PUBLIC HEARING

WELL REVIEW BOARD

and

VIRGINIA OIL AND GAS CONSERVATION COMMISSION

JANUARY 5, 1983
ABINGDON, VIRGINIA

WELL REVIEW BOARD

PRESENT WERE:

Azie Morton, Commissioner
Department of Labor & Industry

John Purcell, Assistant Attorney General

Harry D. Childress, Chairman
Chief Mine Inspector

Olin Prather, Oil and Gas Industry

Ralph Gunter, Public Member

H. Richard Chew, Attorney

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VIRGINIA OIL AND GAS CONSERVATION COMMISSION

PRESENT WERE:

John M. Goldsmith, Jr., Chairman

Robert Clyde Whisonant, Geologist

Russell G. Wayland, Professional Geologist

PUBLIC SPEAKERS

Frank C. Bedell, Associate Director
Virginia Petroleum Council

Blaine Carter, President
Virginia Coal Association

Donald Johnson, Coal Industry Member
Legal-Technical Committee

Jerry Borrelli, Chief Engineer (Gerald Borrelli)
Pittston Coal Group

John L. Snyder, Representative
Columbia Gas Transmission Corp.

John D. Cale, Manager, Civil Engineering
Columbia Gas Transmission Corp.

Charles Bartlett, President
Bartlett Energy Exploration

Glen Phillips, Representative
ARN Coal Company

Bill Kelly, Vice President
Coal Resources, Oil and Gas

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Azie Morton

My name is Azie Morton and I'm the commissioner of the Department of Labor and Industry in Richmond. I want to welcome all of you here for this hearing. I would like to introduce you to the members of the Oil and Gas Conservation Commission and also the Well Review Board, as well as introduce to you John Purcell from the Attorney General's Office who will make some remarks as well. To my left, not to my immediate left, is the chairman of the Oil and Gas Conservation Commission, John Goldsmith. Next to John...I get Russ and John mixed up, one is Russell Wayland and the other one is Robert Whisonant. The Well Review Board is to my right, and it is chaired by the chief mine inspector, Harry Childress, who is an employee of the Department of Labor and Industry. Next to Mr. Childress is Mr. Olin Prather from the Oil and Gas Industry as most of you probably know him; next to him is Mr. Richard Chew, an attorney from Arlington, Virginia, a public member; and Mr. Ralph Gunter also a public member

Azie Morton whom you all probably know. The procedure we're going to take is, since I don't have a list of you who wish to speak before this group, I'd like you to, as I know that you want to be heard, give your name and the company or organization you're with so that it can go into the record. If you have materials you wish to be entered into the record, we will accept that; if you want to read a statement, that will be fine. Take however long it takes. I would hope you would allow questions and answers from the members of the Commission and also the Well Review Board. There will be passed around in a few minutes a list which I would appreciate all of you please signing your names and address so that we can send you all of the materials that come, not only from this proceeding, but also anything from the oil and gas activity. Before we begin with the first person to speak, I would like to introduce John Purcell from the Attorney General's Office. After he speaks, if there are members of either the Well Review Board

Azie Morton or The Commission that would like to make some comments we will entertain those as well. John?

John Purcell Thank you, Ms. Morton. I'm the assistant Attorney General currently assigned to the Department of Labor and Industry and to these two, to this Board and this Commission. I wanted to introduce, however, a new attorney we're going to have on board here in this southwest office who, I hope, you will all get to know. The purpose of establishing the Southwest Office was to provide an assistant attorney general to help serve the needs of the coal and oil industries and mine reclamation in that general area. If Tim Gresham would stand, I'd like for you to know who he is and know that his office is right here. If you have questions of a local nature or if you want to see someone from the Attorney General's Office, he will be right here to help all of you. I hope all of you from industry and the rest will make yourselves known to Tim and come up and introduce yourself to him some time

John Purcell during the day.

Azie Morton Thanks, John. John, would you like to make any comments about those documents, its origin, its worthiness, or nothing at all at this point?

John Goldsmith I didn't know I was going to have to speak so soon.

Azie Morton You don't have to.

John Goldsmith You should have warned me. No, I think the document is a product of an attempt to duplicate the same process that produced the Act, and that was a Committee effort. They're an open group of people who's interests were either the State in seeing an efficient process; and operators, the same thing, and the Farm Bureau is invited to joing; but I think the message that we want to deliver today is that this is not a perfect document in that there are problems with it that I had. And our attempt is to devise a fair and efficient process as fast as we can so we can have this in place for drilling by the drilling season of 1983. I want to assure you from the Commission's respective

John Goldsmith and from everyone who's here, you know, don't hold back. There is no one here with "thin skin" and the sooner we find out the mistakes or inequities in this the better off we'll all be.

Azie Morton Thank you. Is there any other comments from members of the Commission or the Well Review Board? Don't all of you hold up your hands at once, but whoever is first on the front row that wants to speak, please come forward.

Frank Bedell Thank you very much, Commissioner Morton, members of the Oil and Gas Conservation Commission, members of the Well Review Board, Mr. Purcell, Chief Childress, and Inspector Fulmer. I'm Frank Bedell, Associate Director of the Virginia Petroleum Council, a Division of the American Petroleum Institute. The Virginia Petroleum Council has offices located at 1809 Staples Mill Road in Richmond. First, I would like to say the Virginia Petroleum Council appreciates the opportunity to comment on the proposed regulations that are the subject of this

Frank Bedell hearing. We wish to commend the Oil and Gas Conservation Commission, the Well Review Board, and the Chief of the Division of Mines for their expeditious work in preparing the regulations for this hearing. We appreciate their efforts to get the regulations in place in time for the 1983 drilling season. I have copies of my comments; I will pass those over so that you may follow along with me.

(Frank Bedell's exhibit follows--
next three pages)

Frank Bedell.

Statement given by Frank C. Bedell,
Associate Director, Virginia Petroleum Council,
at public hearing on the proposed Regulations
for Conservation of Oil and Coal Resources and
Well Spacing at 10 A.M. on Wednesday, January 5, 1983
in Abingdon, Virginia

Virginia Petroleum Council appreciates the opportunity to comment on the proposed regulations that are the subject of this hearing. Virginia Petroleum Council is a division of the American Petroleum Institute. Virginia Petroleum Council's offices are located at 1809 Staples Mill Road in Richmond.

We wish to commend the Oil and Gas Conservation Commission, the Well Review Board, and the Chief of the Division of Mines for their expeditious work in preparing the regulations for this hearing. We appreciate their efforts to get the regulations in place in time for the 1983 drilling season.

In general, we believe that the proposed regulations fairly complement the new state Oil and Gas Act and would, if adopted, provide a satisfactory regulatory framework for oil and gas operations in Virginia at this stage of their development. However, we have a few recommendations which we believe would improve the effectiveness and enforceability of the regulations.

In Regulation 2.02(c)(1) Notice of completion of a well; setting of allowables, beginning on page 7, we believe that the requirement for submitting a well completion report within three days is illogical and the implication that a test report must be filed within seven days of completion is neither specific enough nor flexible enough. It is common practice in other producing states to require the submission of both reports concurrently within 15 days of testing. The rationale for requiring the reports to be filed simutaneously is that it is only after testing has been done that the key question on the completion report can be answered: "Is the well capable of producing oil or gas?" (See From 15) Broad experience of our member companies indicates that 15 days is about the minimum in which an integrated company can conduct tests, analyze data, and submit meaningful reports. In addition, the language of the paragraph seems to make the presumption that all wells are capable of some production, in that it calls for testing of all wells, making no allowance for dry holes. For the above reasons, we recommend that 2.02(c)(1) be amended as follows:

Page 8, Line 3 -- delete within three days
Page 8, Line 5 -- after unit, insert If the well appears to be capable of producing oil or gas, (t) he...
Page 8, Line 7 -- delete seven and insert ten
Page 8, Line 12 -- after unit., insert The well operator shall file and distribute Form 15 and Form 16, if applicable, in the manner prescribed herein within fifteen days from the date of the test, or, if no test is made, shall file and distribute Form 15 within fifteen days of completion of the well.

If the regulations were amended in accordance with the above recommendation, the problem of the meaning of the words "timely file" in paragraph 2.02(c)(3) would be eliminated. The words "timely file" (on page 8, last line) would then obviously apply to the fifteen day periods specified in 2.02(c)(1). Otherwise, the words "timely file" could present future problems, if left in their present condition of vagueness.

In 2.02(c)(2), the language beginning on page 9, line 26 implies that the Inspector is required to conduct any retest himself. Although I am personally certain that such an implication is not intended, in order to clarify the matter for the general reader of the regulations, we recommend the following changes:

Page 9, Line 26 -- after upon insert the
Page 9, Line 27 -- after retesting insert of

Several of our member companies have reported to us that the language in 2.02(g) Metering of oil production; sealing., does not conform to up-to-date industry practice for measuring oil production. Use of Lease Automatic Custody Transfer (LACT), a technology which has been employed widely and successfully for several years, has proven to be accurate, dependable, and cost-effective. It involves use of other equipment, as well as tanks, to measure oil production. A guide for design, installation, callibration, and operation of Lease Automatic Custody Transfer systems may be found in the API Manual of Petroleum Measurement Standards, 1981, Chapter 6.1, LACT systems, which is identical to the American National Standards Institute's ANSI std. Z 11.249-1969. We would hate to see the Virginia regulations prohibit a well-established practice that is broadly accepted in other areas by producers, purchasers, and royalty owners. For the above reasons, we recommend that the last two sentences of 2.02(g)(1) on page 10 be deleted and the following language inserted:

In no case shall meters be the sole means of metering oil from a lease, unless such metering operation is conducted in accordance with API Manual of Petroleum Measurement Standards, 1981, Chapter 6.1, LACT systems. Use of a guage tank to check the readings of meters is permissible, if agreed to by the parties involved.

In paragraph 2.03(b), the requirement for the operator to furnish the Commission a copy of the unit operating agreement could create a legal problem, since in many cases there may not be an operating agreement. For example, if the operator has under lease all the land proposed to be included in the unit, there would certainly be no operating agreement. Also if the other lease holders or landowners proposed for inclusion in the unit had declined to participate in drilling the well, there would again be no operating agreement. To avoid the creation of a possible unintended legal obstacle to establishing drilling units, we recommend the following changes:

Page 14, Line 21 -- after agreement insert , if any,

In Regulation 3.02(f) Applications involving waste disposal wells., the term "fresh water", which appears on page 18, line 27 and on page 19, lines 1 and 2, is undefined. Since the regulation relates to underground injection, and underground injection control is governed by the federal Safe Drinking Water Act, we believe that it would be preferable to substitute the term used in the act "underground source of drinking water" (USDW) for the term "fresh water". USDW is defined in 40 CFR Part 122. It means something slightly different from the normally accepted definition of fresh water. The thrust of the Safe Drinking Water Act, as it applies to underground injection control, is for the protection of USDW's. Therefore, we recommend the following changes:

Page 18, Line 27 -- delete fresh water strata and insert strata containing an underground source of drinking water

Page 19, Lines 1 and 2 -- delete fresh water strata and insert strata containing an underground source of drinking water

Page 19, Line 2 -- delete fresh water and insert underground source of drinking water

In Regulation 3.04 Well plats., paragraph 3.04(a)(2), we strongly favor ALTERNATE B. ALTERNATE A would add greatly to the cost of surveying and would contribute nothing to the accuracy of the subject well location. Another drawback of ALTERNATE A would be that eventually the same wells would show up on a number of plats and create the additional surveying costs for several operators, redundantly surveying the same well. The burdensome additional expense, the lack of necessity for the information obtained, and the strong likelihood of redundancy, seem to us to militate forcefully against ALTERNATE A and make ALTERNATE B a clear-cut preference.

The same objections apply to the language in ALTERNATE A for paragraph 3.04(a)(1) Accuracy., on page 21, lines 6, 7 and 8. -- "... and all wells located 2,500 feet or less from the subject well ..." In our opinion, either the language should be deleted from ALTERNATE A, or ALTERNATE B should be adopted. We also support ALTERNATE B on page 24 as opposed to ALTERNATE A on page 23 for paragraph 3.04(a)(6), since ALTERNATE B seems to us to be more reasonable for the principal oil and gas operators now drilling in Virginia.

Regulation 6.05 Reporting of oil and gas production and transportation. requires reports by the 15th day of the following month in 6.05(a)(3) and 6.05(b)(2). If an operator has several wells in different fields involving different purchasers, he will almost certainly find the 15th day time frame impossibly short. Our member companies believe that under such circumstances additional time would be necessary to make the required aggregations at the end of the month and to check the results before making the reports. To allow less time would be to invite errors. Many other producing states allow at least 25 days for reporting. A quick check shows that Louisiana and Florida set the 25th as the reporting date, and Alabama uses the 28th. For the above reasons, we recommend changes as follows:

Page 46, Line 10 -- delete 15th and insert 25th

Page 46, Line 25 -- delete 15th and insert 25th

In addition to the above substantive matters, we have noted a few typographical errors that need to be corrected:

Page 12, Line 5 -- delete 5.05(b) and insert 6.05(b)

Page 25, Line 19 -- delete is

Page 42, Lines 15, 16 and 17 -- delete redundant language such well surface pressures are anticipated to be present at the well site;

Page 42, Lines 18 and 19 -- delete redundant language where there is no prior knowledge of the kinds of well drilling in an area

Page 43, Line 15 -- delete Annual and insert Annular

Virginia Petroleum Council would like to take this opportunity to pledge our cooperation with the Commission, the Board, and the Chief in any way we can be of service. We appreciate your consideration of our comments.

Azie Morton Thank you. Are there questions of Mr. Bedell from any of our members?

Richard Chew Which is the broader term "fresh water" or "drinking water"?

Frank Bedell Well, "fresh water" may be broader, but USDW is more specific and relates to the language in the Federal Act which will govern underground injection control regulations in Virginia if Virginia is granted promisory to regulate that aspect.

Olin Prather Frank, would you care to elaborate just a little bit, please, on the use of guage tanks to check the readings of meters in LACT. Is that after it's gone through LACT, or is that periodically testing?

Frank Bedell Oh, I think your point, if I understand, Mr. Prather, is that a guage tank is involved in a LACT system. In the LACT system, the normal proving is done automatically by means of meter provers. There are guage tanks available and in most LACT systems the purchaser reserves the right to do physical measurement periodically but it may only be a 30-day check instead

Frank Bedell of a daily check; and in the meantime, the measurements are being proven by means of other devices.

Olin Prather I was just bringing it up for you to elaborate on it for the rest of the people on the Commission. Thank you.

John Goldsmith I'm very glad you did, Mr. Prather. I think what I'd like to do is ask some questions if I might, Ms. Morton, starting from the beginning of your comments. Your first comment dealt with "Notice of Completion of the Wells" in paragraph 2.02 (c) starting on page 7. To me, there were four issues there starting with the question of when to file, and the method of filing whether by mail or by actual receipt. You raised the question of changing it from three (3) days and extending it to fifteen (15); the question of concurrent filing, and if we did it concurrently, why do we need two (2) forms. You know, if you combine 15 and 16, you know, if we chose to file concurrently. The issue of the fifteen (15) days sliding, you know, has been approved; but also you

John Goldsmith talked about "timely filing". Something we've left out there is the question of a penalty for the lack of timely filing. This was brought up in some comments furnished us by the Division of Mineral Resources where the last sentence on page 8 reads: "If the well operator does not timely file, the the date of the well allowable should be effective only from the date they are filed". I think my concern is; the way this is written, you could just sort of let it go on forever.

Frank Bedell If I can respond and remember all the points to the question, in the first place I think we need the separate forms because if you have a dry hole then obviously you will not do a test and then you would only file Form 15. The present language implies that you would file Form 16 in either case. Of course, if you have an obvious dry hole, you would not test it and it would be no need to file Form 16. That is just a matter of logic stringing out there.

John Goldsmith But you could put them all on one piece of

John Goldsmith paper though, couldn't you? and...

Frank Bedell I suppose that is possible, but not standard. Almost every other state that I know of, well, every state that I know of has two separate forms, but...

John Goldsmith I don't want to take all these folks' time up with that, but I do want the issue of putting some teeth into the filing requirement.

Frank Bedell Mr. Chairman, I would respond that the penalty is already built in. The penalty is that you cannot produce that well until you have filed your report and received an allowable. Our concern is what the definition of "timely filed" would be, because that starts the clock on your peoples' determination of what the allowable should be if an operator is late filing those reports. Obviously, it's going to take you more time to examine the reports and set an allowable and until you do so he cannot produce that well.

John Goldsmith Okay. Mr. Fulmer, when this was first drafted, this section, who came up with the

John Goldsmith three (3) days for the initial Form 15 and the seven (7) days for the conducting of the oil/gas ratio? Is that in the old Regs?

Tom Fulmer No, that was all done, of course, the old Regs didn't have any conservation. That was done through the Joint Committee.

John Goldsmith Well, let me, the next thing I want to bring up here on the second page is the metering problem. Ah, does anybody else here while we're on the issue, if Ms. Morton doesn't mind me massaging issues as we come to them, I tend to forget things....

Azie Morton Go ahead.

John Goldsmith The metering that we have now in the Regulations that were written, we're referring here sporatically to the ICC and the Bureau of Mines Publications and the Open and Flow Testing over on page 12. Ah, I'm sort of, I would like to see, and maybe this is something private, maybe not private but something internally with the Commission's staff deliberation internally. I'm not a technician or a petroleum engineer,

John Goldsmith and this is now the third reference to a formal document prescribing metering standards and/or testing methods. I'm not sure of the plusses and minusses of either method, and I think before we adopt this finally I would like to see an explanation to an old history measure on what this means.

Frank Bedell Right. In our earlier draft, we referenced a different draft and I obtained some copies to give to you this morning. Meantime, day before yesterday I had a call from the Dallas Office of one of our member companies saying the reference you see here is more up to date and more specific as addressing this matter. I haven't had time to order copies, but I will certainly do that. I will furnish you copies of both documents.

John Goldsmith Okay. My third question is in the middle of the second page about deleting your requirement for an operating agreement. I think my, our, concern with that was, and I personally agree if such exists, but where

John Goldsmith you have, it says: "Also if the other lease holders or landowners proposed for inclusion in the unit and had declined to participate in drilling the well, there would again be no operating agreement". However, there has to be some basis of cost determination to determine payout. I think our term of "operating agreement" is probably too broad and there may be some better language here. But you have attempted to determine cost, the recovery of reasonable supervision. The other element of that, there has to be some document I think at this time, and this is spelled out in the Act somewhat, but maybe, is there better language than "operating agreement"?

Frank Bedell Mr. Chairman, I understand that the requirement that an "operating agreement" be submitted to the Commission has to do with the measurable responsibility of the Operator. The only reason you would have any interest in seeing an operating agreement would be (I believe) as it relates to the financial responsibility of the Operator. In other

Frank Bedell words, it's possible that an operator by himself would not have the resources to develop a unit. If there were others who were parties to the operating agreement, their combined resources might meet your financial responsibility requirements. So for that reason the requirement for the submission that the operating agreement was included in the Regulations, however, our concern is the way the language is presently worded. It is an absolute requirement and we're concerned with simply a legal technicality. If there were no operating agreement, ah, the procedure of establishing the unit could go forward and certainly that's not intended and we think should be clarified.

John Goldsmith Well, I'm not any happier with that language than you are and I think we definitely need to work on it. I think we were attempting to distinguish there between, and for anybody who wants to follow what we're talking about, it's on page 14 of the Draft Regulations and it's the last, it's 203 (b) and it's: "The Operator Shall Furnish the

John Goldsmith Commission a Copy of the Unit Operating Agreement....", and you're proposing to add the words if any "....by which the affairs of the unit will be conducted..." So I think we're going to change, to me, I think the evidence of financial responsibility, they're different documents. An operating agreement is an agreement of the affairs of which that well would be conducted is different from the evidence of financial responsibility. "Financial responsibility" being that the guy, is the obligation of the well going to be paid.

Frank Bedell Well, I think the determination that your Commission makes will settle the matters you mentioned about how each participant shares in the proceeds from the well.

John Goldsmith Well, the statute requires in Section 302 (b) that any pooling order shall provide the reasons of how the cost will be borne and everything else. I think this was an attempt for us to get the operator to show us how he is going to do that. I mean, we have a statutory requirement in our order

John Goldsmith to say that. This was an attempt to illicit that and we will certainly take that under advisement, and you know, will be glad to confer further on this at the Commission hearing where we will adopt that. But I wanted to make the point that we, I, veiw separately the document by which the financial affairs will be conducted and the document by which you determine that the operator is financially responsible. So, you know, there is definitely two pieces of paper.

Frank Bedell I agree with that, and will be glad to consult with you further on this matter.

John Goldsmith Okay. And with that I'll be quiet.

Azie Morton Any other questions? Thank you very much.

Frank Bedell Thank you, Commissioner, very much.

Azie Morton We'll continue on Row No. 1. Are there other persons on the front row who would like to come before this body? Alright, we'll go to Row No. 2 if there are no Row No. 1's. Any persons on the second row? Yes, please come forward.

Blaine Carter Commissioner Morton, Mr. Childress, my

Blaine Carter name is Blaine Carter, and I'm president of the Virginia Coal Association. Since the Act was first conceived and thought up and the work started by now Congressman Boucher, the coal industry in Virginia has been very much involved in the Act and now the Regulations. I'm not a technical person and I'm not going to get into specific details regarding the Regulations. I have two people here that have worked extensively, Jerry Borrelli and Don Johnson both have been involved and they do have some extensive comments to make regarding the Regulations. I must say that the comments they have regard only the area that is underlayed by coal. Outside the coal region we don't have any comments to make. The comments that they will be making regard mapping and surveying, and it's an area that is very important mainly to the health and safety of individuals who work in the mines. With that, I will let Mr. Johnson make some comments. I do have one, some comment that I will pass out. He has

Blaine Carter some from the Virginia Coal Association.

Donald Johnson Ms. Morton, and gentlemen, first I know what Mr. Bedell said is very true. I think anyone who worked on this oil and gas bill is proud to see these groups together today, proud that we got this far, and that we've done our work up to this point. I think what you have in front of you in terms of regulations, ah, has also taken much time and labor on the part of all the people who have worked on them up to his point. With regard to the comments of the Coal Association, I will just summarize our comments. First, let me tell you what our little book contains. It contains a letter that goes through each regulation that we wish you to look at. The second part of it contains the language that the regulations, or that we recommend to you, that the regulations contain; and then there are three sub-sections in the back that have technical information to back up our position. Jerry Borrelli will be talking with you after I get through and go over

Donald Johnson the technical data. I hope that meets with your all's approval that we do it in that order. I wanted to get up here and briefly go over with you the what and why and then let Jerry go over the technical aspects of it. I'd like to say two good friends of mine--one in the coal industry, and one in oil and gas industry--wrote an article about two years ago and that article will concern the oil and gas law in a coal state that neighbors ours. He made one statement with regard to mapping. It said "oil and gas work is all conducted from the surface by means which frequently penetrate coal. The most hazardous part of coal mining operations are all underground. Accordingly, careful mapping by both the coal operator and the oil operator are essential so that each can locate the other's operation." I made public comment when we worked on the Act and I told you and I told those that were present, that what was important to the coal industry was the safety of miners and the fact that the coal industry wanted to get

Donald Johnson its coal mined and they wanted to be able to do that in an economical way and wanted to see that our industry's rights were protected. Both of these things are important; certainly safety is the most important. Anybody in the coal industry will tell you that's got to be our chief concern because we are operating coal mines underground. People do get injured, people do get killed, and we don't wnat this to happen; and certainly we don't want this to happen in the context of any problems with the oil and gas operations. There are only a few points on well plats and operations concerning well plats and surveying that we feel need to be talked about. There are a lot of things that are already in the proposed regulations we think helps us, and we think will also help the oil and gas industry and others. The only points that we want to talk about are those points which we don't now come to any compromise on and we feel this is up to the Board to tell us which way the Board feels the

Donald Johnson Regulations should read. The first part on Well Plats and Well Accuracy which is 3.04 (a) (1). We are, of course, supporting the coal industry's position as Mr. Bedell supported the oil industry's position. With regard to the survey of all wells within 2500 ft. of the proposed well location and to see that those wells are surveyed to an accuracy standard of one part in 5000. Ah, the only dispute about this section is the adding of these extra wells to the survey requirements. The coal indsutry feels that we need to know when we look at a plat that all wells within 2500 ft. are shown on that plat so that we can rely on a plat and can make our judgments and mark our plats accordingly. What we're asking for here is that the oil and gas operator, when he finds a well within 2500 ft. of a proposed well, that he survey that well in. Now the reason for that is two-fold: first, any time you do extra surveying in locating wells, ah, you, of course, improve the safety aspect of it

Donald Johnson because there will be double checks that will result from that. Secondly, the Code provision allows the coal operator to object to any well within 2500 ft. of any proposed well. That is an absolute right under this statute and it's up to the coal operator to decide whether or not he wishes a well that is proposed within 2500 ft. in the coal region, if he wants that well there or not. If he doesn't, then he can object to that well and the Board must not issue the well permit. So it is important to the coal operator that he know where each well is within 2500 ft. Let me also say we don't believe there are going to be very many of these, but Jerry will talk to you about that. There is a spacing requirement if there is an objection that the wells must be spaced 2500 ft. apart and we feel by requiring an accurate survey of any of these wells will benefit the coal operator or the coal owner so we'll know where the well is, so that he can decide if he wishes to raise this

Donald Johnson objection. Certainly, let me say to each of you, the coal industry also gets involved in surveying. We're not trying to say to anybody that we're hoping the oil and gas will do our surveying for us. That's not one of the things we're asking for here. What we're asking for is that we have any wells within 2500 ft. tied in so that we can rely on the survey; and this of course, will benefit us in making sure that our maps are accurate. One other point on this issue is, we only have fifteen (15) days in which to decide on whether or not we want to object to this well. It's only through taking action that we can keep the well from being placed within 2500 ft. and fifteen (15) days is not a long time period in order to decide whether a well plat is accurate and to decide whether or not you want to object to the well. With regard to Permanent Points and Landmarks we feel the coal industry position should be taken on that. That's Regulation 3.04 (a) (2). We would also

Donald Johnson like to add to the coal industry proposal some extra language and you'll find that on page 4 of our report and it's underlined there:

> "....Provided that, if the well location is underlain by known coal seams identified by the Chief pursuant to §45.1-333 of the Code, the well plat will locate the well and the two (2) permanent points or landmarks with reference to the Mine Coordinate System, if one has been established for the area of the well location."

The reason why we're asking you to add this to the section is because this is what the law says. We have a fear that a well operator may only look at the Regulation and may not know that he is required if there is a Mine Coordinate System to locate his well in relation to it. This is a backup to make sure this does not slip through; but if there is a Mine Coordinate System in the area, that the mine operator will reference his points to that Mine Coordinate System. Again, we're not asking there be any changes in the law, we're only asking that this point be put

Donald Johnson in the Regulations to make sure everyone understand what the law is. Ah, with regard to Scale of Maps which is Part (a) (5), ah, we also have some language we wanted to add to that proposal to make sure it was clear that where a well plat does not show or where the well plat has so much information on it that you can't get it all within a 1/2 in. radius circle, that you need to use a larger scale plat. That's all we're asking there is to change the Regulation. You'll see our proposal in that second subsection. We're asking that that section also state that if the well, if the information cannot be shown that it's clear in the Regulation, they need to use a larger scale. The point was made to me by one of my friends in the coal industry that when you take a 500 ft. radius circle on a scale that 1" equals 2000 ft. map is only 1/2 in.. If you look at all the information you have to put within that 1/2 in. diameter circle, you can see that we need to make sure that

Donald Johnson it's clear, that we need to put the information on a larger scale. Again, this is not really a change; it's just a change in emphasis and we want to emphasize this. We're not asking that this Regulation be changed as far as its meaning. Jerry will talk to you some more about this point, but (a) (6), we would support the coal industry's position on that concerning the Surface Location of the Proposed Well. What we're trying to accomplish here is to make sure the well is drilled where the plat says the well was permitted. The performance standard, there is no dispute about that. The performance standard and the coal region that the standard calls for is within 3 ft. of the proposed well. So all we're asking for here is that a certified man, surveyor or a registered professional engineer, verify upon completion of the report, that the well is within that performance standard. That's really all we're asking is to see that a competent person that we can rely upon,

Donald Johnson and that the State can rely upon, make the certification that the well is where it's supposed to be. We're not asking for any regulation that says how this is to be done. We're saying we want a competent person to accomplish it. Section (a) (7) under Regulation 3.04 talks about Surface Elevation of the Subject Well. There we want to just simply point out that this cannot be accomplished; a one foot accuracy standard cannot be accomplished by a barametric or altimeter survey. So what you've got is a regulation which requires a certain accuracy and some of the methods mentioned in this Regulation cannot produce that accuracy. On Sub-section (a) (9) which is on Wells it talks about what needs to be shown on there with regard to wells. We would like to add the language:

> "....with the distance from each well to the well which is the subject of the application stated on the plat..."

to make clear that we know what the distance is when the surveyor gives you a

Donald Johnson plat. We would like to know the distance between the wells and I think that would be of benefit to all. Form 17--there, of course, we're also supporting the coal industry's proposal on that. That goes along with our requirements concerning certification of the well location, that it should be done by a land surveyor or a registered professional engineer. I think as for my closing comments here, I think we're getting down to some technical matters. We feel those matters are safety-related matters; they will be a help to the coal industry and people that have to work in the coal industry. We're only asking for these matters that relate directly to the coal industry. Now when we undertook to work on the statute, that was our intent. We certainly had our concern in a region where there are a lot of wells already; there are going to be more wells and there are active coal operations going on. This is what our concern is. It simply relates to what we feel the

Donald Johnson coal industry needs and the oil and gas industry needs to safely operate. That's all we're asking for here is that we get some standards which will help us to safely operate. I'm going to let Jerry Borrelli, who is chief mining engineer for the Pittston Coal Group, come up here and give you a little technical explanation. He has asked me to hold some diagrams for him. I must say I'm not a very good easel, but I'll help Jerry in any way I can. I'm up here to try to help you all. At the conclusion I'll be glad to answer any questions and I'm sure Jerry will too.

Azie Morton While Jerry is coming forward, I failed to introduce the Oil and Gas Inspector who is Tom Fulmer. I don't think he was there at the table when I introduced everybody else.

Jerry Borrelli In the back of those handouts, there should be three sections and they should be tabbed. The first one deals with the Certification of Well Locations which is 3.04 (a) (1) and also 3.04 (a) (6) of the Regulations. There should be another one there marked Survey

Jerry Borrelli of Other Wells which pertains to Section 3.04 (a) (1). The last one there has to do with On-the-Ground Surveys which is Section 3.04 (a) (2). What I would like to do is go through and make some comments on this. I've got exhibits in the back of the book there. We've got larger exhibits. Since there are some people who are not familiar with mining, we thought we would go through those as fast as we could and explain what they are and see what the effects are to the coal mining operations. On the first one we'd like to talk about is the Certification of Wells. I'd like to go through the effects of the coal and example problems that we have. These are actual problems that have come up and then some general comments on certification versus competent person as to approving or making the final lcoation of the well. This first exhibit, and it should be Exhibit No. 1 in the back of your book, it shows a typical mine and it's a rather large mine. We've got

Jerry Borrelli ten (10) entries that we're driving. Each one of these lines here is an entry which would be a tunnel underneath the ground, with the breakthroughs connecting the tunnels up. We're showing ten (10) entries being driven. In order to operate, we've got to have a belt in there and that belt is this solid line coming through. We also have to have the track entry for mantrip and supplies which is this dash line coming through. We've also got to ventilate the mine which requires our stoppings and overcasts and so forth. Stoppings in this section are shown here. The stoppings are solid blocks that we build to separate the various tunnels to direct the air flow. I'll take more time on this one and then we'll go faster on the other ones. The air on this one, the intake air is taken in on these entries and taken out on these entries; we're taking intake air up these entries and back down these entries. The two center entries, by law, have to be neutral. This relates

Jerry Borrelli to why some of these changes need to be made. The coal industry has changed in the past 15, 20, or 30 years. We're now mining lower coal which requires more entries. So we are now driving a lot more entries than we did in the past. We're going to almost all belt haulage where before you had track haulage. If a well was in our way, you could just take the track and go around it, if you was hauling out by track. We also, by law, have to isolate certain entries, belt in track, and make those neutral entries so that eats up more air-ways. So we are driving a lot more entries than we had to before. Ideally, in locating a well we would put it in a barrier pillar right beside our main entries. Of course there might be other locations in the mine; but ideally, they would be at the barrier pillar. Here we are showing a barrier pillar and the mine mining up beside it. As far as it has affects to the safety of the mine, ah, any time there is a well in the mine, there is a safety problem. There

Jerry Borrelli is always that chance of cutting into a well. We feel, with this new legislation, it has helped our situation some, but there always is that chance. We realize we have to drill for wells--we've got to recover oil and gas, and we accept that. As far as mine economics, in some cases we lose as much as three-quarters of an acre of coal. Depending on the number of seams you've got there, it might be three or four acres because in every seam we have to leave the same thing; but we accept that and we have to do that.

Azie Morton Can we hold there just a minute. What's the distance between where you have that marked off in entry, all the way up.

Jerry Borrelli Here?

Azie Morton Yes.

Jerry Borrelli It would vary, depending on the depth of the seam. In the Regulations it spells out how big that block has to be. For convenience, I think we're showing this about 80 ft., but it does vary. There is

Jerry Borrelli a minimum size block you can leave. A minimum size block is 60 x 60 and that would be under real low cover. That's as low as we could be granted a permit to mine by a well. If we say, 60 x 60 would be 30 ft. from the well, if that well would happen to fall 15 ft. from our entries, we couldn't mine it. It has to be at least 30 ft. away; that's the minimum. In deeper coals that could be wider. Exhibit No. 2--We're showing a well that falls within our set of entries. Now the well could have been proposed here and permitted there and platted there. But for some reason it was moved after it was platted to a location right here. The first case we talked about, we might consider that our base case, but this case here could also be considered a base case. It could also be a well platted in this area but actually drilled here, because the well is drilled closer than it was proposed to be. We have to take our

Jerry Borrelli entries around the well. Luckily, on this one--these are typical, these aren't actual cases; these are just typical mining--the belt line has to be a straight line. Luckily, on this one, we could take the belt straight on through, the track we can take straight on through, but we still have to get our ventilation in. So we have extra stoppings that have to be built in here and escapeways (which is this dash line) have to be drived around, two sets of escapeways that have to be drived around. As far as impact to mine safety, of course the presence of the well is always a potential danger. But we have accepted we've got to have wells; and there is no objection to that. Okay, here we have an off-standard projection and there's a chance of interruption to the ventilation system. You have your men working in a uniform patter. It's driving up and you've got cables to be hung, and they have to be hung a certain way; you've got your stoppings and they have to be a certain

Jerry Borrelli place; and your ventilation, you've got line curtains to put your ventilation to all faces; all faces have to be ventilated. Whenever you come up with something like this which is an off-standard type thing, it's a little bit different from the norm of what you're doing and there's always the chance that you might interrupt the ventilation system and you could have an explosion; you've complicated the escape-ways. In a retreat mine, of course, the ideal thing is to have a uniform pillaring. You come back and you're pulling all these pillars, the pillars get pulled and you're controlling the roof. Your roof stresses are controlled. When you have a pillar here that you have to leave for the well, you've broken up that stress pattern. You have to stop your pillaring and get it started again and it's a chance for a roof fall; you're more susceptible to a roof fall in these situations. As far as economics of the mine, I've got those tested, and you have lots of pillaring reserves

Jerry Borrelli which weighs out in the first one. We do have an inefficient mines projection and a decrease in production which is an increase in cost. We have additional stoppings that are needed and we have additional mine machinery that is required for development. We may have to lay a belt line in here to get around it. I don't consider any of those costs, I just said okay, those extra stoppings cost us $1,840 installed in this case, which isn't a lot. This next exhibit is the same situation. We've got ten entries we're driving up. If the well could have been proposed over here and drilled here, or we can go back to the second case and say because of certain restrictions they had to drill the well right there. But for some reason they offset the well and we drilled over here. It's an approved plat and we drilled over here. Okay now, we've got to leave our block in this area. If they had drilled where they were supposed to drill, we could take our belt right on through

Jerry Borrelli so there wouldn't be as much complications. Our track, we have to, our track would have to go around the well also. Of course, we've got different stopping lines. Here because of no restrictions above us, set a belt head here, set another belt head here, another belt head, and drive straight on through close to our original projections because there is no restrictions of why we would have to come back the way we were going; in that case, we offset the well; there's always a chance of cutting into it. We've got the off-standard projections we talked about, driving around the well. We've complicated the escapeways, a potential impairment of roof conditions on retreat; we talked about that. Now we've got additional coal-spill points which creates a problem resulting in accumulation of dust and possibility of a fire. We have an extra belt head setting here and an extra belt head setting there. At every spill point you have a chance of getting spillage you have to carry back on your

Jerry Borrelli belt and there's a possibility of having a fire there. You've got additional electrical equipment in the mine. A belt head is set here and another belt head set there, and of course, that increases the potential of a fire. As far as the mine economics, of course, we've got inefficiency of projections which we really don't address; additional stoppings required, additional mine machinery required, additional haulage equipment required, these extra belts, additional electrical equipment required, additional track and trolley required. Item (d) there in that case, I'm not going to go through the items in this case. In just adding them up it cost us roughly $185,000 to go around that well in material. Our next set, because of the spill points we would probably have to put an extra person in that area of the mine to take care of the belt heads, to keep those belts clean in this area, to take care of those two extra belt heads. I said okay if the mine was to work two shifts, one man

Jerry Borrelli work that mine two shifts, I come up with, over a five-year period, say this life back in this would last five years, I come up with $389,000 or a potential $575,000 it's going to cost us because that well wasn't drilled in the right place. Case No. 4 is a similar situation although, due to certain restrictions we're driving up there, we've got the well that was either proposed here or proposed here--it wasn't drilled at the right location; it's drilled over here. We've got to leave this block of coal. In this case there is adverse property we may not own over here. We've got to get around the well,and yet, we have to get back on our course. So we have to drive over here, drive up around, and drive back over to continue on our way. If this had been over here, we could have taken our belt straight on through and the only thing we would have would be our air courses which would present no real problem. In this case, of course, we have the off-standard projections again and complication

Jerry Borrelli of escapeways, potential roof impairment on retreat mining. We've got additional spill points only this time we've got four of them; a belt head here, here, here, and here; we've got four belt heads. We've got the additional electrical equipment that goes along with those belt heads. As far as economics, we've got the loss of coal which we accept, inefficiency of mine projections which we really don't address in our economics--but it does cost us more to get around these wells--the additional stoppings required, additional mining machinery required, additional haulage equipment required, additional electrical and track. In this case, under Item (d), we've got $388,000 for material to get around the belt head. Here's the same thing as far as the number of persons. One person, the same person, could probably still maintain those belts as far as cleanup. So we have $389,000 over a five-year period for maintenance of those belt heads in that area of the mine for

Jerry Borrelli $777,000. So it is expensive. This is a typical well plat. We have taken all the information off of it other than the survey itself. It would serve no purpose to have names involved on it.

Olin Prather Could I ask a question, Commissioner Morton?

Azie Morton Yes.

Olin Prather Going back to other plats, Jerry, these are specific wells or hypothetical wells?

Jerry Borrelli These are hypothetical cases.

Olin Prather Okay.

Jerry Borrelli Here we've got a well plat and we just picked a well plat at random. As I say, we've taken all the other information off of it as it would serve no purpose. The well has to be located by two permanent points on the tract, which these are the two permanent points. You've got post corners on the fence line and a 12 walnut; you've got a distance between it, you've got a distance coming out to the proposed well, you've got a distance coming out to the proposed well. We went out in the field and checked these

Jerry Borrelli distances. Where the well plat on this one said 277 ft, it was actually 255 ft; a distance of 21 ft. On this other distance, it is the base distance. We checked against it. It is the property line and it should be the same, well, we've got a little bit of difference, 4 ft., but we'll not call it no big difference. On another survey distnace to the well where it was a distance of 1,149 ft., the survey distance is 1,099 ft.; a distance of 49 ft. We're talking about 50 ft. one direction and 51 ft. the other direction.

Olin Prather Jerry, this Exhibit No. 5, where is that well located?

Jerry Borrelli Where is it located?

Olin Prather Yes.

Jerry Borrelli It's in West Virginia.

Olin Prather In West Virginia?

Jerry Borrelli Yes sir, and the next one is in West Virginia too. Here we've got another well plat. The well location is right here. You've got a set stone and a set stone on the property line. The distance on the property line

Jerry Borrelli checked out, 280 ft., and we came out 280 ft. the distance between it. Checking it in the field they called for a distance of 306 ft. and we come up with 283 ft.; a distance of 23 ft. difference.
On the other line 36.03 ft., the distance is 121.40; the distance of 35 ft. Now these are cases that are not real large, and they're not really supposed to be. They're not real large, but I'm sure if we went out and checked the other distances we would find bigger distances in the areas that are being shown here. What we think happened on this one there is a string trustee; whoever staked it out, of course, he just went out there in the field and staked it out; the production people came in to make their site and it looked better down over the hill; they could get a site in easier. So they made their site, just shifted it over just a little bit; very easy to get into the well. Economics of the well, it should have been staked right here in the original survey location and

Jerry Borrelli it wouldn't have hurt us, but it wasn't; it was more convenient so they go out and drill a well; that's what our problem is. I've got some comments I'd like to just talk about on Certified versus Competent person. They're found on page 12 there. Item No. 1 there are safety reasons involved which we talked about. There is economics involved on the mine part. No. 3, a competent person can mean many things, and the oil and gas industry is suggesting that a competent person do this. I don't know what "competent" means. Is he adequate? is he able? is he proper? Who's going to decide what this competent person is. A certified person has been deemed competent by a State appointed Board of his peers and has reached a level of achievement either by test and/or experience. It must certainly be assumed that the certified person would be, by law and education, more accurate than the competent person. A certified person has much more at stake when attesting

Jerry Borrelli to a well location than a competent person. A certified person could lose his licenses; hence, his livelihood if he made a false statement concerning a well location. I know myself, I'm a registered engineer, and I would ban a certain amount on most issues, but when a person comes and says "certify" this location or "certify" this map, I make darn sure it's right because I know my license is at stake if something is wrong with it. Item No. 6--A person who may be deemed competent most probably would also be in charge of production. That's my assumption and it might be wrong. His prime charge would, in most cases, be production with the result that the well location being of secondary importance. He's out there; his job is production and the faster he can get on that well site, the faster he can get off it. I don't know if they're paid a bonus for that, but I assume they might be. The location of that well is strictly secondary; that's my opinion. A certified person,

Jerry Borrelli governed by the Code of Ethics, must conduct his practice in order to protect public health, safety and welfare. Conflicts of interest, which would be the production, should not arise. Assuring the accurate location before drilling begins will eliminate possible future litigation and/or irreparable harm. Our recourse is (I guess) litigation if the well is in the wrong location. We don't want to go to court; we don't want to have a fight, we just want the well put where it was drilled or where it was platted. Knowing the accurate location of a well is the most important safety issue concerning the coexistence of the two industries. I've got a couple other comments. To start off, we talked about an accurate plat by a registered engineer or land surveyor. We want an accurate plat to be safe for the oil and gas industry to work it out where that well should be; they come and you all can work it out. We say we will tie it to two points for the Mine Coordinate System; which he

Jerry Borrelli does. We say we will tie it with an accuracy of one in 5000. We're trying to get an accurate plat; we're tying it down to one in 5000. We drill and we ask that it be drilled within 3 ft. of the location in a coal area and other areas 10 ft. We're wanting accuracy. Then we leave the final location to a competent person. I don't know if that makes a lot of sense or not. Like I said before, I have been told by other people, well, you can always litigate it. When we go to litigate it, it's too late. We have nothing to gain by that. I mean we're just going to court for nothing, and we might say sue for some harms that might have been done; we don't want that. We just don't want the problem to occur and that's what we're asking. That concludes my comments on that part of it. I just hope you will consider these comments.

Azie Morton Any questions, please.

Harry Childress Jerry, as far as, you know, there's agreement between the oil and gas and coal industry

Harry Childress both, I don't think there's any conflict on the one part in 5000 accuracy as contained in both Alternatives; but I don't think, ah, is the coal industry primarily interested in locating the wells that's platted with that accuracy or some of these that were drilled in the past that haven't been platted with that accuracy. Are you really as concerned with the new wells that will be drilled under these regulations with that accuracy as you are the ones in the past that have been drilled?

Jerry Borrelli I'm concerned in a way with both. No, I'm not saying with all wells, but a well that might be within 2500 ft. we're concerned with the accuracy of that well too; although we've got other reasons for that. As you well know, as many checks as you can have on a well location, the better off you are as far as safety. I mean an error could come about in surveying at any time; and sometimes errors, you go out and you're surveying, you make an error and you tie the thing back and it compensates for itself--

Jerry Borrelli you've got a bad location. If you do it a second time, your chances are, if they both come up with the same answer, you've got it right. Errors always have been made in surveying. I don't know if that answered your question, but we are concerned mainly with the first wells being actaully drilled. I was going to address next the other wells within 25000 ft. We are concerned with the accuracy of those too.

Azie Morton Other questions?

Richard Chew I'm sure you're familiar with the initials "CLS", Certified Land Surveyor.

Jerry Borrelli Yes.

Richard Chew Some years back I had a real estate problem down in Louisa County and we ended up with a dozen or so plats that were signed by this gentleman followed by the initials "CLS". We became perturbed about that and finally called him and asked him what that meant and he said "Louisa County Surveyor". Now I presume you're suggesting he might be a competent surveyor, but not certified?

Jerry Borrelli Yes, yes...well, I don't know whether he'd

Jerry Borrelli be competent or not.

Richard Chew Competent is what they certify, isn't it?

Jerry Borrelli He'd be certified in competence, right.

Richard Chew A person who is certified is certified as to his competence, isn't he?

Jerry Borrelli Right.

Richard Chew Are you going to say some more about the retrospective view of this, of oil wells?

Jerry Borrelli Yes, I was going to talk about other wells within 2500 ft.

John Purcell Well, let me ask you before you leave the surveyor's part of it, ah, is it your position or maybe your Counsel could give us this, but is it your position that, ah, if we would require a certified land surveyor or other professional person to certify it, could we accept that from someone out of state that is certified by their own State Board?

Jerry Borrelli Counsel?

John Purcell You all are multi-state companies, you all have people licensed in various states. Let's say it was the ABC Oil Company of Houston, Texas, and they wanted to drill

John Purcell out here and they got an independent Texas surveyor who does business for them from time to time, would we accept that?

Donald Johnson John, I think you know what the State has already ruled on that. We, with the first survey that our good friends from Columbia Gas sent to us was certified by a West Virginia surveyor and we sent this issue back to Mr. Fulmer and he talked to the Attorney General's Office. They said no the statute said it had to be a registered professional engineer or land surveyor. I'm talking about the statute, I'm not talking about this regulation now. I'm talking about who certifies the plat. We raised that issue and the Attorney General's Office said it had to be the Commonwealth of Virginia. We feel like that is where the control is.

John Purcell I wanted to clarify that for the record that that was given by the Assistant Attorney General; that was not the professional opinion of the Attorney General.

Donald Johnson We hope you take it as an assistant's

Donald Johnson advice on that issue.

John Purcell I was asking for your advice.

Donald Johnson My advice is that I definitely agree with that. I think we're looking to State control, State regulation. We're all talking about a regulatory reform, but as far as the State of Virginia we've got Boards set up that certify these people. The mine engineers that I've talked to, all that work in Virginia, they know very well they've got to be a Virginia surveyor or Virginia professional engineer when they certify any mine plats. The Federal Health and Safety Act requires that the certification of any plat be done by a registered professional engineer or a registered mining engineer (I don't know the exact lanaguage) of the State where the plat is being prepared. That is what we think is necessary. There are all kinds of things we could say about that. What is somebody, you know, from Alaska was certifying plats or what if somebody from Oaklahoma was certifying plats in the coal region. We just feel

Donald Johnson we're asking for the State's position here and if certification is to be made. I think it's the intent of the statute as well as the intent of these regulations, or at least as far as I'm concerned, that a person be a certified/licensed Virginia land surveyor or a Virginia registered professional engineer.

John Purcell Thank you.

Jerry Borrelli I might add one thing to this certification, ah, as a registered engineer or any other registered engineer around the mines. We certify work that we are not actually doing ourself but we do have people doing for us. For example, our mine survey crews are underground surveying. We have certain checks on them to be assured they're doing their work right. Of course, over a period of time as you get experience with these people you get to have confidence in what they're doing. So a mine map I may certify but not do the work. What we're asking for is that not in every case the fellow that did the plat has to go out there and survey

Jerry Borrelli that well again. We're not asking for that. There's ways it can be done. They can set up reference points at the mine site; in two or three or four monuments set up the mine site, stretch strings across it and say okay, that well is staked back in where it was proposed. That is all he needs to do is call the registered engineer and say that well is alright, it is where the plat is. And that engineer, if he has confidence in the guy that's doing the work, I would think he would sign. So we're not saying the crew has to go out there, although if the crew had to go out there the cost is minimal. I think they have a reference stake or two setting there just to shoot the well back in again before they start drilling. That's not necessarily to say that the land survey crew or the registered professional engineer has to go back out there. The next item I'd like to talk about is the other wells within 2500 ft. of the proposed well. We're asking that those be surveyed in, too. It's not uncommon,

Jerry Borrelli and we might just go through the text there, I've got a couple exhibits to show you. It's not uncommon for one industry to go out and locate adjacent features that really they didn't put there or it doesn't belong to them. For example, we do it all the time in the coal industry. If we're putting a mine in, we've got to locate the mines above us and mines below us. They may not be our mines, but we've got to locate them. We have to, by law, locate the adjacent mine workings within 1000 ft. of the operating mine. Oil and gas wells, once we get within 500 ft. of an oil or gas well, we have to locate it by survey; it's our requirement. Water pools above us have to be located. In certain situations, occupied dwellings maybe we're mining under--not all of them--but in certain situations we have to locate the occupied dwellings; roads and high pressure gas lines (which there again we don't put there), and high voltage power lines. So it's not uncommon for an industry to have

Jerry Borrelli to do that. All wells in a given area has to be considered by the coal operators' mine plan. When we're looking at a mine plat, when we're putting a mine in, we have to consider all those wells; that one well means a lot to us, but that one well in relationship to all the other wells means a lot more. The coal owner has the right to object under Section 45.1-319 of the new law of a well if it lies within 2500 ft. of an existing well. Now that Section didn't get there very easy; but what it's saying is that all wells are important. If it's over 2500 ft. away from another well, as far as coal goes, as far as our planning, it's not as important; but if it's under 2500 ft. it's rather important to us. So we need to know if the well is less than 2500 ft. in relationship of it to the other wells. As far as the inspector himself, Section 45.1-138 (c) requires the inspector to consider certain things:

Jerry Borrelli

(1) The extent to which the proposed drilling location will reasonably interfere with present or future mining operations

(2) The feasibility of moving the proposed drilling location to some other location

(3) The method proposed for the recovery of coal and gas

(4) The practicality of locating the well on a uniform pattern with other wells

If we don't know where the other wells are, how can the inspector do that part of the law which he is required to do? (e)-- Occurrancy will most probably be few as present practice appears to place wells at a distance greater than 2500 ft. as Exhibit No. 1 shows in the area of Southwest Virginia. So we're saying this isn't going to happen every day that you're going to have to locate a well within 2500 ft., and probably very seldom is that going to happen. The cost of locating an adjacent well is very small when considering the cost of the well and considering the crew is out in the field. The location of the subject well and adjacent wells allows for

Jerry Borrelli a double check for their location. This is very important to us. Any difference in value when they survey in a well, we come along right behind them and survey them when we get within 500 ft. or maybe a little further away we can locate them. Immediate flags tell us we have problems with the survey. They did it wrong or we did it wrong; we know there is an error. We did go out and get it right which eliminates or minimizes the chance that we'd ever cut into that well. Location of wells based on the topographic location as required by Section 3.04 (a) (8) of the proposed regulations have been found to be inaccurate, and we're not complaining about that. It's the way it is shown on the plat, and it means nothing to the well location in reference to another well for the coal operation. The only way to assure the location of a well within 2500 ft. of a proposed well is--right, survey it. Now that doesn't mean you couldn't tie to another survey, say, there's another well

Jerry Borrelli out in the area that has already been surveyed, you could tie into that survey and that well is located by survey. It doesn't say you have to go out and locate that well. I've got a couple exhibits which are in the back of your books. This is a USGS map or it's a copy of a couple USGS maps put together, seen in Southwest Virginia. It's showing wells, each one of these dots is a well; it has a number on it. The circle is a 1250 ft. radius. So 1250 from one well and 1250 ft. from another well is 2500 ft. If the wells were within 2500 ft. of another well, of course the circles would overlap. Here we have a well that overlaps. We've got this well that overlaps. Out of sixty (60) wells in this area, two of them fall within the 2500 ft. that someone would have to survey. I think in other parts, I'm not saying this is absolute throughout the coal fields, but I think it's a good indication of the spacing we're going after. I know in other areas they're going for 2500 to 3000 ft. spacing;

Jerry Borrelli at least that much. So the problem doesn't occur that often. The 2500 ft. distance limitation, and this is important to coal whenever you get within 2500 ft.

Olin Prather Where is this located, Jerry?

Jerry Borrelli The Breaks International Park is right here, the town of Harmon is here...

Olin Prather Who is the operator of this?

Jerry Borrelli Who is the operator?

Olin Prather The oil and gas operator.

Jerry Borrelli Columbia Gas is part of it and I think Philadelphia would be part of it. I don't know who else would be a part of it.

Olin Prather Is this the Haysi Field?

Jerry Borrelli Yes, it's the Haysi Field.

Harry Childress Jerry, those are actual location of the wells?

Jerry Borrelli Yes sir, as accurate as we know.

Harry Childress Okay, I'll take it.

John Purcell Most of this is Pittston's minerals, isn't it?

Harry Childress I wouldn't think all of it would be.

Jerry Borrelli Not all of it is Pittston minerals. There is property up in here; the spacing on it

Jerry Borrelli is just about the same. This next one is a typical mine. I say it's a typical mine but it really isn't typical, but it is a rather large mine. A small contractor wouldn't have a mine near this large. They are expensive to put in. The way a mine, and these are entries, the ten entires we were looking at on those first exhibits would be similar to that, although in this case I think we've got five or six, but ten entires weren't enough. So here we're driving 5, 10, 15, 20 entries in order to get our air out here to ventilate. We're driving 20 entries this way, 20 entries back this way, and 20 over this way. Okay, these circles here are wells. These are actual wells, but this is just for an example; it could be anywhere. In our mine planning we have to be concerned with all the wells. Every well that's on there, any new wells can be drilled we're concerned with if it's going to interfere with our coal operation or it could interfere with our coal operation unless we can direct

Jerry Borrelli where it is. When we come down to areas within 500 ft., like that well right there, by law, we have to locate that well. In general, we have this well, these wells, in close vicinity; they're greater than 500 ft; we have to locate them by survey. But we may not have surveyed a mountain area like this till we get close to it. Now if the wells are spaced fairly far apart, we can adjust to it when we get there. When we start getting in below 2500 ft., and I have shown a couple wells like this, these are just proposed wells, not actual type wells, in permit locations. I just said okay I want a positive permit here or over in this area here, right in front of us. Now, we get concerned about the location of that well. We have to be able to work our entries. Say, in this case we're going to miss this well but we're going to hit this well if it is drilled there. So we're concerned with all the wells; the same as this location right here. If that's right in our barrier, it's probably alright.

Jerry Borrelli If it's off a little bit, we have to either "dog leg" our projections around it or move the well over. Now we don't have to survey out in a mountain area like this, but by the law that's in existence now, they will locate it by the Mine Coordinate System. It behooves us to have the Mine Coordinate System in this area. They can come off that well, locate the proposed well, locate these other wells, and we can pretty well tell immediately whether we can put our mining operation in there; and if it can, we will prove our permit, but we need something out there. We don't have survey crews available to be surveying a way away from our immediate operations. Maybe in a virgin area, say this is a virgin area or another mine site. We maybe have no plans for this area but there is coal in here. Any coal in here less than 2500 ft. we've got to be able to plan it and space it so we can get our mining operation through it. Ah, it does provide this double check. Say, we locate

Jerry Borrelli the wells in this area by survey. We get up to it, we mine up to it, we are going to locate those wells; by law, we've got to locate them. We locate the wells. If there's a difference of what they have in the survey and what we have in the survey, immediately it flags us, hey, we've got a problem there. Something is wrong with that well, something's wrong with our survey or something's wrong with their survey; either that or the well was moved. So it immediately flags to us, we're going to be sure we get the correct location of that well. We have a right to object. The law says we have a right to object to any well within 2500 ft. of another well. The only way to know how far that is to that well is to survey it, or have it on the same survey system. It doesn't mean they'd have to survey that well or that well. If this well was already surveyed and they came off the same corners or the same type survey there under that well, that's alright to locate it. They don't have to survey to

Jerry Borrelli this well because they're tied together. We're not saying they have to survey every well. We're just saying they all have to be tied together somehow.

Harry Childress In other words, that answers my question I had a minute ago a little bit better. With this accuracy and with the way this oul and gas law is written now, we'll just about tie all new wells together, correct?

Jerry Borrelli Right.

Harry Childress It will pretty much tie them in in such a manner. It's the older wells that were not located with this accuracy and this manner....

Jerry Borrelli Right. Ideally, let's talk about it here. Everything should be on a State Plane System and anybody could go and say here's where that well is because you'd have values for it. Of course, the inspector has to consider that type location and we object to that well in this area, moving it to another location. Unless we know where it's at in relationship to these other wells, how can we move it. Ah, the method of recovery of coal whether it be longwall, shortwall, or

Jerry Borrelli pillar mining, it all has to do with the close wells in that area and the relationship of the coal. It also states the inspector will consider putting on them a uniform pattern. Well, unless we know where these wells are, how can we line them up and put them in a uniform pattern. Ideally, we'd line the wells up right through here and it wouldn't hurt us, in the barriers we were looking at before, and it wouldn't hurt us.

Tom Fulmer Commissioner, may I ask a question?

Azie Morton Sure.

Tom Fulmer Of course, the whole issue here is a cost factor involved, would it be reasonably understood that any cost that's going to be incurred could be further reduced by the coal people having available to these operators, mining plans, the projections the company has in order to plan out their own. In other words, like you said, say an operator has located a well and he submits that plat and you object; okay, then the location is going to have to move,

Tom Fulmer he's going to have to re-survey it again. Now that's the situation you want to avoid to begin with...

Jerry Borrelli Right.

Tom Fulmer Is it reasonably understood that the mining industry would offer their mining plans to the company before they go ahead with this type of thing?

Jerry Borrelli I think the intent of this whole thing is to enforce a cooperation rather than go to this Review Board or come to you for a well location, to force a cooperation between the two companies. I would hope, I know most of the major companies do, and I feel sure would work with you on locations. It behooves us to work with you. If we can get them where we want them, it's going to serve our purpose just as much as yours.

Public Attendant Can I make a comment on that?

Azie Morton You'll get a chance to come up after while.

Olin Prathers May I ask a question?

Jerry Borrelli Yes sir.

Olin Prathers In these operations you have up here now,

Olin Prather are any of the wells located on those operations in Virginia that you don't have on your mining maps that are reasonably accurate, you are reasonably accurate where they are.

Jerry Borrelli You're saying on our properties?

Olin Prather On your properties, the ones you own the minerals, you own the minerals and there is wells drilled on those minerals. Do you have maps available showing the accuracy you're requesting here?

Jerry Borrelli I would say all the wells would be located. Our Company goes back a pretty long ways.

Olin Prather I know.

Jerry Borrelli It goes back to the late 1800's or the early 1900's. I'm sure there has been surveying done back then, but I can't guarantee you they were done with the same accuracy.

Olin Prather Let me ask you....

Jerry Borrelli I'd say this, any well that is within 2500 ft. or probably 1000, 1200, 1500, or 3000 ft. maybe, I would hope they would have that accuracy.

Olin Prather That is what I wanted to know.

Jerry Borrelli And I would assume they would.

Olin Prather Because you all used to drill oil wells.

Jerry Borrelli Yeah, but that was before my time I guess.

Olin Prather That's all.

Jerry Borrelli Whenever, maybe, for sure before we ever get to a well and because of the longwall plans we've got to layout now, we're probably 2500 to 3000 ft. away with good well locations.

Donald Johnson Let me say something about what Mr. Fulmer said talking about cooperation. Ah, where we've had problems (and this is not in Virginia), but where we've had problems in other areas where our company operates, it's been because the well operator does not consult with our company and just plats and permits the well. Now that's where there is problems is where there is not cooperation between the well operator and the coal operator. Certainly it behooves both industries to cooperate and if there is not that cooperation, then there will be appeals to the Well Review Board and there will be problems. But if there is

Donald Johnson this cooperation, Mr. Fulmer, I'm sure these things will be worked out and I'm sure the information can be interchanged. Certainly the well operator doesn't want the coal operator to object because of the interference with the mine claim, and neither does the coal operator. If both will cooperate with each other, I think the result that you were talking about is going to occur.

Azie Morton Any other questions?

John Purcell I have a couple. I want to make sure I understand what they're doing. Let me ask Mr. Borrelli a couple questions. Both Alternative A and Alternative B--I want to go down this thing phase by phase so that I can understand exactly what each of you are driving at, or at least what your proposal is. I'm talking about accuracy, the first issue, apparently, that you all have in contest. It says "In case a well is located underlaying known coal seams", alright, this is, what we're doing here, this man has a right to drill for oil on

John Purcell the property or drill for natural gas; he's making an application to the inspector for permission. Now, "known underlain", does that mean it's being operated?

Jerry Borrelli Right.

John Purcell Say, for instance, we're talking about stuff that your company would have rights to do, but weren't yet operating.

Jerry Borrelli Yes sir.

John Purcell Ah, and he has to have a survey of one part in 5000; both of you agreed that is sufficient accuracy....

Jerry Borrelli Yes sir.

John Purcell "And all wells located within 2500 ft. or less of the subject well...", why is it, in your view, the guy asking for the well permit to locate those for you. I mean, I grant you, perhaps if he were the one to put them down that he may want to, you know, to acquire that. But why is it his responsibility to tell you that and why does he have any greater knowledge, for instance, than you do as to where they are?

Jerry Borrelli Well, the wells are out in the field for sure, okay...

John Purcell I assume we can always see a well?

Jerry Borrelli Right. We make a good effort...

John Purcell We can't assume that?

Jerry Borrelli We make a good effort to find a well survey to it. By law, we have a right to object if a well is within 2500 ft.....

John Purcell Sure.

Jerry Borrelli Okay, how are we going to know if it falls within that statute?

John Purcell We assume you're going to go out and look just like they are. I mean, in other words, somebody's got to have this responsibility. I was wondering why the responsibility should fall more on them than on you.

Jerry Borrelli They're drilling the well.

John Purcell I understand, yeah, I can understand also your point about the necessity for great accuracy when they're drilling in and around an operation that is already on-going, that you already have; that was pretty well drawn out, or at least to me it was about all those. We're talking about a place that

John Purcell never was drilled or mined before. Potentially that is what we're talking about. Why does he have any greater knowledge to tell you that than you do? That's what I don't understand.

Jerry Borrelli Okay, the law says we have a right to object to it and everybody understand that, is that right?

John Purcell Sure.

Jerry Borrelli We've had the same situations come up where a person isn't going out to locate a well; they just show a distance out to an adjacent well. If you go out and check that distance to an adjacent well, you'll find that it won't check there. They are just taking it from USGS maps and plotting it on there and saying okay it's 3000 ft. or 1800 ft.; they're not going out there and surveying it. Now how are we going to know, how is a person that owns coal going to find out whether that well is within 2500 ft.? Is he going to go out? See, we're an operator and these other people owns the coal. How is the other person going to

Jerry Borrelli object? Is he going out and hire a survey crew and say hey I can object if that well over there is 2500 ft. away. So they have to go out and hire a survey crew to find out if it's 2500 ft. away. Now they can go out there, and the instruments you've got today it doesn't take long to survey a well in. I mean with EDM equipment it might be one, two, or three shots. I'm not saying you can do that in every location because you can't; but in a lot of areas probably you could do that.

John Purcell I assume you're going to tell him there's wells within 2500 ft. of that proposal, and you've got maps already of that location.

Jerry Borrelli It's up to him to tell us because he's coming in and providing a plat.

John Purcell Are you going to tell him if you know they're there?

Jerry Borrelli Oh sur, if he comes in and is working with us, right.

John Purcell I just wondered where he was supposed to get his information from that's all.

Jerry Borrelli Tom Fulmer or the inspector has a record of

Jerry Borrelli all the wells that have been drilled in the State, so he can go to him and say okay there is wells in this area. I'm sure he has them or a USGS map, okay, I think a well is over in this area; although it's not accurate, a well in this area, and a well in this area. We need to check these three wells out. If they are 3000 ft. away, I wouldn't worry about it; 2500 ft. we'd better survey it in. Tom has all the existing wells; I hope he has all the existing wells.

John Purcell Let me ask you, the second sentence offers a minimum accuracy of one in 500 in your proposal, right, and one in 200 for the oil and gas industry. What's the difference between those?

Jerry Borrelli Three hundred.

John Purcell Good. What's the practical difference?

Jerry Borrelli We thought the other location should be better than the one in 200. You can almost throw a rock and get one in 200. I really don't think we have a big gripe about that. We can go along with the one in 200. Ah,

Jerry Borrelli it just seems there should be a certain amount of professionalism to turn in a plat. Ah, maybe not just a picture that was sat on the side of the road and drawn, but some things should be measured and we're just calling for a little bit better accuracy.

John Purcell What's the difference in your "proposal to" in your two, I see there is some different kind of monuments, is that your basic difference of "proposal to" or reference points, maybe that's a better word.

Jerry Borrelli I think the main difference is the on-the-ground survey has been eliminated, and we wanted to talk about that right now...

John Purcell I'm sorry, I didn't mean to take your time. Go ahead and talk about it.

Jerry Borrelli That's okay.

John Purcell Maybe I won't need to ask questions if you're going to give us a good explanation.

Jerry Borrelli We'll get an explanation; I don't know how good. Ah, it's been proposed that we eliminate the on-the-ground survey in the location of the well. Based on new

Jerry Borrelli technologies that have come along, and these technologies--and I think the oil and gas people will discuss this more--is aerial mapping. It's mapping done by flying over an area and establishing a ground-control survey on the ground and then mapping the total area by what they call photogrammetry methods. We have had experience with aerial mapping and it's not to say that aerial mapping cannot be done accurate becuase we have seen it done accurately. We have found one heck of a lot of mistakes in aerial mapping. Ah, we've got examples here and maybe we can just go through some of the examples. These are in different areas but the one we selected is some area up in West Virginia, one or two of them. This is some aerial mapping that is done and what they do they run in and run a ground control and they may have a ground-control station right here, one here, and one over here. From that, through their stereo-plotters or whatever, they can map this total area.

Jerry Borrelli Now what we've done is gone out in the field and checked because we were talking about putting operations in and found differences in the mapping in the original mapping. We talked to the people who did the mapping for us and we asked them to do it over again. What you're seeing here is just a portion of the difference in the mapping. In the first mapping they did and the second mapping we did, ah, the ground control never changed; the ground control stayed the same. Ah, what happened on this one, we were looking for additional stripping in this area. People out in the field were standing in this waterhole and it shows almost level coming away from the waterhole. Well, they were looking up about 20 ft. For sure, the contours in this area were wrong. So from that we asked them to go back and remap the area. What we found was, one thing over here you've got a power line and the power line showed up in this area, and it's a large physical feature, a power line; and it

Jerry Borrelli was missing in this area. Okay, if they missed that what else are they going to miss? The contour throughout the whole area changed. Now we're just showing a portion of the contours where the 1700's were up in this area, elevation was, it shifted to over here. The 1800, well, the 1700's were down here like this, now shifted and we got a power line come up under here. Down in here the 1800 went out and around and shifted back here. The railroad down in this area they missed; the contours down in this area were wrong. This is the same people doing the same work.

Azie Morton How did you do it? How did you determine it was incorrectly done?

Jerry Borrelli How did we determine it?

Azie Morton How did you do it right?

Jerry Borrelli We didn't do it right. They did it a second time and we're assuming now that it's right.

Azie Morton How did they do it the second time?

Jerry Borrelli Okay, they reflew it. They had their ground control....

Azie Morton So aerial mapping could well be done right?

Jerry Borrelli It can be done right. We're not advocating it can't be done right, but how many times can something be wrong and you won't realize it, like we didn't realize this was wrong. This could lay on a shelf for a year, two years, and finally we start working in this area and we find out that it's wrong.

Azie Morton You found out it was wrong. How did you find out it was wrong?

Jerry Borrelli Our people were up in here looking for stripping and the contours in the area, if it's level there are no contour lines to show up on the map. Okay, they were showing contours going up the hillside, meaning the ground was steep there where it was actually flat.

Azie Morton So you have not been back to see if the second....

Jerry Borrelli They have been, yes, they have been back.

Azie Morton But you have not.

Jerry Borrelli No, I have not.

Azie Morton It could be wrong in some other areas as far as you know.

Jerry Borrelli We assume it's right now.

John Purcell Did you do a ground survey of this?

Jerry Borrelli The ground control was never changed, and it was not done by us. It was done by the people who did the aerial mapping.

John Purcell But you didn't do a ground survey of it to check its accuracy?

Jerry Borrelli Yes, okay, from the map we have a Coordinate System, and right up here we can build a plot and we can run a coordinate value. We have the stakes or coordinates and survey to that point, and that point is supposed to be on the center of the ridge. This has happened and it happened on this one. When we went out there to survey the center of the ridge, we found out we were down on the other side of the hill; something's wrong. Either our survey is wrong or the aerial mapping is wrong.

John Purcell You just showed us a number of exhibits where the ground surveys were messed up. In your professional opinion, which is more reliable, ground surveying or aerial surveying?

Jerry Borrelli I would think there is more involved in aerial mapping, a lot more involved. You've got the ground control which it has to be done anyway. You've got the flight that has to be flown and you've got the difference in elevation while you're flying it. I don't know enough about the actual procedure in doing the maps, but you've got a person in there, you've got a stereo-plotter. He's looking at photographs that are only 9 1/2 in. x 9 1/2 in.; he's looking down through a set of glasses and plotting what this looks like. You've a big human error there that could happen. We've had a lot of problems with mis-identification, and we'll come to a couple of those.

Olin Prather I think you'll find that nearly all of it is done by computer today instead of vision.

Jerry Borrelli Right.

Richard Chew This kind of work, I'm sorry I don't know enough about it to ask an intelligent question, but this kind of work is done with a constant imput of ground coordination, is it not?

Jerry Borrelli Yes. This has the same ground control. It was run-in the first time with ground control. It was mapped, in fact, it was mapped a third time. I didn't go through the whole thing. They mapped it, never changed the ground control; we found a problem in this area right here. Just because they were walking on the strip bench they showed a waterhole and elevation-wise they were showing an elevation of 40 ft. coming out of it and it was level.

Richard Chew I'm not thinking so much about topographical features as I am plain locations....

Jerry Borrelli Right.

Richard Chew I understand these things are made with constant reference to existing conventional maps and surveys....

Jerry Borrelli Sure.

Richard Chew As well as features that are picked up in the process...

Jerry Borrelli Right.

Richard Chew So that, the whole plane adjustment of this is constantly being adjusted to known and positively located ground features or at

Richard Chew least located from ground surveys.

Jerry Borrelli Right.

Richard Chew I think that brings several of us back to the same question. If there's a constant relationship in aerial mapping back to known ground features, why would it not be, not topography, why, as far as plane locations, would it be any less realiable over the long haul than the ground surveys?

Jerry Borrelli If they pick up the wrong point in doing their plotting, and I think we can show you that in an example here, everything can be misqued or mislocated. I think we've got an example or two to show that.

Richard Chew Okay, and that is less true of ground surveys and field surveys?

Jerry Borrelli Well, you're just entering so many more things into it here. A ground control, most generally, on a well location you've maybe got two, three, or four shots and that's the end of it. You're not mapping this whole total area which might be thousands of acres; you're not flying this whole area; you're not trying to plot this

Jerry Borrelli whole area, you're looking for a specific thing in a well--the well itself. Here you're looking for everything and what you get or what you miss, I don't know what it might be. I'm not saying that it can't be done correctly, but we've had so much problem with it and we didn't really realize the problems until we started digging into it.

Harry Childress Jerry, what kind of guarantee, if any, do you get from these aerial mapping people...

Jerry Borrelli I'm not sure.

Harry Childress What kind of accuracy guarantee.

Jerry Borrelli I'm not sure what the guarantee of accuracy is. They did go back and do this free; that's what they did on this. They mapped it the second time and it was wrong. The reason we found that out, we were looking at a second drill. We wanted a second drill cut on a strip bench. So we went up on the bank and drilled some holes. Well, when we go in there to survey the holes in, we were in a different elevation and were in a different location than was shown on

Jerry Borrelli the map. We asked them to go back and do it again. The ground control never changed. This is the final map that got the differences in it, between the first and the final map. Three times they did it. I'm not saying they can't do it right.

Richard Chew I guess what's troubling me is, you keep shifting the emphasis back to elevations and I want to shift it...maybe I'm wrong, do they have anything to do with ground locations?

Jerry Borrelli Here's a power line that was missed; it was missed the first two times.

Richard Chew But we're talking about locating wells....

Jerry Borrelli Right.

Richard Chew I guess my question on that is: These topographical features and do these elevations have anything to do with that. Secondly, do missed physical objects have anything to do with it because we're talking about a well we already know is there.

John Purcell All we're trying to do is take the actual distance...

Jerry Borrelli We know the power line is there and they

Jerry Borrelli missed it. You get missed photo-identification. I mean he might spot something as a tree and it's really a power pole.

John Purcell Let me say what we are trying to do or at least what I thought we were trying to do. You know, I understand that somewhere wells may be buried under the ground and you can't find them and only God knows where they are because fifty years ago somebody let grass grow over them, but what I understand, you know, we try to be more conscientious these days and leave markers where these things are which, I assume, you could find by walking out on the ground and finding them and then locating them from an airplane. And that's all we're trying to do. We're not trying to find power lines or automobiles or cow barns or anything else--we're trying to find wells that are there. I think that's what Mr. Chew was after. We know the wells are out there and we're trying to locate the wells.

Jerry Borrelli We're locating a new well.

John Purcell But what we're talking about now is trying

John Purcell to identify exactly where it is.

Jerry Borrelli No, we're making a plat; maybe you're misinterpreting. We're making a plat from aerial photography. We're saying the aerial photography in some cases--I'm not saying in all cases--could be wrong. Their references they're tying into to make that well plat could be wrong, and we're trying to show examples of why it's wrong. I'm not advocating that aerial photography, aerial mapping, can't be done right.

John Purcell I'm confused because you're saying you're seeing the same reference points. I assume they're going to have to pick some reference points to do that aerial mapping from....

Jerry Borrelli Yeah.

John Purcell They're going to know the general location of the wells before they even start, because you could walk around on the ground supposedly (I guess) and find a white stick or however you identify them, setting up there and know there was a well there at one time. Then instead of taking the

John Purcell measurements from the known reference points from off the ground, I take it, they're going to lay it out from a map they're going to make out of an airplane.

Jerry Borrelli They're, that's the way it works, yes.

Tom Fulmer If the reference points you've got in mind they're using for aerial photography, if those references were calculated or tied into your Mine Coordinate System, would that bother you?

Jerry Borrelli Repeat that again.

Tom Fulmer Okay, the reference points they use to make this aerial photography, their control points, okay, if their control points were tied into a Mine Coordinate System of yours, would that satisfy you or accommodate your problem? In other words, a map is going to be made from your Coordinate System is what's going to happen.

Jerry Borrelli There are so many mistakes that come up in the mapping in aerial....Let's go through a couple more examples. This one, just an error; there's more things involved in aerial mapping. Contours here 2090, and

Jerry Borrelli we got over and surveyed on the field and we found out that was an error; it was 1950. All these contours in this area are mis-labeled. That is just part of what might happen.

John Purcell Is there any requirement, in the area you're talking about, is there any requirement that topographical features be on that map? Is that a requirement we have?

Jerry Borrelli John, I think what we're saying, anything could be wrong. We're starting to get into some of the errors that could be done. Here's a building. It happens to be a breaker building where they shot the building in and you see the relocation. Where we found this out here is, we were going to put a bore-hole here. We started mining right here, drive back underneath, drop hold on the bore-hole and bring the coal out. So we've got to face up in here and we need a survey for the power line. The survey crew goes out and we tell them you're on this ridge here and there should

Jerry Borrelli be a hollow to the right of you. They said no we're in a hollow and the ridge is still left and right of us. We said no that can't be right. So we sent the crew back out there again and started doing some locating in here and we found out the mapping is wrong; got to checking down here and the breaker building is shown wrong; our thickener is shown wrong, and the preparation plant is shown misqued and we ask them to do the whole area again. Ah, what we put on here was just some of the differences we got. So here is a physical feature that was picked up wrong. We've got some other examples.

Azie Morton Do you ask the oil industry to check with you on mapping?

Jerry Borrelli No. The law today says that the wells will be located by an on-the-ground survey. We're just asking to keep the law the way it is--locating it by on-the-ground survey. Here's an area, we started doing some work in the hollow adjacent to it. We started surveying and locating physical features.

Jerry Borrelli When we hit the physical feature, it wasn't where it was supposed to be. We did construction over here based on bad mapping. When we finally determined what happened, they finally come back and remapped this whole area. Well, this scale is probably 1" to 100. That building shifted 30 ft.--a building. I mean we're not looking for a little dot, a little gas well, I mean we're looking at a building and it shifted. These other buildings, of course, you can see there is a shift there. We narrowed it down to, when they were plotting it, they picked it up wrong in this area and because of that, the whole mapping is wrong.

Richard Chew Now you're getting to what I'm interested in. I don't care about your construction work and hills and valleys...

Jerry Borrelli I realize that.

Richard Chew I want to know if there is anything mislocatable on a horizontal plane and you're showing me a building that's 30 ft. off.

Jerry Borrelli Yes sir.

Richard Chew You're saying that no field survey could produce such results?

Jerry Borrelli I'm saying the ground control never changed. We asked them to go back and remap it using the same ground control and that's where the building ended up. Here's a power line, and it could be different with a power line; they change through the years, but I don't think the time element between these growing seasons would have changed it. Here's the power line; these lines over here is where the power line showed up in the first one.

Richard Chew Well, what did they say when you say how in the hell do you get a building 30 ft. away from where it really is?

Azie Morton They say the ground shifted.

Jerry Borrelli We're sorry.

Richard Chew Do they go back and put in correctional factors, ground proof on there?

Jerry Borrelli Ah....

Richard Chew They can't correct them from aerial view, can they, as from the ground survey?

Jerry Borrelli I don't know whether they do or not.

Azie Morton Go ahead.

Tom Fulmer I've got one more question. Since we're dealing with this aerial photography, what controls do they use?

Jerry Borrelli They come in and establish their own ground controls.

Tom Fulmer They use their own...

Jerry Borrelli There's one or two of these that we established the ground controls, although in remapping the ground controls never changed. A couple cases they come in and surveyed and using Distamat or whatever at set points, they do their calculations or mapping from those.

Tom Fulmer What I don't understand in this process you were using, why weren't they based on your controls instead of theirs?

Jerry Borrelli They are our controls of our Ridge System. We say okay, start at these points on the Ridge System and use those. They ran the survey because we didn't have time to do it, plus we want them to be totally responsible for their mapping. Sometimes, if we can manage at all, we go out and do

Jerry Borrelli it ourselves.

Tom Fulmer I'm just wondering why their controls were done by them instead of using your own controls.

Jerry Borrelli It's all one package; they're responsible.

Tom Fulmer But how can you go back and check it if you don't have any controls except theirs?

Jerry Borrelli Their controls are really ours because they are on our Coordinate System. If they run a line two miles across the hill, they are still on our Coordinate System. We could set up at one of their stations and tie into one of our stations.

Azie Morton Is there an economic effect to you adversely when you find all of this totally different to what you thought it would be?

Jerry Borrelli Only if the person don't want to refly it. Another thing, we may do some construction on it, too. If we didn't know the map was wrong, we could do some construction on it at the wrong location and on somebody else's property even.

Azie Morton Do you always go back and redo it or do you just go back and redo it if you find

Azie Morton an error?

Jerry Borrelli If we find an error, we go back and try to get them to redo it because we're using these maps over and over again. You might be looking at a surface mine here, but all this mapping is done at the same time. This map could involve 20,000 or 30,000 acres. It's one large area and we might find it in just one area that they fouled up in what they were doing.

Richard Chew You are relying pretty much on a system that you're asking us to reject.

Jerry Borrelli Ah, we use it; but we don't have the confidence in it, real confidence. We use it a lot, yes. But when you find mistakes like this, I wonder why we're using it.

Olin Prather Jerry, in your Ridge System, what controls your base point on there?

Jerry Borrelli What controls the base point?

Olin Prather The one you have in your system for surveying.

Jerry Borrelli WEll, it would vary....

Olin Prather I mean do you tie it back to a ground

Olin Prather survey point or a State survey point?

Jerry Borrelli We are tied such that we can convert our Coordinate System to the State Plane. Clinchfield was set up on a system in the Clinchfield property in the 1900's, early 1900's....

Olin Prather But you can convert it to a State System?

Jerry Borrelli Yes, right. Other places we might carry two or three different systems. One might be our own and one might be the land company that had the land several years before. We may have chosen to tie it into the State Plane System, and therefore, we'd have a different system to what we was working on and maybe carry two sets of books. One would be Western Pocahontas Land Company System and one would be the Jewell Ridge System, and they might even have a little bit of difference in Azimuth.

Olin Prather Okay.

Jerry Borrelli Just to wind this thing up, here's another area showing this area flat up here and you can see, what they showed was this hill being reclaimed already. Our people were

Jerry Borrelli walking on the strip bench in that area, but it was shown by the Topo in that area, they were showing it as being reclaimed, but it wasn't. It was just another error. We asked them to go back and remap this total area. This one is not a real good case I don't think because some other things might have happened on it. Every year or two years we ask them to go back and upgrade their mapping. The last, I'm talking about this area here. We've got a shop building that was built back in 1976, '75 or '76, somewhere in that range, and it was flown in '76. They picked up the old mapping. It was reflown in '80 or '81. Every couple years it is reflown and we asked them to upgrade this area. It wasn't until this last year that we got them to put this shop building on here. The shop building has been here since '76 and they have reflown it a couple of times. If it was just an error or mis-communications, you might say, of picking up this area and getting it on this map, this

Jerry Borrelli building was missing, the power line or the fence around it was coming through; now it could be a mis-communications.

Azie Morton Is that a certified aerial mapping person...

John Purcell Discompetent.

Azie Morton Discompetent, yes.

Jerry Borrelli I won't comment on that.

Harry Childress That's a good question. Who certifies those in? If you had to submit that, if you did submit it somewhere where it would have to be certified, who would certify it? The people doing the flying or the people doing the mapping or you all?

Jerry Borrelli I would assume the engineers submitting the plat.

Harry Childress These right here, are those certified?

Jerry Borrelli I don't know of those are certified or not. No, I just don't know.

Richard Chew Well, you're not suggesting that their task is to go get that building and locate it for you, that they would have missed it altogether.

Jerry Borrelli No, they were directed to pick up this

Jerry Borrelli building two years in a row and never got it. Now it could be a mis-communications. The guy with the platter or if it was done on a computer, he might not have been given the information. We sent in a letter to them saying we wanted that building picked up. We sent him a map showing the area, saying that building needed to be picked up--two years in a row and it never was picked up. It could be mis-communications; I'm not saying it's mismapping.

Richard Chew But if you tell them to locate a well and we already know the well is there....

Jerry Borrelli Do we?

Richard Chew Sir?

Jerry Borrelli Do we know the well is there?

Richard Chew We're talking about existing wells.

Jerry Borrelli No, we're talking about proposed wells.

Richard Chew We're talking about both, aren't we?

John Purcell But you've got to locate the proposed well and all the existing wells.

Jerry Borrelli How can we locate the proposed well if you don't go underground and look at it?

John Purcell Well, you've got to put something down so

John Purcell they can map it; I'm sure of that. They can't take a picture of an open ground. They've got to put a stake or a marker that's large enough for them to see it from the air.

Jerry Borrelli What do they do after they make their site, refly it and put it in again?

Olin Prather Jerry, I'm sitting over here in my Ivory Tower. I take these points here and I know these things are the federal survey points...

Jerry Borrelli I don't know if they're federal; it might be the Clinchfield Ridge System.

Olin Prather Whatever the system is, and I look around on this Topo map that I have and I tell my people I believe we ought to drill a well so many feet from these markings, and I say right here I want you to locate a well. Now that would be the last I'd see of it except where my survey people would put it and put the plot to it, but I would be doing that all the time. From a Topo map I'd be doing something.

Jerry Borrelli Sure.

Olin Prather The second step then would be to make the

Olin Prather survey whether using their information to start or one that Tom might furnish us...

Jerry Borrelli Tom...

Olin Prather That is certified by another engineer. In other words, he has, theoretically, all the wells in the area. So this happens to us all the time.

Jerry Borrelli Any location that you'd get from Tom, I'd think, if you're going by longitude and latitude you'd have no accuracy whatsoever, cause that's all you do or they're taken from. A person is plotting that on a Topo map and he's scaling back to the longitude or a latitude and I don't believe that would tie.

Olin Prather It wouldn't tie to a 400 ft. or a 500 ft. plat?

Jerry Borrelli No, I don't believe 'cause you're just, really, I think the problem, Mr. Prather, is you're just spotting it on the map...

Olin Prather Yeah, but I mean I have to give the order because I want to drill a well in a certain area.....

Jerry Borrelli Right.

Olin Prather Which I do.

Jerry Borrelli Alright, you spot it on a Topo map and then you give values back on latitude and longitude which is seen from a map that was approximating the area in the field to begin with.

Olin Prather Well, I have a whole lot of wells. For instance, I have wells over here on this map where you have multiple wells....I'm not sure which one it is....

Jerry Borrelli Okay, that was the next one.

Olin Prather I have a geological map of this area; I have geophysical data planted on it; I have all these wells, and theoretically, I'm working and trying to find out the extension of this field. I'm doing my homework, my job...

Jerry Borrelli Sure.

Olin Prather And I come down here and extrapolate a bunch of contours in sub-surface. I'm working, say, 5000 ft. underground...

Jerry Borrelli Uh huh.

Olin Prather And I tell my engineering staff I want to make a location between this point and this point and this point here to make the

Olin Prather circle, and you can stay in here maybe. Now, I know they'll use all the information they have to get it as close as they can to my work sheets....

Jerry Borrelli Sure. I could probably take your work sheet and get it fairly close to where you want it, but it's not accurate; I mean we're just spotting it.

Olin Prather It would be accurate once they make the filing with the State.

Jerry Borrelli How are they going to locate it? How are they going to locate the well? I mean, there's the well, there's the location. What is their procedure to locate that well to make the plat?

Olin Prather Are you talking about when the drilling contractor comes on to do the drilling?

Jerry Borrelli No, I'm saying how do you send a plat in? How do you turn your plat in? What are you tying to? It has to be tied to two affirmative corners.

Olin Prather I'm sure it will be. Whatever the State says, whatever these Regulations say, it will be done.

Jerry Borrelli Sure, but how do they do that physically? Do they go in the field and survey it?

Olin Prather I would say so on that original one, yes sir.

Jerry Borrelli They go underground and survey it?

Olin Prather You bet you; I've never made a location on an application yet without having it surveyed in.

Jerry Borrelli Right, and that's exactly what we're asking.

Olin Prather But at the same time I never went over in the last hollow and surveyed somebody else's property; never in my life.

Jerry Borrelli Yeah, we're not really talking about the aerial photography. That's all I have to say unless there are some questions.

Azie Morton I have one final question. On this particular map where you mentioned there a lot of wells existing, is there a coal mine existing also?

Jerry Borrelli There is coal mining in some of that area, but I wouldn't say all of it, no. I don't know which are a there is mining or not. In general, I'd say there's coal there, but there might not be any mining.

Azie Morton Conceivably, knowing this is this way, could you develop your coal...

Jerry Borrelli We'd have to, we'd have to. The spacing is such there that we could get our mine in between those wells. The only places that are tight are in these two locations--one right there and over there.

Azie Morton So a situation like this would not be economically burdensome nor provide excessive state taxes.

Jerry Borrelli No, we can live with that; that's the purpose of the 2500 ft. from the well. We can live with anything greater than 2500 ft., but if we get under 2500 ft. we could still maybe live with it; I just said maybe, depending on how we orient our mine.

Azie Morton Okay.

John Purcell What's the difference in the third point you disagreed with the oil and gas industry on the subject of the surface well. I was trying to figure out the difference in the two proposals, and what I can see, one wants a certified or registered person and the other one wants a competent person. Are

John Purcell there any other differences between the two?

Jerry Borrelli No, I think that's it.

John Purcell Thank you.

Tom Fulmer I would like to ask one more question just to clarify this point. If you're going into an area to develop a mining system and there's wells in there, will you use aerial photography to develop that mine site?

Jerry Borrelli We may use aerial photography to locate those wells, yes. Before we ever do any mining in that area, we will locate them by survey; it will be an on-the-ground survey.

John Purcell What's this about, both of you mentioned something about a "string casing", surface string of casing. "To regard against such violations no part of the surface string of casing shall be run into the hole prior to the confirmation..." Does that mean no drilling until you've actually located the well?

Jerry Borrelli Well, they could drill down, they could start, go in there and make their site.

Jerry Borrelli They could move the drill in and start drilling down. They usually drill through the unconsolidated material and set a casing. Okay, before the casings are set, while they're making the site, setting the rig up and doing that first drilling, we'd like the person to check it and make certain it was in the right location.

John Purcell Thank you.

Jerry Borrelli Thank you.

Richard Chew There'll be a lot of rich surveyors around here before long.

John Purcell Lawyers too.

Azie Morton It's now 12:35. Can I have some notion, please, of how many other persons would like to be heard before we make a determination about recessing. I think, perhaps, we should take a break for lunch and come back about 1:30 or a quarter of 2:00. Will that be enough; that's an hour. Any objections to 1:30?

John Purcell 1:30.

Azie Morton Okay, we'll recess for the moment and be back at 1:30. Mr. Snyder, will you please

Azie Morton come forward with your comments because a member of the Board has to leave.

John Snyder Thank you.

Azie Morton I hope you're not going to do all of what we see.

John Snyder Like the tin man and his heart, I have to bring my brain along.

Azie Morton Okay.

John Snyder My name is John L. Snyder and I represent the Columbia Gas Transmission Corporation. I have submitted to the reporter and to the members of the Board, the Commission, the Chief, and Commissioner, and I think the Inspector, copies of a submission of factual material by Columbia. Those include two (2) affidavits and nineteen (19) exhibits, and I'll briefly clean and introduce those and get all that over with as soon as I can. The first affidavit is by Joseph E. Campbell, who is, for purposes here present, who is in charge of Exploration and Development of Columbia Gas Reserves in Virginia and elsewhere for Columbia. He was a member of the Heather Industry Technical Committee from

John Snyder its earlier days representing, of course, Columbia, on the oil and gas side of that. We have also John D. Cale, who is manager of Civil Engineering for Columbia, and who's affidavit is the second item in your booklet. I might also point out there is another member of the Joint Technical Committee here, Robert Bonn, who was appointed by Texas International Petroleum Company in 1980, I suppose; but who, during the 1970's was more or less the Tom Fulmer (I suppose you would express it) of West Virginia, but whereas 50-60 oil and gas wells a year are drilled here, in West Virginia there are 2000-4000. So maybe the job that Bob had with 2000-4000 wells is somewhat a little more capacious than anything you are faced with here in this State. I want to emphasize that both John Cale and Joe Campbell are present to answer any questions you might want to pose to them bearing on my summary of what I tell you they say, or anything that was said this morning. The 19 exhibits can be

John Snyder broken down into little groups. The first three are old, old documents--1980 and '81--from the Joint Technical Committee to show that all the big issues, all the issues here today, were no part of that Committee's deliberations as far as I could discover when they were going on before the statute began to be drafted. Exhibits 3-15 are documents demonstrating how the issues before you today evolved; the cover letter, the various drafts--from start to finish--so that you can see, if you want to see, if you want to find out how we staggered to where we are in Alternate A and Alternate B, you can do it documentarily if you just want to take the time; and if I were you, I would tell John Purcell and Tim Gresham, you all figure all that out and have a report on our desk by 3:30 or whatever. No. 16 is a copy of the Assistant Attorney General's opinion by Richard Kast which is discussed in John Cale's affidavit about the implications of the phrase "registered

John Snyder professional engineer or certified land surveyor". I think on the facts, I know on the facts Mr. Kast made a bad opinion and I hope to be able to persuade you, if I have an opportunity to brief the matter, that he issued a bad opinion on the law.

Richard Chew Which exhibit was that?

John Snyder No. 16. Seventeen (17) and (18) will keep the records straight. No. 17 is a letter I wrote to John Purcell mostly about the Underground Injection Control Program. No. 18 is Columbia's application for an evidentuary hearing, which on the basis of what you heard this morning and on the basis of what you might hear this afternoon, you may conclude that you still need. I'll say no more about that other than to formally renew to the Commission, to the Board, and to the Chief, my motion on behalf of Columbia for an evidentuary hearing with the right to cross examine. I've been told by Mr. Purcell that will be ruled on later. May I take that as a given, ladies and gentlemen. Finally, in

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Exhibit No. 19 is Columbia's response to the comments received from the Department of Conservation and Economic Development and the Department of Health. Now there are over twenty (20) points ticked off one by one, with CED's first and the Department of Health second. Columbia's response in most of them are unobjectionable, and I don't have time to get into it. I would like to get into two or three of them because they underlay some of the things that underlaid some of the questions this morning; and the first was by Mr. Chew who asked which was the broader term "fresh water" or the "source of drinking water". Well, there's no question in my mind. The "source of drinking water" is a broader term and I cite you the Department of Health comment on Regulation 3.02 (f) (1), and I refer you to page 10 of Exhibit No. 19. The Department of Health points out that some cities are seriously thinking about going into ground formations and bringing it up out of the ground and putting

John Snyder it through desalination plants so they've got puddles of water on the outside; and then, if that is true, you can see why "source of drinking water" is a far broader term, much more pregnant term in terms of this statute than "fresh water". The next question was by Mr. Goldsmith and it had to do on, "would it not be to the advantage of the unscrupulous operator to postpone filing his test so that he can enjoy maximum production out of a brand-new well". In other words, could you cheat, just by postponing it. That's exactly the question that was asked by CED concerning Regulation 2.02 (3) (c). If you'll see Exhibit No. 19, page 2, you'll see that the question is based on an incorrect assumption as I understand. I wish Stu Butler were here or Grady or any of those fellows that really know this; but my belief is that you do not produce anything from a jurisdictional well until your allowable has been set. The way you get the first day's, say, the first month and a half of

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allowable production is by over-producing, producing twice the amount for the next month and a half. So for then through the whole three-month period your average production has equaled three months. But you cannot turn on your well, you cannot turn on your well until your tests have been filed and your allowable has been set. Hence, there's no possibility that the delay in filing the test could work to the advantage of the operator. It's always to his disadvantage. The last question, also by Chairman Goldsmith, and not covered in Exhibit No. 19, was the lack of an operating agreement: What happens if there just is no operating agreement. Well, where you have unleased landowners who refuse to participate, you will never have an operating agreement covering the whole unit. They won't sign, and what happens there? Neil Pierce, a colleague of mine back home, told me, next week we're going to have a hearing in West Virginia, you just introduce other evidence banning the operating

John Snyder agreement. The only reason, in other words, the only reason the Commission wants the operating agreement is because that settles it so tidily--all under one roof if it's final. But if there is none or if there is outstanding interests so there can be none, then you have to come in with some other evidence.

John Goldsmith Do you have any proposal....

John Snyder No, I don't think you need a thing.

John Goldsmith Okay, we'll talk about that later.

John Snyder Okay. Ah, I want to get now to Alternates A and B, the easy stuff to confound us. In two issues of Alternates A and B, and dwarf everything else, and that's what we spent a lot of time on this morning, though we got side-tracked on what I think is sort of (and I'm going to wind up with it), is a false issue. Two issues that are real and genuine are the issues of surveying pre-existing wells in addition to the subject wells, and recertification of the actual location by someone. Surveying the pre-existing wells involves the Alternates

John Snyder A and B Forms of Regulation 3.04 Paragraphs A-1 and A-2 on pages 21 and 22 of the Draft Regulations that I have. It's intimately involved, as you heard this morning from Mr. Borrelli, Section 45.1-319 of the Code which goes the coal operator the absolute right to object to a well location within 2500 ft. of an existing well. It's not a prohibition; it's perfectly lawful to have a well within 2500 ft. of the second well. But, if the coal operator objects, that is a veto of the application. He doesn't have to have a reason; that is a veto. There may be a thousand reasons why a coal operator would far prefer to have two particular wells 2400 ft. apart or 2300 ft. apart or 1500 ft. apart than to move the new well 2600 ft. away. For example, if there's a pinch out of coal at 2550 ft. but 2600 is right in the middle of his coal, he may have core holes demonstrating there is no coal at 2550 or 1500 ft. or

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whatever; therefore, he would be negotiating as hard as he could to get you to closer centers. Okay, over today as you've heard Mr. Borrelli, proposes the well operator surveys all nearby wells; and "nearby" meaning 2500 ft. Mr. Borrelli said it would rarely occur, hence, is paradox. He wants something that won't happen, but I pass that and I will tell you--and this is one of the things that will come out if we have an evidentuary hearing--at one point I proposed if there were an objection to a well permit on the ground that pre-existing well X is closer than 2500 ft and we demand the survey and if the well operator should survey it and it were more than 2500 ft., the coal operator would pay for the extra survey. If it were less than 2500 ft., the well operator would pay for the rest of the survey. I think it was a de c ent offer turned down. The Campbell and Cale affidavits detail many of the objections to the idea of surveying pre-existing wells. They can

John Snyder all be subdivided into three categories, and then there's a legal category. The first is, and you may have heard from this morning's testimony and certainly it is true, mine safety is not involved and the reason is, any responsible mine operator will--and if I correctly recall the statements by Mr. Borrelli, the laws and regulations require every oil and gas well to be resurveyed independently by the coal operator as his actual mine workings get close to the well--and if that isn't the law, gentlemen, then it ought to be the law. In fact, Mr. Cale's affidavit concludes that the text of a specific proposal he has to require an independent survey by the coal operator every time he files his notice of a mine within 500 ft. or his application for a permit to mine within 200 ft. of an oil or gas well. I will say to you further that Mr. Cale's affidavit indicates that the custom of the industry in so far as he knows it (and I believe he is qualified to speak and certainly with

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western Pennsylvania where he was borned and raised and worked for ten or twelve years), the custom of the coal industry aside from the law and regulations, invariably is to make an independent survey of the surface location of an oil or gas well as the mine workings get near. The affidavit does not say how near "near" is. Mr. Borrelli this morning said from 1000 to 3000 ft. If that is true, then I think my point has been misconstrued. Mine safety is not a part of this issue. Whatever else it is, it is not part of the safety of men underground. What it really is is a proposal to unfairly allocate cost. The well operator, if he is required to survey nearby or pre-existing wells, is going to pay out money to find information for the sole economic benefit of the coal operator; it's just as simple as that. And consider this problem: If there is a requirement that all nearby wells be surveyed, and if there is 200 ft. of overburden on the count of strip mine reclamation by the coal operator

John Snyder covering up an old plugged well, how is the well operator to find the nearby well? He can't do it. There's a thing called (in the hills) "the valley-fill method of surface mine reclamation", and you can talk in terms of many, many tens of feet of overburden. It may not mean much in Virginia because there's not that many wells drilled in Virginia and the penalties of being able to locate old wells will be rare in Virginia and most of the wells have already been surveyed in; but, but, even in Virginia it is perfectly possible--if the well operator must resurvey nearby well to prevent a well location otherwise locatable, purely because the coal operator has covered it up--had this been a problem, I would have supposed the law somewhere in this country might have required the surveying of nearby wells by a well operator. John Cale's affidavit names the fourteen (14) states where both coal deposits and oil and gas deposits underlain the same seams or underlie the same surface, whose law he has

John Snyder examined and he has found nothing in the law in any of those states requiring the well operator to survey anything except the subject well. That brings me, finally, to my legal argument on the issue of surveying pre-existing wells. Section 45.1-312 (a) of the Code provides for the well plat and it has eleven (11) things the well plat must show. The first one is, and I am now quoting the Proposed Locations and Surface Elevations of the Well. That gets to your problem about contours. The Proposed Location of the Surface Elevation of the Well determined by survey; No. 2 and it goes on... No. 3--Streams, Roads, Etc. Within 500 ft. No. 4--Houses, Roads, Outbuildings and all that sort of stuff... The only time the statute uses the term "determined by survey" is with respect to the well. My contention is, there is sound law in the Books in Virginia, and there is sound law in the Books elsewhere. When the statute says "determined by survey" as to one thing and leaves out as to the other,

John Snyder that is an implicit prohibition against the Commission and the Board or anyone else, saying that the well operator has to survey in other things as well. So my final submission is that it's beyond the legal power of the Board to require the well operator to survey in pre-existing wells. If the coal operator can get nearby wells surveyed in, then land owners can get their out-buildings, the Highway Department can get an independent survey of their highways, and go on through that list of 2-11. No. 11 is whatever else the Board may require. The exposure of the well operator to making actual surveys as distinguished from relying on pre-existing maps, geometric surveys and all that sort of stuff is imminent, is imminent. There's to the coal operator to nearby wells is not a whit greater than anyone else's interest in whatever interests him in that list. That adds full-size submit to my proposition; the only thing that can be required to be

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surveyed is the well itself with respect to the two permanent points. The second major item is recertification of the surface location of the well involved. Regulation 3.04 and Alternates are in (A) (6) on pages 23 and 24 respectively in the Regulations I have. I want to say something about mine safety. This month I've been working six (6) years on the relationship between the Oil and Gas Industry and the Coal Industry in the mining and exploration efforts of both. Because it was six years ago this month that I attended the meeting called by Pittston in Charleston, West Virginia, to talk about problems they had, defects they perceived in the statutes--some safety and some economic. I believe, I know that one person was here and heard me say--Jerry Borrelli--and I know that I. C. Spotte, who is not here today but was there in Charleston, heard me say six years ago the Oil and Gas Indsutry would do anything that is fairly required to protect the underground safety

John Snyder

of coal miners. I said it then and I say it today and I'll say it to the day I die, the Oil and Gas Industry will do anything that is required to protect the underground safety of coal miners. I am the guy that wrote the sentence that Don Johnson quoted in his opening remarks. My opinion is that the issue "who says the well is where we put it" is not a legitimate safety issue; that the distinction between the drilling engineer on the job for the Production Department signing "I saw to it that the well was put where it was", a distinction between him and "certified land surveyor", certified by the State of Virginia, is not a significant safety issue before you. I urge you to read the affidavits, and I summarize in response. This idea of a second survey on the ground and a recertification by a registered professional engineer or certified land surveyor, as I say, did not come up during the liberations of the Joint Technical Committee in '80 or '81

John Snyder when the statutory controls were being put together. In fact, it didn't come up until June 14, 1982, and we had already had one conference, ah, in a letter, Exhibit No. 11 in your book. Pittston proposed the second recertification by the professional engineer or certified land surveyor. Now we had already negotiated; we're not talking about, we're not talking about the assurance the well is where it is supposed to be. At the previous meeting in May, the coal industry said we want some assurance that the well is going to be put where the well permit says it's going to be put. Fine, how do we do that? We negotiate a 6 ft. circle of tolerance for a lcoation inside coal territory and 20 ft. circle of tolerance outside coal territory; that was the standard. The question came up, what's the penalty? That's easy, you go outside your circle, you don't have any permit--a void permit; that's the penalty. I thought, I thought when the May meeting

John Snyder broke up we had a deal; we didn't have a deal. Along comes the idea for recertification by a registered professional engineer or a certified land surveyor. Well, the fact is, in our June meeting, a week later, I just raised absolute sand about that for the necessity of sending out a second land survey crew; and Jerry, I'm sure he would confirm this, said look, we're not talking about sending out a separate survey crew. He said this is "duck soup"; there is your well staff, and what do you do before you clear off that location? Here's one way you can do it--put a stake there, so that you can cite across there, put another pair of stakes here so you can cite across, then you clear off the well location; and, of course, you have the stakes converted into mush. So you've just made yourself a quarter or half an acre of flat grime. Then you either take citing, you take tape, you take strings, you take anything you want and you connect this one, and this one; and as sure as

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you're borned, where they cross is going to be where that stake used to be. You have your second stake in the ground and that's where you drill your well. Bob Hager for Kentucky-West Virginia Gas Company said yeah, that's how we do it; Joe Kemble for Columbia said yeah, that's how we do it. I said shoot that's easy. That is how you do it. Thousands and thousands of wells are drilled in Appalachia for not them alone, but all over the world; and in Appalachia every year that's how we do it; it's as easy as that. Gentlemen, it does not take a registered professional engineer or certified land surveyor to do that, or to do any of the other simple on-the-ground techniques that are drawn up to demonstrate where your actual location is. Just like Jerry said back in June, "anyone can do it". But Mr. Borrelli, before you members, still proposes recertification by a registered professional engineer or a certified land surveyor. Well, the Campbell and Cale affidavits

John Snyder present the practical problems between that extra goal and reality. To hold your rig, to set up your rig, and then hold it for a surveying crew to get in, will cost up to $2000 an hour in rig time. If you say why can't the registered engineer sit back in Charleston and take anybody's word who sets up the strings and that sort of stuff. The answer to that is in Columbia and in most major oil and gas companies, and I believe you will have at least a submission by Kentucky-West Virginia, the civil engineers are in an entirely separate part of the company than the production people. They simply don't have common management, and until you get so high you run out of engineers. Ah, consequently, the fact is, the fact is, the requirement for RPE or a certified land surveyor to handle that well for most big companies will mull sending in a second survey crew to do a virtually ministerial task like that. For small companies who have to contract out their surveying, they

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have had it because they're going to have to bring their surveyor back. Meanwhile, they're going to pay up to $2000 an hour and the smallest rig you can buy now is $200 an hour. The biggies, the small operator's not going to have a biggie. The small operators' cost is $200, $300, or $400 a hour for waiting for that survey crew to charge in there and string strings. Until the 1982 Act became law, all that was required for any oil and gas survey in the state of Virginia was certification by a competent engineer or surveyor. That's the origin of the word "competent". Strictly speaking, it was the law until June something, whenever it was signed. Somehow the coal industry has managed to survive with "competent" engineers and surveyors for the oil and gas industry approving, signing all the well plats until this year. More than that, when I asked Counsel for Pittston to make the rough draft of the regulations for application to the Chief to mine through a well,

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to mine within 200 ft. of the well, I believe I am right in saying and I think I can prove this if I can get an evidentuary hearing, the first draft of the regulations brought to a conference by Pittston called for the coal operator to have his mine map to mine through a well certified by a "competent" engineer or land surveyor. If it was good enough then for mining through the well, it ought to be good enough for us on promising that the well is where we said it was going to be. What I'm asking for is for recognition of the fact it is not the professional status of the signature at the bottom of the certification that assures men underground that the well is where the gas company says it's going to be. What assures us it's going to be there is the penalty of being drawn, if you are outside that 6 ft. circle, then you don't have a well permit. All these horror stories that Mr. Borrelli was talking to us about this morning about moving belts, and the

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collection of coal stuff and because wells, yeah, wells were moved or might have been moved or could have been moved or may in the future be moved; all of that, if you have a void permit, is a nationable offense. I understand Mr. Borrelli doesn't want to go to court. Nobody wants to go to court, but believe you me, the penalties of being wrong in actually locating your wells are far more efficacious in getting attention to the requirement of the statutes and regulations than having a registered certified engineer or a certified land surveyor. I might also say there is no precedent in any other state we can find. As a matter of fact, in other states we can find doesn't make you check your location at all. It's just taken for granted that your location is going to be where you said it was going to be. In other words, the coal industry, the public, in Virginia now has more than the void permit rule, now has more in the way of protection and in the way of assurance than any other state

John Snyder in the Union. I'm asking for a sense of proportion. I want to return to my statements about mine safety. I want to repeat it. The Oil and Gas Industry will do whatever is necessary for the safety of underground coal miners. But I want to remind you there are 75,000 oil and gas wells in the Appalachian Basin, most of them drilled through coal and a very substantial fraction of them drilled through now working mines or then working mines and not one oil or gas well has ever been suspected of contributing to a single mine explosion; not one. I cite the massive study of the BLN six or eight years ago and my own article two years ago. I want to finish up with what I thought was a false issue and that's the issue of an on-the-ground survey. I might point out that the Department of Conservation and Economic Development also has a preference for on-the-ground surveys and said they did in their comment on Regulation 3.04 (a) (2). On the other hand, and I'm bound to correct

John Snyder Mr. Borrelli. He misspoke himself. At one point very late in the morning he said "all we want is what we got now; there is an on-the-ground survey requirement now". In fact there isn't. The statute says today "determined by survey"; the statute last year said "determined by survey"; the statute has always said "determined by survey". Up to now you have no regulation on the subject of surveys at all. So at present, right this minute, any survey that is signed at all by an RPE or a certified land surveyor is good enough. So if we're talking about sticking to what we've got, talking of what we got is Alternate B as proposed by the Oil and Gas Industry. On the other hands, since we sent that in it has occurred to us that the Board and the Commission may feel that is the wrong signal to be sending when we're trying to upgrade standards under The Act. Therefore, we have written in Mr. Cale's affidavit the proposal to spell out the kinds of surveys that are permissible in

John Snyder their form. On-the-ground surveying including such an off-shoot which is electronic distance measurement with computer technology on beyond that. Secondly, is aerial photogrammetry, which we have cussed and discussed early in the day. And third, is inertial surveying, the kind of thing that enables us to send polarious submarines all over the world and they get back to port months later. I think that CED's points was anti-intellectual and ignoring the fact of the accuracy permissible in aerial photogrammetry and inertial survey. I think the point which Mr. Borrelli makes is that aerial photogrammetry "could be wrong"; well hell, anything could be wrong. It just, that just doesn't get to the point it seems to me. If specifications are needed, we've got language to propose. Because I don't understand photogrammetry very well and Mr. Cale does, I would like to present him now for a brief analysis of what aerial photogrammetry is in the Oil

John Snyder and Gas Industry and how the accuracy standard of one in 5000 is physcially achieved.

John Cale Ladies and gentlemen, my name is John D. Cale, and I'm manager of Civil Engineering for Columbia Oil and Gas Transmission. I'm responsible for surveys and other civil engineering responsibilities in our seven-state operating territory. I won't waste a lot of your time by going through various war stories concerning aerial mapping, which I would like to draw a certain amount of distinction to in comparison to aerial surveys and the result which is accomplished. First of all, we have had aerial mapping which did include some of the situations such as Mr. Borrelli revealed this morning. However, I would like to address specifically the type of technology that is necessary and a part of survey methods which can be used, aerial survey methods, which can be used to establish a one in 5000 which is required in the agreed regulations. First and foremost is a requirement for a one in 5000

John Cale

accuracy if, in itself, enough to eliminate the types of situations that we saw offered by the Coal Industry this morning. Basically, the difference between the mapping problems and the situation I would propose is that we are requiring a one in 5000 point specific accuracy. What we saw in the mapping was an accuracy, or lack of accuracy, as a result of information which was not paneled, it was not point specific. In order to accomplish a one in 5000 accuracy, aerial survey accuracy, you would have to have, first of all, a panel on the specific site of the well. Okay, you drive a stake as a result of geologic information, references from the geologic information, to the proposed site as provided by the geologic people. The survey crew would identify the geological control, put the stake in the ground at the proper location in reference to other geological or geophysical data. They would panel that particular well location and they would also panel control in the vicinity of that

John Cale

well location. In addition to the paneling of the control, there would be ground control also necessary. Now you don't have to run the ground control back to the specific well location itself. You can run several well sites from the same aerial photography and from the same ground control. Once the aerial photography/ground control paneling is established, and the ground control can either be the result of a physical on-the-ground survey or it can be as a result of the unitization of the USGS control or it could also be the unitization of the Coal Coordinate Control; in other words, their coordinate monuments would be paneled. After you have all the data paneled, all the points paneled, the aerial photography is acquired from the airplane at a specified height, with specific requirements as far as flight height, sun angle, cloud, snow cover--all kinds of variables ruled out; these things result in a very specific and very accurate accomplishment of the actual location of each and every

John Cale one of those panels. Now, not only the X and Y or the horizontal location of these panels can be established, but also the vertical position of these panels can also be established to a one in 5000 accuracy. I would submit that the requirement for a one in 5000 accuracy survey plat be also certified by a registered engineer or surveyor and that, in itself, assures that the horror stories that the Coal Industry presented would be eliminated. I would offer or attempt to respond to any questions you might have.

John Purcell Are you a registered surveyor?

John Cale I am a registered surveyor.

John Purcell In what state?

John Cale Pennsylvania.

John Purcell What standards, I guess you have a Board to regulate the surveyors, is that correct?

John Cale Yes.

John Purcell What standards does your Board accept, does your Board in Pennsylvania accept for one in 5000 surveys? Do you have substandards that you can use?

John Cale — The Board does not specify the methodology or the technology associated with accomplishing a one in 5000 survey. They do establish various surveys which would require a one in 5000 accuracy.

John Purcell — Say that last again.

John Cale — They do establish certain standards, accuracy standards, for various types of surveys. If you're going to do a survey in an urban area that requires a one in 5000 or one in 10,000 or one in 20,000 depending on the value of the property and so forth and so on. But they do not dictate the technology or methodology used to accomplish a one in 5000 survey.

John Purcell — Is that, to your knowledge, true in other states or would that be unique?

John Cale — Yes. Generally so. It's unreasonable...

Richard Chew — Which?

John Cale — Beg your pardon?

John Purcell — All I wanted to know was, did you have any knowledge if the methodology is regulated by other states.

John Cale — No.

John Purcell — I wanted to find out; I'm going to ask Virginia's Board, but I was just curious about Pennsylvania.

Azie Morton — Do you have a reciprocal arrangement with Virginia to do surveying in Virginia?

John Cale — The Registration Board in Pennsylvania and in Virginia have a quasi-reciprocal agreement and it varies depending on your particular registration, if you're a registered engineer or if you're a registered surveyor. Now typically, for surveyors, the jurisdiction for which you're applying for reciprocity as far as your license is concerned will generally require a surveyor to take tests on certain aspects of the law that are unique to the surveying profession which the State feels the surveyor should be aware of in order to provide a proper service to the people of the State. So there really isn't any problem.

Azie Morton — Do you survey in Virginia?

John Cale — Beg your pardon?

Azie Morton — Do you survey in Virginia?

John Cale — No.

Richard Chew Is there a residence requirement?

John Cale No, no.

Harry Childress These people that does this aerial photogrammetry for you, will they gurantee you a one in 5000 accuracy?

John Cale If in my specifications I require a one in 5000 accuracy, I will get a one in 5000 accuracy. The accuracy of aerial photography can be verified the same as the accuracy of any survey can be verified. I can tie, I can run a survey between two points, and if the distance that I come up with between those two points is different than what the aerial mapping service provided me, then it's out of tar, it's out of standard. They have the responsibility to resolve that problem, or you can compare the same coordinate points that are established by USGS who, by the way, developed their USGS one in 2000 quad sheets from aerial photography totally. Okay, I can compare their coordinate values for known monuments against the coordinate values as established through

John Cale aerial photography methods, or aerial photography survey methods.

Harry Childress Say you trust them; they have done good up to a point and you hadn't had reason to check on them, you hadn't had no problem; alright, they get one off. How are you going to know it's off?

John Cale Okay, the interest of the Oil and Gas Commission and the people of Virginia are protected by the fact, assuming they have an aerial photography done, and I say I want these points paneled, I'm going to be the one that is signing that plat and submitting it to you. I'm going to be the one certifying this is one in 5000 accuracy. I'm going to test it and make sure the product they provided me does satisfy you or the one in 5000 accuracy requirement.

Azie Morton How are you going to test it?

John Cale Two methods: The comparison method--comparison against known data provided by USGS as far as their coordinates on their monumentation, or through survey of certain

John Cale selected points drawn by an independent survey group, probably our own.

Harry Childress If you're running an on-the-ground survey anyway....

John Cale I don't have to cover...

Harry Childress From the two points you're going to get the original stakes anyway, you're going to map out the original stake for the well anyway, right?

John Cale Okay, here's the point, this is the point; it's really not cost justified to go out and recommend aerial photography for one well location. I'm saying we're developing a field, I'm saying not only will the wells be paneled and located, but also, controlled and also property corners and other permanent monumentation. So it's more than I, by sampling the data and by testing certain points within the aerial photography project, I can verify or affirm the accuracy of it over all.

Azie Morton Any other questions? Any questions concerning Mr. Synder's presentation?

John Cale Thank you.

John Purcell Thank you.

Azie Morton There were two other hands went up before we went to lunch and I believe you were one of them, the gentleman in the second row if I recall correctly.

Charles Bartlett Ladies and gentlemen, I'm Charles Bartlette, president and janitor of Bartlette Energy Exploration, and everything else in between. I want to do something that hasn't been done yet this morning. Since I'm from Abingdon, we have our offices here in Abingdon, and I know the mayor personally, I know he would want to welcome you to the oil capitol of Southwest Virginia. The area has been well located for becoming that, and of course, your presence here is an indication of fine things for the future. I want to shift the discussion to an entirely different part of Virginia and a different problem that I think the law, the new law, has at least made some start toward correcting; and at least try to make you aware of some of the difficulties in drilling areas where land ownership is

Charles Bartlett broken up much more than it is in most areas of the plateau where the coal fields are located. Specifically, I represent a client called Stonewall Gas Company of Richmond. We are working very closely with them. Just within the past month we concluded a fund-raising campaign, two different campaigns, which reached a total of nearly $5 million for drilling for oil and gas here in Southwest Virginia. We are well under way with that program, we're moving today to our fifth location. In the past year, in my office we have also assisted in the exploration programs of the Ben Hurr Oil Company, for the (inaudible) Oil and Gas Producing Company out of Fort Worth, Texas; The Hay Oil and Gas Company out of Graham, Texas; Oxley Petroleum out of Tulsa, and we're working very closely with many of the other operators in Virginia, other lease owners. In fact, we're specifically working with AMOCO, ARCO, the Virginia Oil and Gas Company, the Mountain Empire Oil and Gas Company

Charles Bartlett and some others in trying to put together drilling units for locating oil wells particularly in Lee County. Additionally, in the near future I anticipate drill sites will soon be selected and we'll see activity on up the valley in Smith and Wythe County. So the oil and gas activity is increasing. Tom Fulmer in his last year has commented on that in his presentations. I anticipate, from what we know in our office, that the surge of drilling is upon us already. In previous years, approximately 120 wells were drilled in Lee County, and in the past year there has been 30-35. I see no slacking of that activity in the coming year. So we are compounding already a problem that exists. I want to go over a few examples with you and ask your forebearance and assistance to Tom and all of our operators that are trying to get the job done in the trenches, to try to assist us to help this move along as efficiently and smoothly and to the fairness of both operators and landowners alike. If I may,

Charles Bartlett I have only six of these copies and I would like to review these with you if you will share them. Now, this first one is very small and the reason being that is the way it was presented to Tom Fulmer's office. It's not a large area but I want to discuss it nevertheless. Since the larger one is a little easier to see, we may start with it and work our way down to the smaller scale version of it. If I step over here, the people on this side may be able to see a little better. Unfortunately, the Good Lord didn't look upon this part of the Eastern United States with a nice squared-off survey, and that's the root of the problem that I'm going to review, and it is something we can't change readily. The landowners have their properties in all different shapes and sizes and that's not going to change in anything we might try to do about that. We can superimpose a grid which will make things a lot easier and a lot fairer to those concerned. Now heretofore in Virginia, in drilling in

Charles Bartlett Lee County and elsewhere, we've had what we call the impormost 500 ft. ruling. I'm showing the situation here in what I guess we could call the Fleenor Town Field which is west of the Ben Hurr Oil Field down in Lee County. One operator owns the green tract, and one operator owns the one I've outlined in purple. My client, a couple weeks ago, had the permission of trying to put together a drill unit on the blue unit. The reason for that is very straight-forward and obvious; the well drilled here is a fairly nice well. The well drilled here, I don't know if it's producing a lot, but hopefully, it's a very decent well too. Now if a landowner happened to have sufficient acreage so that you could locate the well and keep a 500 ft. circle inside him, there would be no problem, initially anyway. All the oil found from him would go to him until we decide otherwise drainage unknown at present, his royalties were taken from that well, no problem. In this first instance the well was drilled and under our

Charles Bartlett present procedures if you lapped over, as this does, over into the adjoining property you simply sent out a notice and said you can object, you have a certain period to object and if he doesn't object then we can continue on our way. Now, if we are willing to use the 500 ft. ruling for that purpose, assuming there is drainage, then this portion of the land is being drained. If you can confuse the landowner enough to get him to believe that he's not going to get drained and the well's over here on his neighbor, so what does he care, you can go ahead and be draining his under the present state law as long as you can get him to sign a waiver. Well, that's just a very small example, just a little bit of the circle laps over. In all fairness though, ah, here's an even larger case. If the same landowner owns both these tracts, then there's still no problem; he's going to get his fair share. But suppose this was a different landowner down here on this circle and he does not get any revenue, if

Charles Bartlett he gives up the waiver. Now these two wells have been drilled. Our distance law requirement as they're going to be proposed in the new law are fine. We can work with the Commission in adjusting those distances as we learn more about production in the area. The indicated distances between wells in the proposed locations are shown before you. This one would be 1200 ft. from Well No. 1, and on down this direction 1200 ft. It turns out they are centered between the two. Now this tract has the common position that it's a long-gated tract, there's adequate acreage in here if you were shaped right, the landowner. If you could rearrange the landsite, he could have a well and not have to worry about his neighbors. But the 500 ft. circle laps over, I don't care where you put it, because the tract is only 490 ft. wide; I don't care where you put it he's going to be required to get waivers or some sort of an agreement with those offset operators. This operator, having

Charles Bartlett concluded his well, may very likely say to whoever owns this, the landowner, he will unitize this whole piece of property, and in essence, say that well is assigned to all of this property. Now he can't draw any more wells without getting waivers either. We're getting a messed up situation for orderly development of the field. So we have to get agreements here and here. If you can't get agreements, the well can't be driven; and yet, there are more than legal distances from the nearby wells. Now eventually when the Commission gets set up, we could of course set up some field rules in here and proceed at a slow pace. If we had money we could drill this immediately. This could not be worked out under the present rules and regulations, and let me explain further; Not only this circle, but also this red square block area. We faced this last year when we first started drilling down in Lee County. We said what are we going to make for units. If we make circular units, if we keep making circular

Charles Bartlett units, somebody's going to get left out. The circles, even if they meet entirely in a field, will leave diamond-shaped gaps and if those happen to be some landowner that wasn't leased, or even if he was leased by some company and was not included in the circle, he could have been left out of any production. Well, he is because he hasn't got the clearance. So we decided early-on in a preliminary methodology to take the 500 ft. circles and squares out, which makes 1000 ft. squares, and therefore, we could have drilled here; this could have been drilled on 1000 ft. squares and this could have butted against that one and keep doing this until everybody eventually is included proportionately their due right in a unit. OUr present State Law and Regs which are the head of this issue, allow you to set field rules. It doesn't even say square units, it just says as long as the units are equal in size and shape in the field. So you could make them (I suppose) two miles wide and ten miles long

Charles Bartlett as long as all the units were made that way; that's ridiculous of course, but this is a much more feasible method. Now there's nothing magic about a 500 ft. circle right now. We don't know, and I don't think there's anybody in this room that can say yet what the drainage of an oil well is in Lee County. It's a fractured reservoir for the most part except for the flint-sandstone, and it will be some time before we have neough engineering data, production data, to determine exactly what, indeed, is the drainage of those wells. At least a reasonable starting point is this 1000 ft. square. Well, that's Situation No. 1. Let me go into the next one; it's a little smaller map, I'm sorry, but this was submitted to Tom Fulmer's Office. One operator owns the blue tract and possible putting together some more and trying to detail some land ownership. Another company owns this outlined in purple. You see, we have already indicated on this plat the well locations that have already been drilled,

Charles Bartlett this upper circle and the middle circle that's overlapping and the other circle over here. So here you've got three circles all slopped on top of each other and what kind of spacing I don't know. Just some convenient piece of property that he owned and a 500 ft. circle. The people were sent letters, but one within the circle, company representative here, did not receive their notice in our fielding of one of these wells right here because that circle there is on their property. My purpose is not to call names and fuss with any particular operator. I'm just trying to get permission to work on the problems that are immediate and do something that is fair and reasonable for all so that we can proceed. This came to our attention because we were negotiating this land right here for lease. At that time he received in the mail this notification and he presented that tous for some opinion. We did not go out looking for trouble, it came to us; and it was the

Charles Bartlett permit form "do you object or do you not object to the well being drilled right here" and that's within about 150 or 200 ft. of the edge of this property. If he had said go ahead, it is quite likely he would have been drained. If he had been asked to join in his proportionate share in that circle, that would have been more reasonable, or certainly some sort of spaced-out, blocked-out unit had been selected. These wells had already been drilled in June or July of this year; it was a very new thing and there has been no field rules established on this. So we're operating in limbo and some erroneous things are happening. Well, quite frankly, we did suggest to the land owner that it might not be a good idea to sign that waiver, and now we have the lease on that and won't sign the waiver; but we will be happy to join in the drilling of the well there if we thought it wasn't access drilling. That's a possibility that you can get them too close together. Finally,

Charles Bartlett I just decided after lunch to bring this exhibit in. This is the one in the middle, and maybe more familiar, if I can get this up here just a little bit.

Richard Chew Would it ruin your train of thought if I ask you a question?

Charles Bartlett I don't have a train of thought. What is it?

Richard Chew I assume what happened in the first example you gave us that a f e llow on one side wouldn't talk turkey.

Charles Bartlett We just never did get an answer and our time limit ran out. I think with more time, it was a time-pressing situation, and I think with more time that could have been worked out.

Richard Chew And this becomes whatever bargain the parties strike with each other.

Charles Bartlett That's right. Now, nevertheless, if he objected (and he could) he could prevent a well being drilled here.

Richard Chew What happens when this kind of notice is given out to a landowner who is not a sophisticated operator of some sort and he doesn't respond....

Charles Bartlett He doesn't understand...

Richard Chew It's over there on Joe's property and what do I care, and that's the end of it?

Charles Bartlett His two weeks or whatever...

Richard Chew He gets nothing?

Charles Bartlett His time runs out and he gets nothing, right.

Richard Chew And it's precluded?

Charles Bartlett Right; and that isn't right.

Ralph Gunter Suppose he had signed and agreed, what percent of the oil would he get or what is the dividing line?

Charles Bartlett We have this survey, a simplified version of a survey. We estimate that this operator in our proposed 1000 ft. square of our boundary would have (I think) 25 percent of the unit. So we say do you want to pay your 25 percent and join in this well or do you want to farm out to us, sell it, propose any kind of agreement you want, fine, and we'll try to belabor it and see if we can work with you. As far as the landowner is concerned, he's then going to get double royalty in a sense. He's

Charles Bartlett going to get a portion of the royalty from this well 'cause we're going to go over here and get this one and he already is getting this portion, as it is commonly being done now, because we unitize the piece of property the well happens to fall on--however ignorant it may be.

Ralph Gunter So the division of the royalty then is just by agreement, whatever they work out instead of acreage. I though t it was by acreage or something.

Charles Bartlett It is, this is where you can get into a porportionate acreage sharing, and that's the nearest thing to fair that I can dream up. If some of you can dream up something better than that, great; but that, of course, is following the precedent of many thousands of wells that have been drilled in Oaklahoma and Texas and elsewhere where you set up a rectangle or a square unit and you keep drilling these units and whoever is in them shares, whoever is the lease owner shares the cost or firms up or takes the penalty as set up in the state law.

John Goldsmith May I ask a question before you cover that up, please. The smaller chart that you listed with four wells on it, are you saying these wells were drilled after July 1?

Charles Bartlett Yes sir.

John Goldsmith All four of them?

Charles Bartlett Some of them may have been permitted prior to July 1; I don't know.

John Goldsmith But any well drilled within 500 ft. of an adverse property line, either one had the consent or no response?

Charles Bartlett This last one I'm talking about hasn't been drilled. He hasn't completed his permit as I understand.

John Goldsmith Which is the so-called last one?

Charles Bartlett The south-most circle.

John Goldsmith Why don't we proceed. I've got a whole bunch of questions.

Charles Bartlett Okay. Alright, this is a working map; in fact, this was only put on there yesterday where we haven't even made formal contact with some of the people that are involved. This is the Ben Hurr Field and this is a tract of the portion of the northeast.

Charles Bartlett This is a re-discovery (if you will), No. 3 Bledsoe, we did a couple years ago. Virginia Oil and Gas I believe leased the Leslie Terry Tract. This tract over here which is Winston Terry, it's odd-shaped and butts that and goes on over to (inaudible). It is my understanding that Virginia Oil and Gas worked out some kind of--pardon the expression--swap-out agreement. The first one was drilled here, and the second and third was drilled almost on the line. Obviously, with any drainage at all, this is coming across and pulling oil from Winston Terry's property which goes between the wells. I don't know whether the land-owner, Winston Terry, is receiving any royalty at all, maybe a little bit from one of these wells. But it don't take too much of an imigination to see that he's being drained. Now if Phillips and Virginia Oil and Gas wants to make such arrangements, that's allowable under the law; no problem. But these squares are done on different scales. The first one we looked at was

Charles Bartlett 100-200 ft. scale and the next one is 100-400 ft. scale, and I think this one is 100-200 ft. again. This square, the large one, varies. I'm sure it is one of these 1000 ft. squares, but you can't put a 1000 ft. square in here now because the other wells have already been drilled too close. So the next step back, and this still hasn't been done yet, to my knowledge; it's been done on 500 ft. rule spacing on the Ben Hurr Field. If you put ten-acre barriers around these units, that is approximately the size it will be, you'll have these two over-lapping a little bit. Since Stonewall Gas now has an agreement with Phillips Petroleum to drilling this tract, obviously, we're going to drill up in the highest structural position, Ah, we can be more than 500 ft. from the well over here. That's about 710 ft. from the oil well here and 1300 ft. or better over this way and 700-and-some feet from this No. 3 Terry Well, using ten-acre spots. We don't know which way to go on this thing. Right

Charles Bartlett now we just have to sort of have a hollow with the various operators in there and say this is the proposal and we roughly guesstimate how much acreage you have in a unit, and say do you want to join in or farm out. That's the way we intend to proceed and we'll be doing so in the next few days. But you see the problem this whole thing presents and it's getting worse every day that we delay in setting some field rules. Right now you can pretty well do what the law allows and that is drill mostly wherever you can get an agreement to drill.

Ralph Gunter Let me ask you a question. Is there any way to determine which way the drainage is coming from into the well?

Charles Bartlett No, not at the present time. This is a fractured well, and I don't think anybody has got any evidence yet to indicate which way the primary fracture panel is and which way the oil is coming from, or 20 ft. away from the well if there is a blockage and if it's coming from all around the other

Charles Bartlett way. We must do some assuming at the present time and that is to say that the oil is coming uniformally from all directions till we know otherwise. Ideally, it would work in a circle, and you see, the circle don't work because of land ownership problems in sharing of the revenue from a well. What I'm trying to say, in summary of all these examples, that we stand ready to appear before this Commission and go ahead and start doing some field spacing. I think all the operators that we have talked to that are knowledgeable up and up operators, tend to agree with our thinking on setting some sort of a pattern like this and sharing them proportionately as we drill wells. In the interim until we can do that, things are going along helter-skelter and is compounding the mess.

John Goldsmith I'm concerned. It sounds like somebody is not doing their job and I guess that somebody is me. I think what I'm concerned about is how things are worse now than they

John Goldsmith were before since we're still operating under the 500 ft. rule.

Charles Bartlett I'm not saying they're any worse than they were; this is just facts.

John Goldsmith Secondly, ah, there's nothing to prevent, you said earlier that noone in this room had enough information to set field rules.

Charles Bartlett Not to establish drainage.

John Goldsmith Well, is that a critical element to adequate field rules?

Charles Bartlett You've got to start somewhere.

John Goldsmith Okay, what would you recommend the field rules and spacing to be?

Charles Bartlett We have, arbitrarily, combined the present existing regulation about the 500 ft. circle with a comprimation of data that is used in several other states. The wells that are drilled 2500-3000 ft., in that general area, you usually establish a 23-acre spacing. I didn't mention that, but a 1000 ft. square comes out to be 22.96 acres; so that's about a 23-acre spacing if you use a convenient measurement which is 1000 ft. square. There's nothing magical about that

Charles Bartlett at this time except that it does establish a pattern and that has some long-range implications that I wanted to elaborate on. If it is possible, and again, at this time we do not know if it is possible to have an established secondary operation recovery method in these areas in Lee County. It will work so much better if we have some sort of pattern than if we have wells here and yonder and every where.

Azie Morton If you have a pattern, can you enforce it?

John Goldsmith Sure.

Azie Morton How can you enforce it in the absence of regulations?

John Goldsmith You have statutory authority to establish provisional drilling units.

Charles Bartlett You have in the law, and I think Tom has it, if I have your permission....In the law as it sets right now to say to an operator that submits a permit, show me your area, what is the area of your unit. This is on page 23 of the Bill, and I presume without any comment in the Regs, this would be the

Charles Bartlett way it's done. Inspector Shall Issue Requested Permit Made--"The inspector may, however, in any case in which an oil or gas well is proposed to be drilled within 500 ft. of any boundary or tract of land, if in his opinion, the drilling would cause drainage of oil or gas from the adjacent land required as a condition of granting the permit. The Achievement--"Prior to any production of the well either...." Of course, one is the agreement or two, "agreement satisfactory to owner of the oil well thereon if the well for which a permit is sought if the well produces oil or gas.." Somewhere in here I think it is fairly straight-forward. He can say where is your drilling unit. It's not really clear, but I think that is within his powers....

John Goldsmith Well....

Charles Bartlett And preliminarily set a reasonable spacing unit; instead of something oblong and whatever the property happens to be shaped like.

John Goldsmith At the public hearing, not a public hearing, but at the initial hearing of the Commission

John Goldsmith in August and before the Oil and Gas Subcommittee in September and in every, I mean, at the initial formation meetings of the Commission, ah, the point was very definitely established that we did not want the barbar o us regulatory process to hold up the implementation of the practice of conservation. Maybe this isn't broadcast clearly enough, but from day one (i.e.) July 2, this Commission was ready to receive application for provisional spacing. So, you know, five days notice and we'll have a meeting. Okay now, I think, I am concerned that the situation, I think maybe this is the subject, we state in these regulations and we only said the Ben Hurr Field, but I think the suggestion from the Division of Mineral Resources and others, is that special fields for Lee County are needed. We couldn't be in a greater thing. Now the question on the process at which we arrive at a fair and equitable rules to do that, ah, your time in doing this is what?

Charles Bartlett We're drilling wells right now and will

Charles Bartlett probably move in the second rig next week. We have about twenty (20) wells that are in the permit process right now, and these are, in large part, step-outs from either one of the fields; each one it hits is, in essence, a new field.

John Goldsmith Well, we're back to the problem. My personal inclination is that since it's your capital at risk, you know, to give you the first crack at suggesting provisional spacing. Since we had no data either way, but it's your money at risk, ah, when do you anticipate making such a request? I mean, when would you want us to be responsive to you?

Charles Bartlett This is ignorance on our part I guess, but I didn't realize you all were available and ready and set up to that extent to where you could receive these kinds of requests. I thought that was determined after you get all the Regs in order and approved on up the line and then we're in business. I assumed this was a public hearing to get those things in the mill. If you're ready, we're ready. We can be ready tomorrow with

Charles Bartlett some suggestions in field spacing. We're going ahead and dong it anyway within the realms of what's possible for us to work out with adjoining operators and trying to fit together, wherever possible, squared off units, not circles.

John Goldsmith The sooner the better in my opinion. I think in terms of the long-term development of Lee County, and I understand there has been some recent rather spectacular discoveries there of gas.

Charles Bartlett There has been one interesting gas well found in recent days in Lee County, yes.

John Goldsmith Is that currently producing?

Charles Bartlett No, it's shut in; mine piped. ARCO's well also encountered some gas, but I don't anticipate that gas will be perforated for some months into the future.

John Goldsmith Again, I hesitate to ask you a major question. If you have fractured reservoirs, what does that mean in terms of secondary recovery potential? I mean, my impression of Lee County is that you had over-drilling, you know, the loss of reservoir pressure;

John Goldsmith it has been over drilled and....

Charles Bartlett In some areas that is undoubtedly true and in other areas there is still lots of in-field drilling that could be accomplished. We could talk for several hours about Lee County and what's been done right and wrong down there...

John Goldsmith Let me just make a committment to you: (1) We're here--the three of us are here today--and the two of us are in Radford every week, but you want to start the actual process of divisional spacing in Lee County today. Now I'm concerned. We have a consultant to the Board who is not here with us today, ah, but, you know, I want you to know that we wish to cooperate and I think to start our process of special field rules....I don't know. Do you think the special hearing in Jonesboro is in order? I know you said you had talked to the other responsible operators, I don't want this to be a process that is as distant from Regulations as Richmond and, you know, I think....

Charles Bartlett I think several of the operators around here would certainly like to be present when we discuss the matter.

John Goldsmith Okay, so the ball's in your court then.

Charles Bartlett Alright, I'll bounce that ball right back.

Richard Chew Would you tell us once again who "we" are, for whom you speak?

Charles Bartlett Stonewall Gas out of Richmond is the principal operator that's working through us at the present time. We have also cooperated with the Ben Hurr Oil Company in locating some of their wells and they have a well currently underway. Stonewall Gas has just completed their fourth well since the first of November, and are speeding up their drilling program.

Richard Chew If you would, permit me one more naive question, and I realize this is slightly out of our "bail of cotton" a little bit. If these notices go out, and as in this one instance you mentioned, sometimes you don't even hear back....

Charles Bartlett That's right, sometimes we don't hear back.

Richard Chew Don't you do better in that situation than where you have to account to the missing parties?

Charles Bartlett These have to be sent by certified mail so you know they are receiving it.

Richard Chew No, suppose they're missing or unknown or just don't bother to answer or don't have enough whit to answer, don't you do better in a deal like that than where you have to take those innocence into account?

Charles Bartlett I....

Richard Chew I mean, why do you care? You make more money this way than...

Charles Bartlett It doesn't make any difference to the well operator in a sense...

Richard Chew Sure, he's got to share with the above neighbor.

Charles Bartlett If we don't have another company that owns that lease or if it's unleased property, and of course, under the statutes he can take the 100 percent penalty route. With other companies that have leased property that would fall within our unit, if they say go ahead, we can form a unit if we so

Charles Bartlett desire and leave them out of it under the present regulations unless we establish some field units.

Richard Chew They could also say go ahead and here's our deal.

Charles Bartlett Right, but if you don't like their deal, you may not drill a well; depends on how tough the deal is.

Richard Chew That's true, but isn't the driller more likely to have to deal with a deal under what you're proposing than what you've got already?

Charles Bartlett You bet you; indeed you would because you're establishing that everybody within that square....

Richard Chew Has rights.

Charles Bartlett Has rights, and has rights to the well proportionate to their share in that unit. This is done day in and day out all through the midwest and elsewhere.

Richard Chew Why are you not continuing to do this then?

Charles Bartlett Because it's just a mess right now that we're not doing it. We do have some

Charles Bartlett landowners who are being adversely affected, and we're concerned about them.

Richard Chew You're talking about small landowners?

Charles Bartlett Small landowners, yes, who are not aware of the consequences of them signing that waiver.

Richard Chew That's what I'm interested in..

John Goldsmith I didn't ask him for "Gorees" in Lee County. We are sort of a "reactive body " with no budget to speak of, and I think the concern I have, you know, this is most instructive to us.

Charles Bartlett That's why I came.

John Goldsmith Good. But, you know, we need to hear from you soon and in greater detail and, you know, we need to talk about agreed landowners; and you know, that's why we're here.

Azie Morton What are you going to do if you work out an arrangement whereby that person over here in this left corner is due to get a share and you can't find that person; he never signs, what do you do? put it in a

Azie Morton "will account" or something?

Charles Bartlett We advertise it in the newspaper. That is a requirement that we must do. I'm talking about an ownership. If we know that someone owns a share of it, we send them a notice when we're getting ready to drill the well, and do they have objections. If we already have them under lease, it really don't make a whole lot of difference. They can object but if they don't really have a valid objection, we have already given them money for the lease and we have the right to drill. But in case a person whom we have tried to locate and we can't, our only requirement is that we put it in the newspaper for two weeks in the lcoal newspaper, which is the last place in the county where this is going to be done. They have two weeks for somebody to pick up on it and respond; otherwise, we go ahead. Suppose you have one hundredth of an interest in a unit that you can't find, should that one hundredth person (and you don't even know whether

Charles Bartlett they're living or not) hold up the benefits that will be derived from that well?

Azie Morton Assume that you don't hold it up, are you going to put that person's share into an account so that if some point they show up you have it?

Richard Chew That's what they do every place else.

Charles Bartlett Right, put it in escrow. We just can't contact them and don't know where to send the money.

John Goldsmith In 1981 the annual production of oil in the State was somewhere around 13,000 barrels. For 1982 I read in the newspaper it's going to be considerably more than that...

Charles Bartlett Yes, multiple of that.

John Goldsmith What do you feel would be, I mean, you're spending $5 million to do that, what do you feel like is the, you know, the plateau of potential of Lee County?

Charles Bartlett Ah, I, I don't know that I foresee the oil boom of east Texas certainly; that's not likely to happen. We're not dealing with that kind of volume on most of the wells,

Charles Bartlett although there are some very nice wells that have been drilled this past year. But the average well is not the kind of thing that Exxon is going to move in here and set up fifty rigs and start drilling. The major oil companies are not too interested in what's going on in Lee County. So it's going to be a smaller operators' haven to try to develop for the most part.

John Goldsmith While we have you captive here, I have some more questions if you don't mind. I understood when this Act was passed that there was a great deal of resentment in Lee County about the statute period, and that it was going to put a lot of little guys out of business; and it was my understanding--I read several of the newspaper articles on this--but my understanding was the cost factor dealt with the casing requirements and the protection of the aquifer. Now since the Act was passed, has this prediction been proven accurate? I mean, has anybody gone out of business?

Charles Bartlett I don't believe so. There's a couple of

Charles Bartlett them we wish would, but...

John Goldsmith Would you care to elaborate on that.

Charles Bartlett That is simply, I think most of the operators are adjusting now to these additional requirements and they see-- I hope I speak for at least some of them-- they are accustomed elsewhere to do that same sort of thing: Protect the aquifer, and submitting casing to the top. We do have some former and still presently active operators in the area who have done some things on a very low budget scale, and they have not been protecting the aquifers in the past. So it's going to cost them more.

John Goldsmith Well, I read someplace there was a water representative here. I mean, we may need to go to Jonesville, I don't know, but when you have water damage and when you have landowners agreed, I mean, people usually get on the telephone and call their delegate or I mean....

Charles Bartlett I think they've been calling Tom occasionally.

John Goldsmith I mean, I don't hear any of this and I,

John Goldsmith well, does anybody else have any questions? Excuse me. From the Commission's perspective, I very much appreciate you being here and look forward to bouncing this ball around again.

Charles Bartlett Thank you, Sir.

Azie Morton Thank you. Next, please.

Glen Phillips I'm Glen Phillips with ANR Coal Company. Since we weren't allowed to cross examine in this form, I would just like to raise a question. Mr. Snyder indicated, and I thought it was quite interesting, he said that if the wells weren't located within three feet of where they were supposed to be according to the plat, then the application would become null and void. My question is this: If we use photogrammetry for the photometric locations, and we don't achieve the accuracy of one in 5000 which I'm very skeptical of being able to do with a high degree of competence, if that happens and we don't get the right accuracy, does the application to drill become null and void?

John Purcell Is that a recordatorical question or are you waiting on an answer?

Glen Phillips I would just like to have it for the record.

John Purcell Just leave that on the record.

Glen Phillips That being the case....that's all I have.

Azie Morton Does anybody have a question of this gentleman?

John Purcell This company of ANR Coal Company, John Hancock is the president of it and submitted a letter in support for presentation here by Mr. Carter?

Glen Phillips Yes.

John Purcell Okay.

Richard Chew Since you're standing there, maybe you can tell me if these dreams that have been impressed by the various parties do not come true and there is an error, who is going to discover it? Is the coal company then going to go back and say ahhh you say it's in there, but it isn't; it's 12 ft. off and if so, what's the point? We're going to have more surveys to find the errors than we are to avoid

Richard Chew them, I think.

Glen Phillips The question is, I think the whole photogrammetry issue was misinterpreted quite frankly. I think it is simply an issue of accuracy. We know that we have blunders, we have blunders, we have human mistakes, but the question of photogrammetry (as I see it) is whether or not we can locate gas wells with a high degree of competence to be within an accuracy of one in 5000. There's no argument between the industries as to whether or not we need a one in 5000, that is given. Our question of photogrammetry is whether or not we can achieve this. I find it quite interesting, the concept that maybe, if that accuracy is not achieved, then the application will become null and void.

Harry Childress How do you know that accuracy is not going to be achieved until you check it?

Richard Chew Let's have a reversal; let's say you all are, you all are putting this terrible burden on us to determine. You've got two

Richard Chew problems: One, what will produce accuracy in the most economical way to the parties involved...

Glen Phillips Yes sir, I understand that.

Richard Chew An acceptable accuracy, and the other question is, who is going to pay for achieving that accuracy. So, I'm just going these next steps; suppose, in fact, whether it was done by a drunken surveyor or drunken pilot doesn't make any difference, but the fact is the location is intolerably inaccurate. You raised the question then if there is a void permit. Suppose there is, but how did we find that out? Are you going to go back out and test what the driller did to see if his certifications are in fact correct? Surely you don't expect us to do that. Sho is going to run that survey on the surveyor?

Glen Phillips If that location is critical to our mining operation and another company--we drill oil and gas wells ourselves, we're a subsidiary of the American Natural Resources--so we're into oil and gas ourselves; but

Glen Phillips if you or anyone submits an application to drill an adverse, what we determine an adverse oil or gas well through our coal and it is a critical location (and they sometimes are as Mr. Borrelli has point out), if that happens, my surveyors will be there very quickly.

Richard Chew Why don't these people say hell why don't you do it in the first place and pay for it?

Glen Phillips My question is, if I go there at my expense and find out that the accuracy was not within one in 5000 by photogrammetry, then I would assume if the application is null and void, then I would assume the operator, the gas operator, will not be able to do it. Going back to this comment "if we're outside the three-foot boundary", if we're outside the three-foot boundary, it's void. If we're not within the one in 5000.....

Richard Chew But then he comes back and says your surveys are wrong and my surveys are right, I mean, what do you guys have in mind as

Richard Chew far as harmonizing? What about this deal of tolerance levels?

Glen Phillips That's why we agreed on one in 5000 in the first place.

Harry Childress I know, Glen, you're a surveyor from your background; I know you did quite a bit, but in this experience with photogrammetry, you do comparisons, right? to set up the other one, but with an on-the-ground survey you tack that back in and with a few computations you can tell if it's off or on, is that correct? I've never done that much surveying.

Glen Phillips Absolutely; all of our survey, our company strictly uses the State Plane Coordinate System. We use electronic distance devices and we use the one-secondth theo lights, and questions were raised about the State's accuracy requirement. I feel like our accuracy requirements are on a higher plane. We're worried about gas well locations; we're worried about a lot of things as far as this location accuracy.

Tom Fulmer How long have they been on State Plane?

Glen Phillips We've been on State Plane ever since I went with that company in 1978. They have converted everything over.

Tom Fulmer You have converted everything over, but you have had wells drilled back before '78, so that is your side. Okay, so you don't agree with, I'm just prodding here...

Glen Phillips I'm just looking for the degree of accuracy of one in 5000 requirement and whether or not you can get the photogrammetry with a high degree of competence.

John Purcell That's a professional question. I'm not a professional surveyor. We have some professional surveyors here, and you're a professional surveyor I understand by background and I understand your answer to that is no.

Glen Phillips I think not, but....

John Purcell Certainly you all must have....

Glen Phillips My initial question was, what if it isn't. The damage may have been done and unless we can go there and see that the location is wrong...

Azie Morton Who determines if it isn't?

John Purcell Let me just....

Glen Phillips If it is a critical location, our company will determine that, Mam.

John Purcell Well, let me just ask you....

Azie Morton Before or after?

John Purcell After.

Glen Phillips If the answer to my question is yes, the application will become null and void if we don't achieve the one in 5000 accuracy in photogrammetry. If the answer is yes, and that location is critical to our mining operations, then my company will perform a survey within the notice period and file objections based upon that location.

Richard Chew But you will see immediately that you're starting a whole procedural chain of events when you say that you are filing objections, because somebody down here at the end of the table is going to have to say no it doesn't become instantly void because I don't even know what the facts are; you just came to my front door and

Richard Chew told me this and two weeks ago this gentleman over here walked in my front door and told me something different. So now what are we going to have, temporary stays, hearings? probably so, if you want to make it constitutional.

Glen Phillips I just asked the question if you can give me an answer.

Richard Chew Well, it may be absolutely void in the air, but it won't be void down on the ground until everybody has had an opportunity to be heard and give notice of that.

Glen Phillips That's true, but as a practical matter though, if the location was critical to mining operations, as Mr. Borrelli has pointed out that they can be at times, then the operations would be stalled...

Richard Chew We could give him authority to enter a temporary stay or an affidavit signed by a Certified Virginia Land Surveyor.

Glen Phillips But what this would amount to would be a test in critical areas as to whether or not photogrammetry was good enough, and that's the whole point I'm making.

John Purcell This whole debate on photogrammetry which frankly I have no idea, certainly, I asked that question of Mr. Cale, I believe it was, of Columbia Gas Company whether that was a method that was recognized by your professionals, by the professional land surveyors and I still, he said, you know, how you arrived at a methodology was not something that was regulated; but surely there must be some professional opinion around here that's worth something that's going to tell me the answer to that. I'm as interested in yours as I am his; and I think we're going to find out from some other people what that is.

Glen Phillips If we have adequate accuracy and density of ground control surveys to establish X, Y, Z locations, "if", and "if" we fly the airplane low enough, and "if" we don't have too much haze that day, and "if" the person flagged the right location--we're getting close now--and "if" the stereo complier has enough experience and don't

Glen Phillips pick the wrong point from a pair of 9 in. photographs, then we might achieve one in 5000 accuracy. But I don't want to be on the ground near that point if it's depending upon that, upon all these "if's"on photogrammetry. We're surveying from pairs of 9 in. x 9 in. photographs. Measurements are taken directly from pairs of 9 in. x 9 in. photographs...

John Purcell Stereo photography.

Glen Phillips Now if we want to compare that to what we can do on the ground, sobeit.

John Purcell I think some of that which you have raised, which both of you have raised, is a matter of professional opinion which I certainly would like to find out a little more about it.

Glen Phillips If we specify all these things, sure, we can get one in 5000 accuracy for a specific point location. But in lieu of all these specifications there is no check because the plane flew over and they snapped photographs and somebody somewhere else took measurements from these photographs,

Glen Phillips that's it; X, Y, and Z. That's the gospel truth; you have no checkers. Personally, I worry a little bit about this mining within 500 ft. and these requirements because that person that looked through the panel point might have been obscured that day; leaves might have blown over the target the day the property was flown, and maybe he saw something that looked like that target.

Azie Morton The guy on the ground or the surveyors might have had a hangover.

John Purcell Well, I think we're going to have to investigate the point of what the land surveyors do.

Glen Phillips We need a more securer check.

Azie Morton Are there any more questions? Okay, thank you very much. Earlier this morning you had a concern. Okay.

Bill Kelly I have something and it don't really pertain to the Regulations; it has to do with the forms. I'm Bill Kelly and I'm vice president of Operations for Coal Resources Oil and Gas. I've been involved in this

Bill Kelly

process off and on during the formulation of Regulations and the forms that go with them. At one of the prior meetings we pretty much agreed on the composition of the various forms and the information that we required. Since then, since I've been involved in compiling some information to fill out part of these forms and part of our permit applications, I discovered a couple things I'd like to suggest to be corrected. One is on Form 2, Sheet 2 (OBVERSE), right here, there's one small correction I'd like to correct and it's under the information on Location. On the Quadrangle section you have District, County, Latitude, Longitude. According to the requirements of the plat, and you can refer to your plat if you'd like, the little "x" that you show on your plat which designates the location of the well is on a 2000 ft. scale. The footage is measured from the north, the south of the North Latitude, and west of the East Longitude; however, on Form 2 you say Latitude and

Bill Kelly

Longitude and that leaves you open to several different interpretations of that. You may have the exact latitude and longitude and you may get footage measurements from different latitudes and longitudes on the same quadrangle. What I'd like to suggest that you mark out Latitude and Longitude and in the place of that put [_____ft. South of Latitude; _____ ft. _____ West of Longitude] which refers back to the direct measurements on your plat. That's my one suggestion. My other suggestion is on Form 17, Appendix D, which deals with information that is permitted on the completion operation that is done on your well. It was the intent, I believe, in the pre-operation of all these forms that we make them as fool proof as possible and if you'll pardon the expression, "as idiot proof" as possible, so all the forms will be of such a manner they are straight-forward enough till all you had to do was fill in the blanks and there was very little question of what the intent, what the requirement was.

Bill Kelly

I'd like to suggest that we modify this form. I have my suggestion here if you'd like to pass these out. This goes back principally, I think you can see that all the forms that are in Form 17, there are several pages, that we have taken the old Completion Form and modified it somewhat and broken it down in segments which deal with different parts of your operation. What I proposed is to modify this Form is to include additional information that may not be included on the Form as it exists now. First of all, you indicate the discovery of oil or the discovery of gas and the indicated potential as you see in your initial test on the well prior to stimulation. Then you get a complete record of stimulation and it's been our experience that you may have one or more zones in the well that you're treating; normally, not more than three although there may be. But in most cases not more than three zones, that you describe your completion work on each zone. Simply fill

Bill Kelly in the blanks as to the number of your breakdowns of pressure rates, your injection rates, and your pressures involved. It is simple straight-forward and you know exactly what you have to fill in; you don't have to guess. Some operators may put down a complete detailed description and some may not put down half the information you really need on the existing form. This way you know exactly what you're required to submit. Down at the bottom you have your final production, zone, rock pressure, hours tested; which is important. Then at the bottom, if you comingle your zone, you have the final total open flow and rock pressure for the total comingled production. I have discussed this with Tom Fulmer briefly and he feels also, I believe, this additional information would be good as far as State records and anyone who may be wanting to use State records for future work in the State. That's all I have.

Azie Morton Any questions?

Bill Kelly Thank you.

Azie Morton You wanted to make comments?

Donald Johnson Yes.

Azie Morton Could I impose on you and ask you to limit them to about five minutes?

Donald Johnson Yes, Mam.

Azie Morton And anybody else who follows, please do the same. Okay.

Donald Johnson I don't want to take any more time than is necessary. I just wanted to respond to some comments which Mr. Snyder made, and of course, he responded to about every point we made. So I would like to respond to the points he made. Ah, and that's what Mr. Snyder and I have been doing for the past two years, and we'll probably continue to do if we're asked to. First, the whole idea of surveying all wells within 2500 ft. of the proposed well, this comes from the Statute and Section 45.1-312 of the Code which says that "all wells within 2500 ft. of the proposed well will be shown on the plat". The plat requirement in that section says it will be an accurate plat. So we're

Donald Johnson saying we want this particular one because it's so important to our decision-making process, and it's so important to safety that we feel that an accurate plat with regard to this certain issue should be on a survey plat and a plat, and that all wells within 2500 ft. should be surveyed with a plat accuracy of one in 5000.

John Purcell Give me that Code Section again.

Donald Johnson 45.1-312, there are two point concepts in there. First, all wells within 2500 ft. shall be shown on the plat; that's a requirement in the Statute. The second thing, the Statute says that the plat will be accurate and we're saying this Board has every right if it feels, if it deems what we're asking for is proper and what we're doing and saying to you all is proper, we feel like this will be of considerable help to us and we feel that it does relate to safety. It certainly relates to decision-making processes and the State only gives us fifteen (15) days to make these decisions, that an accurate

Donald Johnson plat does show all wells within a 2500 ft. location. It should also be an accurate plat and show all the wells within the survey location and be certified too. Let me say one thing about, certainly we don't think the sole economic benefit here is the coal operator. We're all out there trying to do our best and trying to recover resources. There are benefits to surveying wells and making wells more accurate and I don't think anybody's going to object to that statement. There's a lot of benefits and there's more benefits than just to the coal operator. The coal operator is going to have to survey wells later on, but by not having an accurate survey of the well location to begin with, the well operator should not be put, or the coal operator or the coal owner, should not be put in the position to have to go out there with some survey crew in order to find out if there are wells outside the 2500 ft. zone because nobody surveyed the wells. Certainly this is within the legal power

Donald Johnson of the Well Review Board and we feel like there aren't any cases that say just because something doesn't say in the Statutes that the well has to be surveyed, that this Board can't require it to be surveyed. The Statute says this Board, that the plat has to be accurate and that the well shall be shown on the plat. This is Virginia and let me say I feel (this is my personal opinion and I believe a lot of the people share this) that this is the most surface-owner oriented piece of legislation in this country; and it also has more protection for coal owners than any other piece of legislation in this country. There's no reason, also, when we come to drafting regulations, follow that, follow that mood. I feel like this is something that will be of benefit to us and we don't feel like it should be compromised. With regard to safety, I don't think anybody here would deny the importance of safety. There have been situations that I'm familiar with where wells have been run into by coal

Donald Johnson mining machinery underground. These may have been the fault of the coal owner or whoever, but these things do happen. It's up to this State and up to this Board and up to both the coal operators and oil and gas operators to see that it doesn't.

Richard Chew Has it ever happened because of incorrect location?

Donald Johnson Yes sir, or things that weren't put on maps or plats, wells that weren't placed on maps. Lots of human errors can result. We had one situation where one well was drilled without notice to us and it went right between, fortunately, it came down right; but it was right next to active workings. We didn't get notice of it. These sort of things happen. All we're saying to you is, we've not had a big disaster and we're not asking for one. We're not asking...

Richard Chew I just asked if it was an incorrect location, a faulty survey.

Donald Johnson There was a faulty survey in that there

Donald Johnson was no notice to the coal miner. I think the survey might have been accurate, but there was no notice given to the coal miner who had his information properly filed....this is not in the State. There was not notice and because of that no one knew where it was in relation to the underground workings. We found, just spot checking, there are misques. The exhibits we have given you show those mistakes in surveying. All that we're saying is what we feel like this Board is being asked to do by the coal industry, we're asking the Board to promulgate regulations which will insure accuracey of surveys because this is the crux of the whole issue: Where is the well? That's what we continually ask ourselves today, where is the well. The more information we have, the more accurate the surveys are and the better reliability we have and the more people we have who have to certify that these things are accurate, we feel those all help to answer that question: Where is the well?

Richard Chew I do too, and that's why I'm asking you for the last time, do you know of an incident of an accident which was caused by incorrect location of a well or plat?

Donald Johnson No sir. I can't cite you a specific example of where that occurred. I can say there are other reasons why this happened. The article I mentioned to you before that Mr. Snyder co-authored told about such an instance where someone backed into, you know, a mining machine broke the casing. Those things happen, but I cannot cite you to a specific example.

Richard Chew I didn't mean to steal any of your time.

Donald Johnson That's okay.

Azie Morton I think his time is up there.

Donald Johnson Is my time up? Let me say a couple more things. The certification situation, and Mr. Snyder said when I prepared some draft regulations that I didn't put in there that the surveyor shouldn't be competent or whatever; that's right, because I copied the old Statute, the old Regulation, and when it was pointed out to us that it

Donald Johnson didn't say "certified" or "registered" we said, sure, we'd change it and we did. We feel like we should have the same consideration with regard to this particular issue. Photogrammetry, let me say on photogrammetry that, look at page 4 of our comments and I think it will tell you the same thing Mr. Phillips told you about the "if's" involved. All we're saying is that photogrammerty, we don't feel like it's accurate enough and our lives are at stake. Outside the coal fields we have no comment on that, but inside the coal fields, we don't feel like it's accurate. The last thing I want to say is about the history of these proceedings. There has been a long history of these proceedings, there has been a lot of meetings, there's been a lot of regulations discussed, there's been a lot of statutes discussed between the two industries, and we have not been able to compromise on these issues because they are safety related and we don't feel like we can compromise on them. We've had

Donald Johnson plenty of meetings, we've had plenty of drafts, we've had plenty of discussions. There has been ideas brought up along the way that wasn't brought up initially, and technical meetings that discussed the law and not the regulations, and now we're discussing the regulations and there is some disagreement about that. All that we can ask you to do is resolve those issues and we will rest upon the decision of the Board as to whether or not we are properly presenting our position or whether the oil and gas industry is properly presenting their position on those issues. We just ask you to consider these things and reach a conclusion because we have not been able to settle them. Thank you.

Azie Morton Thank you.

John Snyder I just have one thing to say and it's on the point of fact that goes to your question, Mr. Chew. The mine map was wrong, the well survey was right. It was a Columbia Gas Map in Kanawha County, West Virginia, and I am the lawyer that handled

John Snyder the matter.

Azie Morton Are there any other comments? I understand that some of you may want to submit some written comments. In any event, if that be the case, I'm not sure of how long it's going to take to get a copy of the proceedings here, but may I impose on you to get those in to us within a 30-day period. Is that asking too much?

John Purcell How much time do you all want for written comments?

Azie Morton How much time do you want?

Donald Johnson Three weeks time from today.

John Purcell Thirty (30) days?

Azie Morton Thirty (30) days?

Donald Johnson When will we have the transcript?

Harry Childress Martha says it will take about 30 days on the transcript.

Martha Johnson At least 30 days.

Donald Johnson I don't think we need the transcript. We've traded information; that will be fine; 30 days will be fine.

Harry Childress That will be the end of the time limit.

Azie Morton Okay, what our next step is going to be

Azie Morton is something both bodies will have to take up at the moment. I would like to suggest to them that after we get the comments that are coming within thirty days and after we get the transcript and the Staff has had an opportunity to put all of this into some form, that we get it out to you. I think, perhaps, with all that has gone on here today, there may be the necessity to have another one of these; but that's something you need to decide.

John Goldsmith Do we need to have another public hearing?

Azie Morton I don't know.

John Goldsmith I have sat here for four hours listening to oil well location arguments and I think I might have used my time a little better. I know it's a crucial issue, and I'm not required to decide on it. My opinions on it may be irrelevant and unwanted, so I'd rather meet separately. I think another public hearing would be by necessity, but I think another public hearing is maybe a redundant label on it.

Azie Morton So you're suggesting that the Oil and Gas,

Azie Morton following the collection of all this together with our staff, review it and then together we will meet separately, maybe once...

John Goldsmith And publish the notice required of a meeting...

John Purcell Let me go into that a little.

Azie Morton We should have a continuation...

John Purcell I, I, I would suggest to the two bodies here, in case we need to, because of Virginia's somewhat "screwed up" Administrative Process Act, that the, that we hold this public hearing open to reconvene if either one of the bodies decides they would like it; that's not to say that we will, but let's keep it that way so we won't have to give another 60-day notice, let's just continue with this one. That would be my first suggestion. My second suggestion is that, as Mr. Goldsmith, I believe he is correct in this, there was very little on common issue. In fact, I don't know of anything that is a common issue. The common issue is the definition section really, so I see no reason why the two groups shouldn't meet

John Purcell separately and have work sessions where are public, open to the public because it is a public value; but not a public hearing, not open for anybody to make comments; to have a work session of some sort to digest all this stuff. Now when do you want to do it. I mean you've got to some time, but I think we, Ms. Morton's suggestion was that we wait for 30 days till we have some form, is that it?

Azie Morton Yes.

Richard Chew And then we'll have the comments.

Harry Childress There's no need to have another one before we get the comments.

John Purcell There's an awful lot of stuff we can sort through before we get the comments; there's plenty here, but you all decide what you want to do.

Frank Bedell Do you suggest rewriting the regulations before the next get-together?

Azie Morton Yes, that part of it obviously needs to be rewritten...

John Goldsmith Edited.

Azie Morton Edited, I guess is the word, to sort of

Azie Morton incorporate somehow the concerns.

John Purcell I think it would also be appropriate that if either member of either of the two groups has a strong feeling about any issue that was here, any language that was here, surely make that known to the Staff so we can take that into acount when we're getting things together.

Azie Morton The staff may delete everything that was said here...

John Purcell If you all want to do that, it's your decision ultimately and you've got to tell us. It's your decision to make, and not ours.

Azie Morton But what each Body will get for the next time around and what you will get as well is another draft.

John Goldsmith Will we have another work session before that draft?

John Purcell Sure.

Azie Morton Oh sure, yeah, and then we will notify you when, and if, each of these groups meet, whether it is separately or jointly. But the purpose of this meeting in order that

Azie Morton we don't have....huh?

John Goldsmith I'm lost. We wanted to have these regulations in place for the 1983 drilling season, right? Now they have 30 days for comment, open comment. Now if we wait that 30 days, now that's February. Then what happens, we have a work session...

Harry Childress Well, it would be better we have a decent set of regulations than it would to rush through it to have it by drilling season. I'd rather get them all down and get them gone if it takes six months or whatever.

John Goldsmith I....

Azie Morton The next step is after the 30 days and during the 30-day period. The Staff will be putting together the next folume, the next document with the comments we have here and with those that will be coming in.

John Purcell And anything you all want to tell us.

Azie Morton And anything that you submit.

John Purcell I mean, you've heard the discussion and if you want to tell them how you feel...

John Goldsmith I feel like the decision has to be made on whether or not the comments will be

John Goldsmith included in the revised draft. If the second draft isn't going to include those sections as much as you have ALTERNATES A and ALTERNATES B, I mean, if the next document is going to say this section is in question or has been acted on, see document so and so; but, I mean, to me any changes made to this draft requires Commission action before it can be incorporated. I don't want the Staff rewriting it.

Azie Morton The Staff is going to rewrite it based on what you tell us.

John Goldsmith Okay, that's it. I mean, I wanted to know when we could tell them we'd do it. I mean, I have a man here today tell me he's been standing here waiting on us since July and he hadn't gotten the word yet. I don't know who's fault that is...

Tom Fulmer John, you can't fault anybody on that position...

John Goldsmith I'm, I accepted the blame for that.

Tom Fulmer I wouldn't accept no blame...

John Purcell Let's get what procedure you all want to

John Purcell follow and get this draft underway.

Azie Morton They do lock the building at 5:00; we've got half an hour.

John Goldsmith I think you've given 30 days for comments; is that too long, too short? Can you shorten that?

John Purcell But we don't have to wait 30 days to get started to work though.

John Goldsmith Okay...

Donald Johnson I don't really think it's going to make a lot of difference since you're not going to have a transcript for 30 days. Thirty days sounded fair at the time, but we could do it sooner.

John Goldsmith What is the normal critical path for these regulations now to be effective? The hurtles, as I understand, we have to jump are reviewed by the Legislative Committees. We have the problem with the 30-day transcript; we have the problem of rewriting in the middle, and then we have to have some formal hearing to adopt the changes...

Harry Childress No.

John Goldsmith So that's going to be...

John Purcell No, that's incorrect. That's my problem. Let me address what you just asked. What's the last legal requirement that we've got to do. I mean, you can fill in and put in some choices you all have to get the best decision. The only legal requirement remaining for this hearing is: One, you can adopt the regulations today if you want to do it; you all have fulfilled every legal requirement through the public-hearing stage. You have to produce a statement, much like the statement that was filed at the beginning that summarizes the comments and tells why, tells basically why the choices were made or selected in the various opinions that were here, plus some other fairly simple statutory stuff. But that has to be produced and the regulations you adopt, sent to the Registrar of the Regulations, and the minute these things are there that starts the 90-day period for the Legislative Committees to act on that. At the end of the 90-day period if the Legislators have not said stop, then

John Purcell they will go into effect. The only other thing that can stop it is if someone files a notice within 30 days that they intend to sue over it because of some defect in the procedure or beyond statutory authority, then another 30 days would go on the turning point. I mean, in other words, you could get sued over these things; it's possible. Unfortunately, that's the way it is. But as far as what you all can do about this thing, the only two requirements that are really left is to produce a statement of why you adopted these regulations, file them, and wait a 90-day period. Now, to come to what goes into these regulations and what procedures you follow in order to come to some conclusion as to the varying opinions that were here, you've got a lot of choices. You could hold another comment period, you could hold another public hearing; there's a lot of things you can do. When you hold drafting sessions, as far as going through the regulations and accepting one side or another side or picking

John Purcell up a compromise position, that's all in your hands and the time schedule is yours to make. So you all figure out, I mean, you all tell us what the best way to arrive at these decisions are.

John Goldsmith I understand I have to wait, we have to wait until the transcript is furnished...

John Purcell You don't have to wait until the transcript is furnished if you don't want to; nobody said you had to do that. You don't have to produce a transcript of this thing if you don't want to, unless you're sued. Apparently, a lot of people want it, so we might as well produce it.

John Goldsmith Well, it seems to me from the Commission's perspective and, you know, I guess the problem we run into is if we solve ours early or vice versa, I mean, you know, we have (I think) fifteen (15) open items which I think can be resolved. The only one I think we really need help on is this question of metering, and, you know, somebody's going to have to tell me what's in here. That's a lovely page. Have you seen

John Goldsmith that one?

Azie Morton Looks like a tax table.

John Goldsmith I think from the Commission's perspective a drafting session on this should be two weeks? I mean, I'm ready to go. This is something that has to be....this does not have to be decided today. Why don't you and I meet on this Monday and we can set a date Monday to have a work session to finalize the Commission's documents.

Azie Morton That's fine, but my concern was for all these people out here who might want to know what, are you going to have something for them to see again?

John Goldsmith Not until this second document comes out.

Azie Morton I mean, there will be a second document? I'm suggesting that the second document will probably go to them within 45 days?

John Goldsmith And then you add the 90 onto that and it's going to be hot again.

Richard Chew We can't shorten it by much anyhow. I doubt that...

Harry Childress Mr. Prather is gone for three weeks...

Azie Morton That's right.

John Goldsmith The Lee County problem, we can still, under our ability under the Act, formulate provisional units and we can proceed when they come back. I would like to hear from this side over here.

Azie Morton Mr. Prather is gone for three weeks and we can't do anything till he comes back.

John Goldsmith We have to meet together as you know.

Azie Morton We're talking about separately. I still think the 45-day period is probably a good target.

John Goldsmith I still feel, encumbent with the assembled people, that if we're going to have a drafting session on this conservation portion of this, let's set that on Monday, and it has to be a public thing, which I want.

John Purcell It's not a public hearing. I want to tell you that it's not a good idea; yours is not so bad. The big controversy is over here on the right, but it's not a good idea to have an "X-party" comments on these things. They can come and sit, be quiet and listen, but not to enter in the discussion; stick with your staff and yourselves.

Harry Childress Really you don't have to know we're meeting, we can have it someplace else, right?

John Purcell Just courtesy.

John Goldsmith We have to, we want to.

John Purcell I don't think it's required, but it is courteous.

Azie Morton Yeah, policy. Is everybody sufficiently confused?

Audience Yes.

Azie Morton You'll hear from us within 45 days.

John Goldsmith We're in such confusion it sounds like an arbitrary decision is required.

Richard Chew Do you suppose there is still a request for an evidentuary hearing pending?

John Purcell That's one you all will have to make up.

Richard Chew I'm wondering, if it hasn't been, we have to make a decision on whether to grant it or not to grant it.

John Purcell That's correct.

Glen Phillips Who is in process of such a hearing? I've never seen one before.

John Purcell We make it up...

Azie Morton That's right.

John Purcell That's right. I mean to tell you it's in Section 8 of the Administrative Process which you can read and the formulation of the issues. The procedure is strictly within the Body and they can tell you exactly what they want to do and how far they want to go with it.

Richard Chew Mark this the "Queeensberry Rule".

John Purcell In other words, within the limits of the Constitution and Section 8 of the Process Administrative Act, anything they want.

Azie Morton Do you want to make that decision now or...

Harry Childress We can't have the evidentuary hearing because we don't have enough present.

Azie Morton We don't have a quorum over here, so we can't make that decision on the evidentuary hearing.

John Goldsmith We don't have to attend that, thank heavens.

Azie Morton Thank all of you for coming today, and we will be in touch with you within the 45-day period.

John Purcell Remember the comments; comments are due

John Purcell within the 30 days.

Azie Morton Everybody did sign the form? Thank you very much.

REPORTER'S CERTIFICATION

I, Martha B. Johnson, do hereby certify that I did appear at the time and place as specified in the caption for the purpose of taking down by tape recording and transcribing the foregoing proceedings; that I do hereby certify that the foregoing is a true and correct transcript of said proceedings.

Martha B. Johnson
MARTHA B. JOHNSON

PUBLIC HEARING
JANUARY 5, 1983
DATE HEARING WAS HELD

2-14-83
MAILING DATE

PITTSTON Coal

The Pittston Coal Group
P.O. Box 4000
Lebanon, Virginia 24266
703-889-4000

An Affiliate of The Pittston Company

Blaine Carter

January 5, 1983

Virginia Oil and Gas Conservation Commission
Virginia Well Review Board
Chief of the Division of Mines and Quarries
c/o Division of Mines and Quarries
219 Wood Avenue
Big Stone Gap, Virginia 24219-2799

Re: Proposed Regulations and Forms to be Adopted
Pursuant to the Virginia Oil and Gas Act

Gentlemen:

On behalf of Clinchfield Coal Company and Jewell Ridge Coal Corporation, which companies have significant coal operations in the Commonwealth of Virginia, I am writing to express our companies' wishes that the Well Review Board adopt the recommendations of The Virginia Coal Association concerning well plats and accuracy standards. Our companies operate in areas where significant oil and gas drilling has occurred, and we believe that these requirements are necessary in order to insure safey of coal miners and the proper evaluation of all oil and gas permits in the coal region. Your careful consideration of the proposals of The Virginia Coal Association is appreciated.

Very truly yours,

CLINCHFIELD COAL COMPANY
JEWELL RIDGE COAL CORPORATION

Gene Matthis

Gene Matthis
President

GM:wf

ANR Coal

ANR COAL COMPANY
P.O. BOX 1871 • ROANOKE, VIRGINIA 24008 • (703) 342-1801

Blaine Carter

January 4, 1983

The Virginia Oil and Gas Conservation Commission
Virginia Well Review Board
Chief of the Division of Mines and Quarries
c/o Division of Mines and Quarries
219 Wood Avenue
Big Stone Gap, Virginia 24219-2799

Re: Proposed regulations and forms to be adopted pursuant to the Virginia Oil and Gas Act

Gentlemen:

ANR Coal Company hereby expresses its support of the recommendations of the Virginia Coal Association concerning well plats and accuracy standards and asks that the Well Review Board adopt same. Our company controls substantial reserves of oil and gas, as well as coal, in the Commonwealth of Virginia and recognizes that the interests of both industries must be protected, but we believe also that miners' safety is absolutely the paramount issue. Therefore, ANR Coal Company and its Virginia subsidiaries, VICC Land Company and Virginia Iron, Coal and Coke Company, take the position that high surveying and mapping accuracy standards must be set and adequate plats required.

Your consideration in this matter is appreciated.

Thank you.

Yours very truly,

John W Hancock

John W Hancock
President

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CHAPTER 5

Oil and Gas Operations Through Coal Seams in West Virginia

By

H. L. Snyder
Columbia Gas Transmission Corporation
Charleston, West Virginia

and

C. Lynch Christian, III
Jackson, Kelly, Holt & O'Farrell
Charleston, West Virginia

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[iv]—Economic Losses Incurred as a Result of Coal Mining.

In responding to the ever-increasing demand for energy production, oil and gas operators may be exposed to significant economic losses as the result of operating or planned coal mines. Ideally, well locations for the proper development of a particular reservoir are based upon exploratory wells and geological and engineering studies; but an operating or planned coal mine may require alterations in well locations contrary to a desirable development plan. Accordingly, the oil and gas operator may suffer economic loss because coal mining operations prevent the drilling of enough properly spaced wells to maximize production. The operator might also be forced to surrender leases within the development plan because it is prohibited from drilling thereon by coal operations, thus losing the lease acquisition and evaluation costs.

In certain cases, recoverable oil or gas may be lost forever, rather than to a particular well operator. If inadequate reservoir development results from coal operations, the wells actually drilled may reach the end of their commercial value before other wells can be drilled to maximize production. The existing wells may then be plugged and abandoned, and the remaining reserves may be too limited to justify a second development program after coal mining has ceased in the area.

Other problems may also increase the costs of oil and gas operations over coal. Where mining is present, oil and gas operators may expend additional money to survey proposed well locations in relation to the underground mine. If the mine maps are inaccurate, the increased engineering and surveying costs may be far less important than the effect on the actual drilling costs of the well. For example, a drilling location chosen some years ago over an existing coal pillar depicted on a mine map actually proved upon drilling to be above an air shaft. Aside from the obvious safety hazard, the drilling cost was substantially increased; and only the cooperative effort of the coal operator prevented the location from being lost altogether.

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retreat or pillar mining [G]. Retreat mining is conducted after a number of entries are developed in one direction to a desired stopping point. Beginning at the farthest point of the advance, timbers and props are installed to support the roof while the coal pillars originally left between the entries and crosscuts are removed. Removal of these pillars progresses backwards from the farthest point of advance toward the mine portal; and as pillar removal continues, the roof of the mine begins to fall into the mined out area. These roof falls are designed to occur to prevent an increase in the roof pressure on the coal pillars which have not been mined.

In the absence of special procedures approved on petition to the Mine Safety and Health Administration described in § 5.03[5], a pillar or barrier pierced by an oil or gas well cannot be extracted in the retreat mining process. As a result, the mine roof will be held up near the barrier; and as pillar removal continues away from the well barrier, excessive weight from the roof is exerted upon the barrier and the coal pillars being mined. This excessive pressure generally causes adverse roof conditions in the working area, which may result in sudden roof falls [G], creeps [G], squeezes [G], or pillar bursts [G].[14]

[ii]—Economic Losses Incurred as a Result of Oil and Gas Wells Through Coal Seams.

In addition to the safety hazards, mine operators may sustain substantial economic burdens when underground mining is conducted near oil and gas wells.

The most obvious of these burdens is the value of the coal which must be left in the barrier around a well. In areas where

[14] The information concerning the safety aspects involved in mining near oil and gas wells has been drawn primarily from the testimony of mining engineers in administrative proceedings in which coal operators challenged proposed well drilling locations. *See, e.g.,* J & J Enterprises c/o Berry Energy Consultants & Managers, Inc. v. Badger Coal Co., No. 100–5 (Oil and Gas Division, W. Va. Department of Mines, Jan. 5, 1977).

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there are a number of wells, this cost can mount significantly.[15]

In addition to coal loss, additional administrative and engineering costs are involved in locating and avoiding oil and gas wells. For example, surface surveys are often required to locate wells and then tie the surface locations in to the underground mining survey and maps. Additional planning may then be required if mining is to be conducted around a well.

Equally important, and perhaps a greater cost, is the expenditure for additional equipment required when an entry must circumvent an oil or gas well.

Finally, in areas where numerous oil and gas wells are located, use of the most efficient mining methods may be eliminated. Long wall mining [G], which results in the extraction of most of the coal in the seam being mined, is becoming more popular and technologically sound in West Virginia. The long wall system involves the advancement of several entries on either side of a solid block of coal, usually 300 to 700 feet wide. After these entries are advanced into the mine, they are connected across the end of the block of coal by a perpendicular entry. Large hydraulic jacks [G] are installed in this perpendicular entry so that they can be advanced individually as coal is removed from the large block. A rotating cutter head [G] or a shear type plow [G] is installed under these jacks, which is used to cut the coal along the entire face of the block. When the coal is cut, it falls into a chain conveyor [G] which pulls it out of the long wall system and onto a belt conveyor [G] in one of the entries on either side of the large block. After each pass of the cutter or the shear, an operator who works under the jacks selectively advances the jacks, and keeps the long wall system retreating into the face of the coal. Since all of the coal is

[15] For example, if the Federal requirement of a 300 foot barrier is left around one well in a five foot thick coal seam, approximately 450,000 cubic feet of coal would be left. Applying a rule of thumb formula that one cubic foot of coal weighs approximately 70 pounds, and assuming a market price of $25 per ton, $393,750 worth of coal would be left in the barrier around the well.

from any perspective, therefore, the safety features of the 1979 statute must be appraised by different standards than the economic features.

[4]—The Contributions of the Deputy Director.

Throughout the negotiations, the industry representatives kept in touch with the Deputy Director for Oil and Gas. When the drafting was polished into a whole by the Legal Committee, the Deputy Director reviewed the text. He suggested many refinements to improve the technical substance and phraseology of the bill as finally submitted to the Legislature in 1978. Perhaps even more important, he and the Department of Mines expressed no objections to the proposed legislation.

After the enactment of 1978 W. Va. Acts ch. 84, the Deputy Director assumed the de facto leadership of the process of working out the new regulations and forms. A first draft was prepared by the Legal Committee, and the preparation of the final draft was at a series of public conferences chaired by the Deputy Director under the sunshine provisions of W. Va. Code § 6–9A–1 *et seq.* The regulations then wound their way through the formal rule-making process of promulgation and legislative regulation.[42]

§ 5.03. Legislative Changes To Deal With Safety Problems Other Than in Plugging Wells.

[1]—Mapping Requirements.

Oil and gas work is all conducted from the surface by means which frequently penetrate coal, and the most hazardous parts of coal mining operations are all underground. Accordingly, careful mapping by both the well operator and coal operator is essential so that each can locate the other's operations.[1]

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[42] *See* W. Va. Code §§ 29A–3–1 to –15 (1980 Replacement Vol.).

[1] Many years ago, one of the authors received a telephone call from a client who said that a mining machine had cut through the coal protection string [G] of a gas well, and notched the production string [G]. Of course the mine was evacuated, the well operator was notified, and state inspectors were brought in to oversee the process of eliminating the danger. Luckily, no gas escaped.

Subsequent investigation showed

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[a]—Well Plats.

The statutory requirements for well plats are set out in W. Va. Code § 22–4–2 (oil and gas wells [G]) and § 22–4–2b (liquid and waste injection wells [G]). The requirements are virtually identical: all well plats must show (1) district, (2) county, (3) tract identification, (4) tract acreage, (5) owners of adjacent tracts, (6) well location with reference to "two permanent points or landmarks on said tract," and (7) well number. The 1979 statute did not change these provisions of the 1976 law. However, the regulations[2] were modified as noted in the following paragraphs to increase the scope and amount of information shown on well plats.

Accuracy. The standard is unchanged—one part in 2500 for wells on lands "containing workable coal beds [G] which are tributory to operating coal mines," and one part in 200 for other wells. During the discussions preceding issuance of the 1979 Regulations, the coal members on the Technical Committee sought to extend the one part in 2500 standard to all wells overlying "workable coal beds" [G]. They believed it would

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the accident was caused by an inaccurate mine map rather than by an inaccurate well plat. This was only comforting to one side: the instructive point is that the necessity for meticulous survey work was proved more dramatically than anyone desired.

[2] Citations of West Virginia administrative regulations currently in effect are to be understood as follows:

"1979 Reg. [4]" means—

For regulations numbered 1 through 31, "W. Va. Admin. Reg. ch. 22–4, Series V, Part I (1978)," and

For regulations 32 through 36, "W. Va. Admin. Reg. ch. 22–4, Series V, Part II (1979),"

—promulgated by the Administrator under Code § 22–4–1a; and "1979 Reg. [4B]" means "W. Va. Admin. Reg. ch. 22–4B, Series I (1978)," promulgated by the Shallow Gas Well Review Board under W. Va. Code §§ 22–4B–5(e)(2), –6(a).

The Administrator has caused to be published a softcover 1979 edition of the three key articles (4, 4A and 4B) of Code ch. 22, and the associated regulations.

Citations of 1976 West Virginia administrative regulations (as "1976 Reg.") means "W. Va. Admin. Reg. ch. 22–4, Series III," promulgated under the former provisions of W. Va. Code ch. 22, art. 4.

Johnson
Borrelli

THE VIRGINIA COAL ASSOCIATION

L. BLAINE CARTER
PRESIDENT

SUITE 1930
EIGHTH & MAIN BUILDING
RICHMOND, VIRGINIA 23219
804/643-6697

January 5, 1983

Virginia Oil and Gas Conservation Commission
Virginia Well Review Board
Chief of the Division of Mines and Quarries
c/o Division of Mines and Quarries
219 Wood Avenue
Big Stone Gap, Virginia 24219-2799

Re: Proposed Regulations and Forms to be Adopted Pursuant to the Virginia Oil and Gas Act

Dear Sirs:

On behalf of The Virginia Coal Association, I am writing to express our Association's views concerning the proposed regulations, specifically in regard to the coal industry proposals and the oil and gas industry proposals for §3.04(a)(1), (2), (5), (6), (7) and Form 17. With regard to the specific Regulations and Form above mentioned, our Association has the following comments:

Regulation 3.04. Well Plats

(a)(1) Accuracy. Our Association supports the proposal submitted by the coal industry which requires that all wells within 2,500 feet of the subject well be located with the same accuracy in areas which are designated as containing minable coal seams. The accuracy standard agreed to by the oil and gas industry is one part in 2,500 in such areas. Sections 45.1-319 and 45.1-318(c) of the Code of Virginia, which are the provisions under which a coal owner or operator may object to the location of a well, clearly demonstrate that all wells within 2,500 feet of the proposed well location are critical in the well work application and permit issuance process. This process can only be properly carried out if all wells within 2,500 feet are located accurately on the plat in relation to the subject well. Section 45.1-312 provides that any application for a well work permit shall be accompanied by an "accurate well plat prepared by a registered engineer or

certified land surveyor". That section also requires that all wells within 2,500 feet of the proposed well must be shown on the plat as well as other data and such additional data as the Board may require by regulation. It is certainly within the purview of the Board to prescribe standards of accuracy in order to insure that plats are properly prepared and to make such standards of accuracy applicable to such items as the Board sees fit to require.

Section 45.1-319 gives the coal operator or owner an opportunity to prevent any well from being drilled closer than 2,500 feet from an existing well, which right makes the accurate location of other wells shown on the plat within that distance critical to the operators' or owners' decision to approve or reject the well location. This requirement will also be helpful to the Conservation Commission for deep coalfield wells and will promote better information in coalfield areas for royalty owners and surface owners. In that regard, the Board may wish to promulgate other regulations so as to protect the interests of nearby surface owners and royalty owners by providing for accurate surveys of boundary lines of 500 feet or less from the proposed well locations or other matters which the Board feels should require a definite location on the plat.

With regard to the survey of wells in active mining areas, the location of any well within 2,500 feet of the subject well would provide a double check on the location of the well. In most cases, the mine operator will probably locate the well before mining in the vicinity of the well. Any difference in the coordinate value would immediately be flagged, allowing the mine operator to further investigate any discrepancies. Any double check would promote safety which could eliminate an accidental cutting into a well. In mine planning, all wells in the area, not solely the subject well, must be considered. Such planning is most certainly considered in the oil and gas recovery, but it is not as critical in terms of safety. Section 45.1-318 of the Act states several items which the Inspector and, if necessary, the Well Review Board, shall consider in deciding on objections by a coal owner or operator. Section 45.1-318(c)(1) states that the Inspector shall consider the extent to which the proposed drilling location will unreasonably interfere with present or future coal mining

operations. Section 45.1-318(c)(5) requires the Inspector to consider the practicability of locating the well on uniform pattern with other wells. Effective implementation of these two (2) sections and the necessity of any mine operator to successfully plan his mine make the correct location of all wells essential.

The idea of an industry locating adjacent common interests is not uncommon. The coal industry must locate any adjacent mine workings within 1,000 feet of any of its mine operations. Mines above and below must also be located by survey along with any overlying pools of water. In certain situations, roads, occupied dwellings, high pressure gas lines, railroad tracks and public highways leading to the mine, mine buildings of a permanent nature, high voltage power lines, and other information must be located by an on-the-ground survey. The proposal of the coal industry only requires the proposed well and all wells within 2,500 feet to be located by an on-the-ground survey.

The oil and gas industry may contend that the costs of locating these wells is excessive. The average shallow well costs approximately $300,000. The cost of locating one (1) additional well within 2,500 feet, after the crew is in the field for the initial well survey, is about $400 or .0013% of the total cost for the well (accepting $300,000 as an approximate cost). The financial cost incurred by the coal owner is automatic as the coal contained within the protective well barrier is immediately lost, but the proportional cost obligated to the oil and gas industry by the necessity to prepare a survey because of a well within 2,500 feet will be minimal. Moreover, only a handful of wells drilled in the past 25 years in the coalfield area would have required this additional survey work had the proposal been in place.

It is also important to note that the burden of locating adjacent wells should not be placed on an operator or owner of coal who may or may not have available finances for survey crews to do such work. The proposal of the coal industry would not only protect active operations but would also protect inactive operations or coal lands owned by small private interests which would not have the financial capability to double check locations which have been located with a ruler. Since §45.1-313(d) allows only 15 days for a

person to file an objection upon receipt of the well work application, the 15 day limit for filing objections would be unreasonable if it required additional survey work on the owner or operator.

As above stated, the coal industry proposal should be adopted by the Board in order to enable coal operators and others to respond to a more accurate survey which has a degree of reliability, which reliability will also be helpful in promoting safety and recovery of resources.

(a)(2) Permanent Points or Landmarks. Our Association supports the coal industry position concerning the location of a well on the basis of an on-the-ground survey when the well is a well other than the subject well and is located 2,500 feet or less from the subject well in areas underlain by known coal seams identified by the Chief. This proposal relates specifically to the discussion on well plat accuracy discussed in (a)(1) above.

Also, in order to assure that the statute, being Code §45.1-333, will be followed by well operators in coalfield areas, our Association wishes to add to the coal industry proposal the following language, which language would be added at the end of this subpart of the regulation as follows:

". . . provided that, if the well location is underlain by known coal seams identified by the Chief pursuant to §45.1-333 of the Code, the well plat will locate the well and the two (2) permanent points or landmarks with reference to the mine coordinate system, if one has been established for the area of the well location."

Finally, with regard to this subsection, the oil and gas industry is proposing that it be permitted to locate wells based upon photogrammetric methods. This methodology involves taking photographs from airplanes without the benefit of any on-the-ground survey work. Because the health and safety of miners and others are involved, our Association must insist that survey methods which the Board proposes yield the specified accuracy and give us a high degree of confidence. Photogrammetry can yield adequate results, provided that the proper equipment is used, the survey control accuracy and density are sufficient, the operator has enough skill and experience, and several other conditions are met,

especially conditions related to the photography methods employed. Even if all of the accuracy controls are met, and there are many chances for human error and outright mistakes, the only reliable accuracy check is an on-the-ground survey, which is what we conclude is necessary. Accordingly, the coal industry should not rely upon nor should the Well Review Board issue regulations which would locate wells based upon measurements taken from a pair of 9" x 9" photographs.

(a)(5) Scale. Our Association does not believe that a scale of 1" = 2,000' may adequately show the necessary information to be contained on a well plat. Code §45.1-312 states that well plats must show, in addition to many other things, the owners of record of the surface, coal and other mineral rights on all tracts within 500 feet of the proposed well, coal operators who have applied for or obtained a mining or prospecting permit from the Division of Mines with respect to all tracts within 500 feet of the proposed well, any building, highway, railroad, stream, mine, mine opening or working, or quarry within 500 feet of the proposed well and any other well within 2,500 feet of the proposed well. On a scale of 1" = 2,000', the plat may be too small in order to show meaningfully, with any detail, all of the information within a small circle with a diameter of ½ inch. Where the location is to be shown on the USGS 7½ minute topographic map, the pertinent regulations should be 3.04(a)(8), not (a)(5). We recommend that the regulations clearly provide that the scale shall be adequate to show the required information by the use of even multiples of 1" equal 2,000'.

(a)(6) Surface Location of the Proposed Well. Our Association supports the proposal of the coal industry which will require that the surface location of the well will be certified to by a registered professional engineer or certified land surveyor. The statute regarding well plats provides that all well plats will be certified to by a professional or certified person. On the critical matter of having the well located where permitted, which matter has great safety implications in areas where coal mines are located or will be located, the coal industry needs to have a degree of confidence in any certification which is made.

Code §54-17.1(2)(a) defines "professional engineer" as a person who "is qualified to practice engineering by reason of his special knowledge in the use of mathematical, physical and engineering sciences and the principles and methods of engineering analysis and design acquired by an engineering education and experience; and who has complied with the requirements for licensing as determined by the Board". Code §54-17.1(3)(a) defines "land surveying" as including "surveying of areas for the correction, determination and description, and for the conveyancing, or for the establishment and re-establishment of internal and external land boundaries, and the plotting of land and subdivisions thereof". A land surveyor must be certified by the Board of Architects, Professional Engineers, Land Surveyors and Certified Landscape Architects in order to perform land surveying work and to certify plats.

Section 54-25 of the Code states that the rules and regulations of the Board may serve to promote the protection of public health, safety and welfare, the maintenance of standards of objectivity, truthfulness and reliability in public statements by professionals, the avoidance by professionals of conflicts of interest, the prohibition of solicitation or acceptance of work by professionals on any basis other than their qualifications for the work offered, the restriction by the professional in the conduct of his professional activity from association with any person engaging in illegal or dishonest activities and the limitation of professional service to the area of confidence of each professional. It can be seen that the requirement of having a certified land surveyor or registered professional engineer, who is bound by the Code and the regulations of the Board of Architects, Professional Engineers, Land Surveyors and Certified Landscape Architects will work to promote the health and safety of miners and others who must rely upon their survey work and will place a high degree of responsibility on the person making any such certification. Accordingly, our Association believes that this requirement is both reasonable and necessary in order to promote safety and reliability.

(a)(7) Surface Elevation of the Subject Well. Our Association believes that, in order to establish an accuracy of one vertical foot, as required by this regulation, such accuracy

absolutely precludes the use of barometric or altimeter surveys because of their inaccuracy. Also, the use of aerial survey would not be recommended for the reasons above discussed concerning the use of aerial surveys in preparation of plats. We would support the addition of trigonometric leveling as an acceptable on-the-ground survey method for elevation determination.

(a)(9) Wells. Our Association would request the Board to add to the language at the end of the first sentence the following language:

". . . with the distance from each well to the well which is the subject of the application stated on the plat."

The addition of this language is necessary in order to assure that the wells shown on the plat other than the subject well will be shown with a distance to the subject well in order to allow for an evaluation of the wells. This request would not be burdensome and is recommended in order to insure that all necessary information is on the plat.

Form 17

Our Association recommends the coal industry proposal for Form 17 which will insure that the well is located where proposed within the variance standard established by proposed Regulation 4.02. It is obvious that such a form should be signed by a registered professional engineer or certified land surveyor, and the surveyor or professional engineer should be certifying that the well is where proposed within the performance standard established by Regulation 4.02. Accordingly, we strongly urge that this Form be adopted by the Well Review Board.

The Virginia Coal Association urges that the Board amend and adopt its proposed regulations as above set forth. The coal industry certainly believes that survey accuracy and matters related to survey accuracy are critical safety importance as well as importance in the development of Virginia's coalfields. Our Association appreciates the opportunity to express its views concerning these proposed regulations.

A copy of each regulation and the Form discussed above is enclosed for your information.

Respectfully submitted,

THE VIRGINIA COAL ASSOCIATION

Donald R. Johnson
Coal Industry Member of Joint
Legal-Technical Committee

Gerald J. Borrelli
Coal Industry Member of Joint
Legal-Technical Committee

DRJ:GJB:wf

Enclosure

COAL INDUSTRY PROPOSAL

Regulation 3.04. (a).

(5) Scale. If practicable, the well plat shall be drawn to a scale of 1" equals 2,000' (1:24,000) or even multiples of 1":2000' (1" equals 100', 200', 400', 500' or 1,000') in order to include all information required to be shown on the well plat for easy reduction of the plat photographically to a 1":2000' scale.

COAL INDUSTRY PROPOSAL

Regulation 3.04. (a).

(6) Surface location of the subject well. The actual surface location of the subject well, with reference to the permitted surface location on the well plat, shall conform to the performance standard of Regulation 4.02. The fact that the actual surface location of the well conforms with the performance standard of Regulation 4.02 shall be confirmed before any part of the surface string of casing is run into the hole and the conformity with the performance standard shall be certified on the completion report required to be filed by Regulation 4.06 by a registered professional engineer or certified land surveyor.

[ALTERNATE A]

COAL INDUSTRY PROPOSAL

Regulation 3.04. (a).

(7) Surface elevation of the subject well. The surface elevation of the subject well location within an accuracy of one vertical foot shall be given. It shall be tied to either a government bench mark or other point of proven elevation by differential~~,--aerial,--barometric--or altimeter-survey~~ or trigonometric leveling. The location of the government bench mark or the point of proven elevation shall be noted and described on the plat.

COAL INDUSTRY PROPOSAL

Regulation 3.04. (a).

(9) Wells. All wells within the scope of the plat, whether active, drilling or abandoned, shall be shown with the distance from each well to the well which is the subject of the application stated on the plat. The scope of the plat shall be sufficient to show all wells within 3,000 feet of the well which is the subject of the application; and this scope shall be presumed to embrace the entire "area to be affected" by an enhanced oil recovery injection well, as those words are used in §45.1-312.A.x of the Code, in the absence of a Commission order establishing units in the target pool of such size or configuration that renders this 3,000 foot scope as clearly inadequate . . .

COAL INDUSTRY PROPOSAL

FORM 17
REVERSE

CERTIFICATION OF LOCATION OF A NEW WELL

I, the undersigned, hereby certify that the actual surface location of the new well referenced on the obverse hereof conforms with the standard of Regulation 4.02 of the Regulations of the Virginia Oil and Gas Act, as follows:

_____ within three feet of the location designated on the well plat in an area underlain by known coal seams identified by the Chief of the Division of Mines pursuant to §45.1-319 of the Code, or

_____ within ten feet of the location designated by the well plat in other areas.

_____
Certified Land Surveyor ____
Registered Professional Engineer ____

[ALTERNATE A]

DISCUSSED REGULATIONS AND FORM

COAL INDUSTRY PROPOSAL

Regulation 3.04. (a).

(1) Accuracy. In the case of a well located on land which is underlain by known coal seams identified by the Chief pursuant to §45.1-333 of the Code, a survey of one part in 5,000 is required for the location of the subject well and all wells located 2,500 feet or less from the subject well with reference to the two permanent points or landmarks required by §45.1-312.A of the Code. In all other cases, a minimum survey accuracy of one part in 500 is required for the location of the subject well.

[ALTERNATE A]

COAL INDUSTRY PROPOSAL

Regulation 3.04. (a).

(2) Permanent points or landmarks. The two permanent points or landmarks shall be shown with courses and distances on the basis of an on-the-ground survey to the subject well and, in the case of a well located on land, which is underlain by known coal seams identified by the Chief pursuant to ~~§45.1-319~~ §45.1-333 of the Code, all wells located 2,500 feet or less from the subject well shall be shown. Such permanent points or landmarks shall be set stones, iron pipes, T-rails or other manufactured monuments, including mine coordinate monuments, and existing wells (operating or abandoned) platted and on file with the Inspector on the accuracy standards of this Regulation, provided that, if the well location is underlain by known coal seams identified by the Chief pursuant to §45.1-333 of the Code, the well plat shall locate the well and the two permanent points or landmarks with reference to the mine coordiante system if one has been established for the area of the well location.

[ALTERNATE A]

CERTIFICATION OF WELL LOCATION

INFORMATION TO SUPPORT

VIRGINIA COAL ASSOCIATION'S REQUEST FOR

CERTIFICATION OF WELL LOCATION

BEFORE DRILLING COMMENCES

January 5, 1983

INFORMATION TO SUPPORT

VIRGINIA COAL ASSOCIATION'S REQUEST FOR

CERTIFICATION OF WELL LOCATION

BEFORE DRILLING COMMENCES

I. Purpose

The purpose of this report is to present information in support of the Virginia Coal Association's request for Certification of a Well Location by a Registered Land Surveyor or Professional Engineer after the site is prepared, but before drilling commences, to assure that the well is drilled at the location applied for and permitted.

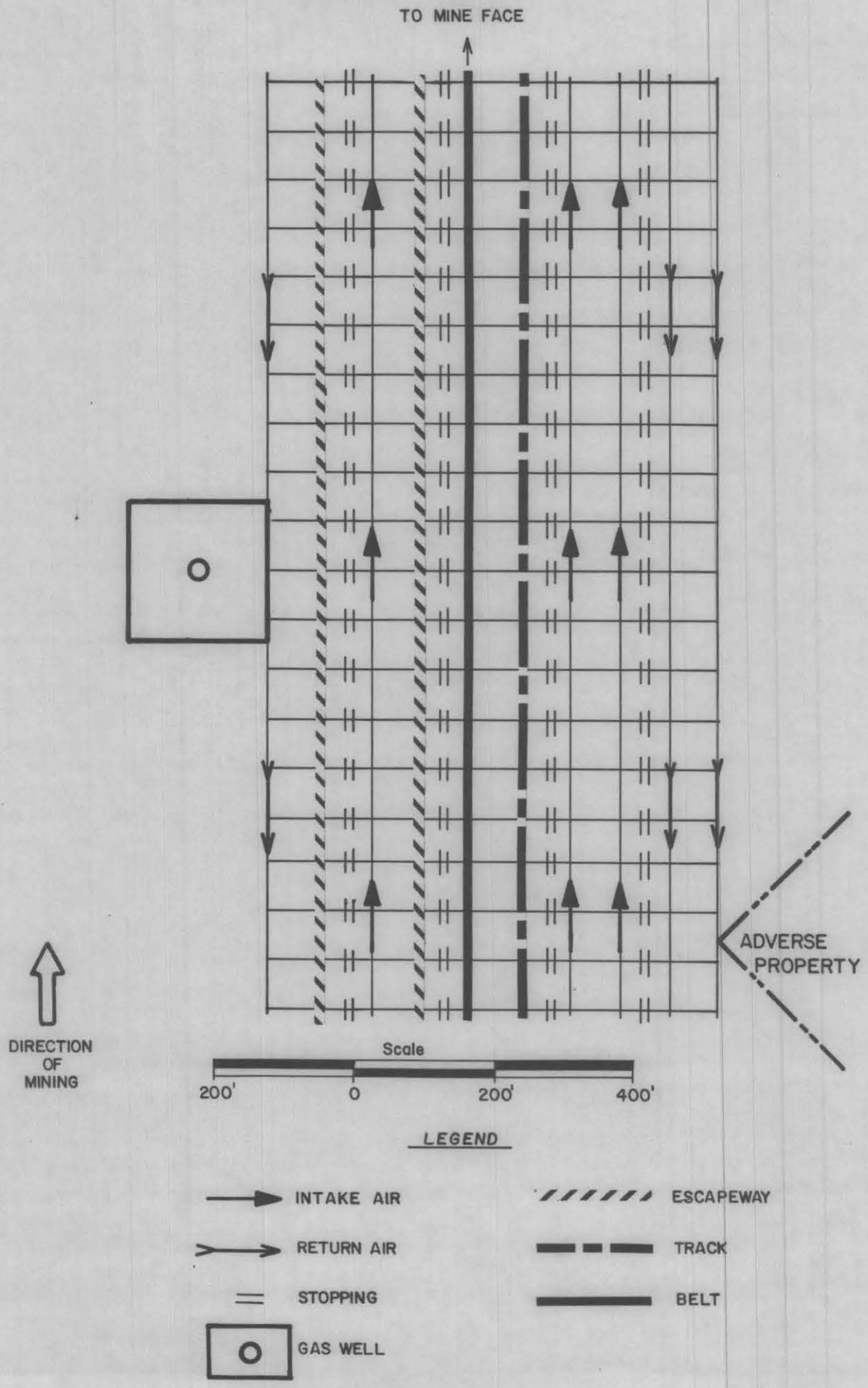
Four potential cases are presented. These cases deal with a well located in the area of mine development entries. Case 1 presents a base case. Cases 2, 3 and 4 present information related to a well being drilled in a location other than that mutually agreed upon by all parties. Cases 2, 3 and 4 should be compared to Case 1 as to their impact to the coal operation.

Exhibits 5 and 6 show examples of typical plat and/or well location errors. Distances shown circled are actual surveyed field locations.

Additional comments for rationale for request that a <u>certified</u> rather than a <u>competent</u> person should attest to the final location of a well can be found on page 12.

As a conclusion on page 13, the Coal Association is proposing a regulation which will eliminate, or, at least, attempt to minimize the occurrence of wells being drilled at location other than applied for and permitted.

EXHIBIT I


TO MINE FACE
ADVERSE PROPERTY
DIRECTION OF MINING
Scale
200'
0
200'
400'
LEGEND
INTAKE AIR
RETURN AIR
STOPPING
GAS WELL
ESCAPEWAY
TRACK
BELT

CASE 1

Exhibit 1 shows normal mine projection for a given area of a coal mine.

Basis:

A. If no wells are present or proposed, there is no exterior man-made adverse effect to mining:

   1. If a well must be drilled, ideally it would be placed so as to minimize its effects to mine safety and economics.

B. Adverse effect to mine safety:

   1. The presence of any well within a coal area presents a potential safety problem. Cutting into the well accidentally could cause an explosion with catastrophic results. In establishing a base case, the coal industry realizes that so many wells will be necessary to recover oil/ gas resources.

C. Adverse effect to mine economics:

   1. In establishing a base case, the coal industry realizes that so many wells will be necessary to recover oil/gas resources. Each well pending its time-frame will cause a loss of coal reserves to the coal operator.

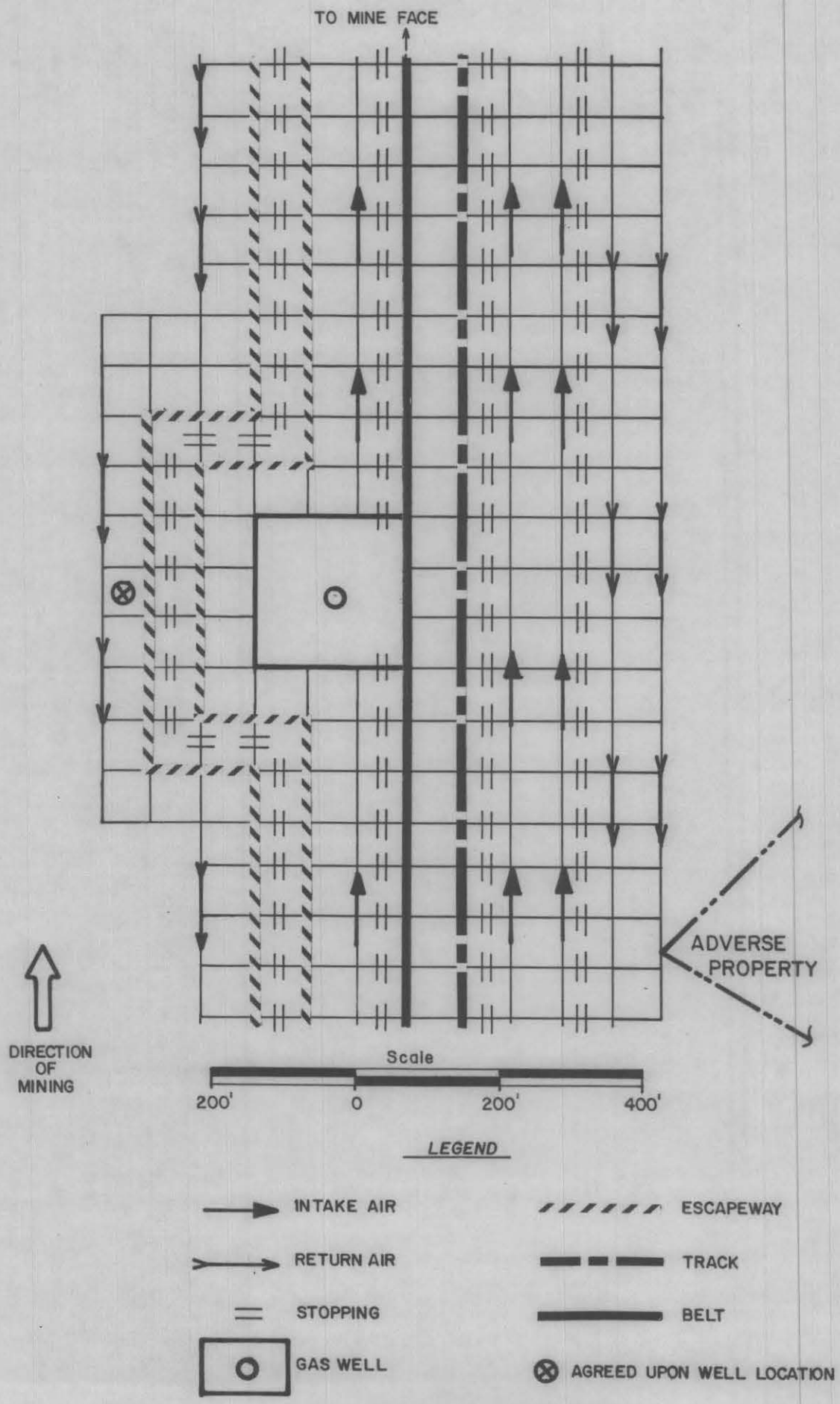
D. Additional cost to coal operator:

   1. For this report only (establishing a base case) $0.00

E. Comment:

   1. The coal industry realizes that in order to extract all resources contained under a given tract of land, some compromises must be made.

EXHIBIT 2


TO MINE FACE
ADVERSE PROPERTY
DIRECTION OF MINING
Scale
200'
0
200'
400'
LEGEND
INTAKE AIR
RETURN AIR
STOPPING
GAS WELL
ESCAPEWAY
TRACK
BELT
AGREED UPON WELL LOCATION

CASE 2

Exhibit 2 shows a well drilled in a location other than agreed upon by well and coal operators. Agreed upon location is noted by symbol "X".

Basis:

A. 1. The mine operator must deviate from original mine projections in order to mine past the well as drilled.

B. Adverse effects to mine safety are:

1. Cutting into the well accidentally could cause an explosion with catastrophic results.

2. Off standard projections with the possibility of interruption to the ventilation system.

3. Complication and lengthening of escapeways.

4. Potential for impairment of roof conditions on retreat mining.

C. Adverse effects to mine economics:

1. Loss of coal reserves.

2. Inefficient mine projection with resulting decrease in production.

3. Additional stoppings required.

4. Additional mine machinery required during development.

D. Additional cost to coal operator:

The following costs do not reflect additional costs incurred during development due to inefficient projections or extra costs such as temporary stoppings, overcasts, belt heads, etc., which may be required during development:

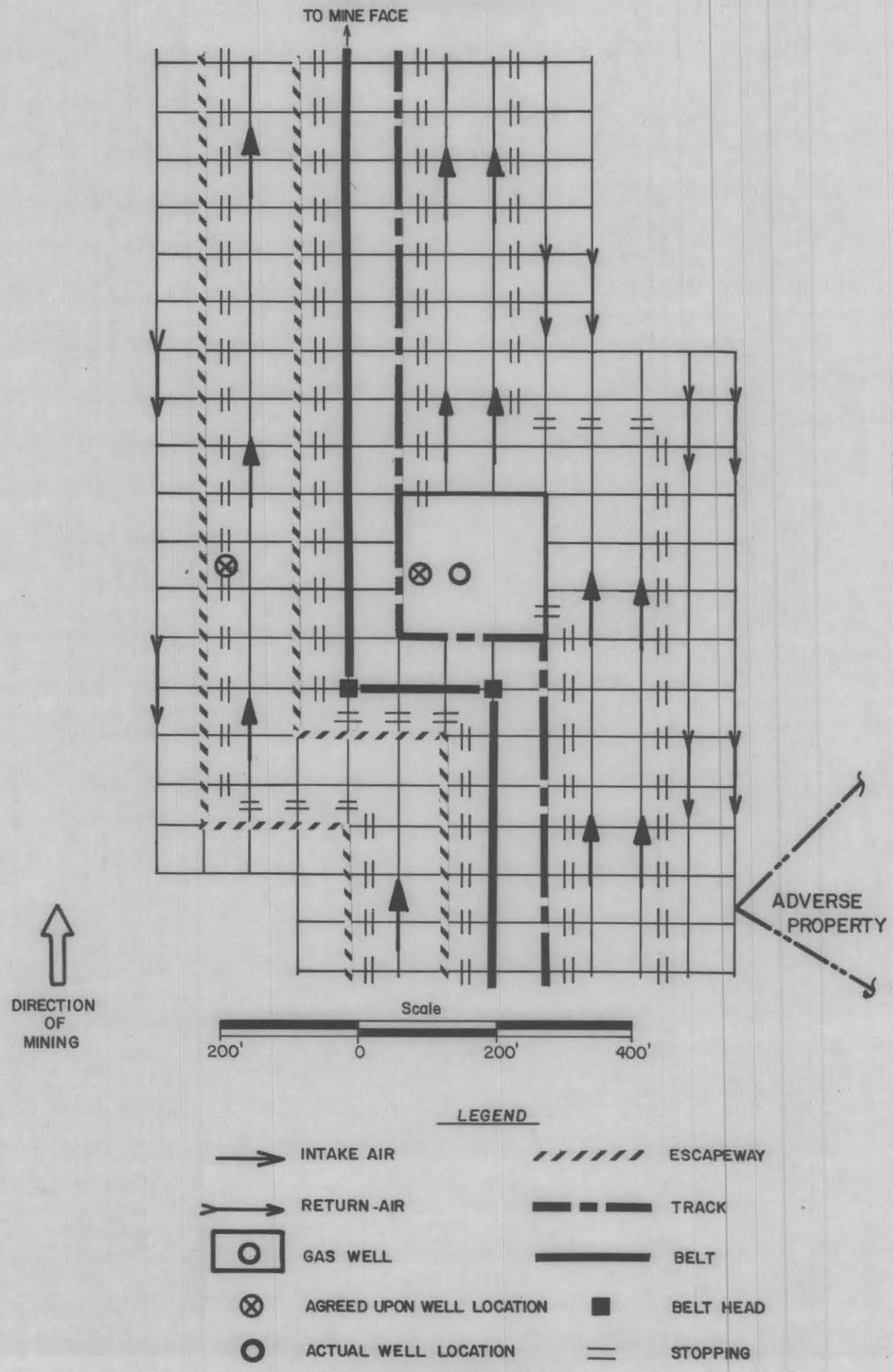
1. Four (4) permanent stoppings @ $460 each $1,840

Case 2 (continued)

E. Comment:

1. The coal industry realizes that in order to extract all resources contained under a given tract of land, some compromises must be made as outlined above.

EXHIBIT 3


TO MINE FACE
ADVERSE PROPERTY
DIRECTION OF MINING
Scale
200'
0
200'
400'
LEGEND
INTAKE AIR
RETURN-AIR
GAS WELL
AGREED UPON WELL LOCATION
ACTUAL WELL LOCATION
ESCAPEWAY
TRACK
BELT
BELT HEAD
STOPPING

CASE 3

Exhibit 3 shows a well drilled in a location other than agreed upon by well and coal operators. Agreed upon location is noted by symbol "X".

Basis:

A. Mine operator must deviate from original mine projections in order to mine past the well as drilled. Due to no other restraints, mine operator need not go back to original projections.

B. Adverse effect to mine safety:

1. Cutting into the well accidently is greatly enhanced which could cause an explosion with catastrophic results.

2. Off standard projections with possibility of interruption to the ventilation system.

3. Complication and lengthening of escapeways.

4. Potential for impairment of roof conditions on retreat mining.

5. Additional coal spill points created resulting in a potential for accumulation of dust and possibility of fire.

6. Additional electrical equipment required increasing the potential of a fire.

C. Adverse effect to mine economics:

1. Loss of coal reserves.

2. Inefficient mine projections with resulting decrease in production.

3. Additional stoppings required.

4. Additional mine machinery required during development.

Case 3 (continued)

5. Additional haulage equipment required.

6. Additional electrical equipment required.

7. Additional track and trolley required.

D. Additional cost to coal operator:

The following costs do not reflect additional costs incurred during development due to inefficient projections or extra costs such as temporary stoppings, overcasts, belt heads, etc., which may be required during development:

1.	Ten (10 permanent stoppings @ $460 each	$ 4,600
2.	1 - 42" terminal group with 125 h.p. motor - installed	80,000
3.	1 - 42" terminal group with 150 h.p. motor - installed	82,835
4.	225 lin. ft. - 42" belt and structure installed @ $43.68/ft.	9,828
5.	225 lin. ft. - 60# steel track installed @ $21.77/ft.	4,898
6.	#9 trolley wire - 210 lin. ft. @ $1.623/ft.	341
7.	210 lin. ft. of 4/0 H.V. cable @ $9,305/1,000 ft.	1,954
8.	Waterline - 210 lin. ft. @ approx. $175/100 ft.	368
	Subtotal	$185,228

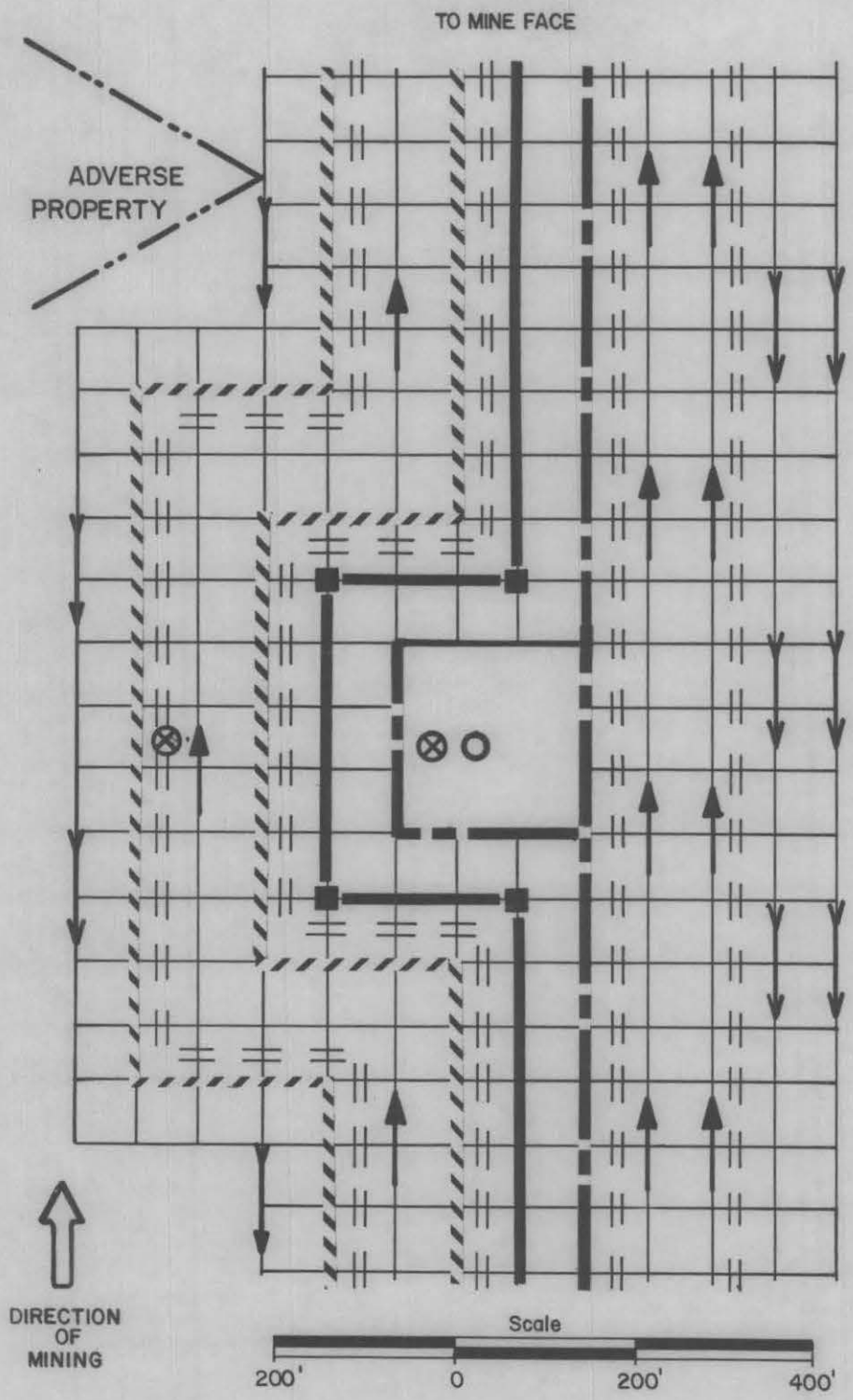
Case 3 (continued)

9.	Potential additional continuous maintenance of coal transfer points (pending site specific condition) 1 man per shift x 2 shifts per day x $169.34 x 230 days per year = $77,896 per year Assume 5 year life	389,480
	Total Potential Additional Cost	$574,700

E. Comment:

As one can readily determine, mine safety and economics will be compromised far more than need be when a well is drilled at a location other than where agreed upon.

EXHIBIT 4



LEGEND

→	INTAKE AIR	//////	ESCAPEWAY
→	RETURN AIR	▬ ▪ ▬	TRACK
⊡	GAS WELL	▬▬▬	BELT
⊗	AGREED UPON WELL LOCATION	■	BELT HEAD
O	ACTUAL WELL LOCATION	═	STOPPING

CASE 4

Exhibit 4 shows a well drilled in a location other than agreed upon by well and coal operators. Agreed upon location is noted by symbol "X".

Basis:

A. Mine operator must maintain original projections due to other restraints (adverse property).

B. Adverse effect to mine safety:

1. Cutting into the well accidently is greatly enhanced which could cause an explosion with catastrophic results.

2. Off standard projections with possibility of interruption to the ventilation system.

3. Complication and lengthening of escapeways.

4. Potential for impairment of roof conditions on retreat mining.

5. Additional coal spill points created resulting in a potential for accumulation of dust and fire.

6. Additional electrical equipment required increasing the potential of a fire.

C. Adverse effect to mine economics:

1. Loss of coal reserves.

2. Inefficient mine projections with resulting decrease in production.

3. Additional stoppings required.

4. Additional mine machinery required during development.

5. Additional haulage equipment required.

Case 4 (continued)

6. Additional electrical equipment required.

7. Additional track and trolley required.

D. Additional cost to coal operator:

The following costs do not reflect additional costs incurred during development due to inefficient projections or extra costs such as temporary stoppings, overcasts, belt heads, etc., which may be required during development:

1.	Twelve (12) permanent stoppings @ $460 each	$ 5,520
2.	1 - 42" terminal group with 150 h.p. motor - installed	80,404
3.	3 - 42" terminal group with 125 h.p. motor - installed @ $82,835	248,505
4.	770 lin. ft. - 42" belt and structure @ $43.68/ft.	33,634
5.	490 lin. ft. - 60# steel tract installed - $21.77/ft.	10,667
6.	#9 trolley wire - 490 lin. ft. @ $21.77/ft.	796
7.	770 lin. ft. of 4/9 H.V. cable @ $9,305/1,000 ft.	7,165
8.	770 lin. ft. of waterline @ $175.40/100 ft.	1,351
	Subtotal	$388,042

Case 4 (continued)

9.	Potential additional continuous maintenance of coal transfer points (pending site specific condition) 1 man per shift x 2 shifts per day x $169.34 x 230 days per year = $77,896 per year Assume 5 Year Life	389,480
	Total Potential Additional Cost	$777,522

E. Comment:

As one can easily see, mine safety and economics will be compromised far more than need be when a well is drilled at a location other than where agreed upon.

II. Examples of Typical Plat and/or Well Location Errors

Exhibits 5 and 6 which follow show examples of errors made on plats and/or well locations. These examples are taken from actual well sites. The distances circled on the plat are by actual field survey of the well. The distances above the circled distance is the platted distance.

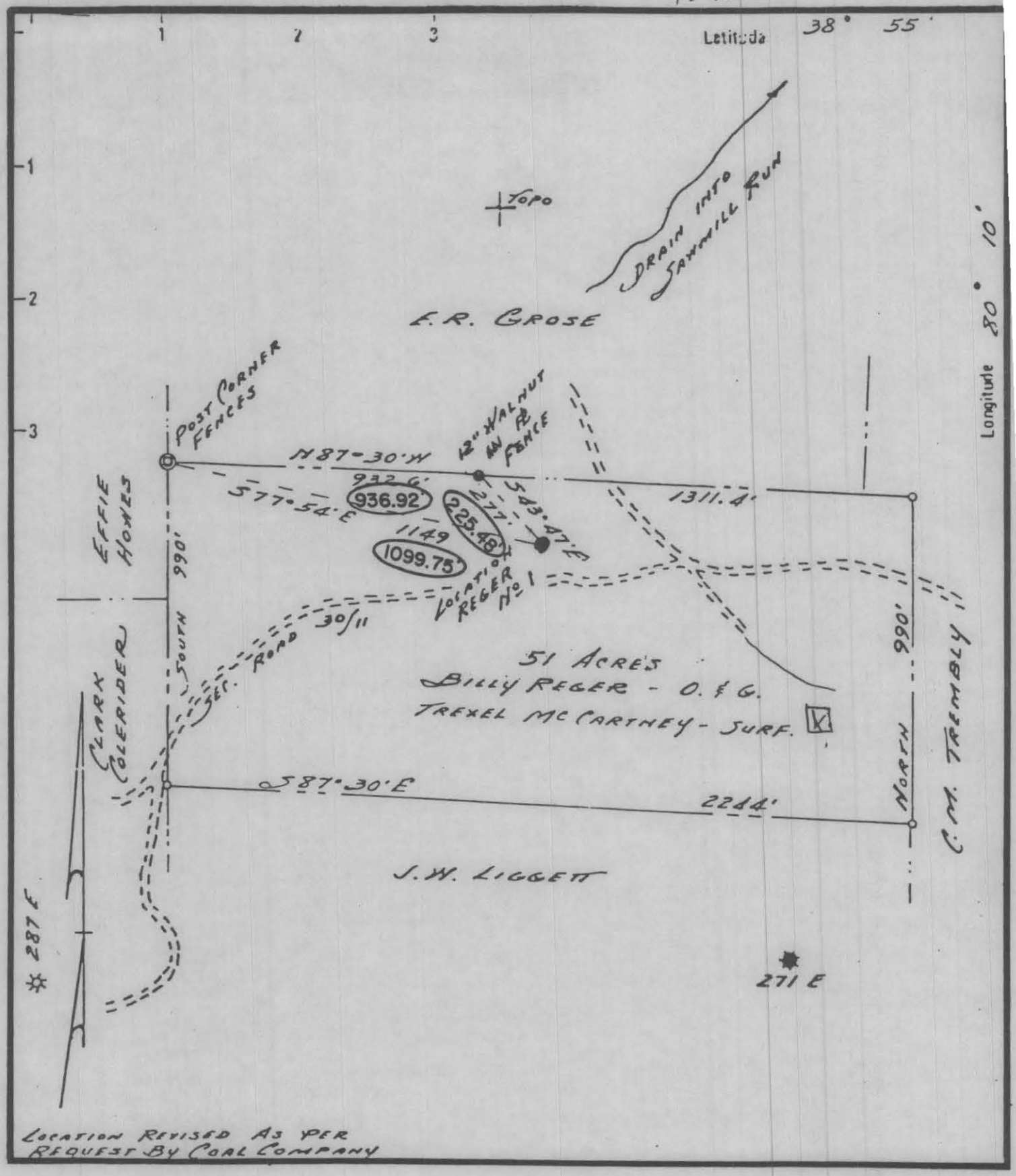


EXHIBIT 5

EXAMPLE OF WELL LOCATIONS (WELL PLAT vs FIELD LOCATION)
CORRECT FIELD SURVEYED DISTANCES ARE SHOWN CIRCLED

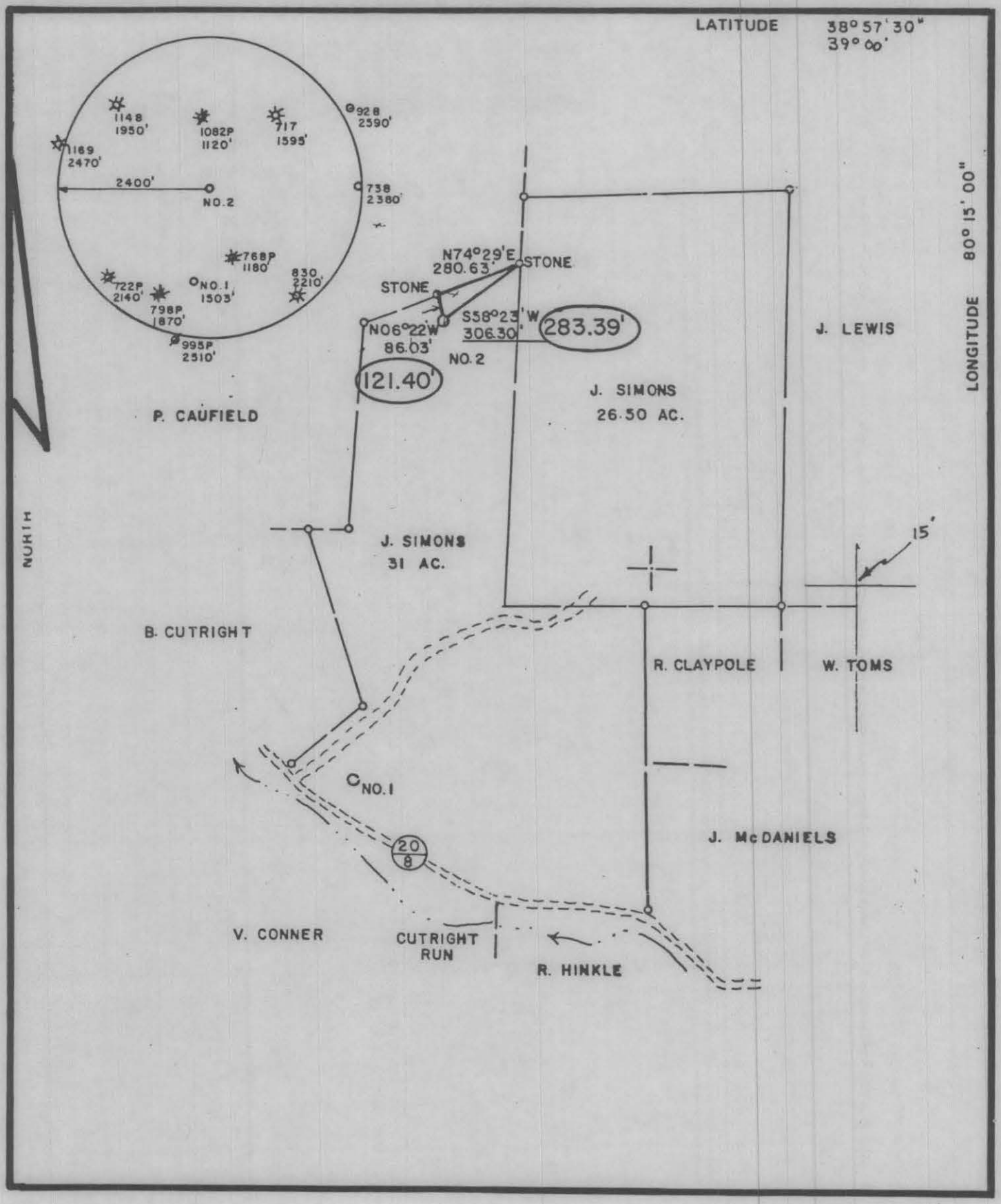


EXHIBIT 6

EXAMPLE OF WELL LOCATIONS (WELL PLAT vs FIELD LOCATION)
CORRECT FIELD SURVEYED DISTANCES ARE SHOWN CIRCLED

III. Additional Comments for Rationale:

The following are additional comments for rationale for request that a certified rather than a competent person should attest to the final location of a well.

1. Safety reasons as stated previously.

2. Economic reasons as stated previously.

3. A competent person could mean many things: Adequate? Able? Proper?

4. A certified person has deemed competent by a state appointed board of his peers and has reached a level of achievement either by test and/or experience. It must certainly be assumed that the certified person would be, by law and education, more accurate than the competent person.

5. A certified person has much more at stake when attesting to a well location than a competent person. A certified person could lose his licenses; hence, his livelihood if he made a false statement concerning a well location.

6. A person who may be deemed competent most probably would also be in charge of production. His prime charge would, in most cases, be production with the result that the well location being of secondary importance.

7. A certified person governed by the Code of Ethics must conduct his practice in order to protect public health, safety and welfare. "Conflicts of Interest" should not arise.

8. Assuring the accurate location before drilling begins will eliminate possible future litigation and/or irreparable harm.

9. Knowing the accurate location of a well is the most important safety issue concerning the co-existence of the two industries.

IV. Conclusion

In order to eliminate or minimize the unnecessary adverse effects to mine safety and mine economics, as can be the case when a well is not drilled at the applied for and permitted location, the Virginia Coal Association recommends the following language be adopted by regulation.

Regulation 3.04. Well Plat

(6) Surface location of the subject well. The actual surface location of the subject well, with reference to the permitted surface location on the well plat, shall conform to the performance standard of Regulation 4.02. The fact that the actual surface location of the well conforms with the performance standard of Regulation 4.02 shall be confirmed before any part of the surface string of casing is run into the hole and the conformity with the performance standard shall be certified to on the completion report required to be filed by Regulation 4.06 by a Professional Engineer or Certified Land Surveyor.

Regulation 4.06. Completion Reports

(a) Completion of well work. (1) The well operator shall file a completion report with the certification provided for by Regulation 3.04(6) for new wells on Form 17 ("Report of Completion of Well Work") within 60 days after the well work is completed.

Form 17

CERTIFICATION OF LOCATION OF A NEW WELL

I, the undersigned, hereby certify that the actual surface location of the new well referenced on the obverse hereof conforms with the standard of regulation 4.02 of the Regulations of the Virginia Oil and Gas Act, as follows:

_____ within three feet of the location designated on the well plat in an area underlain by known coal seams identified by the Chief of the Division of Mines pursuant to Section 45.1-319 of the Code, or

_____ within ten feet of the location designated by the well plat in other areas.

_____ Certified Land Surveyor /

_____ Registered Professional Engineer /

SURVEY OF OTHER WELLS

INFORMATION TO SUPPORT VIRGINIA COAL ASSOCIATION'S REQUEST THAT ALL WELLS WITHIN 2500 FEET OF THE PROPOSED WELL BE LOCATED BY SURVEY

January 5, 1983

INFORMATION TO SUPPORT

VIRGINIA COAL ASSOCIATION'S REQUEST

THAT ALL WELLS WITHIN 2500 FEET OF THE

PROPOSED WELL BE LOCATED BY SURVEY

The following comments are made in support of the Virginia Coal Association's request that all wells within 2500 feet of the proposed well be located by survey with an accuracy of 1' in 5000'.

A. The required location of adjacent physical features is not uncommon to industry. For example, coal operator must locate:

1. Mines above and below operating mine

2. Adjacent mine workings within 1000 feet of an operating mine

3. Oil or gas wells within 500 feet of a mine

4. Water pools above

5. In certain situations

a. Occupied dwellings
b. Roads
c. High pressure gas lines
d. High voltage power lines

B. All wells in a given area must be considered by the coal operator in mine planning. Exhibit 2 attached.

C. Coal owner right to object to the proposed well under Section 45.1-319 of the new law if it lies within 2500 feet of an existing shallow well.

D. Section 45.1-318-C requires the inspector to consider:

1. The extent to which the proposed drilling location will unreasonably interfer with present or future mining operations

2. The feasibility of moving the proposed drilling location..... to some other location

3. The method proposed for the recovery of coal and gas

4. The practicality of locating the well on a uniform pattern with other wells

How can this section be carried out without having other neighboring wells located?

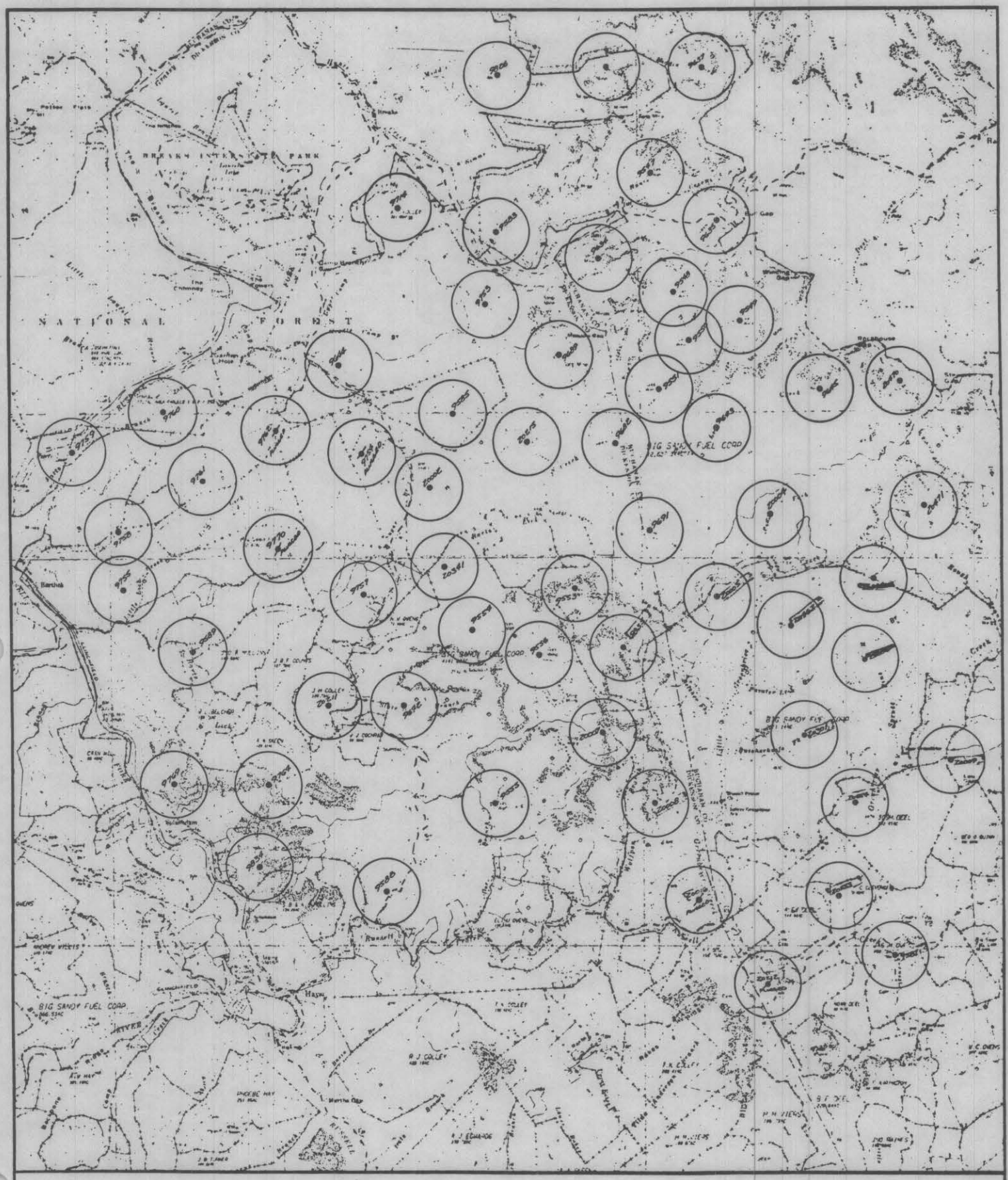
E. Occurancy will most probably be few as present practice appears to place wells at a distance greater than 2500 feet. Exhibit 1 for example shows existing well spacing in one given area of Southwest Virginia.

F. Cost of locating adjacent well is very small when considering the total cost of a well.

G. The location of the subject well and adjacent wells allows for a double check for their location. Any difference in location values would immediately "flag" to the coal operator a potential mislocation thus minimizing the chance of error on a well location.

H. Location of wells based on the topographic location as required by Section 3.04(a)8 of the proposed regulations have been found inaccurate and thus will not suffice the 2500 feet location requirement.

I. The only way to assure the location of a well within 2500 feet of a proposed well is to survey it.



Note: Wells have 1250' radius circle.

Legend

Areas with less than 2500' spacing

EXISTING WELL SPACING IN A GIVEN AREA OF SOUTHWEST, VIRGINIA

2000' 0 2000' 4000'

EXHIBIT 1

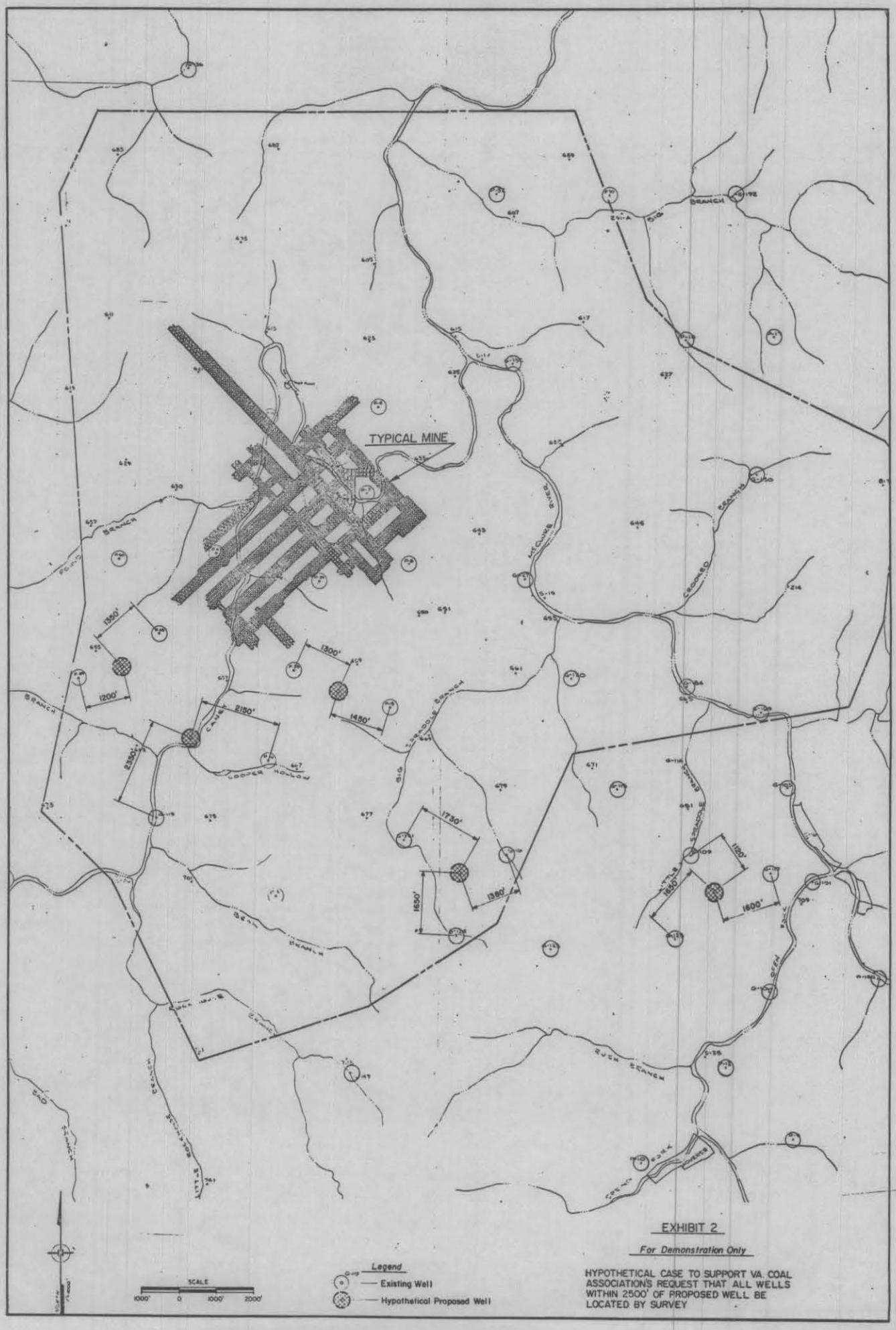


EXHIBIT 2

For Demonstration Only

HYPOTHETICAL CASE TO SUPPORT VA. COAL ASSOCIATION'S REQUEST THAT ALL WELLS WITHIN 2500' OF PROPOSED WELL BE LOCATED BY SURVEY

ON-THE-GROUND SURVEY

INFORMATION TO SUPPORT
VIRGINIA COAL ASSOCIATIONS
REQUEST TO CONTINUE LOCATING WELLS BY
ON THE GROUND SURVEY

January 5, 1983

INFORMATION TO SUPPORT

VIRGINIA COAL ASSOCIATIONS

REQUEST TO CONTINUE LOCATING WELLS BY

ON THE GROUND SURVEY

The following exhibits are examples of mapping errors which were produced using aerial mapping. Dashed lines denote a portion of either corrected or the original mapping. The coal industry does not advocate that aerial mapping can not be done accurately, but based on the numerous errors in mapping it has experienced, suggests that the regulations requiring an on the ground survey be maintained.

EXHIBIT I

TYPICAL ERRORS MADE IN AERIAL MAPPING

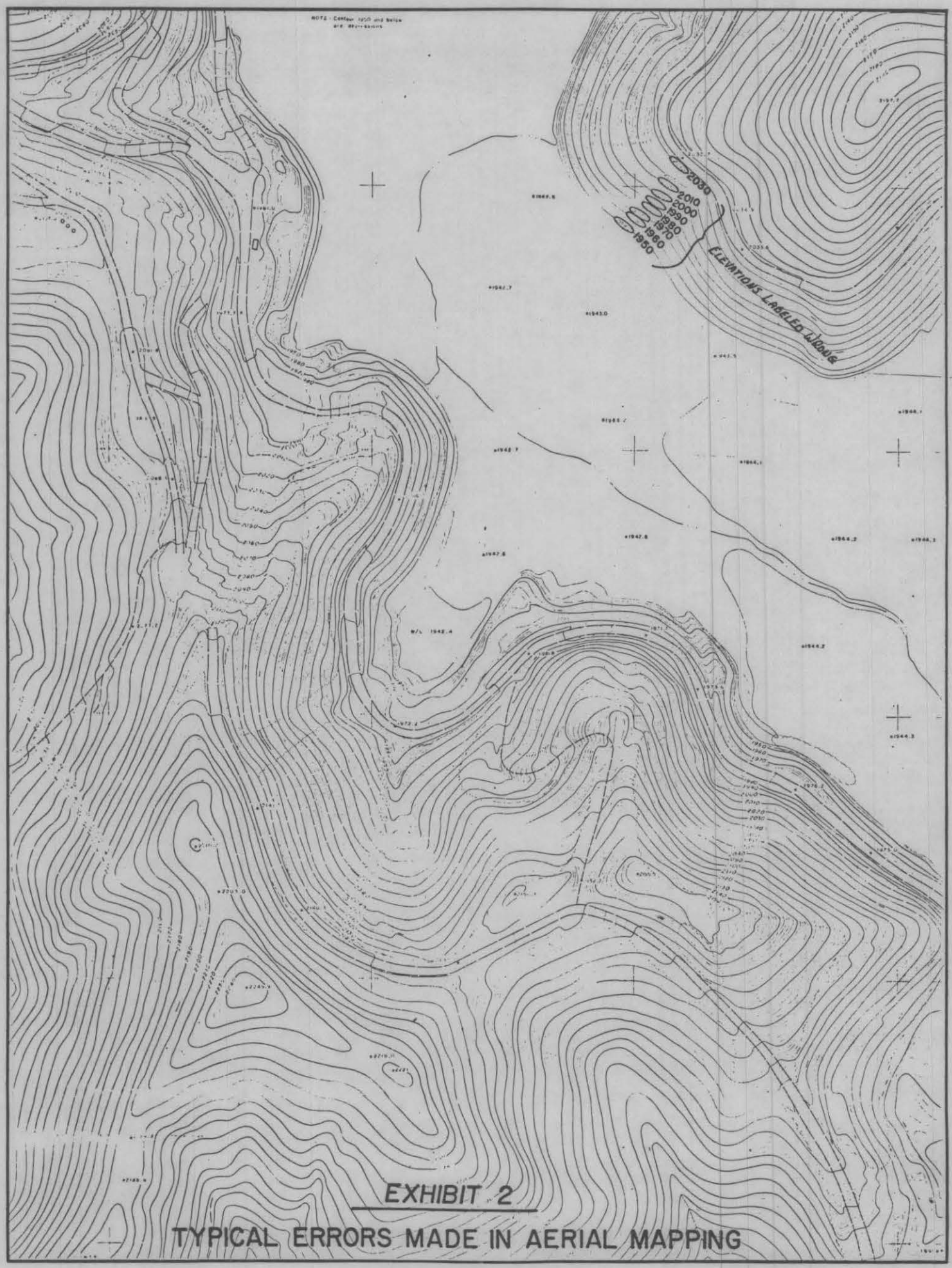


EXHIBIT 2

TYPICAL ERRORS MADE IN AERIAL MAPPING

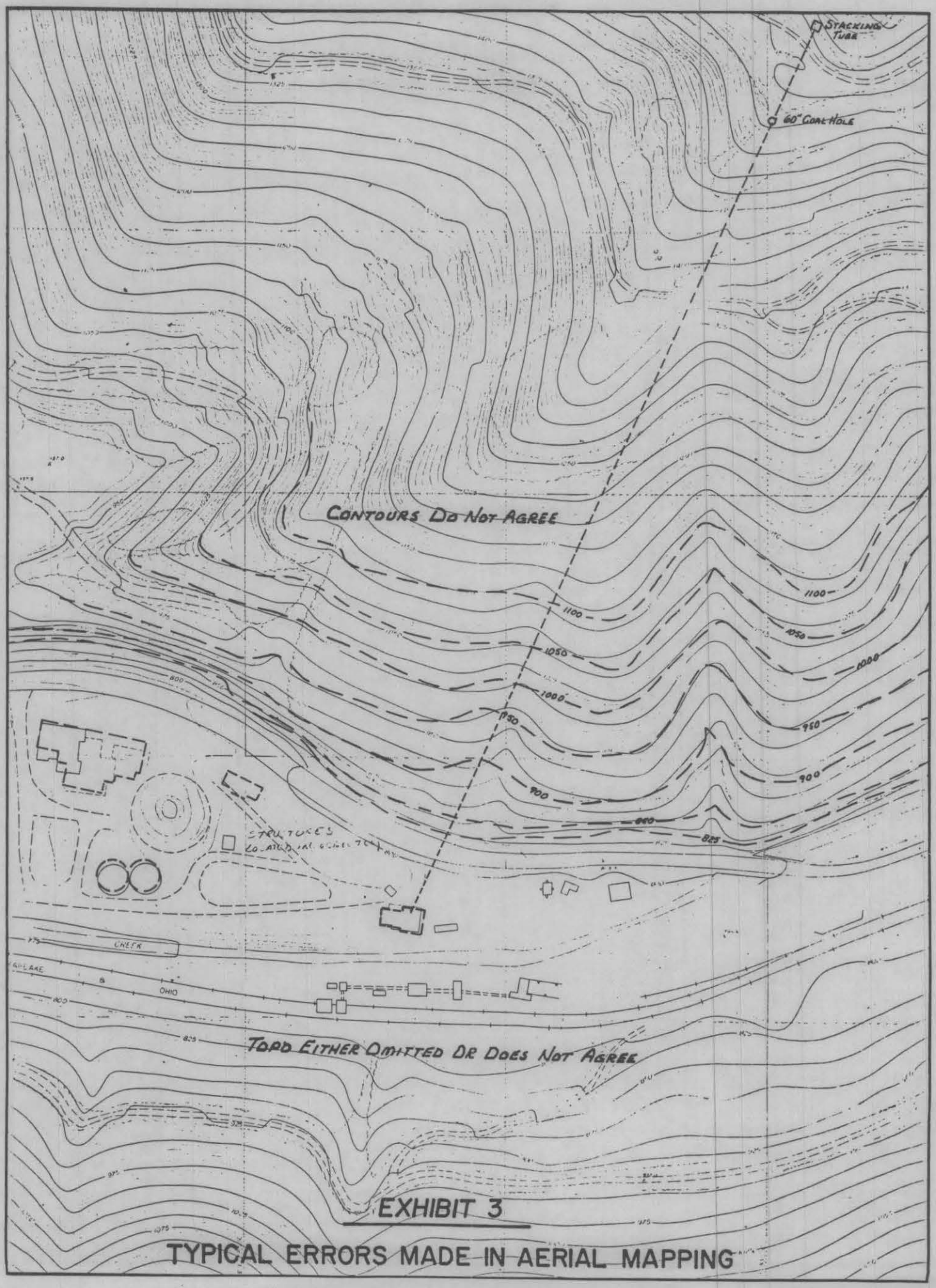


EXHIBIT 3

TYPICAL ERRORS MADE IN AERIAL MAPPING

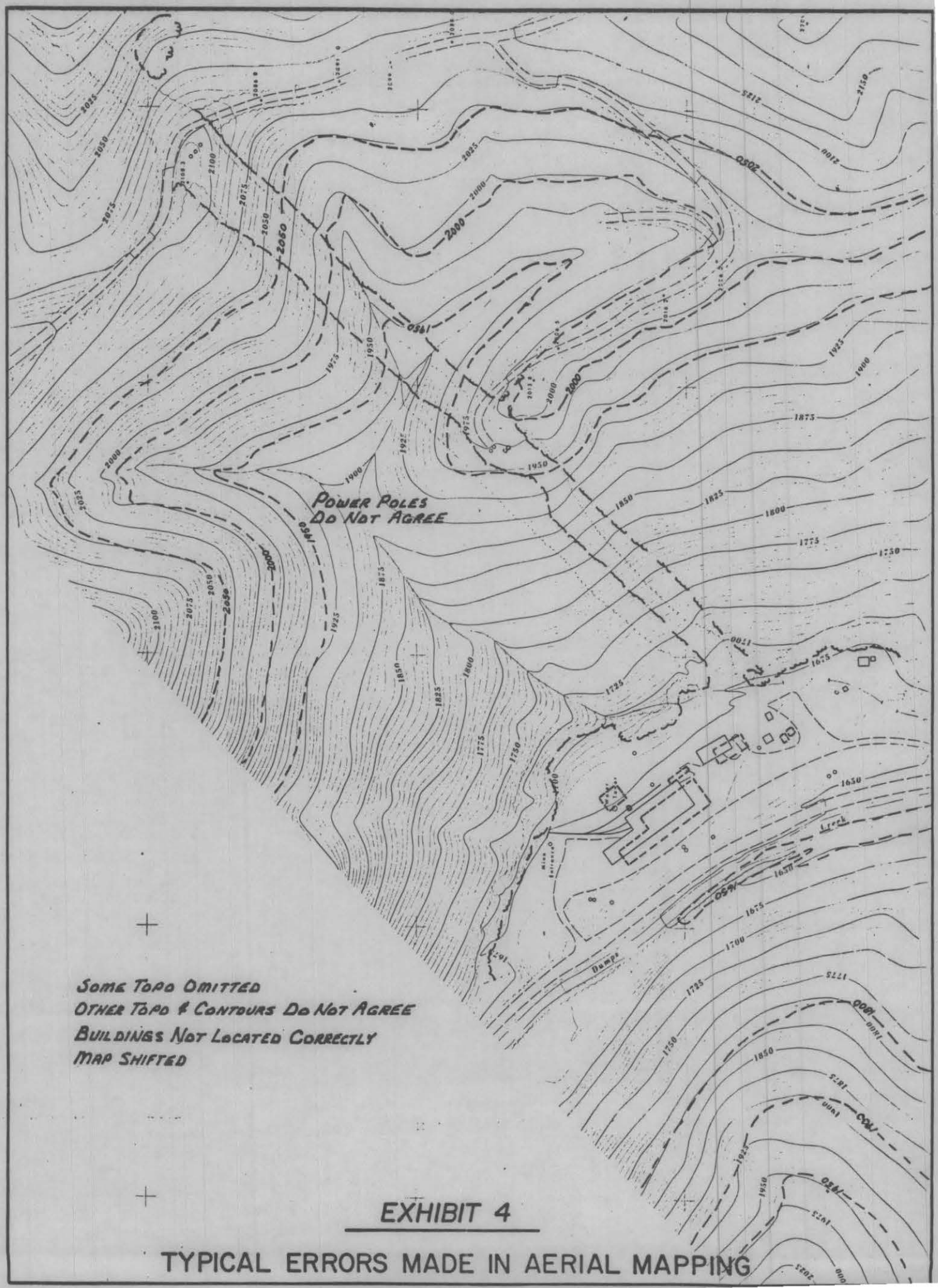


EXHIBIT 4

TYPICAL ERRORS MADE IN AERIAL MAPPING

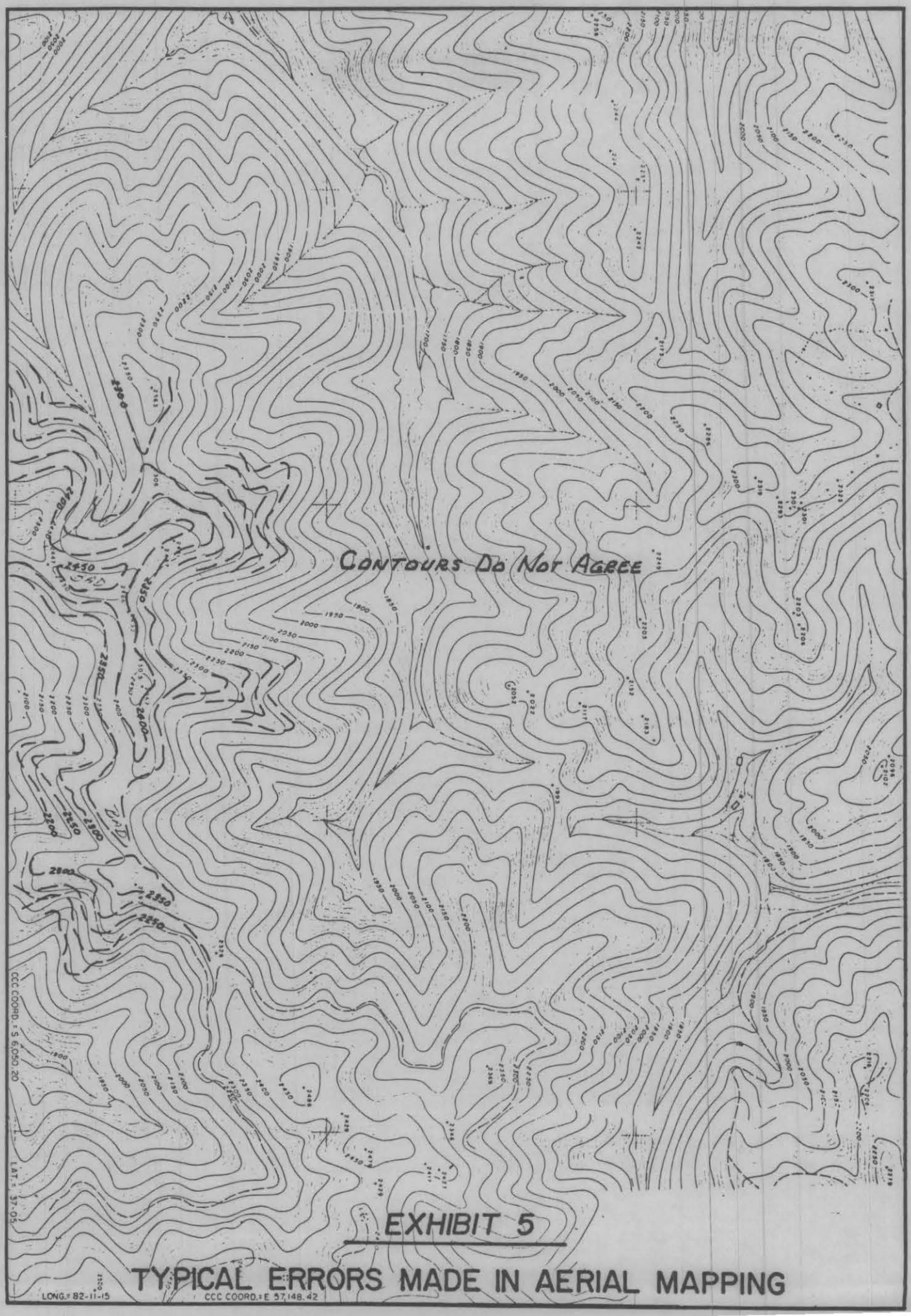


EXHIBIT 5

TYPICAL ERRORS MADE IN AERIAL MAPPING

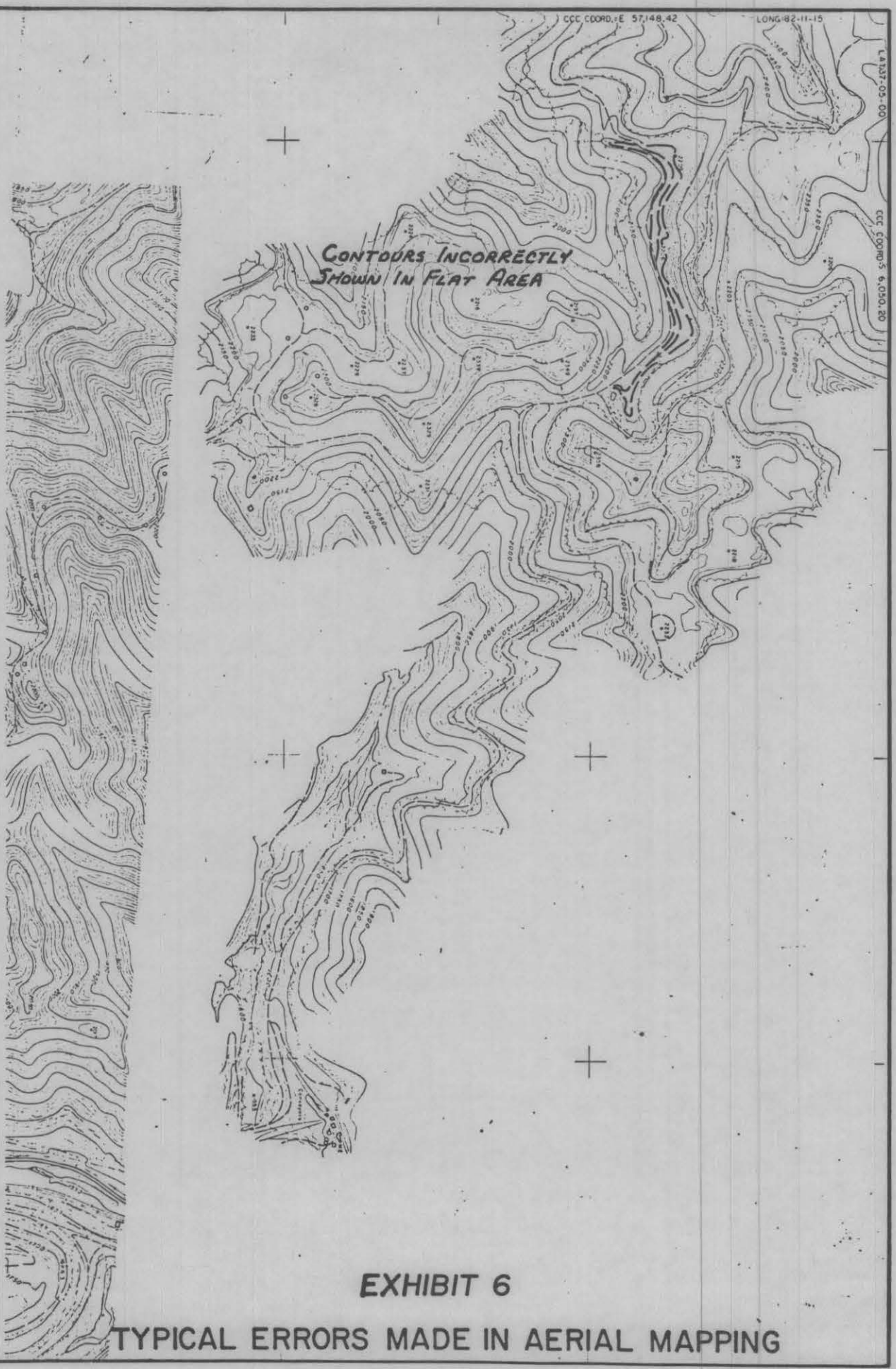


EXHIBIT 6

TYPICAL ERRORS MADE IN AERIAL MAPPING

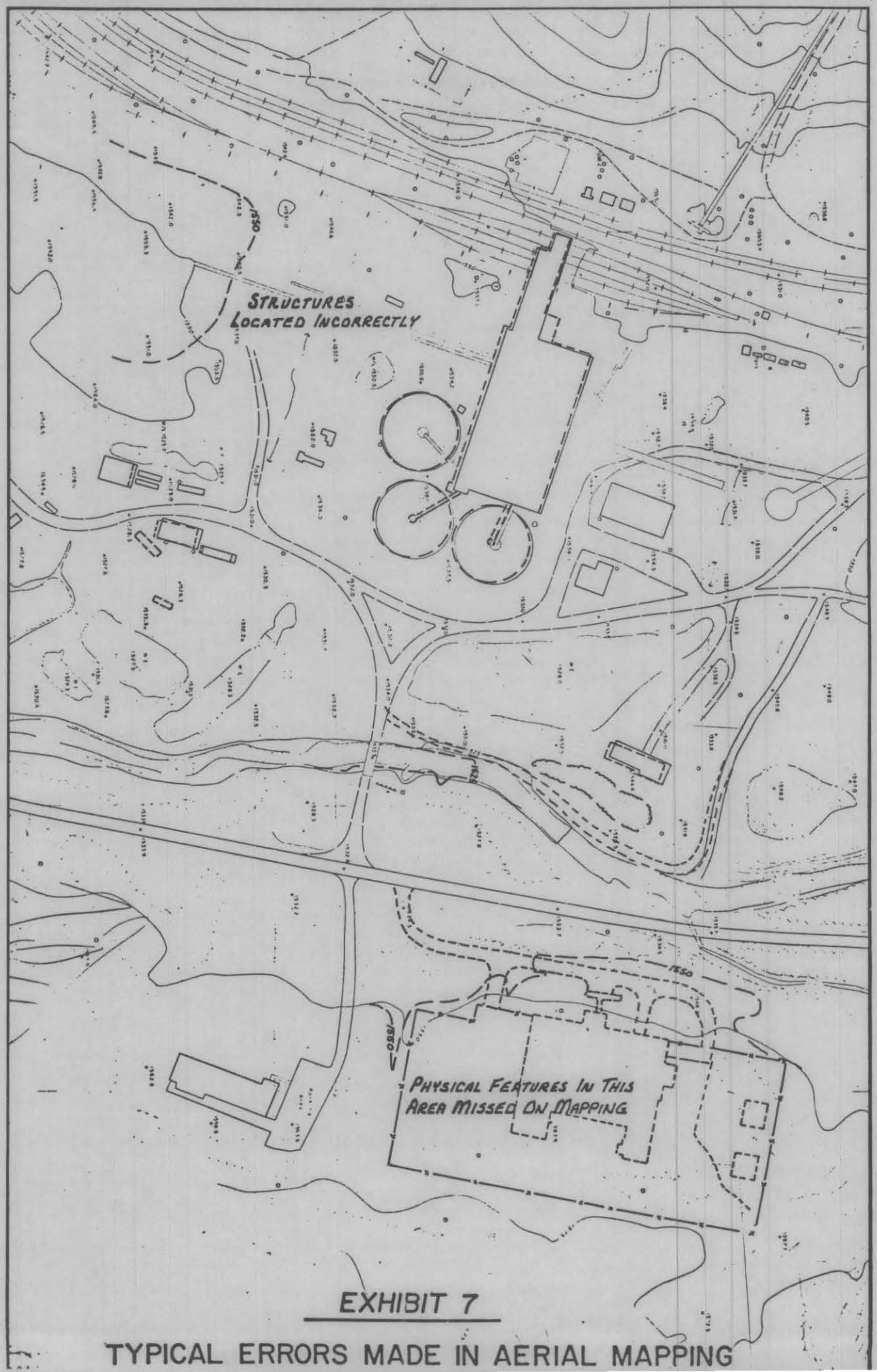


EXHIBIT 7

TYPICAL ERRORS MADE IN AERIAL MAPPING

Virginia Oil and Gas Conservation Commission

Virginia Well Review Board

Chief of the Division of Mines and Quarries,
Virginia Department of Labor and Industry

PRESENTATION BY COLUMBIA GAS TRANSMISSION CORPORATION CONCERNING DRAFT REGULATIONS AND FORMS UNDER THE VIRGINIA OIL AND GAS ACT (CODE OF VIRGINIA, §§ 45.1-286 - 45.1-361) AT INFORMATIONAL PROCEEDINGS ON JANUARY 5, 1983, CONDUCTED UNDER THE ADMINISTRATIVE PROCESS ACT (CODE OF VIRGINIA, §§ 9-6.14:1 - 9-6.14:21)

January 4, 1983

JOSEPH E. CAMPBELL AFFIDAVIT

A F F I D A V I T

STATE OF WEST VIRGINIA,

COUNTY OF KANAWHA, to-wit:

JOSEPH E. CAMPBELL, being first duly sworn, deposes and says that:

(1) My name is Joseph E. Campbell. I am 42 years old. My residence address is 26 Hillsdale Circle, Scott Depot, WV 25560. I am Director of the Oil and Special Projects Section in the Exploration and Development Department of Columbia Gas Transmission Corporation ("Columbia"), at its headquarters office in Charleston, West Virginia. The primary role of the Department is the production of oil and gas.

(2) This affidavit is given for the purpose of a hearing before the Virginia Oil and Gas Conservation Commission, the Virginia Well Review Board, and the Chief of the Division of Mines and Quarries on January 5, 1983. In this connection, I have reviewed the documents to be submitted at the hearing as Columbia Exhibits 1 through 19.

(3) I graduated from Marietta College in 1962, with a bachelor of science degree in petroleum sciences. I was first employed by a predecessor company of Columbia in the same year as an Engineer in the Production and Storage Department in Charleston. In 1973, I was assigned to the Hamlin Division, which included southern West Virginia and Tazewell County, Virginia, as Assistant Superintendent of Production and Transmission. In 1976, I went to the new Huntington Division as

Senior Production and Storage Engineer, overseeing technical aspects of operations in eastern Kentucky, southwestern Virginia, and southern West Virginia. In 1980, I became Technical Manager of all operations in the Huntington Division.

(4) I was promoted to my present position in September, 1981. It is company-wide in scope. Therefore I have assignments affecting Columbia's exploration and production of oil and gas in Kentucky, Maryland, New York, Ohio, Pennsylvania, Virginia and West Virginia. I have also worked on assignments in Michigan and Vermont.

(5) I am a member of the Appalachian Chapter of the Society of Petroleum Engineers, the Kentucky Oil and Gas Association, the Pennsylvania Gas Association and the Virginia Oil and Gas Association.

MY WORK ON THE VIRGINIA OIL & GAS ACT

(6) In the Fall of 1980, I was designated by Columbia as a member of an Inter-Industry Technical Committee of the Virginia Oil and Gas Association, the Virginia Petroleum Council, and the Virginia Coal Association. The assignment of this Technical Committee was to achieve, as completely as we could, an agreement on standards for the drilling and operation of oil and gas wells through coal seams in the State of Virginia. We knew from the beginning that our work was intended to be the technical foundation of part of a proposed new statute.

(7) The first meeting of the Technical Committee was on December 17, 1980. The committee members of the two industries

first met separately, and drew up lists of proposals. Columbia Exhibit 1, entitled "Coal industry needs / proposed legislation", is a photocopy of the proposal submitted by the coal industry at that first meeting. Columbia Exhibit 2, entitled "Oil and gas industry needs in proposed legislation", dated December 17, 1980, was the oil and gas proposal.

(8) The Technical Committee had several meetings. In addition, the oil and gas representatives had separate meetings; and I also consulted various Columbia personnel and others from time to time. Finally, on May 13, 1981, the Technical Committee reached an agreement. This is Columbia Exhibit 3, entitled "Oil & gas/coal industry technical committee tentative agreement on Virginia proposed oil and gas legislation". The persons who actually signed this agreement are identified as follows:

Oil and gas members

Joseph E. Campbell, Columbia Gas Transmission Corporation

R. L. Dodd, Texas International Petroleum Company

B. D. Hager, Kentucky West Virginia Gas Company

Coal members

Gerald Borrelli, Pittston Coal Group

Jack J. Gembach, Jr., Penn Virginia Resources Corporation

Glenn F. Phillips, VICC Land Company

In addition, I had been authorized to sign for J. J. Cox of Chevron USA Inc., and Mr. Gembach had been authorized to sign for Lou Kuchinic of Controlled Resources Oil & Gas Corporation.

(9) Item 4 of the tentative agreement of the Technical Committee (Columbia Exhibit 3) was the only item that concerned the surface location of oil and gas wells. It was as follows:

> "4. Oil and gas wells in areas where coal is found will be located with reference to the mine co-ordinate system established for the area of the proposed well location. The course and distance of such location from two permanent points <u>on</u> [it should have been "<u>or</u>"] land marks on the tract will also be shown. All wells within 2500' of a proposed well will be shown on the well plat."

The reason for the requirement that "wells within 2500' of a proposed well will be shown" was that the oil and gas representatives had agreed, after long negotiations, that a coal owner should be able to veto a shallow gas well closer than 2500 feet to a pre-existing well. This concession was expressed in Item 6 of the tentative agreement.

(10) Item 4 of the Technical Committee's tentative agreement (Columbia Exhibit 3) was ultimately expressed in § 45.1-312 of the new law; and Item 6 of the tentative agreement was expressed in § 45.1-319.

(11) I advised the inter-industry Legal Committee established by the two industries to make the first draft of the proposed new law. I also participated in almost all of the work sessions before the drafting subcommittee of the Virginia Coal and Energy Commission which put the text in final form for presentation to the General Assembly; and I assigned S. L. Ovies,

a petroleum engineer on my staff, to attend on my behalf the work sessions I had to miss. I believe I have a complete understanding of what both inter-industry committees meant in agreeing to the provision in § 45.1-312.A of the Code that the well plat for a proposed new well must show "the proposed location and surface elevation of the well determined by survey". Certainly my understanding, and I believe the understanding of everyone else, was that the well operator had to make an independent survey of "the proposed location and surface elevation of the well" with reference to the "two permanent points or landmarks on the tract". But nothing else on the well plat needed to be independently surveyed by the well operator: in other words, all other information on the well plat could be derived from earlier maps and other secondary sources. This would be exactly like well plats in Virginia before 1982, and in every other State I know of.

DRAFT REGULATION 3.04(a)(1, 2)
--CONCERNING RESURVEYS OF OLD WELLS

(12) I also participated in the entire process of the inter-industry work on draft regulations under the new law.

(13) The first draft of these new regulations (Columbia Exhibit 4) did not say anything about well plats. But in an inter-industry conference on May 25, 1982, the Pittston representatives handed out the draft of a detailed regulation covering well plats (Columbia Exhibit 6), much of which appeared to be copied from a West Virginia regulation adopted in 1979.

(14) Paragraph 4 of the Pittston draft (Columbia Exhibit 6) proposed that pre-existing wells could be used as "established landmarks if the wells are platted and on file with the Chief or the Inspector". This was acceptable to me, and as far as I know to the other oil and gas participants in the meeting. It did not in any way require that pre-existing wells must also be surveyed at the time of a new well location.

(15) At the May 25 meeting, we extensively revised the original Pittston draft (Columbia Exhibit 6). As nearly as I can tell, these revisions account for the handwriting on that exhibit. At no time in this May conference did Mr. Borrelli or anyone else suggest that the well operator must make an actual survey of anything except the proposed new well with reference to the two permanent points or landmarks.

(16) The revisions agreed upon at the May 25 conference were first written up by H. L. Snyder of Columbia's Law Department. This was the "POST CONF DRAFT 06-04-82" (Columbia Exhibit 8), which he initially sent out for review by the inter-industry committees with his covering letter dated June 4, 1982 (Columbia Exhibit 7). This new draft was then mailed to Inspector Fulmer with a covering letter from Mr. Snyder dated June 11, 1982 (Columbia Exhibit 9).

(17) With a covering letter of June 14, 1982, D. R. Johnson, Pittston's Senior Assistant General Counsel, sent Mr. Snyder a redraft of some regulations and comments on others (Columbia Exhibit 11). In his fourth comment, Mr. Johnson noted that Pittston wanted an actual survey not only of the subject

well, but also of "all wells required to be shown on the plat". This meant at least all wells within 3,000 feet of the subject well under the agreed wording of paragraph (a)(9) of draft Regulation 3.04.

(18) The next conference between representatives of the two industries was on June 22-23, 1982. Inspector Byron T. Fulmer was present at this meeting, and he had been sent a copy of the "POST CONF" draft of the regulations (Columbia Exhibit 8). At this meeting, the Pittston representatives brought up their proposal that the well plat should include an actual survey of all pre-existing wells within 3,000 feet of the subject well. The oil and gas representatives rejected this proposal, and the conference ended without any agreement on the subject.

(19) At the close of the June meeting, Inspector Fulmer had asked for a fresh draft as soon as possible to forward to the Chief and, in time, the Commission and the Board. Mr. Snyder had the "POST CONF 06-04-82" draft on a word-processor, and agreed to work up a new draft. He sent the "THIRD DRAFT 07-15-82" to Inspector Fulmer with a covering letter dated July 15, 1982 (Columbia Exhibit 13), and sent copies to everyone else with an explanatory covering letter on July 16, 1982 (Columbia Exhibit 15).

(20) With a covering letter dated July 15, 1982, Mr. Johnson submitted several redrafts (Columbia Exhibit 14). The redraft of paragraphs (a)(1) and (a)(2) of Regulation 3.04 proposed that the well operator's actual survey should include pre-existing wells "located 2,500 feet or less from the subject

well". This revised Pittston proposal ultimately became a part of "ALTERNATE A PROPOSED BY COAL INDUSTRY" of paragraphs (a)(1) and (a)(2) of the Regulation 3.04 being considered at the hearing on January 5, 1983.

(21) I recommend that "ALTERNATE B PROPOSED BY OIL AND GAS INDUSTRY" should be adopted as paragraphs (a)(1) and (a)(2) of Regulation 3.04 on well plats, and ALTERNATE A rejected. I have spent virtually my entire career working in various aspects of the location, drilling, and operation of oil and gas wells through coal seams in Kentucky, Virginia, West Virginia, and elsewhere. Nothing in my past experience indicates to me that the safety of coal miners would be enhanced by the well operator surveying pre-existing wells. I can, however, think of practical objections. They are as follows:

(a) In some circumstances, the extra cost to the well operator might be small. But in rugged country like southwestern Virginia, the extra cost will normally be high. And if a landslide or a surface mining operation covered up a plugged well with 20 or 200 feet of overburden, the cost of moving aside the overburden to find the old well could be prohibitive. The overburden might even have been caused by the coal operator and yet ALTERNATE A would put the cost on the well operator without any benefit to him;

(b) Where the pre-existing well is on land which has been reclaimed under current surface mine reclamation laws, the restrictions on removing overburden in order to recover the location are extremely severe. As a practical matter, even

if the work were considered a "post-mining use" under those laws, the cost of restoring the reclaimed land could be prohibitive, and in fact would be prohibitive in most areas reclaimed by the so-called valley fill method;

(c) Conceivably, a pre-existing well might have to be resurveyed more than once. For example, if a pre-existing well were offset on all four sides by wells at a distance of 2400 feet, none of the four new wells would be within 2500 feet of each other, but all would have to be related to the pre-existing well by actual survey. And if different well operators were involved, none could accept the survey of another under the coal industry's ALTERNATE A;

(d) Retrofitting past actions and operations to current standards is only rarely worth the money involved in actual practice. I am not on any of the national committees that make standards for the oil and gas industry. But I am generally familiar with the process, and I think it is the same in most industries: new standards are normally applied only to future conduct. Retroactivity is reserved for those situations where the public welfare is substantially jeopardized; and

(e) Aside from all these factors, if the pre-existing well is on a different tract, the landowner may be hostile to any invasion of his property. The resultant delays could even imperil the well operator's lease, and thus substantially impair his rights and prohibit the development of the resource.

(22) My professional responsibilities have required me to be familiar with the law and regulations respecting the drilling and operation of oil and gas wells in Kentucky and West Virginia as well as in Virginia. None of the three has ever had a requirement of an actual survey by the well operator for any well except the subject well.

DRAFT REGULATIONS 3.04(a)(6), 4.02, 4.03, AND FORM 17
--ON CERTIFYING THE WELL LOCATION AS DRILLED

(23) At the inter-industry meeting of May 25 mentioned above in paragraphs 13-15, one of the coal representatives (I forget who) suggested some sort of requirement in the regulations that a well must actually be drilled at the location earlier surveyed and shown on the well plat. We agreed that two points had to be considered. First, so as not to penalize insignificant variations, we agreed on a three-foot maximum variation on coal lands, and a ten-foot maximum variation elsewhere. Second, we agreed on what would happen if a well operator exceeded the maximum allowable variation: he would have to apply for a new permit.

(24) These two agreements were first written up in the "POST CONF DRAFT 06-04-82" (Columbia Exhibit 8), as draft Regulations 3.04(a)(6) on page 24, and 4.02 and 4.03 on pages 33-34. As stated above in paragraph 16, this "POST CONF" draft was mailed to Inspector Fulmer and everyone else involved on June 11, 1982 (Columbia Exhibit 9); and three days later, Mr. Johnson sent the Pittston redraft (Columbia Exhibit 11) to Mr. Snyder with his

covering letter of June 14, 1982. In this redraft, for the first time, Pittston proposed that the actual surface location of the well should be resurveyed and its location recertified by a registered engineer or certified land surveyor.

(25) At the next inter-industry meeting on June 22-23 mentioned above in paragraph 18, the oil and gas representatives objected to resurveying the well as actually drilled. I thought the dispute was resolved when Mr. Borrelli described how an easy check could be made, because his method was so simple that it would not require a surveying crew. After returning to Charleston, I worked with Mr. Snyder and John D. Cale of Columbia's Engineering Department to express clearly the process that Mr. Borrelli had described. A rewritten version of draft Regulation 3.04(a)(6) (Columbia Exhibit 12, pages 18-19) was mailed out to the inter-industry group and Inspector Fulmer with Snyder's covering letter of June 25, 1982.

(26) Three weeks later, the same 3.04(a)(6) text as in Columbia's Exhibit 12 was inserted in the "THIRD DRAFT 07-15-82" (Columbia Exhibit 13, pages 20-21). As related above in paragraph 19, Mr. Snyder had promised to get the "THIRD DRAFT" to Inspector Fulmer as soon as possible. In his covering letter (Columbia Exhibit 15), Mr. Snyder told everyone involved that the coal industry had not yet agreed to 3.04(a)(6) as written up in the "THIRD DRAFT".

(27) On July 15, 1982, Mr. Johnson mailed the Pittston redrafts (Columbia Exhibit 14) mentioned above in paragraph 18. The redraft of Regulation 3.04(a)(6) reaffirmed Pittston's

proposal for a recertification of the actual well location by a registered engineer or certified land surveyor. It ultimately became "ALTERNATE A PROPOSED BY COAL INDUSTRY" of paragraph (a)(6) of the draft Regulation 3.04 now being considered.

(28) I recommend that "ALTERNATE B PROPOSED BY OIL AND GAS INDUSTRY" should be adopted as paragraph (a)(6) of Regulation 3.04 on well plats, and ALTERNATE A rejected. I do not know of any other State which requires the actual location of a well to be resurveyed and recertified. Checking the actual location is proper, but requiring a recertification by a registered engineer or certified land surveyor is not necessary.

(29) Aside from the extra expense of bringing in a survey crew a second time, requiring the check to be made after the drilling rig has been set up would result in downtime for the rig while the survey crew was coming in and resurveying. At a current cost of $200 an hour for downtime of an ordinary rotary rig, this would be an excessive burden on the well operator. If the rig was for a really deep well, the downtime cost would be up to ten times higher.

(30) Before the 1982 Act, the former Virginia statute only required surveying of well locations to be done by a "competent" engineer or surveyor; and nothing at all was said about resurveying the actual location. I do not believe the coal industry can fairly claim that its interests or its employees' safety will be impaired at all by accepting the kind of certification I recommend in ALTERNATE B--certification by any "competent" person

that the well was drilled at the permitted location. Furthermore, the heavy penalty for illegally moving the location--the voiding of the well work permit as provided in Regulation 4.02--is adequate to insure accuracy in making the actual location.

(31) For the same reasons set out in paragraphs 27 and 28, I recommend that "ALTERNATE B PROPOSED BY OIL AND GAS INDUSTRY" be adopted as the REVERSE side "certification of location of a new well" on Form 17, the "Report of Completion of Well Work".

COLUMBIA'S RESPONSE TO THE COMMENTS
BY OTHER PARTS OF THE EXECUTIVE BRANCH

(32) I participated in the preparation of Columbia Exhibit 19, entitled "Response by Columbia Gas Transmission Corporation to the comments received from other parts of the executive branch". Except for points of law and details of civil engineering, I adopt those comments as fully as if directly included in this affidavit.

Joseph E. Campbell (SEAL)
Joseph E. Campbell

Subscribed and sworn to before me, a Notary Public in the County and State aforesaid, this 4th day of January, 1983.

My commission expires March 21, 1988.

Sandra K. Neylon
Notary Public

JOHN D. CALE AFFIDAVIT

A F F I D A V I T

STATE OF WEST VIRGINIA,

COUNTY OF KANAWHA, to-wit:

JOHN D. CALE, being first duly sworn, deposes and says that:

(1) My name is John D. Cale. I am 41 years old. My residence address is 531 Everest Avenue, St. Albans, WV 25177. I am Manager of Civil Engineering in the Engineering Department of Columbia Gas Transmission Corporation ("Columbia"), at its headquarters office in Charleston, West Virginia.

(2) This affidavit is given for the purpose of a hearing before the Virginia Oil and Gas Conservation Commission, the Virginia Well Review Board, and the Chief of the Division of Mines and Quarries on January 5, 1983. In this connection, I have reviewed the documents to be submitted at the hearing as Columbia Exhibits 1 through 19.

(3) In 1959, I entered a civil engineering squadron of the U. S. Air Force. As a result of this, I began to take courses which led to a surveying certificate from Pennsylvania State University in 1966. I won a bachelor of science degree in management, with honors, from West Virginia State College in 1980; and I am pursuing graduate work toward an M.B.A. in the West Virginia College of Graduate Studies.

(4) I was first employed by a predecessor company of Columbia in Pittsburgh, Pennsylvania, in 1963, as a draftsman. Two years later, I was promoted to junior surveyor. I progressed in that field until, on April 1, 1973, I was transferred from

Pittsburgh to Charleston, and promoted to Manager of Mapping and Drafting in the Engineering Department. As such, I supervised the preparation of maps from field surveys and secondary sources.

(5) In 1980, I was named to my present position, Manager of Civil Engineering, responsible for all surveys, including well location surveys, required by the construction associated with the operation and maintenance of Columbia's system. This system now includes almost 10,000 production and storage wells and some 18,000 miles of pipeline in the Appalachian area.

(6) I am licensed as a land surveyor in Pennsylvania, and I belong to the International Right of Way Association and the West Virginia Association of Land Surveyors.

(7) My surveying career has continually involved oil and gas facilities on lands underlain by commercial coal deposits. In addition, while living in the Pittsburgh area up to 1973, a number of my personal friends were employed in engineering and production in the Western Pennsylvania coal industry; and we frequently discussed technical problems bearing on both the coal industry and the oil and gas industry. As a result, I believe I have a certain amount of practical understanding of surveying problems affecting the coal industry.

(8) I did not participate in the work on the 1982 Virginia Oil and Gas Act. However, as outlined below, I have participated to some degree in the inter-industry work on draft regulations under the new law.

(9) The first draft of the Regulations that I can recall reviewing was the "POST CONF 06-04-82" draft (Columbia Exhibit 8).

This draft only required an actual survey of the proposed new well with reference to the "two permanent points or landmarks". Disagreements arose on several matters within my area of concern. They were not resolved before the first meeting of the Commission, the Board, and the Chief on October 8, 1982. Therefore I accepted an invitation to attend. After it adjourned, Joseph Campbell and I discussed the areas of disagreement with Gerald Borrelli and Richard Brillhart of the Pittston Coal Group. Some days later, S. L. Ovies (a member of Mr. Campbell's staff) and I met Mr. Borrelli in Charleston. We have been unable to resolve our differences.

DRAFT REGULATION 3.04(a)(1, 2)
--CONCERNING SURVEY OF PRE-EXISTING WELLS

(10) I recommend that "ALTERNATE B PROPOSED BY OIL AND GAS INDUSTRY" should be adopted as paragraphs (a)(1) and (a)(2) of Regulation 3.04 on well plats, and ALTERNATE A rejected on the question whether to require the well operator to survey pre-existing wells. I have three reasons for this recommendation, as explained below.

(11) My first reason is that requiring the oil and gas operator to survey pre-existing wells would not enhance the safety of subsequent underground mining operations. I say this for a very simple reason: I do not believe a responsible coal operator would fail to make his own survey of the location of an oil and gas well prior to any mining operation which could possibly involve the well. When I mentioned something to this

effect to Mr. Borrelli, he agreed that Pittston made its own survey of each oil and gas well as the actual mining operation approached the well. He indicated he was not trying to transfer any part of the mine operator's responsibility for safety to the well operator. I was not surprised, because the mining engineers I knew in Pennsylvania (mentioned above in paragraph 7) had assured me that they never accepted the well operator's survey: the custom of the coal industry was always to resurvey the well before commencing nearby mining operations.

(12) I am not familiar with the details of laws and regulations governing mining maps in Virginia. However, if they do not already require the mine operator to make his own actual survey of all oil and gas wells before mining nearby, I think they should. It could be accomplished very easily in Regulation 4.10, by redesignating the existing paragraph (c) as paragraph (d), and inserting ahead of it a new paragraph (c), as follows:

> "(c) In any filing under this Regulation 4.10, the mine operator shall independently survey the surface location of the well in question for the purpose of showing the same on the parts of its mine maps and plans required to be filed by § 45.1-340 of the Code."

(13) My second reason in support of ALTERNATE B is that the statutes and regulations of Kentucky, Maryland, New York, Ohio, Pennsylvania, and West Virginia--the other States where Columbia has facilities--do not require the well operator to locate any other well except the subject well by actual survey. For that matter, only the subject well had to be located by actual survey

under the Virginia law and regulations prior to 1982. I have also checked the law and regulations of other States where oil and gas reservoirs and commercial coal deposits underlie the same surface land--Alabama, Colorado, Georgia, Illinois, Indiana, Montana, Tennessee, and Wyoming. None of the agencies regulating the drilling and operation of oil and gas wells in those States require the well operator to locate any well except the subject well by actual survey.

(14) My last reason in favor of ALTERNATE B is that ALTERNATE A would unfairly impose additional costs on the oil and gas industry, because the exact relative location of nearby wells is of no economic benefit to my industry. It is valuable, if at all, only to the coal operator. Therefore the coal operator should pay.

(15) Moreover, if the coal owner's economic interest entitles him to require the well operator to survey pre-existing wells, then any other landowner or developer can logically require a survey of whatever he happens to be interested in--property lines, buildings, highways, railroads, streams, mines, mine openings or workings, quarries, etc.--all the things that must be shown on the plat under the provisions of § 45.1-312 of the Code. Thus, the logic of Pittston's proposal in ALTERNATE A exposes the oil and gas industry to infinite survey requirements by anyone who can show an economic or other interest in the result.

DRAFT REGULATION 3.04(a)(1)--CONCERNING THE STANDARD OF SURVEY ACCURACY OUTSIDE OF COAL TERRITORY

(16) The second unresolved issue in draft Regulation 3.04(a)(1) is that of the standard of survey accuracy. "ALTERNATE A PROPOSED BY COAL INDUSTRY" proposes "a minimum survey accuracy of 1:500" for wells located on land not underlain by coal. "ALTERNATE B PROPOSED BY OIL AND GAS INDUSTRY" proposes a minimum survey accuracy of 1:200. On the first page of his letter of July 15, 1982 (Columbia Exhibit 14), Pittston's D. R. Johnson explained that Pittston's purpose was "to prevent the use of stadia", which is the survey method of observing through a telescope the distances intercepted on the rod between two horizontal crosshairs, as a means of determining horizontal distance. I do not know why Pittston is concerned about survey accuracy outside of coal territory.

(17) I recommend that the oil and gas industry's ALTERNATE B should be adopted on this point, and ALTERNATE A should be rejected. Admittedly, the stadia method is not the most accurate method of surveying. Nonetheless, the use of stadia is perfectly appropriate in some circumstances. I can give three examples. The first would be rough country, where the value of the land to the landowner simply does not warrant survey accuracy greater than 1:200. The second is where the landowner does not want you to drill on one part of the tract, but doesn't care where you drill on another part--"across the road", for example, or "over the hill". The third is where the well location is inside a large lease, far from any boundaries. (Even inside coal

territory, if all the commercial coal has been mined out from under the well site, any of my three examples might apply without affecting the actual interest of the coal owner; but I do not propose a change in the agreed standard.)

(18) The reason for two survey accuracy standards in Regulation 3.04(a)(1) is that the needs of the coal industry justify the higher survey accuracy in coal territory. For example, drilling a well down through an existing coal pillar is actually encouraged by § 45.1-318.B.2 of the Code; and a higher level of accuracy is obviously required on safety grounds. However, where coal is not in the picture, the only significant purposes of well location surveys are to administer the oil and gas conservation law, and to permit the relocation of a plugged well after it has been abandoned and the surface reclaimed. In both cases, a survey accuracy of 1:200 is sufficient.

(19) As a practical matter, stadia will almost certainly be less used in the future. Columbia is converting to the use of electronic distance measuring equipment with associated computer technology. It is faster, cheaper, and generally more accurate. However, our conversion is limited by budget constraints; and many surveyors in private practice, serving small well operators, have not yet begun to invest in EDM. I see no justifiable reason to require them to have it.

DRAFT REGULATION 3.04(a)(1)--CONCERNING THE PROPRIETY OF REQUIRING AN "ON-THE-GROUND SURVEY"

(20) My views on this third aspect of the difference between the coal industry's ALTERNATE A and the oil and gas

industry's ALTERNATE B of Regulation 3.04(a)(1) are fully set out in Columbia Exhibit 19, "Response by Columbia Gas Transmission Corporation to the comments received from other parts of the executive branch", at pages 3-5. Consequently, I recommend the adoption of ALTERNATE B in this respect, and the rejection of ALTERNATE A.

(21) However, as indicated on page 4 of Columbia Exhibit 19, we can see that the Commission and the Board may feel the omission of any specification of survey method might be misunderstood. If so, we recommend the specification of alternative survey methods by the following addition at the end of the present text of Regulation 3.04(a)(1) [ALTERNATE B], <u>or</u> at the end of the present text of Regulation 3.04(a)(2) [ALTERNATE B]--whichever place is felt to be more appropriate:

> "The two permanent points or landmarks shall be shown with courses and distances to the subject well on the basis of a survey by one of the following methods: (i) on-the-ground survey, which may include the use of electronic distance measuring equipment with associated computer support, (ii) aerial photogrammetry, or (iii) inertial survey."

DRAFT REGULATION 3.04(a)(2)--CONCERNING THE PROPRIETY OF STANDING CORNER TREES AS PERMANENT LANDMARKS

(22) My views on this third aspect of the difference between the coal industry's ALTERNATE A and the oil and gas industry's ALTERNATE B of Regulation 3.04(a)(2) are set out in

Columbia Exhibit 19, at page 5. I think a corner tree is one of the best monuments. Consequently, I recommend the adoption of ALTERNATE B in this respect, and the rejection of ALTERNATE A. Of course, where a mine coordinate system has been established for the area, it must be used under the provisions of § 45.1-312.B of the Code.

DRAFT REGULATIONS 3.04(a)(6), 4.02, 4.03, AND FORM 17
--ON CERTIFYING THE WELL LOCATION AS DRILLED

(23) The drafting of Regulations 3.04(a)(6), 4.02, 4.03, and the REVERSE of Form 17 began when the coal industry initially asked only for a rule requiring a well to be drilled at the location specified on the plat and approved in the permit. The oil and gas industry agreed. If the basic rule is violated, the permit is void. Even criminal prosecution is possible for a violation.

(24) The real dispute is that "ALTERNATE A PROPOSED BY COAL INDUSTRY" for Regulation 3.04(a)(6) goes much further. It would require a recertification by a registered engineer or certified land surveyor, after the drilling rig is set up and prior to any installation of casing, "that the actual surface location of the well conforms with the performance standards of Regulation 4.02". I think this is an exorbitant demand, not justified by the facts. Therefore I recommend that "ALTERNATE B PROPOSED BY OIL AND GAS INDUSTRY" be accepted for Regulation 3.04(a)(6), and ALTERNATE A rejected.

(25) The check of the actual location can be done by any person of sound intelligence, with a minimum of training. As I understand it, this is the simple method described by Mr. Borrelli at a conference last June. It begins after the well location stake is set. Outlying stakes are also set, so that the point of the well location stake can be re-established. Later, after the well site is leveled and prepared for drilling, the outlying stakes are used (either by measured distances or by instrument sighting) to re-establish the well location stake. That is where the well is drilled. You do not need a survey crew to do this work. Columbia's Engineering Department has never been involved--not in Virginia, not anywhere--in this simple task of re-establishing the well location stake.

(26) We have a very practical and serious objection to the ALTERNATE A recertification proposal, rooted in the organizational structure of Columbia and, I think, most large oil and gas companies. The registered engineers and certified land surveyors who supervise the actual surveys are in one chain of command, whereas the petroleum engineers who supervise the drilling are in another. This means that the ALTERNATE A proposal would require a second trip to the well site by a survey crew.

(27) In the case of small oil and gas operators, the problem is even worse. Small operators normally contract for all surveying services, and would have even more trouble with the cost of bringing the outside contractor's crew back for the check-location.

(28) In my opinion, all of this is unnecessary. As Mr. Borrelli first pointed out, checking the location from the outlying stakes posted under ALTERNATE B is easy. To require the return of a survey crew is simply not necessary.

(29) I might point out that this whole area of check-locations is entirely new. I have not found a single other State which even addresses the problem, which I believe is a pretty good indication that technical personnel on the well are capable of doing the check-location work. In short, ALTERNATE A asks for more than is reasonably necessary. If the problem had been so significant in the past, surely some coal representative would have raised a question long before this summer.

AN ADDITIONAL COMMENT ON AN OPINION
OF THE ATTORNEY GENERAL'S OFFICE

(30) In one of the first well work applications Columbia submitted under the new law, the well plat was signed by a certified land surveyor on my staff. But his certification is not from Virginia, and Pittston objected, and Inspector Fulmer sought an opinion from the Attorney General's office. In a letter dated September 27, 1982 (Columbia Exhibit 16), Assistant Attorney General Richard C. Kast advised Inspector Fulmer of his opinion that the requirement in § 45.1-312.A meant that the registration or certification must come from Virginia, and that the well plat was therefore faulty.

(31) I think this is an indefensible requirement when applied to large companies like Columbia, who do business in

several States. I urge the Commission and the Board to adopt a regulation accepting well plats prepared by engineers or surveyors registered or certified in States other than Virginia. Any State that has a system of registration or certification will have standards substantially similar to those of Virginia, and you will have no real loss of accuracy or competency.

(32) In making this request, I do not mean that my company will or can be embarrassed by Mr. Kast's legal opinion. Columbia's Director of Civil Engineering is an engineer registered in Virginia, and there are others in Columbia with Virginia registration. But such may not be the case for every interstate company doing business in Virginia, and I can not think of a single valid reason for accepting the implications of Mr. Kast's legal opinion (Columbia Exhibit 16).

COLUMBIA'S RESPONSE TO THE COMMENTS
BY OTHER PARTS OF THE EXECUTIVE BRANCH

(33) I participated in the preparation of Columbia Exhibit 19, entitled "Response by Columbia Gas Transmission Corporation to the comments received from other parts of the executive branch". On the points involving surveying, I adopt those comments as fully as if directly included in this affidavit.

John D. Cale (SEAL)

Subscribed and sworn to before me, a Notary Public in the County and State aforesaid, this 4th day of January, 1983.

My commission expires March 21, 1988.

Sandra K. Neylon
Notary Public

INDEX TO EXHIBITS
OF
COLUMBIA GAS TRANSMISSION CORPORATION

1- "Coal industry needs / proposed legislation" (undated)

2- "Oil and gas industry needs in proposed legislation" (12-17-80)

3- "Oil & gas/coal inter-industry technical committee tentative agreement on Virginia proposed oil and gas legislation" (05-13-81)

4- [EXCERPT] First draft of proposed regulations (04-29-82, with covering letter from H. L. Snyder)

5- Letter from H. L. Snyder (Columbia) to inter-industry committees et al. (05-10-82)

6- Pittston draft of regulation on well plats (05-25-82)

7- Letter from H. L. Snyder (Columbia) to inter-industry committees et al. (06-04-82--mailed with Exhibit 8)

8- [EXCERPTS] "POST CONF 06-04-82" draft of regulations (06-04-82--mailed with Exhibit 7)

9- Letter from H. L. Snyder (Columbia) to Inspector B. T. Fulmer et al. (06-11-82)

10- Letter from G. J. Borrelli (Pittston) to H. L. Snyder (Columbia) et al. (06-11-82)

11- Pittston draft of regulations on well plats, etc. (06-14-82, with covering letter from D. R. Johnson)

12- Columbia draft of regulations on well plats, etc. (06-25-82, with covering letter from H. L. Snyder)

13- [EXCERPTS] Third draft of regulations (07-15-82, with covering letter from H. L. Snyder)

14- Pittston draft of regulations on well plats, etc. (07-15-82, with covering letter from D. R. Johnson)

15- Letter from H. L. Snyder (Columbia) to inter-industry committees et al. (07-16-82)

16- Letter from Richard C. Kast, Assistant Attorney General to Inspector B. T. Fulmer (09-27-82)

17- Letter from H. L. Snyder (Columbia) to John B. Purcell, Jr., Assistant Attorney General (11-08-82)

18- Letter from H. L. Snyder (Columbia) to the Commission, the Board, the Chief et al. (12-15-82)

19- Response by Columbia Gas Transmission Corporation to the comments received from other parts of the executive branch

EXHIBITS 1 thru 19

Ex. No. 1

COAL INDUSTRY NEEDS

PROPOSED LEGISLATION

1. PROCEDURES ESTABLISHED TO ASSURE ACCURATE VERTICAL LOCATION OF COAL SEAMS WHEN DRILLING GAS OR OIL WELLS.

2. PROCEDURES ESTABLISHED TO ASSURE ACCURATE HORIZONTAL LOCATION AT POINT OIL OR GAS WELL PENETRATES A GIVEN COAL BED.

3. PROCEDURES ESTABLISHED TO ALLOW MINING THROUGH A PLUGGED OIL OR GAS WELL.

4. LOCATION OF WELLS TO BE WITH REFERENCE TO UNITED STATES GEOLOGICAL SURVEY.

5. SUFFICIENT TIME TO RESPOND TO NOTIFICATION OF OIL AND GAS WELL APPLICATION TO DRILL WELL BY ALL APPROPRIATE OWNERS.

6. COAL TO BE CONSIDERED IN THE LOCATION OF WELLS GIVING COAL OWNERS AND OPERATORS STANDING TO OBJECT TO WELL LOCATIONS. STANDING TO OBJECT AND REVIEW OF APPLICATIONS SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO, THE FOLLOWING:

   A) CONSIDERATION SHALL BE GIVEN AS TO RELOCATING WELL TO AN EXISTING OR PLANNED COAL BARRIER PILLAR.

   B) CONSIDERATION SHALL BE GIVEN TO A MORATORIUM OF NOT MORE THAN TWO (2) YEARS TO DELAY DRILLING UNTIL MINING IS COMPLETED.

   C) CONSIDERATION SHALL BE GIVEN TO THE METHOD PROPOSED FOR COAL AND OIL AND GAS RECOVERY.

   D) IN VIRGIN COAL AREAS, CONSIDERATION SHALL BE GIVEN TO A UNIFORM DRILLING PATTERN TO MAXIMIZE THE RECOVERY OF ALL RESOURCES.

E) CONSIDERATION SHALL BE GIVEN TO RELOCATING WELL TO AN EXISTING OR PLANNED OIL OR GAS WELL PILLAR.

F) CONSIDERATION SHALL BE GIVEN TO THE WELL LOCATION AND LOCATION OF THE DISCHARGE PRODUCT LINE AS TO ITS EFFECTS ON ACTIVE OR FUTURE SURFACE MINE OPERATIONS.

G) CONSERVATION OF ALL RESOURCES WILL BE OF PARAMOUNT INTEREST.

H) CONSIDERATION SHALL BE GIVEN TO ALL WELLS DRILLED AS OPPOSED TO SITE SPECIFIC REVIEW.

7. A MINIMUM SPACING OF ALL OIL OR GAS WELLS ESTABLISHED SO THAT ALL RESOURCES CAN BE RECOVERED SAFELY AND ECONOMICALLY.

8. AN EXPANSION OF THE STATE OIL AND GAS DEPARTMENT, IF REQUIRED, SO THAT PROVISIONS UNDER ITS CHARGE ARE PROPERLY CARRIED OUT.

9. CONTRACTURAL RIGHTS OF PARTIES TO OIL AND GAS LEASES AND CONTRACTS SHALL NOT BE ABROGATED OR ABRIDGED.

Ex. No. 2

Confidential Draft 12-17-80

OIL AND GAS INDUSTRY NEEDS IN PROPOSED LEGISLATION

Pure oil and gas conservation law

(1) The scope should be limited to deep wells only--as in the VOGA draft.

(Columbia has obtained an independent evaluation on this issue.)

(2) The conservation hearings should be separate from and ahead of the specific well location permits.

The coal industry has no ihterest in pure conservation matters.

The exact location of wells can be determined later, either by negotiation with the coal operator or in subsequent hearings.

Conservation orders would be subject to the later well location permits.

Well location permits

(3) A coal operator objecting to a proposed well location should specify alternative locations within a reasonable distance of the proposal.

(4) Future deeds and leases requiring approval of well sites by coal companies should be subject to the need to effectively develop the oil and gas in accordance with the new statute.

(5) Coal mine maps must be related to USGS maps, and ways must be found to assure better accuracy.

(6) Mine safety is a paramount goal, but not mine economics or "conservation of all resources".

(This difference is essentially a legal problem.)

Each of the "coal industry needs" must be considered in light of this point.

Oil wells can probably be eliminated from the mine economics issues, because oil wells are drilled so close together. (This includes enhanced recovery.)

(7) In all well location rules, each producing formation stands alone.

(8) The present law (Code §§45.1-122/-126) on the coal protection string of well casing needs to be studied for possible updating.

(9) Notice requirements must be limited to persons with their ownership on record.

Simultaneous production operations

(10) The present law (Code §§45.1-127) on mining notices and petitions when within 500' and 200' of wells needs to be studied for possible updating.

(11) Wells and pipelines should be legally treated as part of the surface entitled to subjacent and lateral support unless waived.

(12) The existing reclamation statutes need to be revised.

Preservation of coal roads for use as well roads may be possible.

Oil and gas operations on reclaimed strip mines should not be penalized.

Plugging and abandonment of wells

(13) The present plugging law (Code §§45.1-128/-131) needs to be completely updated.

This would include but not be limited to work on the coal industry's stated need for a plugging procedure "to allow mining through a plugged... well".

Existing law on "clouds on title"

(14) Code § 55-154 on old leases should be studied for possible overhaul.

(This may be a pure legal issue.)

(15) Code § 55-154.1 on "migratory gases" seems clearly to be a legal issue, but should be studied for Technical Committee comments.

Existing law on easements and leases of "the beds of certain waters"

(16) Code § 62.1-4 may be a legal issue, but should be studied for Technical Committee comments.

* * * * *

Ex. No. 3

OIL & GAS/COAL
INTER-INDUSTRY TECHNICAL COMMITTEE
TENTATIVE AGREEMENT ON VIRGINIA
PROPOSED OIL AND GAS LEGISLATION

This agreement outlines changes in and additions to the existing laws, rules and regulations ("Laws"). Conservation Act (deep) wells will be made subject to the revised Laws except Issue No. 6 which follows. Any existing Laws not affected or impacted by this agreement will not be changed.

The following is a summary of issues which have been discussed and the tentative agreement reached by the Inter-Industry Technical Committee.

1. Procedures to assure accurate vertical location of coal seams when drilling gas or oil wells.

   (a) All oil and gas wells will either be cased to the red shales or to a point 30 feet below the deepest coal seam. The casing will have cement circulated to the surface around the outside. If the oil and gas operator chooses not to case to the red shales, he will have gamma ray/density compensated log on an expanded scale run to assure the State that mineable coal does not exist below the casing. This log will be submitted to the regulatory agency and become part of the permanent record of the well.

   (b) A separate agreement permitting the coal operator to log the well prior to running the coal protection string will be handled on the individual oil and gas operator and coal operator basis. Permission will not be unreasonably withheld.

   (c) All well operators will also file an accurate log with the Chief containing the character, depth, thickness or geologic formations, and such other information the Chief may require.

2. Procedures to assure accurate horizontal location at point oil or gas well penetrates a given coal bed.

(a) Deviation surveys will be run on 200' intervals through the deepest mineable coal seam. This survey will be submitted as part of the state well record. When the total deviation exceeds horizontal distance 18.75' at a depth of 200', 31 feet at a depth of 400', and a max total deviation of 50' at 600' or deeper, a continuous directional survey will be required. Notification to the coal operator will be made and (1) a release agreement will be obtained from the coal operator or (2) the oil and gas operator will maintain the wellbore within these limits. In either event, a continous directional survey will be obtained through the deepest mineable coal seam and become part of the state well record.

(b) The Chief shall have the right to make or require the operator to make a directional survey of a well at any time, and at the expense of the operator, for safety of coal mines and to check deviation where boundary lines may be of concern.

3. Procedures to allow mining through a plugged oil or gas well.

   (a) Plugging laws are to be updated and patterned after the current West Virginia regulations.

4. Oil and gas wells in areas where coal is found will be located with reference to the mine co-ordinate system established for the area of the proposed well location. The course and distance of such location from two permanent points on land marks on the tract will also be shown. All wells within 2500' of a proposed well will be shown on the well plat.

5. Coal to be considered in the location of all wells (deep and shallow) giving the affected coal owners, lessees and operators standing to object to well locations. Standing to object and review of applications shall include, but shall not be limited to, the following:

   (a) Consideration shall be given as to relocating well to an existing or planned coal barrier pillar.

(b) Consideration shall be given to a moratorium of not more than two (2) years to delay drilling until mining is completed through the affected location.

(c) Consideration shall be given to the method proposed for both coal and oil and gas recovery.

(d) In virgin coal areas, consideration shall be given to a uniform drilling pattern to maximize the recovery of all resources.

(e) Consideration shall be given to relocating well to an existing or planned oil or gas well pillar.

(f) Consideration shall be given to the well location and location of the discharge product line as to its effects on active or future surface mine operations.

(g) Conservations of all resources will be of paramount interest.

(h) Considerations shall be given to all wells drilled as opposed to site specific review.

(i) Consideration shall be given to relocating the well below the coal outcrop.

6. The coal owner, operator or lessee can object to any shallow gas well, not deeper than top of Onondaga or the base of the Devonian shale or 5000', whichever is deeper, application which is within two thousand five hundred (2500) feet of an existing well. Objection to the well location on this criteria will cause the department to refuse to issue the permit. All producing formations in sands determined to be shallow will be treated as one for the purpose of this criteria.

7. The State Oil and Gas Department will be expanded, so that provisions under its charge can be properly carried out.

8. Contractual rights of parties to oil and gas leases and contracts shall not be abrogated or abridged.

9. Definition of coal seam:

   "Coal seam" and "workable coal bed" are interchangeable terms and mean any seam of coal twenty inches or more in thickness, unless a seam of less thickness is being commercially worked, or can in the judgement of the department foreseeably be commercially worked and will require protection if wells are drilled through it.

10. A three man review board will be established to settle disputes over shallow well locations. This review board will consist of three registered engineers: one of which will represent the coal industry; one the oil and gas industry, and can be the conservation commissioner; and a third member not affiliated with either industry.

11. The scope of the Conservation Act will be limited to deep wells only. The Conservation hearings should be separate from and ahead of the specific well location permit.

12. A coal operator objecting to a proposed well location should specify an alternative location within a reasonable distance of the proposed location.

Oil and Gas Members

Joseph E. Campbell
J. J. Cox
R. L. Dodd
B. D. Hager

Coal Members

Gerald Borrelli
Jack J. Gembach, Jr.
Lou Kuchinic
Glenn F. Phillips

May 13, 1981

COLUMBIA GAS
Transmission

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Ex. No. 4

April 29, 1982

VOGA/VPC/VCA Legal Committee
VOGA/VPC/VCA Joint Technical Committee

Dear Friends:

Enclosed is a draft set of regulations. I have worked on them pretty hard, but nobody else has. Therefore, to an unusual degree, this draft merely represents one opinion.

The obvious purpose of all this is to give as much advance time as possible before the conference set in Roanoke for 2:00 p.m. Thursday, May 6. Remember: Morris Kennedy will know where the conference room is. *

Sincerely,

Jack

H. L. Snyder

HLS/skn
Enclosure

Copies to F. Bedell
B. L. Carter
O. R. Prather
Dr. C. S. Bartlett, Jr.
Dr. J. M. Dennison
Dr. W. H. Kanes
C. C. Kunz
K. D. Cheatham
B. T. Fulmer
P. J. Brown
S. L. Ovies
A. R. Hodges
S. M. Horn
R. F. Ford
T. W. Altizer

* Or phone in your comments to me — before or after Roanoke!

Columbia Gas Transmission Corporation, 1700 MacCorkle Ave., S.E., P.O. Box 1273
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DRAFT REGULATIONS UNDER THE VIRGINIA OIL AND GAS ACT

PART I

REGULATIONS UNDER ARTICLE 1 OF THE ACT

Regulation 1.01. Authority.

These regulations have been jointly adopted by the Virginia Well Review Board, the Virginia Oil and Gas Conservation Commission, and the Chief of the Division of Mines of the Virginia Department of Labor and Industry, to the extent their respective jurisdictional statutes authorize each to act under the provisions of the Virginia Oil and Gas Act and other provisions of law.

Regulation 1.02. Definitions.

(a) As used in these Regulations, unless the context clearly indicates otherwise, the words and phrases defined in § 45.1-274 of the Code shall have the same meaning as they have in the Virginia Oil and Gas Act.

(b) As used in these Regulations, unless the context clearly indicates otherwise,

(1) "Act" means the Virginia Oil and Gas Act;

(2) "Mcf" means, when used with reference to gas, one thousand cubic feet of gas at a pressure base of 14.73 pounds per square inch gauge and a temperature base of 60 degrees Fahrenheit.

[AND SO FORTH AS TO OTHER TERMS WHICH NEED TO BE DEFINED]

(d) Dykes and fire walls for oil tanks. Every permanent oil tank or battery of oil tanks shall be surrounded by a dyke or fire wall with a capacity of one and one-half times that of the tank or battery of tanks.

PART II

REGULATIONS UNDER ARTICLE 2 OF THE ACT

[Reserved.]

PART III

REGULATIONS UNDER ARTICLE 3 OF THE ACT

Regulation 3.01. Well work applications.

(a) Applications for a well work permit shall be submitted on Form ____, accompanied by such other documentation as may be required by the Act or these Regulations.

(b) Applications for dual or multiple completion wells. The casing program for any well designed or completed to produce from more than one stratum shall be designed in accordance with the appropriate standard practices of the industry.

(c) Applications for well work impacting on surface mine areas. Where well work is to be done or an access road is to be located on an area for

which a coal surface mining permit is in effect, or which has been reclaimed by a surface mine operator or by the Director of Conservation and Economic Development, the well work application shall be accompanied by the necessary clearance from the Commissioner of Mined Land Reclamation or the Board of Conservation and Economic Development, as the case may require.

(d) Applications for underground gas storage wells. Inasmuch as underground gas storage operations do not exist and are not planned in the foreseeable future at any place in the Commonwealth, no permit for any underground gas storage well shall be issued until after the Board has adopted specific regulations for the underground gas storage field proposed.*

(e) Applications involving enhanced oil recovery wells. [Reserved.]

(f) Applications involving waste disposal wells. [Reserved, pending resolution of the Inspector's application for authority to regulate Class II and Class III wells under the State UIC program.]

Regulation 3.02. Oil or gas in holes not drilled as wells.

(a) In the case of any hole drilled for water or any other purpose than for a well, the detection of noticeable quantities of oil or gas

---

* This clause (d) may need revision as a result of EPA requirements for Virginia's UIC program.

encountered in the hole shall be immediately reported to the Inspector.

(b) If any such hole results in the encountering of oil or gas in commercially productive quantities, the hole shall be deemed to be an oil or gas well, as the case may be; and the owner of the hole shall be deemed to be a well operator subject to all the requirements of the Virginia Oil and Gas Act: Provided, that this clause (b) shall not apply to any methane drainage boreholes, where the methane is to be vented or flared rather than produced and saved.

Regulation 3.03. Salvage work on an abandoned well.

Any person who purchases the right to salvage the casing or tubing from a well abandoned prior to the effective date of the Act, as to which the plugging requirements were different, shall not proceed with any salvage work until after he has registered as a well operator and designated his statutory agent under the provisions of § 45.1-296 of the Code, and received a well work permit to plug the well in accordance with the provisions of §45.1-297 of the Code.

Regulation 3.04. Duplicate well work permits.

Well work permits will be issued in duplicate, and one copy shall be kept at the well location until the well work has been completed.

PART IV

REGULATIONS UNDER ARTICLE 4 OF THE ACT

Regulation 4.01. Changes in the permitted well work as actually performed.

If circumstances arise during the performance of any well work which cause the well operator to decide that a modification of his well work as permitted must be made to insure the successful completion of the well work, the well operator shall receive the verbal permission of the Inspector or an Assistant Inspector before effectuating the change, and confirm the change on the completion report required by Regulation 4.05. This Regulation shall not be construed to justify a change in the surface location of a well, or to affect in any way the verbal permission provision of § 45.1-297(C)(9) of the Code concerning the plugging of an unsuccessful well.

Regulation 4.02. Commencement notice on well work.

The well operator shall notify the Inspector at least 48 hours prior to commencing well work under any permit, giving the permit number of the well and the date and time that the well work is scheduled to begin.

Regulation 4.03. Progress reports on well work.

As a general rule, progress reports are unnecessary during the well work. The Inspector or an Assistant Inspector may, however, require such progress reports for any well work in which unusual conditions are foreseeable or have been encountered.

Regulation 4.04. Logs and surveys.

(a) Driller's logs. On all well work involving any drilling, the person responsible for the conduct of the actual drilling operation shall make and keep at the site a well log complying with § 45.1-319(B)(1) of the Code. The driller's well log shall be updated on a daily basis, for inspection as need be during the progress of the well work, until its completion.

(b) Deviation and directional surveys. The results of any deviation or directional survey made under the provisions of § 45.1-319(C) of the Code shall similarly be kept at the site.

(c) Deviation and directional surveys. Any deviation or directional survey made under the provisions of § 45.1-319(C) of the Code shall similarly be kept at the site.

Regulation 4.05. Completion reports.

(a) Completion of well work. (1) The well operator shall file a completion report on Form ____ 60 days after the well work is completed.

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As a general rule, progress reports are unnecessary during the well work. The Inspector or an Assistant Inspector may, however, require such progress reports for any well work in which unusual conditions are foreseeable or have been encountered.

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(c) Deviation and directional surveys. Any deviation or directional survey made under the provisions of § 45.1-319(C) of the Code shall similarly be kept at the site.

Regulation 4.05. Completion reports.

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COLUMBIA GAS
Transmission

Law Department

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Kenneth E. Tawney

Ex No. 5

May 10, 1982

VOGA/VPC/VCA Legal Committee
VOGA/VPC/VCA Technical Committee

Dear Friends:

Several things.

First, those of us who met in Roanoke last week confirmed Tuesday and Wednesday, May 25-26, at the Hyatt Regency in Atlanta, Georgia, as the time and place of a conference to wring out a draft set of regulations under the new Act. I will arrange for a Hyatt conference room in my name. We will begin at 9:00 a.m. on Tuesday morning, which means that most of us will have to come into Atlanta on Monday night the 24th. I assume that 4:00 p.m. on Wednesday the 26th is about as late as we will be able to confer, because people will have to be starting for late afternoon planes.

The Hyatt's street address is Peachtree Center. Its telephone number is 404-577-1234.

Second, I enclose a draft set of regulations under Article 2 of the Act, the oil and gas conservation article. They were prepared by the Continental folks under Chuck Kunz. He renewed to me what he told some of us last winter: Continental feels it must have such a regulatory system in place from the beginning. Chuck said the States have adopted several different systems, and this is the one he prefers, but he would be more than willing to discuss any other State's method. I told Chuck I would go along with anything he and Stu Butler could agree on, but we know some of your companies have more interest than Columbia in the conservation part of the law.

We who met in Roanoke, including Inspector Tom Fulmer, agreed that all forms should be put on 8-1/2 x 11 sheets <u>or</u> oversized sheets with an 11-inch binding edge, with the other dimension able to be accordion-folded to 8-1/2 x 11. In case any of you had not thought about it, the Nation is moving toward a standard 11-inch top-to-bottom dimension for paper--that is, replacing all 8-1/2 x 13 and 8-1/2 x 14 sheets. All branches of the federal government, most recently including the federal court system, have such programs already in place. We felt the tide should not be resisted.

Enclosed are copies of drafts (slightly revised from Roanoke) of proposed Forms 1, 2, and the first sheet of Form 3. I think we may spend more time on the forms than on the regulations. They are certainly at least as important--perhaps more important, because most users never use anything else. I hope to have the rest of the forms at least to distribute in Atlanta.

Columbia Gas Transmission Corporation, 1700 MacCorkle Ave., S.E., P.O. Box 1273
Charleston, West Virginia 25325, Tel. (304) 346-0951

Finally, I have ordered four tickets for the Braves (vs. Mets) on the night of May 25. Call if you want to go.

Very truly yours,

Jack

H. L. Snyder

HLS/skn
Enclosures

Copies to T. W. Altizer
Dr. C. S. Bartlett, Jr.
F. Bedell
P. J. Brown
B. L. Carter
K. D. Cheatham
Dr. J. M. Dennison
R. F. Ford
B. T. Fulmer
A. R. Hodges
S. M. Horn
Dr. W. H. Kanes
C. C. Kunz
S. L. Ovies
O. R. Prather

3.02.

F/VOGA

Regulation ~~, Form and Contents~~ of Plats.

Any ~~plat required to be furnished under Code~~ §45.1-298 ~~shall contain all information specified in the statutory section requiring the plat.~~ Any plat ~~required to be~~ furnished under §45.1-298 shall be ~~recorded~~ on Form _____, and shall conform to the following standards of accuracy and description.

(1) Accuracy. An accuracy of one part in one mile is required for the location of wells on land which is underlain by known coal seams identified by the Chief pursuant to §45.1-319. All other plats require a minimum accuracy of one part in 2500.

Ex. No. 6

(2) Permanent Landmarks. ~~At least~~ two permanent ~~monuments~~ or landmarks with courses and distances to the subject well shall be shown on the basis of an on-the-ground survey. ~~and, if any such monument or landmark is not a permanently established property corner, it shall be referenced to a property corner by courses and distances on the basis of an on-the-ground survey.~~ If the well location is underlain by known coal seams identified by the Chief pursuant to §45.1-319, the well plat shall locate the well and two permanent points or landmarks with reference to the mine coordinate system, if one has been established for the area of the well location, with the course and distance and coordinate values of the survey starting points shown on the plat.

(3) Physical Location of the Well. Every well shall be drilled at the location designated on the plat.

(4) ~~Description. Landmarks and~~ permanently established property corners shall be named and described on all plats and shall include standing corner trees, set stones, iron pipes, T-rails, or other manufactured monuments, including mine coordinate monuments. Existing wells (operating or abandoned) ~~shall~~ also be ~~considered established~~ landmarks if the wells are platted and on file with the ~~Chief or~~ the Inspector. ~~If landmarks used are not property corners, they must be adequately referenced to property corners to permit their future location.~~

(5) Method of Showing Property Lines. The courses and distances of all property lines adjoining and those connecting the ~~said~~ landmarks or corners within the scope of the ~~such~~ well ~~location~~ plat shall be shown thereon. All lines actually surveyed shall be shown ~~on such plat~~ in solid lines. Lines taken from deed descriptions only shall be shown by broken lines.

(6) Proven Elevation. The elevation of the surface of the location shall be given, and it shall be tied to either a government bench mark or other point of proven elevation. The location of the government bench mark or the point of proven elevation shall be noted and described on the plat.

(7) North-South Line. A north and south line shall be given and shown on the plat and point to the top of the plat.

(8) Scale and Size of Plat. If practicable, all plats shall be drawn to a scale of 1" to 2000' (1:24,000)

or even multiples of 1:2000 for easy reduction of the plat photographically to a 1:2000 scale. ~~The plat shall be 8-1/2 inches by 14 inches in size.~~

(9) Topographic Map Location of Well. The topographic map location of the well for which any permit under Code §45.1-297 is being sought shall be shown on the plat by a "cross" with the measured distance in feet from the nearest 5 minute latitude and longitude intersection using the North East (upper right) border of the plat on the 15 minute (1:62,500) topographic map. If the 7.5 minute (1:24,000) topographic map is used, the topographic location shall be shown on the plat at a "cross" with the measured distance in feet from the nearest 2.5 minute latitude and longitude intersection using the North East (upper right) border of the plat. Each plat shall indicate the topographic map name and series whether 7.5 minute or 15 minute is used to show the well location.

(10) Wells. All wells within the scope of the plat, whether active, drilling or abandoned, shall be shown provided that the scope of every plat shall be sufficient to show all wells within 3,000 feet of the well which is the subject of the application. Each well so shown, including the subject well, shall bear a designation that permits the kind (oil, gas, liquid injection, waste disposal, underground gas storage, or storage observation) and status (active, abandoned, or drilling) of each such well to be determined by the

use of (i) API permit number (excluding State and County) for each well having such a permit number, (ii) in parenthesis, and following the API number if such is listed, the kind and status numbers provided below, (iii) the symbols provided below and (iv) the depth to which each well has been drilled. The kind and status numbers shall be as follows:

Oil Wells

01- Active

02- Abandoned

03- Drilling

Gas wells

04- Production, active

05- Production, abandoned

06- Production, drilling

07- Underground storage, active

08- Underground storage, abandoned

09- Underground storage, drilling

10- Storage observation, active

11- Storage observation, abandoned

12- Storage observation, drilling

Liquid injection wells

13- Active

14- Abandoned

15- Drilling or being converted

Waste disposal wells

16- Active

17- Abandoned

18- Drilling or being converted

The symbols shall be as follows:

New drilling location	
New fracturing or stimulating location	F/S
Cancelled application or permit	CNC
Oil well	
Gas well	
Dry hole	
Liquid injection well	LI
Waste disposal well	WD
Abandoned well	LI WD

(11) Other Surface Features. In addition to the surface features and owner identification data required by statute or by the foregoing specifications in this Regulation_____, the plat shall also show the following surface features lying within the scope of the plat: (i) water wells within two hundred feet of the well for which any permit under Code §45.1-297 is being sought except for liquid injection or waste disposal wells, in which case water wells within one thousand feet of the well shall be shown; (ii) any, building, highway, railroad stream, mine, mine opening or working, or quarry within 500 feet of the proposed well; and (iii) the proposed location of all new roads.

(12) Names. The plat shall state the names of the surface owners, royalty owners, and coal and other mineral owners and operators as required by Code §45.1-298.

¶ (b)

~~Regulation~~, ~~Plat~~ Certification. ~~Surveys and~~ plat~~s~~ shall be m~~ade under the supervision of a registered professional engineer or licensed land surveyor entitled and licensed by law to practice in the State of Virginia. The certification shall be~~ signed and certified by the registered professional engineer or licensed land surveyor in the following manner:

"I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the regulations issued and prescribed by the Virginia Well Review Board."

COLUMBIA GAS
Transmission

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June 4, 1982

Ex. No. 7

VOGA/VPC/VCA Legal Committee
VOGA/VPC/VCA Joint Technical Committee

Dear Friends:

I have done some minor editing and made what I hope are non-controversial but necessary additions to the Regulations as we left them. For example, I think the Regulations should refer to every official "form" to be used--hence the new Regulation 3.03 ("Well operators' bond").

Please call me AT ONCE (new number: 304-357-2705) if you disagree with any of this enough to want to parley before I send it to Inspector Tom Fulmer. I plan to mail it to him and the Farm Bureau Friday, June 14, and so the deadline for your comments is Thursday, June 13.

An itemization follows of "new" changes made on my own motion, with a brief explanation of each. Before that, however, is a draft of my proposed cover letter to Tom Fulmer.

* * * * *

COMMENTS ON REDRAFTED REGULATIONS

First and throughout, I have inserted the (draft) title of a form on at least the first occasion a form is referred to. Only in a few instances is a form mentioned in more than one Regulation, and I repeated the title whenever the context seemed to require it.

Regulation 1.05 ("Number of copies of filed materials"). One of our sections specified duplicate filings, another triplicate. I felt one Regulation at the beginning was superior to sprinkling them along the way. Tom Fulmer will have to say how many he really wants.

Regulation 2.02 ("Allowable production rates for certain wells"). To eliminate the possibility that anyone might think a formal proceeding was involved in clause (4) of subsection (9) ("Metering of oil production; sealing"), I have made specific reference to "verbal permission from the Inspector". I also clarified the necessity for a written report if an emergency requires action before the verbal permission is obtained.

Regulation 2.03 ("Notice of hearings for unit and pooling orders"). This is the first of three Regulations intended to handle hearing notices under a single official form with boxes to be checked to indicate the kind of hearing involved. See also Regulations 3.10 and 4.12.

Columbia Gas Transmission Corporation, 1700 MacCorkle Ave., S.E., P.O. Box 1273
Charleston, West Virginia 25325, Tel. (304) 346-0951

Regulation 3.01 ("Registration"). I have added a warning that registration under the old law must be replaced with a new registration under the new law, and a reference in subsection (a) to "the applicable form to appendix on the program for the well work".

Regulation 3.03 ("Well operator's bond"). Aside from referring to the three forms, this Regulation as redrafted supplies a transition rule between existing bonds under existing law, and new bonds under the Act. Some sort of transition rule is clearly required, and I see no reason why an existing bond (especially a single-well bond) shouldn't remain in force for whatever it bonded in the past.

Regulation 3.04 ("Well plats"). As a matter of editing, I have reordered the clauses of subsection (a) so as to group the three requirements on locating the subject well (surface location, surface elevation, and topographic map location).

Also on Regulation 3.04, the accuracy standards set out in subsection (a)(1) are what Bob Dodd said he could accept--1:5,000 in coal territory and 1:200 elsewhere. Columbia's civil engineering people tell me this is also as far as they will go. I have also expanded the Atlanta text to make it more explicit.

Also on Regulaton 3.04, I added a phrase at the end of subsection (a)(2), to require that an existing well had to be platted under the new Regulation to be an acceptable landmark. This might have been assumed in the Atlanta draft, but I wasn't sure, and so I spelled it out.

Finally on Regulation 3.04, in conversations with Gerry Borrelli, we decided that the reference to the surface location constraints should be put in both Parts III and IV. Because the actual location seemed to me to be more a performance standard than anything else, the standard is in Regulation 4.02, with what amounts to a cross-reference in Regulation 3.04(a)(6).

Regulation 3.05 ("Notice...objections...proof of notice"). We informally agreed in Atlanta that a regulation was necessary to take care of proof of the well operator's notice of his application to persons entitled thereto. As you can see from the text, other details must also be covered.

Regulation 3.10 ("Notice of hearings"). See the comment on Regulation 2.03.

Regulation 4.01 ("Commencement notice on well work"). I have added that a "telephone report" will suffice for the purposes of furnishing this date. The purpose is to give the Inspector an opportunity to come see the start, and a telephone call will actually do this job better than correspondence.

Regulation 4.02 ("Actual surface location of a new well"). See the comment on Regulation 3.04.

Regulation 4.09 ("Mining near or through a well"). This is the core of the draft that Don Johnson submitted in Atlanta. I have cleared this text with him, to make sure I carried out what he thought I said I was going to do.

Also on Regulation 4.09, I have added subsection (c) to provide a form for the permit. As I have drafted this form, it is close to the form for a well work permit.

Regulation 4.10 ("Plugging affidavit"). This is new, to refer to the form to be used.

Regulation 4.11 ("Developing oil or gas well as water well"). You will recall that the people familiar with Virginia operations said that converting to a water well was not all that uncommon. This Regulation takes care of the form reference, and also emphasizes the necessity for proper plugging below the fresh-water stratum.

Regulation 4.12 ("Notice of hearings"). See the comment on Regulation 2.03.

Regulation 5.03 ("Marketing connection report"). The title is changed from the former "Pipeline connection report", to conform to the actual text. In addition, I have added that telephone notice will suffice for this report, because the date is bracketed well enough by two more important reports that must be in writing--the well work completion report (Regulation 4.06) and the first quarterly production report (Regulation 5.05). Furthermore, for all jurisdictional wells deeper than 3,000 feet, the Commission will get the date in the written "notice of completion of a well" (Regulation 2.02(c)). I submit this is enough.

Regulation 5.04 ("Initial potential flow test"). When we left Atlanta, we had two subsections, identically worded except that one applied to oil wells and the other to gas wells. I have combined them into a single statement applying to "oil or gas."

I also enclose a table of contents for the draft regulations.

* * * * *

Also, covered with a tabulation ("Proposed Forms..."), I enclose--

"Analysis of Existing Virginia Forms 06-04-82"
Form 1, "Registration Form..."
Form 2, "Notice and Application for a Well Work Permit"
Form 3, "Well Operator's Surety Bond"
Form 4, "Well Operator's Cash Bond"
Form 5, "Release of Well Operator's Bond"
Form 6, "Well Plat"
Form 7, "Notice by Publication..." (New To You)
Form 8, "Statement of No Objection..." (New To You)
Form 9, "Proof of Notice of Well Work Application" (New To You)
Form 13, "Notice of Hearing" (New To You)
Form 14, "Well Work Permit"
Form 19, "Oil and Gas Quarterly Production Report"

The following forms are being drafted by Don Johnson, and you will remember we agreed in Atlanta that he and I would be a subcommittee of two to put them in presentation shape:

Form 10, "Notice of Mining Within 500 Feet of a Well"
Form 11, "Petition to Mine Near or Through a Well"
Form 15, "Permit to Mine Near or Through a Well"

In addition, some of the forms have yet to be drafted. I will try to do them this coming week if at all possible. They are as follows:

Form 12, "Application to Develop...Water Well"
Form 16, "Notice of Completion of a Jurisdictional Well"
Form 17, "Initial Test of a Jurisdictional Well"
Form 18, "Report of Completion of Well Work"
Form 20, "Plugging Affidavit"

A few comments on the enclosed forms may assist your review. To begin with, the tabulation of the forms is new. Also, I have rearranged the numbers to try to accommodate better to the sequence of what happens to a well--from the registration of the well operator through the plugging affidavit. I have also revised the "Analysis of Existing Virginia Forms" in line with our Atlanta conference.

Comments on individual forms follow.

Form 1 ("Registration Form...") is little changed from the Atlanta format.

Form 2 ("Notice and Application for a Well Work Permit") is greatly changed. You will remember that we decided to combine the Atlanta Form 2 (the notice) with the Atlanta Form 3 (the application itself). We also agreed that the "persons receiving official notice" had to be spelled out better. Finally, we agreed that the well work details should be relegated to a series of three appendices, so that the applicant would append only what he needed to. All of this has been done, with considerable revision in accordance with the Atlanta consensus. In addition, I have added to Appendix C a section on the "Purpose of Plugging".

Form 3 ("Well Operator's Surety Bond)" had a different number in Atlanta.

Form 4 ("Well Operator's Cash Bond") had a different number in Atlanta.

Form 5 ("Release of Well Operator's Bond") had a different number in Atlanta.

Form 6 ("Well Plat") has been revised to add the "certification of the well plat" at the bottom, as we agreed in Atlanta.

Form 9 ("Proof of Notice of a Well Work Application") does not refer to an affidavit of publication, as distinguished from proof of publication. Somebody pointed out that country newspapers were weeks late in submitting their affidavits. Because the statute does not require the affidavit of publication, a clipping from the paper and some sort of certificate by the well operator ought to be enough.

Form 14 ("Well Work Permit") had a different number in Atlanta.

Form 19 ("Oil and Gas Quarterly Report") has been revised in accordance with the necessity to integrate the Commission's need for comparison of actual production to the allowable.

Very truly yours,

Jack

H. L. Snyder

HLS/skn
Enclosures

Copies to F. C. Bedell
B. L. Carter
G. Collier
L. E. Dickinson
C. C. Kunz
O. R. Prather

POST-CONF 06-04-82

[EXCERPTS: PAGES 17-21, 26-27]

Ex. No. 8

DRAFT REGULATIONS UNDER THE VIRGINIA OIL AND GAS ACT

PART I

REGULATIONS UNDER ARTICLE 1 OF THE ACT

Regulation 1.01. Authority.

These regulations have been jointly adopted by the Virginia Well Review Board, the Virginia Oil and Gas Conservation Commission, and the Chief of the Division of Mines of the Virginia Department of Labor and Industry, to the extent their respective jurisdictional statutes authorize each to act under the provisions of the Virginia Oil and Gas Act and other provisions of law.

Regulation 1.02. Definitions.

(a) As used in these Regulations, unless the context clearly indicates otherwise, the words and phrases defined in § 45.1-274 of the Code of Virginia and shall have the same meaning.

(b) As used in these Regulations, unless the context clearly indicates otherwise,

Regulation 3.04. Well plats.

(a) Any well plat required to be furnished under § 45.1-298 shall be recorded on Form 6 ("Well Plat"), and shall conform to the following standards of accuracy and description:

(1) Accuracy. In the case of a well located on land which is underlain by known coal seams identified by the Chief pursuant to § 45.1-319 of the Code, an accuracy of one part in 5,000 is required for the location of the subject well with reference to the two permanent points or landmarks required by § 45.1-298.A of the Code. In other cases, a minimum accuracy of one part in 200 is required for the location of the subject well.

(2) Permanent points or landmarks. The two permanent points or landmarks shall be shown with courses and distances to the subject well on the basis of an on-the-ground survey. Such permanent points or landmarks may be standing corner trees, set stones, iron pipes, T-rails or other manufactured monuments, including mine coordinate monuments, and existing wells (operating or abandoned) platted and on file with the Inspector on the accuracy standards of this Regulation.

(3) Method of showing property lines. The courses and distances of all property lines adjoining and those connecting the permanent points or landmarks or corners within the scope of the well plat shall be shown thereon. All lines actually surveyed shall be shown in solid lines. Lines taken from deed descriptions only shall be shown by broken lines.

(4) North-south line. A north and south line shall be given and shown on the plat and point to the top of the plat.

(5) Scale. If practicable, the well plat shall be drawn to a scale of 1" to 2,000' (1:24,000) or even multiples of 1:2000 for easy reduction of the plat photographically to a 1:2000 scale.

(6) Surface location of the subject well. The actual surface location of the subject well, with reference to the surface location on the well plat, shall conform to the performance standard of Regulation 4.02.

(7) Surface elevation of the subject well. The surface elevation of the subject well location to the nearest foot shall be given, and it shall be tied to either a government bench mark or other point of proven elevation. The location

of the government bench mark or the point of proven elevation shall be noted and described on the plat.

(8) Topographic map loation of the subject well. The topographic map location of the subject well shall be shown on the plat by a "cross" with the measured distance in feet from the nearest 5 minute latitude and longitude intersection using the North East (upper right) border of the plat on the 15 minute (1:62,500) topographic map. If the 7.5 minute (1:24,000) topographic map is used, the topographic location shall be shown on the plat at a "cross" with the measured distance in feet from the nearest 2.5 minute latitude and longitude intersection using the North East (upper right) border of the plat. Each plat shall indicate the topographic map name and series whether 7.5 minute or 15 minute is used to show the well location.

(9) Wells. All wells within the scope of the plat, whether active, drilling or abandoned, shall be shown. The scope of the plat shall be sufficient to show all wells within 3,000 feet of the well which is the subject of the application. Each well so shown, including the subject well, shall bear a designation that permits

the kind (oil, gas, liquid injection, waste disposal, underground gas storage) and status (active, abandoned, or drilling) of each such well to be determined by the use of (i) API permit number (excluding State and County) for each well having such a permit number, (ii) in parenthesis, and following the API number if such is listed, the kind and status numbers provided below, (iii) the symbols provided below and (iv) the depth to which each well has been or is proposed to be drilled. The kind and status numbers shall be as follows:

Oil Wells

01- Active

02- Abandoned

03- Drilling

Gas Wells

04- Production, active

05- Production, abandoned

06- Production, drilling

07- Underground storage, active

08- Underground storage, abandoned

09- Underground storage, drilling

Enhanced recovery injection wells

10- Active

11- Abandoned

12- Drilling or being converted

Waste disposal wells

13- Active

14- Abandoned

15- Drilling or being converted

The symbols shall be as follows:

New drilling location

New fracturing or stimulating location

Cancelled application or permit

Oil well

Gas well

Dry hole

Liquid injection well

Waste disposal well

Abandoned well

(b) Certification. Every well plat shall be signed and certified by the registered professional engineer or licensed land surveyor in the following manner:

"I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the regulations promulgated by the Virginia Well Review Board."

PART IV

REGULATIONS UNDER ARTICLE 4 OF THE ACT

Regulation 4.01. Commencement notice on well work.

The well operator shall notify the Inspector at least 48 hours prior to commencing well work under any permit, giving the permit number of the well and the date and time that the well work is scheduled to begin. Telephone notice will suffice.

Regulation 4.02. Actual surface location of a new well.

The actual surface location of the well shall be within three feet of the location designated on the well plat in an area underlain by known coal seams identified by the Chief pursuant to § 45.1-319 of the Code, and within ten feet of the location designated by the well plat in other areas. If a violation of this location standard is discovered on any well drilled after the effective date of the Act, the well operator shall file a new application with notice to those persons entitled thereof.

Regulation 4.03. Changes in the permitted well work as actually performed.

If circumstances arise during the performance of any well work which cause the well operator to decide that a modification of his well work as permitted must be made to insure the successful completion of the well work, the well operator shall obtain the verbal permission of the Inspector or an Assistant Inspector before effectuating the change, and confirm the change on the well work completion report required by Regulation 4.05. This Regulation shall not be construed to justify a change in the surface location of a well except under the provisions of Regulation 4.02, or to affect in any way the verbal permission provision of § 45.1-297.C.9 of the Code concerning the plugging of an unsuccessful well.

Regulation 4.04. Progress reports on well work.

As a general rule, progress reports are unnecessary during the well work. The Inspector or an Assistant Inspector may, however, require such progress reports for any well work in which

COLUMBIA GAS
Transmission

Law Department

Attorneys
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F. Samuel Byrer
Mark D. Clark
Jo Ellen Diehl
John M. Hill
James P. Holland
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James A. Jarrell
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Stephen J. Small
Giles D. H. Snyder
H. L. Snyder
Kenneth E. Tawney

Ex. No. 9

June 11, 1982

Mr. Byron T. Fulmer
Department of Labor and Industry
Division of Mines
219 Wood Avenue
Big Stone Gap, Virginia 24219-2799

Dear Tom:

Re: Draft regulations and forms under the Virginia Oil and Gas Act

Enclosed are the drafts that the various trade associations and industry representatives have produced as a result of their earlier conferences. The enclosed materials are all on word-processor diskettes here in Columbia's Law Department, so that revisions can be quickly made.

As you know, our goal is to enable you to arrive at a draft set of regulations and forms which you can conscientiously recommend for approval by the Well Review Board, the Oil and Gas Conservation Commission, and the Chief of the Division of Mines with respect to their particular powers.

I think your personal review will proceed more effectively if I do not propagandize the enclosures, except in one aspect. The problem of formal adoption has concerned us, and I would like to explain my idea behind the very first regulation, No. 1.01, with its reference to the regulations having been "jointly adopted" by the three entities with power. § 9-6.14:9 of the Administrative Process Act provides that the final adoption of regulations is "by the signed order of the agency so stating." My theory is that once the full text is worked out, each of the three can issue an order adopting the whole insofar as they or he can. Of course, the Attorney General's Office must be satisfied that this is a sensible approach. We would be grateful if you would ask the Assistant Attorney General who reviews these materials if we could have a meeting with him to discuss any technical problems he has. (He might even want to come down on June 22-23.)

Columbia Gas Transmission Corporation, 1700 MacCorkle Ave., S.E., P.O. Box 1273
Charleston, West Virginia 25325. Tel. (304) 346-0951

In addition to a table of contents and the draft regulations, I also enclose (covered with a tabulation ("Proposed Forms...")) the following:

"Analysis of Existing Virginia Forms 06-04-82"
Form 1, "Registration Form..."
Form 2, "Notice and Application for a Well Work Permit"
Form 3, "Well Operator's Surety Bond"
Form 4, "Well Operator's Cash Bond"
Form 5, "Release of Well Operator's Bond"
Form 6, "Well Plat"
Form 7, "Notice by Publication..."
Form 8, "Statement of No Objection..."
Form 9, "Proof of Notice of Well Work Application"
Form 13, "Notice of Hearing"
Form 14, "Well Work Permit"
Form 19, "Oil and Gas Quarterly Production Report"

The following forms are being drafted by Don Johnson:

Form 10, "Notice of Mining Within 500 Feet of a Well"
Form 11, "Petition to Mine Near or Through a Well"
Form 15, "Permit to Mine Near or Through a Well"

In addition, I have yet to draft five forms. I will try to do them this coming week and bring them to our meeting with you.

Form 12, "Application to Develop...Water Well"
Form 16, "Notice of Completion of a Jurisdictional Well"
Form 17, "Initial Test of a Jurisdictional Well"
Form 18, "Report of Completion of Well Work"
Form 20, "Plugging Affidavit"

Very truly yours,

Jack Snyder

H. L. Snyder

HLS/skn
Enclosures

Copies to VOGA/VPC/VCA Legal Committee
VOGA/VPC/VCA Joint Technical Committee
F. C. Bedell
P. J. Brown
B. L. Carter
K. D. Cheatham
G. Collier
Dr. J. M. Dennison
L. E. Dickinson
R. F. Ford
Dr. W. H. Kanes
C. C. Kunz
O. R. Prather

PITTSTON Coal

The Pittston Coal Group
P.O. Box 4000
Lebanon, Virginia 24266
703-889-4000

An Affiliate of The Pittston Company

Ex. No. 10

June 11, 1982

H. L. Snyder, Esq.
Assistant General Counsel
Columbia Gas Transmission Corporation
P. O. Box 1273
Charleston, West Virginia 25325

Re: Regulations for the Virginia Oil and Gas Act

Dear Jack:

I felt that I should respond to your comment contained in your memorandum to the Joint Legal-Technical Committee dated June 4, 1982. With regard to Regulation 3.04 on well plats, you stated that "we" decided that the surface location constraints should be put in Parts III and IV. My recollection of our conversation was that you had decided that the regulation on surface location was a performance standard and that it should be cross-referenced. I advised you that I would discuss this matter with Mr. Don Johnson of our Legal Department. At the present time, Mr. Johnson and I are discussing changes in your proposals and will be commenting on the surface location issue. Obviously, this issue is very important to the coal industry as it puts some burden on the well operator to drill a well where the operator permits the well.

Sincerely yours,

Gerald Borrelli

G. J. Borrelli
Chief Mining Engineer

GJB:mm

cc: Mr. L. Blaine Carter
Donald R. Johnson, Esq.

PITTSTON Coal

The Pittston Coal Group
P.O. Box 4000
Lebanon, Virginia 24266
703-889-4000

An Affiliate of The Pittston Company

Ex. No. 11

June 14, 1982

H. L. Snyder, Esq.
Assistant General Counsel
Columbia Gas Transmission Corporation
1700 MacCorkle Ave., S. E.
P.O. Box 1273
Charleston, West Virginia 25325

Re: Virginia Oil and Gas Act
Drafting of Regulations

Dear Jack:

Mr. Borrelli and I have reviewed your memorandum dated June 4, 1982, and I have prepared redrafts for Regulation 3.04 and Regulation 4.02. Also, I have prepared drafts of Form Nos. 10, 11 and 15, as requested. The regulations and forms which I have prepared are enclosed. With regard to the other regulations and forms, I have the following comments referencing your regulation draft dated June 4, 1982, and your form draft dated June 3, 1982:

1. Regulation 1.02, page 2, lines 12 and 17. "Non-commercial well" lacks definition.

2. Regulation 2.01, page 4, line 20. We feel that some spacing requirement for shallow wells should be incorporated in these regulations in order to be consistent with the Act.

3. Regulation 3.02, page 15, line 8. I suggest that the words "necessary clearance" be substituted with the language "a letter or document granting approval".

4. Regulation 3.04, page 17, lines 11, 15 and 18. After the word "well" on each line, insert the words "and all wells required to be shown on the plat".

5. Regulation 3.04, page 18, line 26. After the word "elevation", insert "by an on-the-ground survey".

6. Regulation 5.05, page 36, line 17. The words "approved meter" need to be defined or clarified.

7. Regulation 5.06, page 37. This regulation needs specific exception for methane ventilation holes.

8. Form 1, line 23. Omit the words "permit to do" and insert "certificate of authority to transact".

9. Form 1, line 34. I would suggest a place for the name of the certifying person in addition to the signature.

10. Form 2, Appendix-Type A. At the bottom of the Appendix is a place for the notation of the source of data on the depth of strata which I do not believe is all inclusive, and I would suggest providing for alternates.

11. Form 6. Next to the word "Elevation" are the words "spirit level", and I do not know what that means.

12. Form 6. At the bottom of the signature line for the certification, I would suggest "(Registered Professional Engineer or Licensed Land Surveyor in Charge)".

13. Form 7. This form needs explanation as to its purpose, being publication in a newspaper of general circulation in the jurisdiction in which the proposed well site is located. The publication should be proven by a certificate from the publishing newspaper. Perhaps this should be covered in the regulations as well as some mention of the procedure on this form. The Act requires "proof of publication", and we should help well operators to know what should be required of them.

14. Form 8. I would suggest instead of the word "entity" at the bottom of the form that the words "partnership or corporation" be substituted.

15. Form 9. Please see my comments on Form 7.

The above and the enclosures represent my comments on review of your most recent drafts of regulations and forms. I would ask that you undertake distribution of this letter and the enclosures to those persons who you feel need to know our position. Since you have the most current and up-to-date distribution lists, I am asking that you distribute the same as you feel appropriate.

Please contact me if you have any questions concerning the above or the enclosures. I look forward to meeting with you and the other members of the Joint Legal - Technical Committee at Tri-Cities Airport on June 22, 1982.

Sincerely yours,

Donald R. Johnson
Senior Assistant General Counsel

DRJ:wf

Enclosures

cc: Mr. L. Blaine Carter
Mr. Gerald Borrelli
P. R. Thomson, Jr., Esq.
All w/Copy of Enclosures

Regulation 3.04. Well plats.

(6) Surface location of the subject well. All new wells drilled pursuant to a permit issued by the Inspector shall be drilled at the surface location shown on the well plat as issued by the Inspector and shall not deviate from the performance standard of Regulation 4.02. Within thirty (30) days of the commencement of drilling (spud in date), a registered professional engineer or certified land surveyor shall, by on-the-ground survey, locate the well on the surface to determine whether the well is within the performance standard of Regulation 4.02, and certify in writing to the Inspector and those entitled to notice of the initial permit application that the well has been surveyed after commencement of drilling and is or is not within the limits of the performance standard of Regulation 4.02. Should the surface well location be found by the survey to be at a location on the surface other than that specified on the well plat as permitted by Regulation 4.02, then all well work shall immediately be discontinued until such time as the well operator is issued a new permit by the Inspector upon a new application for a permit for the actual surface location of the well with proper notice to all persons entitled to notice.

1 Regulation 4.02. Actual surface location of a new well.

2 The actual surface location of the well shall be within
3 three feet of the location designated on the well plat in an
4 area underlain by known coal seams identified by the Chief
5 pursuant to §45.1-319 of the Code, and within ten feet of the
6 location designated by the well plat in other areas.

FORM 10 (DRJ Draft 06-14-82)

Date _____, 19____

Operator's
Well No. _____

API Well No.
45 - _____ - _____
State County Permit

Mine No. _____

DIVISION OF MINES AND QUARRIES
DEPARTMENT OF LABOR AND INDUSTRY
219 Wood Avenue
Big Stone Gap, Virginia 24219-2799
Phone 703-523-0335

NOTICE BY MINE OPERATOR OF INTENTION TO EXTEND
WORKINGS WITHIN 500 FEET OF OIL OR GAS WELL

TO: (1) Virginia Oil & Gas Inspector, and

(2) Well Operator: _____
Address of Well Operator: _____
_____

Take notice that, pursuant to Code of Virginia, §45.1-326, the undersigned mine operator proposes to extend its workings nearer than 500 feet to the above well which has been drilled or is in the process of being drilled. Attached is a copy of the parts of its maps and plans required by Code of Virginia, §45.2-27, showing the undersigned's mine workings and projected mine workings beneath the tract in question and within 500 feet of the well.

The undersigned mine operator hereby certifies that this Notice, filed with the Division of Mines and Quarries, has been sent certified mail, return receipt requested, to the Virginia Oil and Gas Inspector and the above-named well operator.

MINE OPERATOR _____

ADDRESS _____

TELEPHONE _____

SIGNATURE OF AUTHORIZED PERSON _____

TITLE _____

FORM 11 (DRJ Draft 06-14-82)

Date _____, 19____

Operator's
Well No. _____

API Well No.
45 - _____ - _____
State County Permit

Mine No. _____

DIVISION OF MINES AND QUARRIES
DEPARTMENT OF LABOR AND INDUSTRY
219 Wood Avenue
Big Stone Gap, Virginia 24219-2799
Phone 703-523-0335

NOTICE AND APPLICATION BY MINE OPERATOR FOR PERMIT
TO EXTEND WORKINGS WITHIN 200 FEET OF OIL OR GAS
WELL OR THE MINING THROUGH OF AN OIL OR GAS WELL

TO: (1) Virginia Oil & Gas Inspector, and

(2) Well Operator: _____
Address of Well Operator: _____
_____

Take notice that, pursuant to Code of Virginia, §45.1-326, the undersigned mine operator proposes to file or has filed this Notice and Application with the Chief of the Division of Mines and Quarries for a permit to:

_____/ extend workings within 200 feet of oil or gas well

_____/ extend workings within 200 feet of oil or gas well and mine through the subject well

Attached are maps and plans showing the location of the well and the contemplated mining operations within 200 feet of the well or through the well on a scale of _____ feet to the inch prepared by a competent engineer or surveyor and showing, in the case of a well which will not be mined through, the details of pillar which the undersigned proposes to leave intact for the protection of the well and mine which the undersigned believes to be adequate and in accordance with the best prevailing usage and practice in the mining industry. If the proposed well is to be mined through, the undersigned attaches information necessary to establish that the subject well has been adequately plugged for the purpose of being safely mined through and that no oil, gas or salt water is capable of migrating into the mine workings.

FORM 11 (DRJ Draft 06-14-82)

The undersigned requests approval by the Chief of the said plans and extension of the mining operations or mine workings within 200 feet of the subject well and, if designated above, to mine through the subject well. Under Code of Virginia, §45.1-326, the well operator and the Virginia Oil and Gas Inspector each have ten (10) days from their receipt of the Petition to file objections to the Chief to the proposed extension of mine workings. Objections must be filed with:

Chief
Division of Mines and Quarries
Department of Labor and Industry
219 Wood Avenue
Big Stone Gap, Virginia 24219-2799

The undersigned mine operator certifies that this Notice and Application and any and all attachments have been sent certified mail, return receipt requested, to the Virginia Oil and Gas Inspector and the above-named well operator.

MINE OPERATOR _____ SIGNATURE OF AUTHORIZED PERSON _____

ADDRESS _____ TITLE _____

TELEPHONE _____

FORM 15 (DRJ Draft 06-14-82)

Date _____, 19____

Operator's
Well No. _____

API Well No.
45 - _____ - _____
State County Permit

Mine No. _____

CHIEF, DIVISION OF MINES AND QUARRIES
DEPARTMENT OF LABOR AND INDUSTRY
219 Wood Avenue
Big Stone Gap, Virginia 24219-2799
Phone 703-523-0335

PERMIT TO MINE NEAR OR THROUGH A WELL

Effective this date, pursuant to the Virginia Oil and Gas Act, this permit to mine near or through a well is issued to:

Mine Operator: _____
Address: _____

Mining: ____/ extend workings within 200 feet of oil or gas well
____/ extend workings within 200 feet of oil or gas well and mine through the subject well

for the above mine number and near or through the above well which has been drilled or is in the process of being drilled, located in _____ County, Virginia.

The permitted mining activity is as discussed in the Notice and Application filed on _____ subject to modifications and conditions specified below:

MODIFICATIONS AND CONDITIONS (IF ANY):

_____
Chief

Transmission

Law Department

Attorneys
Harry C. Bruner, Jr.
F. Samuel Byrer
Mark D. Clark
Jo Ellen Diehl
John M. Hill
James P. Holland
Stephen M. Horn
James A. Jarrell
Glen L. Kettering

Marian W. Louis
R. Neal Pierce, Jr.
William Roy Rice
Hubert H. Roberts
Leonard Sargeant, III
Robert C. Skaggs, Jr.
Stephen J. Small
Giles D. H. Snyder
H. L. Snyder
Kenneth E. Tawney

Ex. No. 12

June 25, 1982

VOGA/VPC/VCA Legal Committee
VOGA/VPC/VCA Technical Committee

Dear Friends:

Don Johnson and I agreed that I would try to send out a quickie redraft of some of the sheets that especially involve the relationship between the mineral industries. Some of our decisions were little more than conceptual; at least one area of disagreement remains, on Pittston's proposal that all wells within the scope of the plat should be located with the same particularity as the subject well. I see no need to rehash any of the arguments bearing on that proposition.

I would be grateful if you would let me know as soon as may be possible if you have any objections or suggestions with respect to the attached.

Very truly yours,

H. L. Snyder

Copies to T. W. Altizer
Dr. C. S. Bartlett, Jr.
F. Bedell
P. J. Brown
B. L. Carter
K. D. Cheatham
G. Collier
Dr. J. M. Dennison
L. E. Dickinson
R. F. Ford
B. T. Fulmer
A. R. Hodges
S. M. Horn
Dr. W. H. Kanes
C. C. Kunz
S. L. Ovies
O. R. Prather

Columbia Gas Transmission Corporation, 1700 MacCorkle Ave., S.E., P.O. Box 1273
Charleston, West Virginia 25325, Tel. (304) 346-0951

(3) Method of showing property lines. The courses and distances of all property lines adjoining and those connecting the permanent points or landmarks or corners within the scope of the well plat shall be shown thereon. All lines actually surveyed shall be shown in solid lines. Lines taken from deed descriptions only shall be shown by broken lines.

(4) North-south line. A north and south line shall be given and shown on the plat and point to the top of the plat.

(5) Scale. If practicable, the well plat shall be drawn to a scale of 1" to 2,000' (1:24,000) or even multiples of 1:2000 for easy reduction of the plat photographically to a 1:2000 scale.

(6) Surface location of the subject well. The actual surface location of the subject well, with reference to the permitted surface location on the well plat, shall conform to the performance standard of Regulation 4.02. To assure this conformance, the location stake placed for the purpose of preparing the well plat shall be augmented by checkpoint stakes placed so as to permit replacement of the location stake after the well site has been cleared and readied for drilling;

and the fact that the actual surface location of the replaced stake (or the well itself, at the well operator's option) conforms to the performance standard of Regulation 4.02 shall be confirmed by a competent engineer or surveyor before any part of the surface string of casing is run into the hole.

(7) Surface elevation of the subject well. The surface elevation of the subject well location to the nearest foot shall be given, and it shall be tied to either a government bench mark or other point of proven elevation by differential, aerial, barometric or altimeter survey. The location of the government bench mark or the point of proven elevation shall be noted and described on the plat.

(8) Topographic map location of the subject well. The topographic map location of the subject well shall be shown on the plat by a "cross" with the measured distance in feet from the nearest 2.5 minute latitude and longitude intersection using the North East (upper right) border of the plat on the 7.5 minute (1:24,000) topographic map. Each plat shall indicate the topographic map name and series.

PART IV

REGULATIONS UNDER ARTICLE 4 OF THE ACT

Regulation 4.01. Commencement notice on well work.

The well operator shall notify the Inspector at least 48 hours prior to commencing well work under any permit, giving the permit number of the well and the date and time that the well work is scheduled to begin. Telephone notice will suffice.

Regulation 4.02. Actual surface location of a new well.

The actual surface location of the well shall be within three feet of the permitted location designated on the well plat in an area underlain by known coal seams identified by the Chief pursuant to § 45.1-319 of the Code, and within ten feet of the location designated by the well plat in other areas. If a violation of this location standard is discovered on any well drilled after the effective date of the Act, the Inspector shall direct the well operator to file a new application with notice to those persons entitled thereto. To guard against such a violation, no part of the surface string of casing shall be run into the hole prior to the confirmation of the

actual surface location as provided in Regulation 3.04(a)(6).

Regulation 4.03. Changes in the permitted well work as actually performed.

If circumstances arise during the performance of any well work which cause the well operator to decide that a modification of his well work as permitted must be made to insure the successful completion of the well work, the well operator shall obtain the verbal permission of the Inspector or an Assistant Inspector before effectuating the change, and confirm the change on the well work completion report required by Regulation 4.05. This Regulation shall not be construed to justify a change in the surface location of a well except under the provisions of Regulation 4.02, or to affect in any way the verbal permission provision of § 45.1-297.C.9 of the Code concerning the plugging of an unsuccessful well.

Regulation 4.04. Progress reports on well work.

As a general rule, progress reports are unnecessary during the well work. The Inspector or an Assistant Inspector may, however, require

COLUMBIA GAS
Transmission

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Leonard Sargeant, III
Robert C. Skaggs, Jr.
Stephen J. Small
Giles D. H. Snyder
H. L. Snyder
Kenneth E. Tawney

Ex. No. 13

July 15, 1982

Mr. B. T. Fulmer
Oil and Gas Inspector
Department of Labor and Industry
Division of Mines
219 Wood Avenue
Big Stone Gap, Virginia 24219-2799

Dear Tom:

I enclose ten copies of the most recent draft ("Third Draft 07-15-82") of Regulations under the Virginia Oil and Gas Act. Of the copies, one is for you, one is for the Chief, one is for the Assistant Attorney General, and the last seven are for the public members of the Commission and the Board. The Regulations are on a word-processor, so that revisions will be simple as the Regulations are finalized.

Very truly yours,

Jack Snyder

H. L. Snyder

HLS/skn
Enclosure

Copies to VOGA/VPC/VCA Legal Committee
VOGA/VPC/VCA Joint Technical Committee
T. W. Altizer
Dr. C. S. Bartlett, Jr.
F. Bedell
P. J. Brown
B. L. Carter
K. D. Cheatham
G. Collier
Dr. J. M. Dennison
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R. F. Ford
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S. L. Ovies
O. R. Prather

Columbia Gas Transmission Corporation, 1700 MacCorkle Ave., S.E., P.O. Box 1273
Charleston, West Virginia 25325, Tel. (304) 346-0951

DRAFT REGULATIONS UNDER THE VIRGINIA OIL AND GAS ACT

PART I

REGULATIONS UNDER ARTICLE 1 OF THE ACT

Regulation 1.01. Authority.

These regulations have been jointly adopted by the Virginia Well Review Board, the Virginia Oil and Gas Conservation Commission, and the Chief of the Division of Mines of the Virginia Department of Labor and Industry, to the extent their respective jurisdictional statutes authorize each to act under the provisions of the Virginia Oil and Gas Act and other provisions of law.

Regulation 1.02. Definitions.

(a) As used in these Regulations, unless the context clearly indicates otherwise, the words and phrases defined in § 45.1-288 of the Code of Virginia and shall have the same meaning.

(b) As used in these Regulations, unless the context clearly indicates otherwise,

(1) "Act" means the Virginia Oil and Gas Act;

1 Regulation 3.03. Well operator's bond.

2 (a) Bonds approved prior to the effec-
3 tive date of the Act shall continue in force until
4 released or until replaced by a new bond.

5 (b) A single-well bond approved prior
6 to the effective date of the Act shall be replaced
7 when the first subsequent application is filed for
8 a well work permit respecting the well; and a
9 blanket bond approved prior to the effective date
10 of the Act shall be replaced when the well
11 operator files his first subsequent application
12 for a well work permit, whether on a new or a
13 pre-existing well.

14 (c) Bonds shall be filed either on
15 Form 3 ("Well Operator's Surety Bond") or on
16 Form 4 ("Well Operator's Cash Bond"). Releases,
17 whether partial or complete, will be entered on
18 the reverse side of the bond.

19 Regulation 3.04. Well plats.

20 (a) Any well plat required to be
21 furnished under § 45.1-312 of the Code shall be
22 recorded on Form 5 ("Well Plat"), and shall
23 conform to the following standards of accuracy and
24 description:

(1) Accuracy. In the case of a well located on land which is underlain by known coal seams identified by the Chief pursuant to § 45.1-333 of the Code, an accuracy of one part in 5,000 is required for the location of the subject well with reference to the two permanent points or landmarks required by § 45.1-312.A of the Code. In other cases, a minimum accuracy of one part in 200 is required for the location of the subject well.

(2) Permanent points or landmarks. The two permanent points or landmarks shall be shown with courses and distances to the subject well on the basis of an on-the-ground survey. Such permanent points or landmarks shall be set stones, iron pipes, T-rails or other manufactured monuments, including mine coordinate monuments, and existing wells (operating or abandoned) platted and on file with the Inspector on the accuracy standards of this Regulation.

(3) Method of showing property lines. The courses and distances of all property lines adjoining and those connecting the permanent points or landmarks or corners within the scope of the well plat shall be shown thereon. All lines actually surveyed shall be shown in solid lines.

Lines taken from deed descriptions only shall be shown by broken lines.

(4) North-south line. A north and south line shall be given and shown on the plat and point to the top of the plat.

(5) Scale. If practicable, the well plat shall be drawn to a scale of 1" to 2,000' (1:24,000) or even multiples of 1:2000 for easy reduction of the plat photographically to a 1:2000 scale.

(6) Surface location of the subject well. The actual surface location of the subject well, with reference to the permitted surface location on the well plat, shall conform to the performance standard of Regulation 4.02. To assure this conformance, the location stake placed for the purpose of preparing the well plat shall be augmented by checkpoint stakes placed so as to permit replacement of the location stake after the well site has been cleared and readied for drilling; and the fact that the actual surface location of the replaced stake (or the well itself, at the well operator's option) conforms to the performance standard of Regulation 4.02 shall be confirmed by a competent engineer or surveyor before any part of the surface string of casing is

run into the hole, and later certified as part of Form 17 ("Report of Completion of Well Work").

(7) Surface elevation of the subject well. The surface elevation of the subject well location to the nearest foot shall be given, and it shall be tied to either a government bench mark or other point of proven elevation by differential, aerial, barometric or altimeter survey. The location of the government bench mark or the point of proven elevation shall be noted and described on the plat.

(8) Topographic map location of the subject well. The topographic map location of the subject well shall be shown on the plat by a "cross" with the measured distance in feet from the nearest 2.5 minute latitude and longitude intersection using the North East (upper right) border of the plat on the 7.5 minute (1:24,000) topographic map. Each plat shall indicate the topographic map name and series.

(9) Wells. All wells within the scope of the plat, whether active, drilling or abandoned, shall be shown. The scope of the plat shall be sufficient to show all wells within 3,000 feet of the well which is the subject of the application; and this scope shall be presumed to embrace the entire "area to be affected" by an

1 enhanced oil recovery injection well, as those
2 words are use in § 45.1-312.A.x of the Code, in

3 the absence of a Commission order establishing
4 units in the target pool of such size or
5 configuration that renders this 3,000 foot scope
6 is clearly inadequate. Each well so shown,
7 including the subject well, shall bear a
8 designation that permits the kind (oil, gas,
9 enhanced oil recovery, waste disposal, underground
10 gas storage) and status (active, abandoned, or
11 drilling) of each such well to be determined by
12 the use of (i) API permit number (excluding State
13 and County) for each well having such a permit
14 number, (ii) in parenthesis, and following the API
15 number if such is listed, the kind and status
16 numbers provided below, (iii) the symbols provided
17 below and (iv) the depth to which each well has
18 been or is proposed to be drilled. The kind and
19 status numbers shall be as follows:
20 Oil Wells
21 01- Active
22 02- Abandoned
23 03- Drilling

Gas Wells

- 04- Production, active
- 05- Production, abandoned
- 06- Production, drilling
- 07- Underground storage, active
- 08- Underground storage, abandoned
- 09- Underground storage, drilling

Enhanced oil recovery injection wells

- 10- Active
- 11- Abandoned
- 12- Drilling or being converted

Waste disposal wells

- 13- Active
- 14- Abandoned
- 15- Drilling or being converted

The symbols shall be as follows:

New drilling location	○
New stimulating location	○ ST
Cancelled application or permit	○ CNC
Oil well	●
Gas well	☼
Dry hole	☼
Enchanced oil recovery injection well	⊘ LI
Waste disposal well	⊘ WD
Abandoned well	● - ☼ - ⊗ - ⊗ WD

(b) Every well plat shall be signed and certified by the registered professional engineer or licensed land surveyor in the following manner:

"I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the regulations promulgated by the Virginia Well Review Board."

Regulation 3.05. Notice to site owners, adjacent owners, etc.; filing of objections, statement of no objections, and proof of notice.

(a) The mailed notice provided by § 45.1-313.A of the Code is incorporated into Form 2 as the initial part of the "Notice and Application for a Well Work Permit".

(b) The published notice provided in certain cases by § 45.1-313.B of the Code for publication in a newspaper of general circulation in the jurisdiction involved shall be on Form 6 ("Notice by Publication of an Application for a Well Work Permit").

(c) Objections filed under the provisions of § 45.1-313.D of the Code shall be in

retained, so that the pit is kept reasonably free of salt water and oil.

Regulation 3.10. Notice of hearings.

Notice of hearings under Article 3 of the Act, whether before the Inspector, the Board or the Commission, shall be given on Form 12 ("Notice of Hearing").

PART IV

REGULATIONS UNDER ARTICLE 4 OF THE ACT

Regulation 4.01. Commencement notice on well work.

The well operator shall notify the Inspector at least 48 hours prior to commencing well work under any permit, giving the permit number of the well and the date and time that the well work is scheduled to begin. Telephone notice will suffice.

Regulation 4.02. Actual surface location of a new well.

The actual surface location of the well shall be within three feet of the permitted location designated on the well plat in an area underlain by known coal seams identified by the Chief pursuant to § 45.1-333 of the Code, and within ten feet of the location designated by the

well plat in other areas. If a violation of this location standard is discovered on any well drilled after the effective date of the Act, the Inspector shall direct the well operator to file a new application with notice to those persons entitled thereto. To guard against such a violation, no part of the surface string of casing shall be run into the hole prior to the confirmation of the actual surface location as provided in Regulation 3.04(a)(6).

Regulation 4.03. Changes in the permitted well work as actually performed.

If circumstances arise during the performance of any well work which cause the well operator to decide that a modification of his well work as permitted must be made to insure the successful completion of the well work, the well operator shall obtain the verbal permission of the Inspector or an Assistant Inspector before effectuating the change, and confirm the change on the well work completion report required by Regulation 4.05. This Regulation shall not be construed to justify a change in the surface location of a well except under the provisions of Regulation 4.02, or to affect in any way the verbal permission provision of § 45.1-311.C.9 of

1 the Code concerning the plugging of an unsuccess-
2 ful well.

3 Regulation 4.04. Progress reports on well work.
4 As a general rule, progress reports are
5 unnecessary during the well work. The Inspector
6 or an Assistant Inspector may, however, require
7 such progress reports for any well work in which
8 unusual conditions are foreseeable or have been
9 encountered.

10 Regulation 4.05. Logs and surveys.
11 (a) Driller's logs. On all well work
12 involving any drilling, the person responsible for
13 the conduct of the actual drilling operation shall
14 make and keep at the site a well log complying
15 with § 45.1-333.B.1 of the Code. The driller's
16 well log shall be updated on a daily basis, for
17 inspection by the Inspector or an Assistant
18 Inspector as need be during the progress of the
19 well work, until its completion.
20 (b) Deviation and directional surveys.
21 The results of any deviation or directional survey
22 made under the provisions of § 45.1-333.C of the
23 Code shall similarly be kept at the site.

PITTSTON Coal

The Pittston Coal Group
P.O. Box 4000
Lebanon, Virginia 24266
703-889-4000

An Affiliate of The Pittston Company

D

Ex. No. 14

July 15, 1982

H. L. Snyder, Esq.
Assistant General Counsel
Columbia Gas Transmission
1700 MacCorkle Avenue, S. E.
P. O. Box 1273
Charleston, West Virginia 25325

Re: Oil and Gas Regulations

Dear Jack:

Enclosed find our proposed redrafts concerning well plats and well locations composing Regulations 3.04, 4.03 and 4.06 and the certification shown on Form 18. My commentary on the changes is as follows:

Regulation 3.04(1):

With regard to survey accuracy in the coal area, I have changed the requirement of the survey of all wells shown on the plat to all wells located 2,500 feet or less from the subject well. The accuracy outside of the coal fields has been changed from one part in 200 to one part in 500 in order to prevent the use of stadia, and the accuracy requirement only applies to the subject well.

Regulation 3.04(2)

With regard to the permanent points, all landmarks, courses and distances are to be shown from the permanent points or landmarks for the subject well and the wells to be surveyed in the coal areas.

Regulation 3.04(6)

The surface location of the well is to be confirmed prior to the running of the surface string of casing and is to be certified to by a registered professional engineer or certified land surveyor. I do not believe that it is necessary for a detailing of the method upon which the location is to be verified, but I do feel that it is important that the location of the well be confirmed and be certified to. The practical application of this regulation would not

require the certifying person to do the actual verification, but he is responsible when he signs the certification, which method is the way most plats are prepared by the use of survey crews.

Regulation 3.04(7)

I have inserted the word "vertical" between the word "one" and the word "foot".

Regulation 3.04(8)

The topographic map location language has been modified at the suggestion of Mr. Brillhart of our company for clarity.

Regulation 4.03

The words "or the Inspector" were added after the words "well operator" and the word "his" immediately following was changed to "the".

Regulation 4.06(a)(1)

This regulation was modified to include a mention of the certification for the completion report for the location of new wells.

Form 18 - Reserve

I have modified the form to comply with my revised version of the regulations as above explained. We feel that the certification should be by a responsible person and that the certification speaks to the location of the well and not a stake. I note that you have changed the form number to 17 in your "Fulmer draft", and confusion continues.

The enclosed redrafts of regulations represent the only matters which I believe are outstanding prior to the submittal of these proposed regulation drafts to Mr. Fulmer. I hope that these matters will be resolved so that we can proceed to consult with the Board and the Commission.

I shall await your reply.

Sincerely yours,

Donald R. Johnson
Senior Assistant General Counsel

DRJ:wf

Enclosures

cc: Mr. Frank C. Bidell
Morris Kennedy, Esq.
Mr. Louis Kuchinic
J. Thomas Fowlkes, Esq.
Raymond E. Davis, Esq.
Thomas L. Hopkins, Esq.
Mr. Jerry Borrelli
Mr. Richard Brillhart
All w/Copy of Enclosures

Regulation 3.04. Well plats.

(1) Accuracy. In the case of a well located on land which is underlain by known coal seams identified by the Chief pursuant to §45.1-319 of the Code, an accuracy of one part in 5,000 is required for the location of the subject well and all wells located 2,500 feet or less from the subject well with reference to the two permanent points or landmarks required by §45.1-289A of the Code. In all other cases, a minimum accuracy of one part in 500 is required for the location of the subject well.

(2) Permanent points or landmarks. The two permanent points or landmarks shall be shown with courses and distances on the basis of an on-the-ground survey to the subject well and, in the case of a well located on land which is underlain by known coal seams identified by the Chief pursuant to §45.1-319 of the Code, all wells located 2,500 feet or less from the subject well. Such permanent points or landmarks shall be set stones, iron pipes, T-rails or other manufactured monuments, including mine coordinate monuments, and existing wells (operating or abandoned) platted and on file with the Inspector on the accuracy standards of this Regulation.

(6) Surface location of the subject well. The actual surface location of the subject well, with reference to the permitted surface location on the well plat, shall conform to the performance standard of Regulation 4.02. The fact that the actual surface location of the well conforms with

the performance standard of Regulation 4.02 shall be confirmed before any part of the surface string of casing is run into the hole and the conformity with the performance standard shall be certified to on the completion report required to be filed by Regulation 4.06 by a registered professional engineer or certified land surveyor.

(7) Surface elevation of the subject well. The surface elevation of the subject well location within an accuracy of one vertical foot shall be given, and it shall be tied to either a government bench mark or other point of proven elevation by differential, aerial, barometric or altimeter survey. The location of the government bench mark or the point of proven elevation shall be noted and described on the plat.

(8) Topographic map location of the subject well. The topographic map location of the subject well shall be shown on the plat by a "cross" with the measured distance in feet from the nearest 2.5 minute latitude and longitude intersection from the nearest 2.5 minute longitude line to the East and the nearest 2.5 minute latitude line to the North on the 7.5 minute (1:24,000) topographic map. Each plat shall indicate the topographic map name and series.

Regulation 4.03. Changes in the permitted well work as actually performed.

If circumstances arise during the performance of any well work which cause the well operator or the Inspector to

decide that a modification of the well work as permitted must be made to insure the successful completion of the well work, the well operator shall obtain the verbal permission of the Inspector or an Assistant Inspector before effectuating the change, and confirm the change on the well work completion report required by Regulation 4.05. This Regulations shall not be construed to justify a change in the surface location of a well except under the provisions of Regulation 4.02, or to affect in any way the verbal permission provision of §45.1-297.C.9 of the Code concerning the plugging of an unsuccessful well.

Regulation 4.06. Completion reports.

(a) Completion of well work. (1) The well operator shall file a completion report with the certification provided for by Regulation 3.04(6) for new wells on Form 18 ("Report of Completion of Well Work") within 60 days after the well work is completed.

FORM 18
REVERSE

CERTIFICATION OF LOCATION OF A NEW WELL

I, the undersigned, hereby certify that the actual surface location of the new well referenced on the obverse hereof conforms with the standard of Regulation 4.02 of the Regulations of the Virginia Oil and Gas Act, as follows:

_____ within three feet of the location designated on the well plat in an area underlain by known coal seams identified by the Chief of the Division of Mines pursuant to §45.1-319 of the Code, or

_____ within ten feet of the location designated by the well plat in other areas.

_____
Certified Land Surveyor ____/
Registered Professional Engineer ____/

COLUMBIA GAS
Transmission

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July 16, 1982

Ex. No. 15

VOGA/VPC/VCA Legal Committee
VOGA/VPC/VCA Joint Technical Committee

Dear Friends:

I enclose a fresh draft ("Third Draft 07-15-82") of Regulations under the Virginia Oil and Gas Act. Several sections have changed enough since you last saw them that explanatory comments are perhaps required.

Overall. The most important comment, as I wrote earlier in connection with the draft Forms, is that the Virginia Code Commission assigned new section numbers to the entire Act. The new numbers are 14 higher than the old. As far as I know, all of the Code citations in these Regulations have been corrected, and should thus coordinate with the Act and the draft Forms.

Regulation 2.02(f) combines the earlier draft parts (f) and (j). Both earlier parts concerned gas/oil ratios, and I couldn't think of any reason not to put both in the same place.

Regulation 3.02(e) is entirely new. It is adapted from old Regulation 26 on enhanced oil recovery injection wells, in accordance with Tom Fulmer's decision. Of course, Tom has not seen this write-up, any more than you have.

Regulation 3.02(f) is also new and based on Tom's decision on old Regulation 26 and waste disposal wells.

Regulation 3.04(a)(6) is the joint work product of Don Johnson and me; but Don has not approved the text, much less cleared it with his constituency.

Regulation 3.04(a)(9) incorporates a reference to the "area to be affected" mentioned in Code § 45.1-312.A.x, in line with Tom Fulmer's observation.

Regulation 4.08 is new. Its principal purpose is to require monthly reports on enhanced oil recovery injection wells and waste disposal wells. I thought it made sense to refer to progress reports on other types of wells, which accounts for paragraphs (a) and (b).

Columbia Gas Transmission Corporation, 1700 MacCorkle Ave., S.E., P.O. Box 1273
Charleston, West Virginia 25325, Tel. (304) 346-0951

Regulation 5.05(c) is adapted from old Regulations 56 and 58, in accordance with Tom Fulmer's decision. Note the distinction between transportation of oil and transportation of gas: the Connally Hot Oil Act simply does not apply to natural gas. Consequently, I must stand on my point that the regulation of interstate transportation of natural gas is exclusively the jurisdiction of the Federal Energy Regulatory Commission on all matters except safety, where it belongs to the Department of Transportation and the State Corporation Commission.

Very truly yours,

Jack

H. L. Snyder

HLS/skn
Enclosure
Copies to T. W. Altizer
Dr. C. S. Bartlett, Jr.
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P. J. Brown
B. L. Carter
K. D. Cheatham
G. Collier
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Ex. no. 16

COMMONWEALTH of VIRGINIA

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Deputy Attorney General
Finance & Transportation Division

Karl E. Bren
Director of Administration

September 27, 1982

Mr. B. T. Fulmer
Chief Oil and Gas Inspector
Division of Mines & Quarries
Department of Labor & Industry
219 Wood Avenue
Big Stone Gap, Virginia 24219

Dear Mr. Fulmer:

John Purcell has asked me to review and respond to your letter of August 30, 1982. Virginia Code Section 45.1-312 states that a "registered engineer" or "certified land surveyor" must prepare the well plat which is required to be filed with the application for a well work permit. The section does not state Virginia registered or certified; however, Virginia Code Section 54-26.1 states:

> In order to engage in the practice of architecture, or engineering, which practice includes design consultation, evaluation or analysis and involves proposed or existing improvements to real property, a person shall hold a valid license unless included within the exemptions to this chapter.
>
> In order to engage in the practice of land surveying, a person shall hold a valid license unless included within the exemptions to this chapter.

The exemptions referred to above are found in Code Sections 54-37 and 54-37.1 and are not pertinent to the

situation about which you inquire. Therefore I believe Section 45.1-312 must be read to require Virginia registered or certified engineers or land surveyors.

Sincerely,

Richard C. Kast

Richard C. Kast
Assistant Attorney General

6:37/210

cc: John B. Purcell, Jr., Esquire

COLUMBIA GAS
Transmission

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H. L. Snyder
Kenneth E. Tawney

November 8, 1982

Ex. no. 17

John B. Purcell, Jr., Esq.
Assistant Attorney General
101 North 8th Street
Fifth Floor
Richmond, Virginia 23219

Dear John:

I thought I would give you my ideas (with the right to disseminate them to anyone you wish at any time you wish) on Tom Fulmer's draft regulations for underground gas storage, enhanced oil recovery, and waste disposal. These are my own views, and should not be read as binding anyone else.

Overall, the oil and gas industry can not lightly disregard the implications of putting Tom in position to obtain partial UIC primacy under the applicable Federal and State law controlling underground injection of various materials. Columbia would like for Tom to have such partial primacy, and I do not know of any oil and gas producer who would argue to the contrary.

But underground gas storage is not in the UIC program, and the rest of my comments deal with storage wells separately from the two other types. (To make the last section easier to follow, I attach a copy of Tom's draft, specially marked with paragraph numbers in the left margin.) All references are to the "FIFTH DRAFT 10-20-82" of the Regulations and the "Draft 07-09-82" of the Forms.

UNDERGROUND GAS STORAGE WELLS

The desirability of partial UIC primacy does not conflict at all with handling underground gas storage as in Regulation 3.02(d)--simply reserving the Board's right to establish underground gas storage regulations when the need actually arises. The reason is that the UIC law has wholly excluded underground gas storage wells since December 5, 1980, when Congress enacted Pub. L. 96-502. Among other things, § 3 of this enactment amended Sec. 1421(d)(1) of the UIC law, codified as the Safe Drinking Water Act, which is Title XIV of the Public Health Service Act. The UIC law now provides, "The term 'underground injection'...does not include the underground injection of natural gas for purposes of storage." 42 U.S.C.A. § 300h(d)(1).

Moreover, on August 27, 1981, the EPA amended its UIC regulations to conform to the new statute. The 1982 edition of the UIC regulations has just been published, and underground gas

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storage wells are wholly omitted--not provisionally exempt like Class V wells (40 C.F.R. § 146.52), but wholly excluded from the UIC program. The exclusion is specific: in the opening Part 122 of the general regulations of "EPA Administered Permit Programs", Subpart C contains the following express exclusion from UIC programs under the Safe Drinking Water Act:

> "(2) Specific exclusions. The following are not covered by these regulations:
>
> "***.
>
> "(iv) Injection wells used for injection of hydrocarbons which are of pipeline quality and are gases at standard temperature and pressure for the purpose of storage." 40 C.F.R. § 122.31(d)(2) (1982).

The only proper question, then, is whether Virginia has an independent need for underground gas storage regulations under the Act at this time. The inter-industry committees easily decided that the answer was No. All existing gas fields are in Southwestern Virginia, and Southwestern Virginia is about the least likely place in the State ever to be used for underground storage. The ideal place for storage is close to major markets, which are all a long way from Southwestern Virginia. At the present time, therefore, underground storage regulations are more than superfluous: since no one now knows the geological characteristics of potential storage reservoirs in Virginia, no one can now design proper regulations.

ENHANCED OIL RECOVERY WELLS AND WASTE DISPOSAL WELLS

As a preliminary matter, I believe that enhanced recovery and waste disposal are not similar parts of one problem. Enhanced oil recovery wells and waste disposal wells are wholly different in purpose, and markedly different in their operational settings and implications. Therefore, they should not be lumped together as Fulmer ¶ 1 implies that they can be. Note also that Fulmer ¶¶ 2-14 tend to ping-pong back and forth between the two subjects rather than combining them.

The Regulations make somewhat sharper distinctions. Aside from that, we have carefully checked the actual substance of Fulmer ¶¶ 2-14 to determine whether they were incorporated into the Regulations as published. The following annotation shows that the Regulations as now drafted more accurately integrate the substance of Fulmer ¶¶ 2-14 in light of the provisions of the Act.

Fulmer ¶ 2 is redundant, because it merely repeats the definitions in § 45.1-288.23 and -.62 of the Code. Regulation 1.02(a) incorporates all statutory definitions by reference.

Fulmer ¶¶ 3-6 involve waste disposal wells. All of the substantive requirements of these paragraphs are incorporated into Regulation 3.02(f).

Fulmer ¶ 7 is concerned only with enhanced oil recovery wells. It is redundant in light of Code § 45.1-349.A.

Fulmer ¶ 8 is redundant in light of Code §§ 45.1-311 and -312.

Fulmer ¶ 9, as to enhanced oil recovery wells, is substantively incorporated into Regulation 3.02(e)(2). As to waste disposal wells, Fulmer ¶ 9 is substantively incorporated by the cross-referenced casing requirements in Regulation 3.02(f)(2): it requires the same "casing standards set out above for enhanced recovery injection wells."

Fulmer ¶ 10 is practically incorporated into Regulation 4.08(c), except that the periodic reports would be monthly instead of biweekly. (West Virginia is the precedent for monthly reporting.) The Inspector's emergency powers under Code § 45.1-293.B supply whatever power the Regulation may omit.

Fulmer ¶ 11 is substantively incorporated into what evolved into Regulation 3.02(e)(2) as to enhanced oil recovery wells. The same requirements are cross-referenced for waste disposal wells under Regulation 3.02(f)(2).

Fulmer ¶ 12 is substantively incorporated into Regulation 4.06 with one exception: Regulation 4.06 omits a "certification that the mechanical integrity of the well has been tested." I suggest that this omission should be repaired by an additional item vii to Appendix--Type B of Form 17. (This is the appendix to completion reports on wells "for enhanced oil recovery under § 45.1-349 or for disposal of waste as described in Code § 45.1-288.62".) The new item vii could be along the following lines:

> "(vii) The well operator certifies that the mechanical integrity of the well has been tested and demonstrated."

Fulmer ¶ 13 is substantively incorporated into Regulation 4.08(c).

Fulmer ¶ 14 is redundant. Code §§ 45.1-341 / -348 control how all wells shall be plugged in such detail that Regulation 4.11 merely references the form of affidavit.

A final UIC comment. I have made no real analysis of the extent to which the Regulations (or Fulmer ¶¶ 1-14) concerning enhanced oil recovery and waste disposal are indeed sufficient to permit the Inspector to obtain partial UIC primacy under the EPA's Regulations. My impression is that they are not. Columbia has no plans for enhanced oil production or waste disposal in Virginia, so that the issue is academic to me at this time. See, however, 40 C.F.R. Parts 122-124, 126 (1982).

* * * * *

If you have any questions, I shall be happy to respond.

Very truly yours,

Jack Snyder

H. L. Snyder

Copies to: VOGA/VPC/VCA Legal Committee
C. C. Kunz

(e) Applications Involving Enhanced Oil Recover Wells and Waste Disposal Wells

¶ 1 For the purposes of this Section, the following definitions shall apply:

¶ 2 "Waste disposal well" means a well drilled or converted for the disposal of drilling fluids, producing waters and other wastes associated with the exploration, development, or production of oil or gas;

"Fluid injection well", means a well drilled or converted for the purpose of introducing water or other fluid pressure into and upon the producing strata for the purpose of recovering the oil contained therein;

¶ 3 Saltwater, waste fluids or other objectionable water containing minerals in such amount as to be unfit for domestic, municipal, industrial, stock, agricultural or recreational uses, upon application to and approval by the Inspector, may be disposed of by injection into the following formations:

¶ 4 A. Non-producing zones of oil or gas-bearing formations that contain water mineralized by the processes of nature to such a degree that the water is unfit for domestic, municipal, industrial, stock,agricultural, or recreational uses; and

¶ 5 B. All non-producing formations containing water mineralized by the processes of nature to such a degree that the water is unfit for domestic, municipal industrial, stock, agricultural, or recreational uses, and provided that before any such formations are approved for disposal use, it shall be ascertained that they are separated from fresh-water bearing formations by impervious beds which will give adequate protection to such fresh-water bearing formations, and that fresh-water supplies contained by the proposed disposal formations near its outcrop shall be at such a remote distance as not to be endangered by the addition of mineralized water in the proposed disposal wells.

¶ 6 The Inspector in passing upon applications for the use of non-producing oil or gas formations for disposal formations, will be advised by the technical recommendations of the State Geological Survey, the State Board of Health and the State Water Control Board in determining whether such formations may be safe and legally used.

¶ 7 In order to prevent waste, avoid the drilling of unnecessary wells and recov increased yields, the Inspector may, after due notice, permit the cycling or int duction of gas, air, water, steam or other substances into producing formations oil and gas-reservoirs for the purpose of repressuring such reservoirs, maintain ing pressure, or carrying on secondary recovery operations. Application to insta and use gas, air, water, steam or other substances for secondary recovery purpos shall be made to the Inspector, together with the submission of a detailed description and plans of the proposed development, giving such information as the Inspector may require.

¶8

When making application for a permit to drill or operate a waste disposal or fluid injection well, the operator shall comply with the provisions of Chapter 22, Section 45.1-311 of the Virginia Oil and Gas Act in regard to permit fees, bonding requirements and operations plan. An accurate plat as required in Chapter 22, Section 45.1-312 shall be submitted with the additional requirement that it show the location and identification of all known water wells, producing and abandoned oil or gas wells, and active and abandoned waste disposal well or fluid injection well within three thousand linear feet of the proposed well location. For such wells which are improperly sealed, completed, or abandoned, the applicant shall also submit a plan consisting of such steps or modifications as are necessary to prevent movement of fluid into underground sources of drinking water. Additional materials shall be submitted to the Inspector stating the purpose for which the well is to be used; the name, description and depth of the formation into which any injection is to be done; the type of substance to be injected; and the approximate depth of the known fresh water zones on the application forms required. A copy of such plat and other material shall also be sent to all interested persons as required in Chapter 22, Section 45.1-313 and to any other persons who in the judgement of the Inspector may be affected by the drilling or operation of such disposal or service well. If no objection has been made within thirty days of the filing of the permit application, the Inspector shall issue the requested permit. When objections are filed, the procedures for a hearing on such matters shall be substantially the same as provided in Chapter 22, Article 3 of the Virginia Oil and Gas Act.

¶9

Waste disposal wells and fluid injection wells shall be cased and casing cemented in such manner that no contamination or damage will be caused to oil or gas bearing strata, sources of fresh water, workable coal beds or other commercial mineral deposits.

¶10

In addition, monitoring procedures shall become part of the conditions of the permit. The migration or movement of fluid into underground sources of water is prohibited. If in any case where monitoring indicates the movement of injection or formation fluids into underground sources of drinking water, the Inspector shall prescribe such additional requirements for construction, corrective action, operation, monitoring, or reporting (including closure of the injection well) as are necessary to prevent such movement. Such monitoring reports shall be submitted to the Inspector on a biweekly basis or at the request of the Inspector.

¶11

In waste disposal wells or fluid injection wells, injection shall be done (1) through a tubing and packer arrangement with the packer set immediately above the injection zone, and the annulus between the tubing and casing shall be monitored by pressure sensitive devices or (2) through production casing adequately seated and cemented to allow for monitoring of the annulus between the injection casing and the last intermediate casing string or coal-fresh water casing string as the case may be. The injection pressure will be regulated to minimize the possibility of fracturing the confining strata. Alternative injection procedures may be approved by the Inspector if such are shown to afford adequate protection to oil or gas bearing strata, sources of fresh water, workable coal beds or other commercial mineral deposits. The requirements herein shall not be applicable to the injection of water or other substances for the purpose of well stimulation or to injection for the purpose of gas storage.

¶ 12 After completion of a waste disposal well or fluid injection well, the well operator shall submit all information as required in Chapter 22, Article 4 of the Virginia Oil and Gas Act including the identification of the injection zone by geological name and depth, the anticipated maximum bottom hole pressure and daily injection rate, and a certification that the mechanical integrity of the well has been tested.

¶ 13 Every person injecting gas or fluid into the earth in connection with or as a part of secondary recovery or disposal operations, shall report monthly to the Inspector on a form to be supplied by the Inspector showing the pressures and quantities or volumes of oil, gas, water, steam or other gaseous or liquid material injected during the month covered by the report and identifying the underground reservoirs or strata into which the injection is made. Inspections may be made periodically at the direction of the Inspector to determine if proper operating procedures are being followed by the well operator.

¶ 14 In the event of the abandonment of a waste disposal well or fluid injection well such well shall be plugged according to procedures set forth in Chapter 22, Article 4 of the Virginia Oil and Gas Act.

* * *

COLUMBIA GAS
Transmission

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Ex. No. 18

December 15, 1982

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Virginia Oil and Gas Conservation Commission
Virginia Well Review Board
Chief of the Division of Mines
Department of Labor and Industry
Division of Mines
219 Wood Avenue
Big Stone Gap, VA 24219-2799

Sirs:

Re: Proposed Regulations and Forms under the Virginia Oil and Gas Act

This letter is to request an opportunity for Columbia Gas Transmission Corporation to present formal testimony which would be transcribed as a part of the record, and possibly to offer exhibits as a part of the record, in connection with the public hearing scheduled for January 5, 1983, as provided in the public notice issued October 21, 1982 by Azie Taylor Morton, Commissioner of Labor and Industry.

Columbia's evidence will bear on one of the draft Regulations and one of the draft Forms published with the Public Notice. First, Columbia's evidence will bear upon draft Regulation 3.04 ("Well plats"), and particularly the alternative proposals by the coal industry and the oil and gas industry in paragraphs (a)(1), (a)(2), and (a)(6) of this Regulation. Second, Columbia's evidence would bear on Form 17 ("Report of Completion of Well Work"), and particularly the alternate proposals by the coal industry and the oil and gas industry for the "Certification of Location of a New Well" on the reverse of Form 17.

Columbia's evidence would specifically address the factual issues implicit in the contentions made in two letters on the subject of draft Regulation 3.04 and Form 17 to Virginia Oil and Gas Inspector Byron T. Fulmer--the first from me dated August 13, 1982, and the second from Donald R. Johnson (Pittston Coal Group) dated August 26, 1982.

Inasmuch as the matters which Columbia desires to address in its evidence appear to be restricted to matters within the jurisdiction of the Well Review Board, as distinguished from the Commission or the Chief, Columbia would accept, as an

Columbia Gas Transmission Corporation, 1700 MacCorkle Ave., S.E., P.O. Box 1273
Charleston, West Virginia 25325, Tel. (304) 346-0951

alternative to presenting its evidence at the joint hearing, presenting it at a recessed hearing before the Well Review Board separately, or in any other manner which you deem appropriate under the circumstances.

For your information, I expect to examine three witnesses, as follows:

Gerald Borrelli
Business address:
The Pittston Coal Group
P. O. Box 4000
Lebanon, VA 24266
(703) 889-4000

Residence address:
Westwood Estates
Abingdon, VA 24201
(703) 628-4590

John D. Cale
Business address:
Columbia Gas Transmission Corporation
1700 MacCorkle Avenue, S.E.
P. O. Box 1273
Charleston, WV 25325-1273
(304) 357-2761

Residence address:
531 Everest Avenue
St. Albans, WV 25177
(304) 727-9605

Joseph E. Campbell
Business address:
Columbia Gas Transmission Corporation
1700 MacCorkle Avenue, S.E.
P. O. Box 1273
Charleston, WV 25325-1273
(304) 357-2741

Residence address:
26 Hillsdale Circle
Scott Depot, WV 25560
(304) 757-6326

In this connection, I undertook earlier today to contact counsel for the Pittston Coal Group to see if they might contact Mr. Borrelli about attending the hearing for the purpose of testifying. Both Mr. Johnson and the general counsel, Mr. Thomson, were out of town. But I have no reason to think that Mr. Borrelli will not agree to testify and I am sending him a copy of this letter.

Mr. Cale and Mr. Campbell have agreed to testify.

Respectfully,

H. L. Snyder

Copy to Gerald Borrelli
John Purcell, Assistant Attorney General

Ex. 20.19

RESPONSE OF COLUMBIA GAS TRANSMISSION CORPORATION
TO THE COMMENTS RECEIVED
FROM OTHER PARTS OF THE EXECUTIVE BRANCH

RESPONSE TO COMMENTS OF THE DEPARTMENT
OF CONSERVATION AND ECONOMIC DEVELOPMENT

Regulation 2.01(a, b) on pages 5-6

Comment: "Who determines, and on what basis, whether a specific well is drilled in search of oil or of gas? Various formations may have neither, either, or both, from area to area, and in the case of new development this may need to be determined by drilling several wells. Also, how do the stated requirements relate to productive reservoirs that are sufficiently thick or have enough structural relief to extend both above and below the 3000' depth in a given pool?"

Response: As for the first question, the well operator decides whether his prospect is for an oil well or a gas well; and he enters this on the "Notice and Application for a Well Work Permit" (Form 2). If he drills and gets the other kind of well, the record is straightened out by either the "Initial Tests of a Jurisdictional Well" (Form 16) or the "Report of Completion of Well Work" (Form 17). It can not be done any other way, because no one can know in advance whether the well will "have neither, either, or both" oil and gas.

As for the question on the 3,000 foot demarcation, the lowest point of the completion in the target formation determines the depth. A "dual completion" well, with production from both a shallow reservoir and a deep reservoir, could obviously invoke both constraints on later wells (again, depending on the target formation(s) of the later wells); but the deep well constraint would have to be applied to a later dual completion well.

Regulation 2.01(f) on pages 6-7

Comment: "Should the Rose Hill oil field and the Early Grove gas field also be exempt?"

Response: The answer is Yes. Both the Rose Hill Oil Field (Lee County) and the Early Grove Gas Field (Scott and Washington Counties) should be added to the list for special field rules.

Regulation 2.02(c)(3) on pages 8-9

Comment: "Can this wording be construed to give a producer the chance to delay filing and produce more than the allowable in the interim?"

Response: The answer is No. The reason is that the well operator will not have an allowable for a jurisdictional well, and will thus have no right to produce anything at all, if he delays filing Forms 15 and 16.

Regulation 3.02(e)(2) on pages 17-18

Comment: "The determination as to whether a mineral deposit is commercial may change through time with market demand, etc. Wording such as 'potentially commercial' might be more appropriate."

Response: We strongly object to the qualifier "potentially" before the phrase "commercial mineral deposits". It would not only be as variable through time as the plain unvarnished "commercial": it would also discourage actual oil production on the mere hope of later producibility of something else. To determine whether mineral reserve deposits are commercial before they are being mined can be very difficult. Adding the qualifier "potentially" would inevitably tend to impede oil production on the speculative possibility that other mineral deposit might at some unknown date in the future become commercial.

Regulation 3.02(f) on pages 18-19

Comment: "Subsurface geology and hydrology may not always be sufficiently well known in the early stages of field development to make such determinations."

Response: If the required determinations can not be made, then the permit application for a waste disposal well must be rejected. The well operator clearly has the burden of proof to establish that the waste disposal well will be safe.

This CED comment leads directly to a related consideration--the extent to which the regulations for secondary oil recovery wells and waste disposal wells meet the Underground Injection Control (UIC) requirements of the Federal Safe Water Drinking Act (Title XIV, Public Health Service Act) and the correlative regulations published in 40 C.F.R. Parts 122-124, 126 (1982) by the Environmental Protection Agency. Although we have made no detailed comparison of the proposed State regulations in the light of the Federal UIC requirements, our impression is they are, but only because Regulation 3.02(g) incorporates much of the EPA regulations. In this connection, the letter from H. L. Snyder to Assistant Attorney General John B. Purcell, Jr. dated November 8, 1982 (Columbia Exhibit 17), was written before Regulation 3.02(g) was added.

Regulation 3.02(f)(3) on page 19

Comment: "'State Geological Survey' is officially the 'State Division of Mineral Resources.'"

Response: The Division's name should of course be corrected.

Regulation 3.04(a)(1) [ALTERNATES A & B] on page 21

Comment: "Alternate A may be preferable inasmuch as an on-the-ground survey is required, and manufactured monuments are permanent reference points whereas landmark trees are not."

Response: The comment about "on-the-ground survey" is unsound evaluation, and the condemnation of corner tree monuments is objectively wrong.

At one time, surveying "on-the-ground" was the only method of making a survey. But technology has led to great advances in the whole of cartography, including the branch known as surveying. Aerial photogrammetry is but the earliest example of a new surveying method. Two others have evolved in the last ten years: the technology of inertial guidance systems was first developed for submarines and the space program, and electronic distance measuring equipment with associated computer applications was developed primarily for the U.S. Geodetic Survey. (Strictly speaking, EDM is a new form of on-the-ground surveying.) All of these new methods can be useful in particular surveying applications, and Columbia uses both aerial photogrammetry and EDM on a regular basis.

Given the tools and know-how, these alternate methods can produce results at least as accurate as on-the-ground surveys. The sole purpose of this aspect of ALTERNATE B as proposed by the oil and gas industry is to enable the Inspector and the well operators to keep pace with civil engineering technology.

In further support of ALTERNATE B, we desire to point out that § 45.1-312 of the Code does not require the survey to be "on-the-ground". In other words, the statute is broad enough to permit the use of new technology.

The Commission and the Board may feel that the absence of any specification of surveying technique might be misunderstood. If this is the case, we recommend the following addition at the end of the present text of Regulation 3.04(a)(1) [ALTERNATE B], <u>or</u> at the end of the present text of Regulation 3.04(a)(2) [ALTERNATE B]--whichever place is felt to be more appropriate:

"The two permanent points or landmarks shall be shown with courses and distances to the subject well on the basis of a survey by one of the following methods: (i) on-the-ground survey, which may include the use of electronic distance measuring equipment with associated computer support, (ii) aerial photogrammetry, or (iii) inertial survey."

As for the "two permanent points or landmarks" which § 45.1-312.A of the Code requires a well location to be tied to, CED asserts that "manufactured monuments are permanent...whereas landmark trees are not." The fact is, CED is wrong. Iron pins, for example, can and do rust out far quicker than corner trees die and rot. Concrete monuments can deteriorate. Even a set stone of granite can be shifted by far less surface disturbance than a mature tree. In reality, the kinds of trees used for corners are probably the best monuments of all except for U.S. Geodetic Survey benchmarks set in solid rock.

Note also that the ALTERNATE proposals for paragraphs (a)(1) and (a)(2) of Regulation 3.04 have multiple differences which must be explored at the hearing. They are differences of such great significance that, in a letter of December 15, 1982, Columbia has asked for an opportunity to present testimony and exhibits on the issues. This evidence will bear on both of CED's assertions as well as the other unresolved differences.

Regulation 3.04(a)(7) on page 24

Comment: "Barometric and altimeter surveys have only limited accuracy, depending upon conditions, and may not meet the one-foot standard."

Response: This is a sound observation, and the reference to barometric and altimeter surveys should be eliminated.

Regulation 3.06(a) on page 28

Comment: "Does the term 'gas' refer only to natural gas or does it include coal-bed methane, nitrogen, and other gases as well?"

Response: "Gas" is adequately defined in § 45.11-288.24 of the Code.

Regulation 3.09(a) on page 30

Comment: "Do the oil and gas regulations have actual legal authority to regulate the post-well location of buildings on private property?"

Response: The answer is Yes, because the public safety is involved. The primary declaration of policy in § 45.1-287.1 of the Code is to enhance "the safe and efficient exploration for and development, production, utilization and conservation" of oil and gas. Moreover, substantially the same regulation has been in effect for several years under the old statute.

In any sort of emergency involving a well, the operator simply must have enough room to work. The 300-foot line may not be the minimum that could possibly be accepted by the oil and gas industry, but some sort of demarcation is necessary. Aside from the implicit duty of government to protect the public safety, the regulations should reinforce for every well operator the effective power to comply with the many statutory duties remaining after the well is drilled and up through the time of plugging and abandonment.

Furthermore, setting a line of demarcation will tend to minimize the number of disputes over the well operator's implied right to use the surface under his lease. This alone would justify the regulation.

Regulation 4.06(a)(2) on page 36

Comment: "The term 'geophysical logs' is more all inclusive than 'electric logs.' Is the definition of exploratory well here the same as that in the Oil and Gas Act, and, if so, what basis will be followed in making the determination of an exploratory well as 'greatly extending the limits' of a field?"

Response: The answer to the primary question is Yes, because Regulation 1.02(a) provides that "Unless the context clearly indicates otherwise, the words and phrases defines in § 45.1-288 of the Code of Virginia shall have the same meaning" in the Regulations.

As for the question concerning the meaning of "greatly extending the limits" of a field, the drafting subcommittee of the Coal and Energy Commission intensively considered the definition of "exploratory well", and reviewed several alternatives culled from various technical dictionaries and manuals. The statutory definition in § 45.1-288.21 of the Code was accepted in the end as the best the industry could do. The reason is that reservoir characteristics vary so widely that each exploratory well must be considered on its own merits, rather than on the basis of a rigid formula.

Regulation 6.01(b)(1) on page 42

Comment: "Text appears to be garbled."

Response: The comment is justified, and we propose editing and correcting Regulation 6.01(b)(1) to read as follows (new words underscored, deleted words -hyphenated-):

"(1) Blowout prevention equipment shall be provided and used when (i) well surface pressures are encountered that present the hazards of a blowout, or (ii) when such well surface pressures are anticipated to be present at

the well site, or (iii) drilling in an area where there is no prior knowledge of the ~~kinds of well drilling in an area where there is no prior knowledge of the~~ kinds of well surface pressures to be encountered."

Regulation 6.05(b)(2) on page 46

Comment: "It might be advisable to define the term 'Mcfs' here as this term is sometimes subject to confusion between thousands and millions of cubic feet."

Response: "Mcf" is defined in Regulation 1.02(b)(5).

Form 5

Comment: "The elevation reference should be stated, e.g. ground level, derrick floor, kelly bushing, etc."

Response: The elevation reference must be to "surface elevation", because this is what is required by § 45.1-312 of the Code.

Form 17 (Appendix - Type A, Sheet 2 (Obverse))

Comment: "'Virginia Geological Survey' is officially the 'Virginia Division of Mineral Resources.' However, the sentences under 'Samples and Cuttings' are ambiguous and do not insure collection of well samples for ultimate use and preservation by the State Division of Mineral Resources. We believe that this section should be modified to mandate that samples will be collected for each well and submitted to the State, and that such a requirement should be added to the text of these rules and regulations."

Response: This part of Form 17 is the analogous part of the old Form 7, which was in use for several years.

For the future, however, we have no objection to CED's proposal, provided the periods of confidentiality are observed as set out in § 45.1-332 of

the Code. We suggest the following text for the "SAMPLES AND CUTTINGS" part of Form 17, Apendix Type A, Sheet 2 (Obverse):

"SAMPLES AND CUTTINGS

"Will be furnished the Virginia Division of Mineral Resources upon request, within 30 days after the expiration of the applicable period of confidentiality prescribed by § 45.1-332 of the Code;

"Will___/ Will not___/ require sacks to be furnished."

Form 17 (Appendix - Type D)

Comment: "Gas flow should be indicated in Mcf rather than Bbl/d."

Response: CED is correct that gas flow should be stated in Mcf, but it should be Mcf per day, analogous to barrels per day for oil wells.

RESPONSE TO COMMENTS OF THE DEPARTMENT OF HEALTH

Regulation 3.02(e)(2) on pages 17-18

Comment: "Will the lack of specific design and construction criteria present an enforcement problem if the Inspector determines that the construction or design of a particular well is not adequate? We are concerned that such methods can only be disapproved once they have failed - thus resulting in a contamination incident of some kind. The approach taken appears to address contamination after the fact rather than to attempt to prevent contamination through detailed well design criteria."

Response: The statute itself imposes "detailed well design criteria" for all wells, not merely secondary oil recovery wells. See §§ 45.1-334 through - 339 and -342 through -346 of the Code. Moreover, § 45.1-311.C.7 of the Code requires the application for a well work permit to contain "the entire casing program for the well" whenever pipe is to be set in the hole. Form 2

(Appendix--Type A) structures this part of the application; Form 17 (Appendix--Type A) structures the documentation of the casing program as actually installed, as part of the report of completion of well work.

See also the UIC comment on Regulation 3.02(f), supra pages 3-4.

Regulation 3.02(e)(2)(ii) on page 18

Comment: "Reference is made to the 'Chief', we assume that this should be the 'Inspector'."

Response: The observation is correct, and "Inspector" should be substituted for "Chief".

Regulation 3.02(f)(1)(i) on page 18

Comment: "Can the level of groundwater mineralization that is generally considered to be unfit for beneficial use be specifically defined by a maximum level of Total Dissolved Solids (TDS)? Generally speaking, a level of over 1000 mg/L TDS is considered not fit for domestic use, however, on at least one occasion a Virginia locality has seriously considered the desalinization of groundwater with an average TDS of approximately 5000 mg/L."

Response: See the UIC comment on Regulation 3.02(e)(2), supra pages 3-4.

Regulation 3.02(f)(3) on page 19

Comment: "The wording in this section is somewhat confusing. We would prefer to see a specific requirement that the Inspector inform the listed state agencies (we assume that the 'State Geological Survey' refers to the 'Division of Mineral Resources') of applications concerning injection wells, thus affording each agency the opportunity to comment on specific projects."

Response: See the UIC comment on Regulation 3.02(e)(2), supra pages 3-4.

Regulation 4.04 on page 35
and
Regulation 4.08(a) on page 37

Comment: "There appears to be no provision for the Department of Labor and Industry to require additional monitoring in special or unusual conditions. Would such a provision prove useful in borderline cases where approval of underground injection could not be given?"

Response: The last DOH comment apparently overlooked Regulations 4.04 ("Progress Reports on Well Work") and 4.08 ("Progress Reports on Operation of Wells"). They appear to embody the DOH proposal for "additional monitoring in special or unusual conditions".

Respectfully submitted,

COLUMBIA GAS TRANSMISSION CORPORATION

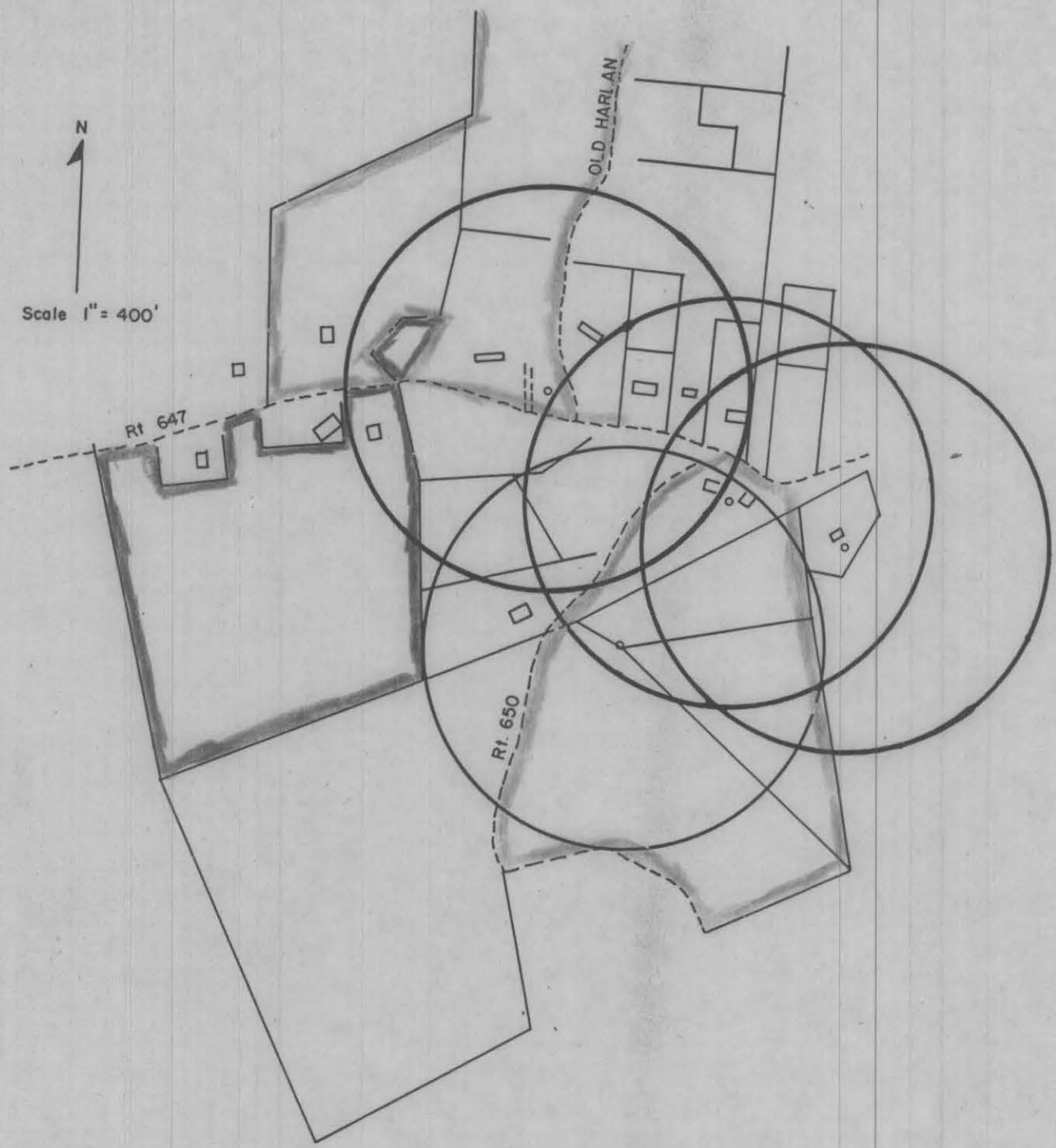
By _____
Director, Oil and Special Projects Section, Exploration and Development Department

By _____
Manager, Civil Engineering Section, Engineering Department

By H L Snyder
Assistant General Counsel

January 4, 1983

Charles Bartlett Exhibit



Bill Kelly Exhibit

FORM 17

API Well No. 45 -_____-_____
State County Permit

APPENDIX--TYPE D

Date _____, 19____

Operator's
Well No. _____

APPENDIX TO REPORT OF COMPLETION OF WELL WORK
ON A WELL DRILLED IN SEARCH OF OIL OR GAS

DISCOVERY OF OIL OR INDICATIONS THEREOF

Indicated potential flow before stimulation _____ BOD

Gravity and grade _____

DISCOVERY OF GAS OR INDICATIONS THEREOF

Indicated potential flow before stimulation _____ MCFD

Rock pressure: _____ psig _____ hour test

RECORD OF STIMULATION

Full description of stimulation:

Zone 1: _____ Formation: _____

Breakdown ____ psig; Avg. Injection ____ psig; Avg. Injection Rate _____ BPM;
ISIP ____ psig; 15-Min. Shut-In ____ psig.

Zone 2: _____ Formation: _____

Breakdown ____ psig; Avg. Injection ____ psig; Avg. Injection Rate _____ BPM;
ISIP ____ psig; 15-Min. Shut-In ____ psig.

Zone 3: _____ Formation: _____

Breakdown ____ psig; Avg. Injection ____ psig; Avg. Injection Rate _____ BPM;
ISIP ____ psig; 15-Min. Shut-In ____ psig.

Final production (check one) ( ) after stimulation, ( ) natural.

	BOD	MCFD	Hours Tested	Rock pressure psig.	Hours Tested
Zone 1	_____	_____	_____	_____	_____
Zone 2	_____	_____	_____	_____	_____
Zone 3	_____	_____	_____	_____	_____

Final production if gas zones are comingled: _____ MCFD,
_____ hours tested; ____ psig, _____ hours tested.