I suggest that present item (7) on operating expenses be changed to item (4) and placed just before maintenance and repairs. That is the way it is usually carried on operating statements, and it should be a companion of other direct expenses, rather than separated by "amortization."

Page 3, line 5

The net proceeds tax is not at all like the Federal income tax, and the charge cited here is made for a different reason. The word "amortization" should be used instead of "depreciation.""Amortization" means only one thing, the recapture of capital, which is the goal sought here. As you know, "depreciation" can also mean a loss in value, and we might as well avoid that ambiguity.

AGO 530292

Page 3, line 10

The words "the well" should be deleted, since it is operations generally that are involved. Also, the word "development" should be singular; it is never used in the plural in investment language.

Pages 3 and 4, Section 43.22.040

This section should be deleted in its entirety for reasons that I set out in my letter of February 8. First, note that "...money expended for ...development" is permitted as a charge against gross income in item (7) on page 3. But, drilling costs are the largest single element in oil field development costs, so a serious contradiction now exists relative to expensing development costs in Section 43.22.030(b)(7) and amortizing them in Section 43.22.040.

As I noted on February 8, it is much simpler to expense these costs, as proposed in Section 43.22.030(b)(7), and this expensing is in harmony with the income level known as net proceeds, since development costs are a direct obligation at the field level.

Exploration costs simply should not be allowed at all. The net proceeds tax is, to repeat, levied on the operating income from a property (specifically, from a property's oil and gas reserves, since equipment must be amortized in order to subject it to the ad valorem property tax). Past exploration costs, whether they resulted in production or not, have absolutely no relationship to present net proceeds.

If the amortization of exploration costs is permitted as an expense, it will vitiate the net proceeds tax and make it a tax on persons (corporations) rather than on properties. Also, it will compound to an unbelievable degree the administration and auditing of the tax. What does it matter, for example, if a producing lease at Prudhoe Bay is owned by a company that is engaging in seismic work in the Gulf of Alaska? Nothing, I can assure you.

Page 4, lines 5-7

The title of this section should be "NET PROCEEDS TAX LEVIED." It is not an ad valorem tax. Also, lines 6 and 7 should be revised to read

> "shall be collected by the department a net proceeds tax based on the operating income from production..." and so on.

Page 4, lines 14, 15, 19, and 20

The word "value" should be replaced by the words "gross income" in each case.

AGO 530293

Page 4, line 23

The word "value" should be replaced by the word "price." You can now appreciate why it is so important to differentiate between the words price, income, and value. They only rarely mean the same thing in the fields of either valuation or taxation, and they never mean the same thing in net proceeds taxation.

Page 8, lines 21-23

First, a minor item. I suggest that "gas" be made item (3), so that it and "oil" are placed next to one another, and not separated by "gross income." More importantly, the word "value" on line 23 should be replaeed by

"gross income per barrel of oil or MCF of gas"

Also, you may wish to reconsider the term "FOB price at Alaska border or other convenient point." My own belief here is that the price should be the wellhead price as determined by the Department in terms of Section 43.22060 on page 4.

SENATE BILL 621, EXCESS INCOME SURTAX

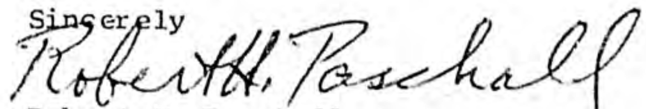
You know about my concern over this proposed tax. At the very least, I am convinced that its own excesses and its obvious administrative difficulties will jeopardize the passage of other oil tax legislation introduced in the same session.

I will make only two observations here. One of them is a simple technical point that I have beaten to death earlier in this letter. This particular tax is not an excess value surtax, but an excess profits tax or an excess income tax.

Permit me to offer an analogy with another excess profits surtax that you may wish to consider, and which may highlight the political and economic dangers that lurk in any excess profits tax. Contemplate, if you will, levying an excess profits tax on Alaska landlords. It should be easy to compute. Use a base year of, say, 1972 for Alaska rents, and escalate them each year by the Consumer Price Index. Then, levy a tax on 41 percent of the net income generated by the difference between actual current rents charged and indexed rents. Pretty easy, eh?

Yes, that would be easy, but now consider the problem introduced if the Department of Revenue is charged with determining each year, not an easily indexed rent, but the prospective long-term rent that might be expected. Now it becomes not only politically unpalatable (to landlords, at least) but an economic nightmare. And that's about the case with any effort to levy an excess profits tax.

Sincerely



Robert H. Paschall
Consulting Valuation Geologist
and Engineer

AGO 530294

APPENDIX

This analysis is a fairly straightforward effort to estimate the value, at the time that Prudhoe Bay production commences, of all past investment in the field, and then to estimate the time by which the industry will recoup that investment. It may be useful to you in considering the effect of different tax levies and in responding to similar estimates that may be offerrd by industry.

It is assumed that past investments will incur lost interest at a conservative rate of 8.5 percent per year, so that the true cost of investment by 1977 will be the original cost plus accrued annual interest. Stated costs for field development were taken from my 1973 appraisal and escalated 50 percent because of the great degree of inflation in recent years. Where certain costs were spread out over a number of years, an "average year" was used to simplify calculations.

Element of cost	Original	Full cost by 1977
	(in millions)	
1969 lease sale	$ 900	$1,728
Exploration	100	192
Development (average year 1974)	1,968	2,513
TOTAL		$4,433

The next step necessary is to compute the first-year operating net income for Prudhoe Bay, and assume that the net income will prevail for a few years. For this computation I used these elements:

Production rate of 1,200,000 B/D
Price of $7.00 per barrel at the wellhead
My 1973 operating expenses inflated by 50 percent
The current level of royalty and production tax

These elements yield a gross income per year of $3,066 million and an operating net income of $2,390 million.

In 1975 I concluded that the proper venture capital rate for Prudhoe Bay was then 18 percent. I will now lower it to a conservative 15 percent mainly because of a notable decline in the short-term interest rate that applies to oil field loans. If one next applies the operating net income of $2,390 million to the 1977 full cost of $4,4330 million, in conjunction with a 15 percent rate of return, it is found that the investment will be recouped in the year 1980, about three years from the commencement of production.

This period of return may appear to be a short one, but these important things should be kept in mind: some large capital investments date back to 1969, so that the total period of recapture (on a pre-income tax basis, at that) will be eleven years for that part of the investment, a very long time indeed for getting one's money back.

AGO 530295

An equally important consideration is that the colossal $6 billion investment in the pipeline is not considered here. If the pipeline is treated as a regulated interstate carrier, the investment will not be recouped for perhaps twenty years. In short, it is evident that Prudhoe Bay has not yet provided a bonanza for the oil industry, but instead has simply incurred very large carrying costs.

AGO 530296

460 Lovella Way
Sacramento CA 95819
12 February 1976

Senator John Huber, Chairman
Special Committee on Taxation and Revenue
Pouch V
Juneau Alaska 99811

Dear John:

This letter contains my comments on the outstanding report submitted by Rush Moody, Jr., to you in your capacity as chairman of the Joint Gas Pipeline Impact Committee. Moody's report brings into clear focus Alaska's problems and required decisions on the issue of natural gas, to which you had alluded to me in conversation but of which I now have a fuller understanding. It is my hope that my own knowledge of and interest in petroleum economics and in production and processing systems will add to Moody's statements, which constitute a concise summary of legal avenues and pitfalls. My comments will proceed on a page-by-page path through Moody's report.

Page 1, future rate of Prudhoe Bay gas production

I was most interested in the footnote on this page bearing on the possibly detrimental effect of producing gas (and selling it) at a high rate at the same time that the oil is produced at Prudhoe Bay. I have been somewhat astonished in the past couple of years over the battle about alternative gas pipeline routes, because my 1973 appraisal of Prudhoe Bay contemplated that large-scale production of gas would not begin until the 18th year of the field's producing life. If my conclusion had any merit at all, I said to myself, why are people now battling over the right to build a line? Mr. Moody's footnote indicates a concurrence of our views.

I will give you my opinion on what Alaska should do about this issue and others of great importance in the last paragraph of this letter.

Page 2, the dangers of nonaction

I agree with Moody's implication that nonaction on Alaska's part at this time is tantamount to a decision, and one that may be injurious to the State's long-term interests. The various impacts of nonaction will become evident later.

Page 3 and pages 5-6, royalty in cash or in kind

Moody points out the grim effect on the State should it choose to take its royalty in cash, and thus lose control of the gas to the FPC. I made marginal notes on page 3 to the effect that "Apparently State should take only in kind" and "Better take action on a non-cash basis," and then found that Moody said the same thing on pages 5 and 6.

AGO 530297

But this decision, on which Moody and I agree, calls for other decisions and positions. For one thing, it requires, as he noted, that the State promote a gas transmission line that lies within the State to the greatest extent possible, which means either the El Paso proposal or a southeasterly route for the Arctic Gas proposal.

But, paragraphs 2 and 3 on page 4 lead me to ask "Does anyone really know how well Kenai gas will provide for Alaska's needs for, say, the next twenty years?" There is no point, because of all the uncertainties involved, to look farther down the line than that. If Kenai can do the job for Anchorage and Fairbanks, this simplifies the problems related to delayed gas production from Prudhoe Bay or of choosing between El Paso and Arctic.

Mind you, there is a way of knowing, or at least of making a very good estimate, in order to answer my question. I will get back to that in the last paragraph. It is evident that the question should be answered, because it is one that may well be asked by the FPC in challenging Alaska's statements on its needs.

Page 6, Decision on disposal of royalty gas

Paragraph 2 continues to deal with the matter of the State's taking its gas in money or in kind, opting for the latter, and I agree. This is a decision that should be made soon, since it will have more merit later than if the decision itself was made much later. Also, you should obtain a legal opinion as to whether the State can take the royalty in kind and then sell it to the interstate pipeline without jeopardizing its right to claim it later. That is, would such a sale of its royalty gas commit it to interstate commerce?

Page 6, State cooperation with gas transporter

The last sentence in the next-to-last paragraph indicates the desirability of the State's remaining on at least speaking terms with the company that transports the gas. Should the State choose to take gas in kind, and either go into the gas distribution business itself or issue a franchise to a distributor, it appears that close cooperation with the transporter may be requisite. That is, for example, if a line were to tap El Paso's proposed line east of Fairbanks to take gas to Fairbanks, the State and El Paso might have to go hand-in-hand to the FPC to make the arrangement, And, for various reasons, the producers would undoubtedly be highly interested spectators.

Page 7, State law controlling out-of-state sales of gas

Paragraph 3 talks of such a law enacted in Texas. To me it smacked of lese majeste on the part of the state, and I scribbled a marginal note "Is this constitutional? May interfere with interstate commerce." Moody's remark in the last paragraph on page 6 shows that he wonders about it, too. There must be a better way to do what you want to do for Alaska. After all, you have only 300,000 population to Texas's 9 or 10 million, and your reserves and production are on the upgrade instead of the downgrade. Texas may be getting a bit desperate; a real pot of gold lies at the end of your rainbow, without getting crosswise with the rest of the United States.

AGO 530298

Page 8, extraction of natural gas liquids

Ethane, propane, butane, et al., are known as natural gas liquids, or NGLs for short. I suggest here that Moody is not familiar with normal oil field practice relative to NGLs. If the field gas has an economic content of NGLs, they are extracted at the field by the use of separators or a gasoline plant ("gasoline" here means natural gasoline, which is one of the NGLs). "Natural gas" moving in interstate commerce is, so far as I know, only methane, which is also known as "dry" gas, meaning that the NGLs have been removed.

All of these definitions are intended to point out that no incentive is usually needed to get producers to extract the NGLs from the produced gas. In fact, it is generally considered highly advisable to do so before putting the dry gas back into a reservoir ("reinjecting", as it is called) when desired to maintain the reservoir pressure.

Of course, things may get a little sticky in Alaska because of the pipeline problem. Prudhoe Bay producers might decide to commingle the NGLs with the oil before shipping it to Valdez, where it would leave the State. That's not all bad, however, since that would boost the State's take from the severance tax and from the net proceeds tax, too, should one be enacted.

I will not comment on the prospect that the natural gas might be converted to methanol, other than to say that it is not immediately evident how the State could "encourage" that action. I suggest that economics will be the decider. I see no evident problems here relative to the FPC, by the way, although Moody believes so without saying why.

Page 9, State royalty rate

I will agree that a one-eighth royalty rate is a quite conservative one these days, but there are offsetting factors if one makes comparisons with Texas and Louisiana. For one thing, operating costs in Alaska are enormously higher than in the Lower 48, so if you put the two together-- royalty and operating costs-- your operators will undoubtedly suffer a much bigger bite out of their gross income. Moreover, no other state now has or has proposed a net proceeds tax on oil (let alone an excess profits tax!), so it is certainly economically unsound, and perhaps politically unsound as well, to make comparisons only on the basis of State royalty rates.

Page 9, a return to the subject of interstate commitment

Moody doesn't say, but perhaps you know the answer to what may be a simple but very important question: will natural gas be committed to interstate commerce before it leaves Valdez? Just asking; after all, it will be entirely intrastate until then, and will change carriers at that point.

AGO 530299

Page 10, near top: oil development tied to State's needs

I feel a bit uneasy over Moody's statement here for the same reason that applies to the comments about the remarks on page 7 on a State law controlling out-of-state sales of gas. The political problems are ominous, and there are some sizeable economic ones as well. A political problem might be that of bringing 48 other states, or maybe 25 or so, down on your necks, with subsequent congressional "interference." Here is an economic problem: what if an operator leases State lands for a fat bonus bid, puts alot of money into exploration and makes a big discovery, and the State then says "Our law and our present circumstances require that you suspend development until we need the oil (or gas, or money)? That would be a case of Katie, bar the door!

Page 10, a franchise tax on interstate pipelines

Doesn't your present law provide for ad valorem taxation of the Alyeska pipeline? Moody may not know about this. In California at least, the franchise tax is relatively small compared to the ad valorem tax on interstate pipelines. (In fact, in California parlance the "franchise tax" on corporations exactly parallels the Federal income tax, and Moody probably refers to something different, like a business tax or license. But that still should not compare with the ad valorem tax.)

SUMMARY

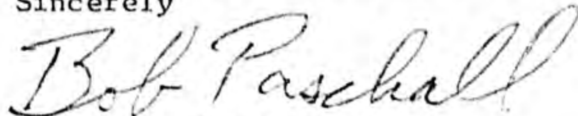
John, I will close by suggesting early action on a multi-faceted program for Alaska.

1. Take care of the matter of the State's getting its gas in kind rather than in cash.

2. Have a study made that encompasses Alaska's 20-year need for natural gas, the ability of the Kenai to supply it, the cost of a pipeline for Kenai gas to Fairbanks, the probable date at which Prudhoe Bay will be able to ship gas, the matter of whether the State could take its royalty gas from El Paso's proposed line at selected points, and the cost of that program either to the State or to a franchised distributor.

Finally, if my suggestions have any merit whatsoever, Alaska will need a coordinated effort to find the answers and resolve the issues. If it is at all useful to you, I just happen to know someone who is in an excellent position to put together a small team of economists, engineers, and tax experts to do the job. (I forgot: we will need a lawyer, too. Can't seem to avoid them.)

Sincerely



Robert H. Paschall
Consulting Valuation Geologist
and Engineer

AGO 530300

460 Lovella Way
Sacramento CA 95819
8 February 1976

Senator John Huber
Special Committee on Taxation and Revenue
Pouch V, Juneau Alaska 99811

Dear John:

This letter constitutes my report on the "Oil and Gas Taxation Report" that you sent to me on January 22. First, let me compliment the author on the high level of writing competence demonstrated, and on the thoroughness with which all issues are treated. The report is also sufficiently well-organized, by which I mean well organized, that I will use its organization as the framework for my response, after I have made some introductory comments.

A second and minor item: I am going to write this response straight through, without retyping. There is no need for Alaska to pay for my services as a typist alone, and I can usually do pretty well putting my final thoughts directly onto paper. However, you may have to forgive an occasionally word that is "x'd" out.

I. INTRODUCTION

It is perhaps regrettable that I was not able to work with you in formulating proposed legislation, because it is not always pleasant for either party when one of them is called in later only for critical comments. Please keep in mind, then, that my sole intent at all times is simply to aid you in putting together a tax program that is politically feasible, economically palatable (to investors), simple to administer, and as free as possible from flaws and complexities that will produce future controversy and litigation. With those goals in mind, I will begin with Tax Proposal Two, Excess Value Surtax.

II. EXCESS VALUE SURTAX

First a comment on terminology. It is necessary in valuation work to differentiate between price, income, and value, and I suggest that the meanings employed in valuation are admirably adaptable to taxation. Thus, price is simply the amount paid per unit of a commodity, say a barrel of oil. Gross income is the annual production of units multiplied by the unit price, and net income, in general terms, is gross income minus the expenses incurred in generating the gross income. Finally, value is a many-faceted term, but its use in the field of taxation is probably best confined to the property tax meaning, that is, the amount in money or its equivalent for which a property might sell to a willing and knowledgable buyer from an equally willing and knowledgable seller.

These definitions reveal that the proposed tax being discussed here is an excess income surtax. You can be sure that that is the way it would be viewed by taxpayers.

AGO 530301

Definitions aside, I would like to suggest that you not press for the implementation of this tax. As noted, it is a tax on income, and so are both the severance tax and the net proceeds tax. Imagine your own shock should it be proposed that a single jurisdiction will impose three separate taxes on your income. This sort of tax, I believe you will agree, could not possibly have a positive effect on investment in Alaska oil prospects. I suggest that, instead, it will have a delerious effect by its mere presence.

You have already demonstrated that tax revenues can be obtained by adjustment of the severance tax rate and by the addition of the net proceeds tax. It is not at all apparent that the addition of a third tax on income will necessarily increase revenues. But let us explore the real difficulties associated with an "excess income surtax."

The essence of the difficulties is summarized on page 28 of your report, where it is stated in the last paragraph that

> "It should be continually recognized that the excess value surtax is based on an estimate of the long term price of energy. Thus, the tax should have a provision for periodic correction and inflation adjustments of the long term price base."

This statement acknowledges that it is not possible to estimate the long-term price, but that instead adjustments must be continually made to the current price. The experience of the past three years shows that anyone's estimate of the long-term price is not worth very much. Not only must one estimate (1) inflation, but a future price-level estimate must also take account of (2) OPEC's actions, (3) development of alternative energy sources, and (4) congressional decisions. An extremely optimistic theoretical economist might be willing to crank these elements into a computer program, but they are not a very sturdy basis for taxation.

Another thing: the entire concept of "excess profits" or "excess income" is an extremely dubious one. Let's get away from oil for a moment, where there is a widespread temptation to think that excess profits are generated, and look at business and industry generally. How would you like to write an excess profits bill for California's row crop farmers (big businessmen, believe me), proposing to tax at a high rate any income from lettuce exceeding 25 cents a head, or Colorado's cattlemen, with an excess profits tax on beef income when the price rose above 40 cents a pound on the hoof? In another area, what about the "excess" profits generated by IBM as its net income increased at a rate of 20 percent per year, year after year, and it came to dominate its industry in a fashion unique in American history? At a personal level, how about the "excess profits" generated by $1,200-a-week welders on the Alyeska pipeline?

One can go on and draw innumerable examples of good cases of "excess income," but none of them appears to be politically feasible or administratively possible. Why, then, is the case different with oil? I do not believe that it is. as a tax source.

AGO 530302

Back for a moment to the tax impact on investment. The last paragraph on page 23 begins

> "The excess value tax, as suggested, strives to tax only the income which does not have a direct impact on the investor's long term plans."

Let me ask you, a businessman, this question: what portion of your past or present income does not have an impact upon your plans for investment? All that any of us can say in response to that question is: "Who knows? The more income I have, the more I save or invest in some specific way, or just spend." There really isn't any other answer, is there? And, without serving as a crying towel for the industry, it is doubtful that any of its members can contemplate excess income for many years to come, with the pipeline ballooning in cost from $1 billion to more than $6 billion. This is why I believe that an "excess income tax" will be harmful to oil development in Alaska.

Finally, the foregoing remarks indicate the can of worms that administration of such a tax would open. Even if the state employs the brightest, most analytical, hard-boiled people it can find to run the program, they will be continually embroiled in controversy, tax appeals, and litigation. Who needs that?

John, I hope that these remarks do not seem harsh. They are intended mainly to serve you and your legislature and your state. Moreover, they constitute all of the bad news thatIintend to convey. The rest of this letter deals with a good tax and good news.

III. NET PROCEEDS TAX

Essentially all elements and all prospective problems of this tax are dealt with in "II. An Oil Tax Base," beginning on page 7, and my comments will parallel that discussion. Before that I would like to remark that, if Alaska did not already have a tax on oil production, I would heartily recommend the net proceeds tax as the only method of taxation. It is equitable, because it is based on the ability to pay; it is simple, in contrast to the Federal income tax; it does not call for the subjective judgments required by an ad valorem property tax; and finally, it is flexible, and tax revenues can be adjusted by adjusting the tax rate. As an aside, I have incorporated these features, in some detail, into the talk that I will give later this month at a seminar on the taxation of coal mines sponsored by the Council of Economics of the American Institute of Mining Engineers in Las Vegas.

By the way, the net proceeds tax is a form of income tax, not an ad valorem tax, which is what it is called near the bottom of page 3 of the report that you sent me. My earlier comments on price, income, and value, and the manner in which the tax base is computed in your report, both demonstrate this fact. Nevada tax officials, too, thought that their own net proceeds tax was an ad valorem tax, simply because they apply the ad valorem tax rate to the tax base. But the method of tax base computation reveals what sort of tax it really is.

AGO 530303

Now to a discussion of the elements in the tax base, and of the alternatives set out by the author of your report.

A. Treatment of exploration and development costs (page 8)

1. Exploration costs should not be allowed at all. For openers, the oil industry accounting treats exploration and production as two cost centers. For another, exploration is a chancy thing, and two companies with identical present production may have incurred radically different past exploration costs. For another, current exploration costs seldom have anything to do with current production and income, and the very essence of a net proceeds tax is current income from production. Consider, too, the grim decisions to be made if exploration costs are allowed as an expense. Should all past exploration costs be allowed, going back to, say, 1958? Should costs be allowed only for exploration in finding the production that is taxed, or will distant exploration costs be allowed as well-- e.g., Bristol Bay exploration versus Prudhoe Bay production? A high percentage of exploration costs are incurred in geological and geophysical offices far from a producing oil field, and commonly far even from Alaska. Should those costs be allowed, too?

No, I assure you, only costs chargeable to production should be allowed as an expense.

2. Development costs should be allowed, because they contribute directly to production and, in fact, without them no production would occur. I recommend that they be allowed as an operating expense, even though they are recaptured for Federal income tax purposes by the unit-of-production method of amottization. But we should not cloud the clear waters of the net proceeds tax with income tax mud.

This is probably the best time at which to introduce the concept of net income (net proceeds) as the oil field superintendent views it. He is concerned, as we should be, with all out-of-pocket costs and expenses for which he is responsible in developing and maintaining production. He is not at all concerned about methods of amortization or interest payments deductions or other elements so dear to the heart of the accountant or the I.R.S. (Nothing personal, Frank, believe me. The effort here is to deal with the income from a property, not the income to a corporate entity. These are the things that differentiate the net proceeds tax from the Federal income tax.)

Annual expensing of development costs simplifies the administration of the net proceeds tax. Otherwise, judgments must be made of the life of the oil field or of the life of the oilfield equipment in order to determine the rate of amortization.

AGO 530304

B. Indirect Administrative Costs (page 9)

In all fairness, general overhead incurred in Alaska and truly attributable to a given operation should be allowed, but this one can be a real bear. For example, one oil company here claimed O & A of $660,000 on an oil field that I was appraising. This turned out to be nothing more (or less) than a head-office accountant's allocation based on gross income, and the field was a large producer. I sat down with the company's representative and worked out a realistic O & A of only $120,000, and he accepted it without a murmur.

The only consolation about this troublesome expense is that it does not loom as a very large item relative to gross income or to other expenses. (see also second paragraph of next item, "C".)

C. Basis for the "Adjusted Value" (Net Proceeds) (page9)

The essence of a net proceeds tax is that it is a tax on the income from a property, not to a person, as noted earlier. Therefore a company's (person's) gross income and expenses from several fields should not be consolidated. In short, a field running at a loss incurs no net proceeds tax, but its loss shouldnot be transferable to a profitable field.

The report speaks here of what is to be done about allocation of indirect expenses if more than one field is operated by one corporation. In this case it would be appropriate to allocate on the basis of gross revenue, since the properties are alike. The problem that I cited above involved O & A costs involving refineries, service stations, and you name it. You will have to deal with only overhead costs incurred in Alaska by the production department, and that should not provide any great difficulty.

D. Method of Depreciation (page 10)

The report does not state to what sort of property the "depreciation" (amortization) is to be applied. Development costs are not a problem if they are simply expensed. However, a charge for amortization of the investment in equipment is necessary, since it is subject to ad valorem taxation in Alaska, and if it were not amortized in computing the net proceeds tax it would be subjected to double taxation.

The simplest way, and I believe an equitable one, is to employ a reasonable life of, say, 20 years, and use straightline depreciation. Moreover, this should be done by the use of a capital recovery factor at a reasonable interest rate, say 10 percent. That is, the capital recovery factor should be multiplied by the original cost of equipment, and the product used as an expense. Otherwise, recapture of capital would not be accompanied by a return on investment, and the depreciation would be understated. If this sounds too complicated-- and it is the only thing at all complicated about the net proceeds tax-- we can explore it when we get together. It's a strictly technical item, not a political or administrative one.

AGO 530305

E. "Losses" stemming from depreciation (page 11)

This subject has already been covered. New and old entrants to Alaska are treated alike. Exploration costs should not be deductible from production income, and only profitable production (which will be about all of it, I can assure you) will be subject to taxation.

F. Treatment of Bonus Bid Money (page 11)

Item (3) is correct. Bonus bids should not be treated as an expense in computing net proceeds. They constitute pre-production money, and have nothing to do with net proceeds. It would be as improper to allow amortization of a bonus bid as an expense as it would be to do the same in valuing the field for ad valorem tax purposes. "Sunk costs" incurred perhaps far in the past have nothing to do with either present profitability or present value.

G. Treatment of Interest on Debt (page 12)

Interest on debt is a charge against a person, not against a property. I concur with the outlook stated in the first paragraph in your report on this subject. On the other hand, I do not concur with the statement at the top of page 13 that

> "...the taxpayer can be placed in the position of paying taxes while not having enough income after other costs to pay the interest on the debt."

By the time a field reaches a marginal stage any debt owing on it has long been paid off. The banks see to this.

Interest on debt should not be treated as an expense in computing the net proceeds to an oil field. Other than the property-versus-person argument, the problem in doing so is well stated on page 13 where it says that doing so

> "...would lead into an administrative and accounting quagmire."

I. Treatment of Income from Oil and Gas (page 14)

Again, this should be handled just the way that the production superintendent handles it. He doesn't care where the money comes from. Income from oil, gas, and natural gas liquids should be treated together.

J. Scope of the Net Proceeds Tax (page 14)

I concur with the author that only producing properties should be subject to the net proceeds tax. I have studied refineries income and valuation fairly extensively, and it is rather a nightmare. However, refineries and service stations do not necessarily require "a more complex tax approach." They are assessed and taxed in California on an ad valorem basis, using the cost approach to value, and things work out pretty well, although the industry would probably argue it.

AGO 530306

K. Taxation of Royalty Payments

A royalty interest is an interest in land, and is the legal equivalent of rent paid for farmland. Royalty payments should be subtracted from an oil operator's gross income, since the operator does not own that interest. If the royalty interest is owned by the State, it is not subject to taxation. If it is privately owned, it should be separately subjected to the net proceeds tax at its face value, since no expenses are incurred in earning it. By the way, Nevada does this regularly, obtaining the names and addresses of royalty owners from the operators, who are only too happy to provide them.

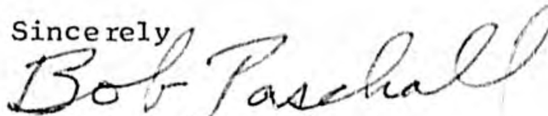
....

Comments on the Reporting Forms and Revenue Estimates

It would not serve any useful purpose for me to comment on either of these subjects, since many of my earlier remarks, if adopted, would necessitate changes in both.

I will next study your letter of January 30 on natural gas, and will send you a report on it within a few days.

Sincerely,



Robert H. Paschall
Consulting Valuation Geologist
and Engineer

AGO 530307

460 Lovella Way
Sacramento CA 95819
22 June 1976

Senator John Huber
Special Committee on Taxation and Revenue
Pouch V
Juneau Alaska 99811

Dear John:

Your letter makes it apparent that this will probably be the last letter that I can write to you at the above specific address. It seems a shame, really, that Alaska should treat such an important mission on an ad hoc basis.

Thanks for sending me the distant early warning about the committee's demise. I am all paid up, so no problem exists.

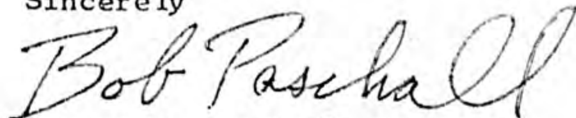
It was indeed a pleasure working with you, especially last year when the work required my coming to Juneau and meeting head-to-head with everyone involved in the issue. If my personal situation had been just a bit different I would probably have come up there about three years ago to stay a few years. I found it to be a very stimulating place to be. But, Jeanette just can't take the cold weather as I can, so that was not to be.

Here are some more or less untouched areas that we may be able to explore together some day, and on which we have touched lightly in the past. One, of course, is a workable statute on the taxation of mines. I suspect that mines still go untaxed because a rather extreme view was taken by the administration in its efforts last year. It is not often politically possible, as you well know, to jump from nothing to everything.

Another is the area of possessory interest taxation, especially in regard to timber but not excluding other valuable private rights in public property. Some people up your way are getting a free tax ride, which is really not a healthy thing in the long run or for everyone else in the short run.

All for now, and thank you again for your recent nice note.

Sincerely



Robert H. Paschall

AGO 530308

June 15, 1976

Mr. Robert H. Paschall
460 Lovella Way
Sacramento, California 95819

Dear Bob:

The Subcommittee on Taxation and Revenue is in the process of preparing its final report. I want to thank you for the good job that you did for us. The information was most helpful in carrying out the committee's work.

Please review your records to see if all billings and payments have been made. If there is an additional billing or if a payment is missing, please inform me by phone or return mail. The committee will cease to exist and all funds will lapse as of June 30, 1976.

You can be assured that when matters come before the Legislature in your area of expertise that I will recommend that your services be retained. Thank you again for all of your help.

Sincerely,

John Huber

Enclosure

AGO 530309

460 Lovella Way
Sacramento CA 95819
13 May 1976

Mr. John C. Doyle, Administrator
Legislative Affairs Agency
Pouch Y, State Capitol
Juneau Alaska 99811

Dear Mr. Doyle:

I am enclosing a duplicate of a statement for $750 that I first sent to your office on February 21. That statement dealt with my services during the months of January and February to Senator John Huber's Special Committee on Taxation and Revenue.

I would appreciate an early remittance of the $750. Last month I had to make my first estimated tax payment on that portion of my 1976 income, and next month I must make the second payment. It seems only proper that the State of Alaska pay me now for that work done four months ago.

Thank you for your very early attention to this matter.

Sincerely

Robert A. Paschall
Consulting Valuation Geologist
and Engineer

Attachment
cc Senator John Huber

Paid
5-10-76
✓ 3104550

AGO 530310

Receiv'd 03-31-76

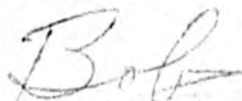
Senator John Huber
Special Committee on Taxation and Revenue
Pouch V
Juneau Alaska 99811

Dear John:

I thought that you might like to see, and pass along, this interview with Governor Edwards of Louisiana. His point of view as Governor of a longtime major oil-producing state may be of interest.

My schedule has been so busy of late that I am almost grateful that I have not received a call to come to Juneau. I have been on the road at least three days a week for ten of the past eleven weeks, and that's a bit much. It was more or less topped this past week by my being offered a county job that pays almost $6,000 a year more than my job with the state. If that were the only issue it would be overwhelmingly tempting, but there are other considerations, so I'm thinking it over.

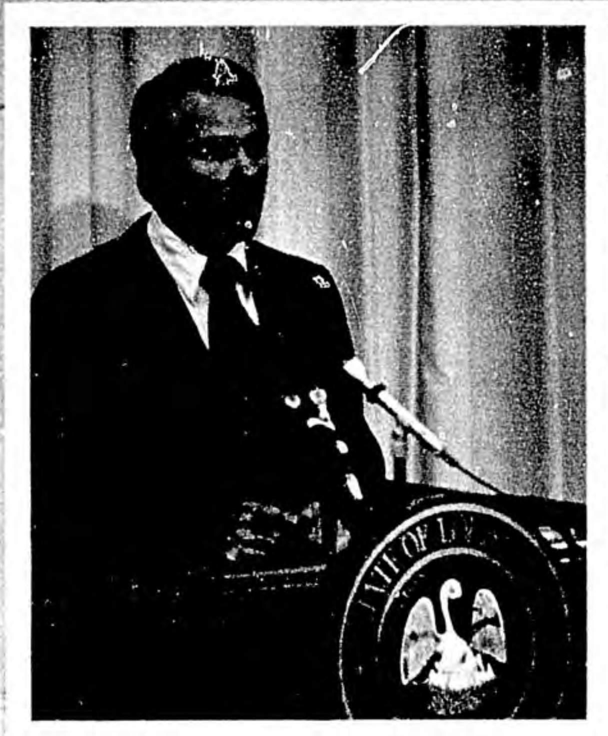
Sincerely



Robert H. Paschall

AGO 530311

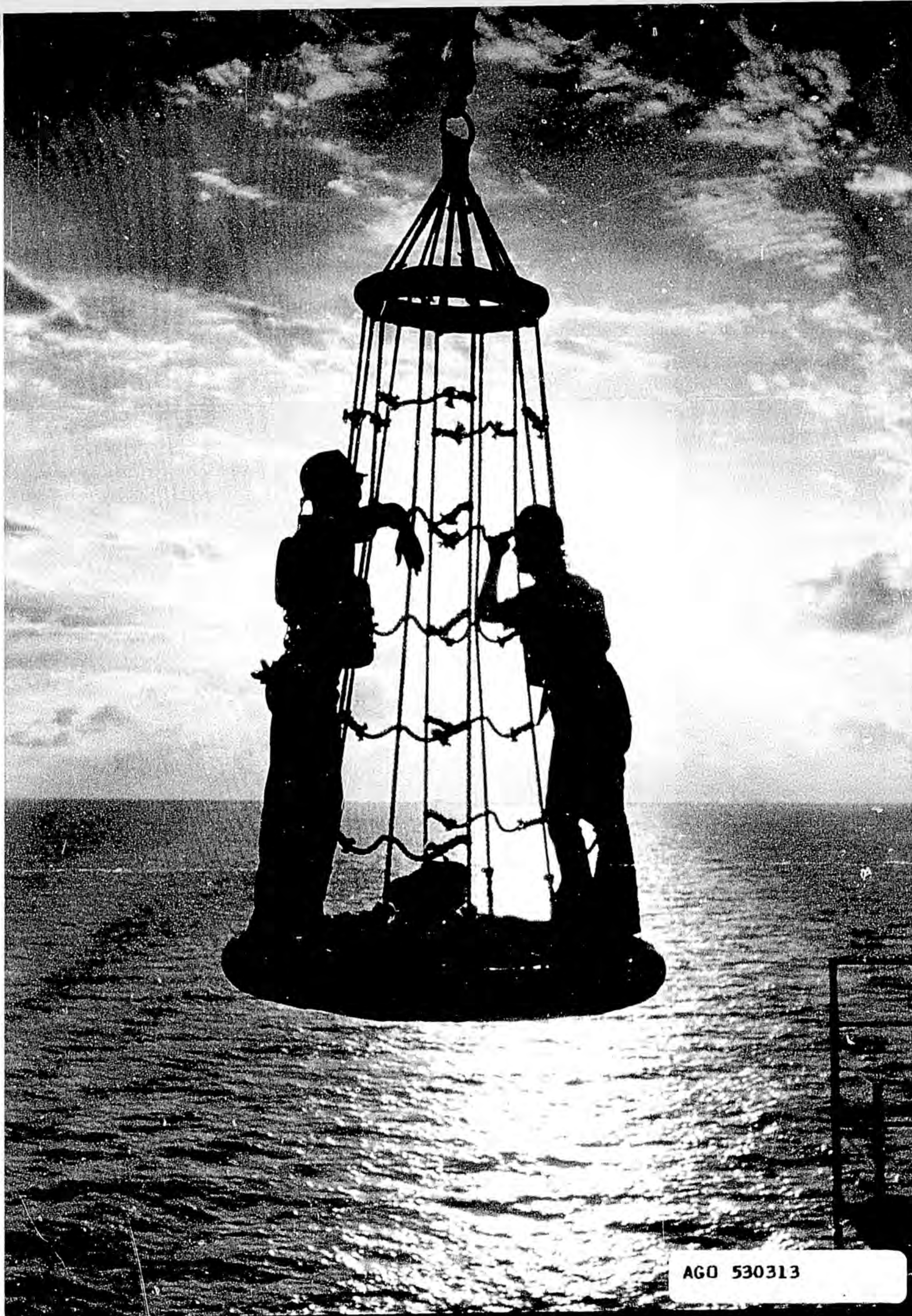
PLEASE NOTE: THE FOLLOWING PAGES WERE TREATED AS A UNIT IN THE ORIGINAL DOCUMENT.



AGO 530312

PETROLEUM TODAY

1975/three



AGO 530313

Talk With a Cajun Governor

by Bob Hamm

Edwin W. Edwards has served at all levels of government: Councilman of the small Louisiana town of Crowley, member of the state legislature, U.S. Congressman, and now governor of Louisiana.

Born to a sharecropper family in Louisiana's oil-rich Acadian country, Edwards is a direct descendant of the exiled Nova Scotians described in Longfellow's poem, "Evangeline." He is the first "Cajun" governor of the state since pre-Civil War days.

Edwards has gained national prominence recently for his fiery defense of offshore exploration and production. In this interview, which took place at the Governor's Mansion in Baton Rouge, Edwards talks about that and other aspects of the oil and natural gas situation.

PETROLEUM TODAY: If you could turn back the clock to a time when there was no oil activity in the Gulf of Mexico would you permit its initial entry there?

EDWARDS: Yes. Absolutely. I say that as one who has looked at the total development, and as the governor of a state which has pioneered the development of offshore activity. We would be able to approach it now with all the technology that's been developed. It would be much safer now than it was 35 years ago when it was started.

PETROLEUM TODAY: In the past quarter of a century, approximately 14,000 wells have been drilled off the Louisiana coast. Has there been any lasting damage?

EDWARDS: None to my knowledge. None of the spills ever resulted in oil or noxious materials getting to the coast.

In all offshore exploration, there have been only four really major problems. In only one of them, the Santa Barbara incident, was there significant damage to the coastline . . . and that was repaired with money put up by the oil companies responsible for the damage. I think that's an excellent safety record.

But more importantly, the technology, machinery and government regulations now are much more effective than they were 6½ years ago. The possibility of blowouts or other accidents is much less today.

PETROLEUM TODAY: You have debated with governors of East Coast states—sometimes on national television—the pros and cons of offshore oil activity. Do they offer any compelling arguments?

EDWARDS: In all candor, no. Most of their arguments have been based on lack of knowledge. They were not aware of the huge number of wells that have been drilled without incident. Many of them envisioned oil and gas rigs as being ugly, dirty, spewing, noisy apparatus a hundred yards offshore, which swimmers had to circumnavigate.

Off the New England coast, we're talking about development of an area that's 60 miles off the coast in 200 feet of water.

You couldn't see an oil or gas rig 60 miles off the coastline from the top of the Empire State Building on a clear day . . . even if New York had clear days.

PETROLEUM TODAY: What was your reaction to the Supreme Court's denial of claims by East Coast states to mineral rights beyond the three-mile limit?

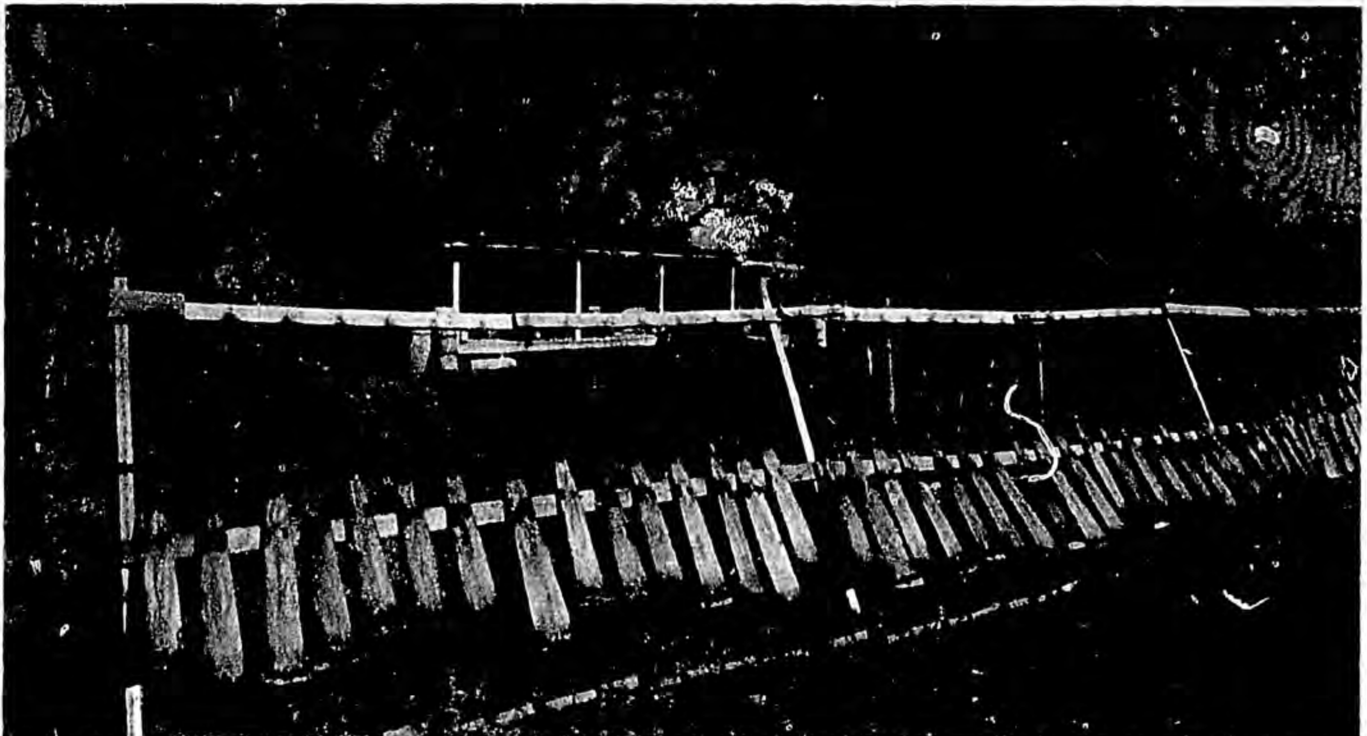
EDWARDS: They got what they deserved. Twenty-five years ago when we were trying to establish that as a matter of states' rights, they were foremost in arguing politically and legally that

Louisiana marshes provide nesting areas for white ibis and site for drilling rigs

AGO 530314

Fur of the marsh-dwelling nutria (right) provides a living for Cajun trappers; below, nutria pelts dry on racks in dappled shade

Opposite page, pelicans perch within sight of rig on shell reef off Louisiana shore



we were wrong . . . that the federal government had the exclusive claim outside the three-mile limit. Now the situation has turned full-cycle, and they are the unhappy legatees of their own ill-advised legal opinions and political positions taken a quarter of a century ago.

PETROLEUM TODAY: The charge is revived periodically that the oil companies contrived the energy crisis to promote profits. Do you believe this?

EDWARDS: I can best answer that by saying that there are 23 major or heavy independent oil companies in America. That's far greater than the number of steel companies, automobile companies or mail-order houses of national significance. If one looks at the amount of money that is consistently paid to the government in federal and state bidding for coastal tracts by these companies, it's obvious that there's no collusion among them. If they were colluding, they certainly wouldn't leave millions of dollars on the table in bidding practices. They'd get together and rig the bids.

I simply say that there's fair enough competition in the oil and gas industry to more than allay the fears of anyone having that concern.

Also, you can look at the facts and figures. The reserves of oil and natural gas in place—whether we like it or not—declined by three to eight per cent a year because of many inhibiting factors and because of heavy usage. That's there . . . can be seen . . . can be calculated and projected. It flies totally in the face of the argument that the crisis has been contrived. It's just not so.

PETROLEUM TODAY: Proposed national legislation would establish a federal oil and gas corporation, national energy supply corporation, or other government operated company. Would you favor such a move?

EDWARDS: No. If there's one thing we have

AGO 530315

proved in the past 200 years, it is that in no single instance can government operate as efficiently as private industry. Government should only engage itself in projects like TVA or Hoover Dam, where private industry does not have the capital or the powers of expropriation or what have you to accomplish a stated purpose. There are some areas where government must be involved.

But where private industry can handle it—and certainly the oil and gas companies can handle the exploration and production of oil and gas in this country—it should definitely be left to them.

Secondly, there is a limited number of offshore rigs . . . a limited number of people in the business . . . a limited number of pieces of equipment and machinery. I don't think the government could acquire the equipment in any reasonable period of time, even if it had the men and technology to use it.

PETROLEUM TODAY: What was your reaction to Congressional action eliminating percentage depletion only for oil and gas?

EDWARDS: It was a step in the wrong direction. It will be counterproductive. I think it's going to hurt exploration at a time when we badly need to find additional reserves. And I think it's a beguiling of the American people. When you remove percentage depletion, the cost has to be passed on to the consumer at the gas pump and at the fuel station. It's really not doing the American taxpayer a favor.

I think the oil and gas companies should be treated like all other American businesses. Oil and gas were among more than a hundred minerals that were included under percentage depletion. All of a sudden, percentage depletion was removed for most oil and gas but not for the other minerals.

PETROLEUM TODAY: You have referred to federal regulation of natural gas prices at the wellhead as "the first giant step backwards."

EDWARDS: Wellhead regulation began in 1954 as the result of an ill-advised Supreme Court decision interpreting the 1938 Natural Gas Act. Congress passed an act overriding the decision that wellhead prices should be under federal regulation. When it got to President Eisenhower's desk in February of 1956, he vetoed it because of a scandal involving a campaign contribution made by a lobbyist to a senator.

At the time of the veto, he recommended that it be reenacted. He predicted then—prophetically—that it would ultimately reduce supplies and heighten demand, and would not be in the long-run national interest.

He was right. What happened was that natural gas, being the only fuel regulated for 20 years, was sold at a price about one-third to one-half comparative Btu costs of other ener-

AGO 530316

I would say 50 per cent of Louisiana's economy depends on petroleum and satellite industries

gies. Demand skyrocketed for this cheap, clean, and beautifully burning fuel. Enthusiasm of investors and producers for seeking additional reserves was dampened because the price was kept so low.

As a result of this paradox, reserves have declined from about a 22½ years' supply in relation to production to a seven years' supply.

PETROLEUM TODAY: Do you subscribe to the view of some that the oil industry rakes in "obscene" profits?

EDWARDS: No, I do not. When one considers the tremendous investment, that claim seems faulty. Anyway, it's a free country, and if things are that good, everybody can get into the oil and gas business. But for every one who's making a few dollars in the business, there are dozens who are losing money. If you can get into the business in a free and competitive market and make it, so be it. That's what this country is all about.

PETROLEUM TODAY: What measures have you successfully promoted at the state level to create greater incentive for exploration and production?

EDWARDS: Instead of decreasing the depletion allowance, we have increased it. We also have a fund to encourage independents to search for oil and gas by giving them certain benefits under state law. Then, of course, there's the effort to maximize state participation in produced oil and gas from state lands rather than to increase the cash bonuses required from oil companies.

PETROLEUM TODAY: How does Louisiana's economy compare with the national picture. What part has the petroleum industry played?

EDWARDS: Because our economy is largely based on oil and gas, agriculture and transportation—the three remaining growth areas—Louisiana has not fared as badly as many other states. The petroleum industry has been very, very helpful. I would say 50 per cent of our total economy is dependent directly or indirectly on petroleum and satellite industries.

PETROLEUM TODAY: What will the establishment of a superport mean to Louisiana?

EDWARDS: Something like 35,000 jobs and billions of dollars in industrial expansion.

PETROLEUM TODAY: Are you fearful of possible environmental damage from the operation of a superport?

EDWARDS: Not at all. I would say to those who have some fears that one thing is certain: the possibility of spills or environmental damage resulting from transporting oil in supertankers and discharging it in superports away from the traffic lanes and crowded ports is far, far, far less than transporting the same quantity in medium tankers to customary ports. That's already been established by the Council on Environmental Quality, which is a very conservative body.

PETROLEUM TODAY: If you were still a member of the national Congress, what measures would you support to promote energy self-sufficiency?

EDWARDS: First, I would do whatever has to be done to complete the Alaskan pipeline. Second, I would immediately lift all environmental restrictions on the mining, transportation and use of coal. Third, I would immediately open up all of the 10 million acres in the Pacific and Atlantic Oceans which appear to be productive of oil and gas, and get it explored and developed as soon as possible. Fourth, I would embark on a Manhattan-type project to develop alternate sources of energy. I would license immediately all applications for construction of nuclear generating plants.

I would proceed with operational pilot fast-breeder reactors, insist on use of coal in areas where it is in abundant supply, and initiate a crash program for research and development to gasify and liquefy shale.

Fifth, I would cut all the red tape and probably appoint one energy czar who would have complete authority to override all other agencies in granting permits for construction of refineries, thermonuclear generating plants and facilities used in either the production or generation of energy.

Finally, I would deregulate the price of natural gas and oil at every level. ●

Active drilling rig in Gulf of Mexico symbolizes mainstay of Louisiana's economy

AGO 530317

February 27, 1976

Mr. Robert Paschall
Consulting Valuation Geologist & Engineer
460 Lovella Way
Sacramento, California 95818

Dear Bob:

Enclosed, for your information, is the most recent bill filed in the Legislature concerning oil taxation. It is known as the Cowper bill.

Sincerely,

John Huber

Enclosure

460 Lovella Way
Sacramento CA 95819
21 Februay 1976

Senator John Huber, Chairman
Special Committee on Taxation and Revenue
Pouch V
Juneau Alaska 99811

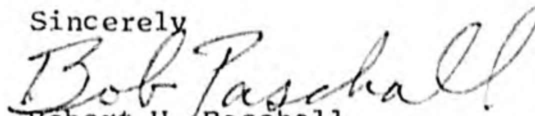
Dear John:

It seemed prudent appropriate at this time to render my statement to the Legislative Affairs Agency for work done in the months of January and February. I am sending two copies of both this letter and the statement in case you want a copy of the statement and the Agency needs a copy of the letter of transmittal.

Today I had a look at several Nevada Supreme Court cases and Attorney General's decisions dealing with the net proceeds tax, in order to anticipate any questions that might arise in the course of review or testimony. It was most interesting to find that all major issues were settled as far back as 1868, within four years of the time that the tax was enacted. How's that for longevity?

If you think that you have had trouble with the oil industry, you should see the language of the Supreme Court in dealing with the actions of certain mining companies more than one hundred years ago. The court said at one point "At the instance of the mine owners, and by their intrigues and threats..." The underlined words were in italics. Pretty strong, eh?

Sincerely



Robert H. Paschall
Consulting Geologist and
Valuation Engineer

AGO 530319

480 Lovella Way
Sacramento CA 95819
21 Febraury 1976

Senator John Huber, Chairman
Special Committee on Taxation and Revenue
Pouch V
Juneau Alaska 99811

Dear John:

It seemed prudent appropriate at this time to render my statement to the Legislative Affairs Agency for work done in the months of January and February. I am sending two copies of both this letter and the statement in case you want a copy of the statement and the Agency needs a copy of the letter of transmittal.

Today I had a look at several Nevada Supreme Court cases and Attorney General's decisions dealing with the net proceeds tax, in order to anticipate any questions that might arise in the course of review or testimony. It was most interesting to find that all major issues were settled as far back as 1868, within four years of the time that the tax was enacted. How's that for longevity?

If you think that you have had trouble with the oil industry, you should see the language of the Supreme Court in dealing with the actions of certain mining companies more than one hundred years ago. The court said at one point "At the instance of the mine owners, and by their intrigues and threats..." The underlined words were in italics. Pretty strong, eh?

Sincerely

Robert H. Paschall
Consulting Geologist and
Valuation Engineer

Robert H. Paschall
Consulting Valuation Geologist and Engineer
460 Lovella Way
Sacramento CA 95819

....

S T A T E M E N T

21 February 1976

Legislative Affairs Agency
Pouch Y, State Capitol
Juneau Alaska 99811

	Hours
January 5: discussion in Sacramento with Senator John Huber on oil and gas tax systems and proposals	4
February 1: Studied 14-page Mining License Tax proposal	2
February 8: Studied 30page staff report on oil and gas taxation and wrote 7-page letter to Senator Huber	7
February 12: Studied 14-page report by Rush Moody on natural gas and wrote 4-page letter to Senator Huber	4
February 16: Analyzed three proposed Senate bills on oil taxation and wrote 6-page letter to Senator Huber	7
February 21: reviewed Nevada court cases and Attorny General's decisions on net proceeds tax	1
TOTAL HOURS	25
Amount due and payable, at $30 per hour	$750

AGO 530321

February 10, 1976

Mr. Robert Paschall
Consulting Valuation Geologist & Engineer
460 Lovella Way
Sacramento, California 95819

Dear Bob:

Enclosed is the tax package that the Special Committee on Taxation and Revenue has prepared and filed with the Legislature. Because of your position as a consultant to the Committee I thought you would be interested in receiving these bills.

HB 699 and SB 620 are the companion bills on net proceeds; and HB 703 and SB 621 are the companion bills on excess value.

Sincerely yours,

John Huber

Enclosures

AGO 530322

PLEASE NOTE: THE PRECEDING PAGES WERE TREATED AS A UNIT IN THE ORIGINAL DOCUMENT.

STATE OF ALASKA
THE LEGISLATURE
LEGISLATIVE AFFAIRS AGENCY
POUCH Y, STATE CAPITOL
JUNEAU, ALASKA 99811
465-3800

CONTRACT BETWEEN

STATE OF ALASKA

LEGISLATIVE AFFAIRS AGENCY

AND

ROBERT H. PASCHALL

The parties to this agreement are the LEGISLATIVE AFFAIRS AGENCY, hereinafter referred to as the "Agency", and ROBERT H. PASCHALL, of Sacramento, California, hereinafter referred to as the "Contractor".

THE PURPOSE OF THIS AGREEMENT is to provide professional review services and testimony on pending legislation relating to oil and gas revenues and taxation to the Alaska State Legislature through the Agency during the Second Session, Ninth Legislature.

IT IS, THEREFORE, MUTUALLY AGREED THAT:

CLAUSE I. - STATEMENT OF WORK

The Contractor shall do all things necessary for and incidental to the performance of the work as described in this agreement.

CLAUSE II. - PERIOD OF PERFORMANCE

(A) The Contractor shall be available at a mutually agreeable time during the Second Session of the Ninth Alaska Legislature to provide the services described in this agreement and under the terms and conditions contained herein.

(B) This agreement may be terminated

(1) by either party on 30 days' written notice to the other party, or

(2) by mutual consent of the parties to this agreement.

(C) This agreement expires on the last day of the legislative session aforementioned unless terminated earlier as provided in Clause II(B) of this agreement.

(D) It is estimated that 60 hours will be spent by Contractor reviewing legislation in Sacramento, California, and seven days will be required for his travel and presence in Juneau, Alaska, to satisfy this contract. These time estimates may be extended upon approval of the Project Director.

CLAUSE III. - COMPENSATION AND METHOD OF PAYMENT

The Contractor shall be compensated as a contract employee at a rate of $30.00 per hour while reviewing legislation in Sacramento, California, and $325.00 per day and be reimbursed for expenses for travel to Juneau, Alaska, for testifying purposes. The Agency will make necessary arrangements for such compensation to be remitted to the Contractor on receipt of an itemized invoice from the Contractor. Total payments for the services of the Contractor under this agreement, excluding approved expenses, may not exceed $4,075.00 unless extended in accordance with Clause II(D).

CLAUSE IV. - PROJECT DIRECTOR

Performance of the work specified in this agreement shall be under the general direction of Senator John Huber, Chairman, Senate Special Committee on Taxation and Revenue.

CLAUSE V. - REPORTS

The Contractor shall keep the Agency informed as to the progress of the work performed under this agreement and shall provide progress reports as specified by the Project Director.

CLAUSE VI. - RECORDS, DOCUMENTS, AUDIT

The Contractor shall maintain accurate records, including detailed time records, as may be required by the Agency. The records are subject to inspection by the Agency at all reasonable times. All documents, reports and writings are, upon delivery to the Agency or at termination of this agreement, the property of the Agency.

CLAUSE VII. - ALL WRITINGS CONTAINED HEREIN

This agreement contains all the terms and conditions agreed upon by the parties. No other understandings, oral or otherwise, regarding the subject matter of this agreement shall be deemed to exist or to bind either of the parties to this agreement.

AGO 530324

IN WITNESS WHEREOF, the parties have executed this agreement on this 8th day of February, 1976.

ROBERT H. PASCHALL

Robert H. Paschall
CONTRACTOR

LEGISLATIVE AFFAIRS AGENCY

John C. Doyle
ADMINISTRATOR

APPROVED AS TO FORM WHEN SIGNED BY CONTRACTING PARTIES

[illegible]
AGENCY LEGAL COUNSEL

[illegible]
PROJECT DIRECTOR

February 4, 1976

Mr. Robert Paschall
Consulting Valuation Geologist & Engineer
460 Lovella Way
Sacramento, California 95819

Dear Bob:

Please sign both copies and return them to me immediately so that I may have them signed by Jack Doyle and legal counsel. We will return your copy to you.

In the meantime, we are planning a short session and don't let the grass grow under your feet in getting to work on our material, as you have my word that you are covered.

Sincerely yours,

John Huber

Enclosures

AGO 530326

460 Lovella Way
Sacramento CA 95819
1 February 1976

Senator John Huber, Chairman
Senate Taxation and Revenue Committee
Pouch V
Juneau Alaska 99811

Dear John:

I just studied Chapter 65, Mining License Tax, and was so shocked by its contents that I am impelled to let you know immediately of some serious problems, without dwelling on their solutions. Meanwhile, I am beginning to study the other data that you sent, and I eagerly await a letter from you acknowledging my role as a consultant to your committee.

Chapter 65 is absolutely, unequivocally not a "net proceeds" tax law, and bears only the faintest resemblance to the Nevada type of law that I have recommended to you. Instead, Chapter 65 is a corporate income tax, and can hardly be deemed to be in lieu of such a tax when it is one itself. Here are the chief difficulties with the chapter.

1. Depletion is allowed as a cost, yet depletion is the very essence of income to the mineral deposit. Depletion is a major element of after-tax cash flow, which is the "net proceeds to the mine" so far as a mine operator is concerned.

2. Chapter 65 proposes a tax that is levied on the operator, not on the mine. The aggregation of income and expenses for two or more mines owned by a single operator vitiates the tax as a "mines net proceeds tax." Why should a profitable mine go tax-free simply because another mine owned by the same company is running in the red? The provision for aggregation obviously affords a much greater benefit to a large company than to a small one, because the small company is more apt to have a single and profitable property, with no tax shelter available from elsewhere.

3. Depreciation on plant and equipment is permitted as an expense "...not to exceed 10 per cent of the cost or market value of the asset, whichever is lower." There are two objections to this statement. First, if depreciation is allowed as an expense, the inclusion of market value as a prospective base will require annual appraisal of the plant and equipment. I assure you that such appraisal will be a difficult and controversial task, and will of course require hiring another body to do it. Going further: if depreciation is not allowed, the net proceeds will reflect the value of the plant and equipment and subject them to taxation, thereby making it unnecessary to tax them on an ad valorem property tax basis.

AGO 530327

4. "Amortization of development costs" is strictly an income tax approach, and greatly complicates administration. A true net proceeds tax would treat annual development costs as an annual expense, regardless of their handling for Federal income tax purposes. In appraising large mines, for example, I simply expense development costs, rather than amortize them, because this is the way that the mining superintendent looks at them.

5. Allocation of expenses "...not directly attributable to mining properties or processes" is, again, strictly an income tax device, and one that is a real monster to handle. Only direct expenses should be deductible, and those are the ones for which the mining superintendent is typically responsible.

6. A minor item: the sentence dealing with "Taxes upon royalties" should presumably read "Taxes upon privately owned royalties," since it is doubtful that the State either can or would want to tax itself or another governmental entity.

In addition to the above, there are several areas in which the chapter is simply overwritten, especially where all sorts of minerals are named and where all sorts of processing methods are listed. Also, I have not even bothered to read the provisions for administration and penalties, so I have no comments to make there.

The first five numbered items above will demonstrate to you how concerned I am over the utter vitiation of the net proceeds concept, and the substitution of an income tax that will probably be just about as useful as your State's present income tax on oil and mining. At the same time, I fully understand the mining industry's concern over a severance tax, as outlined in Franklin Fleeks' memos to you. A severance tax is inevitably an inequitable one, and does indeed penalize the marginal operator. I can also appreciate that the industry may not read my comments with approbation, but they should not concern the industry nearly so much as a contempalted tax rate, and that I will leave to you and the fiscal and budgetary people.

Sincerely

Robert H. Paschall
Consulting Valuation Geologist
and Engineer

AGO 530328

460 Lovella Way
Sacramento CA 95819
27 January 1976

Senator John Huber, Chairman
Special Committee on Taxation and Revenue
Pouch V
Juneau Alaska 99811

Dear John:

Today I received your mailing of January 22 (pretty good mail service for such a bundle!) and will very shortly begin to review it and put together my thoughts on its contents. However, before I launch into any substantial work, such as rendering you a report on the material, it is necessary for me to receive formal word from you that I am indeed being employed by your committee to engage in the work. Imagine my embarrassment if you decided all of a sudden to give up the vicissitudes of political life and return to business in Fairbanks! It may be useful to note that, prior to my working for either the State of Nevada or the North Slope Borough, I received standard contracts from the Attorny General and the Borough Counsel, respectively. I suggest that such a document, or something very near it, is rather comforting to both sides of a cooperative effort. In fact, both the State of Nevada and the Borough made progress payments so that it was not necessary for me to make substantial out-of-pocket outlays for the expensive business of long-distance travel. This is not necessary, it's just nice.

By the way, I have again received a mass of material from Sterling Gallagher, asking for my comments by February 16. It contains the Mining License Tax item that you sent and, as well, a 252-page transcript of a November public hearing on taxation of the mining industry. I find it rather embarrassing to have to repeat my letter of last October to Mr. Gallagher, pointing up the fact that I simply cannot engage in gratis critiques of the complex issue of minerals taxation for the State of Alaska. Of course, your situation and his are notably different. You and I have engaged in voluminous correspondence, I have worked before for your Committee, and you recently visited me to talk things over. Mr. Gallagher and I have never discussed any of the matters on which he has asked my opinion by mail.

Finally: I am sure you will be interested to read the enclosed report by H.C. Wainwright and Company of New York. Liebman of Wainwright called me many months ago and asked for a copy of the Prudhoe Bay appraisal that I made in 1973, and he promised to send me anything that he wrote about Alaska oil, whose economics he has been assigned to follow.

Sincerely

Robert H. Paschall
Consulting Valuation Geologist
and Engineer

AGO 530329

460 Lovella Way
Sacramento CA 95819
11 January 1976

Senator John Huber, Chairman
Special Committee on Taxation and Revenue
Pouch V
Juneau Alaska 99811

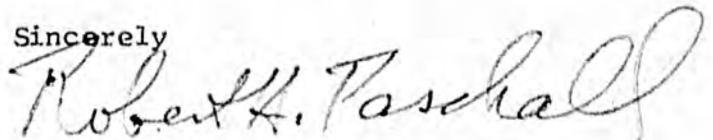
Dear John:

That was quite a four-hour chat that we had the other day, and I hope you enjoyed it as much as I did. As a matter of fact, it was the beginning of the darndest week for me. Before it was out, in addition to your visit I was either visited or called by people who want me to testify in four California county oil tax equalization cases. Since two of the callers were county counsels and two represented industry, I might stake a temporary claim to being nonpartisan. Also, something that I believe you will find interesting, I received a call from a professor at the University of West Virginia asking me to speak on mines taxation at next month's annual conference of the Council of Economics of the American Institute of Mining Engineers in Las Vegas. I accepted his invitation. Finally, on Friday I got a letter from the Executive Director of an outfit in British Columbia called the British Columbia Institute for Economic Policy Analysis. Somehow or other he had gotten a copy of my testimony in Juneau, and he began his letter by saying "I have just read with great delight..." He wanted me to fill in some details for him. I ask you: how was that for a week. Almost as good as money in the bank.

You asked that I provide you with a statement of my fees for working for your committee on bills analysis and testimony in Juneau. I am raising my fees this year by a modest amount: $30 per hour for time spent here in Sacramento and $325 per day (plus expenses) for a trip to Juneau. My past work for you and for the State of Nevada leads me to believe that bill analysis, et al., here at home will not take over 60 hours. A trip to Juneau seems inevitably to take a week. Put the two together and we are looking at a maximum of $4,275 in fees plus about $600 in expenses.

I am leaving tomorrow on an 11-day business trip, with four days in the Kern County Assessor's office followed by four days the following week at the Santa Barbara Assessor's office. I regret to say that I have not yet received anything from your office. I would like to have taken it along with me.

Sincerely



Robert H. Paschall
Consulting Valuation Geologist
and Engineer

AGO 530330

460 Lovella Way
Sacramento CA 95819
21 June 1975

The Honorable Sterling Gallagher
Commissioner of Revenue
Pouch SA
Juneau Alaska 99811

Dear Mr. Gallagher:

I recently had the opportunity to read the excellent master's thesis on oil taxation written by James Deagen of your Department of Economic Development. One statement, however, deeply concerned me, and I would like to comment on it. Mr. Deagen had this to say on page 51:

> "If legislation is enacted on taxing oil reserves, however, it appears that the Alaska Department of Revenue will contract with a Texas consultant rather than California consultants. Both offer competent appraisal techniques. The Texas alternative, however, offers both the appraisal and legal expertise that will be required. It is 'easier' to obtain $150-200 million in oil taxation revenues with the help of a veteran firm which has a good record in corporate-tax matters."

I disagree strongly with this viewpoint, both on behalf of the State of Alaska and on behalf of my personal interest in working for you. First, I propose that purely legal expertise relating to your State's oil property assessments falls in the domain of Alaska's office of the Attorney General. Should outside legal advice be required, which is doubtful, it should be sought on its own merits, and stipulated in a contract as something aside from valuation expertise. Please forgive me if this appears to be gratuitous advice, since I am sure that it is in accord with your current policies and practices.

More specifically, no valuation engineer can do a job for anyone unless he is thoroughly familiar with the laws applicable to the job. You are undoubtedly acquainted with my role in Alaska's recent legislation on oil property taxation. Senator John Huber provided me with every Senate and House bill draft, including the final statute, and I worked closely with him, Representative Steven Cowper, and John Messenger while I was in Juneau. Thus, I am as knowledgable about Alaska oil property tax law as anyone in your state or elsewhere.

I am required to be equally knowledgable about parallel California law. If that were not the case I could not do my work here, and the Alaska legislature would not have employed me to testify on its application. Moreover, I have testified on numerous occasions at equalization hearings on oil property assessments. I have been subpoenaed to appear three times in the past eighteen months, and have been notified by a major law firm that I will soon be subpoenaed in an oil equalization hearing involving several million tax dollars.

AGO 530331

Forgive me if I appear to be disturbed by the implications of Mr. Deagen's remarks, but of course I am. I would be highly chagrined to lose an account in which I am greatly interested because it is presumed that I am ignorant in an area where I am highly knowledgable.

Sincerely

Robert H. Paschall
Consulting Valuation Geologist
and Engineer

cc Senator John Huber
Gerald D. Heier
Frederick P. Boetsch
John Messenger
James Deagen

John, I am very much concerned for your sake about another aspect of this matter that I really couldn't mention to Sterling Gallagher. It may not be the best of news to Chancy Croft, but Texas simply does not have the reputation in property taxation that California has. In fact, to be blunt about it, Texas has a poor repuation. If you believe I may be unduly prejudiced, you may want to check with the International Association of Assesing Officers in Chicago, or the Advisory Commission on Intergovernmental Relations in Washington, D.C.

The idea of hiring a Texas appraisal firm because it has a Texas lawyer as president just does not make good sense from Alaska's standpoint. There may be a good reason to hire such a firm, but that is not it.

Another thing: you may find that the present statute needs amendment next year. If so, the employment of a Texas firm would probably mean that you would have input only from Texas relative to legislation. I will suggest that Henry Wilkinson and Joe Witherspoon are adequate to the case, without bringing in a third Texan.

460 Lovella Way
Sacramento CA 95819
2 June 1975

Senator John Huber, Chairman
Special Committee on Taxation and Revenue
Pouch V
Juneau Alaska 99811

Dear John:

I am sure you will be pleased to know that a check from the Legislative Affairs Agency arrived today, in the same mail that brought your letter of concern on the subject. It may also relieve your mind to hear that, unfortunately, other states and governmental entities are similarly tardy in paying their bills, so Alaska has plenty of company. I'm not quite sure why this should be the case, and it appears to be a fit subject for a congressional investigation, at the very least.

How are things going in the field of oil tax legislation? I will be most grateful to hear as soon as a law may be enacted, for two reasons. One is that it is always gratifying to know of the successful conclusion of a campaign in which one has played a part, however small. The other, of course, is that I am still highly interested in serving as Alaska's valuation engineering consultant, should one be required. If I hear that ad valorem taxation has been enacted, I intend to write Commissioner Gallagher a follow-up letter. In fact, should I get the job, I intend to quit California state employment in order to do justice to Alaska's requirements.

Have you seen the article on Alaska in the most recent National Geographic? All told , it was pretty good coverage. And of course I was interested to encounter the names of three natives whom I have met: Eban Hopson, Willie Hensley, and Oliver Leggett.

I trust that you have had that fine boat in the water long before now, and have successfully pulled in your halibut skate.

Sincerely

Robert H. Paschall

AGO 530333

May 29, 1975

Mr. Robert H. Paschall
460 Lovella Way
Sacramento, CA 95819

Dear Bob:

Thank you for sending me a carbon copy of your letter of May 26, 1975 to John Elliott.

I just wanted to let you know that I have been raising Hell to get you paid, which I believe is now very close if not already in the mail. I am truly sorry for this delay and sincerely apologize for my state and its administration.

Sincerely yours,

John Huber

JH:kb

AGO 530334

[illegible]

[illegible]
Legislative [illegible] Agency
Pouch [illegible]
Juneau, Alaska [illegible]

Dear [illegible]:

My present concern about not having received payment for my services to your State's legislature is two-fold. The most immediate, of course, is the fact that I have not been paid by a time that is now six and one-half months after I worked in Juneau, following my having submitted statements twice and having later sent you a telegram asking that you check on the matter with Senator John Huber.

My other concern is that I have heard absolutely nothing from you on the subject. I have begun to wonder whether your office has even received the three messages that I have sent. This puts me in a most difficult position. I can appreciate that a state may have administrative delays in paying unusual expenses like those of an individual consultant. At the same time, it also seems appropriate that the state might acknowledge correspondence on the subject, and give some idea of the time when the money will be sent.

It is most frustrating to be here 2,000 miles away, wondering what has happened to my communications on a subject that is highly important to me. By this time, of course, I have had to pay out of my own pocket the $600 cost of my trip to Juneau, and the continued delay in the receipt of pay for my services is a concern that increases daily.

Will you please at least acknowledge receipt of this letter?

Sincerely

Robert H. Paschall

Robert H. Paschall
Consulting Valuation Geologist
and Engineer

cc Senator John Huber
Senator Chancy Croft

Dear Senator Huber and Senator Croft: I imagine that Nels Anderson would find some amusement in this delay, especially if he knew that the North Slope Borough always paid me within two weeks of billing. Is that where all the money has gone?

Bob P.

AGO 530335

[illegible]
[illegible] CA 958[illegible]
30 April 1975

Executive Officer
Legislative Affairs Agency
Pouch Y
Juneau Alaska 99811

Dear sir:

The attached statement is a duplicate of one that I sent to your office on April 13. I hope that it will be possible for you to pay me in accordance with the statement at the time of your end-of-April accounting. Thank you for your attention to this matter.

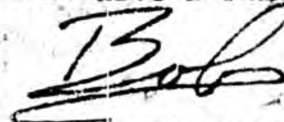
Sincerely

Robert H. Paschall

Dear John:

I hope that things are going well with you regarding your legislative goals. Yesterday I talked with Walter Mead. I concur with his idea of the usefulness of a Beaufort Lease sale <u>of the waters immediately contiguous to Prddhoe Bay</u>. Interestingly, these lands are labelled as "BP" and "ARCO-Humble" on BP-Alaska's Exhibit G for the 1971 Field Rules Hearing. But Walter said that Sterling Gallagher assured him they were not included in the 1969 or prior sales. At the same time, and without regard to the sale, an ad valorem statute might be useful as a reserve, should the sale not meet state needs. And the prospect of a sale might reduce the opposition to the ad valorem bill (<u>might</u>, I said).

Looking back, I greatly enjoyed my trip to Juneau, even if you <u>did</u> keep me so busy that I didn't get to explore the adjacent wilds. Of course, all of those signs saying "DANGER-- TRAIL CLOSED" were a problem, too. And the highlight of the trip was the ride that you took me on the day that I arrived. Incidentally, I talked to a forester since I got back about those trees that were broken off by the wind above your place on Douglas Island. He said this was not unusual when tougher trees on the perimeter of a forest are removed, as they were of course in building the road on Douglas Island. The trees inside the forest are not as wind-resistant, so that when a hurricane hits them they dont have a chance. Interesting, eh?



AGO 530336

[illegible] H. [illegible]
Consulting Valuation Geologist and Engineer

460 Lavella Way
Sacramento Calif. 958[illegible]

. . . .

30 April 1975

Legislative Affairs Agency
Pouch Y
Juneau Alaska 99811

S T A T E M E N T

<u>for professional services</u>

Analysis of legislative bills and testimony relating to ad valorem taxation of oil and gas, plus report-writing and letter-writing:

23 hours at $25 per hour (while in Sacramento)	$ 575.00

Trip to Juneau from April 5 to 12: testimony before legislative committees, conferring with legislators, legislative staff members, representative of the Attorney General, and others on bill analysis and other matters:

6 full days and two one-half days at $300 per day	2,100.00

Travel and other costs:

Air fare	$237.68	
Hotel: 5 nights at Baranof in Juneau at $33.28 and two nights at Sea-Tac in Seattle at $25.27	216.94	
Meals, bus and taxi, telephone, laundry, et al.	146.29	
		600.91

TOTAL of all costs and professional charges	$3,275.91

bc Senator John Huber

AGO 530337

460 Lovella Way
Sacramento CA 95819
30 April 1975

Executive Officer
Legislative Affairs Agency
Pouch Y
Juneau ~~Alaska~~ 99811

Dear sir:

The attached statement is a duplicate of one that I sent to your office on April 13. I hope that it will be possible for you to pay me in accordance with the statement at the time of your end-of-April accounting. Thank you for your attention to this matter.

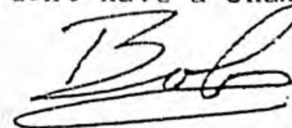
Sincerely

Robert H. Paschall

Dear John:

I hope that things are going well with you regarding your legislative goals. Yesterday I talked with Walter Mead. I concur with his idea of the usefulness of a Beaufort Lease sale of the waters immediately contiguous to Prddhoe Bay. Interestingly, these lands are labelled as "BP" and "ARCO-Humble" on BP-Alaska's Exhibit G for the 1971 Field Rules Hearing. But Walter said that Sterling Gallagher assured him they were not included in the 1969 or prior sales. At the same time, and without regard to the sale, an ad valorem statute might be useful as a reserve, should the sale not meet state needs. And the prospect of a sale might reduce the opposition to the ad valorem bill (might, I said).

Looking back, I greatly enjoyed my trip to Juneau, even if you did keep me so busy that I didn't get to explore the adjacent wilds. Of course, all of those signs saying "DANGER-- TRAIL CLOSED" were a problem, too. And the highlight of the trip was the ride that you took me on the day that I arrived. Incidentally, I talked to a forester since I got back about those trees that were broken off by the wind above your place on Douglas Island. He said this was not unusual when tougher trees on the perimeter of a forest are removed, as they were of course in building the road on Douglas Island. The trees inside the forest are not as wind-resistant, so that when a hurricane hits them they dont have a chance. Interesting, eh?



AGO 530338

ROBERT H. PASCHALL
Consulting Valuation Geologist and Engineer

460 Lovella Way
Sacramento Calif. 95819

30 April 1975

Legislative Affairs Agency
Pouch Y
Juneau Alaska 99811

STATEMENT
for professional services

Analysis of legislative bills and testimony relating to ad valorem taxation of oil and gas, plus report-writing and letter-writing:

23 hours at $25 per hour (while in Sacramento)		$ 575.00

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Meals, bus and taxi, telephone, laundry, et al.	146.29	
		600.91

TOTAL of all costs and professional charges $3,275.91

bc Senator John Huber

AGO 530

460 Lovella Way
Sacramento CA 95819
11 May 1975

Senator John Huber
Special Committee on Taxation and Revenue
Pouch V, Juneau
Alaska 99811

Dear John:

Several elements of HOUSE BILL 297, as offered 5/6/75, provide great cause for concern, and others can be improved for administrative reasons. Here they are, more or less in order of importance.

EXEMPTION OF "PRODUCING OIL AND GAS LEASES AND THE VALUE OF INTANGIBLE DRILLING AND EXPLORATION EXPENSES (Sec. 2, 43.55.010(b)

These exemptions are carried in the April 17 and later versions of HB 297. I strongly urge their deletion. I will play the devil's advocate and claim that they nullify all or part of Sec. 43.58.010, namely, the very proposal to levy an ad valorem tax on oil and gas reserves. Here is the case that I can make and that industry will make.

(2) Producing Oil and Gas Leases

A private party's lease with a government agency is the very instrument that creates its leasehold interest in the mineral rights. Unless the intent of 43.58.010 is to confine the ad valorem tax to non-producing properties, 43.55.010(b)(2) creates an unintentional exemption from ad valorem taxation for all fields that now produce. But the very fact that Section 43.58.030 provides for a production tax credit against the ad valorem tax indicates that producing leases are not to be exempted.

(5) Intangible Exploration and Drilling Costs

(5) Exploration and development are necessary to establish the existence of a valuable oil or gas reserve. More precisely, the completion of a new well capable of production enhances the value of the reserves, since the well is necessary to produce (part of) the reserves. One can maintain, then, that the cost of drilling is included in the value of the reserves developed by the drilling.

Now, what exactly are "intangible drilling costs" (IDCs)? They represent that portion of total drilling costs expended for wages, salaries, and services, and are identified separately from tangible drilling costs (for casing, wellhead equipment, etc.) only because the Internal Revenue Service permits expensing IDCs while it requires that tangibles be capitalized. IDCs have been under serious attack as an undue tax privilege; that is the case because the euqivalent in real estate development would consist of expensing architect's fees and building contractors' salaries and wages.

AGO 530340

DEFINITION OF "PROVEN RESERVES" (Sec. 43.58.190(7)

An excellent definition of this term was in the bill until the version of April 24 was written. That earlier version was almost exactly the one promulgated by the American Petroleum Institute and adopted throughout the industry. The definition in the latest version is awkward and ambiguous. The phrase "if it is economically feasible to market it" is not necessary, since the phrase "indicate to be recoverable" precedes it; no one will bother to recover it unless it is economically feasible. Also, the term "reasonably foreseeable conditions" is a monster, and lawyers would have a field day defining "reasonable" as it applies to a given oil field.

In fact, it looks as if the lawyers intruded themselves into an area that was hammered out years ago by engineers and economists to everyone's satisfaction. I recommend that the definition in the April 17 version be used.

THE AD VALOREM ASSESSMENT TIME TABLE

Here are key dates:

January 1: property assessed as of this date. This means that information as late as December 31 may be required by the valuation engineer.

February 1: all taxpayers returns shall be filed on or before this date. I can assure you that this will be essentially impossible in many cases, because of the lag in sending data from (1) the field to (2) a company's accounting department to (3) a company's tax department to (4) the state.

April 15: the department shall send a notice of the assessed value of each property to the operator or other person.

June 15: The department shall certify the assessment roll and send out the tax bills.

Here is the problem: typically, the valuation engineer will receive some critical data at least as late as February 15 (and he can't do much about it except complain). Also, he will have to furnish his values to the department by April 1 if the department is to send out notices by April 15. The result: the poor valuation engineer will have no more than sixty days in which to do his job.

A recommended solution: Change "April 15" in Section 43.58.060 to "May 15." This should give the department ample time for its job, and add a month's time for the beleaguered valuation engineer to do his job.

MANDATORY VALUATION BY THE DEPARTMENT

Sec. 43.58.100 (a), second sentence, says that "In either case, the department may make its own valuation of the taxable property." In my bailiwick, at least, that "may" would read "shall." It removes any doubt as to the department's right and obligation to value the property.

AGO 530342

....

I will now comment on the April 15 version of Senate Bill 374, beginning with the items in common with my remarks on House Bill 297.

EXEMTION OF "PRODUCING OIL AND GAS LEASES" AND "INTANGIBLE DRILLING AND EXPLORATION EXPENSES" (43.55.010 (b) (2) and (5))

I cannot stress too strongly the need to remove these items from any bill on ad valorem taxation or other taxation of oil and gas. Putting it bluntly, everyone to whom I have described these items comes close to throwing up.

THE "PERIOD OF GRACE"

This element in SB 374 makes a great deal more sense than the language of HB 297. I suggest only that the word "other" be deleted from the first line of 43.58.020(3). I'm not quite sure what purpose it serves.

OPERATOR'S WITHHOLDING OF PROPORTIONATE SHARE OF TAXES

The Senate bill carries no problem in this regard.

DEFINITION OF "PROVEN RESERVES"

The Senate bill carries the correct definition of this term.

THE AD VALOREM ASSESSMENT TIME TABLE

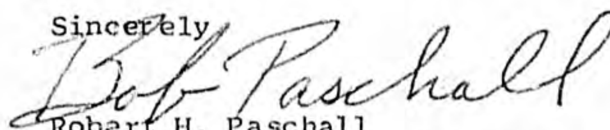
SB 374 poses a quite insuperable burden on the valuation engineer, since its Section 43.58.080 lops a precious month off of the short time provided in HB 297. See my comments above on that topic.

Here are some brief comments on other subjects.

I like SB 374's appeals procedures, including the omission of reference to a trial de novo. John Messenger indicated that one cannot stop a trial de novo, but that a plaintiff's right to it need not be stated in a statute.

I was startled to see the non sequitor "crude petroleum oil" in SB 374's Section 43.58.190(5). "Petroleum" means "rock oil," so "crude petroleum oil" means "rock oil oil," which is not only redundant but a term never, never used by anyone in the entire oil industry. I got Easy Gilbreath's concurrence on this, but I guess it was too small to be noticed. Would you please insert "crude petroleum" or "crude oil"? All petroleum geologists and petroleum engineers will be grateful.

Sincerely



Robert H. Paschall
Consulting Valuation Geologist
and Engineer

cc Walter Mead

AGO 530343

460 Lovella Way
Sacramento CA 95819
3 May 1975

Senator John Huber
Special Committee on Taxation and Revenue
Pouch V
Juneau
Alaska 99811

Dear John:

The oil industry and gas pipeline industry have just furnished us with an excellent example of the viability of reserves estimation and property valuation for a non-producing field. The April 21 Oil and Gas Journal carries an article which says in part:

> "Northern Natural Gas Co. has asked the Federal Power Commission for an expedited hearing and decision on payments it plans to make to Exxon Co. U.S.A. for gas-purchase rights in the Prudhoe Bay area of Alaska... In one agreement with Exxon, Northern may acquire up to 2 trillion cu ft of gas from a 25% share of Exxon's interest in the Prudhoe field. In return, Northern may be required to pay Exxon as much as $300 million."

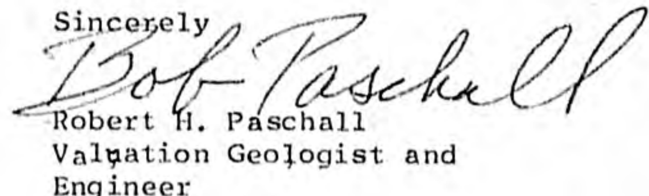
Here are some of the interesting things that may be inferred from the above statement.

1. Northern must have a great deal of faith that a gas pipeline will be built in the foreseeable future. This faith casts considerable doubt on the conclusion of the Governor's Task Force that Prudhoe Bay's gas is essentially worthless.

2. The proposed expenditure of $300 million means that Northern has faith, as well, in Exxon's estimate of reserves and of the ultimate wellhead price of gas. The article later said that Northern will ask the F.P.C. for permission to incorporate the purchase price in its rate base. You can bet that the F.P.C. will require submittal of a detailed reserves estimate and cash flow stream. In short, the F.P.C. will require an appraisal.

3. Finally, the above items refute the contention of Milton Lipton and others that valuation for ad valorem property tax purposes is not feasible. If Exxon and Northern Natural Gas can do it, I can do it. In fact, I would accept the F.P.C.'s allowable addition to rate base as an excellent value indicator for gas in place at Prudhoe Bay.

Sincerely



Robert H. Paschall
Valuation Geologist and
Engineer

cc Walter Mead

AGO 530344

[illegible]

Dear Mr. [illegible]:

[illegible] I would like to list the main elements that go into oil industry decision-making [illegible] to new leases. I contend that these elements are listed in the industry's order of priority.

1. Political Climate

The political climate is now very bad in the Mid East, North Africa, and Venezuela, only fair in Canada, and good in the United States, including Alaska.

2. Promising Geological Structures

No one will bid unless the geology is promising. If it is promising, it is hard to beat people off with a stick, as the money laid out for the 24th lease sale showed.

3. Availability of Money to Bid

Availability of money depends on the financial status of individual companies and on the money market, that is, on the amount of funds on hand for lending and the interest rate charged for those funds.

4. Availability of Pipeline or of Tanker Transportation

This problem is a familiar one to Alaskans, and needs no comment.

5. Availability of Drilling Rigs

The high costs of preparing rigs for Alaska operations and of shipping them makes rig availability especially important in your state.

6. Future Expenses

These expenses fall into three major categories: drilling and other development costs, oil and gas production costs, and royalty and taxes.

I hope that these comments are useful in putting the role of an [illegible] [illegible] into perspective.

Sincerely,

Robert H. Paschall
Consulting Valuation Geologist
and Engineer

cc Senator Chancy Croft
Senator John Huber
Representative Steven Cowper

AGO 530346

460 Love[illegible] Way
Sacramento CA 95819
14 April 1975

The Honorable Sterling Gallagher
Commissioner of Revenue
Department of Revenue
Pouch SA
Juneau Alaska 99811

Dear Mr. Gallagher:

As you know, legislation presently pending in Juneau contemplates an ad valorem property tax on oil and gas leasehold interests. Mr. Gerald Heier, Director of your Department's Property Tax Division, has testified that, in his opinion, Alaska should employ an outside consultant to appraise your state's oil and gas fields should a property tax be enacted. This letter constitutes my expression of interest in being that consultant.

I have had the opportunity to visit Alaska four times in the past year and a half, in all instances either to work on the appraisal of the Prudhoe Bay field or to testify before your legislature on oil and gas property taxation. My qualifications are stated on the attached professional resume.

Here is the job that I would do annually for your Department and the Property Tax Division for a fee of $40,000 plus a maximum of $5,000 in recorded travel and other expenses:

1. Employing standard evaluation practice, derive a total property value for each field.

2. Write a narrative appraisal report which contains the reasons for each consequential judgment that was made in valuing each field.

3. Allocate the total property value to each ownership, lease block, or other legal or geographic category required to be in accord with the task of oil and gas field equipment assessment that is presently done by your Property Tax Division.

I will remark in closing that I had the pleasure of conferring recently in Juneau with both Gerald Heier and with Frederick Boetsch, Deputy Commissioner of Revenue. They are in a position to confirm my stated ability to do the required job for your Department and to deal on your behalf with other governmental agencies and with industry.

Sincerely,

Robert H. Paschall
Consulting Valuation Geologist
and Engineer

cc Frederick P. Boetsch
Gerald D. Heier

bcc Senator John Huber
Representative Steven Cowper

AGO 530347

PROFESSIONAL RESUME OF

ROBERT H. PASCHALL

with special reference to the valuation of oil and gas properties for tax purposes

EDUCATION AND EXPERIENCE

B.A. and graduate work in geology, UCLA and Oregon State University

Twenty years in onshore and offshore oil and gas reserves estimation and exploration in California; last position was Senior Geologist, Signal Oil and Gas Company.

Twelve and one-half years (to present) as Senior Petroleum and Mining Appraisal Engineer and Principal Property Appraiser, State Board of Equalization, Sacramento.

Editor and principal author, Assessors Handbook 566, Valuation of Oil and Gas Producing Properties (for ad valorem tax purposes), State Board of Equalization, Sacramento, 1966 (265 pages).

Have appraised oil and gas properties for tax purposes in 15 California counties plus the North Slope of Alaska, 1963-74.

Lecturer on "Valuation of an Oil Property" at three-day seminar in 1971 on "Valuation of Oil and Mineral Rights" in Phoenix, Arizona, sponsored by the International Association of Assessing Officers and Arizona State University.

Panelist in 1974 at two-day seminar on "Oil in California" sponsored by California State Assembly Science and Technology Council, speaking on estimation of oil reserves and taxation of oil properties.

Have served as technical advisor to legislatures of both Alaska and California on taxation and other matters relating to the oil industry.

Have been guest speaker on oil and gas properties taxation at meetings of county assessors, the Society of Petroleum Engineers, the Society of Petroleum Accountants, and other organizations.

PROFESSIONAL LICENSES AND MEMBERSHIPS

Registered Geologist, State of California (Certif. No. 8)
Registered Petroleum Engineer, State of California (Certif. No. 537)
Member, Amer. Assoc. of Petroleum Geologists
Member, Amer. Inst. of Professional Geologists
Senior Member, American Society of Appraisers
Member, International Assoc. of Assessing Officers

AGO 530348

460 Lovella Way
Sacramento CA 95819
30 March 1975

Senator John Huber
Special Committee on Taxation and Revenue
Pouch V
Juneau Alaska 99811

Dear Senator Huber:

This letter carries my comments on Milton Lipton's testimony before your committee on February 12. My aim is to highlight those topics on which I dissent from Mr. Lipton, and other topics whose treatment I find puzzling.

A. THREE SOURCES OF OIL INDUSTRY REVENUE (p. 2-3)

1. Bonuses and Royalty Payments

These two sources are combined, but I suggest that they should not be. Lease-sale bonuses are commonly viewed by industry as "hunting licenses," and have often been paid, as you know, where no production is ever established and no royalties are ever paid.

2. Severance and Ad Valorem Taxes

Both of these are called "...taxes on on-going operations divorced either from industry's expectations or their actual profitability." This definition does not apply to ad valorem taxation. "Ad valorem" means "according to value," and the value of an oil property reflects its anticipated future profitability. The more profit, the higher the value.

3. Tax Keyed to Actual Profitability

I have no dissent here to what I presume is an income tax, although that term is not used. It is interesting to note that Mr. Lipton says

> "...for oil in particular this would have to be the major source of revenue which the State of Alaska or any state can expect to obtain..."

Actually, in California the local ad valorem tax on oil and gas exceeds the State income tax. That is the case because of the effects of depreciation and depletion in limiting income tax liability.

B. A PECULIAR STATEMENT ON BONUS BIDS (p. 3)

Referring to bids on leases, Mr. Lipton says:

> "...(it) is a flow of revenue which the industry voluntarily undertakes to contribute...

AGO 530349

The phrase "voluntary contribution of the industry in its bidding" is later used on the same page.

I find this language rather unusual, and misleading as well. A lease bid is voluntary in the sense that most capital outlays are voluntary, but is is hardly a "contribution." It has something of the risk of buying a speculative stock that is not presently yielding a dividend. Voluntary, yes, but not an act of charity.

C. COMMENTS ON INCOME TAXATION (p. 8-9)

I am fairly well-acquainted with oil and gas income taxation, but Mr. Lipton's statements are hard to follow. My feeling is that he has made it sound more complicated than it really is. Why not simply propose to parallel Federal law, as is done in California and I am sure in other states as well?

He indicates that a problem may exist in computing depreciation:

> "You will have to think through the basic problems of how recovery of capital is handled."

I suggest thatthis is not a problem. Federal income tax guidelines exist for the allowable depreciation on oilfield machinery and equipment, and it must be established for each property. Why should Alaska have to work out its own system?

He does go on to say

> "These problems...have been handled in other jurisdictions."

It might have been better to say this in the first place.

D. COMMENTS ON AD VALOREM TAXATION (p. 14)

Mr. Lipton engages here in some remarks that absolutely astound me, because they reveal such a very large gap in his knowledge of ad valorem taxation of oil and gas properties (and of other properties, for that matter). He says

> "To estimate the value of oil or gas in place is an exercise in futility. No one really knows the value, even if you know how much oil and gas reserves there are..."

Of course, no one really knows the value of anything. We must settle for an estimate or an opinion of value, whether of an oil field or an oil refinery or a diamond ring. But estimates of value are not the province of just the tax assessor. The oil industry itself buys and sells oil and gas properties all over the United States. And the manager of a property acquisition department would be ill-advised to tell his boss that it is an exercise in futility to estimate the value of oil and gas reserves.

AGO 530350

Mr. Lipton says that

> "(In California the assessor does not really) determine what the value of the underlying reserves are, as it is a notional (nominal?) thing which brings a certain amount of municipal revenue."

Wrong, completely wrong. The California constitutional goal is fair market value for <u>all</u> properties, andhas been for 100 years. Granted, some lively debates occur here over oil property values, but no more so-- probably less so-- than over the values of industrial and commercial properties. That is the case,of course, because fair market value must be estimated for any type of property, and one can always argue over estimates. As to California's having only a"nominal" value (if that is indeed the right word near the bottom of page 14), the total value in 1974 of all oil and gas fields here was about $4.7 billion. Hardly nominal.

E. <u>SEVERANCE TAXATION (p. 15)</u>

I am somewhat puzzled by Mr. Lipton's statement that, in the future,

> "...the severance tax is going to be adjusted undoubtedly in the light of what seems to be the <u>value</u> of the reserves." (underlining added)

This may have been only a slip of the tongue, although it is stated twice. I presume he is really referring to oil and gas prices and gross income, because a value determination is not necessary in administering a severance tax.

....

I would also like to comment on a statement of Mr. Lipton's made before the Senate Resources Committee on February 14 on the prospective sale of future royalties from natural gas. He rejected the idea of selling oil royalties for the good reason that the income would be discounted so heavily. However, he then stated that a public utility, which would be the logical purchaser of the gas royalties, would not engage in such heavy discounting because it could always incorporate the cost in either its rate base or its operating expenses.

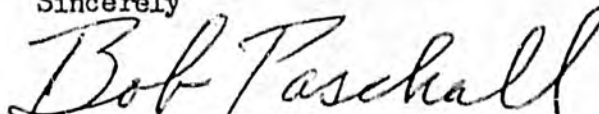
I suggest that this is a dangerous assumption. The FPC and public utilities commissions are generally insistent that incurred costs are fair and reasonable. The FPC might take the stand that a utility paid too much, so that its customers are put in the position of subsidizing Alaska's tax deficit. And the excess cost might be disallowed.

AGO 530351

The prospect is that a utility which might purchase Alaska gas royalties would consider this matter in advance, and even seek an FPC opinion. If the FPC proposed to disallow the purchase without adequate discounting, it means that the sale of gas royalties would be no more favorable an action than the sale of oil royalties, from Alaska's standpoint.

You may wonder why I dare to comment on this issue. It happens that I have written a book on the valuation of utility water companies, and teach a course on that subject annually. Also, I once briefly held the position of Supervising Utilities Valuation Analyst, and now own stocks in a half-dozen public utilities. In the course of this activity I have become fairly familiar with rate base computation, at least as it is practiced in California.

Sincerely



Robert H. Paschall
Consulting Valuation Geologist
and Engineer

cc Dr. Walter Mead

AGO 530352

460 Lovella Way
Sacramento CA 95819
27 March 1975

Senator John Huber
Senate Committee on Taxation and Revenue
Pouch V
Juneau Alaska 99811

Dear John:

The intent of this letter is to comment on the statements made by Jacob Adams and Thomas Kelly on behalf of the native corporations at the March 20 hearing of the Senate Resources Committe. My remarks are directed at areas of ambiguity or inaccuracy, especially in regard to oil property valuation and prospective methods of raising revenue. The Native Claims Settlement Act is a legal issue outside my province.

Mr. Adams commented at length on a gas discovery that has been made on an 18,000-acre lease. He stated that the U.S. Geological survey has estimated the proven reserves to be 213 billion cubic feet. He then said that a prospective wellhead gas price of 50 cents per MCF would produce a value of $106 million, from which a 20-mill levy would extract an ad valorem tax of $2.1 million.

Mr. Adams' conclusion betrays a serious lack of understanding of the relationship between gross income and value. His stated premise would yield an ultimate gross income of $106 million, but this income falls far short of value for these reasons: (1) field development costs plus production costs over the life of the field must be subtracted to obtain net income, and (2) the net income will be spread out over many years' time, so its present value is far less than its total future amount. For example: no one in his right mind would pay $1,000 now for the privilege of getting $1,000 back ten years from now. If an investor wanted a mere 8 percent on his investment, he would pay only $463 now for the privilege of receiving that $1,000 a decade from now.

Here is a specific Alaska field example. I appraised Prudhoe Bay as of January 1973 at a value of $4.8 billion, yet the anticipated future gross income from the field at that time was $35 billion. My appraised value, then, was only 14 percent of future gross income.

If we apply that fraction to the gas discovery cited by Mr. Adams, a value of $14.8 million is indicated, instead of $106 million. Such an application is imprecise, but it serves to illustrate the degree to which he overestimated the prospective ad valorem tax. If the native corporation's net profits interest was taxable (which apparently no one intends), that interest would now be worth no more than about 30 percent of the total value, and the tax liability would be about $89,000, not Mr. Adams' stated $2.1 million.

AGO 530353

Mr. Adams next suggested six methods of raising revenue that he said might serve as alternatives to ad valorem taxation. It was difficult to follow all of his suggestions because, although they dealt with complex issues, the details for implementing them were in rather short supply. However, I believe that it is important to cite four of these methods for this reason: they all call for the state's selling future income to get present income, and discounting the future income in the process. Here are those methods as I understood Mr. Adams to state them.

ABC financing of oil royalties: the ABC technique was devised as a method of selling oil and gas properties with minimum income tax impact on the buyer. IRS regulations have changed its once-favorable status in that regard, but that is not important here. What is important is the fact that an ABC transaction depends on the sale of a producing property, and a sale requires the discounting of future income. The discount rate is set by the buyer and the lending institution (since a loan is implicit in the transaction), and it is typically substantial. In short, the state would now get many fewer dollars than it would get in future royalties if it did not engage in an ABC sale.

The other three methods proposed by Mr. Adams would have the same net effect on state revenues as the one just discussed. Those methods were: the advance collection of severance taxes, a purchase-option on state royalty oil to be sold to a public utility, and the advance sale of royalty income. Mr. Adams called the last "the least advisable at this time," but I find it hard to choose between the four, because they all carry the prospect of severe discounting of future state income that is presently assured <u>without</u> discounting.

I have no comments on the other two methods proposed for raising revenue. They were Arlon Tussing's proposal to issue revenue bonds and the proposal that a state lease sale be held.

Mr. Kelly then made two statements that I believe call for a response. Paraphrasing him as nearly as possible, he said that the discoverer of an oil field will not develop his discovery "if he doesn't have a market" for fear that he will be subjected to ad valorem taxation on the developed value (prior to production). I am rather startled at this statement because, as I recall, Mr. Kelly has considerable knowledge of the oil industry. What is the prospect that no market will exist for an oil discovery in Alaska? I will grant that it is not possible to find a case of zero risk in industrial economics, but we must be approaching it when we consider the risk of finding a market for crude oil from a new American oil field.

But that is not the most critical issue. Actually, the ad valorem taxation of oil properties has been criticized because it <u>accelerated</u> development and production. This is the case because no one wants to sit on an oil field of known value (however modest) and pay ad valorem taxes out of other income when he can start producing and pay taxes

AGO 530354

out of income from the property. So, contrary to Mr. Kelly's conclusion, ad valorem taxation is apt to spur development rather than impede it.

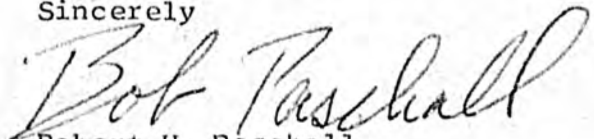
Mr. Kelly also stated that the imposition of an ad valorem tax would make Federal OCS lands more appealling because of their exemption from state taxation, and that oil operators would therefore place a higher priority on acquiring and developing Federal leases. I suggest that this conclusion is incorrect for several reasons. The overriding one is that the appeal of prospective oil lands, no matter what the ownership or taxation, is dictated primarily by the geological odds; if the geology is favorable, people will bid, and if it is not, they will not. Also, taxes are only part of the cost of doing business, and therefore only part of the decision-making process; in the case at hand, Federal lands will be so much more expensive to explore and develop that those costs will far outweigh tax considerations.

In addition, the proposed five-year period of grace following discovery eases the impact of state ad valorem taxes. And finally, of course, state lands would not be ignored in favor of Federal lands. Instead, the bonus bids for state lands would simply be tempered to take account of the prospective ad valorem tax prior to the commencement of production.

How much would industry temper its bonus bids because of prospective ad valorem taxes? I suggest that it will not be very much; if you would like me to do so, I will quantify it for a typical case. But the multiple aspects of the five-year grace period, the time-deferred cost of the tax, and the much greater burden of exploration and development costs suggest that it will not be as serious an issue as Mr. Kelly implied.

In my next letter I will comment on Milton Lipton's testimony.

Sincerely



Robert H. Paschall
Consulting Valuation Geologist
and Engineer

cc Dr. Walter Mead

AGO 530355

460 Lovella Way
Sacramento CA 95819
23 March 1975

Senator John Huber
Special Committee on Taxation and Revenue
Pouch V
Juneau Alaska 99811

Dear John:

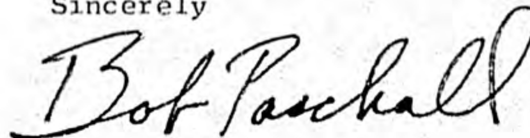
Three of the four bills that you have sent me say in the first paragraph:

> "except as provided in Section 15 of this chapter."

The underlining is included, indicating it is a proposed addition to current law. My problem is this: Section 15 itself is not included in any of the bills. Would you be so good as to send me a copy of Section 15?

Another thing: I just came across a Pritchard and Abbott advertising folder that Jerry Heier once gave me. It confirms what I had in mind when I spoke to you about the firm on the telephone. P & A have a heading on their folder saying "Industrial Evaluations." The list a broad array of manufacturing plants that they have appraised. But they do not hold themselves out to be petroleum geologists or petroleum engineers. That is, at no point do they list "oil and gas fields" or "oil and gas reserves" as one of the property types in which they have appraisal experience and expertise.

Sincerely



Robert H. Paschall

AGO 530356

460 Lovella Way
Sacramento CA 95819
23 March 1975

Senator John Huber
Special Committee on Taxation and Revenue
Pouch V
Juneau Alaska 99811

Dear John:

I have just been studying the unnumbered House Bill authored by Cowper that you sent to me on March 12. The bill contains many cases of wording whose clarity or precision can be greatly improved by using instead the language in the Governor's bill. But these things are minor compared to the serious problems posed by the combined effect of paragraphs (c), (d), and (e) of Section 43.56.015. I speak now as a tax administrator. It is not at all evident how this bill would provide for administration of oil and gas taxes in all cases. Let's look at the three paragraphs in terms of a fictitious oil property.

In the most recent year this property produced an average of 500 barrels a day of $6.00 oil from one well. It is appraised for ad valorem tax purposes at $2,000,000, and a 20-mill levy yields an ad valorem tax of $40,000. However, its gross production tax (under the terms of AS Chapter 55) comes to $41,610. How do we equate this situation with the terms of the proposed bill?

Paragraph (c) is common to your bill and to HB 102, and by itself is no problem. In the case at hand there would be no ad valorem tax liability, since the gross production tax is greater. Note, though, that it is necessary to value the property and to compute the ad valorem tax in order to determine whether paragraph (c) is applicable.

Paragraph (d) is, <u>in part</u>, the other side of the coin of paragraph (c). It says that the gross production tax "actually paid" shall serve as an offset to the ad valorem tax when the latter is greater. But it then adds "...after the subtraction of the credit allowable under (e) of this section."

It is paragraph (e) that is the problem. It begins by saying that

> "Tax paid under (a) of this section <u>may</u> be used as a credit against gross production tax..."

The underlining is added. Who determines whether it "may" be used as a credit? This is an awfully big "may," and leaves room for all sorts of later dissension. But a problem would exist even if the "may" was changed to "shall."

AGO 530357

As noted, paragraph (e) turns things around and says that the ad valorem tax "may" be used as a credit against the gross production tax "...not to exceed 50 percent of the gross production tax due." That is, where paragraph (d) sets up the gross production tax as an offset to the ad valorem tax, paragraph (e) does the opposite. What would the effect of (e) be on the example that I proposed above?

Let's assume that someone decides to allow the ad valorem tax as a credit against the gross production tax "in subsequent years." What does "subsequent years" mean? Any year from now on, even beyond the year 1982 in which the proposed tax terminates? That is, could any ad valorem tax payment serve as an offset against any future gross production tax? The bill does not say.

Another thing: paragraph (e) refers to "(the ad valorem) tax paid under (a) of this section..." But (c) provides that no ad valorem tax is paid if the gross production tax exceeds the computed ad valorem tax. As a result, the phrases "gross production tax due" and "ad valorem tax paid" are completely at odds with one another here, because of the earlier terms of paragraphs (c) and (d).

I find it impossible to make a tax computation for my above example based on paragraph (e). Why did the author not write a paragraph (c) that said simply

> "Producing oil or gas leases or ownership interests in proven oil and gas reserves shall pay either a tax based on value or the gross production tax, whichever is greater.."

and forget about paragraphs (d) and (e)?

I hope that you will find these comments useful.

Sincerely

Bob Paschall

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