CASE NO. 49

BRFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO.

IN THE MATTER OF THE APPLICATION OF LOCO HILLS PRESSURE MAINTENANCE ASSOCIATION, INC., FOR AN ORDER COVERING THE LOCO HILLS
FIELD, EDDY COUNTY, WHICH IS TO INCLUDE: 1. BASIC ALLOWABLE:
2. GAS-OIL RATIOS: 3. PRESSURE FAINTENANCE PLAN EMBRACING
PROVISIONS FOR IN-PUT WELLS. SAID APPLICATION AFFECTS ORDER
339. THE EXISTING LOCO HILLS PRESSURE MAINTENANCE PLAN ORDER,
THE EXCEPTION THERETO, ORDER 540, RELATING TO THE GAS IN-PUT
WELL SCHEURICH STATE WELL NO. 4. UPON THE NESW 32-175-30E;
ORDER 484. THE PRESENT ORDER AUTHOLIZING THE RATE OF WITHDRAWAL AT NOT BELOW 20 BASKELS OF OIL NOR ABOVE 40 BASKELS OF
OIL PER PRORATION UNIT: AND OBLER NO. 250. THE PRESENT GAS-OIL
RATEO ORDER, STILL APPLICABLE AS TO FIELDS IN EDDY COUNTY.
THIS CASE IS SET FOR 10 O'CLOCK A.M., FRBRUARY 10, 1944 AT
SANTA FE, NEW MEXICO.

Pursuant to notice by the Commission, duly made and published, setting February 10, 1944, at ten o'clock, A. H., for hearing in the above entitled matter, said hearing was convened on said day, at said hour, in the Coronado Room, La Fonda, Santa Fe, New Mexico, the Commission sitting as follows:

HOM. JOHN M. KELLY, State Geogolist, Secretary

HOM. H. R. RODGERS, Commissioner of Fublic Lands, Member

HOM. CARL B. LIVINGSTON, Chief Clerk and Legal Adviser.

APPEARANCES:

HATE	COMPANY	ADDRESS
Sam Sanders	Sanders Bros., & Loco Hills Pressure Maintenance Association, Inc.	Artesia, N. M.
V. P. Sheldon	Engineer - Loco Hills Pressure Hain-	
	tenance Association, Inc.	Artesia, N. M.
John E. Miles	Self	Santa Fe, N. h.
W. E. Hubbard	Humble Oil & Refining Company	•
John House	Humble Oil & Refining Company	
Ke lso n Jones	Humble Oil & Rofining Company	
Raymond Lamb	Continental Oil Company	· Hobbs, N. H.
H. R. Antweil	Hobbs Fipe & Supply Company	Hobbs, R. M.
M. E. Noble (Atty)	Hobbs Pipe & Supply Company and	Las Vegas, N. M.
, , ,	Conchas Development Company	
Neil B. Watson (Atty)	Loco Hills Pressure Maintenance	
,	Association, Inc.	
C. H. Rankin	Great Lakes Carbon Company	

The meeting was called to order by the Chairman, and upon request of the Secretary, the Chief Clerk read the call of the meeting, as follows:

"NOTICE OF HUBI ICATION
STATE OF MEM MEXICO
OIL CONSERVATION COMMISSION

The Oil Conservation Commission, by law invested with jurisdiction as the oil and gas regulatory body of the state of New Mexico, hereby gives notice of the following hearing to be held at Santa Fe, New Mexico:

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Case No. 49

In the matter of the application of Loco Hills Pressure Maintenance Association, Inc., for an order covering the Loco Hills Field, Eddy County, which is to include:

1. Basic allowable; 2. Gas-oil ratios; 3. pressure maintenance plan embracing provisions for in-put wells. Said application affects Order 339, the existing Loco Hills Pressure Maintenance Plan Order, the exception thereto, Order 540, relating to the gas in-put well Scheurich State Well No. 4 upon the MESW 32-178-30E; Order 484, the present order authorizing the rate of withdrawal at not below 20 barrels of oil nor above 40 barrels of oil per proration unit; and Order No. 250, the present gas-oil ratio order, still applicable as to fields in Eddy County. This case is set for 10 o'clock a.m., February 10, 1344 at Santa Fe, New Mexico.

Any person having any interest in the subject of said hearing shall be entitled to be heard.

The foregoing Notice of Publication was made pursuant to the direction of the Commission at its Executive Meeting January 24, 1944.

Given under the seal of said Commission at Santa Fe, New Mexico, on January 25, 1944.

OIL CONSTRUCTION COMMISSION

By (Sgd) JOHN M. KELLY SECPETARY

SEAL

BY MR. NEILL B. WATSON - Attorney for Loss Hills Pressure Maintenance Association, Inc.

EXHIBIT 1. File a short brief containing Certified Copy of Articles of Incorporation and By-Laws, Uniform Agreement and Assignment, signed by the operators.

IR. SAM SANDERS

being first duly sworm to tell the truth, the whole truth, and nothing but the truth, was asked to testify.

Pressure Maintanance Association, Inc.,

designating Mr. San Sanders to represent
the Association.

BY MR. WATSON:

You are a stockholder in the Loco Hills Pressure Maintenance Association? BY MR. SAM SANDERS:

Right.

BY MR. WATSON:

How many wells do you have in the Loco Hills Field?

BY MR. SAM SANDERS:

Seventeen.

BY MR WATSON:

In what part of the field are your wells located?

BY MR. SANDERS:

I would call it the western part.

BY MR. WATSON:

Are you a member of any Committee or any particular group in connection with the Association of Loco Hills Maintenance Association at present?

BY MR. SANDERS:

What they call the Executive Committee.

BY MR. WATSON:

Who are the other members?

BY MR. SANDERS:

Emery Carper and Bert Aston.

BY MR. WATSON:

You are familiar with the purpose of this meeting?

BY MR. SANDERS:

Yes sir.

BY MR. WATSON:

With regards to the procedure regarding an in-put well allowable, I would like to ask you if you were present at the stockholders meeting which the pro ration plan was discussed?

BY MR. SANDERS:

Yes sir.

BY MR. WATSON:

What action was taken?

BY MR SANDERS:

We have been following the policy of each man more or less furnishing input wells and making up allowable production out of the other wells. BY MR. WATSON:

Make up allowable oil production?

BY MR. SANDERS:

They wanted to discard that and assess each man so much per barrel, and put the in-put wells where they belong and not put an overload on the other wells, take oil out for those.

BY MR. WATSON:

Generally speaking, do the operators feel the plan for making up allowable has been detrimental?

BY MR. SANDERS:

We felt it was a failure, two things against it (1) tried to pick the well which had mery low production which ordinarily would be a tight well,

(2)or pick a well on a lease where other wells would make up the allowable more or less taking it away from the engineering department, was very unsuccessful.

BY MR. WATSON:

Does the Association at this time have an engineer working on these problems.

BY MR. SANDERS:

They do.

BY MR. WATSON:

Mr. Sheldon?

BY MR SANDERS:

Yes sir.

BY MR. WATSON:

With regards to the 2,000 cubic feet, do you know if the operators are in favor of continuing that?

BY MR. SAMDERS:

Majority of them are. Very small percentage may not be.

BY MR. WATSON:

With regards to existing allowable of 30 barrels and not less than 20, and more than 40, do you know if most of the operators are in favor of that?

BY MR. SANDERS:

I would say a majority of them are

BY MR. KELLY:

Mr. Sanders, at your operators' meeting what percentage of the members were present?

BY MR. SANDERS:

I believe ninety-two, or two percent not represented, I wouldn't be positive which.

BY MR. KELLY:

At that meeting the Association voted to request the Commission to carry it at out/the call of this hearing?

BY MR. SANDERS:

That is right.

BY MR. KELLY:

On 30 barrels allowable, approximately how many wells make 30 barrels in that section?

BY MR. SAMDERS:

I couldn't answer that - My own would be dern few.

Mr. V. P. Sheldon

being first duly sworn to tell the truth, the whole truth, and nothing but the truth, testified as follows:

BY MR. WATSON:

What is your occupation?

BY MR SHELDON:

Petroleum engineer.

BY MR. WATSON:

What education have you had in your occupation?

BY MR. SHELDON:

Granted a degree in geology at the University of Nebraska.

BY MR. WATSON:

What year?

BY MR. SHELDON:

1934.

BY MR. WATSON:

What practical experience in petroleum?

BY MR. SHELDON:

I have worked in petroleum engineering and petroleum geology for the past nine years in New Mexico and Texas.

BY MR. WATSON: What is your official title?

BY MR. SHELDON: Chief engineer.

BY MR. WATSON: How long have you been employed by the Loco Hills Maintenance Association?

BY MR. SHELDON: Right at six months.

BY MR. WATSON: During that period of time, have you had occasion to study the records of the Association.

BY MR. SHELDON: I have, yes sir.

BY MR. WATSON: I would like to ask you, whether or not you have carried any maps for this hearing?

BY MR. SHELDON: Three exhibits.

BY MR. WATSON: Please state what each one is.

BY MR. SHELDON: Map of Loco Hills Fields upon which have been designated three things - (1) Boundary of the field as set by the Oil Conservation Commissioner of New Mexico. (2) Outline of the field as defined in the agreement and assignment which was executed by the participaters in the Loco Hills Maintenance Association. (3) The red lines cross out certain leases, and those areas in the boundaries of the Association which have not signed the agreement and not members of the Association.

Exhibit 4 - Map of Loco Hills upon which is shown by contours the gas-oil ratio situation as of October 1943, which is the date of the most recent survey. By the use of various colors the effect is brought out in a more visual angle. On this same map, by the use of red circles we have designated therwells which are now used as gas in-put wells.

Exhibit 5 - Map of Loco Hills Field showing by the use of contour, impressured at 1,000 feet above sea level as of December 1943.

- PY NR. WATSON: Mr. Sheldon, based upon your study of the Loco Hills pressure, the Loco Hills Field and the Pressure Maintenance Association, just what is your opinion of continuing the present gas-oil ration limitation at 2,000 cubic feet?
- SY MR SHELLON: I think at the present time the 2,000 cubic feet limit is a satisfactory ratio. I stated AT THE PRESENT TIME, as the project becomes older and conditions change, it may be advisable to request a change, by it, prevent avoidable physical waste. At this time, and based upon the engineering studies, it seems to me 2,000 cubic feet is satisfactory now.



BY MR. KELLY: What is the average field ration now?

BY MR. SHELDON: Average field ratio as of October 1943 2,400.

BY MR. KELLY: What a year ago?

BY MR. SHMLION: In 1942 1,850.

BY MR. KELLY: Increas about 25% in a year?

BY MR. SHELDON: Just about, that is perhaps more than the average increase, more than the increase will be each year. In 1940 for example, about 5,000, but by proper control from remedial work, it will be able to minimize its increase.

BY MR. KMLLY: How many wells are penalized under the present ratio?

BY 1R. SHELDON: 56 - I estimated there would be 56 wells penalized with the 30 barrel maximum ratio and 2,000 gallons.

BY MR. WATSON: What effect will an increase in gas-oil ratio have on gas production?

BY MR. SHELDON: It would increase the daily gas production from the field, as a result the plant would not be able to handle anymore than at present, it would cause a greater available physical waste than at present.

BY MR. KELLY: Approximately what is the daily gas cubic feet?

BY MR. SHELDON: Seven and one-half Million.

BY MR. KELLY: How many are you putting through the plant a day now?

BY MR. SHELDON: Four and one-fourth million.

BY MR. KELLY: Require more additional equipment?

BY MR. SHELDON: The Association is working on that, and taking the necessary steps for pressure.

BY MR. KELLY: Will handle Seven and one-half million?

BY MR. SHELDON: Eight Million.

BY MR. WATSON: Mr. Sheldon, what is your opinion on the proper per well daily allowable production of oil in connection with the Loco Hills Field and regarding the pressure plant at this time?

BY HR. SHELDON: After taking into consideration all angles of the matter, realizing the operators and producers have to produce certain amount of oil to pay expenses and try to hold the total gas production as low as possible, I concluded 30 barrels per day would be the rate at this time.

BY MR. KELLY: Approximately you many wells would make 30 barrels per day?

BY MR. SHELDON: This is a guess, it would be about 60 or 70 wells.

BY HR. KELLY: At 30 barrels top allowable, what would be the maximum.

BY MR. SHELDON: A greater allowable to in-put wells, the daily take from the field would be about 3,200 barrels.

BY MR. KWLLY: From 190 wells?

BY DR. SHELDON: 196 wells.

BY MR. KELLY: Average figure roughly, 15 barrels a well?

BY MR. SHELDON: That is right.

BY MR. WATSON: Are you taking your gas-oil ratios making a study of the whole field to determine the best rate of production from the Loco Hills Fields?

BY MR. SHELDON: That is right, we have made various engineering and geological studies from the main field, taking ratios constantly, also endeavor to rectify bad production conditions.

BY MR. WATSON: Upon what is based this study - upon trial and experiment?

BY MR. SHELDON: Quite a little of it.

BY MR. WATSON: State what in your opinion would be the loss per well allowable that the Association might desire, and also the highest.

BY MR. SHELDOM: I would think the loss daily allowable the operators would desire would be approximately 20 barrels per well per day, after considering the character of the wells, probably 40 barrels would be about in line.

BY MR. WATSON: Is it your opinion that some place within those limitations could be the maximum official operation?

BY MR. SHELDON: Yes sir.

BY MR WATSON: That is the present order of the Commission?

BY MR. SHELDON: Yes sir.

BY MR. WATSON: The majority of the members of the Association desire to keep that the same as it is now?

BY MR SHELDON: So far as I know, that is the wish of the majority.

BY MR. WATSON: What is the present in-put well plan in the Loco Hills Fields for the Loco Hills Association with regards to the compensation of the owners?

BY MR. SHELDON: The present plan provides that the in-put wells be assigned an oil allowable which is to be made up to the other wells on the same use.

BY MR. WATSON: Has that worked out satisfactorily in all respects?

BY MR. SHELDON: No sir.

BY MR. WATSON: What are the objections?

BY MR. SHILLON: Several objections from an engineering point of view, the first one is that often times the oil allowable from the in-put well is actually made up from high ratio wells, which promotes avoidable physical waste, the second reason is that sometimes in making up the allowable from other wells it is necessary to produce the wells at a higher optimum rate, which results in higher ratios and consequently causes physical waste, the third reason is that the Association does not have a wide enough plant in select in-put wells due to diversified leases in the field and small leases. Clarifying that, perhaps one well would be ideally located and desirable, but the owner of that well could not make up the allowable. The fourth reason is closely related, and in some cases where we already have in-put wells that have been in use for one or two years, the other wells are no longer capable of producing.

BY MR. WATSCN: Has the Association formulated any plan to change that system?

BY MR. SHELDON: Yes sir they have.

BY MR WATSON: What is the plan?

BY MR. SHELDON: The new plan provides for compensation to the owner of in-put wells by a cash payment from the Association.

BY MR. WATSON: Where will the Association obtain funds to make those payments?

BY MR. SHELDON: By assessment among various operators.

BY MR. WATSON: Will that preposed plan do away with the objections you mentioned?

BY MR. SHELDON: Yes sir, it will.

BY MR. WATSON: Do you know whether or not the Association has taken any specific action on that plan?

BY MR. SHELDON: The Association has adopted the plan by vote.

BT MR. WATSON: What effect will the payment for the in-put wells - will they have on the daily production on the field of both oil and gas?

BY MR. SHELDON: With a flat maximum oil withdrawal rate, it would decrease
the daily output of the field of cil, but based on comparable figures from
25 to 30 barrel maximum, the oil production would be relatively the same.

BY MR. KELLY: 3,200 barrels per day?

BY MR. SHELDON: 3,200 to 3,400.

BY MR. KELLY: How much would you save in Jas?



- BY MR. SHELDON: The net total gas production in the field will remain approximately the same - in January $7\frac{1}{2}$ million. The new plan would result in $7\frac{1}{2}$ million gas, the difference lies in fact that a higher allowable would be given lower ratio wells.
- BY MR. WATSON: Mr. Sheldon you are familiar with Order 339 Oil Conservation Commission?
- BY MR. SHELDON: I am.
- BY MR. WATSON: Section 4 provides for use of a gas well belonging Basset and Birmey, located on the NW1SE1 of Section 11, in said Township and Range the oil allowable for such well shall be apportioned on an equitable basis among all of the other wells in the field belonging to said owners which are located on State Land. Does the Association propose to make any change with regards to that well?
- BY MR. SHELDON: The Association proposes to use that well as a gas in-put well. by so doing the owners will receive compensation from the Association and have requested the well no longer receive an oil allowable.
- BY MR. WATSON: Has the proposed thange been designated with the owner of the well?
- BY MR. SHELDON: Yes sir.
- BY MR. WATSON: Do you have an expression of their wishes in the matter?
- BY MR. SHELDON: Two forms, one letter received from Basset and Birney requesting the allowable on No. 6 well be cancelled at this time. I also have a state form, Misc. Notice C-102 signed by Basset and Birney, notice of their intention to cease production allowable from other wells on the lease.
- BY MR. KELLY: Submit the latter administratively later.
- BY MR. WATSON: Same paragraph, order 339 refers to a well located on the STASTA of Section 10, T. 18S., R. 29 F., H.M.P.M., the oil allowable shall be apportioned on an equitable basis among the other wells owned by the owners of said gas well, which are located or the Eb of Section belonging to R. W. Fair - what is the situation regarding that well?
- BY MR. SHELDON; For some months past, other wells on that particular lease have not been able to make their own maximum rate of production, consequently, the lease has not been able to make up any allowable for the gas well.
- BY MR. KELLY: Practically, it has not been given allowable for several months? BY MR. SHELDON: That is right. ILLEGIBLE

- BY IR. WATSON: Any market or outlet for gas well in that area?
- BY IR. SHILDON: No.
- BY IR. WATSON: Both these gas wells are in established oil fields?
- BY IR. SHELDON: They are definitely within the field.
- BY IR. WATSON: Their production of gas, if they had a market would be limited on the 2,000 ratio and the top allowable to only about 60,000 cubic feet per day?
- BY MR. SHMLDON: That was my understanding, yes sir.
- BY MR. WATSON: That is not generally considered commercial production in that area?
- BY MR. SHELDOM: Wouldn't justify a very large expenditure to adjust a market.
- BY MR. KELLY: You don't want the Commission to pass on that?
- BY IR. WATSON: No, the fact has been established that is the production if they had a market if you care to make that final.
- BY MR. KELLY: Did the Pressure Maintenance Association take any of Mr. Fairs well?
- BY MR. SHELDON: No sir, we did not.
- BY MP. WATSON: Referring to your map and giving the descriptions of the wells you propose to use, as the in-put wells -
- BY MP. KELLY: Give the ones now using first.
- Franklin Petroleum Comporation Copperedge 4-A, Franklin-Yatos 6-A, Franklin-Ballard 1-B, Yates et al 1-A, Soley and Mater, State 4, Continental M, State 2, Continental and S.P. Mates, Travis 1, Branard 3, Sanders Bros., & Guy 1, Gordon Langford, 2, Strap and Mates, Travis 4, Metam Mates 3, Sanders Brothers and Miller 4.
 - BY MR. WATSON: Those are the present in-put wells?
 - BY MR. SHELDON: Yes Sir.
 - BY MR. KELLY: You intend to change any of those?
 - BY MR. SHELDON: No, not any of those at the present time, additional wells to be changed later tentatively.
 - BY MR. KELLY: These are ones authorized on Loco Hills order?
 - BY MR. SHILDON: That is right.
 - BY MR. WATSON: Mr. Sheldon, have you any other objections or statements you wish to make in this connection?

- EY MR. SHELDON: I can think of but one at the present time, that is conerning the two gas wells, if it meets the approval of the Oil Conservation Commission, it would be desirable to provide in their order that gas from these wells could be produced and re-introduced into the same reservoir in other wells in the field, that would be for the purpose of promoting greater ultimate recovery of oil.
- BY IR. WATSON: It would be your intention to put that gas through to repressuring plant?
- BY MR. SHELDOM: No, directly cycle it.
- EY HR. KELLY: You believe it would be practical?
- BY MR. SHELDON: Yes, I believe we could handle considerable gas.
- PY 1M. KELLY: The Commission would like a statement from Mr. Sheldon on his views on the proposed expansion of the plant, and how this would affect your field conditions.
- BY MR. SHELDON: The Association proposes to change the per 42 million capacity to approximately 8 million capacity. With such capacity all gas now being produced in the field could be handled, and from my engineering studies of the field, I believe such a plant will adequately handle gas during coming years, it will be necessary to change optimum results from the pressure maintenance project to control oil and gas tailor made, to fit the size of our compressure plant, but I believe that can be accomplished.
- BY MR. KELLY: This increased plant capacity will cut avoidable minimum?
- BY MR. SHELDON: Yes sir.
- BY MR. KELLY: By returning all gas to the field, do you belive you will get an increase in the field?
- BY MR. SHELDON: Yes sir, I believe it will.
- RY MR. RAYMOND LAMB Continental Cil Company, Hobbs, New Mexico.

 Mr. Sheldon, how long a period of time do you think the 2,000 limit would hold out in loco Hills Field How long would the 2,000 limit be able to

produce?

increase in gas-oil ration, but if the plans which are now being formulated and every effort being made to execute them to increase compressure capacity, to handle practically all gas being produced at that time, we could review the situation and possible increase in ratio would be desirable, but to avoid all possible physical waste at this time, until the plant is finished



- I believe 2,000 is the ideal ratio now.
- BY MR. LAMB: What is the maximum limit the field would operate efficiently under?
- operate efficiently would depund upon the plant. To avoid physical waste it will be necessary to cut wastage of gas. If the re-pressure plant was left out of the picture, if that plant wasn't in evidence, we couldn't possible advocate the 2,000 limit under those conditions.
- BY MR. LAMB: Do you propose any withdrawal of wells which are not being used as in-put wells?
- BY MR. SHELDON: No, we have no such plans now. It may be desirable later.
- BY MR. LAMB: In other words, back to the gas-oil ratios, as soon as the plant goes through it will be necessary to request another hearing with the idea of increasing the limit for the field?
- BY MR. SHELDON: No, I cannot say that at this time, because my idea would be to balance field withdrawals according to the capacity of the plant, but there is a situation in the field of probable decline along with gas-oil increase. A great many wells have ratios higher than 2,000 a day are not penalized, and are not included in the 56. That situation might continue will continue. As to whether or not we shall want another hearing for the purpose of raising the 2,000 limitation has to remain to be decided upon facts at that time.
- BY MR. LAMB: From the operators viewpoint, twenty barrels would be minimum production per day, As you propose to handle eight million, will not the gas-oil ratios increase more rapidly than they have in the past, you will have channeling.
- BY MR. SHELDON: I don't know if we would necessarily have channeling, but referring to that the ratios would increase faster. Referred to barrels of production, I am not sure that would hold.
- BY IR. KELLY: You stated a minute ago that you recommended a 2,000 ratio because of the plant, do think you could recommend 2,000 if the plant is not there, on order, do you base that on economical factors or physical waste?
- BY MR. SHILDON: Economical factors.

EY HP. WATSON: Would you consider it sound engineering to base your calculation, your proposed gas-oil ratio without taking the re-pressuring plant into consideration?

BY HR. EMELDON: No, I would not consider that proper engineering.

BY MR. MELLY: Any further questions -

(No further questions)

Witness excused.

granted, on establishing a daily allowable as being 20 to 40 barrels, that some simple procedure he established whereby the Association can notify the Commission without the present showing that is required. I would suggest it be entirely satisfactory with the Association and practical to the Secretary of the Association or some agent designated by him, to furnish written statements to the Jommission, rather than for the aboving now required.

BY MR. KELLY: The Agent would have to be designated by the Association.

BY MR. WATSOM: The Secretary on some agont of the Association.

BY IR. K'ILY: The Commission will take that under consideration.

The Commission will take the case under advisement and notify the Association as soon as practicable.

CERTIFICATE

I hereby certify that the foregoing and attached 132 pages of typewritten matter constitute a true, correct and complete transcript of the shorthand notes taken by me in Case No. 49, on the 10th day of February 1944, and by me extended into typewriting. Witness my hand this 15th day of February 1944.

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Vastie Fowler