CASE 7121: FLAG-REDFERN OIL CO. FOR DOWNHOLE COMMINGLING, SAN JUAN COUNTY, NEW MEXICO

CASE NO.

7121

APPLICATION,

TRANSCRIPTS,

SMALL EXHIBITS,

ETC.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

LARRY KEHOE
SECRETARY

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501
(505) 827-2434

February 13, 1981

Re: CASE NO. 7121
ORDER NO. R-6572

Mr. Tommy Roberts, Attorney
Dugan Production Corporation
P. O. Box 208
Farmington, New Mexico 87401

Applicant:

~~Flag-Redfern Oil Co.~~

Dear Sir:

Enclosed herewith are two copies of the above-referenced Division order recently entered in the subject case.

Yours very truly,

JOE D. RAMEY
Director

JDR/fd

Copy of order also sent to:

Hobbs OCD ×
Artesia OCD ×
Aztec OCD ×

Other

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 7121
Order No. R-6572

APPLICATION OF FLAG-REDFERN OIL
CO. FOR DOWNHOLE COMMINGLING,
SAN JUAN COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on January 14, 1981, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this 10th day of February, 1981, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Flag-Redfern Oil Co., is the owner and operator of the Aloha Wells Nos. 1 and 2, located in Units L and D, respectively, of Section 16, Township 28 North, Range 11 West, NMPM, San Juan County, New Mexico.

(3) That the applicant seeks authority to commingle Pinon-Fruitland and Fulcher Kutz-Pictured Cliffs production within the wellbores of the above-described wells.

(4) That from the Pinon-Fruitland zone, the subject wells are capable of low rates of production only.

(5) That from the Fulcher Kutz-Pictured Cliffs zone, the subject wells are capable of low rates of production only.

(6) That the proposed commingling may result in the recovery of additional hydrocarbons from each of the subject pools, thereby preventing waste, and will not violate correlative rights.

(7) That the reservoir characteristics of each of the subject zones are such that underground waste would not be caused by the proposed commingling provided that the well is not shut-in for an extended period.

(8) That to afford the Division the opportunity to assess the potential for waste and to expeditiously order appropriate remedial action, the operator should notify the Aztec district office of the Division any time the subject well is shut-in for 7 consecutive days.

(9) That in order to allocate the commingled production to each of the commingled zones in said Aloha Wells No. 1 and 2, 90 percent and 50 percent, respectively, of the commingled production should be allocated to the Pinon-Fruitland zone, and 10 percent and 50 percent, respectively, of the commingled production to the Fulcher Kutz-Pictured Cliffs zone.

(10) That during January, 1982, the applicant should consult with the supervisor of the Aztec district office of the Division to determine allocation formulas for each of the production zones in said Aloha Well No. 1 should production trends warrant such a change.

IT IS THEREFORE ORDERED:

(1) That the applicant, Flag-Redfern Oil Co., is hereby authorized to commingle Pinon-Fruitland and Fulcher Kutz-Pictured Cliffs production within the wellbore of the Aloha Wells Nos. 1 and 2, located in Units L and O, respectively, of Section 16, Township 28 North, Range 11 West, NMPM, San Juan County, New Mexico.

(2) That 90 percent and 50 percent, respectively, of the commingled production shall be allocated to the Pinon-Fruitland zone and 10 percent and 50 percent, respectively, of the commingled production shall be allocated to the Fulcher Kutz-Pictured Cliffs zone in said Aloha Wells Nos. 1 and 2.

(3) That during January, 1982, the applicant shall consult with the Supervisor of the Aztec district office of the Division and determine a modified allocation formula for said Aloha Well No. 1 should production trends warrant the same.

(4) That the operator of the subject well shall immediately notify the Division's Aztec district office any time the well has been shut-in for 7 consecutive days and shall concurrently present, to the Division, a plan for remedial action.

(5) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

JOE D. RAMEY,
Director

S E A L

dr/

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO
14 January 1981

EXAMINER HEARING

IN THE MATTER OF:

Application of Flag-Redfern Oil Co. for downhole commingling, San Juan County, New Mexico.

CASE 7121

BEFORE: Richard L. Stamets

TRANSCRIPT OF HEARING

A P P E A R A N C E S

For the Oil Conservation Division: Ernest L. Padilla, Esq.
Legal Counsel to the Division
State Land Office Bldg.
Santa Fe, New Mexico 87501

For the Applicant: Tommy Roberts, Esq.
P. O. Box 208
Farmington, New Mexico 87401

I N D E X

E X H I B I T S

MR. STAMETS: We'll call next Case 7121.

MR. PADILLA: Application of Flag-Redfern Oil Company for downhole commingling, San Juan County, New Mexico.

MR. ROBERTS: Tommy Roberts, in house counsel for Dugan Production Corporation, on behalf of Flag-Redfern Oil Company, P. O. Box 208, Farmington, New Mexico.

I have one witness to be sworn.

MR. STAMETS: The same witness?

MR. ROBERTS: The same witness.

MR. STAMETS: I'd like for the record to reflect that he was previously sworn and is still sworn for purposes of this case.

THOMAS A. DUGAN

being called as a witness and being previously sworn upon his oath, testified as follows, to-wit:

DIRECT EXAMINATION

BY MR. ROBERTS:

Q. Would you please state your name and your address and occupation for the record, please?

A. Tom Dugan from Farmington, New Mexico, and I'm a Director of Flag-Redfern Oil Company.

Q. Is that the capacity in which you represent Flag-Redfern Oil Company here today?

A. No, I'm representing them as a consulting petroleum engineer today.

Q. For the record, you have previously testified before this Commission?

A. Yes.

MR. ROBERTS: Are the witness' qualifications accepted?

MR. STAMETS: They are.

Q. Mr. Dugan, are you familiar with the application in this matter?

A. Yes, I am.

Q. Will you briefly describe the purpose of the application?

A. Well, Flag-Redfern has drilled two wells in the -- in Section 16 of Township 28 North, Range 11 West. They have been dually completed in the Fruitland and Pictured Cliffs formations and we are asking that both wells be allowed to commingle in the wellbore from both horizons.

Q. Would you refer to Exhibit Number One and identify that exhibit?

A. It shows the owners of the offset leases along with the location of the Aloha 1 Well, which is in the

southwest quarter of Section 16, 28, 11.

Q. Would you now refer to Exhibit Number One-A and identify that exhibit?

A. It's essentially the same exhibit except that it shows the Aloha No. 2 Well in blue in the northwest quarter of Section 16, 28, 11.

Q. Please refer to what has been marked as Exhibits Numbers Two and Two-A and identify and briefly summarize the contents of those exhibits?

A. Exhibit Two is the daily morning report on the Aloha 1 Well and shows the manner in which the well was drilled and completed.

Q. And what is the present -- current status of the Aloha No. 1 Well?

A. The well is shut-in.

Q. Refer to Exhibit Number Two-A, please, and identify it.

A. Exhibit Two-A is a -- the morning report for the drilling of the Aloha No. 2 Well. It shows the manner in which this well was drilled and completed.

Q. And what is the current status of the Aloha No. 2 Well?

A. The Aloha No. 2 Well is also shut-in.

Q. Please refer to what's been marked as

Exhibit Number Three and identify and explain the relevance of that exhibit to this case?

A. The Exhibit Three is a diagrammatic sketch of the Aloha No. 1 Well, showing where the casing is set and where the tubing has been set, along with a Baker Model "C" packer, and where the Pictured Cliffs and Fruitland horizons were perforated.

Q. Refer to Exhibit Number Three-A and identify it.

A. It's a diagrammatic sketch of the Aloha No. 2 Well, showing where the casing, tubing, and packer was set, along with the perforations in the Pictured Cliffs and Fruitland formations.

Q. Please refer to Exhibit Number Four and identify that exhibit and explain its significance.

A. Number Four is a cross section of the two logs, showing the -- I guess -- the zones that were perforated weren't marked, so I guess we'd better go over that, on this.

Q. Referring to Exhibits Three and Three-A.

A. Yeah.

Okay, on the Aloha 1 Well the Fruitland zone from 1311 to 1326 was perforated. That doesn't look right.

MR. STAMETS: It sure doesn't, Tom. Are you sure that well's making anything there?

A. Yeah, it's a pretty good well. I would say that we perforated that sand there from -- there's either a big difference in the measurements, the wireline measurements, there, that's a mistake, but I'd say we perforated that sand from 1330 to 50. That was our intention, I'm sure.

The difference in the log and -- okay, I know what the difference is. The -- this is the log on a Dakota well that is within 200 feet of the Aloha 1. We actually didn't log the Aloha 1, so the measurements that is shown on the diagrammatic sketch is ground level measurements and -- but I know that we perforated the zone, the sand that shows up there on this -- on this exhibit, from 1330 to 50. And also the Pictured Cliffs formation from -- as showing up on Exhibit -- on the cross section, from 1615 to 25, and then the Aloha No. 2 Well, this is actually the log on it, and it was perforated 1350 to 57, and 1582 to 88.

Q. All right, Mr. Dugan, do you have anything more on Exhibit --

A. Well, yeah, the cross section would indicate that, of course, the Pictured Cliffs horizon is the same in both wells, but the Fruitland zones aren't the same.

Q. Okay.

A. In the Aloha No. 2 Well it's a lower Fruitland zone that was perforated as compared to the zone that was perforated in the Aloha 1.

Q. Please refer to what's been marked as Exhibit Number Five and identify that exhibit. You can identify Five and Five-A at the same time, if you like.

A. Okay. This is the one point back pressure test on the Aloha 1 Well in the Pictured Cliffs and also the Fruitland horizons. The Pictured Cliffs zone had a calculated absolute open flow of 329 Mcf per day. The Fruitland had a calculated absolute open flow of 2255 Mcf per day.

The Pictured Cliffs has a shut-in pressure of 482 and the Fruitland has a shut-in pressure of 575 psi.

Q. Okay, and would you identify Exhibit Five-A with regard to the Aloha No. 2 Well?

A. Okay. The Aloha No. 2, the Pictured Cliffs formation has a calculated absolute open flow of 207 Mcf per day. The Fruitland zone has a calculated absolute open flow of 160 Mcf per day. The Pictured Cliffs shut-in pressure on this well is 372 psi. The Fruitland shut-in pressure is 544 psi.

Q. And does the information contained in

these two exhibits indicate that the pressures, as regards the two zones in the respective wells, are compatible?

A. Yes. The upper zone has the higher shut-in pressure.

Q. Please take a look at Exhibit Number Six and identify that exhibit.

A. That's a packer leakage test that was run on both wells -- well, Exhibit Six is on Aloha 1 and Exhibit Six-A is a packer leakage test on Aloha 2. Indicate that at the present time there's no communication between zones.

Q. Mr. Dugan, from an economical point of view, is it necessary to commingle production from these zones in the wellbores of the wells?

A. I don't know if it's necessary, but it is certainly desireable to, particularly in the Aloha 2. Both zones are relatively weak and if we could commingle them in the wellbore, we could lift the produced fluids much better and I'm sure that the ultimate production from the well would be much higher.

In the Aloha No. 1 Well the Fruitland zone is really a strong zone but the -- it would be difficult to lift the produced fluids from the Pictured Cliffs formation and we'd like to see this well commingled, also. We

also anticipate that we might have problems in the near future with leaking between the zones because of the strength of the higher zone, afraid that we'll get a hole in it, it will sandblast a hole in our -- in the tubing rather rapidly.

Q. To your knowledge is the ownership of both zones common --

A. Yes.

Q. -- to both wells?

A. Yes, it is.

Q. Should this application be granted, do you propose any formula for the allocation of production between the zones in each well?

A. Yes, I do. The Aloha 1 Well, I would propose that 90 percent of the production be allocated to the Fruitland and 10 percent to the Pictured Cliffs.

In the Aloha 2, I'd propose that 50 percent be allocated to the Fruitland and 50 percent to the Pictured Cliffs.

Q. Mr. Dugan, were Exhibits One through Six either prepared by you or under your supervision?

A. Yes.

MR. ROBERTS: Move for admission of Exhibits One through Six.

MR. STAMETS: These exhibits will be

admitted.

Q. If this application should be granted, would it result in the recovery of additional hydrocarbons and the prevention of waste and the protection of correlative rights?

A. I believe that it would.

MR. ROBERTS: I have no other questions.

CROSS EXAMINATION

BY MR. STAMETS:

Q. Mr. Dugan, you mentioned liquids. Do either of these zones produce any liquids at this time?

A. Neither of the zones produce any oil but both zones produce some water.

Q. Do you have a measure?

A. Small amount of water. No, I don't have a measurement on it but it's --

Q. Talking about a barrel a day overall or less?

A. It, probably to start out with, it would be a little bit more than a barrel a day and within six months it will be less than a barrel a day.

Q. What do you propose to do mechanically in these wells?

A. In the No. 2 I would propose to pull the tubing, pull that packer out of there and rerun the tubing.

In the No. 1 I'd propose to perforate the tubing, not pull the packer.

Q. Okay.

A. I'd like to pull the packer but it's a pretty good well. It's a little bit difficult to do.

MR. STAMETS: Any other questions of the witness?

CROSS EXAMINATION

BY MR. CHAVEZ:

Q. Mr. Dugan, just one question. Has it been your experience with the Fruitland production in that area that it's a fast decline because of the small lenses that would -- that would actually be your reservoir --

A. Well --

Q. -- in particular areas?

A. Unfortunately some of them are exactly that way; however -- and I would think probably that this Aloha 1 would probably be in that category because this particular horizon, it doesn't show up in any other well around there; however, that Pinon Fruitland Field, which is not far away, is a pretty large sand and it doesn't really show the

rapid decline as some of the others.

Q. Then you might say, then, that the Aloha 1 may not be in the Pinon Pool, or it may just be an isolated sand lens.

A. I'm sure it's not.

MR. CHAVEZ: That's all I have.

A. I think the Aloha 2 is in the Pinon, same horizon.

RECROSS EXAMINATION

BY MR. STAMETS:

Q. Mr. Dugan, if production did decline rather rapidly from the No. 1 Well, would you think it would be appropriate to adjust that allocation figure downward, say to 50-50 as you proposed on No. 2?

A. Yes, it might be, if it came down very rapidly.

MR. STAMETS: Are there any other questions of the witness? He may be excused.

Anything further in this case?

The case will be taken under advisement.

(Hearing concluded.)

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd C.S.R.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 7121, heard by me on 12/14, 1981.

Richard L. Stamets, Examiner
Oil Conservation Division

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
STATE LAND OFFICE BLDG.
SANTA FE, NEW MEXICO

14 January 1981

EXAMINER HEARING

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BEFORE: Richard L. Stamets

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rapid decline as some of the others.

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RECROSS EXAMINATION

BY MR. STAMETS:

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A. Yes, it might be, if it came down very rapidly.

MR. STAMETS: Are there any other questions of the witness? He may be excused.

Anything further in this case?

The case will be taken under advisement.

(Hearing concluded.)

SALLY W. BOYD, C.S.R.
Rt. 1 Box 193-B
Santa Fe, New Mexico 87501
Phone (505) 455-7409

C E R T I F I C A T E

I, SALLY W. BOYD, C.S.R., DO HEREBY CERTIFY that the foregoing Transcript of Hearing before the Oil Conservation Division was reported by me; that the said transcript is a full, true, and correct record of the hearing, prepared by me to the best of my ability.

Sally W. Boyd C.S.R.

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. _____, heard by me on _____ 19____.

_____, Examiner
Oil Conservation Division

A. DEDICATED ACREAGE
Aloha #1 Well
NM 013365
Flag-Redfern Oil Co.

B. NM 013365
Flag-Redfern Oil Co.

C. NM 010063
George E. Willett
Curtis Little
Bradley Keyes

D. SF 080844
National Drilling Co.

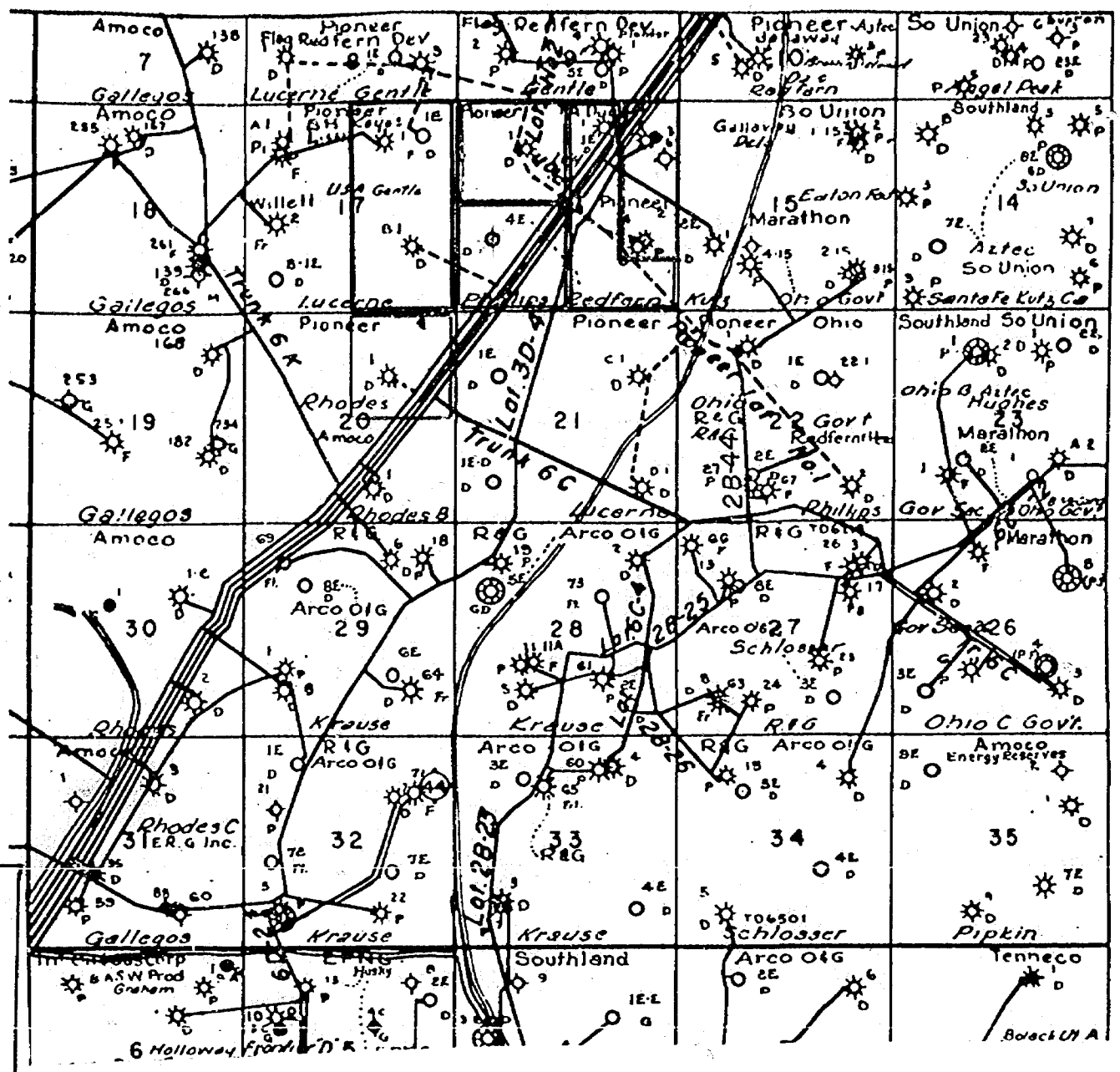
E. NM 013365
Dugan Production Corp.

F. NM 021116
Flag-Redfern Oil Co.

G. NM 010063
George E. Willett
Curtis Little
Bradley Keyes

ALOHA #1 Well

OFFSETTING LEASES AND OPERATORS



APPLICATION FOR DOWNHOLE COMMINGLING
Flag-Redfern Oil Co.
Aloha #1 & #2 Wells
Unit L & D, Sec. 16, T-28-N, R-11-W
San Juan County, New Mexico
Case No. 7121
Exhibit No. 1

A. NM 020982
Flag-Redfern Oil Co.

B. NM 010063
Flag-Redfern Oil Co.

C. NM 013365
Flag-Redfern Oil Co.

D. NM 013365
Dugan Production Corp.

E. NM 010063
Flag-Redfern Oil Co.

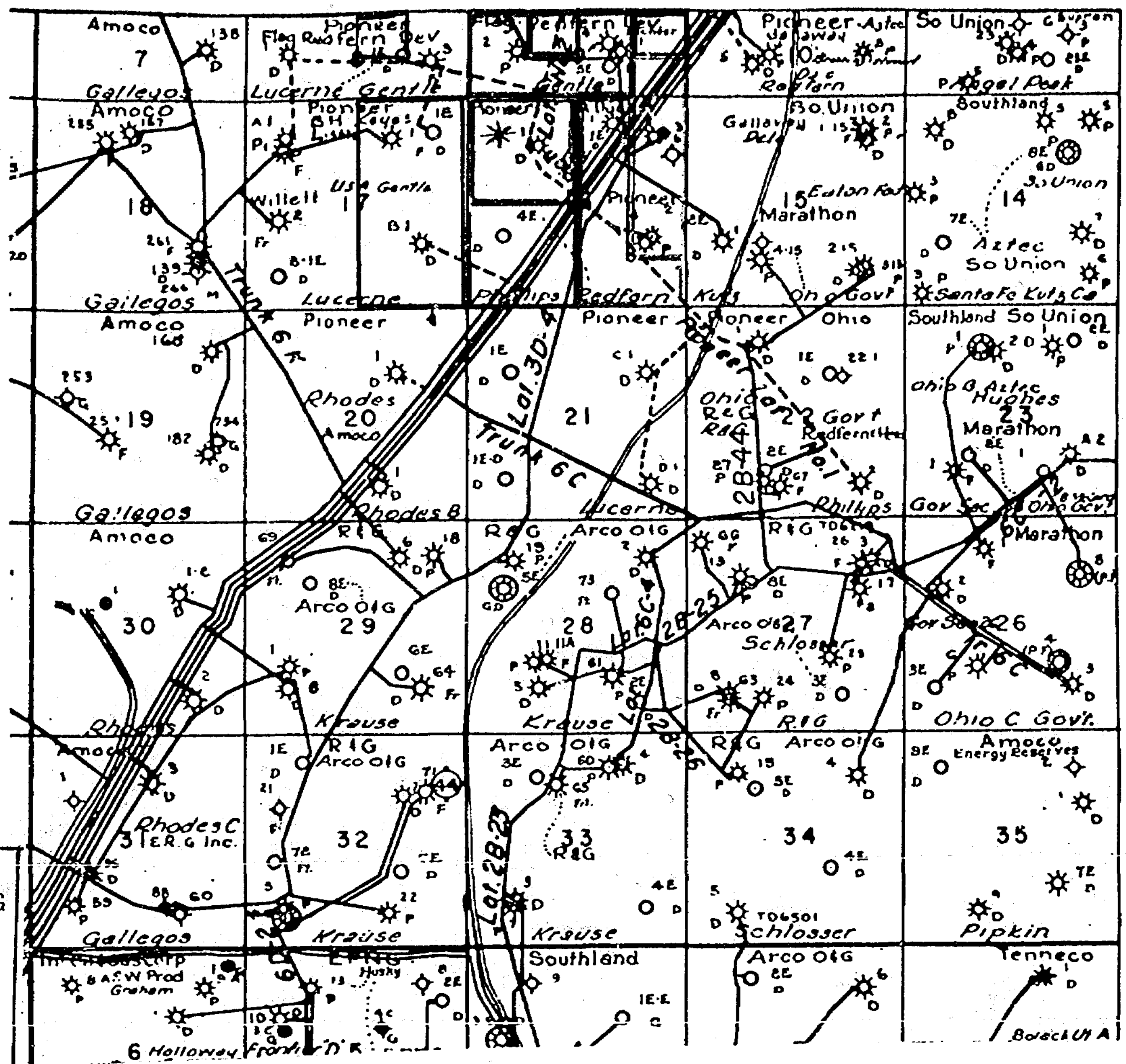
F. NM 010063
George E. Willett
Curtis Little
Bradley Keyes

G. NM 021116
Flag-Redfern Oil Co.

H. DEDICATED ACREAGE
Aloha #2 Well
Flag-Redfern Oil Co.

ALOHA #2 WELL

OFFSETTING LEASES AND OPERATORS



APPLICATION FOR DOWNHOLE COMMINGLING
Flag-Redfern Oil Co.
Aloha #1 & #2 Wells
Unit L & D, Sec. 16, T-28-N, R-11-W
San Juan County, New Mexico
Case No. 7121
Exhibit No. 1-A

dugan production corp.

APPLICATION FOR DOWNHOLE COMMINGLING
Flag-Redfern Oil Co.
Aloha #1 & #2 Wells
Unit L & D, Sec. 16, T-28-N, R-11-W
San Juan County, New Mexico
Case No. 7121
Exhibit No. 2

FLAG-REDFERN OIL CO.
Aloha #1
1710' FSL - 790' FWL
Sec 16 T28N R11W
San Juan County, NM

MORNING REPORT

11-7-80 MIRU Morrow Drlg. Co. Rig. Spudded 8-3/4" hole @ 10:30 a.m., 11-6-80. Drilled to 127'. Ran 3 jts 7" O.D., 23#, 8 Rd., ST&C "B" cond. csg. T.E. 123.76' set @ 125' G.L. cemented w/ 60 sx class "B". P.O.B. @ 2:00 p.m., 11-6-80. Good cement to surface. W.O.C.

11-8-80 Drlg. 5" hole @ 780'.

11-9-80 Drlg. 5" hole @ 1180'.. Well kicked @ 960'). Mixed gel & starch - well is now completely under control. No mud properties available.

11-10-80 T.D. 1690'. Laying down drill pipe, prep to run 2-7/8" csg.

11-11-80 Laid down drill pipe. Ran 60 jts. 2-7/8" O.D. 6.4# CW55-10RD NEUE tbg for csg. T.E. 1692.51' set @ 1692' G.L. Had good circulation throughout job. Cemented w/ 75 sx extended slurry followed by 75 sx class "B" neat. Bumped plug w/ 1200 psi. Held OK. Shut in w/ 750 psi. Circulated trace of cement. P.O.B. 11:10 a.m. 11-10-80.

11-25-80 Rigged up Southwest Surveys. Ran GR/Neutron/CCL from PBTD 1657' to 850'. Rigged up FWS swabbing unit. Swabbed well down to 1100'. Perf zone 1597'-1603', 6', 1 SPF, .43" diam. hole, 6 holes w/ 2-1/8" bi-wire glass jet gun. Perf 1311'-1326', 15', 1 SPF, .43" diam hole, 15 holes w/ 2-1/8' bi-wire glass jet gun. Well unloading while pulling gun out of the hole.

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1821

1

11-28-80 Rig up FWS to run tubing. Ran Baker model D packer on 43 jts of 1¼", 10R, EUE, new tubing. T.E. 1366.92 set @ 1365' GL. Set packer in tension. Well making gas on annulus. Shut in annulus. Annulus built up to 400 psi in 10 min. Tubing making slight amount of gas.

Rigged up Cementers Inc. acid truck and 3 Rivers water hauling. Pumped 150 gals 15% HCL w/ inhibitor down casing and displaced w/ 3.8 bbls of water. Breakdown pressure 1550 psi. 950 psi pressure while pumping @ 3/4 BPM. ISDP 450 psi. 0 psi in 7 mins. after shut-in. No indication of communication on annulus noted. Pumped 150 gal of 15% HCL w/ inhibitor down annulus and displaced w/ 4.1 bbls of water. Breakdown pressure 1100 psi, 750 psi prssure while pumping @ 1 BPM ISDP 550. 200 psi in 5 mins after shut in. No indication of communications w/ tubing noted. Well flowing while pulling packer. Well left open for 4 hrs. Shut in.

12-1-80 Rigged up the Western Co. and foam fraced the P.C. & Fruitland formations (1597-1603 & 1311-1326) w/ 70% quality foam. Pressure tested lines to 4800 psi. Placed 4000 gal pad of 70% quality foam ahead of 5000 gals of 70% quality foam w/ 1 ppg of 10-20 sand, followed by 7500 gals of 70% quality foam w/ 2 ppg of 10-20 sand. Placed 2000 gal of 70% quality foam pad and dropped 10 balls (7/8" diam, 1.3 sg) followed by 7500 gals of 70% quality foam w/ 2 ppg of 10-20 sand. Displaced w/ 340 gals of 70% quality foam. ISDP 1000 psi; 15 min shut-in 900 psi. Maximum pressure 1700 psi, minimum pressure 1400. Average pressure 1650 psi. No ball action noted. IR 15 BPM. Materials used. 194,040 SCFN_2, 35,000# 10-20 sand, 175 bbls of water, 41 gals adafoam, 182 HHP, 10 balls (7/8" diam., 1.3 sg). Well opened to atmosphere thru 5/8" choke 2 hrs after treating.

12-3-80 Rigged up FWS pulling unit. Rigged up wellhead. Ran and landed the following tubing string; 1 swab stop (.40'); 7 jts 1¼", 10R, EUE, 2.4#/ft, J-55, new tubing (228.50'); 1 Baker model "C" packer set in tension (1.68'); 42 jts 1¼", 10R, EUE, 2.4#/ft., J-55, new tubing (1364.59'). TE 1595.17' set at 1594' GL, packer set in tension at 1364' GL. No sand tagged. Annulus making gas, tubing making gas and misting soapy water. Well shut in.

dugan production corp.

APPLICATION FOR DOWNHOLE COMMINGLING
Flag-Redfern Oil Co.
Aloha #1 & #2 Wells
Unit L & D, Sec. 16, T-28-N, R-11-W
San Juan County, New Mexico
Case No. 7121
Exhibit No. 2-A

FLAG-REDFERN OIL CO.
Aloha #2
850 FNL - 870' FWL
Sec 16 T 28N R11W
San Juan County, NM

MORNING REPORT

11-13-80 Moved in and rigged up Morrow Drlg. Co. rig. Spudded 8-3/4" hole at 9:30 a.m. 11-12-80. Drilled 126'. Ran 3 jts. 7" O.D. 23#, 8R, ST&C, "B" Cond csg. T.E. 123.15 set at 125' G.L. Cemented w/ 60 sx class "B". P.O.B. at 3:00 p.m. 11-12-80. Good cement to surface. W.O.C.

11-14-80 Repairing hydraulic pump on rig. Well kicked at 500'. Mixed gel and starch. Well is now completely under control. No mud properties available.

11-15-80 Drlg. 1100' Wt. 10. Vis 48 Ph 9.5 Wt. 8
No trouble with gas kick on last trip.

11-16-80 1400' - Drlg. W.t 10.1 Vis 45

11-17-80 T.D. 1740' Ran I.E.S. log by Welex. Now prep to run 2-7/8" tbg. for csg.

11-18-80 T.I.H. w/ drill pipe. Circ. hole 1 hr. Laid down drill pipe; rigged up and ran 60 jts 2-7/8" O.D., 6.4#, 10 Rd., NEUE tbg for csg. T.E. 1741.47' set @ 1740' G.L. Cemented w/ 90 sx 2% Lodense followed by 75 sx class "B" neat. Reciprocated pipe OK while cementing. Good returns while cementing. Trace of contaminated cement to surface. P.O.B. @ 3:30 p.m., 11-17-80.

11-25-80 Rigged up FWS swabbing unit and Southwest Surveys. Swabbed well down to 1200'. Ran GR/CLL from PBTD 1713' to 1000'. Note: All depths are set back to open hole IES log. Perf zone 1582'-1588', 6', 1 SPF, .43" diam. hole, 6 holes w/ 2-1/8" bi-wire glass jet gun. Perf 1350-1357', 7', 1 SPF, .43" diam hole, 7 holes, w/ 2-1/8 bi-wire glass jet gun. Swabbed well 3 times. Small amount of gas flowing, no liquid entry apparent.

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11-28-80 Rigged up FWS. Ran Baker model D packer in tension on 43 jts of 1¼", 10R, EUE new tubing. T.E. 1399.42' set @ 1398 GL. Small amount of gas flowing up tubing, annulus dead. Rigged up Cementers, Inc. Pumped 150 gals of 15% HCL w/ inhibitor and displaced w/ 3.8 bbls of water. Breakdown pressure 1400 psi. Acid placed @ 3/4 BPM @ 850 psi. ISDP 200. No indications of communications w/ annulus. Pumped 150 gals of 15% HCL w/ inhibitor and displaced w/ 4.5 bbls of water. Breakdown pressure 1600 psi. Acid placed @ 3/4 BPM @ 1100 psi. ISDP 625 psi. Shut annulus in 15 min.-pressure 600 psi. Well flowing back on annulus.

11-29-80 Pulled 43 jts of 1¼", 10 R, EUE tubing and Baker model D packer. Well unloading while pulling tubing. Swabbing well.

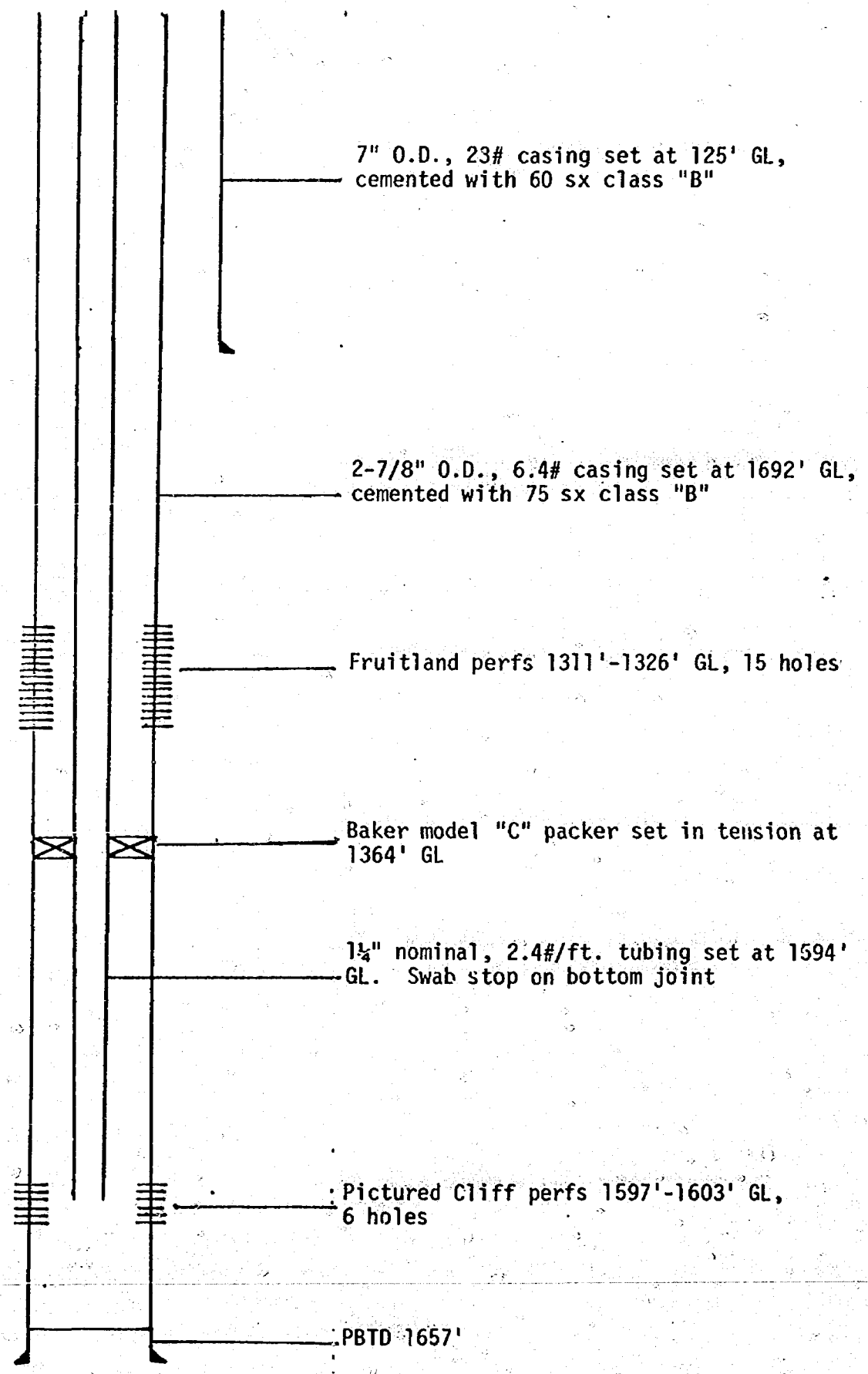
12-1-80 Rigged up the Western Co. and foam fraced the P.C. and Fruitland formations (1582-1588 & 1350-1356) w/ 70% quality foam. Pressure tested lines to 3500 psi. Placed 4000 gal pad of 70% quality foam ahead of 5000 gal of 70% quality foam w/ 1 ppg of 10-20 sand, followed by 7500 gals of 70% quality foam w/ 2ppg of 10-20 sand. Placed 2000 gal of 70% quality foam pad and dropped 10 balls (7/8" diam., 1.3 sg) followed by 7500 gals of 70% quality foam w/ 2 ppg of 10-20 sand. Displaced w/ 340 gals of 70% quality foam. ISDP 1000 psi; 15 min. shut-in 900 psi. Maximum pressure 1825 psi, minimum pressure 1600 psi, average pressure 1700 psi. No ball action noted. IR 15 BPM. Materials used: 200,250 SCF of N_2; 35,000# 10-20 sand, 189 bbl of water, 42 gals adafoam, 195 HHP, 6 balls (7/8" diam., 1.3sg). Well opened to atmosphere thru 3/4" choke 2 hrs after treating.

12-2-80 Rigged up FWS. Set wellhead. Tagged sand w/ tubing at 1589 GL. Landed tubing string consisting of 1 swab stop (1.25'); 3 jts 1¼", 10R, EUE, used tubing (97.62'); 1 Baker model "C" packer set in tension (2.25'); and 45 jts 1¼", 10R, EUE, used tubing (1463.34'). T.E. 1564.46' set at 1563 GL, packer set at 1463' GL in tension. Well making gas and slugs of soapy water from tubing and gas from annulus. Well left open for clean up.

APPLICATION FOR DOWNHOLE COMMINGLING
Flag-Redfern Oil Co.
Aloha #1 & #2 Wells
Unit L & D, Sec. 16, T-28-N, R-11-W
San Juan County, New Mexico
Case No. 7121
Exhibit No. 3

DIAGRAMMATIC SKETCH
DUAL GAS COMPLETION

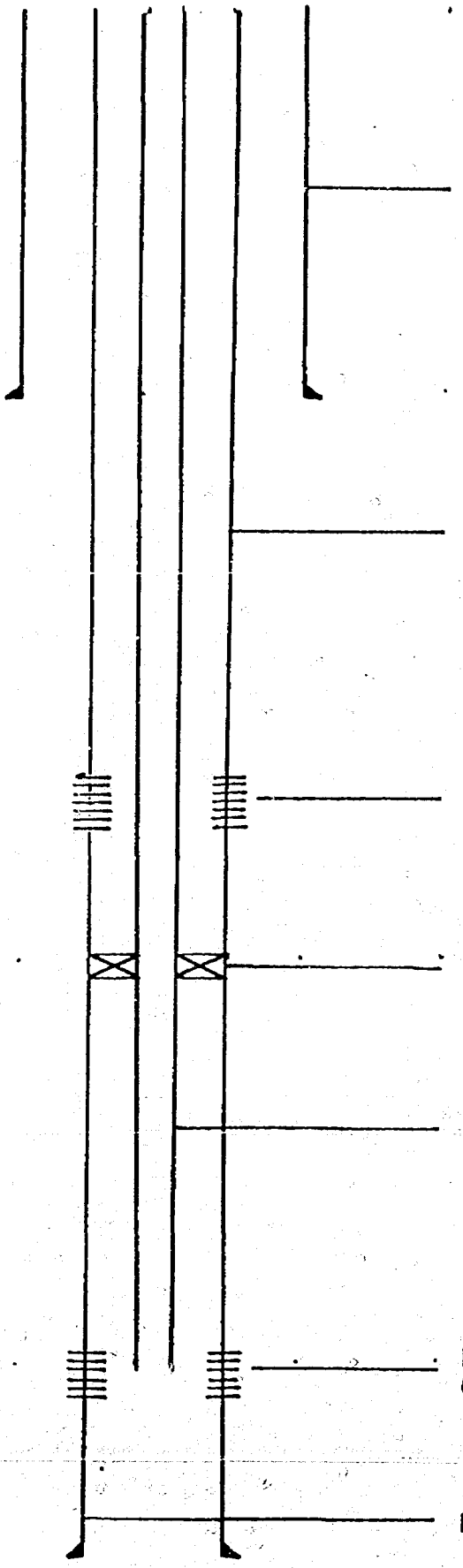
Flag-Redfern
Aloha #1
1710' FSL - 790' FWL
Sec 16 T28N R11W
San Juan County, NM



APPLICATION FOR DOWNHOLE COMMINGLING
Flag-Redfern Oil Co.
Aloha #1 & #2 Wells
Unit L & D, Sec. 16, T-28-N, R-11-W
San Juan County, New Mexico
Case No. 7121
Exhibit No. 3-A

DIAGRAMMATIC SKETCH
DUAL GAS COMPLETION

Flag-Redfern Co.
Aloha #2
850 FNL - 870' FWL
Sec 16 T28N R11W
San Juan County, NM



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-122
Revised 10-1-78

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test: [XX] Initial [ ] Annual [ ] Special				Test Date: 12-10-80	
Company: Flag-Redfern Oil Co.		Connection:			
Pool: Fulcher Kutz P.C.		Formation: Pictured Cliffs			Unit:
Completion Date: 12-3-80	Total Depth: 1690'		Plug Back TD: 1657'	Elevation:	Farm or Lease Name: Aloha
Csg. Size: 2-7/8" / Wt.: 6.4# / d: / Set At: 1692			Perforations: From 1597 To 1603		Well No.: #1
Tbg. Size: 1¼" / Wt.: 2.4# / d: / Set At: 1594			Perforations: From open-end To		Unit: L / Sec.: 16 / Twp.: 28N / Rge.: 11W
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Gas-Gas-Dual			Packer Set At: 1364'		County: San Juan
Producing Thru: Tbg.	Reservoir Temp. °F:	Mean Annual Temp. °F:	Baro. Press. – P_a:		State: New Mexico

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
		.62 est.						

	FLOW DATA				TUBING DATA		CASING DATA		
NO.	Prover Line Size X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI					482		575		7 days
1.									
2.									
3.	½" pos choke	48		46°			575		3 hrs
4.									
5.									

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1							
2.							
3.	5.4315		60	1.014	.9837	1.000	325
4.							

APPLICATION FOR DOWNHOLE COMMINGLING
Flag-Redfern Oil Co.
Aloha #1 & #2 Wells
Unit L & D, Sec. 16, T-28-N, R-11-W
San Juan County, New Mexico
Case No. 7121
Exhibit No. 5

Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
Specific Gravity Separator Gas _____ XXXXXXXXX
Specific Gravity Flowing Fluid XXXXX _____
Critical Pressure _____ P.S.I.A. _____ P.S.I.A.
Critical Temperature _____ R _____ R

P_c 494 P_c^2 244,036

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1				
2				
3	3600		3606	240,430
4				
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1,0150$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.0127$

$AOF = Q\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 329$

Absolute Open Flow 329 Mcfd @ 15.025 | Angle of Slope θ _____ | Slope, n .85

Remarks: _____

Approved By Division	Conducted By: Anderson	Calculated By: Jacobs	Checked By:

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-122
Revised 10-1-78

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test: [XX] Initial [ ] Annual [ ] Special				Test Date: 12-17-80	
Company: Flag-Redfern Oil Co.		Connection:			
Pool: Pinon		Formation: Fruitland			Unit:
Completion Date: 12-3-80	Total Depth: 1690'		Plug Back TD: 1657'	Elevation: 5641 GL	Farm or Lease Name: Aloha
Csg. Size: 2-7/8" / Wt.: 6.4# / d: / Set At: 1692'			Perforations: From 1311' To 1326'		Well No.: #1
Tbg. Size: 1¼" / Wt.: 2.4# / d: / Set At: 1594'			Perforations: From annular space		Unit: L / Sec.: 16 / Twp.: 28N / Rge.: 11W
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Gas-Gas-Dual			Packer Set At: 1364'		County: San Juan
Producing Thru: Annulus	Reservoir Temp. °F:	Mean Annual Temp. °F:	Baro. Press. – P_a:		State: New Mexico
L	H	Cg	% CO_2	% N_2	% H_2S / Prover / Meter Run / Taps

FLOW DATA / TUBING DATA / CASING DATA

NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Tubing Press. p.s.i.g.	Tubing Temp. °F	Casing Press. p.s.i.g.	Casing Temp. °F	Duration of Flow
SI							482	56	573	56	7 days
1.											
2.											
3.	pos choke 3/4"			142.5		54	482	56			3 hr
4.											
5.											

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1							
2.							
3.	12.365		154.5	1.006	.9837	1.104	2087
4.							
5.							

NO.	P_t	Temp. °R	T_r	Z
1.				
2.				
3.				
4.				
5.				

Gas Liquid Hydrocarbon Ratio NA Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons NA Deg.
Specific Gravity Separator Gas XXXXXXXXX
Specific Gravity Flowing Fluid XXXXX
Critical Pressure P.S.I.A. P.S.I.A.
Critical Temperature R R

P_c 585 P_c^2 342225

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1				
2				
3	23870		29.796	312.429
4				
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.0954$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.0805$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 2255$

Absolute Open Flow 2255 Mcfd @ 15.025 Angle of Slope θ Slope, n .85

Remarks:

Approved by Division | Conducted by: Donovan | Calculated by: Donovan | Checked by:

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-122
Revised 10-1-78

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test: (XX) Initial ( ) Annual ( ) Special				Test Date: 12-10-80	
Company: Flag Redfern Oil Co.		Connection:			
Pool: Fulcher Kutz P.C.		Formation: Pictured Cliffs			Unit:
Completion Date: 12-2-80	Total Depth: 1740	Plug Back TD: 1713		Elevation: 5578'	Farm or Lease Name: Aloha
Csg. Size: 2-7/8" / Wt.: 6.4# / d: / Set At: 1740		Perforations: From 1582 To 1588			Well No.: #2
Tbg. Size: 1-1/4" / Wt.: 2.4# / d: 1.380 / Set At: 1563		Perforations: From open end To			Unit: D / Sec.: 16 / Twp.: 28N / Rge.: 11W
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Gas - dual		Packer Set At: 1463'			County: San Juan
Producing Thru: Tbg.	Reservoir Temp. °F:	Mean Annual Temp. °F:	Baro. Press. – P_a:		State: New Mexico
L:	H:	Gg: .62 est.	% CO_2:	% N_2:	% H_2S:
Prover:	Meter Run:	Taps:			

FLOW DATA / TUBING DATA / CASING DATA

NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Tubing Press. p.s.i.g.	Tubing Temp. °F	Casing Press. p.s.i.g.	Casing Temp. °F	Duration of Flow
SI							372		544		7 days
1.											
2.											
3.	½ pos. choke			26		48°			544		3 hrs.
4.											
5.											

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1							
2.							
3.	5.4215		38	1.012	.9837	1.000	205
4.							

APPLICATION FOR DOWNHOLE COMMINGLING
Flag-Redfern Oil Co.
Aloha #1 & #2 Wells
Unit L & D, Sec. 16, T-28-N, R-11-W
San Juan County, New Mexico
Case No. 7121
Exhibit No. 5-A

Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
Specific Gravity Separator Gas _____ XXXXXXXXXX
Specific Gravity Flowing Fluid XXXXX _____
Critical Pressure _____ P.S.I.A. _____ P.S.I.A.
Critical Temperature _____ R _____ R

P_c 384 P_c^2 147.456

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1				
2				
3	1444		1446	146,010
4				
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.0099$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = {}^{.85}1.0084$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 207$

Absolute Open Flow 207 Mcfd @ 15.025 | Angle of Slope θ _____ | Slope, n .85

Remarks: _____

Approved By Division | Conducted By: Anderson | Calculated By: Jacobs | Checked By:

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-122
Revised 10-1-78

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test: [XX] Initial [ ] Annual [ ] Special				Test Date: 12-17-80	
Company: Flag-Redfern Oil Co.		Connection:			
Pool: Pinon		Formation: Fruitland			Unit:
Completion Date: 12-2-80	Total Depth: 1740'	Plug Back TD: 1713'	Elevation: 5578'	Farm or Lease Name: Aloha	
Csg. Size: 2-7/8" / Wt.: 6.4# / d: / Set At: 1740'		Perforations: From 1350' To 1357'		Well No.: #2	
Tbg. Size: 1¼" / Wt.: 2.4# / d: / Set At: 1563'		Perforations: From annular space		Unit: D / Sec.: 16 / Twp.: 28N / Rge.: 11W	
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Gas Gas Dual		Packer Set At: 1463'		County: San Juan	
Producing Thru: annulus	Reservoir Temp. °F:	Mean Annual Temp. °F:	Baro. Press. – P_a:	State: New Mexico	

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
		.62 est						

	FLOW DATA					TUBING DATA		CASING DATA		
NO.	Prover Line Size X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F		Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI						375	60	535	60	7 days
1.										
2.										
3.	pos choke 3/4"	1.0		50		375	60			3 hrs
4.										
5.										

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	12.365		13	1.010	.9837	1.000	160
2.							
3.							
4.							
5.							

NO.	P_t	Temp. °R	T_t	Z
1				
2.				
3.				
4.				
5.				

Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
Specific Gravity Separator Gas _____ XXXXXXXXX
Specific Gravity Flowing Fluid XXXXX _____
Critical Pressure _____ P.S.I.A. _____ P.S.I.A.
Critical Temperature _____ R _____ R

P_c 535 P_c^2 286,225

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1	169	---	169	286056
2				
3				
4				
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = \frac{286225}{286056}$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = .85 \quad 1.001$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n$ = 160

Absolute Open Flow 160 Mcfd @ 15.025 | Angle of Slope θ _____ | Slope, n .85

Remarks: _____

Approved by Division	Conducted By:	Calculated By:	Checked By:
	DonOvan	Donovan	Griffith

This form is not to be used for reporting packer leakage tests in Southeast New Mexico

Revised 10/1/78

NORTHWEST NEW MEXICO PACKER-LEAKAGE TEST

Operator Flag-Redfern Oil Company Lease Aloha Well No. 1

Location of Well: Unit L Sec. 16 Twp. 28North Rge. 11 West County San Juan

	Name of Reservoir or Pool	Type of Prod. (Oil or Gas)	Method of Prod. (Flow or Art. Lift)	Prod. Medium (Tbg. or Csg.)
Upper Completion	Pinon Fruitland	Gas	Flow	Csg.
Lower Completion	Fulcher-Kutz Pictured Cliffs	Gas	Flow	Tbg.

PRE-FLOW SHUT-IN PRESSURE DATA

	Hour, date Shut-in	Length of time shut-in	SI press. psig	Stabilized? (Yes or No)
Upper Compl	10:00 am 12-3-80	7 days	575	NO
Lower Compl	10:00am 12-3-80	7 days	482	NO

FLOW TEST NO. 1

Commenced at (hour, date)* 9:00 am 12-10-80 Zone producing (Upper or Lower): lower

Time (hour, date)	Lapsed time since*	Pressure Upper Compl.	Pressure Lower Compl.	Prod. Zone Temp.	Remarks
9:00am 12-10-80	0	575	482	43	Start test ½" choke
10:00am 12-10-80	1 hr	575	200	41	
11:00am 12-10-80	2 hr	575	160	41	
12:00am 12-10-80	3 hr	575	48	47	

Production rate during test

Oil: 0 BOPD based on ____ Bbls. in ____ Hrs. ____ Grav. ____ GOR ____

Gas: 329 AOF MCFPD; Tested thru (Orifice or Meter): ____

MID-TEST SHUT-IN PRESSURE DATA

	Hour, date Shut-in	Length of time shut-in	SI press. psig	Stabilized? (Yes or No)
Upper Compl	10:00am 12-3-80	14 days	575	NO
Lower Compl	12:00am 12-10-80	7 days	482	NO

FLOW TEST NO. 2

Commenced at (hour, date)** 1:00pm 12-17-80 Zone producing (Upper or Lower): upper

Time (hour, date)	Lapsed time since **	Pressure Upper Compl.	Pressure Lower Compl.	Prod. Zone Temp.	Remarks
1:00pm 12-17-80	0	575	482	56	Start test 3/4" choke
2:00pm 12-17-80	1 hr	161	482	54	
3:00pm 12-17-80	2 hr	149	482	55	
4:00pm 12-17-80	3 hr	142.5	482	54	

Production rate during test

Oil: 0 BOPD based on ____ Bbls. in ____ Hrs. ____ Grav. ____ GOR ____

Gas: 2255 AOF MCFPD; Tested thru (Orifice or Meter): ____

REMARKS: ____

I hereby certify that the information herein contained is true and complete to the best of my knowledge.

Operator Flag-Redfern Oil Company

Approved: ____ 19__

Thomas A. Dugan T. A. Dugan

By ____ Title Agent

Title ____ Date 1-13-81

APPLICATION FOR DOWNHOLE COMMINGLING
Flag-Redfern Oil Co.
Aloha #1 & #2 Wells
Unit L & D, Sec. 16, T-28-N, R-11-W
San Juan County, New Mexico
Case No. 7121
Exhibit No. 6

NORTHWEST NEW MEXICO PACKER LEAKAGE TEST INSTRUCTIONS

1. A packer leakage test shall be commenced on each multiply completed well within seven days after actual completion of the well, and annually thereafter as prescribed by the order authorizing the multiple completion. Such test shall also be commenced on all multiple completions within seven days following recompletion and/or chemical or fracture treatment, and whenever remedial work has been done on a well during which the packer or the casing have been disturbed. Tests shall also be taken at any time that communication is suspected or when requested by the Division.

2. At least 72 hours prior to the commencement of any packer leakage test, the operator shall notify the Division in writing of the exact time the test is to be commenced. Offset operators shall also be so notified.

3. The packer leakage test shall commence when both zones of the dual completion are shut-in for pressure stabilization. Both zones shall remain shut-in until the well-head pressure in each has stabilized, provided however, that they need not remain shut-in more than seven days.

4. For Flow Test No. 1, one zone of the dual completion shall be produced at the normal rate of production while the other zone remains shut-in. Such test shall be continued for seven days in the case of a gas well and for 24 hours in the case of an oil well. Note: If, on an initial packer leakage test, a gas well is being flowed to the atmosphere due to the lack of a pipeline connection the flow period shall be three hours.

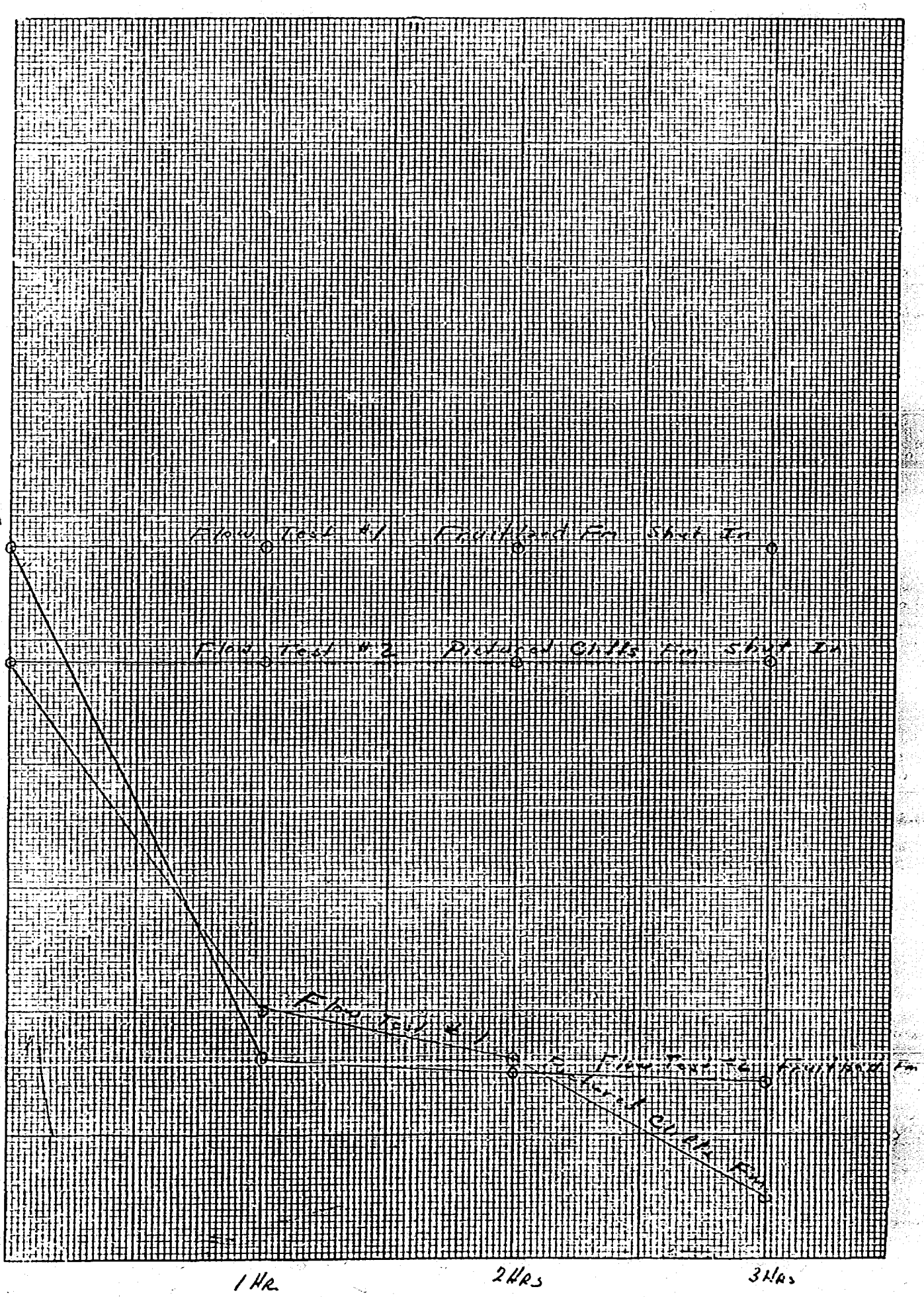
5. Following completion of Flow Test No. 1, the well shall again be shut-in, in accordance with Paragraph 3 above.

6. Flow Test No. 2 shall be conducted even though no leak was indicated during Flow Test No. 1. Procedure for Flow Test No. 2 is to be the same as for Flow Test No. 1 except that the previously produced zone shall remain shut-in while the zone which was previously shut-in is produced.

7. Pressures for gas-zone tests must be measured on each zone with a deadweight pressure gauge at time intervals as follows: 3-hour tests: immediately prior to the beginning of each flow period, at fifteen minute intervals during the first hour thereof, and at hourly intervals thereafter, including one pressure measurement immediately prior to the conclusion of each flow period. 7-day tests: immediately prior to the beginning of each flow period, at least one time during each flow period (at approximately the midway point) and immediately prior to the conclusion of each flow period. Other pressures may be taken as desired, or may be requested on wells which have previously shown questionable test data.

24-hour oil zone tests: all pressures, throughout the entire test, shall be continuously measured and recorded with recording pressure gauges, the accuracy of which must be checked at least twice, once at the beginning and once at the end of each test, with a deadweight pressure gauge. If a well is a gas-oil or an oil-gas dual completion, the recording gauge shall be required on the oil zone only, with deadweight pressures as required above being taken on the gas zone.

8. The results of the above-described tests shall be filed in triplicate within 15 days after completion of the test. Tests shall be filed with the Aztec District Office of the Oil Conservation Division on Northwest New Mexico Packer Leakage Test Form Revised 10-1-78, with all deadweight pressures indicated thereon as well as the flowing temperatures (gas zones only) and gravity and GOR (oil zones only). A pressure versus time curve for each zone of each test shall be constructed on the reverse side of the Packer Leakage Test Form with all deadweight pressure points taken indicated thereon. For oil zones, the pressure curve should also indicate all key pressure changes which may be reflected by the recording gauge charts. These key pressure changes should also be tabulated on the front of the Packer Leakage Test Form.



This form is not to be used for reporting packer leakage tests in Southeast New Mexico

Revised 10/1/78

NORTHWEST NEW MEXICO PACKER-LEAKAGE TEST

Operator Flag-Redfern Oil Company Lease Aloha Well No. 2

Location of Well: Unit D Sec. 16 Twp. 28 North Rge. 11 West County San Juan

	Name of Reservoir or Pool	Type of Prod. (Oil or Gas)	Method of Prod. (Flow or Art. Lift)	Prod. Medium (Tbg. or Csg.)
Upper Completion	Pinon Fruitland	Gas	Flow	Csg.
Lower Completion	Fulcher-Kutz Pictured Cliffs	Gas	Flow	Tbg.

PRE-FLOW SHUT-IN PRESSURE DATA

Upper Compl	Hour, date Shut-in	10:00 AM 12/3/80	Length of time shut-in	7 days	SI press. psig 535	Stabilized? (Yes or No) No
Lower Compl	Hour, date Shut-in	10:00 AM 12/3/80	Length of time shut-in	7 days	SI press. psig 372	Stabilized? (Yes or No) NO

FLOW TEST NO. 1

Commenced at (hour, date)* 2:05 PM 2/10/80 Zone producing (Upper or Lower): Lower

Time (hour, date)	Lapsed time since*	Pressure Upper Compl.	Pressure Lower Compl.	Prod. Zone Temp.	Remarks
2:05 PM 12/10/80	0	535	372	49°	Start test 1/2" choke
3:05 PM 12/10/80	1 Hr.	535	47	48°	
4:05 PM 12/10/80	2 Hr.	535	38	48°	
5:05 PM 12/10/80	3 Hr.	535	26	48°	

Production rate during test

Oil: 0 BOPD based on Bbls. in Hrs. Grav. GOR

Gas: 207 AOF MCFPD; Tested thru (Orifice or Meter):

MID-TEST SHUT-IN PRESSURE DATA

Upper Compl.	Hour, date Shut-in	10:00 AM 12/3/80	Length of time shut-in	14 days	SI press. psig 535	Stabilized? (Yes or No) NO
Lower Compl	Hour, date Shut-in	5:05 PM 12/10/80	Length of time shut-in	7 days	SI press. psig 372	Stabilized? (Yes or No) NO

FLOW TEST NO. 2

Commenced at (hour, date)** 9:00 AM 12/17/80 Zone producing (Upper or Lower): Upper

Time (hour, date)	Lapsed time since **	Pressure Upper Compl.	Pressure Lower Compl.	Prod. Zone Temp.	Remarks
9:00 AM 12/17/80	0	535	372	60°	Start test 3/4" choke
10:00 AM 12/17/80	1 Hr.	1	372	54°	
11:00 AM 12/17/80	2 Hr.	1	372	53°	
12:00 AM 12/17/80	3 Hr.	1	372	50°	

Production rate during test

Oil: 0 BOPD based on Bbls. in Hrs. Grav. GOR

Gas: 160 AOF MCFPD; Tested thru (Orifice or Meter):

REMARKS:

I hereby certify that the information herein contained is true and complete to the best of my knowledge.

Operator Flag-Redfern Oil Company

Approved: 19

Oil Conservation Division

By Thomas Dugan

Title Agent

Date

APPLICATION FOR DOWNHOLE COMMINGLING
Flag-Redfern Oil Co.
Aloha #1 & #2 Wells
Unit L & D, Sec. 16, T-28-N, R-11-W
San Juan County, New Mexico
Case No. 7121
Exhibit No. 6-A

NORTHWEST NEW MEXICO PACKER LEAKAGE TEST INSTRUCTIONS

1. A packer leakage test shall be commenced on each multiply completed well within seven days after actual completion of the well, and annually thereafter as prescribed by the order authorizing the multiple completion. Such tests shall also be commenced on all multiple completions within seven days following recompletion and/or chemical or fracture treatment, and whenever remedial work has been done on a well during which the packer or the tubing have been disturbed. Tests shall also be taken at any time that communication is suspected or when requested by the Division.

2. At least 72 hours prior to the commencement of any packer leakage test, the operator shall notify the Division in writing of the exact time the test is to be commenced. Offset operators shall also be so notified.

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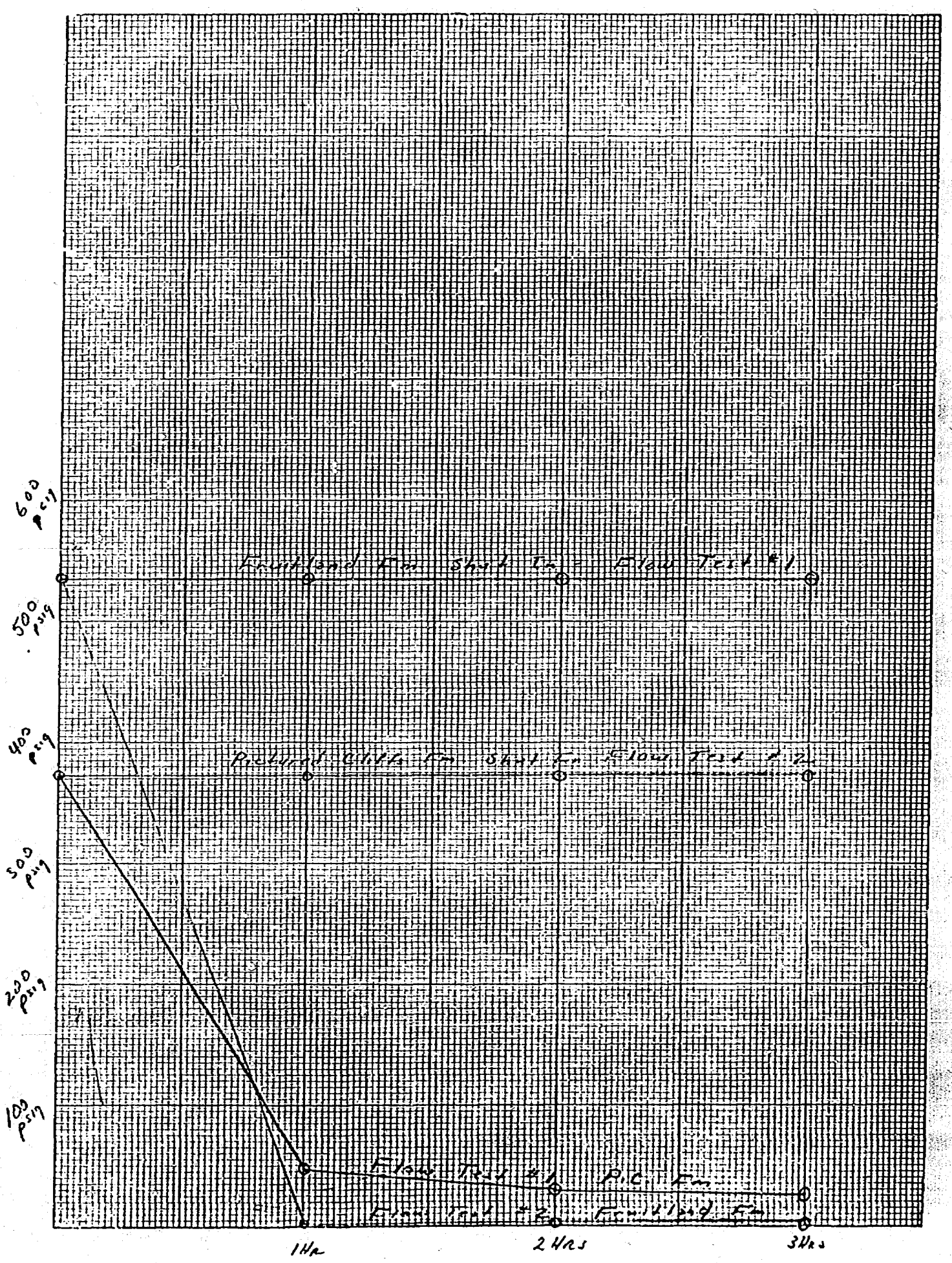
24-hour oil zone tests: all pressures, throughout the entire test, shall be continuously measured and recorded with recording pressure gauges, the accuracy of which must be checked at least twice, once at the beginning and once at the end of each test, with a deadweight pressure gauge. If a well is a gas-oil or an oil-gas dual completion, the recording gauge shall be required on the oil zone only, with deadweight pressures as required above being taken on the gas zone.

8. The results of the above-described tests shall be filed in triplicate within 15 days after completion of the test. Tests shall be filed with the Aztec District Office of the Oil Conservation Division on Northwest New Mexico Packer Leakage Test Form Revised 10-1-78, with all deadweight pressures indicated thereon as well as the flowing temperatures (gas zones only) and gravity and GOR (oil zones only). A pressure versus time curve for each zone of each test shall be constructed on the reverse side of the Packer Leakage Test Form with all deadweight pressure points taken indicated thereon. For oil zones, the pressure curve should also indicate all key pressure changes which may be reflected by the recording gauge charts. These key pressure changes should also be tabulated on the front of the Packer Leakage Test Form.



A. DEDICATED ACREAGE
Aloha #1 Well
NM 013365
Flag-Redfern Oil Co.

B. NM 013365
Flag-Redfern Oil Co.

C. NM 010063
George E. Willett
Curtis Little
Bradley Keyes

D. SF 080844
National Drilling Co.

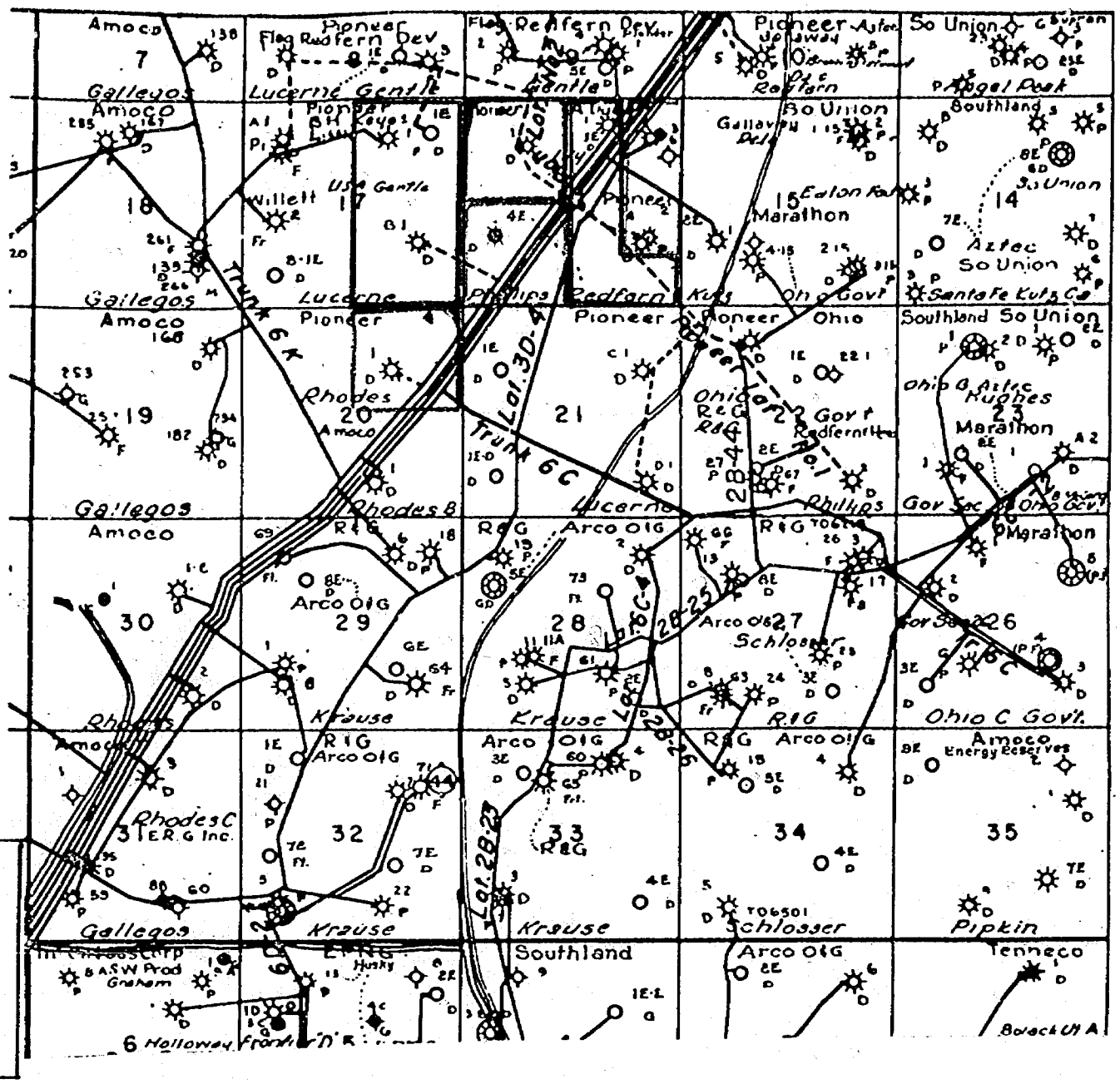
E. NM 013365
Dugan Production Corp.

F. NM 021116
Flag-Redfern Oil Co.

G. NM 010063
George E. Willett
Curtis Little
Bradley Keyes

ALOHA #1 WELL

OFFSETTING LEASES AND OPERATORS



APPLICATION FOR DOWNHOLE COMMINGLING
Flag-Redfern Oil Co.
Aloha #1 & #2 Wells
Unit L & D, Sec. 16, T-28-N, R-11-W
San Juan County, New Mexico
Case No. 7121
Exhibit No. 1

A. NM 020982
Flag-Redfern Oil Co.

B. NM 010063
Flag-Redfern Oil Co.

C. NM 013365
Flag-Redfern Oil Co.

D. NM 013365
Dugan Production Corp.

E. NM 010063
Flag-Redfern Oil Co.

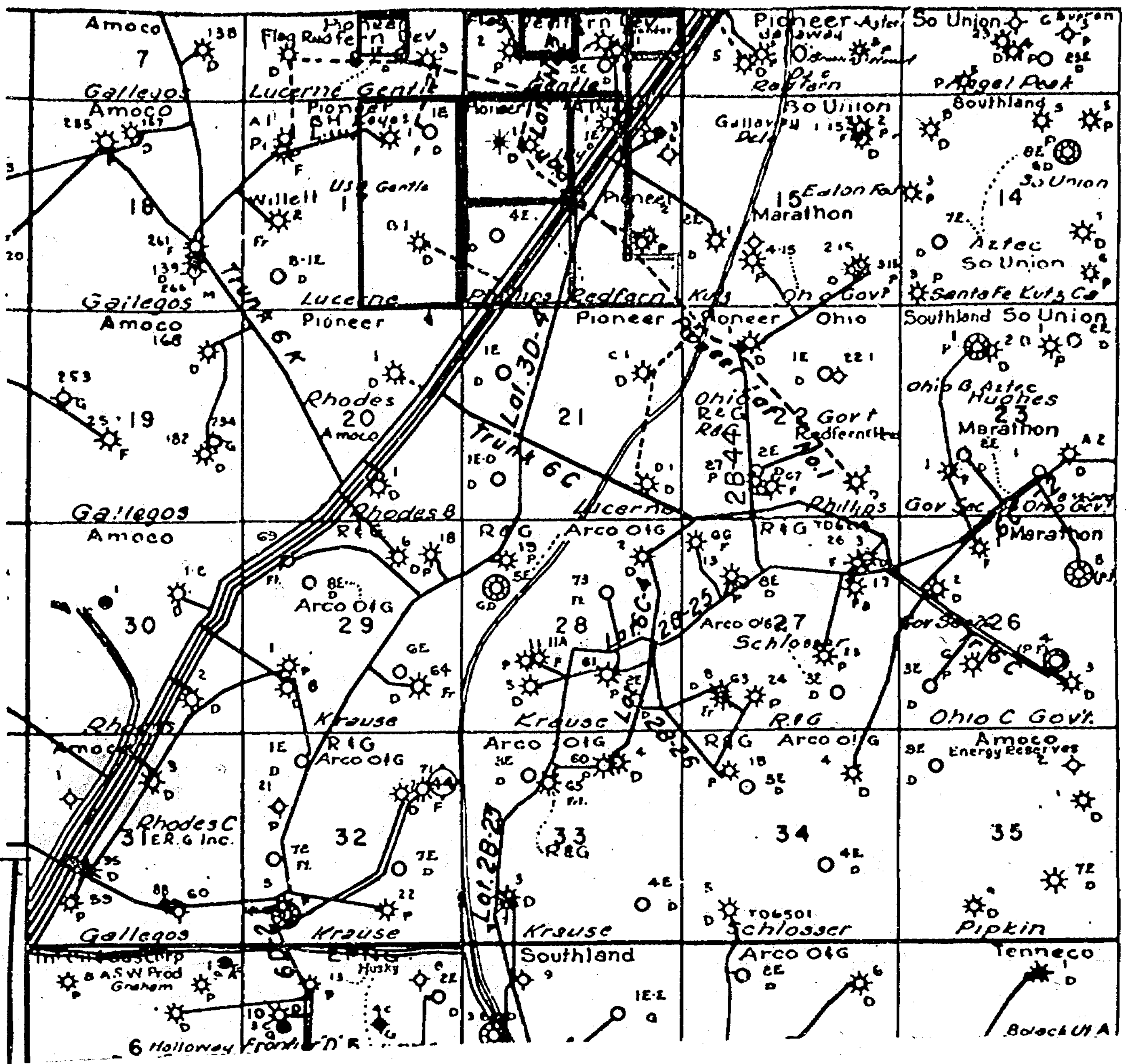
F. NM 010063
George E. Willett
Curtis Little
Bradley Keyes

G. NM 021116
Flag-Redfern Oil Co.

H. DEDICATED ACREAGE
Aloha #2 Well
Flag-Redfern Oil Co.

ALOHA #2 WELL

OFFSETTING LEASES AND OPERATORS



APPLICATION FOR DOWNHOLE COMMINGLING
Flag-Redfern Oil Co.
Aloha #1 & #2 Wells
Unit L & D, Sec. 16, T-28-N, R-11-W
San Juan County, New Mexico
Case No. 7121
Exhibit No. 1-A

dugan production corp.

APPLICATION FOR DOWNHOLE COMMINGLING
Flag-Redfern Oil Co.
Aloha #1 & #2 Wells
Unit L & D, Sec. 16, T-28-N, R-11-W
San Juan County, New Mexico
Case No. 7121
Exhibit No. 2

FLAG-REDFERN OIL CO.
Aloha #1
1710' FSL - 790' FWL
Sec 16 T28N R11W
San Juan County, NM

MORNING REPORT

11-7-80	MIRU Morrow Drlg. Co. Rig. Spudded 8-3/4" hole @ 10:30 a.m., 11-6-80. Drilled to 127'. Ran 3 jts 7" O.D., 23#, 8 Rd., ST&C "B" cond. csg. T.E. 123.76' set @ 125' G.L. cemented w/ 60 sx class "B". P.O.B. @ 2:00 p.m., 11-6-80. Good cement to surface. W.O.C.
11-8-80	Drlg. 5" hole @ 780'.
11-9-80	Drlg. 5" hole @ 1180'. Well kicked @ 960'). Mixed gel & starch - well is now completely under control. No mud properties available.
11-10-80	T.D. 1690'. Laying down drill pipe, prep to run 2-7/8" csg.
11-11-80	Laid down drill pipe. Ran 60 jts. 2-7/8" O.D. 6.4# CW55-10RD NEUE tbg for csg. T.E. 1692.51' set @ 1692' G.L. Had good circulation throughout job. Cemented w/ 75 sx extended slurry followed by 75 sx class "B" neat. Bumped plug w/ 1200 psi. Held OK. Shut in w/ 750 psi. Circulated trace of cement. P.O.B. 11:10 a.m. 11-10-80.
11-25-80	Rigged up Southwest Surveys. Ran GR/Neutron/CLL from PBTD 1657' to 850'. Rigged up FWS swabbing unit. Swabbed well down to 1100'. Perf zone 1597'-1603', 6', 1 SPF, .43" diam. hole, 6 holes w/ 2-1/8" bi-wire glass jet gun. Perf 1311'-1326', 15', 1 SPF, .43" diam hole, 15 holes w/ 2-1/8' bi-wire glass jet gun. Well unloading while pulling gun out of the hole.

709 BLOOMFIELD RD. • P. O. BOX 208 • FARMINGTON, NEW MEXICO 87401 • PHONE: 505-325-[redacted]
1821

11-28-80 Rig up FWS to run tubing. Ran Baker model D packer on 43 jts of 1¼", 10R, EUE, new tubing. T.E. 1366.92 set @ 1365' GL. Set packer in tension. Well making gas on annulus. Shut in annulus. Annulus built up to 400 psi in 10 min. Tubing making slight amount of gas.

Rigged up Cementers Inc. acid truck and 3 Rivers water hauling. Pumped 150 gals 15% HCL w/ inhibitor down casing and displaced w/ 3.8 bbls of water. Breakdown pressure 1550 psi. 950 psi pressure while pumping @ 3/4 BPM. ISDP 450 psi. 0 psi in 7 mins. after shut-in. No indication of communication on annulus noted. Pumped 150 gal of 15% HCL w/ inhibitor down annulus and displaced w/ 4.1 bbls of water. Breakdown pressure 1100 psi, 750 psi prssure while pumping @ 1 BPM ISDP 550. 200 psi in 5 mins after shut in. No indication of communications w/ tubing noted. Well flowing while pulling packer. Well left open for 4 hrs. Shut in.

12-1-80 Rigged up the Western Co. and foam fraced the P.C. & Fruitland formations (1597-1603 & 1311-1326) w/ 70% quality foam. Pressure tested lines to 4800 psi. Placed 4000 gal pad of 70% quality foam ahead of 5000 gals of 70% quality foam w/ 1 ppg of 10-20 sand, followed by 7500 gals of 70% quality foam w/ 2 ppg of 10-20 sand. Placed 2000 gal of 70% quality foam pad and dropped 10 balls (7/8" diam, 1.3 sg) followed by 7500 gals of 70% quality foam w/ 2 ppg of 10-20 sand. Displaced w/ 340 gals of 70% quality foam. ISDP 1000 psi; 15 min shut-in 900 psi. Maximum pressure 1700 psi, minimum pressure 1400. Average pressure 1650 psi. No ball action noted. IR 15 BPM. Materials used: 194,040 SCFN_2, 35,000# 10-20 sand, 175 bbls of water, 41 gals adafoam, 182 HHP, 10 balls (7/8" diam., 1.3 sg). Well opened to atmosphere thru 5/8" choke 2 hrs after treating.

12-3-80 Rigged up FWS pulling unit. Rigged up wellhead. Ran and landed the following tubing string; 1 swab stop (.40'); 7 jts 1¼", 10R, EUE, 2.4#/ft, J-55, new tubing (228.50'); 1 Baker model "C" packer set in tension (1.68'); 42 jts 1¼", 10R, EUE, 2.4#/ft., J-55, new tubing (1364.59'). TE 1595.17' set at 1594' GL, packer set in tension at 1364' GL. No sand tagged. Annulus making gas, tubing making gas and misting soapy water. Well shut in.

dugan production corp.

APPLICATION FOR DOWNHOLE COMMINGLING
Flag-Redfern Oil Co.
Aloha #1 & #2 Wells
Unit L & D, Sec. 16, T-28-N, R-11-W
San Juan County, New Mexico
Case No. 7121
Exhibit No. 2-A

FLAG-REDFERN OIL CO.
Aloha #2
850 FNL - 870' FWL
Sec 16 T 28N R11W
San Juan County, NM

MORNING REPORT

11-13-80 Moved in and rigged up Morrow Drlg. Co. rig. Spudded 8-3/4" hole at 9:30 a.m. 11-12-80. Drilled 126'. Ran 3 jts. 7" O.D. 23#, 8R, ST&C, "B" Cond csg. T.E. 123.15 set at 125' G.L. Cemented w/ 60 sx class "B". P.O.B. at 3:00 p.m. 11-12-80. Good cement to surface. W.O.C.

11-14-80 Repairing hydraulic pump on rig. Well kicked at 500'. Mixed gel and starch. Well is now completely under control. No mud properties available.

11-15-80 Drlg. 1100' Wt. 10. Vis 48 Ph 9.5 Wt. 8
No trouble with gas kick on last trip.

11-16-80 1400' - Drlg. W.t 10.1 Vis 45

11-17-80 T.D. 1740' Ran I.E.S. log by Welex. Now prep to run 2-7/8" tbg. for csg.

11-18-80 T.I.H. w/ drill pipe. Circ. hole 1 hr. Laid down drill pipe; rigged up and ran 60 jts 2-7/8" O.D., 6.4#, 10 Rd., NEUE tbg for csg. T.E. 1741.47' set @ 1740' G.L. Cemented w/ 90 sx 2% Lodense followed by 75 sx class "B" neat. Reciprocated pipe OK while cementing. Good returns while cementing. Trace of contaminated cement to surface. P.O.B. @ 3:30 p.m., 11-17-80.

11-25-80 Rigged up FWS swabbing unit and Southwest Surveys. Swabbed well down to 1200'. Ran GR/CLL from PBTD 1713' to 1000'. Note: All depths are set back to open hole IES log. Perf zone 1582'-1588', 6', 1 SPF, .43" diam. hole, 6 holes w/ 2-1/8" bi-wire glass jet gun. Perf 1350-1357', 7', 1 SPF, .43" diam hole, 7 holes, w/ 2-1/8 bi-wire glass jet gun. Swabbed well 3 times. Small amount of gas flowing, no liquid entry apparent.

11-28-80 Rigged up FWS. Ran Baker model D packer in tension on 43 jts of 1¼", 10R, EUE new tubing. T.E. 1399.42' set @ 1398 GL. Small amount of gas flowing up tubing, annulus dead. Rigged up Cementers, Inc. Pumped 150 gals of 15% HCL w/ inhibitor and displaced w/ 3.8 bbls of water. Breakdown pressure 1400 psi. Acid placed @ 3/4 BPM @ 850 psi. ISDP 200. No indications of communications w/ annulus. Pumped 150 gals of 15% HCL w/ inhibitor and displaced w/ 4.5 bbls of water. Breakdown pressure 1600 psi. Acid placed @ 3/4 BPM @ 1100 psi. ISDP 625 psi. Shut annulus in 15 min.-pressure 600 psi. Well flowing back on annulus.

11-29-80 Pulled 43 jts of 1¼", 10 R, EUE tubing and Baker model D packer. Well unloading while pulling tubing. Swabbing well.

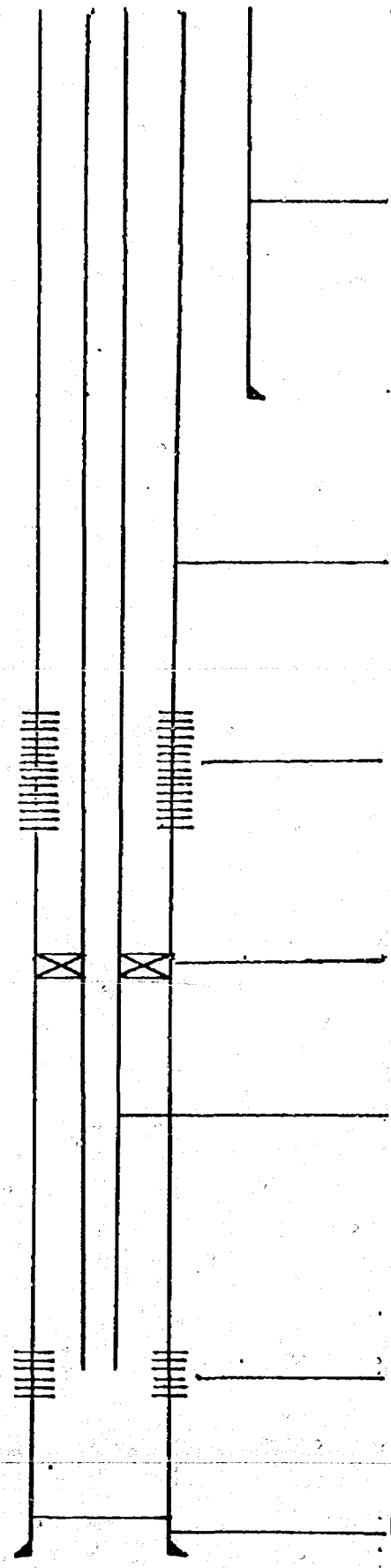
12-1-80 Rigged up the Western Co. and foam fraced the P.C. and Fruitland formations (1582-1588 & 1350-1356) w/ 70% quality foam. Pressure tested lines to 3500 psi. Placed 4000 gal pad of 70% quality foam ahead of 5000 gal of 70% quality foam w/ 1 ppg of 10-20 sand, followed by 7500 gals of 70% quality foam w/ 2ppg of 10-20 sand. Placed 2000 gal of 70% quality foam pad and dropped 10 balls (7/8" diam., 1.3 sg) followed by 7500 gals of 70% quality foam w/ 2 ppg of 10-20 sand. Displaced w/ 340 gals of 70% quality foam. ISDP 1000 psi; 15 min. shut-in 900 psi. Maximum pressure 1825 psi, minimum pressure 1600 psi, average pressure 1700 psi. No ball action noted. IR 15 BPM. Materials used: 200,250 SCF of N_2; 35,000# 10-20 sand, 189 bbl of water, 42 gals adafoam, 195 HHP, 6 balls (7/8" diam., 1.3sg). Well opened to atmosphere thru 3/4" choke 2 hrs after treating.

12-2-80 Rigged up FWS. Set wellhead. Tagged sand w/ tubing at 1589 GL. Landed tubing string consisting of 1 swab stop (1.25'); 3 jts 1¼", 10R, EUE, used tubing (97.62'); 1 Baker model "C" packer set in tension (2.25'); and 45 jts 1¼", 10R, EUE, used tubing (1463.34'). T.E. 1564.46' set at 1563 GL, packer set at 1463' GL in tension. Well making gas and slugs of soapy water from tubing and gas from annulus. Well left open for clean up.

APPLICATION FOR DOWNHOLE COMMINGLING
Flag-Redfern Oil Co.
Aloha #1 & #2 Wells
Unit L & D, Sec. 16, T-28-N, R-11-W
San Juan County, New Mexico
Case No. 7121
Exhibit No. 3

DIAGRAMMATIC SKETCH
DUAL GAS COMPLETION

Flag-Redfern
Aloha #1
1710' FSL - 790' FWL
Sec 16 T28N R11W
San Juan County, NM



7" O.D., 23# casing set at 125' GL, cemented with 60 sx class "B"

2-7/8" O.D., 6.4# casing set at 1692' GL, cemented with 75 sx class "B"

Fruitland perfs 1311'-1326' GL, 15 holes

Baker model "C" packer set in tension at 1364' GL

1¼" nominal, 2.4#/ft. tubing set at 1594' GL. Swab stop on bottom joint

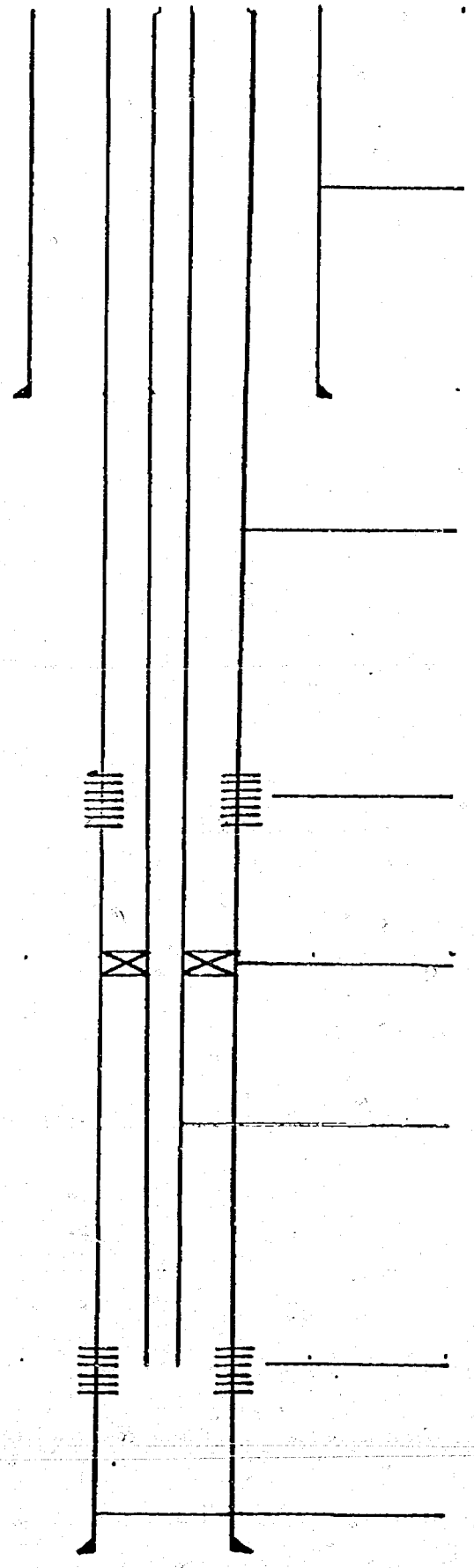
Pictured Cliff perfs 1597'-1603' GL, 6 holes

PBTD 1657'

APPLICATION FOR DOWNHOLE COMMINGLING
Flag-Redfern Oil Co.
Aloha #1 & #2 Wells
Unit L & D, Sec. 16, T-28-N, R-11-W
San Juan County, New Mexico
Case No. 7121
Exhibit No. 3-A

DIAGRAMMATIC SKETCH
DUAL GAS COMPLETION

Flag-Redfern Co.
Aloha #2
850 FNL - 870' FWL
Sec 16 T28N R11W
San Juan County, NM



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-122
Revised 10-1-78

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test: [XX] Initial [ ] Annual [ ] Special				Test Date: 12-10-80	
Company: Flag-Redfern Oil Co.		Connection			
Pool: Fulcher Kutz P.C.		Formation: Pictured Cliffs			Unit
Completion Date: 12-3-80	Total Depth: 1690'		Plug Back TD: 1657'	Elevation	Farm or Lease Name: Aloha
Csg. Size: 2-7/8" / Wt.: 6.4# / d / Set At: 1692			Perforations: From 1597 To 1603		Well No.: #1
Tbg. Size: 1¼" / Wt.: 2.4# / d / Set At: 1594			Perforations: From open-end To		Unit: L / Sec.: 16 / Twp.: 28N / Rge.: 11W
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Gas-Gas-Dual			Packer Set At: 1364'		County: San Juan
Producing Thru: Tbg.	Reservoir Temp. °F	Mean Annual Temp. °F	Baro. Press. – P_a		State: New Mexico

L	H	Cg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
		.62 est.						

	FLOW DATA				TUBING DATA		CASING DATA		
NO.	Prover Line Size X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI					482		575		7 days
1.									
2.									
3.	½" pos choke	48		46°			575		3 hrs
4.									
5.									

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1							
2.							
3.	5.4315		60	1.014	.9837	1.000	325
4.							
5.							

APPLICATION FOR DOWNHOLE COMMINGLING
Flag-Redfern Oil Co.
Aloha #1 & #2 Wells
Unit L & D, Sec. 16, T-28-N, R-11-W
San Juan County, New Mexico
Case No. 7121
Exhibit No. 5

Liquid Hydrocarbon Ratio _____ Mcf/bbl.
P.I. Gravity of Liquid Hydrocarbons _____ Deg.
Specific Gravity Separator Gas _____ XXXXXXXXX
Specific Gravity Flowing Fluid XXXXX _____
Critical Pressure _____ P.S.I.A. _____ P.S.I.A.
Critical Temperature _____ R _____ R

P_c 494 P_c^2 244,036

NO	P_t^2	P_w	R_w^2	$P_c^2 - P_w^2$
1				
2				
3	3600		3606	240,430
4				
5				

(1) $\frac{P_c^2}{R_t^2 - R_w^2} = 1,0150$ (2) $\left[\frac{P_c^2}{R_t^2 - R_w^2}\right]^n = 1.0127$

AOF = Q $\left[\frac{R_t^2}{R_t^2 - R_w^2}\right]^n = 329$

Absolute Open Flow 329 Mcfd @ 15.025 Angle of Slope θ _____ Slope, n .85

Remarks: _____

Approved by Division	Conducted by: Anderson	Calculated by: Jacobs	Checked by:

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-122
Revised 10-1-78

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test: [XX] Initial [ ] Annual [ ] Special				Test Date: 12-17-80	
Company: Flag-Redfern Oil Co.		Connection:			
Pool: Pinon		Formation: Fruitland			Unit
Completion Date: 12-3-80	Total Depth: 1690'		Plug Back TD: 1657'	Elevation: 5641 GL	Farm or Lease Name: Aloha
Csg. Size: 2-7/8" / Wt.: 6.4# / d: / Set At: 1692'			Perforations: From 1311' To 1326'		Well No.: #1
Tbg. Size: 1¼" / Wt.: 2.4# / d: / Set At: 1594'			Perforations: From annular space		Unit: L / Sec.: 16 / Twp.: 28N / Rge.: 11W
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Gas-Gas-Dual			Packer Set At: 1364'		County: San Juan
Producing Thru: Annulus	Reservoir Temp. °F:	Mean Annual Temp. °F:	Baro. Press. – P_a:		State: New Mexico
L	H	Gg	% CO_2	% N_2	% H_2S / Prover / Meter Run / Taps

NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Tubing Press. p.s.i.g.	Tubing Temp. °F	Casing Press. p.s.i.g.	Casing Temp. °F	Duration of Flow
SI							482	56	573	56	7 days
1.											
2.											
3.	pos choke 3/4"			142.5		54	482	56			3 hr
4.											
5.											

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1							
2.							
3.	12.365		154.5	1.006	.9837	1.104	2087
4.							
5.							

NO.	P_t	Temp. °R	T_r	Z
1.				
2.				
3.				
4.				
5.				

Gas Liquid Hydrocarbon Ratio NA Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons NA Deg.
Specific Gravity Separator Gas XXXXXXXXXX
Specific Gravity Flowing Fluid XXXXX
Critical Pressure ____ P.S.I.A. ____ P.S.I.A.
Critical Temperature ____ R ____ R

P_c 585 P_c^2 342225

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1				
2				
3	23870		29.796	312,429
4				
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.0954$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.0805$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 2255$

Absolute Open Flow 2255 Mcfd @ 15.025 Angle of Slope θ ____ Slope, n .85

Remarks:

Approved by Division | Conducted by: Donovan | Calculated by: Donovan | Checked by:

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-122
Revised 10-1-78

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test: [XX] Initial [ ] Annual [ ] Special				Test Date: 12-10-80	
Company: Flag Redfern Oil Co.		Connection:			
Pool: Fulcher Kutz P.C.		Formation: Pictured Cliffs			Unit:
Completion Date: 12-2-80	Total Depth: 1740		Plug Back TD: 17T3	Elevation: 5578'	Farm or Lease Name: Aloha
Csg. Size: 2-7/8" / Wt.: 6.4# / d: / Set At: 1740			Perforations: From 1582 To 1588		Well No.: #2
Tbg. Size: 1-1/4" / Wt.: 2.4# / d: 1.380 / Set At: 1563			Perforations: From open end To		Unit: D / Sec.: 16 / Twp.: 28N / Rge.: 11W
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Gas - dual			Packer Set At: 1463'		County: San Juan
Producing Thru: Tbg.	Reservoir Temp. °F:	Mean Annual Temp. °F:	Baro. Press. – P_a:		State: New Mexico
L	H	Gg: .62 est.	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps

NO.	FLOW DATA: Prover Line Size X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	TUBING DATA: Press. p.s.i.g.	Temp. °F	CASING DATA: Press. p.s.i.g.	Temp. °F	Duration of Flow
SI					372		544		7 days
1.									
2.									
3.	½ pos. choke	26		48°			544		3 hrs.
4.									
5.									

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1							
2.							
3.	5.4215		38	1.012	.9837	1.000	205
4.							
5.							

APPLICATION FOR DOWNHOLE COMMINGLING
Flag-Redfern Oil Co.
Aloha #1 & #2 Wells
Unit L & D, Sec. 16, T-28-N, R-11-W
San Juan County, New Mexico
Case No. 7121
Exhibit No. 5-A

Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
Specific Gravity Separator Gas _____ XXXXXXXXX
Specific Gravity Flowing Fluid XXXXX _____
Critical Pressure _____ P.S.I.A. _____ P.S.I.A.
Critical Temperature _____ R _____ R

P_c 384 P_c^2 147.456

NO	P_t	P_w	P_w^2	$P_c^2 - P_w^2$
1				
2				
3	1444		1446	146,010
4				
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = 1.0099$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = .85\ 1.0084$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 207$

Absolute Open Flow 207 Mcfd @ 15.025 | Angle of Slope θ _____ | Slope, n .85

Remarks: _____

Approved By Division | Conducted By: Anderson | Calculated By: Jacobs | Checked By:

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-122
Revised 10-1-78

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Type Test: [XX] Initial [ ] Annual [ ] Special				Test Date: 12-17-80	
Company: Flag-Redfern Oil Co.		Connection:			
Pool: Pinon		Formation: Fruitland			Unit:
Completion Date: 12-2-80	Total Depth: 1740'	Plug Back TD: 1713'	Elevation: 5578'		Farm or Lease Name: Aloha
Csg. Size: 2-7/8" / Wt.: 6.4# / d: / Set At: 1740'		Perforations: From 1350' To 1357'			Well No.: #2
Tbg. Size: 1½" / Wt.: 2.4# / d: / Set At: 1563'		Perforations: From annular space			Unit: D / Sec.: 16 / Twp.: 28N / Rge.: 11W
Type Well – Single – Bradenhead – G.G. or G.O. Multiple: Gas Gas Dual		Packer Set At: 1463'			County: San Juan
Producing Thru: annulus	Reservoir Temp. °F:	Mean Annual Temp. °F:	Baro. Press. – P_a:		State: New Mexico

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
		.62 est						

	FLOW DATA				TUBING DATA		CASING DATA		
NO.	Prover Line Size X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI					375	60	535	60	7 days
1.									
2.									
3.	pos choke 3/4"	1.0		50	375	60			3 hrs
4.									
5.									

RATE OF FLOW CALCULATIONS

NO.	Coefficient (24 Hour)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg	Super Compress. Factor, Fpv	Rate of Flow Q, Mcfd
1	12.365		13	1.010	.9837	1.000	160
2.							
3.							
4.							
5.							

NO.	P_t	Temp. °R	T_r	Z
1				
2.				
3.				
4.				
5.				

Gas Liquid Hydrocarbon Ratio _____ Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons _____ Deg.
Specific Gravity Separator Gas _____ XXXXXXXXX
Specific Gravity Flowing Fluid XXXXX _____
Critical Pressure _____ P.S.I.A. _____ P.S.I.A.
Critical Temperature _____ R _____ R

P_c 535 P_c^2 286,225

NO	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1	169	---	169	286056
2				
3				
4				
5				

(1) $\frac{P_c^2}{P_c^2 - P_w^2} = \frac{286225}{286056}$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = \frac{.85}{1.001}$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 160$

Absolute Open Flow 160 Mcfd @ 15.025 | Angle of Slope θ _____ | Slope, n .85

Remarks: _____

Approved By Division	Conducted By:	Calculated By:	Checked By:
	DonOvan	Donovan	Griffith

This form is not to be used for reporting packer leakage tests in Southeast New Mexico

Revised 10/1/78

NORTHWEST NEW MEXICO PACKER-LEAKAGE TEST

Operator Flag-Redfern Oil Company Lease Aloha Well No. 1

Location of Well: Unit L Sec. 16 Twp. 28North Rge. 11 West County San Juan

	Name of Reservoir or Pool	Type of Prod. (Oil or Gas)	Method of Prod. (Flow or Art. Lift)	Prod. Medium (Tbg. or Csg.)
Upper Completion	Pinon Fruitland	Gas	Flow	Csg.
Lower Completion	Fulcher-Kutz Pictured Cliffs	Gas	Flow	Tbg.

PRE-FLOW SHUT-IN PRESSURE DATA

Upper Compl	Hour, date Shut-in 10:00 am 12-3-80	Length of time shut-in 7 days	SI press. psig 575	Stabilized? (Yes or No) NO
Lower Compl	Hour, date Shut-in 10:00am 12-3-80	Length of time shut-in 7 days	SI press. psig 482	Stabilized? (Yes or No) NO

FLOW TEST NO. 1

Commenced at (hour, date)* 9:00 am 12-10-80 Zone producing (Upper or Lower): lower

Time (hour, date)	Lapsed time since*	Pressure Upper Compl.	Pressure Lower Compl.	Prod. Zone Temp.	Remarks
9:00am 12-10-80	0	575	482	43	Start test ½" choke
10:00am 12-10-80	1 hr	575	200	41	
11:00am 12-10-80	2 hr	575	160	41	
12:00am 12-10-80	3 hr	575	48	47	

Production rate during test

Oil: 0 BOPD based on ____ Bbls. in ____ Hrs. ____ Grav. ____ GOR ____

Gas: 329 AOF MCFPD; Tested thru (Orifice or Meter): ____

MID-TEST SHUT-IN PRESSURE DATA

Upper Compl	Hour, date Shut-in 10:00am 12-3-80	Length of time shut-in 14 days	SI press. psig 575	Stabilized? (Yes or No) NO
Lower Compl	Hour, date Shut-in 12:00am 12-10-80	Length of time shut-in 7 days	SI press. psig 482	Stabilized? (Yes or No) NO

FLOW TEST NO. 2

Commenced at (hour, date)** 1:00pm 12-17-80 Zone producing (Upper or Lower): upper

Time (hour, date)	Lapsed time since **	Pressure Upper Compl.	Pressure Lower Compl.	Prod. Zone Temp.	Remarks
1:00pm 12-17-80	0	575	482	56	Start test 3/4" choke
2:00pm 12-17-80	1 hr	161	482	54	
3:00pm 12-17-80	2 hr	149	482	55	
4:00pm 12-17-80	3 hr	142.5	482	54	

Production rate during test

Oil: 0 BOPD based on ____ Bbls. in ____ Hrs. ____ Grav. ____ GOR ____

Gas: 2255 AOF MCFPD; Tested thru (Orifice or Meter): ____

REMARKS: ____

I hereby certify that the information herein contained is true and complete to the best of my knowledge.

Operator Flag-Redfern Oil Company

By Thomas A. Dugan T. A. Dugan

Title Agent

Date 1-13-81

APPLICATION FOR DOWNHOLE COMMINGLING
Flag-Redfern Oil Co.
Aloha #1 & #2 Wells
Unit L & D, Sec. 16, T-28-N, R-11-W
San Juan County, New Mexico
Case No. 7121
Exhibit No. 6

NORTHWEST NEW MEXICO PACKER LEAKAGE TEST INSTRUCTIONS

1. A packer leakage test shall be commenced on each multiply completed well within seven days after actual completion of the well, and annually thereafter as prescribed by the order authorizing the multiple completion. Each test shall also be commenced on all multiple completions within seven days following recompletion and/or chemical or fracture treatment, or whenever remedial work has been done on a well during which the packer or the tubing have been disturbed. Tests shall also be taken at any time that communication is suspected or when requested by the Division.

2. At least 72 hours prior to the commencement of any packer leakage test, the operator shall notify the Division in writing of the exact time the test is to be commenced. Offset operators shall also be so notified.

3. The packer leakage test shall commence when both zones of the dual completion are shut-in for pressure stabilization. Both zones shall remain shut-in until the well-head pressure in each has stabilized, provided however, that they need not remain shut-in more than seven days.

4. For Flow Test No. 1, one zone of the dual completion shall be produced at the normal rate of production while the other zone remains shut-in. Such test shall be continued for seven days in the case of a gas well and for 24 hours in the case of an oil well. Note: If, on an initial packer leakage test, a gas well is being flowed to the atmosphere due to the lack of a pipeline connection the flow period shall be three hours.

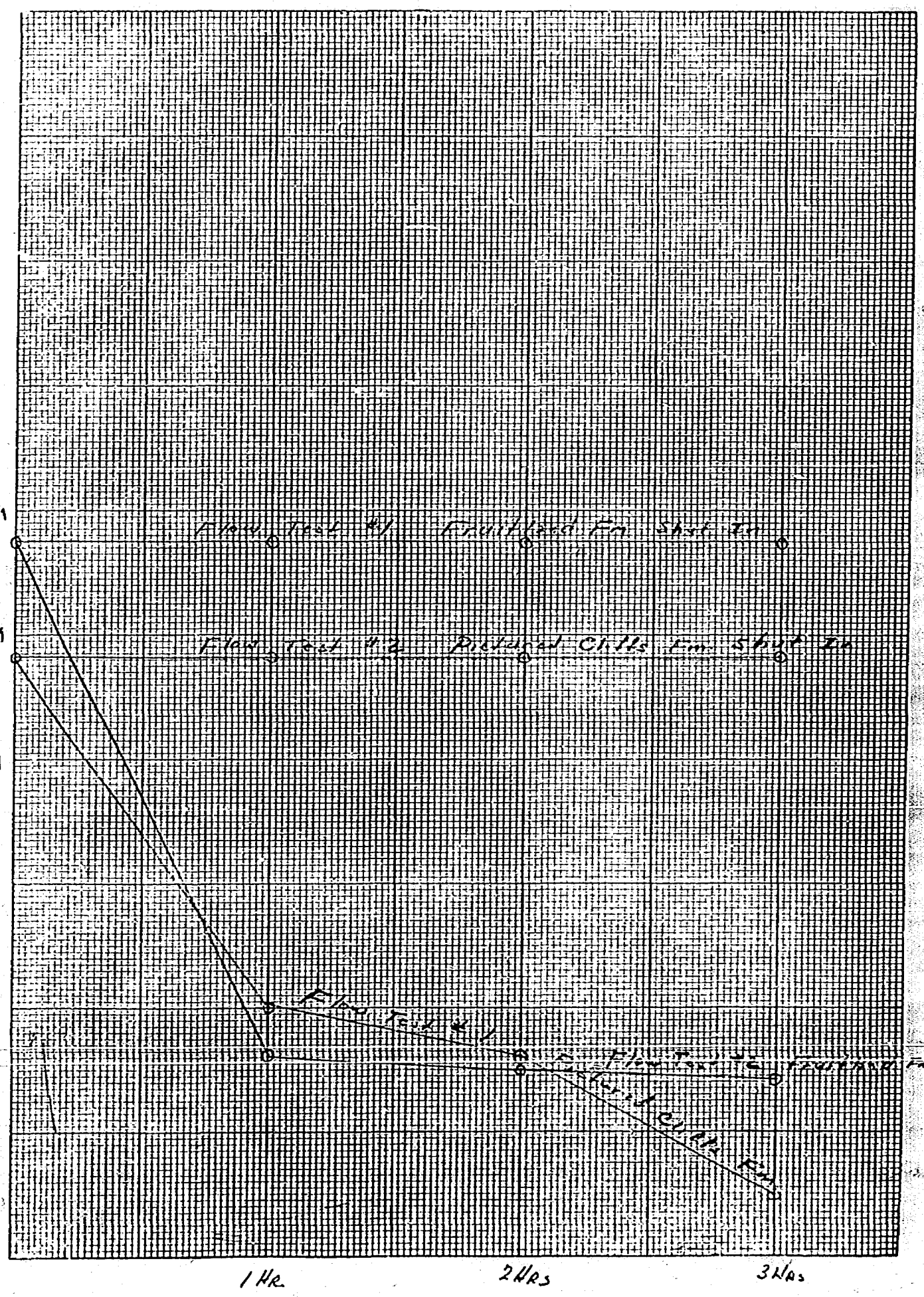
5. Following completion of Flow Test No. 1, the well shall again be shut-in, in accordance with Paragraph 3 above.

6. Flow Test No. 2 shall be conducted even though no leak was indicated during Flow Test No. 1. Procedure for Flow Test No. 2 is to be the same as for Flow Test No. 1 except that the previously produced zone shall remain shut-in while the zone which was previously shut-in is produced.

7. Pressures for gas-zone tests must be measured on each zone with a deadweight pressure gauge at time intervals as follows: 3-hour tests: immediately prior to the beginning of each flow-period, at fifteen-minute intervals during the first hour thereof, and at hourly intervals thereafter, including one pressure measurement immediately prior to the conclusion of each flow period. 7-day tests: immediately prior to the beginning of each flow period, at least one time during each flow period (at approximately the midway point) and immediately prior to the conclusion of each flow period. Other pressures may be taken as desired, or may be requested on wells which have previously shown questionable test data.

24-hour oil zone tests: all pressures, throughout the entire test, shall be continuously measured and recorded with recording pressure gauges, the accuracy of which must be checked at least twice, once at the beginning and once at the end of each test, with a deadweight pressure gauge. If a well is a gas-oil or an oil-gas dual completion, the recording gauge shall be required on the oil zone only, with deadweight pressures as required above being taken on the gas zone.

8. The results of the above-described tests shall be filed in triplicate within 15 days after completion of the test. Tests shall be filed with the Aztec District Office of the Oil Conservation Division on Northwest New Mexico Packer Leakage Test Form Revised 10-1-78, with all deadweight pressures indicated thereon as well as the flowing temperature (gas zones only) and gravity and GOR (oil zones only). A pressure versus time curve for each zone of each test shall be constructed on the reverse side of the Packer Leakage Test Form with all deadweight pressure points taken indicated thereon. For oil zones, the pressure curve should also indicate all key pressure changes which may be reflected by the recording gauge charts. These key pressure changes should also be tabulated on the front of the Packer Leakage Test Form.



This form is not to be used for reporting packer leakage tests in Southeast New Mexico

Revised 10/1/78

NORTHWEST NEW MEXICO PACKER-LEAKAGE TEST

Operator Flag-Redfern Oil Company Lease Aloha Well No. 2

Location of Well: Unit D Sec. 16 Twp. 28 North Rge. 11 West County San Juan

	Name of Reservoir or Pool	Type of Prod. (Oil or Gas)	Method of Prod. (Flow or Art. Lift)	Prod. Medium (Tbg. or Csg.)
Upper Completion	Pinon Fruitland	Gas	Flow	Csg.
Lower Completion	Fulcher-Kutz Pictured Cliffs	Gas	Flow	Tbg.

PRE-FLOW SHUT-IN PRESSURE DATA

Upper Compl	Hour, date Shut-in	10:00 AM 12/3/80	Length of time shut-in	7 days	SI press. psig 535	Stabilized? (Yes or No) No
Lower Compl	Hour, date Shut-in	10:00 AM 12/3/80	Length of time shut-in	7 days	SI press. psig 372	Stabilized? (Yes or No) NO

FLOW TEST NO. 1

Commenced at (hour, date)* 2:05 PM 2/10/80 Zone producing (Upper or Lower): Lower

Time (hour, date)	Lapsed time since*	Pressure Upper Compl.	Pressure Lower Compl.	Prod. Zone Temp.	Remarks
2:05 PM 12/10/80	0	535	372	49°	Start test 1/2" choke
3:05 PM 12/10/80	1 Hr.	535	47	48°	
4:05 PM 12/10/80	2 Hr.	535	38	48°	
5:05 PM 12/10/80	3 Hr.	535	26	48°	

Production rate during test

Oil: 0 BOPD based on ____ Bbls. in ____ Hrs. ____ Grav. ____ GOR ____

Gas: 207 AOF MCFPD; Tested thru (Orifice or Meter): ____

MID-TEST SHUT-IN PRESSURE DATA

Upper Compl	Hour, date Shut-in	10:00 AM 12/3/80	Length of time shut-in	14 days	SI press. psig 535	Stabilized? (Yes or No) NO
Lower Compl	Hour, date Shut-in	5:05 PM 12/10/80	Length of time shut-in	7 days	SI press. psig 372	Stabilized? (Yes or No) NO

FLOW TEST NO. 2

Commenced at (hour, date)** 9:00 AM 12/17/80 Zone producing (Upper or Lower): Upper

Time (hour, date)	Lapsed time since **	Pressure Upper Compl.	Pressure Lower Compl.	Prod. Zone Temp.	Remarks
9:00 AM 12/17/80	0	535	372	60°	Start test 3/4" choke
10:00 AM 12/17/80	1 Hr.	1	372	54°	
11:00 AM 12/17/80	2 Hr.	1	372	53°	
12:00 AM 12/17/80	3 Hr.	1	372	50°	

Production rate during test

Oil: 0 BOPD based on ____ Bbls. in ____ Hrs. ____ Grav. ____ GOR ____

Gas: 160 AOF MCFPD; Tested thru (Orifice or Meter): ____

REMARKS: ____

I hereby certify that the information herein contained is true and complete to the best of my knowledge.

Operator Flag-Redfern Oil Company

By T. A. Dugan
Thomas Dugan

Title Agent

Date ____

Approved ____ 19__

APPLICATION FOR DOWNHOLE COMMINGLING
Flag-Redfern Oil Co.
Aloha #1 & #2 Wells
Unit L & D, Sec. 16, T-28-N, R-11-W
San Juan County, New Mexico
Case No. 7121
Exhibit No. 6-A

NORTHWEST NEW MEXICO PACKER LEAKAGE TEST INSTRUCTIONS

1. A packer leakage test shall be commenced on each multiply completed well within seven days after actual completion of the well, and annually thereafter as prescribed by the order authorizing the multiple completion. Test shall also be commenced on all multiple completions within seven days following recompletion and/or chemical or fracture treatment, and whenever remedial work has been done on a well during which the packer or the tubing have been disturbed. Tests shall also be taken at any time that communication is suspected or when requested by the Division.

2. At least 72 hours prior to the commencement of any packer leakage test, the operator shall notify the Division in writing of the exact time the test is to be commenced. Offset operators shall also be so notified.

3. The packer leakage test shall commence when both zones of the dual completion are shut-in for pressure stabilization. Both zones shall remain shut-in until the well-head pressure in each has stabilized, provided however, that they need not remain shut-in more than seven days.

4. For Flow Test No. 1, one zone of the dual completion shall be produced at the normal rate of production while the other zone remains shut-in. Such test shall be continued for seven days in the case of a gas well and for 24 hours in the case of an oil well. Note: If, on an initial packer leakage test, a gas well is being flowed to the atmosphere due to the lack of a pipeline connection the flow period shall be three hours.

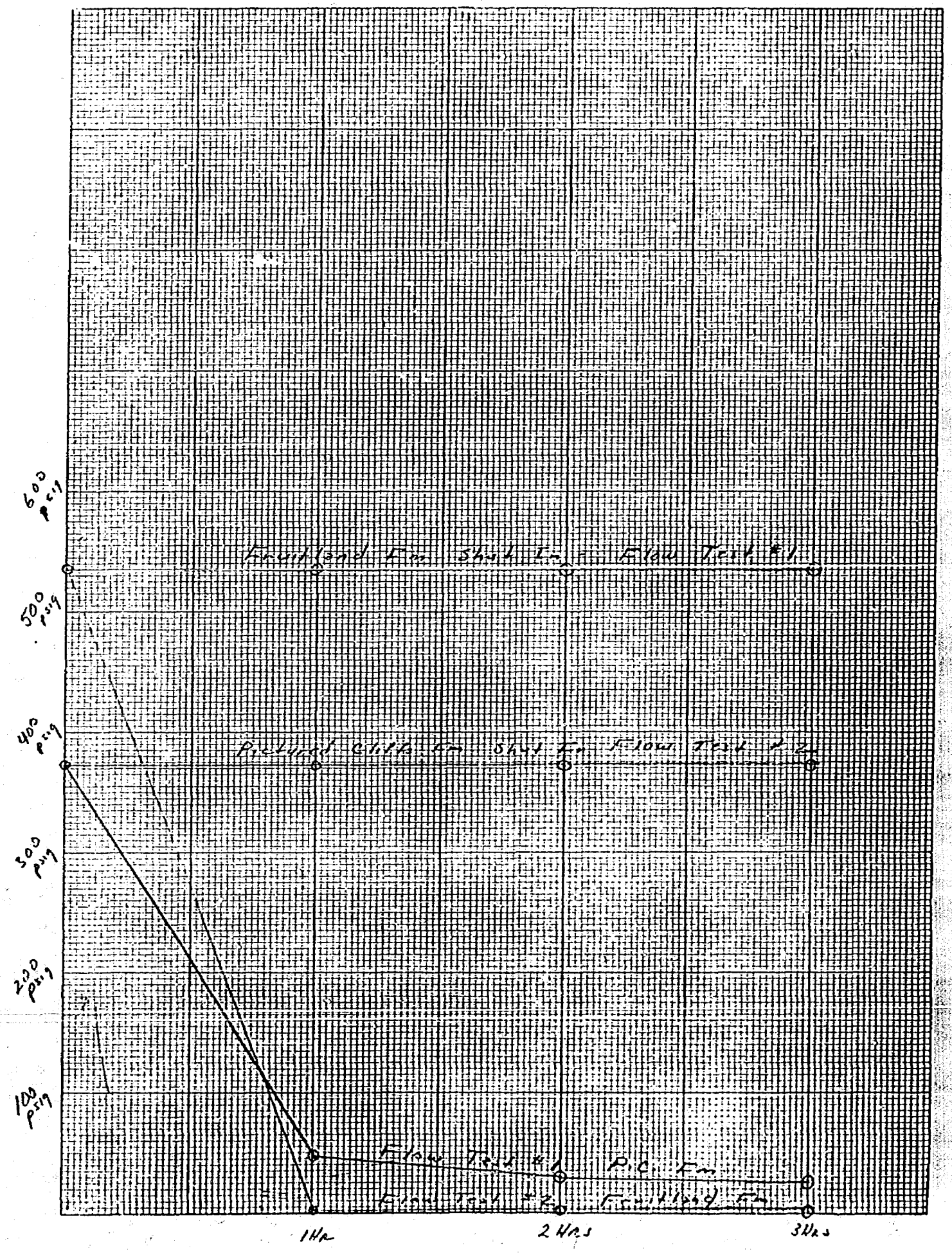
5. Following completion of Flow Test No. 1, the well shall again be shut-in, in accordance with Paragraph 3 above.

6. Flow Test No. 2 shall be conducted even though no leak was indicated during Flow Test No. 1. Procedure for Flow Test No. 2 is to be the same as for Flow Test No. 1 except that the previously produced zone shall remain shut-in while the zone which was previously shut-in is produced.

7. Pressures for gas-zone tests must be measured on each zone with a deadweight pressure gauge at time intervals as follows: 3-hour tests: immediately prior to the beginning of each flow-period, at fifteen-minute intervals during the first hour thereof, and at hourly intervals thereafter, including one pressure for immediately prior to the conclusion of each flow period. 7-day tests: immediately prior to the beginning of each flow period, at least once each day. Pressures for each flow period (at approximately the midway point) and immediately prior to the conclusion of each flow period. Other pressures may be taken as desired, or may be requested on wells which have previously shown questionable test data.

24-hour oil zone tests: All pressures, throughout the entire test, shall be continuously measured and recorded with recording pressure gauges, the accuracy of which must be checked at least twice, once at the beginning and once at the end of each test, with a deadweight pressure gauge. If a well is a gas-oil or an oil-gas dual completion, the recording gauge shall be required on the oil zone only, with deadweight pressures as required above being taken on the gas zone.

8. The results of the above-described tests shall be filed in triplicate within 15 days after completion of the test. Tests shall be filed with the Aztec District Office of the Oil Conservation Division on Northwest New Mexico Packer Leakage Test Form Revised 10-1-78, with all deadweight pressures indicated thereon as well as the flowing temperatures (gas zones only) and gravity and GOR (oil zones only). A pressure versus time curve for each zone of each test shall be constructed on the reverse side of the Packer Leakage Test Form with all deadweight pressure points taken indicated thereon. For oil zones, the pressure curve should also indicate all key pressure changes which may be reflected by the recorder gauge charts. These key pressure changes should also be tabulated on the front of the Packer Leakage Test Form.



WAIVER OF OBJECTION AND CONSENT TO

THE DOWNHOLE COMMINGLING OF THE ALOHA #2 WELL

Case 7128

The undersigned, as an Operator of a lease offsetting the NW/4 of Section 16, Township 28 North, Range 11 West, N.M.P.M., San Juan County, New Mexico, does hereby acknowledge receipt of the Application for Downhole Commingling of the Aloha #2 Well.

The Undersigned hereby waives any objection to this Application and voluntarily consents to the commingling of the Aloha #2 Well as stated in the above mentioned Application.

Dated this 7th day of January, 1981.

Signed:

Curtis Little
P.O. Box 2487
Farmington, NM 87401

Please send one executed copy to Joe D. Ramey, Division Director, New Mexico Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico, 87501, and return one executed copy to Dugan Production Corp., P.O. Box 208, Farmington, NM 87401. The remaining copy is for your files.

JAN 09 19[illegible]

OIL CONSERVATION DIVISION
SANTA FE

WAIVER OF OBJECTION AND CONSENT TO THE DOWNHOLE COMMINGLING OF THE ALOHA #1 WELL

The undersigned, as an Operator of a lease offsetting the SW/4 of Section 16, Township 28 North, Range 11 West, N.M.P.M., San Juan County, New Mexico, does hereby acknowledge receipt of the Application for Downhole Commingling of the Aloha #1 Well.

The Undersigned hereby waives any objection to this Application and voluntarily consents to the commingling of the Aloha #1 Well as stated in the above mentioned Application.

Dated this 7th day of January, 1981.

Signed:

Curtis Little
P.O. Box 2487
Farmington, NM 87401

Please send one executed copy to Joe D. Ramey, Division Director, New Mexico Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico, 87501, and return one executed copy to Dugan Production Corp., P.O. Box 208, Farmington, NM 87401. The remaining copy is for your files.

dugan production corp.

December 29, 1980

Case 7124

Joe D. Ramey
Division Director
New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87501

Re: Application for Downhole Commingling
Aloha #2 Well (Fulcher Kutz Pictured Cliffs
Pool and Pinon Fruitland Pool)
San Juan County, New Mexico

Dear Mr. Ramey:

Enclosed please find three copies of the above referenced Application.

I previously verbally requested this matter be placed on the January 14, 1981 Docket and was advised by the New Mexico Oil Conservation Division that this request would be honored. I was also advised that a written application must be filed with the NMOCD on or before January 3, 1981.

Please advise if you need further information.

Sincerely,

Tommy Roberts

Tommy Roberts
Landman

TR:nw

Enclosures

709 BLOOMFIELD RD. • P. O. BOX 208 • FARMINGTON, NEW MEXICO 87401 • PHONE: 505-325-1821

cc: George E. Willett
Box 548
Lemoore, California 93245

WAIVER OF OBJECTION AND CONSENT TO

THE DOWNHOLE COMMINGLING OF THE ALOHA #1 WELL

The undersigned, as an Operator of a lease offsetting the SW/4 of Section 16, Township 28 North, Range 11 West, N.M.P.M., San Juan County, New Mexico, does hereby acknowledge receipt of the Application for Downhole Commingling of the Aloha #1 Well.

The Undersigned hereby waives any objection to this Application and voluntarily consents to the commingling of the Aloha #1 Well as stated in the above mentioned Application.

Dated this 1st day of January, 1981.

Signed:

Brad Keyes

Brad Keyes
General Delivery
Aztec, NM 87410

Please send one executed copy to Joe D. Ramey, Division Director, New Mexico Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico, 87501, and return one executed copy to Dugan Production Corp., P.O. Box 208, Farmington, NM 87401. The remaining copy is for your files.

WAIVER OF OBJECTION AND CONSENT TO

THE DOWNHOLE COMMINGLING OF THE ALOHA #2 WELL

The undersigned, as an Operator of a lease offsetting the NW/4 of Section 16, Township 28 North, Range 11 West, N.M.P.M., San Juan County, New Mexico, does hereby acknowledge receipt of the Application for Downhole Commingling of the Aloha #2 Well.

The Undersigned hereby waives any objection to this Application and voluntarily consents to the commingling of the Aloha #2 Well as stated in the above mentioned Application.

Dated this 15th day of January, 1981.

Signed:

Brad Keyes

Brad Keyes
General Delivery
Aztec, NM 87410

Please send one executed copy to Joe D. Ramey, Division Director, New Mexico Oil Conservation Division, P.O. Box 2088, Santa Fe, New Mexico, 87501, and return one executed copy to Dugan Production Corp., P.O. Box 208, Farmington, NM 87401. The remaining copy is for your files.

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO

Case 7126

IN THE Matter of the Application of
Flag-Redfern Oil Co. for Downhole
Commingling of the Aloha #2 Well
in San Juan County, New Mexico

APPLICATION

Pursuant to Rule 303 C of the Rules and Regulations of the State of New Mexico Oil Conservation Division, The Applicant, Flag-Redfern Oil Co., by and through its agent, Thomas A. Dugan, hereby makes application for approval of downhole commingling in the well bore of the Aloha #2 Well in San Juan County, New Mexico.

The Applicant further states:

1. The Operator of the Aloha #2 Well will be the Applicant, Flag-Redfern Oil Co., whose address is P.O. Box 208, Farmington, New Mexico, 87401.

2. The Aloha #2 Well will be located on Federal Oil and Gas Lease Serial #NM 013365 insofar as said lease covers the following described lands:

Township 28 North, Range 11 West, NMPM
Section 16: SE/4 SE/4, W/2 SE/4, W/2 NE/4, W/2
(Fulcher Kutz Pictured Cliffs Pool)
Section 16: SE/4 SE/4, W/2 SE/4, W/2 NE/4, W/2
(Pinon Fruitland Pool)

3. The legal location of the well will be as follows:

Township 28 North, Range 11 West, NMPM
Section 16: Unit Letter D
San Juan County, New Mexico

4. The Aloha #2 Well has not presently been approved for dual completion in the Fulcher Kutz Pictured Cliffs Pool and the Pinon Fruitland Pool.

5. The Aloha #2 Well will be capable of only low marginal production from the Fulcher Kutz Pictured Cliffs Pool, and will be capable of only low marginal production from the Pinon Fruitland Pool.

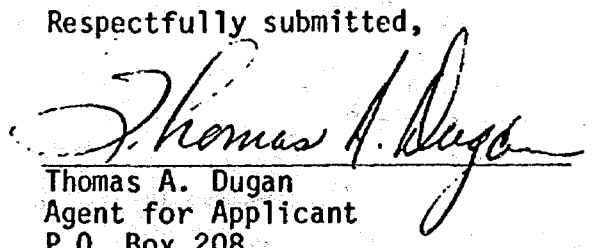
6. The ownership of the above mentioned Pools is common.

7. The proposed commingling from the above Pools will result in the recovery of additional hydrocarbons, the prevention of waste and the protection of correlative rights.

8. All operators of leases offsetting the dedicated acreage for this well, the U. S. Geological Survey and the Supervisor of the District III Office of the New Mexico Oil Conservation Division have been mailed a copy of this Application.

WHEREFORE, the Applicant requests this Application be set for hearing on January 14, 1981, and that after said hearing the New Mexico Oil Conservation Division grant this Application by giving approval to the downhole commingling of the Aloha #2 Well in San Juan County, New Mexico.

Respectfully submitted,



Thomas A. Dugan
Agent for Applicant
P.O. Box 208
Farmington, N.M. 87401

ALOHA #2 WELL

Application for Approval of Downhole Commingling
Flag-Redfern Oil Co.

OFFSET LEASES AND OPERATORS

1. USA NM 020982
Township 28 North, Range 11 West, NMPM
Section 8: Lot 2
Section 9: Lots 1,3
San Juan County, New Mexico

OPERATOR: Flag-Redfern Oil Co.
P.O. Box 2280
Midland, Texas 79701

2. USA NM 010063
Township 28 North, Range 11 West, NMPM
Section 9: Lots 2,4, SW/4 SE/4,
SW/4 SW/4, SE/4 SW/4
San Juan County, New Mexico

OPERATOR: Flag-Redfern Oil Co.
P.O. Box 2280
Midland, Texas 79701

3. USA NM 021116
Township 28 North, Range 11 West, NMPM
Section 9: SE/4 SE/4
Section 16: E/2 NE/4, NE/4 SE/4
San Juan County, New Mexico

OPERATOR: Flag-Redfern Oil Co.
P.O. Drawer 2280
Midland, Texas 79701

4. USA NM 013365
Township 28 North, Range 11 West, NMPM
Section 16: W/2 NE/4, W/2 SE/4, SE/4 SE/4
San Juan County, New Mexico

OPERATOR: Dugan Production Corp.
P.O. Box 208
Farmington, New Mexico 87401

5. USA NM 013365
Township 28 North, Range 11 West, NMPM
Section 16: SW/4
San Juan County, New Mexico

OPERATOR: Flag-Redfern Oil Co.
P.O. Drawer 2280
Midland, Texas 79701

6. USA NM 010063
Township 28 North, Range 11 West, NMPM
Section 17: E/2
San Juan County, New Mexico

OPERATOR: George E. Willett
Box 548
Lemoore, California 93245

7. USA NM 010063
Township 28 North, Range 11 West, NMPM
Section 8: Lot 1, SW/4 SE/4, SE/4 SE/4
San Juan County, New Mexico

OPERATOR: Flag-Redfern Oil Co.
P.O. Drawer 2280
Midland, Texas 79701

Dockets Nos. 4-81 and 5-81 are tentatively set for January 28 and February 11, 1981. Applications for hearing must be filed at least 22 days in advance of hearing date.

DOCKET: EXAMINER HEARING - WEDNESDAY - JANUARY 14, 1981

9 A.M. - OIL CONSERVATION DIVISION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING, SANTA FE, NEW MEXICO

The following cases will be heard before Richard L. Stamets, Examiner, or Daniel S. Nutter, Alternate Examiner:

ALLOWABLE: (1) Consideration of the allowable production of gas for February, 1981, from fifteen prorated pools in Lea, Eddy, and Chaves Counties, New Mexico.

(2) Consideration of the allowable production of gas for February, 1981, from four prorated pools in San Juan, Rio Arriba, and Sandoval Counties, New Mexico.

CASE 7117: Application of Gulf Oil Corporation for a non-standard gas proration unit, unorthodox location, and simultaneous dedication, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the simultaneous dedication of a previously approved 320-acre non-standard proration unit comprising the E/2 of Section 25, Township 20 South, Range 36 East, Eumont Gas Pool, to its L. W. White (NCT-A)Wells No. 2 in Unit I and No. 7 at an unorthodox location 990 feet from the North line and 660 feet from the East line of said Section 25.

CASE 7118: Application of El Paso Exploration Company for downhole commingling, Rio Arriba County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of South Blanco-Tocito and Basin-Dakota production in the wellbore of its Jicarilla 152 W Well No. 3 in Unit D of Section 7, Township 26 North, Range 5 West.

CASE 7119: Application of Shell Oil Company for a unit agreement, Bernalillo and Sandoval Counties, New Mexico. Applicant, in the above-styled cause, seeks approval for the West Mesa Unit Area, comprising 26,722 acres, more or less, of State, Federal, and fee lands in Townships 10, 11, and 12 North, Ranges 1 and 2 East.

CASE 7120: Application of Dugan Production Corporation for downhole commingling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of undesignated Gallup and Basin-Dakota production in the wellbore of its Merry May Well No. 1 in Unit I of Section 24, Township 24 North, Range 10 West.

CASE 7121: Application of Flag-Redfern Oil Co. for downhole commingling, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval for the downhole commingling of Pinon-Fruitland and Fulcher Kutz-Pictured Cliffs production in the wellbores of its Aloha Wells Nos. 1 and 2 located in Units L and D, respectively, of Section 16, Township 28 North, Range 11 West.

CASE 7122: Application of Elk Oil Company for salt water disposal, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the Pennsylvanian formation in the interval from 10,445 feet to 10,516 feet in its C. S. State Well No. 2 in Unit K of Section 25, Township 14 South, Range 34 East, High Plains-Pennsylvanian Pool.

CASE 7123: Application of Yates Petroleum Corporation for an unorthodox gas well location, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks approval for the unorthodox location of its Federal "AB" Well No. 7, a Morrow test to be drilled 1980 feet from the North line and 660 feet from the West line of Section 9, Township 18 South, Range 25 East, the N/2 of said Section 9 to be dedicated to the well.

CASE 7124: Application of Caribou Four Corners, Inc. for two non-standard proration units, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks approval for two non-standard oil proration units in Section 13, Township 29 North, Range 15 West, Cha Cha-Gallup Oil Pool. As follows: a 50.09-acre unit consisting of those fee lands comprising the NE/4 NW/4 and northermost 16.09 acres of the SE/4 NW/4 of said Section 13, and a 66.33-acre unit consisting of those fee lands comprising the NW/4 NW/4 and northermost 23.33 acres of the SW/4 NW/4 of said Section 13. In the alternative applicant seeks an order directing the escrowing of funds attributable to those lands in the E/2 NW/4 and W/2 NW/4, respectively, of said Section 13 which are not included in the above-described non-standard proration units.

dugan production corp.

December 29, 1980

Joe D. Ramey
Division Director
New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87501

Re: Application for Downhole Commingling
Aloha #1 Well (Fulcher Kutz Pictured Cliffs
Pool and Pinon Fruitland Pool)
San Juan County, New Mexico

Dear Mr. Ramey:

Enclosed please find three copies of the above referenced Application.

I previously verbally requested this matter be placed on the January 14, 1981 Docket and was advised by the New Mexico Oil Conservation Division that this request would be honored. I was also advised that a written application must be filed with the NMOCD on or before January 3, 1981.

Please advise if you need further information.

Sincerely,

Tommy Roberts

Tommy Roberts
Landman

TR:nw

Enclosures

RECEIVED
DEC 31 1980
OIL CONSERVATION DIVISION
SANTA FE

709 BLOOMFIELD RD. • P. O. BOX 208 • FARMINGTON, NEW MEXICO 87401 • PHONE: 505-325-1821

cc: George E. Willett
Box 548
Lemoore, California 93245

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO

IN THE Matter of the Application of
Flag-Redfern Oil Co. for Downhole
Commingling of the Aloha #1 Well
in San Juan County, New Mexico

Case 7121

APPLICATION

Pursuant to Rule 303 C of the Rules and Regulations of the State of New Mexico Oil Conservation Division, The Applicant, Flag-Redfern Oil Co., by and through its agent, Thomas A. Dugan, hereby makes application for approval of downhole commingling in the well bore of the Aloha #1 Well in San Juan County, New Mexico.

The Applicant further states:

1. The Operator of the Aloha #1 Well will be the Applicant, Flag-Redfern Oil Co., whose address is P.O. Box 208, Farmington, New Mexico, 87401.

2. The Aloha #1 Well will be located on Federal Oil and Gas Lease Serial #NM 013365 insofar as said lease covers the following described lands:

Township 28 North, Range 11 West, NMPM
Section 16: SE/4 SE/4, W/2 SE/4, W/2 NE/4, W/2
(Fulcher Kutz Pictured Cliffs Pool)
Section 16: SE/4 SE/4, W/2 SE/4, W/2 NE/4, W/2
(Pinon Fruitland Pool)

3. The legal location of the well will be as follows:

Township 28 North, Range 11 West, NMPM
Section 16: Unit Letter L
San Juan County, New Mexico

4. The Aloha #1 Well has not presently been approved for dual completion in the Fulcher Kutz Pictured Cliffs Pool and the Pinon Fruitland Pool.

5. The Aloha #1 Well will be capable of only low marginal production from the Fulcher Kutz Pictured Cliffs Pool, and will be capable of only low marginal production from the Pinon Fruitland Pool.

6. The ownership of the above mentioned Pools is common.

7. The proposed commingling from the above Pools will result in the recovery of additional hydrocarbons, the prevention of waste and the protection of correlative rights.

8. All operators of leases offsetting the dedicated acreage for this well, the U. S. Geological Survey and the Supervisor of the District III Office of the New Mexico Oil Conservation Division have been mailed a copy of this Application.

WHEREFORE, the Applicant requests this Application be set for hearing on January 14, 1981, and that after said hearing the New Mexico Oil Conservation Division grant this Application by giving approval to the downhole commingling of the Aloha #1 Well in San Juan County, New Mexico.

Respectfully submitted,

Thomas A. Dugan

Thomas A. Dugan
Agent for Applicant
P.O. Box 208
Farmington, N.M. 87401

ALOHA #1 WELL

Application for Approval of Downhole Commingling
Flag-Redfern Oil Co.

OFFSET LEASES AND OPERATORS

1. USA NM 013365
Township 28 North, Range 11 West, NMPM
Section 16: NW/4
San Juan County, New Mexico

OPERATOR: Flag-Redfern Oil Co.
P.O. Drawer 2280
Midland, Texas 79701

2. USA NM 013365
Township 28 North, Range 11 West, NMPM
Section 16: W/2 NE/4, W/2 SE/4, SE/4 SE/4
San Juan County, New Mexcio

OPERATOR: Dugan Production Corp.
P.O. Box 208
Farmington, New Mexico 87401

3. USA NM 021116
Township 28 North, Range 11 West, NMPM
Section 16: E/2 NE/4, NE/4 SE/4
San Juan County, New Mexico

OPERATOR: Flag-Redfern Oil Co.
P.O. Drawer 2280
Midland, Texas 79701

4. USA NM 010063
Township 28 North, Range 11 West, NMPM
Section 17: E/2
Section 21: N/2
San Juan County, New Mexico

OPERATOR: George L. Willett
Box 548
Lemoore, California 93245

5. USA SF 080844
Township 28 North, Range 11 West, NMPM
Section 20: NE/4
San Juan County, New Mexico

OPERATOR: National Drilling Co.
Address Unavailable

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO

IN THE Matter of the Application of
Flag-Redfern Oil Co. for Downhole
Commingling of the Aloha #1 Well
in San Juan County, New Mexico

Case 7121

APPLICATION

Pursuant to Rule 303 C of the Rules and Regulations of the State of New Mexico Oil Conservation Division, The Applicant, Flag-Redfern Oil Co., by and through its agent, Thomas A. Dugan, hereby makes application for approval of downhole commingling in the well bore of the Aloha #1 Well in San Juan County, New Mexico.

The Applicant further states:

1. The Operator of the Aloha #1 Well will be the Applicant, Flag-Redfern Oil Co., whose address is P.O. Box 208, Farmington, New Mexico, 87401.

2. The Aloha #1 Well will be located on Federal Oil and Gas Lease Serial #NM 013365 insofar as said lease covers the following described lands:

Township 28 North, Range 11 West, NMPM
Section 16: SE/4 SE/4, W/2 SE/4, W/2 NE/4, W/2
(Fulcher Kutz Pictured Cliffs Pool)
Section 16: SE/4 SE/4, W/2 SE/4, W/2 NE/4, W/2
(Pinon Fruitland Pool)

3. The legal location of the well will be as follows:

Township 28 North, Range 11 West, NMPM
Section 16: Unit Letter L
San Juan County, New Mexico

4. The Aloha #1 Well has not presently been approved for dual completion in the Fulcher Kutz Pictured Cliffs Pool and the Pinon Fruitland Pool.

5. The Aloha #1 Well will be capable of only low marginal production from the Fulcher Kutz Pictured Cliffs Pool, and will be capable of only low marginal production from the Pinon Fruitland Pool.

6. The ownership of the above mentioned Pools is common.

7. The proposed commingling from the above Pools will result in the recovery of additional hydrocarbons, the prevention of waste and the protection of correlative rights.

8. All operators of leases offsetting the dedicated acreage for this well, the U. S. Geological Survey and the Supervisor of the District III Office of the New Mexico Oil Conservation Division have been mailed a copy of this Application.

WHEREFORE, the Applicant requests this Application be set for hearing on January 14, 1981, and that after said hearing the New Mexico Oil Conservation Division grant this Application by giving approval to the downhole commingling of the Aloha #1 Well in San Juan County, New Mexico.

Respectfully submitted,

Thomas A. Dugan

Thomas A. Dugan
Agent for Applicant
P.O. Box 208
Farmington, N.M. 87401

ALOHA #1 WELL

Application for Approval of Downhole Commingling
Flag-Redfern Oil Co.

OFFSET LEASES AND OPERATORS

1. USA NM 013365
Township 28 North, Range 11 West, NMPM
Section 16: NW/4
San Juan County, New Mexico

OPERATOR: Flag-Redfern Oil Co.
P.O. Drawer 2280
Midland, Texas 79701

2. USA NM 013365
Township 28 North, Range 11 West, NMPM
Section 16: W/2 NE/4, W/2 SE/4, SE/4 SE/4
San Juan County, New Mexcio

OPERATOR: Dugan Production Corp.
P.O. Box 208
Farmington, New Mexico 87401

3. USA NM 021116
Township 28 North, Range 11 West, NMPM
Section 16: E/2 NE/4, NE/4 SE/4
San Juan County, New Mexico

OPERATOR: Flag-Redfern Oil Co.
P.O. Drawer 2280
Midland, Texas 79701

4. USA NM 010063
Township 28 North, Range 11 West, NMPM
Section 17: E/2
Section 21: N/2
San Juan County, New Mexico

OPERATOR: George E. Willett
Box 548
Lemoore, California 93245

5. USA SF 080844
Township 28 North, Range 11 West, NMPM
Section 20: NE/4
San Juan County, New Mexico

OPERATOR: National Drilling Co.
Address Unavailable

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO

IN THE Matter of the Application of
Flag-Redfern Oil Co. for Downhole
Commingling of the Aloha #1 Well
in San Juan County, New Mexico

Case 7121

APPLICATION

Pursuant to Rule 303 C of the Rules and Regulations of the State of New Mexico Oil Conservation Division, The Applicant, Flag-Redfern Oil Co., by and through its agent, Thomas A. Dugan, hereby makes application for approval of downhole commingling in the well bore of the Aloha #1 Well in San Juan County, New Mexico.

The Applicant further states:

1. The Operator of the Aloha #1 Well will be the Applicant, Flag-Redfern Oil Co., whose address is P.O. Box 208, Farmington, New Mexico, 87401.

2. The Aloha #1 Well will be located on Federal Oil and Gas Lease Serial #NM 013365 insofar as said lease covers the following described lands:

Township 28 North, Range 11 West, NMPM
Section 16: SE/4 SE/4, W/2 SE/4, W/2 NE/4, W/2
(Fulcher Kutz Pictured Cliffs Pool)
Section 16: SE/4 SE/4, W/2 SE/4, W/2 NE/4, W/2
(Pinon Fruitland Pool)

3. The legal location of the well will be as follows:

Township 28 North, Range 11 West, NMPM
Section 16: Unit Letter L
San Juan County, New Mexico

4. The Aloha #1 Well has not presently been approved for dual completion in the Fulcher Kutz Pictured Cliffs Pool and the Pinon Fruitland Pool.

5. The Aloha #1 Well will be capable of only low marginal production from the Fulcher Kutz Pictured Cliffs Pool, and will be capable of only low marginal production from the Pinon Fruitland Pool.

6. The ownership of the above mentioned Pools is common.

7. The proposed commingling from the above Pools will result in the recovery of additional hydrocarbons, the prevention of waste and the protection of correlative rights.

8. All operators of leases offsetting the dedicated acreage for this well, the U. S. Geological Survey and the Supervisor of the District III Office of the New Mexico Oil Conservation Division have been mailed a copy of this Application.

WHEREFORE, the Applicant requests this Application be set for hearing on January 14, 1981, and that after said hearing the New Mexico Oil Conservation Division grant this Application by giving approval to the downhole commingling of the Aloha #1 Well in San Juan County, New Mexico.

Respectfully submitted,

Thomas A. Dugan

Thomas A. Dugan
Agent for Applicant
P.O. Box 208
Farmington, N.M. 87401

ALOHA #1 WELL

Application for Approval of Downhole Commingling
Flag-Redfern Oil Co.

OFFSET LEASES AND OPERATORS

1. USA NM 013365
Township 28 North, Range 11 West, NMPM
Section 16: NW/4
San Juan County, New Mexico

OPERATOR: Flag-Redfern Oil Co.
P.O. Drawer 2280
Midland, Texas 79701

2. USA NM 013365
Township 28 North, Range 11 West, NMPM
Section 16: W/2 NE/4, W/2 SE/4, SE/4 SE/4
San Juan County, New Mexcio

OPERATOR: Dugan Production Corp.
P.O. Box 208
Farmington, New Mexico 87401

3. USA NM 021116
Township 28 North, Range 11 West, NMPM
Section 16: E/2 NE/4, NE/4 SE/4
San Juan County, New Mexico

OPERATOR: Flag-Redfern Oil Co.
P.O. Drawer 2280
Midland, Texas 79701

4. USA NM 010063
Township 28 North, Range 11 West, NMPM
Section 17: E/2
Section 21: N/2
San Juan County, New Mexico

OPERATOR: George E. Willett
Box 548
Lemoore, California 93245

5. USA SF 080844
Township 28 North, Range 11 West, NMPM
Section 20: NE/4
San Juan County, New Mexico

OPERATOR: National Drilling Co.
Address Unavailable

ALOHA #1 WELL

Application for Approval of Downhole Commingling
Flag-Redfern Oil Co.

OFFSET LEASES AND OPERATORS

1. USA NM 013365
Township 28 North, Range 11 West, NMPM
Section 16: NW/4
San Juan County, New Mexico

OPERATOR: Flag-Redfern Oil Co.
P.O. Drawer 2280
Midland, Texas 79701

2. USA NM 013365
Township 28 North, Range 11 West, NMPM
Section 16: W/2 NE/4, W/2 SE/4, SE/4 SE/4
San Juan County, New Mexcio

OPERATOR: Dugan Production Corp.
P.O. Box 208
Farmington, New Mexico 87401

3. USA NM 021116
Township 28 North, Range 11 West, NMPM
Section 16: E/2 NE/4, NE/4 SE/4
San Juan County, New Mexico

OPERATOR: Flag-Redfern Oil Co.
P.O. Drawer 2280
Midland, Texas 79701

4. USA NM 010063
Township 28 North, Range 11 West, NMPM
Section 17: E/2
Section 21: N/2
San Juan County, New Mexico

OPERATOR: George E. Willett
Box 548
Lemoore, California 93245

5. USA SF 080844
Township 28 North, Range 11 West, NMPM
Section 20: NE/4
San Juan County, New Mexico

OPERATOR: National Drilling Co.
Address Unavailable

dugan production corp.

December 29, 1980

Joe D. Ramey
Division Director
New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87501

Re: Application for Downhole Commingling
Aloha #2 Well (Fulcher Kutz Pictured Cliffs
Pool and Pinon Fruitland Pool)
San Juan County, New Mexico

Dear Mr. Ramey:

Enclosed please find three copies of the above referenced Application.

I previously verbally requested this matter be placed on the January 14, 1981 Docket and was advised by the New Mexico Oil Conservation Division that this request would be honored. I was also advised that a written application must be filed with the NMOCD on or before January 3, 1981.

Please advise if you need further information.

Sincerely,

Tommy Roberts

Tommy Roberts
Landman

TR:nw

Enclosures

RECEIVED
DEC 31 1980
OIL CONSERVATION DIVISION
SANTA FE

709 BLOOMFIELD RD. • P. O. BOX 208 • FARMINGTON, NEW MEXICO 87401 • PHONE: 505-325-1821

cc: George E. Willett
Box 548
Lemoore, California 93245

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO

IN THE Matter of the Application of
Flag-Redfern Oil Co. for Downhole
Commingling of the Aloha #2 Well
in San Juan County, New Mexico

Case 7121

APPLICATION

Pursuant to Rule 303 C of the Rules and Regulations of the State of New Mexico Oil Conservation Division, The Applicant, Flag-Redfern Oil Co., by and through its agent, Thomas A. Dugan, hereby makes application for approval of downhole commingling in the well bore of the Aloha #2 Well in San Juan County, New Mexico.

The Applicant further states:

1. The Operator of the Aloha #2 Well will be the Applicant, Flag-Redfern Oil Co., whose address is P.O. Box 208, Farmington, New Mexico, 87401.

2. The Aloha #2 Well will be located on Federal Oil and Gas Lease Serial #NM 013365 insofar as said lease covers the following described lands:

Township 28 North, Range 11 West, NMPM
Section 16: SE/4 SE/4, W/2 SE/4, W/2 NE/4, W/2
(Fulcher Kutz Pictured Cliffs Pool)
Section 16: SE/4 SE/4, W/2 SE/4, W/2 NE/4, W/2
(Pinon Fruitland Pool)

3. The legal location of the well will be as follows:

Township 28 North, Range 11 West, NMPM
Section 16: Unit Letter D
San Juan County, New Mexico

4. The Aloha #2 Well has not presently been approved for dual completion in the Fulcher Kutz Pictured Cliffs Pool and the Pinon Fruitland Pool.

5. The Aloha #2 Well will be capable of only low marginal production from the Fulcher Kutz Pictured Cliffs Pool, and will be capable of only low marginal production from the Pinon Fruitland Pool.

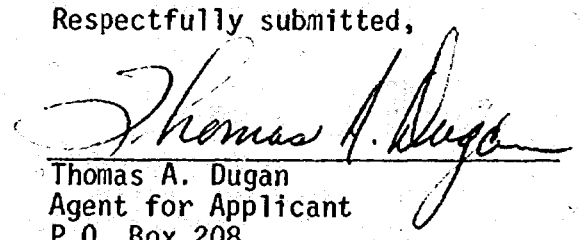
6. The ownership of the above mentioned Pools is common.

7. The proposed commingling from the above Pools will result in the recovery of additional hydrocarbons, the prevention of waste and the protection of correlative rights.

8. All operators of leases offsetting the dedicated acreage for this well, the U. S. Geological Survey and the Supervisor of the District III Office of the New Mexico Oil Conservation Division have been mailed a copy of this Application.

WHEREFORE, the Applicant requests this Application be set for hearing on January 14, 1981, and that after said hearing the New Mexico Oil Conservation Division grant this Application by giving approval to the downhole commingling of the Aloha #2 Well in San Juan County, New Mexico.

Respectfully submitted,



Thomas A. Dugan
Agent for Applicant
P.O. Box 208
Farmington, N.M. 87401

ALOHA #2 WELL

Application for Approval of Downhole Commingling
Flag-Redfern Oil Co.

OFFSET LEASES AND OPERATORS

1. USA NM 020982
Township 28 North, Range 11 West, NMPM
Section 8: Lot 2
Section 9: Lots 1,3
San Juan County, New Mexico

OPERATOR: Flag-Redfern Oil Co.
P.O. Box 2280
Midland, Texas 79701

2. USA NM 010063
Township 28 North, Range 11 West, NMPM
Section 9: Lots 2,4, SW/4 SE/4,
SW/4 SW/4, SE/4 SW/4
San Juan County, New Mexico

OPERATOR: Flag-Redfern Oil Co.
P.O. Box 2280
Midland, Texas 79701

3. USA NM 021116
Township 28 North, Range 11 West, NMPM
Section 9: SE/4 SE/4
Section 16: E/2 NE/4, NE/4 SE/4
San Juan County, New Mexico

OPERATOR: Flag-Redfern Oil Co.
P.O. Drawer 2280
Midland, Texas 79701

4. USA NM 013365
Township 28 North, Range 11 West, NMPM
Section 16: W/2 NE/4, W/2 SE/4, SE/4 SE/4
San Juan County, New Mexico

OPERATOR: Dugan Production Corp.
P.O. Box 208
Farmington, New Mexico 87401

5. USA NM 013365
Township 28 North, Range 11 West, NMPM
Section 16: SW/4
San Juan County, New Mexico

OPERATOR: Flag-Redfern Oil Co.
P.O. Drawer 2280
Midland, Texas 79701

6. USA NM 010063
Township 28 North, Range 11 West, NMPM
Section 17: E/2
San Juan County, New Mexico

OPERATOR: George E. Willett
Box 548
Lemoore, California 93245

7. USA NM 010063
Township 28 North, Range 11 West, NMPM
Section 8: Lot 1, SW/4 SE/4, SE/4 SE/4
San Juan County, New Mexico

OPERATOR: Flag-Redfern Oil Co.
P.O. Drawer 2280
Midland, Texas 79701

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO

IN THE Matter of the Application of
Flag-Redfern Oil Co. for Downhole
Commingling of the Aloha #2 Well
in San Juan County, New Mexico

Case 7121

APPLICATION

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(Fulcher Kutz Pictured Cliffs Pool)
Section 16: SE/4 SE/4, W/2 SE/4, W/2 NE/4, W/2
(Pinon Fruitland Pool)

3. The legal location of the well will be as follows:

Township 28 North, Range 11 West, NMPM
Section 16: Unit Letter D
San Juan County, New Mexico

4. The Aloha #2 Well has not presently been approved for dual completion in the Fulcher Kutz Pictured Cliffs Pool and the Pinon Fruitland Pool.

5. The Aloha #2 Well will be capable of only low marginal production from the Fulcher Kutz Pictured Cliffs Pool, and will be capable of only low marginal production from the Pinon Fruitland Pool.

6. The ownership of the above mentioned Pools is common.

7. The proposed commingling from the above Pools will result in the recovery of additional hydrocarbons, the prevention of waste and the protection of correlative rights.

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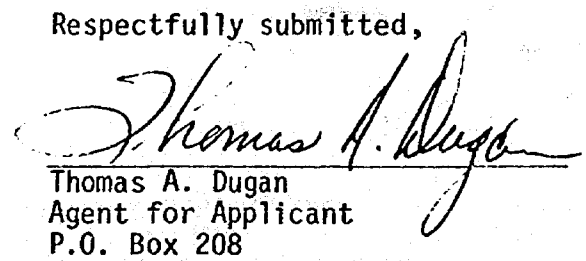
Respectfully submitted,



Thomas A. Dugan
Agent for Applicant
P.O. Box 208
Farmington, N.M. 87401

ALOHA #2 WELL

Application for Approval of Downhole Commingling
Flag-Redfern Oil Co.

OFFSET LEASES AND OPERATORS

1. USA NM 020982
Township 28 North, Range 11 West, NMPM
Section 8: Lot 2
Section 9: Lots 1,3
San Juan County, New Mexico

OPERATOR: Flag-Redfern Oil Co.
P.O. Box 2280
Midland, Texas 79701

2. USA NM 010063
Township 28 North, Range 11 West, NMPM
Section 9: Lots 2,4, SW/4 SE/4,
SW/4 SW/4, SE/4 SW/4
San Juan County, New Mexico

OPERATOR: Flag-Redfern Oil Co.
P.O. Box 2280
Midland, Texas 79701

3. USA NM 021116
Township 28 North, Range 11 West, NMPM
Section 9: SE/4 SE/4
Section 16: E/2 NE/4, NE/4 SE/4
San Juan County, New Mexico

OPERATOR: Flag-Redfern Oil Co.
P.O. Drawer 2280
Midland, Texas 79701

4. USA NM 013365
Township 28 North, Range 11 West, NMPM
Section 16: W/2 NE/4, W/2 SE/4, SE/4 SE/4
San Juan County, New Mexico

OPERATOR: Dugan Production Corp.
P.O. Box 208
Farmington, New Mexico 87401

5. USA NM 013365
Township 28 North, Range 11 West, NMPM
Section 16: SW/4
San Juan County, New Mexico

OPERATOR: Flag-Redfern Oil Co.
P.O. Drawer 2280
Midland, Texas 79701

6. USA NM 010063
Township 28 North, Range 11 West, NMPM
Section 17: E/2
San Juan County, New Mexico

OPERATOR: George E. Willett
Box 548
Lemoore, California 93245

7. USA NM 010063
Township 28 North, Range 11 West, NMPM
Section 8: Lot 1, SW/4 SE/4, SE/4 SE/4
San Juan County, New Mexico

OPERATOR: Flag-Redfern Oil Co.
P.O. Drawer 2280
Midland, Texas 79701

OIL CONSERVATION DIVISION

STATE OF NEW MEXICO

IN THE Matter of the Application of
Flag-Redfern Oil Co. for Downhole
Commingling of the Aloha #2 Well
in San Juan County, New Mexico

Case 7121

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Section 16: Unit Letter D
San Juan County, New Mexico

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Respectfully submitted,

Thomas A. Dugan

Thomas A. Dugan
Agent for Applicant
P.O. Box 208
Farmington, N.M. 87401

ALOHA #2 WELL

Application for Approval of Downhole Commingling
Flag-Redfern Oil Co.

OFFSET LEASES AND OPERATORS

1. USA NM 020982
   Township 28 North, Range 11 West, NMPM
   Section 8: Lot 2
   Section 9: Lots 1,3
   San Juan County, New Mexico

   OPERATOR: Flag-Redfern Oil Co.
   P.O. Box 2280
   Midland, Texas 79701

2. USA NM 010063
   Township 28 North, Range 11 West, NMPM
   Section 9: Lots 2,4, SW/4 SE/4,
   SW/4 SW/4, SE/4 SW/4
   San Juan County, New Mexico

   OPERATOR: Flag-Redfern Oil Co.
   P.O. Box 2280
   Midland, Texas 79701

3. USA NM 021116
   Township 28 North, Range 11 West, NMPM
   Section 9: SE/4 SE/4
   Section 16: E/2 NE/4, NE/4 SE/4
   San Juan County, New Mexico

   OPERATOR: Flag-Redfern Oil Co.
   P.O. Drawer 2280
   Midland, Texas 79701

4. USA NM 013365
   Township 28 North, Range 11 West, NMPM
   Section 16: W/2 NE/4, W/2 SE/4, SE/4 SE/4
   San Juan County, New Mexico

   OPERATOR: Dugan Production Corp.
   P.O. Box 208
   Farmington, New Mexico 87401

5. USA NM 013365
   Township 28 North, Range 11 West, NMPM
   Section 16: SW/4
   San Juan County, New Mexico

   OPERATOR: Flag-Redfern Oil Co.
   P.O. Drawer 2280
   Midland, Texas 79701

6. USA NM 010063
   Township 28 North, Range 11 West, NMPM
   Section 17: E/2
   San Juan County, New Mexico

   OPERATOR: George E. Willett
   Box 548
   Lemoore, California 93245

7. USA NM 010063
   Township 28 North, Range 11 West, NMPM
   Section 8: Lot 1, SW/4 SE/4, SE/4 SE/4
   San Juan County, New Mexico

   OPERATOR: Flag-Redfern Oil Co.
   P.O. Drawer 2280
   Midland, Texas 79701

Called in by Tommie Roberts
12/16/80
Flag - Redfern Oil Company
San Juan County
Downhole Commingling
Pinon - Fruitland and
Fulcher Kutz - Pictured Cliffs
Aloha #1-L
16-28N-11W

Called in by Tommie Roberts
12/16/80
Flag - Redfern Oil Co.
Downhole Commingling
San Juan County
Pinon - Fruitland and
Fulcher Kutz - Pictured Cliffs
Aloha #2-D
16-28N-11W

dr/

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:

CASE NO. 7121

Order No. R-6572

APPLICATION OF FLAG-REDFERN OIL CO.

FOR DOWNHOLE COMMINGLING, SAN JUAN

COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 9 a.m. on January 14, 1981, at Santa Fe, New Mexico, before Examiner Richard L. Stamets.

NOW, on this _____ day of January, 1981, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS:

(1) That due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) That the applicant, Flag-Redfern Oil Co., is the owner and operator of the Aloha Wells Nos. 1 and 2, located in Units L and D, respectively, of Section 16, Township 28 North, Range 11 West, NMPM, San Juan County, New Mexico.

(3) That the applicant seeks authority to commingle Pinon-Fruitland and Fulcher Kutz-Pictured Cliffs production within the wellbores of the above-described wells.

(4) That from the Pinon-Fruitland zone, the subject well ~~is~~ are capable of low ~~marginal~~ rates of production only.

(5) That from the Fulcher Kutz-Pictured Cliffs zone, the subject well ~~is~~ are capable of low ~~marginal~~ rates of production only.

(6) That the proposed commingling may result in the recovery of additional hydrocarbons from each of the subject pools, thereby preventing waste, and will not violate correlative rights.

(7) That the reservoir characteristics of each of the subject zones are such that underground waste would not be caused by the proposed commingling provided that the well is not shut-in for an extended period.

(8) That to afford the Division the opportunity to assess the potential for waste and to expeditiously order appropriate remedial action, the operator should notify the Aztec district office of the Division any time the subject well is shut-in for 7 consecutive days.

(9) That in order to allocate the commingled production to each of the commingled zones in ~~the subject well~~ said Aloha Wells No 1 and 2, 90 percent and 50 percent, respectively, of the commingled _____ production, respectively, should be allocated to the Pinon-Fruitland zone, and 10 percent and 50 percent, respectively, of the commingled _____ production, respectively, to the Fulcher Kutz-Pictured Cliffs zone.

~~ALTERNATE~~

(10) ~~That in order to allocate the commingled production to each of the commingled zones in the wells,~~ That during January, 1982, the applicant should consult with the supervisor of the Aztec district office of the Division ~~and~~ to determine a modified allocation formula for each of the production zones. in said Aloha Well No. 1 should production trends warrant such a change.

IT IS THEREFORE ORDERED:

(1) That the applicant, Flag-Redfern Oil Co., is hereby authorized to commingle Pinon-Fruitland and Fulcher Kutz-Pictured Cliffs production within the wellbore of the Aloha Wells Nos. 1 and 2, located in Units L and D, respectively, of Section 16, Township 28 North, Range 11 West, NMPM, San Juan County, New Mexico.

(3) That during January, 1982, the applicant shall consult with the Supervisor of the Aztec district office of the Division and determine a modified allocation formula for said Aloha Well No. 1 should production trends warrant the same. ~~an allocation formula for the allocation of production to each zone in each of the subject wells.~~

~~(ALTERNATE)~~

(2) That 90 percent and 50 percent, respectively, of the commingled ~~production~~ production shall be allocated to the Pinon-Fruitland zone and 10 percent and 50 percent, respectively, of the commingled ~~production~~ production shall be allocated to the Fulcher Kutz-Pictured Cliffs zone in said Aloha Wells Nos. 1 and 2.

(3)

~~(4)~~ That the operator of the subject well shall immediately notify the Division's Aztec district office any time the well has been shut-in for 7 consecutive days and shall concurrently present, to the Division, a plan for remedial action.

(5) That jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.