



THE JICARILLA APACHE TRIBE

P.O. BOX 507 • DULCE, NEW MEXICO 87528
(505) 759-3242

RESOLUTION OF THE TRIBAL COUNCIL

OIL AND GAS ADMINISTRATION

RE: Oil and Gas/Mallon Oil Company
Amending Resolution No. 97-R-530-07

*Jic 30-3-27 #2
M-27-30-3*

Resolution No. 2000-R-153-04

WHEREAS, on July 3, 1997, the Tribal Council enacted Resolution No. 97-R-530-07 approving the Plan of Development submitted by Mallon Oil Company for the construction and operation of an Amine Plant for the treatment of sour gas from certain listed oil and gas leases on the Reservation; and

WHEREAS, the approved Plan of Development required Mallon to isolate the Ojo Alamo formation from all other formations; and

WHEREAS, Mallon has engaged in extensive development of its leases since 1997 and has requested the Tribe's permission for down-hole commingling of gas that will be treated in the Mallon Amine Plant; and

WHEREAS, the Oil and Gas Administration and the Revenue and Taxation Department have reviewed Mallon's proposal and recommend certain conditions be placed on any down-hole commingling of gas by Mallon; and

WHEREAS, the Tribal Council has determined that the recommendation of the Oil and Gas Administration and the Revenue and Taxation Department should be adopted,

NOW, THEREFORE, BE IT RESOLVED by the Jicarilla Apache Tribal Council that the Plan of Development of the Mallon Amine Plant approved by Resolution No. 97-R-530-07 is hereby amended to allow down-hole commingling of gas production by Mallon Oil Company on the following conditions:

1. This resolution applies only to production from BIA Oil and Gas Leases No(s). 451, 452, 457, 458, 459, 460, 461, 462, and 464, and Mineral Development Agreements No(s). 701-90-0002 and 701-98-0013.
2. Mallon will apply to the Oil and Gas Administration (OGA) for approval of down-hole commingling on a well-by-well basis.



OIL AND GAS ADMINISTRATION

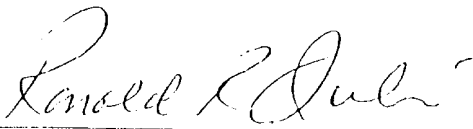
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- 3 Mallon will test each well drilled, including a 48-hour stabilized flow test for each producing zone and gas analysis testing for each producing zone.
- 4 Mallon will submit OGA the same application for permission to commingle that is submitted to the New Mexico Oil Conservation Division and the Bureau of Land Management. The application will include the test results specified in par. 3, the proposed completion program, and a proposed method of allocating production rates and Btu content to each zone.
- 5 OGA and Revenue & Taxation will approve/disapprove the application within ten working days after receipt of the application.
- 6 The Tribe will not approve down-hole commingling of production from zones that are subject to different royalty rates.
- 7 The cumulated total of MMBtus allocated to all producing zones of a well shall not be less than the total MMBtus measured at the wellhead.
- 8 The allocation formula (Btu content and production rates) shall be subject to review by the OGA and Revenue and Taxation annually.
- 9 Under normal operating procedures sour gas will not be allowed to enter any other formation.
- 10 The commingled stream of gas will be metered at the wellhead and will be tested for Btu content semi-annually.
- 11 The Tribe's consent to down-hole commingling for a well shall be subject to withdrawal if there is damage to any producing formation or if the allocation formula results in royalty payments to the Tribe that are less than the royalty that would be payable from separate completions of each zone.

BE IT FURTHER RESOLVED that nothing in this resolution released Mallon from compliance with the normal permitting and approval requirements imposed by federal or tribal law in connection with any oil and gas well drilled or to be drilled on the leases or mineral development agreements identified above.



Tribal President

OIL AND GAS ADMINISTRATION

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CERTIFICATION

The foregoing Resolution was enacted by the Tribal Council of the Jicarilla Apache Tribe on the 6th day of April, 2000, by a vote of 5 for, 0 against, 1 abstaining, at a duly called meeting at which a quorum of the Tribal Council members was present.

Corinne Puerto

TRIBAL SECRETARY

Mallon Oil Company

Denver/Colorado ♦ Durango/Colorado ♦ Carlsbad/New Mexico

a Mallon Resources Subsidiary

April 4, 2000

Mr. Thurman Velarde
Oil & Gas Administration
Jicarilla Apache Tribe
PO Box 507
Dulce, NM 87528

Dear Mr. Velarde:

A commingling review meeting was held in Farmington on October 21, 1999. The purpose of the meeting was to begin discussion about the potential for down hole commingling in the Mallon operated wells located in the East Blanco Field. The area of Mallon's interest in the East Blanco Field is within the Jicarilla Tribal Reservation and is located in T28-31N R2-3W. The meeting participants included representatives from the Jicarilla Tribe, Bureau of Land Management, New Mexico Oil Conservation Division and Mallon Oil Company. The list of attendees is attached (Exhibit 1). Mallon Oil Company plans to request approval of down hole commingling of separately pooled formations on a well by well basis once Jicarilla Tribal approval is obtained for the reasons described below and requests your support of this process.

The development of the natural gas reserves in this area began in 1986 with the completion of wells in the Pictured Cliffs formation. Mallon Oil Company is actively developing three additional Tertiary age formations in this area. These formations are the San Jose, Nacimiento, and Ojo Alamo. Some basic geologic and reservoir information is included on the attached reservoir summary sheet (Exhibit 2). Mallon is currently limited to completing only two zones at a time in each well bore. This limitation is due to the requirement that two tubing strings with a packer be used to separate the two producing zones. The separate tubing strings produce to separate surface and metering facilities at the surface before being combined into the common gathering system (Exhibit 3) to transport the gas to Mallon's compression and treating facility. All zones require compression to produce and the treating facility removes H₂S from the combined gas stream before entering the El Paso system.

Some of the completed wells have four to five potentially productive intervals that could be completed and put on production (Exhibit 4) under a commingling plan of operation. The commingling of zones down hole would eliminate the need to drill shallow twin wells to produce the San Jose intervals (Exhibit 5), thus minimizing surface and environmental disturbances as well as increasing the revenue to the Jicarilla Tribe.

Additionally, the two zone two tubing string completion does not allow for maximum production flexibility to ensure that gas rates from each well bore are maximized. The Ojo Alamo and shallower reservoirs produce water at some locations. Allowing down hole commingling of reservoirs would allow the wells to more optimally produce these reservoirs by increasing the lift efficiency.

The advantages of down hole commingling are:

- Production can be increased from the current well bores by opening more than two zones. This will increase recoverable reserves and maximize revenues to the Jicarilla Tribe.
- Production rates can be maintained at a higher level by reducing liquid in the well bores. This will be accomplished by commingling gas with lower associated water production to help lift well bore liquid. Efficient down hole mechanical configurations such as artificial lift could be installed, which can not be effectively applied now because of the two tubing string completions.
- Reducing the total number of wells required for each spacing unit would minimize surface disturbances. Commingling would also reduce the required surface equipment from one set of equipment for each reservoir/tubing string to one set per well.
- Down hole commingling will allow artificial lift to be installed to extend the wells producing life.
- Ultimate gas recoveries will be increased by allowing development into marginal field areas that can not be developed if more than one tubing string and surface equipment set are required.
- Jicarilla revenues will increase in the new MDA areas by allowing reduced investments and subsequently earlier well pay outs that result in increased Jicarilla royalty rates at interest reversion.
- Down hole commingling will allow Mallon to hydraulically fracture and complete more than one reservoir at a time which will reduce the time that completion equipment is on the well site, reduce investment costs, and allow development of marginal areas.

Down hole commingling is not being applied for in zones with different royalty rates.

The point of gas measurement and royalty payment will remain the same and will not be changed by down hole commingling. Royalty payments will be paid based on production allocated to each producing formation.

Current spacing for all reservoirs being discussed is 160 acres.

Mallon intends to pursue down hole commingling to accomplish the above recovery and revenue improvements. This process will include:

- Applying for down hole commingling for San Jose, Nacimiento and Ojo Alamo production on a well by well basis.
- Applying for down hole commingling of new Pictured Cliffs producers with new or prior Ojo Alamo, Nacimiento or San Jose zones on a well by well basis.
- Evaluate and apply for field wide commingling after adequate well by well commingled cases have been approved and commingled well performance reviewed by appropriate agencies.

Mallon respectfully requests your assistance in obtaining Jicarilla Tribe approval of down hole commingling of gas production. If you have any questions please do not hesitate to contact me at 970-382-9100. Thank you for your cooperation and assistance in this matter.

Sincerely,

Mallon Oil Company



Robert E. Blaylock
District Manager

EXHIBIT 1

MEETING ATTENDEES
OCTOBER 21, 1999
FARMINGTON, NEW MEXICO

NAME	COMPANY	PHONE
Duane C. Winkler	Mallon Oil Company	970-382-9100
John Zellitti	Mallon Oil Company	970-382-9100
Terry Lindeman	Mallon Oil Company	970-382-9100
Wayne Townsend	BLM/FFO	505-599-6359
Ray Hager	BLM/FFO	970-490-2942
Ernie Busch	NMOCD Aztec	
Ray Jones	Mallon Oil Company	303-293-2333, Ext. 1450
Wendell Bond	Mallon Oil Company	303-293-2333, Ext 1430
John Kilpatrick	Jicarilla Oil & Gas Administration	505-759-3485, Ext. 23
Joe Hewitt	BLM/FFO	505-599-6365

Existing Dually Completed Well

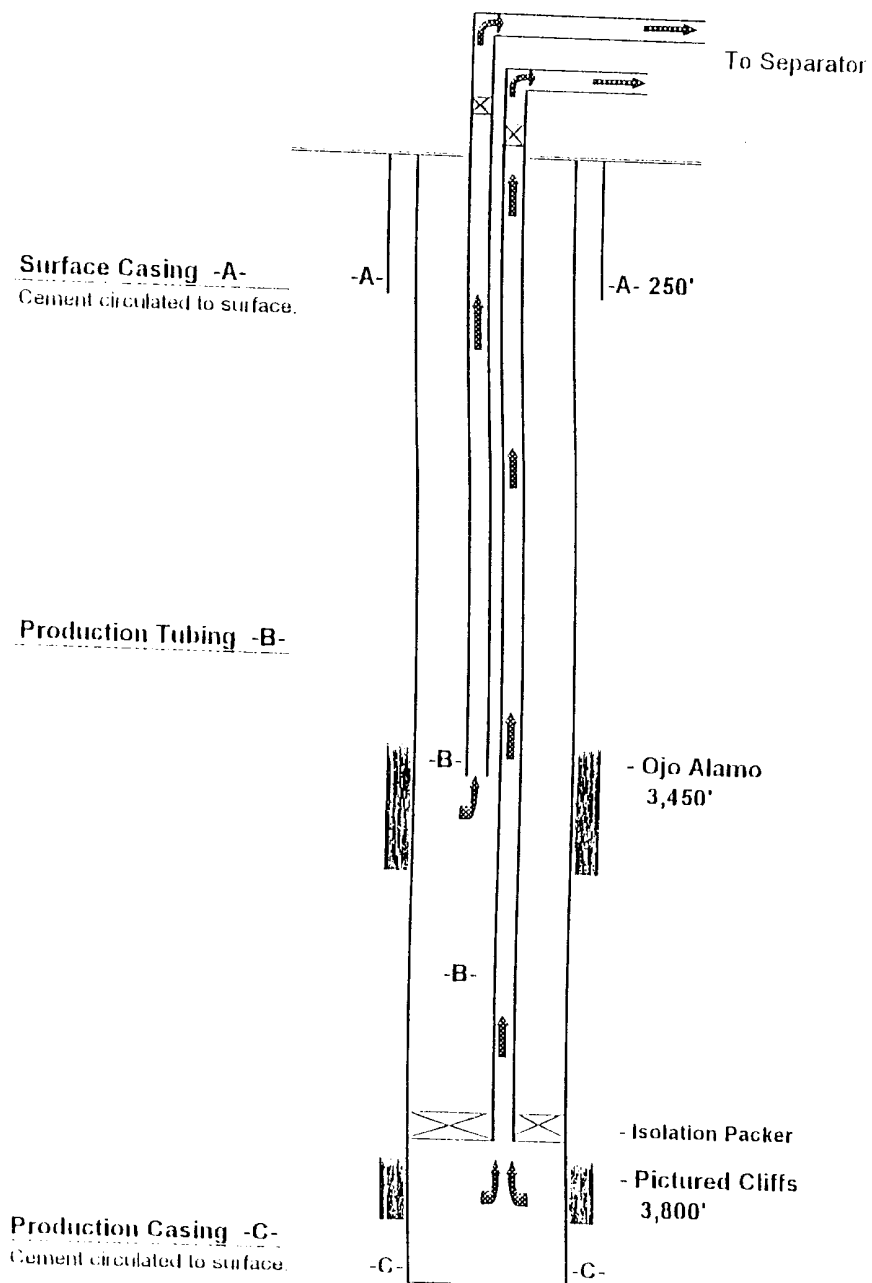


Exhibit 3

Typical Wellbore

Schematic

East Blanco Field

Rio Arriba County, NM

Mallon Oil Company

Wellbore Diagram

Proposed Downhole Commingled Well

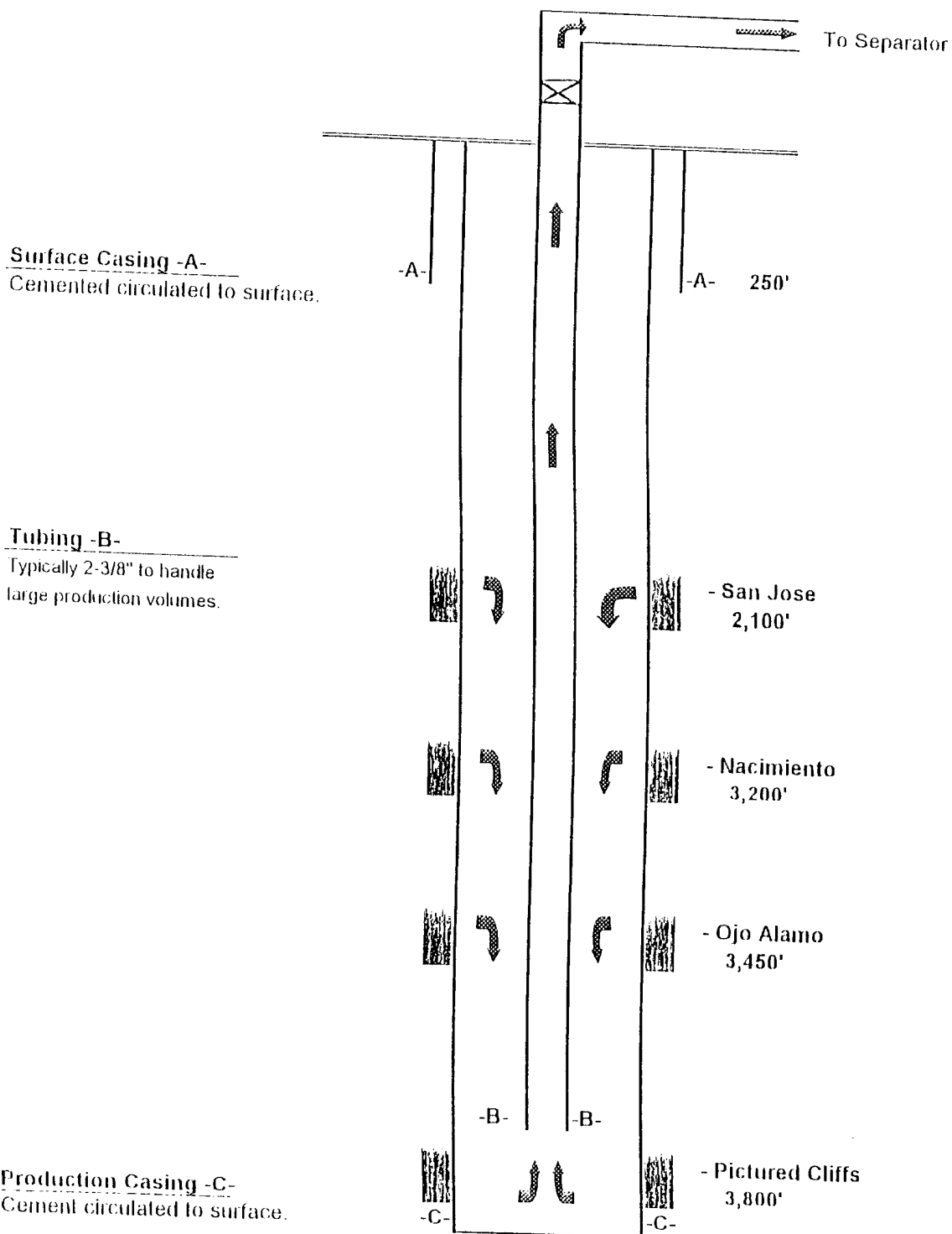


Exhibit 4

Existing Dually Completed Well

Existing San Jose Twin Well

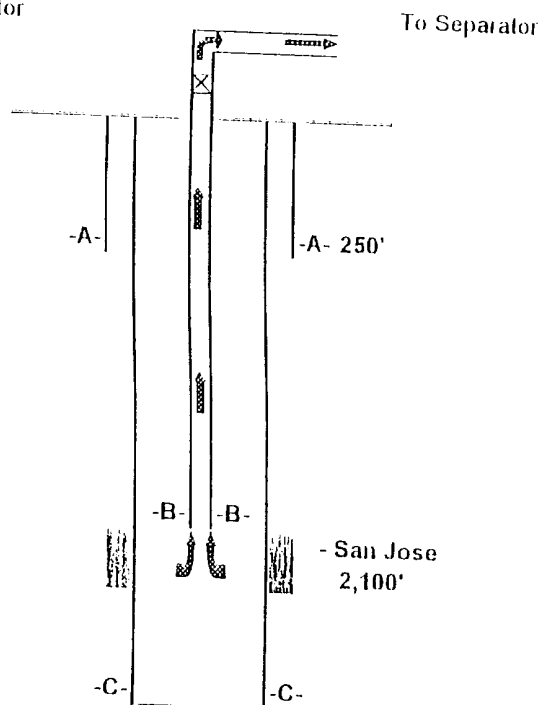
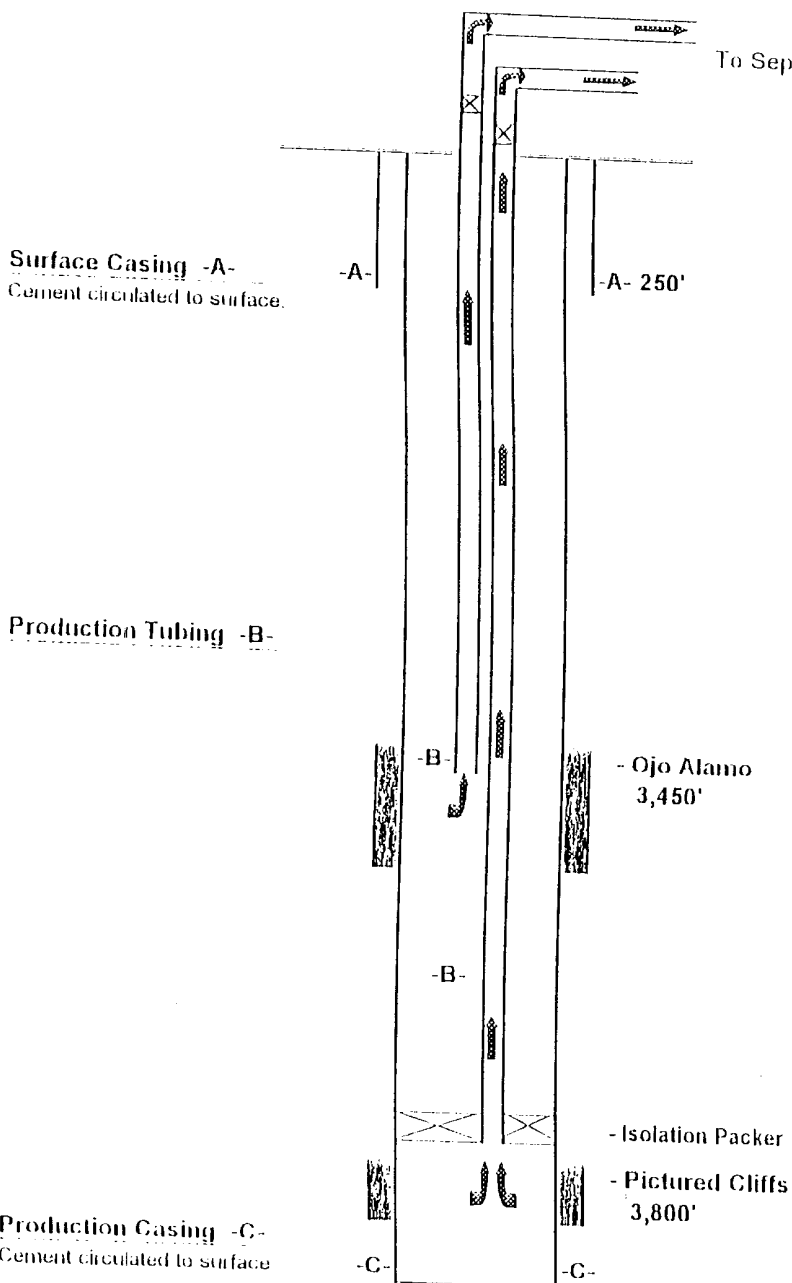


Exhibit 5

The advantages of downhole commingling are:

- Production can be increased from the current wellbores by opening more than two zones. This will increase recoverable reserves and maximize revenues to the Jicarilla Tribe.
- Production rates can be maintained at a higher level by reducing liquid in the wellbores. This will be accomplished by commingling gas with lower associated water production to help lift wellbore liquid. Efficient downhole mechanical configurations such as artificial lift could be installed, which can not be effectively applied now because of the two tubing string completions.
- Surface disturbances will be minimized by reducing the total number of wells required for each spacing unit. Commingling would also reduce the required surface equipment from one set of equipment for each reservoir/tubing string to one set per well.
- Downhole commingling will allow artificial lift to be installed to extend the wells producing life.
- Ultimate gas recoveries will be increased by allowing development into marginal field areas that can not be developed if more than one tubing string and surface equipment set are required.
- Jicarilla revenues will increase in the new MDA areas by allowing reduced investments and subsequently earlier well payouts that result in increased Jicarilla royalty rates at interest reversion.
- Downhole commingling will allow Mallon to hydraulically fracture and complete more than one reservoir at a time which will reduce the time that completion equipment is on the well site, reduce investment costs, and allow development of marginal areas.

Mallon's activities on Jicarilla reservation lands and royalty rates are very uniform. Original leases had a 0.16666 royalty rate for all zones except the Fruitland Coal which had a 0.1875 royalty rate. One original lease had a royalty rate of 0.20 for all zones. New Mineral Development Agreements have a uniform royalty rate of 0.20 for all reservoirs. Downhole commingling will not affect royalty rates from wells with uniform royalty rates for all reservoirs. Downhole commingling of the Fruitland Coal reservoir on original leases with a 0.1875 royalty rate would not be applied for without appropriate production allocation to assure proper royalty payments.

The point of gas measurement and royalty payment will remain the same and will not be changed by downhole commingling. Gas properties vary by zone but test calculations were made that determined the royalty rate paid for the gas will not be affected by downhole commingling. Royalty payment test calculations are further explained in Exhibit 4.

Current spacing is 160 acres for all reservoirs except the Fruitland Coal which is 320 acre spacing. Downhole commingling of the Fruitland Coal would be limited to one completion per 320 acres as long as the Fruitland coal spacing is 320 acres.

Mallon intends to pursue downhole commingle to accomplish the above recovery and revenue improvements. This process will include:

- Applying for downhole commingling for San Jose, Nacimiento and Ojo Alamo production on a well by well basis.

Date

Bureau of Land Management
Farmington Field Office

Date

Jicarilla Tribal Minerals

cc: Joe Muniz, Executive Director of Natural Resources