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JASON KELLAHIN (RETIRED 1991)

December 14, 2001

**HAND DELIVERED**

Ms. Lori Wrotenbery, Chair  
Dr. Robert Lee, Member  
Ms. Jamie Bailey, Member

**Hand delivered**  
**Federal Express**  
**Hand delivered**

Oil Conservation Commission  
1220 South Saint Francis Drive  
Santa Fe, New Mexico 87505

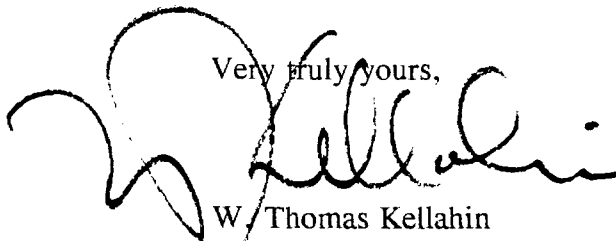
**Re: COMMISSION DENOVO HEARING**  
**Order No. R-11652**  
**NMOCD Case 12587: Application of Sapient Energy Corp.**  
**for an unorthodox well location and non-**  
**standard proration units, Lea County, New Mexico**

**NMOCD Case 12605: Application of Sapient Energy Corp.**  
**for special pool rules for the West Monument Tubb Gas Pool,**  
**Lea County, New Mexico**

Dear Members of the Commission:

On behalf of Sapient Energy Corp. ("Sapient") and in accordance with correspondence from the Commission's attorney, please find enclosed Sapient's Closing Statement and Summary of the Evidence which includes a proposed order and a memorandum on retroactivity.

Very truly yours,



W. Thomas Kellahin

copy with enclosures:

Steve Ross, Esq.  
Attorney for Commission  
William F. Carr, Esq.  
Attorney for Conoco Inc.  
Sapient Energy Corp.  
Attn: Kyle Travis

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**STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION COMMISSION**

**APPLICATION OF SAPIENT ENERGY CORP. FOR  
UNORTHODOX WELL LOCATION AND: (i) TWO  
NON-STANDARD 160-ACRE GAS SPACING AND  
PRORATION UNITS; OR IN THE ALTERNATIVE  
(ii) ONE NON-STANDARD 160-ACRE GAS  
PRORATION AND SPACING UNIT,  
LEA COUNTY, NEW MEXICO**

**CASE NO. 12587  
DeNovo**

**APPLICATION OF SAPIENT ENERGY CORP.  
FOR SPECIAL POOL RULES FOR THE  
WEST MONUMENT-TUBB GAS POOL  
LEA COUNTY, NEW MEXICO.**

**CASE NO. 12605  
DeNovo**

**SAPIENT ENERGY CORP.'S  
CLOSING STATEMENT  
AND  
SUMMARY OF THE EVIDENCE**

SAPIENT ENERGY CORP. ("Sapient"), through its attorneys, Kellahin & Kellahin, submits this Closing Statement and Summary of the Evidence in accordance with the direction from the Commission's attorney.

**FUNDAMENTAL ISSUES**

These cases involve the Tubb formation in the Monument Area of Lea County, New Mexico which, with the exception of Sapient's Barber 12 Well, has been developed with Tubb gas and oil wells on 80-acre spacing.

The fundamental issues involved in these cases are:

- (a) what is the most probable drainage area for Sapient's Barber 12 Well;
- (b) should the Barber 12 Well be treated any differently from the gas wells in the adjoining Monument Tubb Oil Pool;
- (c) what spacing unit size should be approved for Sapient's Barber 12 Well and other wells in the West Monument Tubb Gas Pool;
- (d) what orientation and accompanying well location should be approved for Sapient's Barber 12 Well and other wells in the West Monument Tubb Gas Pool; and
- (e) should the assignment of an appropriate spacing unit for the Sapient Barber 12 Well be made retroactive to the date of first production in August, 1999.

### **PARTIES**

#### **Applicant:**

Sapient Energy Corp. ("Sapient") acquired the Bertha J. Barber 12 Well (the "Barber 12 Well") in July , 2000. from Falcon Creek Resources, Inc. The well is located 330 feet from the north line and 660 feet from the east line of Section 7, T20S, R37E, Lea County, New Mexico. Falcon Creek Resources, Inc. acquired the well in April 2000, from Cross Timbers Oil Company who originally recompleted the well into the Tubb formation and commenced production in August, 1999.

#### **Opposition:**

Chevron USA Production Company ("Chevron") has an 18.71 % working interest ownership in the W/2NE/4 of Section 7 and is the offsetting operator with 100 % of the working interest for the Matthews 12 Well in the SE/4 of Section 7, T20S, R37E.

Conoco Inc. ("Conoco") is an offsetting working interest owner with a 37.42 % interest in the W/2NE/4 of Section 7.

Amerada Hess has a working interest in the S/2SW/4 of Section 5 in the Monument Tubb Oil Pool in which Amerada Hess could have drilled a Tubb gas well 467 feet from Sapient's spacing unit without notice to Sapient. Amerada Hess objected to the fact that Sapient's Barber 12 Well is 738 feet from the Amerada Hess tract but prior to the hearing withdrew its objection and did not appear before the Commission.

## SAPIENT'S REQUEST TO THE COMMISSION

### Request to the Commission:

Sapient seeks the following relief from the Commission:

- (a) adopt rules for the West Monument-Tubb Gas Pool ("The Gas Pool") which are identical to the existing rules for the Monument Tubb Oil Pool ("The Oil Pool"), including a provision for standard 80-acre spacing units and 330 foot well set back requirement for both oil wells and gas wells;
- (b) whether spacing is 80-acre or 160-acres, production from the discovery well be allocated retroactive to the date of first production from its Barber 12 Well for any production from The Gas Pool; and
- (c) in the event Sapient's request for 80-acres spacing is granted, then its Barber 12 Well will be at a standard well location. However, in the event the Commission adopts 160-acre spacing with 660 foot well setback requirements, then Sapient's location is unorthodox and Sapient requests approval of the Well Location for its Barber 12 retroactive to date of first production, without any penalty.

### COMMISSION'S AUTHORITY

NMSA 1978 Section 70-2-17, obligates the Commission:

"A. is required, so far as it is practicable to do so, afford to the owner of each property in a pool the opportunity to produce its just and equitable share of the oil or gas, or both, in the pool, being the amount, so far as can be practically determined, and so far as such can be practicably obtained without waste, **substantially in the proportion that the quantity of the recoverable oil or gas, or both, under such property bears to the total recoverable oil or gas, or both, in the pool...**" [emphasis added]

"B. ...may establish a proration unit for each pool, such being the area that can be efficiently and economically drained and developed by one well...."

The Commission is authorized to adopt special pool rules which can be different from the "general statewide" spacing rules set forth in Division Rule 104. 19 NMAC 15.C.104.

NMSA 1978 Section 70-2-12 (10) empowers the Commission "To fix the spacing of wells".

The Commission has the authority to retroactively allocate production from Sapient's Barber 12 Well from the date of first production. **See Sapient's Memorandum attached hereto as Addendum (1)**

Correlative rights are defined as "the opportunity" afforded each interest owner to recover his share of the recoverable hydrocarbons apportioned to his tract. That opportunity is not an absolute entitlement to a certain volume of hydrocarbons. That opportunity can be lost or waived by an interest owner failing to act. **See 19 NMAC 15.A (22).**

### **PROBABLE DRAINAGE AREA FOR THE BARBER 12 WELL**

#### **Sapient's position:**

Sapient's contends that the Barber 12 Well is only capable of draining approximately 60 acres based upon Sapient's analysis using its new bottom hole pressure data (BHP/Z 1477 psia); 12.2 % porosity and an initial reservoir pressure of 2597 psia) **See Sapient Exhibit 18.** In addition, if Sapient uses Chevron's side wall core based neutron/density cross-plot method for calculation porosity, then the Barber 12 Well is only capable of draining approximately 88 acres.

In support of its position, Sapient presented the geologic and petroleum engineering evidence which demonstrated that the critical and most appropriate geologic and engineering parameters for the Barber 12 Well are: (i) an 2597 psia initial BHP reservoir pressure; (ii) 1477 psia 10/24/01 BHP from its Barber 12 Well; (iii) 30 net feet of thickness and (iv) 12.2 % average porosity.

Sapient's parameters result in the following conclusions for the Barber 12 Well:

- (i) an estimated ultimate recovery ("EUR") of 1.326 Bcf based upon material balance calculations with a drainage area of 53 acres by using a plainmetered volume for the E/2NE/4 of Section 7 and of 60 acres by using a constant thickness of 30 feet. **See Sapient Exhibits 18 & 19**

(ii) an estimated ultimate recovery of 1.315 Bcf with a drainage area of 59 acres based upon production decline analysis **See Sapient Exhibits 20 and 21**

(iii) volumetric calculations of 2.206 BCF original gas in place for the E/2NE/4 of Section 7. The volumetric recoverable gas per acre/foot yields a drainage area of 60 acres. **See Sapient Exhibits 14 and 16**

#### **Conoco/Chevron's position:**

In opposition, Conoco presented a petroleum engineer and Chevron presented a geologist to support its contention that Sapient's Barber 12 Well was draining 165 acres. Chevron's petroleum engineer testified that for the March 1, 2001 Examiner's hearing, he testified that the drainage area was approximately 160 acres using the following the following key assumptions 16 % decline, 50 Mcfd of abandonment rate, 2.8 Bcf of EUR, 2462 psia initial reservoir pressure, 0.385 psi/ft for Tubb pressure gradient, and 25 feet of net thickness at an average 12 % porosity.

However, in anticipation of the Commission's original DeNovo hearing set for the November 6, 2001, Chevron's engineer added new production and increased the decline rate to 22 % thereby generating a lower EUR. To compensate for the smaller drained area due to the lower EUR, Conoco's engineer reduced the average porosity from 12 % to 8.7 % which resulted in his calculated drainage area of 159 acres. **See Conoco/Chevron Exhibit 8**

When the Commission hearing was postponed to December 4, 2001, Chevron's engineer took that opportunity to increase his estimate of the Barber 12 Well's drainage area from 159 acres to 165 acres by substituting 6.6 % average porosity for the 8.7 % average porosity he had used for November 6, 2001 and by substituting the Matthew 12 Well's 1446 psia 9/06/01 bottom hole pressure ("BHP") for Sapient's Barber 12 Wells BHP/Z of 1477 as of 10/24/01. **See Conoco/Chevron Exhibit 8 revised.**

#### **Sapient's rebuttal:**

In cross examination and in rebuttal, Sapient demonstrated that:

- (a) Chevron manipulated the new pressure data by substituting the higher pressure from the Matthews 12 Well for the Barber 12 Well's pressure data in order to increase the EUR and correspondingly increase the drainage area for the Barber 12 Well. Standard reservoir engineering principles dictate the use of pressure data from the wellbore in question instead of a well over 700 feet away which was perforated in new porosity zones not present in the Barber 12 Well;
- (b) In response to the lower EUR for the Barber 12 Well, Chevron manipulated the porosity data by substituting 6.6% average porosity from 8.7% in order to increase the drainage area for the Barber 12 Well;
- (c) Only by reducing the Barber 12 Well's average porosity to 6.6% could Conoco/Chevron continue to calculate a 165 acre drainage area in response to the well's significantly reduced EUR;
- (d) Sapient testified that while it could replicate Conoco/Chevron's average cross-plot porosity of 6.6% it used for the Matthews 12 Well, it could not use the same method to replicate Conoco/Chevron's 6.6% porosity value for the Barber 12 Well. Sapient testified by using the Conoco/Chevron method, the cross-plot porosity for the Barber 12 Well was 8.4%;
- (e) Sapient presented a copy of Conoco/Chevron's sidewall core data which shows that Conoco/Chevron had used only 1% of the Tubb interval. Conoco/Chevron maintained that the core data ostensibly showed the "good correlation" between their sidewall core porosity and log porosity. Sapient testified that these data actually differed routinely by 40%;
- (f) Matthews 12 and Barber 12 wells are only 700 feet apart, yet the pay intervals are different and the pressures are different leading to the conclusion that wells this close together still produce gas that would not otherwise be produce thereby justify spacing of less than 160 acres per well;

(g) Conoco/Chevron, using the same production data, arbitrarily increased by 36% the production decline rate from 22.267% for November 6th presentation to 30.1% for the December 5th presentation in order to have its estimated EUR by decline curve analysis "match" its estimated EUR from volumetric and pressure decline analysis.

**Conclusion:**

Sapient provided substantial geological and petroleum engineering evidence which demonstrates that it is most probable that the Barber 12 Well is only affecting between 59-88 acres.

**THE BARBER 12 WELL SHOULD BE TREATED LIKE  
THE GAS WELLS IN THE ADJOINING MONUMENT  
TUBB OIL POOL**

**Sapient's position:**

Sapient presented a detailed comprehensive geologic evaluation of the Tubb reservoir which included both the Monument Tubb Oil Pool ("the Oil Pool") and the West Monument Tubb Gas Pool in which the Barber 12 Well is currently located ("Gas Pool"). That technical evidence along with supporting petroleum engineering evidence demonstrated that:

(a) the Monument Tubb Oil Pool ("The Oil Pool"), which abuts the NE/4 of Section 7 in which Sapient's Barber 12 Well is located, has some 15 gas wells dedicated to 80-acre spacing units for gas production from the Tubb formation. The Oil Pool makes no distinction in the size of a spacing unit assigned to a well regardless of whether it is classified as a gas well or an oil well;

(b) while it's Barber 12 Well has been placed in the Gas Pool, it is an extension of the same Tubb gas/oil accumulation established for the Oil Pool and is located immediately adjacent to the western boundary of the Oil Pool;

(c) Sapient demonstrated that the Barber 12 Well has identical producing attributes to existing gas wells in the Oil Pool. There is no distinction of the Barber 12 Well from the gas wells in the Oil Pool. **See Sapient Exhibit 24-B**



(d) Sapient demonstrated continuous geologic correlation from the Barber 12 Well eastward across the entire Oil Pool. The Tubb formation in the Barber 12 Well is correlative to the Oil Pool and there is no evidence of a change in geologic conditions that would create drainage areas any different from that shown for the Barber 12 Well.

(e) it's Barber 12 Well cannot be distinguished from gas wells in the Oil Pool;

**Conoco/Chevron position:**

Conoco and Chevron inferred that this Tubb reservoir is an oil pool with a gas cap and that the Barber 12 Well is in the gas cap and may be connected to Marathon's oil wells in the SW/4 of Section 5, T19S, R37E. However, Chevron and Conoco failed to present any geology or petroleum engineering analysis by which to compare the Barber 12 Well with the Oil Pool. Conoco/Chevron failed to present substantial evidence to demonstrate that this is an oil pool with a gas cap.

**Conclusion:**

Conoco/Chevron's inference of a gas cap implies that the Barber 12 Well should be incorporated into the Oil Pool.

It would be arbitrary and capricious to treat the Barber 12 Well any differently from the gas wells in the Oil Pool because there is no geologic or petroleum engineering reason for treating it differently.

**80-ACRE SPACING UNITS ARE THE MOST  
APPROPRIATE FOR THE BARBER 12 WELL AND  
OTHER WELLS IN THE GAS POOL**

**Conoco/Chevron's position:**

In support of its contention for 160-acre spacing units, Conoco/Chevron showed 160-acre circular drainage patterns with radii to show how those drainage circles related to the distribution of the net pay thickness of the reservoir. **Conoco Exhibit**

**Sapient's position:**

However, Sapient showed that the Conoco/Chevron exhibit also demonstrated that 160-acre drainage circles would leave approximately 70% of the W/2NE/4 undrained thereby necessitating a second well in the NE/4 of Section 7 to prevent waste and protect correlative rights. **See Sapient Exhibit 33**

Sapient showed 60-acre circular drainage pattern with radii to show how those drainage circles related to the distribution of the net pay thickness of the reservoir. **Sapient Exhibit 33**. Sapient's drainage radius circle showed that over approximately 70% of the NE/4 of Section 7 would not be drained by the Barber 12 Well and that a second well in the W/2NE/4 would be necessary.

Sapient provided the necessary evidence upon which to decide the most reasonable number of acres to assign to a spacing and proration unit in this pool.

The distribution of productive acres including the calculated drainage area of the Barber 12 Well requires the Commission to adopt rules for the Gas Pool which are consistent with the Tubb Oil Pool such that 80-acre spacing is appropriate for Tubb gas wells in this circumstance. **See Exhibit 15, 16, 18, 21, 23**

**Conclusion:**

Both Sapient and Conoco/Chevron presented drainage circles which demonstrated that a single well would not adequately drain the NE/4 of Section 7. Sapient demonstrated that 70% to nearly 100% of the W/2NE/4 of Section 7 would remain undrained regardless of whose drainage calculation was accepted.

Sapient provided substantial geological and petroleum engineering evidence which demonstrates that it is most probable that the Barber 12 Well is only affecting between 59-88 acres and therefore 80-acre spacing is most appropriate for the Gas Pool.

80-acre spacing units are consistent with Sapient's finding of 60 acres of drainage for the Barber 12 Well and 80-acre spacing therefore should be adopted.

**ORIENTATION OF 80-ACRES SPACING UNITS  
SHOULD BE AS PROPOSED BY SAPIENT**

**Sapient's position:**

Because the drainage area for the Barber 12 Well is only approximately 60 acres, Conoco/Chevron's acreage in the W/2NE/4 has not contributed and they should not share in production from the Barber 12 Well.

Chevron knew of the existence of the Barber 12 Well in September, 1999 and by its own action failed to take timely action to protect its correlative rights in the SE/4 of Section 6.

It is most reasonable and practicable to adopt 80-acre spacing units as follows:

- (a) Chevron S/2SE/4 of Section 6
- (b) Conoco/Chevron W/2NE/4 of Section 7
- (c) Sapient E/2NE/4 of Section 7

These three spacing units will afford each owner the opportunity to recover and produce its just and equitable share of the oil or gas, or both, in the pool, being the amount, so far as can be practically determined, and so far as such can be practicably obtained without waste, substantially in the proportion that the quantity of the recoverable oil or gas, or both, under such property bears to the total recoverable oil or gas, or both, in the pool.

Because the Barber 12 Well drains approximately 60-acres, its location 330 feet from the north line and 660 feet from the east line of Section 7 does not impair correlative rights.

**Conoco/Chevron position:**

Conoco/Chevron did not address this issue because they took the position that 160-acre spacing is appropriate.

**Conclusion:**

**Both** Conoco/Chevron and Sapient's net pay isopach show the distribution of the Tubb reservoir as it relates to the NE/4 of Section 7 and the SE/4 of Section 6 and demonstrates that distribution is not uniform.

**Both** Conoco/Chevron and Sapient's geologic isopach maps demonstrate that the E/2NE/4 of Section 7 has the greatest volume of productive acreage when compared to either the SE/4 of Section 6 or the W/2NE/4 of Section 7.

**Both** demonstrate that 80-acre spacing will afford the opportunity for reasonable development of the Tubb reservoir.

While it is the custom and practice of the Commission and Division to allow each operator to determine the orientation of its spacing unit in pools subject to 80-acre spacing, in this case it is appropriate for the Commission to do so.

**THE COMMISSION HAS THE AUTHORITY TO  
ASSIGN AN 80-ACRE SPACING UNIT TO THE  
BARBER 12 WELL RETROACTIVE TO THE DATE OF  
FIRST PRODUCTION AND SHOULD DO SO IN THIS  
CASE**

Sapient, having acted in good faith and having relied upon past approvals by the Division, assumed its Barber 12 Well is in full compliance until October, 2000 when it took action to bring this matter to the attention of the Division. As a result of the Chevron application, Sapient on its own and without action by Conoco, Chevron or the Division, applied to the Division to determine the proper spacing unit for the Barber 12 Well and to approve its location should the Division determine it to be unorthodox.

Because of the unique circumstances surrounding the Division's approval for Cross-Timbers to produce the Barber 12 Well and because that production has not adversely impaired the correlative rights of either Conoco or Chevron, the Commission should make a retroactive adjustment of production from the Barber 12 Well.

The Commission has the authority to retroactively assign an 80-acre spacing unit to Sapient's Barber 12 Well. Without such a retroactive assignment, Conoco/Chevron would receive the benefit of 50 % of the production from the Barber 12 Well despite the fact that Sapient proved that Conoco/Chevron's acreage in the W/2NE/4 of Section 7 was not contributing to that production. **See Sapient's Memorandum attached hereto as Addendum (1)**

**Conclusion:**

Any contention by Conoco/Chevron that production from the Barber 12 Well must be allocated to the owners in the NE/4 until such time as special rules are adopted is without merit because that position is predicated upon the contention that the Commission lacks the authority to make a retroactive adjustment in allocation of production from this well.

In order to avoid having to allocate gas to owners who have not contributed any reserves and who have not been adversely affect, it is necessary for the Commission to exercise its statutory authority to prevent waste and protect correlative rights by making 80-acre spacing applicable to the Barber 12 Well is the "discovery well" for the Gas Pool from the date of first production.

**CORRELATIVE RIGHTS**

Correlative rights are defined as "the opportunity" afforded each interest owner to recover his share of the recoverable hydrocarbons apportioned to his tract. That opportunity is not an absolute entitlement to a certain volume of hydrocarbons. That opportunity can be lost or waived by an interest owner failing to act. See 19 NMAC 15.A (22).

**Conoco/Chevron position:**

Conoco/Chevron contend that their correlative rights have been impaired because:

- (a) Cross Timbers and now Sapient have produced gas from the Barber 12 Well and have failed to allocate that production to the owners in the NE/4 of Section 7; and
- (b) until an 80-acre spacing unit and well location have been approved, then all past gas production is "illegal gas" which must be allocated to the owners in the NE/4 of Section 7

**Sapient's position:**

Sapient contends that neither Conoco nor Chevron's correlative rights have been impaired because:

(a) Chevron, as the offset operator to the north, knew in September 1999 that Cross Timbers had recompleted the Barber 12 Well as a new Tubb gas well immediately adjacent to their property and failed to timely act to recompleted its Matthews 12 Well;

(b) the drainage area for the Barber 12 Well is only 60 acres and Chevron and Conoco's correlative rights in the W/2NE/4 of Section 7 have not been impaired.

(c) Conoco and Chevron each waived their correlative rights in this matter.

### **Conclusion:**

Because the Barber 12 Well drains approximately 60-acres, its location 330 feet from the north line and 660 feet from the east line of Section 7 does not impair correlative rights. Because of the unique circumstances surrounding the Division's approval for Cross-Timbers to produce the Barber 12 Well and because that production has not adversely impair the correlative rights of either Conoco or Chevron, the Commission should make a retroactive adjustment of production from the Barber 12 Well.

Chevron knew of the existence of the Barber 12 Well in September, 1999 and by its own action failed to take timely action to protect its correlative rights.

Granting Sapient's request to the Commission will protect correlative rights by affording each owner the opportunity to recover and produce its just and equitable share of the oil or gas, or both in the pool.

### **WASTE**

Granting Sapient's request before the Commission will prevent waste by maximizing the opportunity to increase ultimate recovery from the Gas Pool at a well density of one well per 80-acres. Correspondingly, the adoption of 160-acre density as requested by Conoco/Chevron would result in the drilling of too few wells thereby causing waste.

## CONCLUSION

Sapient's technical case is more comprehensive and superior to that presented by Conoco and Chevron. Sapient's technical case fully integrated the geological and engineering data according to accepted industry principles. Sapient demonstrated that their engineering testimony of 60-acres drainage is consistent with the Tubb reservoir's geologic description and direct offsetting production. Conoco/Chevron presented no such integration.

In accordance with NMSA 1978 Section 70-2-17, NMSA 1978 Section 70-2-12(c), and Division Rule 104, the Commission should find that:

(a) in order to provide an opportunity for each interest owner to produce its share of the Tubb gas reserves underlying its tract the Division should adopt special rules and regulations for the West Monument Tubb Gas Pool which are consistent with the rules for the Monument Tubb Oil Pool;

(b) should establish proration units in the pool of 80-acres as the area that can be most efficiently and economically drained and developed by one well and is the area that most closely fits Sapient's drainage calculations; and

(c) to adopt 160-spacing units would result in too few wells being drilled.

The size, shape, limited areal extent and distribution of productive acres of the Tubb reservoir, including the calculated drainage area of the Barber 12 well, in the West Monument-Tubb Gas Pool ("the Tubb gas pool") lends itself to adopting rules consistent with the Monument Tubb Pool ("the Tubb oil pool") such that 80-acre spacing is appropriate for Tubb Gas wells in this circumstance.

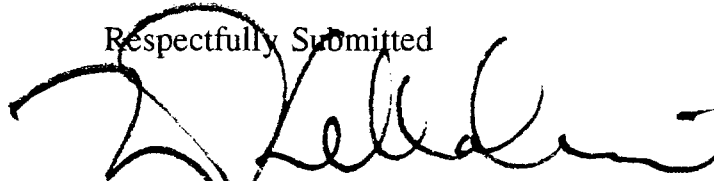
While the limits of the Tubb gas pool have not yet been defined, there is substantial evidence within the NE/4 of Section 7 and the SE/4 of Section 6 to decide on the most equitable distribution of productive acres and the size of the spacing units for those areas.

Sapient has provided substantial geological and petroleum engineering evidence which demonstrates that it is possible to accurately estimate the potential limits of this Tubb reservoir and the orientation and location of this reservoir as it affects the NE/4 of Section 7 and the SE/4 of Section 6.

Sapient has provided substantial geological and petroleum engineering evidence which demonstrates that it is necessary to grant exceptions to Division Rule 104 in order to prevent waste and in doing so, correlative right will not be impaired.

Sapient requests that the Commission adopt an order in the case consistent with Sapient's proposed order. **See Addendum (2) attached hereto.**

Respectfully Submitted

A handwritten signature in black ink, appearing to read 'W. Thomas Kellahin', written over a horizontal line.

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Kellahin & Kellahin  
P. O. Box 2265  
Santa fe, New Mexico 87504





**STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION DIVISION**

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

**CASE NO. 12587**

**APPLICATION OF SAPIENT ENERGY CORP. FOR AN  
UNORTHODOX GAS WELL LOCATIONS AND (i) TWO  
NON-STANDARD 160-ACRE GAS SPACING UNITS;  
OR IN THE ALTERNATIVE (ii) ONE NON-STANDARD  
160-ACRE GAS SPACING AND PRORATION UNIT,  
LEA COUNTY, NEW MEXICO.**

**CASE NO. 12605**

**APPLICATION OF SAPIENT ENERGY CORP.  
FOR SPECIAL POOL RULES,  
LEA COUNTY, NEW MEXICO**

**SAPIENT ENERGY CORP.  
MEMORANDUM  
IN SUPPORT OF RETROACTIVITY**

SAPIENT ENERGY CORP. ("Sapient"), through its attorneys, Kellahin & Kellahin, submits this memorandum in support of its proposed order to the New Mexico Oil Conservation Commission ("Commission") which, if entered by the Commission, would allocate production from Sapient's Barber 12 Well from the date of first production.

**Special Circumstances:**

If the Commission accepts Sapient's contention that its Barber 12 Well only drains approximately 60 acres, then that acceptance must be made effective as of the date of first production because there are special circumstances which make this case unique and require the retroactive application of the Commission's order:

In 1964, Conoco obtained a Division order R-2800 adopting special rules for the Monument Tubb Pool ("The Oil Pool") including 80-acre spacing for BOTH gas and oil wells. The Oil Pool, which abuts the NE/4 of Section 7 in which Sapient's Barber 12 Well is located, has gas wells dedicated to 80-acre spacing units for gas production from the Tubb formation. The Oil Pool makes no distinction in the size of a spacing unit assigned to a well regardless of whether it is classified as a gas well or an oil well.

In August and September, 1999, Cross Timbers Oil Company, with the approval of the OCD-Hobbs re-enter the Barber 12 Well and re-completed it as a gas well in the Tubb formation (C-103 sundry notice) **and** included a C-102 acreage dedication plat dedicating the E/2E/2 of Section 7 to the well at a location 330 feet from the north line.

In September, 1999, instead of requiring Cross Timbers to comply with either Rule 104 for a 160-acre square spacing unit consisting of the NE/4 and an unorthodox well location of 330 feet or with the rules for The Oil Pool, the OCD-Hobbs approved Cross Timbers C-104 request for an allowable and authorized Cross Timbers to produced the well.

The OCD did not tell Cross Timbers, did not reject Cross Timber's C-104, but instead authorized Cross Timbers to produce the well.

Despite Conoco and Chevron's experience in the area and offsetting ownership to the Barber 12 Well, neither did anything about the fact that this well is not dedicated to a 160-acre square and is 330 feet from Chevron's tract. Finally, in January, 2001, almost 17 months after first production, Chevron finally decided to file for approval of an unorthodox well location for its Matthews 12 Well to offset the Barber 12 Well.

Cross Timbers sold the well and on July 14, 2000, almost a year after it first started producing, Sapient bought the well.

Sapient, having acted in good faith and having relied upon past approvals by the Division, assumed its Barber 12 Well is in full compliance until October, 2000 when the following occurred. As a result of the Chevron application, Sapient on its own and without action by Conoco, Chevron or the Division, applied to the Division to determine the proper spacing unit for the Barber 12 Well and to approve its location should the Division determine it to be unorthodox.

These are the special circumstances in these cases which make it just and equitable for an order to be retroactive to protect correlative rights as established by the Oil & Gas Act.

To do otherwise would require the owners in the E/2NE/4 of Section 7 where the Barber 12 Well is located to share that production with the owners in the W/2NE/4 including Conoco/Chevron, despite the Commission's decision that those owners are not contributing any reserves to the well. Such a result would be inequitable.

**THE COMMISSION HAS THE  
AUTHORITY TO ENTER AN ORDER IN  
THIS CASE EFFECTIVE TO THE DATE  
OF FIRST PRODUCTION FROM THE  
DISCOVERY WELL**

The Commission has comprehensive powers to take appropriate action to prevent waste and protect correlative rights. **See Continental Oil Co. v. Oil Conservation Com'n, 70 N.M. 310.** That authority includes the adoption of special pool rules which are different from the statewide rules and to make those rules effective as of the date of first production from the discovery well:

"...To that end, the division is empowered to make and enforce rules, regulations and orders, and to do whatever may be reasonably necessary to carry out the purpose of this act, whether or not indicated or specified in any section hereof."  
See Section 70-2-11.A NMSA (1979)

In fact, the Division already recognizes that authority and frequently exercises it by adopting special pool rules and making them effective as of the date of first production from the discovery well.<sup>1</sup>

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1. For Example See Case 11773 (Order R-10854); Case 11750 (Order R-10848); Case 12000 (Order R-11145); Case 12367 (Order R-11396); Case 12649 (Order R-11610)

**NOTHING IN THE OIL AND GAS ACT  
PRECLUDES THE COMMISSION FROM  
APPLY ITS DECISION IN THIS CASE  
RETROACTIVELY TO THE DATE OF  
FIRST PRODUCTION**

The Oil and Gas Act sets forth certain specific types of cases in which the orders will be effective as of the date of the order. For example, Section 70-2-18.A NMSA (1979) states that if the order increases the size of the spacing unit, then it is effective as of the date of the order. In addition, Section 70-2-18.C approval of a non-standard unit shall be effective as of the date of the order. None of these apply to the relief sought by Sapient.

The specifically enumerated powers of the Commission should not be taken as a "limitation" of the Commission's comprehensive authority.<sup>2</sup> For example, it was a commonly belief<sup>3</sup> that the Commission's general powers were limited by the Statutory Unitization Act which allowed statutory unitization only for secondary or tertiary recovery. It was argued that the Commission could not compel the unitization of a pool during primary production. That belief was changed when the New Mexico Supreme Court approved the Commission's authority and affirmed the Commission's approval of an unorthodox well location **including** production restrictions for the entire pool without prior notice to the operators in that pool. **See Santa Fe Exploration Co. v. Oil Cons. Com'n, 114 N.M. 103 (1992)**

In accordance with Section 70-2-18.A NMSA (1979), the Division routinely enters compulsory pooling orders **retroactively**, back to the date of first production. **For Example, See Case 9994 (Order R-9332); Case 11922 (Order R-10966)**

In addition, in Oklahoma where a pooling order also includes a spacing order, the Oklahoma Supreme Court has approved Oklahoma Commission orders which are made effective retroactive to the date of first production. **For Example, see Roberts v. Funk Exploration, inc. 764 P.2d 147 (Okla. 1988) and Hair v. Corporation Comm'n, 740 P.2d 134 (Okla 1978)**

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<sup>2</sup> See Section 70-2-11.A NMSA (1979)

<sup>3</sup> William F. Carr, Esq. one of the authors of the Statutory Unitization Act, held this opinion prior to the **Santa Fe Exploration Case cited below.**

**A DISTINCTION BETWEEN "RULE MAKING" AND  
AN "ADJUDICATION" IS IRRELEVANT TO THE  
COMMISSION'S AUTHORITY TO ENTER AN ORDER  
IN THIS CASE WHICH IS RETROACTIVE**

Conoco/Chevron may argue that there is a distinction between the Commission's authority to enter an order retroactively rather than prospectively. Conoco/Chevron may argue that the adoption of special pool rules is administrative "rule making" and therefore can only be done prospectively. Correspondingly, they will contend that this is not an administrative "adjudication" of rights which can be applied retroactively.

Sapient contends that this case is both an adjudication and rule making. It is an adjudication as to Sapient's Barber 12 Well because it involves the resolution of a factual dispute about the drainage area for this well and when and how that production should be allocated. It is also rule making and will establish well spacing and location requirements for this limited area which will apply prospectively to the other operators as they drill their wells.

However, in cases before the Commission, this is a distinction without a difference. Any merit to the "rule-making" argument has been resolved against Conoco/Chevron by the New Mexico Supreme Court:

Proceeding of Commission pursuant to application seeking increase in well spacing on oil and gas estate was adjudicatory and not rule making proceeding, where applicant presented witnesses and evidence regarding engineering and geological properties of a particular reservoir, after hearing, Commission entered order based on findings of fact and conclusions of law and order was not of general application but rather pertained to a limited area, persons affected were limited in number and identifiable and order had immediate effect on owner of oil and gas. **Uhden v. New Mexico Oil Conservation Commission 112 N.M. 528 (1991)**

"The notoriously slippery distinction between rulemaking and adjudication is not particularly helpful in this case." **Montgomery dissenting in Uhden case, supra.**

"The Commission<sup>4</sup> has the inherent authority to retroactively set the starting date for increasing regulated phone rates. It should have the flexibility to apply its rules and exercise its authority. **Matter of Rates and Charges of US West Communications, Inc. 116 N.M. 548 (1993)**

The Court rejected the Commission's argument that adoption of 640-acre gas spacing unit rules for the deep gas well in the San Juan Basin was "rule-making" and stated "no test can be draw anything like a mathematical line between rulemaking an adjudication..." **Johnson v. New Mexico Oil Conservation Commission, 127 N.M. 120 (1999)**

In addition, the New Mexico Supreme Court, in rejecting the distinction between rulemaking and an adjudication, has procedurally linked the Commission's adoption of spacing rules with the applicable compulsory pooling and has required notice to "parties affected" by the spacing rule case. **See Johnson, supra.**

In classifying a proceeding as adjudicatory or rulemaking, agency labels are not determinative. The fact that a rule has a future effect is not determinative because rules may apply retroactively and orders may be prospective. **Stein, Mitchell, Mezines, ADMINISTRATIVE LAW, Volume 4, Section 36.01**

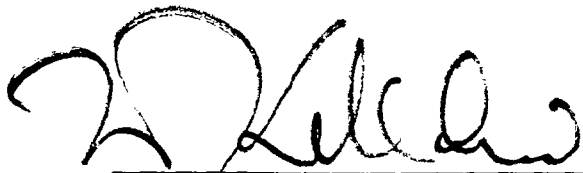
## CONCLUSION

Without a retroactive order, Conoco/Chevron would receive the benefit of 50% of the production from the Barber 12 Well despite the fact that Sapient proved to the satisfaction of the Commission that Conoco/Chevron's acreage was not contributing to that production. Such a result would circumvent the Commission's 80-acre spacing decision. Such a result would ignore the Sapient's superior technical presentation which demonstrates that the Barber 12 Well only drains approximately 60-acres. Such a result would be arbitrary and inequitable.

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<sup>4</sup> In this case the administrative agency is the Corporation Commission but the decision is application to the Oil Conservation Commission.


Respectfully submitted,



W. Thomas Kellahin  
Kellahin & Kellahin  
P. O. Box 2265  
Santa Fe, New Mexico 87504-2265  
ATTORNEYS FOR SAPIENT ENERGY CORP.

**CERTIFICATE OF SERVICE**

I hereby certify that a copy of the foregoing Memorandum was hand-delivered this 14th day of December 2001 to office of William F. Carr, Esq. attorney for Conoco Inc. and Chevron USA Inc.



W. Thomas Kellahin





**STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION COMMISSION**

**APPLICATION OF SAPIENT ENERGY CORP. FOR  
UNORTHODOX WELL LOCATION AND: (i) TWO  
NON-STANDARD 160-ACRE GAS SPACING AND  
PRORATION UNITS; OR IN THE ALTERNATIVE  
(ii) ONE NON-STANDARD 160-ACRE GAS  
PRORATION AND SPACING UNIT,  
LEA COUNTY, NEW MEXICO**

**CASE NO. 12587  
DeNovo**

**APPLICATION OF SAPIENT ENERGY CORP.  
FOR SPECIAL POOL RULES FOR THE  
WEST MONUMENT-TUBB GAS POOL  
LEA COUNTY, NEW MEXICO.**

**CASE NO. 12605  
DeNovo**

**SAPIENT ENERGY CORP.'S  
PROPOSED  
ORDER OF THE COMMISSION**

**BY THE COMMISSION:**

These cases came on for hearing at 9:00 am on December 4, 2001 at Santa FE, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission".

NOW, on this \_\_\_\_ day of December, 2001, the Commission, a quorum being present, having considered the record.

**FINDS THAT:**

(1) Due public notice has been given and the Commission has jurisdiction of these cases and their subject matter.

## **PARTIES**

### **Applicant:**

(2) Sapiient Energy Corp. ("Sapiient") is the applicant, having acquired the Bertha J. Barber 12 Well (the Barber 12 Well") located 330 feet from the north line and 660 feet from the east line of Section 7, T20S, R37E, Lea County, New Mexico, from Falcon Creek Resources, Inc. who, in April 2000, had acquired the well from Cross Timbers Oil Company who originally recomplected the well into the Tubb formation and commenced production in August, 1999.

### **Opposition:**

(3) Chevron USA Production Company ("Chevron") has an 18.71% working interest ownership in the W/2NE/4 of Section 7 and is the offsetting operator and owner of 100% of the working interest for the Matthews 12 Well in the SE/4 of Section 7, T20S, R37E.

(4) Conoco Inc. ("Conoco") is an offsetting working interest owner with a 37.42% interest in the W/2E/2 of Section 7.

(5) Amerada Hess has a working interest in the S/2SW/4 of Section 5 in the Monument Tubb Oil Pool in which Amerada Hess could have drilled a Tubb gas well 467 feet from Sapiient's spacing unit without notice to Sapiient. Amerada Hess objected to the fact that Sapiient's Barber 12 Well is 738 feet from the Amerada Hess tract but prior to the hearing withdrew its objection and did not appear before the Commission.

## **SAPIENT'S REQUEST TO THE COMMISSION**

### **Request to the Commission:**

(6) Sapiient seeks the following relief from the Commission:

(a) adopt rules for the West Monument-Tubb Gas Pool ("The Gas Pool") which are identical to the existing rules for the Monument Tubb Oil Pool ("The Oil Pool"), including a provision for standard 80-acre spacing units and 330 foot well set back requirement for both oil wells and gas wells;

(b) whether spacing is 80-acre or 160-acres, production from the discovery well be allocated retroactive to the date of first production from its Barber 12 Well for any production from The Gas Pool; and

(c) in the event Sapient's request for 80-acres spacing is granted, then its Barber 12 Well will be at a standard well location. However, in the event the Commission adopts 160-acre spacing with 660 foot well setback requirements, then Sapient's location is unorthodox and Sapient requests approval of the Well Location for its Barber 12 retroactive to date of first production, without any penalty.

### **FUNDAMENTAL ISSUES**

(7) These cases involve the Tubb formation in the Monument Area of Lea County, New Mexico which, with the exception of Sapient's Barber 12 Well, has been developed with Tubb gas and oil wells on 80-acre spacing.

(8) The fundamental issues involved in these cases are

(a) what is the most probable drainage area for Sapient's Barber 12 Well;

(b) should the Barber 12 Well be treated any differently from the gas wells in the adjoining Monument Tubb Oil Pool;

(c) what spacing unit size should be approved for Sapient's Barber 12 Well and any other wells in the West Monument Tubb Gas Pool;

(d) what orientation and accompanying well location should be approved for Sapient's Barber 12 Well and any other wells in the West Monument Tubb Gas Pool; and

(e) should that assignment of an appropriate spacing unit for Sapient's Barber 12 Well be made retroactive to the date of first production.

## **PROBABLE DRAINAGE AREA FOR THE BARBER 12 WELL**

### **Sapient's position:**

(9) Sapient's contends that the Barber 12 Well is only capable of draining approximately 60 acres based upon Sapient's analysis using its new bottom hole pressure data (BHP/Z 1477 psia); 12.2% porosity and an initial reservoir pressure of 2597 psia. **See Sapient Exhibit 18.** In addition, the Barber 12 Well is only capable of draining approximately 88 acres if the net porosity is reduced to 8.4% as determined by Sapient by using Chevron's neutron/density cross plot methodology based upon Chevron's sidewall core data from the Matthews 12 Well.

(10) In support of its position, Sapient presented the geologic and petroleum engineering evidence which demonstrated that the critical and most appropriate geologic and engineering parameters for the Barber 12 Well are: (i) an 2597 psia initial BHP reservoir pressure; (ii) 1477 psia 10/24/01 BHP from its Barber 12 Well; (iii) 30 net feet of thickness and (iv) 12.2% average porosity.

### **Conoco/Chevron's position:**

(11) In opposition, Conoco presented a petroleum engineer and Chevron presented a geologist to support its contention that Sapient's Barber 12 Well was draining 165 acres. Chevron's petroleum engineer testified that for the March 1, 2001 Examiner's hearing, that the drainage area was approximately 160 acres. However, in anticipation of the Commission's original hearing set for the November 6, 2001, Chevron's engineer calculated that the drainage was 159 acre by reducing the average net porosity to 8.7%. When the Commission hearing was postponed to December 4, 2001, Chevron's engineer took that opportunity to increase his estimate of the Barber 12 Well's drainage area from 159 acres to 165 acres by substituting 6.6% average porosity for the 8.7% average porosity he had used for November 6, 2001 and substituting the Matthews 12 Well's 1446 psia 9/06/01 BHP for Sapient's Barber 12 Well's BHP/Z of 1477 psia as of 10/24/01

### **Conclusion:**

(12) Sapient's technical case is more comprehensive and superior to that presented by Conoco and Chevron.

(13) The Commission finds that Sapien provided substantial geological and petroleum engineering evidence which demonstrates that it is most probable that the Barber 12 Well is only affecting between 59-88 acres.

**THE BARBER 12 WELL SHOULD BE TREATED LIKE  
THE GAS WELLS IN THE ADJOINING MONUMENT  
TUBB OIL POOL**

**Sapien's position:**

(14) Sapien presented a detailed comprehensive geologic evaluation of the Tubb reservoir which included both the Monument Tubb Oil Pool ("the Oil Pool") and the West Monument Tubb Gas Pool in which the Barber 12 Well is currently located ("Gas Pool"). That technical evidence along with supporting petroleum engineering evidence demonstrated that:

- (a) the Monument Tubb Oil Pool ("The Oil Pool"), which abuts the NE/4 of Section 7 in which Sapien's Barber 12 Well is located, has some 15 gas wells dedicated to 80-acre spacing units for gas production from the Tubb formation. The Oil Pool makes no distinction in the size of a spacing unit assigned to a well regardless of whether it is classified as a gas well or an oil well;
- (b) while it's Barber 12 Well has been placed in the Gas Pool, it is an extension of the same Tubb gas/oil accumulation established for the Oil Pool and is located immediately adjacent to the western boundary of the Oil Pool;
- (c) Sapien's Barber 12 Well cannot be distinguished from gas wells in the Oil Pool;
- (d) Sapien demonstrated that the Barber 12 Well has identical producing attributes to existing gas wells in the Oil Pool.
- (e) Sapien demonstrated a continuous geological correlation in the Tubb formation from the Barber 12 Well eastward across the Oil Pool. There is no evidence of a change in geologic conditions that would create drainage areas for the Barber 12 Well that are any different from those for gas wells in the Oil Pool.

**Conoco/Chevron position:**

(15) Conoco and Chevron inferred that this Tubb reservoir is an oil pool with a gas cap and that the Barber 12 Well is in the gas cap and may be connected to Marathon's oil wells in the SW/4 of Section 5, T19S, R37E. However, Chevron and Conoco failed to present any geology or petroleum engineering analysis by which to compare the Barber 12 Well with the Oil Pool. Conoco/Chevron failed to present substantial evidence to demonstrate that this is an oil pool with a gas cap. Conoco/Chevron's inference of a gas cap implies that the Barber 12 Well should be incorporated into the Oil Pool.

**Conclusion:**

(16) The Commission finds that it would be arbitrary and capricious to treat the Barber 12 Well any differently from the gas wells in the Oil Pool because there is no geologic or petroleum engineering reason for treating it differently.

**80-ACRE SPACING UNITS ARE THE MOST  
APPROPRIATE FOR THE BARBER 12 WELL AND  
OTHER WELLS IN THE GAS POOL**

**Conoco/Chevron's position:**

(17) In support of its contention for 160-acre spacing units, Conoco/Chevron showed 160-acre circular drainage patterns with radii to show how those drainage circles related to the distribution of the net pay thickness of the reservoir. However, Sapient showed that the Conoco/Chevron exhibit also demonstrated that 160-acre drainage circles would leave approximately 70% of the W/2NE/4 of Section 7 undrained thereby necessitating a second well in the NE/4 of Section 7 in order to prevent waste and protect correlative rights.

**Sapient's position:**

(18) Sapient showed 60-acre circular drainage pattern with radii to demonstrate how those drainage circles related to the distribution of the net pay thickness of the reservoir. Sapient's drainage radius circle showed that over 70% of the W/2NE/4 of Section 7 would not be drained by the Barber 12 Well and that a second well in the W/2NE/4 would be necessary.

**Conclusion:**

(19) Sapient provided the necessary evidence upon which to decide the most reasonable number of acres to assign to a spacing and proration unit in this pool.

(20) The distribution of productive acres including the calculated drainage area of the Barber 12 Well requires the Commission to adopt rules for the Gas Pool which are consistent with the Tubb Oil Pool such that 80-acre spacing is appropriate for Tubb gas wells in this circumstance. **See Exhibit 15, 16, 18, 21, 23**

(21) Sapient provided substantial geological and petroleum engineering evidence which demonstrates that it is most probable that the Barber 12 Well is only affecting between 53-88 acres and therefore 80-acre spacing is most appropriate for the Gas Pool.

(22) Sapient's drainage circle is consistent with a finding of 60 acres of drainage for the Barber 12 Well and 80-acre spacing should be adopted.

**ORIENTATION OF 80-ACRES SPACING UNITS  
SHOULD BE AS PROPOSED BY SAPIENT**

**Sapient's position:**

(23) Sapient contended that because the drainage area for the Barber 12 Well is only approximately 60 acres, Conoco/Chevron's acreage in the W/2NE/4 has not contributed and they should not share in production from the Barber 12 Well.

(24) Chevron knew of the existence of the Barber 12 Well in September, 1999 and by its own action failed to take timely action to protect its correlative rights in the SE/4 of Section 6.

**Conoco/Chevron position:**

(25) Conoco/Chevron did not address this issue because they took the position that 160-acre is appropriate.

**Commission finds that:**

(26) Because the Barber 12 Well drains approximately 60-acres, its location 330 feet from the north line and 660 feet from the east line of Section 7 does not impair correlative rights.



(27) Assuming uniform radial drainage, Sapiient's drainage radius circle showed a substantial portion (approximately 50 %) of the NE/4 of Section 7 would not be drained by the Barber 12 Well and that a second well in the W/2NE/4 would be necessary.

(28) Sapiient's drainage circle is consistent with the Commission's finding of 60 acres of drainage for the Barber 12 Well and should be adopted.

(29) Sapiient provided the necessary evidence upon which to decide the most reasonable number of acres to assign to a spacing and proration unit in this pool.

(30) The distribution of productive acres including the calculated drainage area of the Barber 12 Well requires the Commission to adopt rules for the Gas Pool which are consistent with the Tubb Oil Pool such that 80-acre spacing is appropriate for Tubb gas wells in this circumstance.

(31) **Both** Conoco/Chevron and Sapiient's net pay isopach show the distribution of the Tubb reservoir as it relates to the NE/4 of Section 7 and the SE/4 of Section 6 and demonstrates that distribution is not uniform.

(32) **Both** Conoco/Chevron and Sapiient's geologic isopach maps demonstrate that the E/2NE/4 of Section 7 has the greatest volume of productive acreage when compared to either the SE/4 of Section 6 or the W/2NE/4 of Section 7.

(33) **Both** demonstrate that 80-acre spacing will afford the opportunity for reasonable development of the Tubb reservoir.

(34) While it is the custom and practice of the Commission and Division to allow each operator to determine the orientation of its spacing unit in pools subject to 80-acre spacing, in this case it is appropriate for the Commission to do so.

(35) It is most reasonable and practicable to adopt 80-acre spacing units as follows

- (a) Chevron S/2SE/4 of Section 6
- (b) Conoco/Chevron W/2NE/4 of Section 7
- (c) Sapiient E/2NE/4 of Section 7

(36) These three spacing units will afford each owner the opportunity to recover and produce its just and equitable share of the oil or gas, or both, in the pool, being the amount, so far as can be practically determined, and so far as such can be practicably

obtained without waste, substantially in the proportion that the quantity of the recoverable oil or gas, or both, under such property bears to the total recoverable oil or gas, or both, in the pool.

**THE COMMISSION HAS THE AUTHORITY TO  
ASSIGN AN 80-ACRE SPACING UNIT TO THE  
BARBER 12 WELL RETROACTIVE TO THE DATE OF  
FIRST PRODUCTION AND SHOULD DO SO IN THIS  
CASE**

(37) Sapient, having acted in good faith and having relied upon past approvals by the Division, assumed its Barber 12 Well is in full compliance until October, 2000 when it took action to bring this matter to the attention of the Division. As a result of the Chevron application, Sapient on its own and without action by Conoco, Chevron or the Division, applied to the Division to determine the proper spacing unit for the Barber 12 Well and to approve its location should the Division determine it to be unorthodox.

(38) Because of the unique circumstances surrounding the Division's approval for Cross-Timbers to produce the Barber 12 Well and because that production has not adversely impair the correlative rights of either Conoco or Chevron, the Commission should make a retroactive adjustment of production from the Barber 12 Well.

(39) The Commission has the authority to retroactively assign an 80-acre spacing unit to Sapient's Barber 12 Well. Without such a retroactive assignment, Conoco/Chevron would receive the benefit of 50 % of the production from the Barber 12 Well despite the fact that Sapient proved that Conoco/Chevron's acreage in the W/2NE/4 of Section 7 was not contributing to that production.

(40) Any contention by Conoco/Chevron that production from the Barber 12 Well must be allocated to the owners in the NE/4 until such time as special rules are adopted is without merit because that position is predicated up on the contention that the Commission lacks the authority to make a retroactive adjustment in allocation of production from this well.

(41) In order to avoid having to allocate gas to owners who have not contributed any reserves and who have not been adversely affect, it is necessary for the Commission to exercise its statutory authority to prevent waste and protect correlative rights by making 80-acre spacing applicable to the Barber 12 Well is the "discovery well" for the Gas Pool from the date of first production.

### **CORRELATIVE RIGHTS**

(42) Correlative rights are defined as "the opportunity" afforded each interest owner to recover his share of the recoverable hydrocarbons apportioned to his tract. That opportunity is not an absolute entitlement to a certain volume of hydrocarbons. That opportunity can be lost or waived by an interest owner failing to act.

#### **Conoco/Chevron position:**

(43) Conoco/Chevron contend that their correlative rights have been impaired because:

(a) Cross Timbers and now Sapient have produced gas from the Barber 12 Well and have failed to allocate that production to the owners in the NE/4 of Section 7; and

(b) until an 80-acre spacing unit and well location have been approved, then all past gas production is "illegal gas" which must be allocated to the owners in the NE/4 of Section 7

#### **Sapient's position:**

(44) Sapient contends that neither Conoco nor Chevron's correlative rights have been impaired because:

(a) Chevron, as the offset operator to the north, knew in September 1999 that Cross Timbers had recompleting the Barber 12 Well as a new Tubb gas well immediately adjacent to their property and failed to timely act to recomplete its Matthews we Well;

(b) the drainage area for the Barber 12 Well is only 60 acres and Chevron and Conoco/s correlative rights in the W/2NE/4 of Section 7 have not been impaired;

(c) Conoco and Chevron each waived their correlative rights in this matter.

(45) Sapient, having acted in good faith and having relied upon past approvals by the Division, assumed its Barber 12 Well is in full compliance until October, 2000 when it took action to bring this matter to the attention of the Division.

(46) as a result of the Chevron application, Sapient on its own and without action by Conoco, Chevron or the Division, applied to the Division to determine the proper spacing unit for the Barber 12 Well and to approve its location should the Division determine it to be unorthodox.

**Commission finds:**

(47) Because the Barber 12 Well drains approximately 60-acres, its location 330 feet from the north line and 660 feet from the east line of Section 7 does not impair correlative rights.

(48) Because of the unique circumstances surrounding the Division's approval for Cross-Timbers to produce the Barber 12 Well and because that production has not adversely impair the correlative rights of either Conoco or Chevron, the Commission should make a retroactive adjustment of production from the Barber 12 Well.

(49) Chevron knew of the existence of the Barber 12 Well in September, 1999 and by its own action failed to take timely action to protect its correlative rights.

(50) Conoco/Chevron's contention that production from the Barber 12 Well must be allocated to the owners in the NE/4 until such time as special rules are adopted is without merit because that position is predicated up on the contention that the Commission lacks the authority to make a retroactive adjustment in allocation of production from this well.

(51) To the contrary, because the drainage area is only 60 acres, Conoco/Chevron's acreage in the W/2NE/4 has not contributed and they should not share in production from the Barber 12 Well.

(52) In order to avoid having to allocate gas to owners who have not contributed any reserves and who have not been adversely affect, it is necessary for the Commission to exercise its statutory authority to prevent waste and protect correlative rights by making 80-acre spacing applicable to the Barber 12 Well is the "discovery well" for the Gas Pool from the date of first production.

### COMMISSION ACTION

(53) In accordance with NMSA 1978 Section 70-2-17, NMSA 1978 Section 70-2-12(c), and Division Rule 104, the Commission finds that:

(a) in order to provide an opportunity for each interest owner to produce its share of the Tubb gas reserves underlying its tract the Division should adopt special rules and regulations for the West Monument Tubb Gas Pool which are consistent with the rules for the Monument Tubb Oil Pool;

(b) should establish proration units in the pool of 80-acres as the area that can be most efficiently and economically drained and developed by one well and is the area that most closely fits Sapient's drainage calculations; and

(c) to adopt 160-spacing units would result in too few wells being drilled.

(54) The size, shape, limited areal extent and distribution of productive acres of the Tubb reservoir, including the calculated drainage area of the Barber 12 well, in the West Monument-Tubb Gas Pool ("the Tubb gas pool") lends itself to adopting rules consistent with the Monument Tubb Pool ("the Tubb oil pool") such that 80-acre spacing is appropriate for Tubb Gas wells in this circumstance.

(55) While the limits of the Tubb gas pool have not yet been defined, there is substantial evidence within the NE/4 of Section 7 and the SE/4 of Section 6 to decide on the most equitable distribution of productive acres and the size of the spacing units for those areas.

(56) Sapient has provided substantial geological and petroleum engineering evidence which demonstrates that it is possible to accurately estimate the potential limits of this Tubb reservoir and the orientation and location of this reservoir as it affects the NE/4 of Section 7 and the SE/4 of Section 6.

(57) Sapient has provided substantial geological and petroleum engineering evidence which demonstrates that it is necessary to grant exceptions to Division Rule 104 in order to prevent waste and in doing so, correlative right will not be impaired.

(58) The adoption of 80-acre spacing with standard well location not closer than 330 feet to the side boundaries of a spacing unit makes Sapien's Barber 12 Well standard and the approval of an unorthodox well location unnecessary.

**IT IS THEREFORE ORDERED THAT:**

(1) The Commission **hereby** adopts rules and regulations for the production of gas from the West Monument-Tubb Gas Pool including a provision for standard 80-acre gas spacing and proration units for both gas and oil wells and standard well locations not closer than 330 feet to any side boundary of the spacing unit.

(2) Sapien is hereby **granted** the approval of a standard 80-acre gas spacing unit consisting of the E/2NE/4 of Section 7 for production from the West Monument-Tubb Gas Pool from its Barber 12 Well **retroactive to the date of first production (September 9, 1999)**.

(3) The spacing unit for Chevron's Matthews 12 Well is hereby declared to be the S/2SE/4 of Section 6.

(4) Jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

HOLLAND & HART LLP  
AND  
CAMPBELL & CARR  
ATTORNEYS AT LAW

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December 14, 2001

**HAND DELIVERED**

Oil Conservation Commission  
New Mexico Energy, Minerals and  
Natural Resources Department  
1220 South Saint Francis Drive  
Santa Fe, New Mexico 87505

Attention: Florene Davidson

Re: New Mexico Oil Conservation Division Case 12587.  
Application of Sapient Energy Corp. for an unorthodox well location and  
non-standard proration unit or in the alternative a 160-acre non-standard  
proration unit, Lea County, New Mexico.

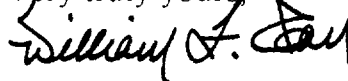
New Mexico Oil Conservation Division Case 12605.  
Application of Sapient Energy Corp. for special pool rules, Lea County,  
New Mexico.

Dear Ms. Davidson:

Pursuant to the directive of the Oil Conservation Commission at the December hearing on the above-referenced applications, enclosed herewith is the Closing Statement of Chevron U.S.A. Production Company and Conoco Inc. in the above-referenced cases. Also enclosed is a proposed order which summarizes the evidence presented at the hearing. The order contains subheadings and references to the record to assist the Commission in evaluating the evidence presented by the parties.

By copy of this letter, I have provided copies of these documents Commissioners Lori Wrotenbery, Jamie Bailey and Robert Lee, and to Stephen C. Ross, Esq., Assistant Attorney General for the Oil Conservation Commission, and W. Thomas Kellahin, Esq., attorney for Sapient Energy Corp.

Very truly yours,



William F. Carr  
Attorney for Chevron U.S.A. Production  
Company and Conoco, Inc.

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Oil Conservation Commission

December 14, 2001

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Enc.

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**STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT  
OIL CONSERVATION COMMISSION**

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

**AMENDED APPLICATION OF SAPIENT  
ENERGY CORP FOR AN UNORTHODOX  
WELL LOCATION AND (i) TWO NON-  
STANDARD 160-ACRE SPACING UNITS, OR IN  
THE ALTERNATIVE, (ii) ONE NON-STANDARD  
160-ACRE SPACING AND PRORATION UNIT,  
LEA COUNTY, NEW MEXICO.**

**CASE NO. 12587**

**APPLICATION OF SAPIENT ENERGY  
CORPORATION FOR SPECIAL POOL  
RULES, LEA COUNTY, NEW MEXICO.**

**CASE NO. 12605**

**ORDER NO. R-11652-B**

**PROPOSED ORDER OF THE COMMISSION  
OF  
CHEVRON U.S.A. PRODUCTION COMPANY AND CONOCO INC.**

THIS MATTER has come before the New Mexico Oil Conservation Commission (hereinafter referred to as "the Commission") on the applications of Sapient Energy Corporation (hereinafter referred to as "Sapient"), Chevron U.S.A. Production Company (hereinafter referred to as "Chevron"), and Conoco Inc. (hereinafter referred to as "Conoco") for hearing *de novo*, and the Commission, having conducted an evidentiary hearing on the applications on December 4, 2001, and being fully advised in the premises,

**FINDS:**

(1) Due public notice has been given, and the Commission has jurisdiction of these causes and their subject matter.

(2) In Case 12587, Sapient seeks retroactive approval of an unorthodox well location for its Bertha J. Barber Well No. 12 (hereinafter referred to as "the Barber Well") which is located at an unorthodox gas well location 330 feet from the North line and 660 feet from the East line of Section 7, Township 20 South, Range 37 East,

NMPM, to be dedicated to a non-standard 160-acre gas spacing and proration unit consisting of either (i) the E/2 E/2 of this section, or in the alternative, (ii) the E/2 NE/4 of Section 7 and the W/2 NW/4 of Section 8 for production from the West Monument-Tubb Gas Pool retroactive to September 9, 1999, the date of first production from the Tubb formation. In addition, should the Division approve a non-standard 160-acre spacing and proration unit comprised of the E/2 E/2 of Section 7, then the applicant seeks the approval of a second non-standard 160-acre spacing and proration unit consisting of the W/2 E/2 of this section.

(3) In Case 12605, Sapient seeks the promulgation of special pool rules for the West Monument-Tubb Gas Pool including provisions for 80-acre spacing units and designated well locations.

(4) Sapient has withdrawn its request for hearing *de novo* except for that portion of its application which seeks Special Pool Rules and the assignment of an 80-acre spacing unit for the Barber Well in the West Monument-Tubb Gas Pool to be made retroactive to the date of first production from the Tubb formation and the affirmance of that portion of Division Order No. R-11652 which approved Sapient's well location. (*See, Sapient's Revised Pre-hearing Statement filed on November 28, 2001, Procedural Matters, at page 11.*)

(5) Each application involves the same factual issues and the cases were consolidated and an evidentiary hearing on the consolidated cases took place on December 4, 2001.

(6) Chevron, the offsetting operator to the north and a working interest owner in the W/2 NE/2 of Section 7, and Conoco, a working interest owner in the W/2 NE/2 of Section 7<sup>1</sup>, appeared and presented testimony in opposition to the applications of Sapient for the promulgation of special pool rules for the West Monument-Tubb Gas

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<sup>1</sup> Chevron owns 100% of the working interest in the SE/4 of Section 6, Sapient owns 100% of the working interest in the E/2 E/2 of Section 7. The working interest ownership of the W/2 E/2 of Section 7 is as follows:

<b>Conoco Inc.</b>	<b>37.41862%</b>
Phillips Petroleum Company	25.0%
ARCO	18.70931%
<b>Chevron U.S.A. Production Company</b>	<b>18.70931%</b>
James Burr	0.06511%
Larry Nermyr	0.06511%
Ruth Sutton	0.03255%

(*Testimony of Denny, Chevron-Conoco Exhibit 1*)

Pool and the retroactive creation of a non-standard 80-acre spacing and proration unit for the Barber Well effective on the date of first production from the Tubb formation.

**BACKGROUND:**

(7) The Barber Well was producing as an oil well at a standard oil well location 330 feet from the North line and 660 feet from the East line of Section 7, until August 1999 when it was recompleted by Cross Timbers Oil Company (hereinafter referred to as "Cross Timbers") in the Tubb formation as a gas well. In September 1999, Cross Timbers filed Division form C-102 which showed the well at an unorthodox gas well location on a non-standard spacing unit comprised of the E/2 E/2 of Section 7. No application for approval of this unorthodox gas well location nor the non-standard spacing unit dedicated thereto was made pursuant to Division rules nor was the required notice provided to the offsetting owners who are affected by this well location and the acreage dedicated thereto.

**FINDING:** Interest owners in the W/2 NE/4 of Section 7 were not properly notified of the proposed unorthodox well location nor the non-standard gas spacing unit for the Barber Well as required by Oil Conservation Division Rules and were thereby denied an opportunity to object at the time the well was recompleted in the Tubb formation.

(8) By Order No. R-11304, dated January 6, 2000, the Division created the West Monument-Tubb Gas Pool (effective February 1, 2000), designated the E/2 of Section 7 as the acreage to be included in the new pool and approved the Barber Well as the discovery well for the pool.

**OIL CONSERVATION DIVISION RULES:**

(9) Oil Conservation Division Rules 12 provides "...it shall be the responsibility of all the owners or operators to obtain information pertaining to the regulation of oil and gas before operations begin."

(10) Falcon Creek Resources, Inc. (hereinafter referred to as "Falcon Creek") acquired the Barber Well from Cross Timbers on April 1, 2000 and Sapient acquired the well from Falcon Creek on July 14, 2000. When it acquired the well from Falcon Creek Sapient made no effort to obtain information pertaining the regulation of oil and gas in

New Mexico before it began operations nor to ascertain if the Barber Well was in compliance with Division rules.<sup>2</sup> (*Testimony of Travis*)

(11) Division Rule 104.B(2) provides that “if a well drilled as an oil well is completed as a gas well but does not conform to the applicable gas well location rules, the operator must apply for administrative approval for a non-standard location before the well can produce.”

(12) Neither Sapient or its predecessors applied for administrative approval for the non-standard gas well location for the Barber Well prior to producing the well. (*Testimony of Travis*)

**FINDING: The Barber Well is at an unapproved unorthodox gas well location in violation of the Division Rules.**

(13) The West Monument-Tubb Gas Pool is governed by the General Rules and Regulations of the Oil Conservation Division which provide for gas wells to be located on spacing units consisting of 160 surface contiguous acres, substantially in the form of a square, which is a quarter section and a legal subdivision of the U. S. Public Lands Survey, with wells to be located no closer than 660 feet to any outer boundary of such unit and no closer than 10 feet to any quarter-quarter section or subdivision inner boundary.

**FINDING: The Barber Well is located on a non-standard spacing unit in the West Monument-Tubb Gas Pool which has not been properly formed under the rules of the Division. The standard spacing unit for the Barber Well is the 160-acre quarter section comprised of the NE/4 of Section 7 and the owners therein are entitled to their respective shares of production from the well both retroactively and prospectively.**

(14) Division Rule 104 D(2) provides that “Any well that does not have the required amount of acreage dedicated to it for the pool or formation in which it is

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<sup>2</sup> Sapient alleges that it was unaware of the rules of the Division and the regulatory requirements for the Barber Well when it was acquired from Falcon Creek and it was only after Chevron filed its application to recomplete its Mathews 12 Well that Sapient became aware that the Barber Well was not in compliance with Division rules. (*Testimony of Travis*)

completed may not be produced until a standard spacing unit for the well has been formed and dedicated or until a non-standard spacing unit has been approved.”

**FINDING:** Sapiient failed to obtain administrative approval of a non-standard spacing unit for the Barber Well, is in violation of Division Rule 104 B(2) and has been illegally producing the Barber Well since its recompletion in September 1999.

**FINDING:** The Barber Well must remain shut in until it is in compliance with Division rules and the value received for past production from the well has been reallocated to the owners of the reserves drained by the well.

**CHEVRON’S EFFORTS TO OFFSET THE BARBER WELL:**

(15) In late 1999, following the recompletion of the Barber Well in the Tubb formation, Chevron began assessing its offset options and decided to attempt to recomplete its G. C. Mathews Well No. 6 located in the NE/4 SE/4 of Section 6 in the Tubb formation. That recompletion proved unsuccessful in the summer of 2000. (*Testimony of Denny*)

(16) In October 2000, Chevron filed an application pursuant to Division Rule 104 seeking approval of a non-standard gas well location for its G. C. Mathews Well No. 12 (“hereinafter referred to as “the Mathews 12 Well”) which it proposed to recomplete in the Tubb formation at an unorthodox gas well location 330 feet from the South line and 990 feet from the East line of Section 6, Township 20 South, Range 37 East, NMPM. This well is a direct offset to the Barber Well and, like the Barber Well is 330 feet from the common boundary between the Chevron and Sapiient spacing units. Although Chevron’s proposed location was only as close to the common boundary between the Chevron and Sapiient spacing units as the Barber Well, Sapiient objected to the proposed location. (*Testimony of Travis*)

(17) Because of the Sapiient objection, the Chevron application was set for hearing before a Division examiner on January 25, 2001. (*See, Testimony of Travis*)

(18) On January 23, 2001, Sapiient withdrew its objection to the Chevron application and Chevron’s application was approved administratively by Division Order NSL-3752-A dated January 24, 2001. (*See, Chevron/Conoco Exhibit No. 2.*) Due to the delays in obtaining final Division approval of its application for administrative approval of the unorthodox location for the Mathews 12 Well, Chevron was unable to recomplete the Mathews well until late November 2001. During this time, Sapiient continued to

produce the Barber at unrestricted rates thereby gaining an advantage on the offsetting Chevron tract impairing the correlative rights of Chevron and the other interest owners in that acreage. (*Testimony of Travis, Testimony of Denny*)

**THE ISSUE BEFORE THE COMMISSION:**

(19) The fundamental issue before the Commission in this case is the appropriate spacing for the West Monument-Tubb Gas Pool. (*Sapient Revised Pre-hearing Statement at page 2.*) ✓

(20) Sapient correctly identifies the provisions of the Oil and Gas Act which authorize the Commission to adopt spacing rules based on the area which can be efficiently drained and developed by one well<sup>3</sup>. (*Sapient Revised Pre-hearing Statement at page 4.*) However, instead of focusing on drainage information on this reservoir, Sapient asks the Commission to adopt spacing rules based on analogies to Tubb wells located miles away where reservoir characteristics differ from those of the West Monument-Tubb Gas Pool. (*See, Testimony of Von Rhee*)<sup>4</sup> ✓

(21) Chevron/Conoco support spacing rules which are based on the area which can be effectively drained and developed by one well in the West Monument-Tubb Gas Pool, i.e., 160 acres.

✓ 3

Sapient correctly identifies the Commission's statutory authority to set spacing as follows:

NMSA 1978 Section 70-2-17:

"A. [the Commission] is required, as far as it is practicable to do so, [to] afford to the owner of each property in a pool the opportunity to produce its just and equitable share of the oil or gas, or both, in the pool, being an amount, so far as can be practicably obtained without waste, substantially in the proportion that the quantity of the recoverable oil or gas or both, under such property bears to the total recoverable oil or gas, or both, in the pool...."

B. ...may establish a proration unit for each pool, such being the area that can be efficiently drained and developed by one well...."

NMSA 1978 Section 70-2-12 (10):

[the Commission is empowered " To fix the spacing of wells."

*Sapient Pre-hearing Statement at page 2.*

4. Contrary to statutory standards, Sapient's engineering witness, Kyle Travis, testified that even if the Commission finds that wells in this gas pool drain 160-acres, the pool should nonetheless be subject to the 80-acre spacing requirements of the neighboring oil pool. (*Testimony of Travis*)

**NEW DATA:**

(22) Both parties have recently acquired new data on the Tubb reservoir in the West Monument-Tubb Gas Pool. (*Testimony of Travis, Denny and Lowe*)

(23) In October 2001, after Sapient was ordered by the Division to shut in the Barber Well, it took a static pressure test. The incorporation of this new pressure data into its previously submitted drainage calculations dramatically reduced Sapient's estimated drainage area for the Barber Well from 103 acres to 59-acres. (*Testimony of Travis, Sapient Exhibit 21*)

(24) In November 2001, Chevron completed the Mathews 12 Well. New information was obtained from this well including data from a six-day pressure build up test, new log information, and data from 29 side wall cores. This information was acquired during the days immediately prior to the December 4, 2001 Commission hearing and was shared with Sapient prior to the hearing. The incorporation of this new data into the drainage calculations of Chevron/Conoco slightly increased the drainage area for the Barber Well from 159 acres to 165 acres. (*Testimony of Lowe, Chevron/Conoco Revised Exhibit 8*)

(25) Both parties adjusted their decline curves for the Barber well based on newly acquired information and both parties adjusted the decline curve for the Barber well to reflect a sharper decline. Each change was favorable to Sapient. (Chevron/Conoco's declines from changed from 16% to 22% to 30 % and Sapient's declines changed during the course of the hearings from 20% to 42%). (*See, Testimony of Lowe, Chevron/Conoco Exhibit 6 and Revised 6, Testimony of Travis, Sapient Exhibit 19*)

(26) Based on the most current information on this reservoir, each party presented its interpretation of the productive reservoir limits in the West Monument-Tubb Gas Pool and calculated the drainage area for wells in this pool.

(27) The spacing rules for this pool must be based on the number of acres that each Tubb gas well will drain and the drainage area is dictated by the porosity, pressure and drainage information on the reservoir.

**POROSITY:**

(28) Sapient calculated the porosity for the Barber Well from the PE Log. and, without adjustment to the log data, applied thereto a porosity cut off of 4% for

limestone and 12 % for dolomite. *(Testimony of Von Rhee)* With this process, Sapient calculated a formation porosity of 12.2%. *(Testimony of Von Rhee)*

(29) The PE Log is a lithology indicator and Sapient's use of the PE curve to calculate porosity is not standard practice in the oil and gas industry with inaccurate results. *(Testimony of Denny)*

(30) Side wall core data on the Tubb formation from the Mathews well showed the presence of ankerite and pyrite in the Tubb formation in the West Monument-Tubb Gas Pool. The presence of these minerals render the use of the PE curve useless as a tool to measure formation porosity. *(Testimony of Denny)*

(31) Chevron/Conoco calculated the porosity of the Tubb formation from the cross plot of the neutron and density curves from the Mathews 12 Well. The cross plot was prepared by Schlumberger at the time the well was logged and was not adjusted or altered by Chevron or Conoco. The use of the cross plot curve for determining porosity is a standard oil and gas industry practice. The Chevron/Conoco calculation results in a porosity of 6.6%. *(Testimony of Denny, Chevron/Conoco Exhibit 11)*

(32) The most accurate way to determine lithology and porosity in a reservoir is to look at rock samples from the formation. Chevron, took 29 side wall cores at representative intervals within the Tubb formation in the Mathews 12 Well. These cores were analyzed by Core Labs and the core porosities were plotted on the Schlumberger cross plot of the neutron and density curves of the Mathews 12 Well. *(Testimony of Denny, Chevron/Conoco Exhibit 11.)* Both cross plot and core analysis are industry standard methods for calculating reservoir porosity. *(Testimony of Denny, Testimony of Lowe)*

(33) There is a very high correlation between the actual Tubb porosity calculated by Core Labs in the side wall cores and the porosity on the cross plot prepared by Schlumberger. The match between these porosities in the Mathews 12 Well confirms the accuracy of the porosity used by Chevron/Conoco in determining the drainage area for wells in the West Monument-Tubb Gas Pool..

**FINDING:** The 6.6% porosity used by Chevron/Conoco to calculate the drainage area for the wells in the West Monument-Tubb Gas Pool was determined with industry accepted practices, has been confirmed with actual rock data from the Tubb formation from side wall cores and accurately represents the porosity of wells in this pool.



**PRESSURE DATA:**

**INITIAL RESERVOIR PRESSURE:**

(34) Sapient determined the initial pressure gradients in the pool by averaging the initial pressures from other deeper wells in the area. No effort was made to adjust or correct this pressure information to correspond to the perforation depth of the Barber Well. (*Testimony of Von Rhee.*) The pressure used by Sapient in its drainage calculations is 2597 psia. (*Testimony of Travis, Testimony of Von Rhee, Sapient Exhibits 14, 18*)

(35) Chevron/Conoco determined the initial reservoir pressure for the Barber Well by selecting nine analogous wells in the area with drill stem test and related information and, after adjusting the data for the mid point drill stem test interval, excluded the two highest gradients (more reflective of a liquid gradient) and the two lowest gradients (representative of depletion) and then averaged the remaining five gradients. Chevron/Conoco obtained an initial pressure of 2462 psia. (*Testimony of Lowe, Chevron/Conoco Exhibit No. 13.*) ✓

(36) Sapient's geological expert witness testified that the method used by Chevron/Conoco was the preferable way to determine initial reservoir pressure gradients. (*Testimony of Von Rhee*) ✓

(37) The methods utilized by Sapient to calculate initial pressure gradients in the reservoir resulted in an initial pressure 129 psia higher than the initial pressure obtained by Chevron/Conoco. (*Compare Chevron/Conoco Exhibit 13 and Sapient Exhibit Nos. 14 and 18*).

(38) Use of the higher initial pressure and using a lower current reservoir pressure by Sapient results in an Estimated Ultimate Recovery for the Barber Well of 1315 MMCF. (*Testimony of Travis, Sapient Exhibit 19*) Use of the admittedly preferable initial pressure and a higher current pressure calculated from a six-day pressure build-up in the Mathews #12 obtained by Chevron/Conoco resulted in an Estimated Ultimate Recovery of 1680 MMCF. (*Testimony of Lowe, Chevron/Conoco Exhibit No. 14*). Use of the better Initial Reservoir Pressure and current reservoir at the external boundaries by Chevron/Conoco results in a larger Estimated Ultimate Recovery for the well and a substantially larger drainage area than that obtained if the Sapient calculated initial pressure is used. ✓

**FINDING:** The methods used by Chevron/Conoco to determine the initial pressure gradients in this pool are more accurate than the methods utilized by Sapient results in a larger Estimated Ultimate Recovery for the Barber Well, and a larger drainage area.

**BOTTOMHOLE PRESSURE:**

(39) On October 24, 2001 after the Oil Conservation Division ordered the Barber Well be shut in, Sapient ran a static bottom hole pressure test. This pressure represents a static value in a well which had experienced significant production withdrawal and pressure depletion. At the time the test was run, the pressure in the well was still building, the pressure gauge was set at a depth 130 feet above the mid point of the perforations in the well and, although the well produces fluids, Sapient did not know the fluid level below the gauge and therefore did not have necessary information to accurately calculate a representative reservoir pressure in the structurally deeper Tubb horizon. Sapient obtained a bottom hole pressure for the Barber Well on October 24, 2001 of 1235 psia. (*Testimony of Travis, Sapient Exhibit 17*) ✓

(40) Chevron/Conoco used industry accepted type curve analysis to calculate average pressure for the reservoir from a continuous 6 day shut in pressure build up test on the Mathews 12 Well which has produced no fluids. With this shut in pressure data, Chevron/Conoco used the pressure gradient to calculate the pressure at the mid-point of the perforated interval in the Mathews 12 Well. Chevron/Conoco obtained a bottom hole pressure for the Mathews 12 Well on November 26, 2001, using the industry accepted type curve analysis calculated a reservoir pressure of 1446 psia, which was corrected to a datum depth equivalent of the mid-point perforation (6394 feet) in the Barber No. 12. In addition the last recorded pressure in the Mathews #12 recorded at the same depth as Sapient's static measurement, was 100 psi higher and was still building. (*Testimony of Lowe*) ✓

**FINDING:** The pressures utilized by Chevron/Conoco are more representative of the external absolute pressure in the reservoir.

**DRAINAGE:**

(41) Sapient testified to the heterogeneous nature of the Tubb formation in other portions of the reservoir. (*Testimony of VonRhee.*) However, there is no evidence of a heterogeneous reservoir in the area of interest in this case as shown on the comparison of the logs of the Barber Well and Mathews 12 Well which are mirror images of each other and show a homogeneous reservoir. (*Testimony of Denny, Chevron/Conoco Exhibit No. 12*)

(42) Although Sapient estimates that the Barber well will drain only 59 acres, the November 26, 2001 bottomhole pressure obtained by Chevron/Conoco from the Mathews 12 Well which is located 736 feet from the Barber Well shows original reservoir pressure has declined from 2462 psia to 1446 psia since the Barber Well first produced. (*Testimony of Lowe, Chevron/Conoco Exhibit 14.*) This data shows pressure depletion has occurred over a large area as a result of drainage from the Barber Well. Based on Sapient's reservoir parameters and the current cumulative production from the Barber #12, the drainage as of September 2001 would only be 676 feet. This is contrary with the observed pressure data in the Mathews #12. (*Testimony of Lowe, See, Chevron/Conoco Exhibit 14*)

(43) Sapient testified that the drainage radius for the Barber well would ultimately be approximately 900 feet. (*Testimony of Travis*) The evidence shows that although the Barber well has drained only 49% of the total recoverable reserves it will ultimately produce, the Mathews well which is located 736 feet from the Barber well has already experienced substantial pressure depletion. The current pressure depletion in the Mathews well shows that the Barber well will ultimately have a drainage radius far in excess of the 900 feet Sapient estimates. (*Testimony of Lowe*)

**FINDING: Sapient's calculated drainage radius for the Barber Well is not an accurate reflection of its drainage area, is inconsistent with the actual drainage information on the well, is underestimated, and inaccurate.**

(44) In support of its request for 80-acre spacing rules for this pool, Sapient presented volumetric calculations for the Barber 12 Well which showed that it should only drain 59 acres. (*Testimony of Travis, Sapient Exhibit No. 21*)

(45) Using a porosity of 6.6% (*See*, Findings 30 through 33) and an initial pressure of 2462 psia, (*See*, Finding 35), Chevron/Conoco calculated the drainage area for the Barber Well in the following ways:

- A. Decline Curve Analysis, with a constant decline of 30%<sup>5</sup>, results in an Estimated Ultimate Recovery for the Barber Well of **1.670 BCF**, a drainage radius of 1513 feet, and a drainage area of 165 acres (*Testimony of Lowe, Chevron/Conoco Revised Exhibit No. 8*);

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<sup>5</sup> Sapient used a decline rate of 43% which was obtained by including in its decline production data for June and July 2001 during which time the well was choked back. This results in a steeped decline and a smaller Estimated Ultimate Recovery for the well.

- B. Volumetric Calculations result in an Estimated Ultimate Recovery for the Barber Well of **1.616 BCF**; (*Testimony of Lowe, Chevron/Conoco Exhibit 8*); and
- C. The Material Balance Method of Recovery, honoring the historic performance of the well, results in an Estimated Ultimate Recovery for the Barber Well of **1.679 BCF** and a drainage area of 164-acres (*Testimony of Lowe, Chevron/Conoco Exhibit 14.*).

(46) The calculations of Chevron/Conoco were based on the most accurate information on this gas reservoir and the resulting almost identical estimates of recoverable reserves confirm the accuracy of Chevron/Conoco's calculated drainage area for the Barber Well. This drainage area already extends onto the Chevron/Conoco federal lease acreage in the W/2 E/2 of Section 7 and the Chevron acreage in the SE/4 of Section 6. (*Testimony of Lowe, Conoco Exhibit 9*)

(47) Pressure depletion from the 808 MMCF of gas produced from the Barber Well through October 2001 (*Sapient Exhibit 13*) extends beyond the Sapient acreage and the impact on the ultimate recovery of oil reserves has already occurred and cannot be reversed. (*Testimony of Lowe*)

**FINDING:** The best information available on the wells in the West Monument-Tubb Gas Pool shows that each well will drain approximately 160-acres. ✓

**FINDING:** The Barber Well will drain 160-acres in the Tubb formation and 160-acre spacing and proration units are appropriate for the West Monument-Tubb Pool. ✓

**FINDING:** Barber Well drains reserves from the Tubb formation from the federal lease in the W/2 NE/4 of Section 7 and has drained and will continue to drain reserves from the SE/4 of Section.

#### **GEOLOGICAL EVIDENCE -- RESERVOIR LIMITS**

(48) The parties agree that the fundamental issue in this case is the number of acres that wells in this gas pool will drain. Chevron/Conoco disagree with Sapient that issue evidence on the Monument Tubb Pool suggesting that it is a heterogeneous reservoir with poor reservoir correlation from well to well. Recent log and core data on the West Monument Tubb Gas Pool shows high degree of correlation between the ✓

Barber Well and the Mathews 12 Well. (*Testimony of Denny, Chevron/Conoco Exhibit 12*)

(49) Sapient presented geological evidence which showed:

- A. A general northwest-southeast structural trend to the Tubb formation across the area of interest. (*Testimony of Von Rhee, Sapient Exhibit Nos. 22, 23 and 24*); and
- B. Northeast-Southwest trending Tubb porosity perpendicular to the general trend of the formation in the area and located on Sapient acreage in the E/2 of the NE/4 of Section 7. This interpretation assigned approximately 20 feet of 4% porosity to the Mathews 12 Well. (*Sapient Exhibit No. 28; Isopach Map.*) The interpretation was based in part upon a on a mud log from the Conoco Barber Federal Well No. 1 located in the SW/4 of Section 7. (*Testimony of Von Rhee*)

(50) Chevron/Conoco presented geological evidence which showed:

- A. Porosity mapped parallel to the general Northwest-Southeast porosity trend of the Tubb formation in this area (*Testimony of Denny, Chevron/Conoco Exhibit No. 5*);
- B. Comparable porosity development in both the Barber Well and Mathews 12 Well (*Testimony of Denny, Chevron/Conoco Exhibit 5*); and
- C. Comparable porosity thickness through out the NE/4 of Section 7 (*Testimony of Denny; Chevron/Conoco Exhibit No. 5*).

(51) Sapient used the mud log from the Barber Federal Well No. 1 to interpret porosity thickness in this area. The use of mud logs to predict porosity is unreliable. (the Rate of Penetration (ROP) indicated on mud logs is influenced by weight on bit, condition of bit, drift, type of bit and weight of mud, etc.) Using ROP to predict quantitative porosity measurement is not an industry standard is not reliable. (*Testimony of Denny*)

(52) New data from the Mathews 12 Well changed Sapient's interpretation of the porosity thickness at this well location to 32 feet of net porosity instead of the 20 feet it had previously calculated. (*Testimony of Von Rhee, Sapient Exhibit No. 22*).

When Sapient's porosity isopach map is amended to honor this new data, this gas reservoir extends under the Chevron/Conoco Federal lease covering the W/2 NE/4 of Section 7. (*See, Testimony of Von Rhee*)

(53) The new information from the Mathews 12 Well caused only minor insignificant changes in the isopach maps previously submitted by Chevron/Conoco. (*See, Compare Chevron/Conoco Isopach Map submitted as Exhibit 5 for November 6, 2001 hearing date and Chevron/Conoco Revised Exhibit 5, Testimony of Denny*).

**FINDING:** The data now available on the Tubb reservoir under the NE/4 of Section 7 shows that the porosity which is being drained and will continue to be drained by the Barber well is present throughout the statutory standard 160-acre unit comprised of the NE/4 of Section 7.

**WASTE:**

(54) Since wells in the West Monument-Tubb Gas Pool drain approximately 160-acres, the adoption of special pool rules which provide for 80-acre spacing would result in the drilling of unnecessary wells thereby causing waste. (*Testimony of Lowe, Chevron/Conoco Exhibit 10*)

**FINDING:** Adoption of Special Pool Rules for the West Monument-Tubb Pool which provide for 80-acre spacing would result in reserves being drained from offsetting tracts which can only be recovered by the offset owners drilling of unnecessary wells thereby causing waste.

**CORRELATIVE RIGHTS:**

(55) Correlative rights is defined by the Oil and Gas Act as the "opportunity afforded, so far as it is practicable to do so to the owner of each property in a pool the opportunity to produce without waste his just and equitable share of the oil or gas or both, in the pool, being an amount, so far as can be practicably determined and so far as can be practicably obtained without waste, substantially in the proportion that the quantity of the recoverable oil or gas or both under the property bears to the total recoverable oil or gas, or both, in the pool...."

*NMSA 1978 Section 70-2-33*

(56) The evidence in this case establishes that wells in the West Monument-Tubb Gas Pool drain 160-acres. (*Testimony of Lowe, Chevron Exhibit Nos. 8 and 14*)

(57) Formation of a standard 160-acre spacing and proration unit for the Barber Well comprised of the NE/4 of Section 7 and the allocation of production proceeds to the owners of the minerals in this acreage will result in these owners receiving their just and equitable share of the reserves drained from this spacing unit.

(58) The effects of the drainage from the Barber Well on the W/2 NE/4 of Section 7 cannot be reversed and the formation of a standard spacing unit for the Barber Well and the reallocation of the production to the owners in this standard unit is necessary to protect the correlative rights of all owners in the NE/4 of Section 7.

(59) The retroactive formation an 80-acre spacing unit for the Barber Well would permit Sapient to retain the production proceeds for gas it has illegally produced and which has been drained from offsetting acreage thereby impairing the correlative rights of the mineral owners in the W/2 NE/2 of Section 7.

(60) To now permit Chevron/Conoco to drill an additional well in the W/2 NE/4 of this Section does not protect the rights of Chevron, Conoco and the other owners of the Federal lease covering the W/2 NE/4 of this Section. While Chevron repeatedly asked the Division to shut in the Barber Well, it was allowed to produce. The acreage has now been pressure depleted and the owners in the W/2 can never recover their just and equitable share of the reserves under this acreage.

(61) While Sapient was allowed to produce, neither Chevron nor Conoco could have drilled a well in the NE/4 of Section 7 because the Division only allows one well per spacing unit--and the spacing unit for the well is and has been 160-acres.

(62) The delays Chevron experienced in obtaining Division approval of its unorthodox location in the SE/4 of Section 6 prevented Chevron from recompleting its Mathews 12 Well while the Barber 12 Well has been permitted to produce and continue to drain the reservoir.

**FINDING:** The reallocation of the value received for production from the Barber Well from September 9, 1999, the date of first Tubb production, is necessary if all owners are to receive their just and fair share of the recoverable reserves from the pool thereby protecting their correlative rights.

**FINDING:** The application of Sapient Energy Corporation in Case 12587 for an unorthodox well location for its Bertha J. Barber Well No. 12 at a point 330 feet from the North line and 660 feet from the East line of

Section 7, Township 20 South, Range 37 East, N.M.P.M., should be approved.

**FINDING:** At the request of Sapient Energy Corporation, its application in Case 12587 for the approval of a non-standard gas spacing and proration unit comprised of the E/2 NE/4 and of Section 7 and the W/2 NW/4 of Section 8, Township 20 South, Range 37 East, NMPM, and for approval of non-standard 160-acre gas spacing and proration units comprised of the E/2 E/2 of Section 7, and the W/2 E/2 of Section 7, Township 20 South, Range 37 East, NMPM Lea County, New Mexico should be dismissed. ✓

**FINDING:** Having failed to meet its burden of proof in this case, the application of Sapient Energy Corporation in Case 12605 for the adoption of Special Pool Rules and Regulations for the West Monument-Tubb Gas Pool including provisions for 80-acre gas well spacing should be denied. ✓

**FINDING:** The Barber 12 Well has been and continues to be produced in violation of Division Rules 104 B(2), 104 C(3) and 104 D(2).

**FINDING:** The Barber Well has illegally produced over 818 MMSCF of gas since September 1999 and drained substantial reserves from offsetting tracts.

**FINDING:** The Barber Well should be shut in and remain shut in until a standard 160-acre gas spacing and proration unit comprised of the NE/4 of Section 7 has been dedicated to the well and the value received for all production from the date of first Tubb production from this well has been reallocated to the interest owners in this spacing and proration unit. Prospectively, all production should be allocated consistent with the findings in this order. ✓

**IT IS THEREFORE ORDERED, AS FOLLOWS:**

(1) The application of Sapient Energy Corporation in Case 12605 for the adoption of special pool rules for the West Monument-Tubb Gas Pool including provisions for 80-acre gas spacing and proration units is hereby denied.



(2) The application of Sapient Energy Corporation in Case 12587 for an unorthodox gas well location in the West Monument-Tubb Gas Pool for its Bertha J. Barber Well No. 12 located 330 feet from the North line and 660 feet from the east line of Section 7, Township 20 South, Range 37 East, NMPM, Lea County, New Mexico is hereby **approved**.

**PROVIDED THAT** Sapient Energy Corporation is ordered to shut in the Bertha J. Barber Well No. 12 and that the well shall not be returned to production until a standard gas spacing and proration unit has been dedicated to the well in accordance with Division Rules 104 C(2) and 104 D(2) and the value received for all production from this well from September 9, 1999 has been reallocated to the interest owner in this spacing unit or an agreement reached with all interest owners in this standard spacing unit for the reallocation of this production to the owners thereof.

(3) At the request of Sapient Energy Corporation, its application in Case 12587 for the approval of a non-standard gas spacing and proration unit comprised of the E/2 NE/4 and of Section 7 and the W/2 NW/4 of Section 8, Township 20 South, Range 37 East, NMPM, and for approval of non-standard 160-acre gas spacing and proration units comprised of the E/2 E/2 of Section 7, and the W/2 E/2 of Section 7, Township 20 South, Range 37 East, NMPM Lea County, New Mexico is hereby **dismissed**.

(4) Jurisdiction of these causes 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 hereinafter designated.

**STATE OF NEW MEXICO  
OIL CONSERVATION COMMISSION**

**LORI WROTENBERY, Chair**

**JAMI BAILEY, Member**

**ROBERT LEE, Member**

CASE NOS. 12015 AND 12017  
ORDER NO. R-11652-B  
Page -18-

**S E A L**

**CLOSING STATEMENT OF**  
**CHEVRON U.S.A. PRODUCTION COMPANY**  
**AND CONOCO INC.**

**ROLE OF THE OIL CONSERVATION COMMISSION:**

In New Mexico disputes involving the development of oil and gas resources come before the Oil Conservation Commission for resolution. These cases are technical in nature and their resolution requires an understanding of petroleum engineering, geology and the rules and regulations of the Commission. Since courts are generally ill equipped to understand and therefore properly decide these technical issues, the legislature created the Oil Conservation Commission and vested it with jurisdiction over all matters related to the conservation of oil and gas. The Commission has been recognized by our Supreme Court as having special expertise and knowledge in oil and gas matters and the courts generally defer to the Commission's decisions.

In the normal hearing before the Commission, each party presents its "science" in support of its position in the case. We come here because, unlike a court, the Commission knows what is "science" and what is not. The Commission knows the difference between evidence that is accurate and has been developed using industry accepted methods. The Commission also recognizes evidence that is inaccurate, not developed in accordance with industry accepted practice, or manipulated for purposes of the hearing. This is the job of the Oil Conservation Commission.

Sapient asserts that its Barber No. 12 Well in the West Monument-Tubb Gas Pool drains a small area, but Chevron/Conoco's evidence shows the well drains 165-acres. Both parties have new evidence that they have obtained within the last two months. Sapient has new pressure data from the Barber No. 12 Well which, when incorporated into its drainage calculations, dramatically reduced the drainage area for the Barber No. 12 Well from 103 acres to 59 acres. Chevron/Conoco have new information from the recently completed Mathews No. 12 Well. When the new porosity and pressure data are used in their calculations the drainage area for the Barber No. 12 Well is slightly increased from 154 acres to 165 acres. Note that both sides presented incremental data during the de novo hearing, but only the Chevron/Conoco data included new information that was harmful to earlier positions. For example, as new data became available, Chevron/Conoco actually increased the production decline curve which reduced the calculation for Estimated Ultimate Recovery. All of Sapient's changes were made to benefit its own self-interest.

Although the case may seem complicated, it involves only one question: How many acres are drained by a well in the West Monument-Tubb Gas Pool? The answer to this question resolves all issues presented to the Commission in this matter. To answer this question the Commission must examine three things: porosity, pressure and drainage. In this context, it is important to note that Sapient had the burden of proof going forward and must clearly demonstrate that their Barber No. 12 Well will not drain gas reserves under the Federal lands leased to Conoco, Chevron and others.

## POROSITY:

Sapient's 12.2% porosity estimate was obtained from the PE log on the Barber No. 12 Well. This is not science. The evidence showed that the PE log is only a lithology indicator and it is not standard industry practice to use this type of log to determine porosity. Furthermore, the presence of minerals like ankerite and pyrite in the sidewall core data from the Mathews No. 12 well render meaningless the use of the PE log to determine porosity.

Chevron/Conoco calculated a porosity of 6.5% for the Mathews No. 12 Well and 6.7% for the Barber No. 12 Well for the Tubb formation using the Schlumberger cross plot curves for each well. The use of the cross plot is standard industry practice. Furthermore, the Chevron/Conoco porosity figures were confirmed by CORE Labs in 29 side wall cores taken from representative intervals in the Tubb formation in the Mathews No. 12 Well. Porosity information from logs is used to try to determine the porosity of the rock in the formation. Here we have the rock. Even Sapient's own geologist had to admit that the best evidence was the rock itself. It confirms the cross plot porosity calculation. This is science. Using this science it is clear that the wells in this pool drain large areas.

## PRESSURE DATA:

### Initial Reservoir Pressure:

For its material balance calculations, Sapient used an initial reservoir pressure it obtained by averaging the initial pressure in several wells in the general area. The problem with Sapient's approach is that it used wells in which the Tubb formation is deeper than in the Barber No. 12 Well and Sapient failed to adjust the pressure to the mid-perforation point.

Chevron/Conoco calculated an initial pressure from wells in the immediate area after adjusting the data to represent the mid-perforation depth in the Barber No. 12 Well. Chevron/Conoco excluded data from depleted wells and oil wells, and then averaged the initial pressures in the wells that remained to get a pressure at the perforated interval in the Barber No. 12 Well. Sapient's geologist acknowledged that Chevron/Conoco had used a better method to determine initial pressure.

Sapient's method of calculating initial pressure is not only inferior to the methods used by Chevron/Conoco, it is not science. Whether Sapient's methods are intentionally misleading or just sloppy, they result in an estimated initial pressure that is 129 psia higher than the pressure obtained by Chevron/Conoco. Use of this higher pressure in their P/Z Curve results in a smaller Estimated Ultimate Recovery for the Barber No. 12 Well and this in turn conveniently results in a smaller drainage area for the well.

### Bottomhole Pressure:

Sapient's bottomhole pressure measurement of 1235 psia also fails to meet industry standards. Sapient ran a static pressure test in the Barber No. 12 Well after it had experienced substantial depletion. The test was taken after the well had been shut-in for five days but while

the pressure in the well was still building. The pressure gauge was at a depth approximately 130 feet above the mid-point perforation, and although the well produces fluids, Sapient did not know the fluid level below the gauge and assumed none.

Chevron/Conoco used an industry accepted type curve analysis to calculate average pressure for the reservoir from a continuous 6 day shut-in pressure build up test on the Matthews No. 12 Well. The Mathews #12 well produces no fluids. With this pressure gradient, Chevron/Conoco calculated the pressure at the mid-point of the perforated interval and obtained a bottom hole pressure for the Matthews No. 12 well of 1445 psia. The pressure obtained by Chevron/Conoco is more representative of the external absolute pressure in the reservoir because it accounts for reservoir properties and is able to compute a stabilized rate. Chevron/Conoco's pressure is based on science – Sapient's pressure is not.

#### DRAINAGE:

Using their porosity and pressure data, Chevron/Conoco calculated the drainage area for the Barber No. 12 Well in three ways. With decline curve analysis they got an estimated Ultimate Recovery of 1.670 BCF and a drainage area of 165-acres, with volumetrics an Estimated Ultimate Recovery of 1.616 BCF, and with material balance an Estimated Ultimate Recovery of 1.679 BCF and a drainage area of 164 acres.

Using its data, Sapient calculated a drainage area of 59 acres. Sapient tried to reduce the Ultimate Recovery from the Barber No. 12 Well by using pressure data that was not at a stabilized reservoir pressure and then increased the porosity in the reservoir so more gas could be contained in a smaller area. All of this was an attempt to force the reserves under its acreage. Sapient also mapped the porosity perpendicular to the general reservoir trend in this area—and conveniently under its tract.

Even with all of this maneuvering, Sapient still cannot get around one fact. The pressure in the Matthews No. 12 Well is now 1446 psia – down from an original reservoir pressure of 2462 psia. This pressure depletion is a result of production from the Barber No. 12 Well, which has produced approximately 49% of its recoverable reserves and has already drained more than the 736 feet between it and the Matthews No. 12 Well. This drainage also extends across the northeast quarter of Section 7, because the new data from the Matthews No. 12 Well shows, even using Sapient's isopach map, that there are 32 feet of porosity at the location of the Matthews No. 12 Well compared to the 20 feet previously mapped at this location by Sapient. We now know that the Barber No. 12 Well is draining a large area and that it is draining Chevron/Conoco acreage.

When the methods used by each of the parties in this case is compared, it is clear that Chevron/Conoco presented reliable information on this reservoir, and calculated porosity and pressure data using industry accepted methods. Their information clearly shows that wells will drain 160-acres in the West Monument-Tubb Gas Pool.

Sapient may call their work “science” but it is not. Sapient has not used industry practices or standards, but has instead chosen to use unconventional means which has biased the results—every time to Sapient’s benefit and every time incorrectly.

The standard the Commission must apply in this case is announced in statute: Spacing follows drainage. Since Sapient’s technical presentation fails to show 80-acre spacing is appropriate for this pool, Sapient asks the Commission not to rely on drainage information on this reservoir but instead to base its order on information analogized from wells located miles away and not pertinent to the drainage capabilities of the Barber No. 12 Well in the Tubb formation in the West Monument-Tubb Gas Pool. This is something the Commission cannot do.

It is inappropriate for the Commission to rely on interpreted data from other wells and a different pool when there is actual data on this pool that shows the Tubb reservoir is in pressure communication, and there is a high degree of continuity and correlation between the logs on the two wells that have been drilled in the pool. It also shows that wells drain 160 acres -- not 80 acres or less.

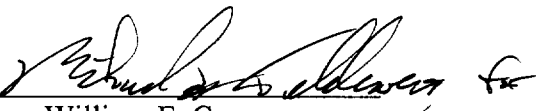
Sapient’s predecessor, Cross Timbers, failed to comply with Division rules when it recompleted the Barber No. 12 Well. However, since Sapient assumed operations that trend has continued. Sapient has known, or should have known, that it was in violation of Division rules. Moreover, Sapient has used the rules to gain an advantage against offsetting operators every time it could. Sapient objected to Chevron’s offsetting location and gained additional time to produce the Barber No. 12 Well at capacity while Chevron could not drill an offsetting well.

With the reservoir substantially depleted and reserves drained from Chevron/Conoco’s Federal lease, Sapient now asks the Commission to enter a retroactive spacing order and let it keep the reserves it has drained from others. To grant Sapient’s request for 80-acre spacing, the Commission would have to ignore the drainage evidence on this reservoir and authorize wasteful over-drilling of this pool. To grant Sapient’s application, the Commission has to ignore the correlative rights of Chevron, Conoco and others and deny each of them the opportunity to produce their fair share of the reserves in the West Monument-Tubb Gas Pool. This correlative rights violation will result from a change in spacing and a retroactive spacing order which cannot be corrected at a later date by the drilling of offsetting wells.

Chevron/Conoco ask the Commission to deny the application of Sapient for 80-acre spacing for the West Monument-Tubb Gas Pool either prospectively or retroactively to the date of first production from the Barber No. 12 Well. The Division ruled on Sapient’s application, finding that Sapient had been illegally producing the Barber No. 12 Well and directing that it be shut-in until the production proceeds had been reallocated to those who owned the oil and gas rights under the standard 160-acre spacing unit comprising the NE/4 of Section 7. Chevron/Conoco respectfully ask the Commission to do the same.

Respectfully submitted,

Holland & Hart, LLP

By:   
William F. Carr

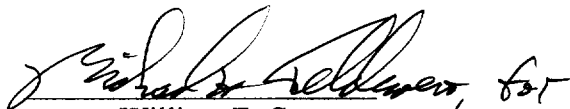
ATTORNEYS FOR CHEVRON U.S.A.  
PRODUCTION COMPANY  
AND CONOCO INC.

CERTIFICATE OF SERVICE

I hereby certify that on December 14, 2001, a copy of this Closing Statement and Proposed Order have been Hand Delivered to the following Attorneys of record:

W. Thomas Kellahin, Esq.  
El Patio Building  
117 North Guadalupe Street  
Santa Fe, New Mexico 87504

Stephen C. Ross, Esq.  
Assistant Attorney General  
Oil Conservation Commission  
New Mexico Department of Energy,  
Minerals and Natural Resource  
1220 South Saint Francis Drive  
Santa Fe, New Mexico 87505

  
William F. Carr

**JAMES BRUCE**  
ATTORNEY AT LAW

POST OFFICE BOX 1056  
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HYDE PARK ESTATES  
SANTA FE, NEW MEXICO 87501

(505) 982-2043  
(505) 982-2151 (FAX)

November 28, 2001

**Via Fax and U.S. Mail**


Lori Wrotenbery  
Oil Conservation Commission  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

Re: Cases 12587 and 12605 de novo (Sapient Energy Corp.)

Dear Ms. Wrotenbery:

Amerada Hess Corporation hereby withdraws its entry of appearance in the above matters. It will not participate in the December 4th Commission hearing.

Very truly yours,



James Bruce

Attorney for Amerada Hess Corporation

cc: Stephen C. Ross (via fax)  
W. Thomas Kellahin (via fax)  
William F. Carr (via fax)



**KELLAHIN AND KELLAHIN**

ATTORNEYS AT LAW

EL PATIO BUILDING

117 NORTH GUADALUPE

POST OFFICE BOX 2266

SANTA FE, NEW MEXICO 87504-2266

W. THOMAS KELLAHIN\*

\*NEW MEXICO BOARD OF LEGAL SPECIALIZATION  
RECOGNIZED SPECIALIST IN THE AREA OF  
NATURAL RESOURCES-OIL AND GAS LAW

JASON KELLAHIN (RETIRED 1991)

TELEPHONE (505) 982-4285  
TELEFAX (505) 982-2047

November 20, 2001

**Via Facsimile**

Steve Ross, Esq.  
Oil Conservation Commission  
1220 South Saint Francis Drive  
Santa Fe, New Mexico 87505

**Re: Commission De Novo Hearings:**  
**NMOCD Case 12587**  
**Amended Application of Sapiant Energy Corp.**  
**for an unorthodox well location, non-standard**  
**proration units, Lea County, New Mexico**

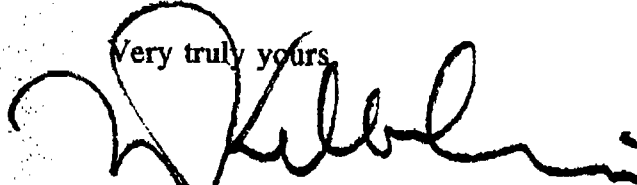
**NMOCD Case 12605**  
**Application of Sapiant Energy Corporation for**  
**special pool rules for the West Monument-Tubb Gas Pool,**  
**Lea County, New Mexico**

Dear Mr. Ross:

I am writing requesting a modification of your letter dated November 9 in which you directed that any prehearing statements and exhibits in the referenced matter be filed and served by November 26 (one week prior to hearing on December 4th).

I will return from Thanksgiving holiday on Tuesday, November 27th and would like your permission to file any additional or revised exhibits or prehearing statements by noon on Wednesday, November 28th.

Very truly yours,



W. Thomas Kellahin

cfx: William F. Carr, Esq.  
James Bruce, Esq.  
Sapiant Energy Corp.  
Attn: Chuck Perrin



# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON  
Governor  
Jennifer A. Salisbury  
Cabinet Secretary

Lori Wrotenbery  
Director  
Oil Conservation Division

November 9, 2001

*Via Facsimile and First Class Mail*

W. Thomas Kellahin  
Kellahin & Kellahin  
P.O. Box 2265  
Santa Fe, New Mexico 87504-2265

William F. Carr  
Holland & Hart and Campbell & Carr  
P.O. Box 2208  
Santa Fe, New Mexico 87504-2208

James G. Bruce  
P.O. Box 1056  
Santa Fe, New Mexico 87504-1056

Re: Case No. 12587, Application of Sapient Energy Corp., *de novo*  
Case No. 12605, Application of Sapient Energy Corp., *de novo*

Dear Counsel,

As you are aware, the hearing in this case was continued so that counsel could deal with the notice issue that arose at the last minute. The case was continued to the December meeting.

Please note: because of scheduling problems, the Commission has changed its December meeting date to **December 4**. The Commission members are prepared to continue hearing evidence on December 5, should that become necessary.

As an additional party will participate in the hearing, and the hearing was already scheduled to be a long one, I would suggest the same grounds rules vis a vis opening and closing statements that were in place for the November hearing: (1) written closing statements (and/or summaries of the evidence presented) in lieu of oral ones, submitted in writing no later than 10 days following the hearing, and (2) brief opening statements, if needed at all given the pre-hearing statements, no more than 5 minutes each.

Mr. Bruce, the other parties have already submitted exhibits and a pre-hearing statement. I suggest that you submit exhibits and a pre-hearing statement on behalf of the party you represent no later than one week prior to the hearing.

Counsel of record  
Page 2  
November 9, 2001

As always, if you have any questions, please do not hesitate to give me a call at 476-3451.

Sincerely,

A handwritten signature in black ink, appearing to be 'SR' or similar, written over the word 'Sincerely,'.

Stephen C. Ross  
Assistant General Counsel

Cc: Florene Davidson, Commission Secretary

**JAMES BRUCE**  
**Attorney at Law**  
**Post Office Box 1056**  
**Santa Fe, New Mexico 87504**  
**Telephone: (505) 982-2043**  
**Fax: (505) 982-2151**

**FAX COVER SHEET**

**DELIVER TO:** Stephen C. Ross  
**COMPANY:** Oil Conservation Division  
**CITY:** Santa Fe, New Mexico  
**FAX NUMBER:** (505) 476-3462  
**NUMBER OF PAGES:** 2 (Including Cover Sheet)  
**DATE SENT:** 11/5/01  
**MEMO:**

**JAMES BRUCE**

ATTORNEY AT LAW

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HYDE PARK ESTATES  
SANTA FE, NEW MEXICO 87501(505) 982-2043  
(505) 982-2151 (FAX)

November 5, 2001

**Via Fax**Lori Wrotenbery  
Oil Conservation Commission  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505Re: Cases 12587 and 12605 de novo (Sapient Energy  
Corporation)

Dear Ms. Wrotenbery:

Please consider this letter my entry of appearance on behalf of  
Amerada Hess Corporation ("Amerada") in the above matters.

I was called at approximately 4:00 p.m. today, and do not yet have all the facts regarding this matter. However, based on what I have been informed, it appears that Amerada was entitled to notice of the applications in the above cases, but has never been given notice. As a result, I must request on Amerada's behalf that the cases be continued to a hearing which Amerada can attend and present evidence. Notwithstanding the continuance request, if witnesses are present and ready to testify tomorrow, Amerada will not object to the presentation of testimony providing that it can present evidence at a later date.

Please call if you have any questions.

Very truly yours,

  
James Bruce

Attorney for Amerada Hess Corporation

cc: Stephen C. Ross (via fax)  
W. Thomas Kellahin (via fax)  
William F. Carr (via fax)

## TRANSACTION REPORT

NOV-05-2001 MON 05:46 PM

FOR:

RECEIVE

DATE	START	SENDER	RX TIME	PAGES	TYPE	NOTE	M#	DP
NOV-05	05:45 PM	5059822151	49"	2	RECEIVE	OK		

**JAMES BRUCE**  
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HYDE PARK ESTATES  
SANTA FE, NEW MEXICO 87501(505) 982-2043  
(505) 982-2151 (FAX)

November 5, 2001

Via FaxLori Wrotenbery  
Oil Conservation Commission  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505Re: Cases 12587 and 12605 de novo (Sapient Energy  
Corporation)

Dear Ms. Wrotenbery:

Please consider this letter my entry of appearance on behalf of  
Amerada Hess Corporation ("Amerada") in the above matters.

I was called at approximately 4:00 p.m. today, and do not yet have all the facts regarding this matter. However, based on what I have been informed, it appears that Amerada was entitled to notice of the applications in the above cases, but has never been given notice. As a result, I must request on Amerada's behalf that the cases be continued to a hearing which Amerada can attend and present evidence. Notwithstanding the continuance request, if witnesses are present and ready to testify tomorrow, Amerada will not object to the presentation of testimony providing that it can present evidence at a later date.

Please call if you have any questions.

Very truly yours,

  
James Bruce

Attorney for Amerada Hess Corporation

cc: Stephen C. Ross (via fax)  
W. Thomas Kellahin (via fax)  
William F. Carr (via fax)

# HOLLAND & HART LLP

AND

## CAMPBELL & CARR

ATTORNEYS AT LAW

DENVER • ASPEN  
BOULDER • COLORADO SPRINGS  
DENVER TECH CENTER  
BILLINGS • BOISE  
CHEYENNE • JACKSON HOLE  
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01 NOV -2 PM 3:07

TELEPHONE (505) 988-4421  
FACSIMILE (505) 983-6043  
www.hollandhart.com

November 2, 2001

### **HAND DELIVERED**

Oil Conservation Commission  
New Mexico Department of Energy,  
Minerals and Natural Resources  
1220 South Saint Francis Drive  
Santa Fe, New Mexico 87505

Attention: Florene Davidson

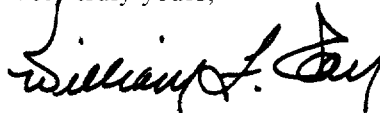
Re: New Mexico Oil Conservation Division Case 12587:  
Application of Sapient Energy Corp. for an unorthodox well location and non-standard proration unit or in the alternative a 160-acre non-standard proration unit, Lea County, New Mexico.

New Mexico Oil Conservation Division Case 12605:  
Application of Sapient Energy Corp. for special pool rules, Lea County, New Mexico.

Dear Ms. Davidson;

Attached are Exhibits 9 and 10 in the referenced cases which are overlays. We inadvertently placed hard copies of these exhibits in some of the packets and want to be sure that you have the overlay.

Very truly yours,



William F. Carr  
Attorney for Chevron U.S.A. Production  
Company and Conoco, Inc.

cc: Lori Wrotenbery, Chairman (By Hand Delivery)  
Oil Conservation Commission  
1220 South Saint Francis Drive  
Santa Fe, New Mexico 87505

Jami C. Bailey, Commissioner (By Hand Delivery)  
Oil Conservation Commission  
New Mexico State Land Office  
310 Old Santa Fe Trail  
Santa Fe, New Mexico 87504



Letter to Oil Conservation Commission  
November 2, 2001  
Page 2

Dr. Robert Lee, Commissioner (By Federal Express)  
Oil Conservation Commission  
c/o New Mexico Petroleum Recovery Research Center  
801 Leroy Place  
Socorro, New Mexico 87801

W. Thomas Kellahin, Esq. (By Hand Delivery)  
Kellahin and Kellahin  
117 North Guadalupe  
Santa Fe, New Mexico 87501



# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**GARY E. JOHNSON**  
Governor  
**Jennifer A. Salisbury**  
Cabinet Secretary

**Lori Wrotenbery**  
Director  
**Oil Conservation Division**

November 1, 2001

*Via Facsimile and First Class Mail*

W. Thomas Kellahin  
Kellahin & Kellahin  
P.O. Box 2265  
Santa Fe, New Mexico 87504-2265

William F. Carr  
Holland & Hart and Campbell & Carr  
P.O. Box 2208  
Santa Fe, New Mexico 87504

Re: Case No. 12587, Application of Sapient Energy Corp., *de novo*  
Case No. 12605, Application of Sapient Energy Corp., *de novo*

Dear Counsel,

As you are aware, the first case on the docket next Tuesday is estimated to take three hours. The evidentiary hearing of the Sapient case took approximately six hours to present to the Division hearing examiner.

You have both filed very detailed pre-hearing statements. These will assist the Commissioners to become aware of the issues in the coming days.

Because of the length of the hearing, I have spoken to both of you about the possibility of submitting written closing statements (and/or summaries of the evidence presented) in lieu of oral ones, and you both feel this is appropriate. Therefore, the Director will ask that closing statements be submitted in writing no later than 10 days following the hearing. The Director has also asked that opening statements, if needed at all given the pre-hearing statements, be kept brief, no more than 5 minutes each.

Please also be prepared in the event the McElvain/Simmons case takes less than three hours; if it does, I'm sure the Commission will want you to begin your case immediately thereafter. I'm also told that the Commission intends to have lunch brought to the building and keep any lunch break to a half hour. You might want to plan on doing the same.

Counsel of record  
November 1, 2001  
Page 2

With approximately nine hours of testimony to hear, things will have to move along to ensure that all the evidence is heard in one sitting. We thank you in advance for your assistance in this regard. As always, if you have any questions, please do not hesitate to give me a call at 476-3451.

Sincerely,  


Stephen C. Ross  
Assistant General Counsel

Cc: Florene Davidson, Commission Secretary



# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**GARY E. JOHNSON**

Governor

**Jennifer A. Salisbury**

Cabinet Secretary

October 26, 2001

**Lori Wrotenbery**

Director

**Oil Conservation Division**

*Via Facsimile and First Class Mail*

William F. Carr  
Holland & Hart and Campbell & Carr  
P.O. Box 2208  
Santa Fe, New Mexico 87504

Re: Case No. 12587, Application of Sapient Energy Corp., *de novo*  
Case No. 12605, Application of Sapient Energy Corp., *de novo*

Dear Bill,

Your letter of October 22 and my letter of October 23 crossed in the mail.

I believe I addressed in my October 23 letter all your inquiries except that of the admissibility of exhibits submitted after November 1. I'd suggest at this point that if an exhibit is offered during the hearing of this matter that has not been submitted, any party may raise the issue by way of objection and receive a ruling on its admissibility from the Chair. I'm sure the Chair would be interested in hearing why the document was not submitted as requested.

As you know, the Commission members believe that review of detailed pre-hearing statements and the documentary evidence to be offered will help them to be better prepared for the issues and testimony. As such, it is incumbent on the parties to help them prepare --- it can only work to the parties' advantage.

As always, if you have any questions, please do not hesitate to give me a call at 476-3451.

Sincerely,

A handwritten signature in dark ink, appearing to be "S. Ross".

Stephen C. Ross  
Assistant General Counsel

Cc: W. Thomas Kellahin  
Kellahin & Kellahin  
P.O. Box 2265  
Santa Fe, New Mexico 87504-2265



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Sincerely,

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Assistant General Counsel

Cc: W. Thomas Kellahin  
Kellahin & Kellahin  
P.O. Box 2265  
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October 23, 2001

Lori Wrotenbery

Director

Oil Conservation Division

*Via Facsimile and First Class Mail*

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Kellahin & Kellahin  
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William F. Carr  
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P.O. Box 2208  
Santa Fe, New Mexico 87504

Re: Case No. 12587, Application of Sapient Energy Corp., *de novo*  
Case No. 12605, Application of Sapient Energy Corp., *de novo*

Dear Counsel,

The Commission members have requested that copies of each exhibit which is to be offered during the hearing of this matter be provided to the Commission Secretary no later than one week prior to the date set for hearing in this matter. As the matter is now set for hearing on November 6, exhibits should be submitted to Florene Davidson no later than Wednesday, November 1. If an agreed continuance results in the matter being set in a subsequent month, exhibits should be submitted no later than one week prior to the re-scheduled hearing.

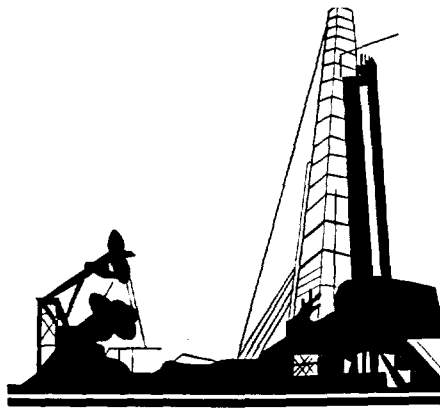
It would also helpful if you could provide a more detailed statement of your positions in the pre-hearing statement than is customary.

The Commission members believe that review of detailed pre-hearing statements and the documentary evidence to be offered will help them to be better prepared for the issues and testimony. As always, if you have any questions, please do not hesitate to give me a call at 476-3451.

Sincerely,

Stephen C. Ross  
Assistant General Counsel

Cc: Florene Davidson, Commission Secretary



TRANSMITTAL COVER SHEET

OIL CONSERVATION DIVISION  
1220 S. ST. FRANCIS DRIVE  
SANTA FE, NM 87505  
(505) 476-3440  
(505)476-3462 (Fax)

PLEASE DELIVER THIS FAX:

TO: W. Thomas Kellahan, William F. Carr

FROM: Stephen C. Ross

DATE: 10.23

PAGES: 2

SUBJECT: Sapient

IF YOU HAVE TROUBLE RECEIVING THIS FAX, PLEASE CALL THE OFFICE  
NUMBER ABOVE.

HOLLAND & HART LLP  
AND  
CAMPBELL & CARR  
ATTORNEYS AT LAW

DENVER • ASPEN  
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DENVER TECH CENTER  
BILLINGS • BOISE  
CHEYENNE • JACKSON HOLE  
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FACSIMILE (505) 983-6043  
www.hollandhart.com

October 22, 2001

**HAND DELIVERED**

Stephen C. Ross, Esq.  
Assistant General Counsel  
Oil Conservation Commission  
New Mexico Energy, Minerals and  
Natural Resources Department  
1220 South Saint Francis Drive  
Santa Fe, New Mexico 87505

Re: New Mexico Oil Conservation Division Case 12587:  
Application of Sapient Energy Corp. for an unorthodox well location and non-standard proration unit or in the alternative a 160-acre non-standard proration unit, Lea County, New Mexico.

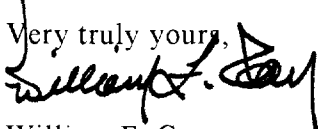
New Mexico Oil Conservation Division Case 12605:  
Application of Sapient Energy Corp. for special pool rules, Lea County, New Mexico.

Dear Steve:

In recent cases set for hearing before the Oil Conservation Commission, the parties have been asked to pre-file their exhibits and provide the Commission with a detailed Pre-Hearing Statement. We did not pre-file exhibits for the October 12, 2001 Commission hearing and were advised that we were expected to do so for all future Commission hearings.

As you are aware, the above referenced cases are set for hearing on November 6, 2001. Please advise if the Commission desires to have exhibits filed in advance of the hearing. If so, we suggest that all exhibits and Pre-hearing Statements be filed and exchanged by the parties on November 1, 2001 and that exhibits not filed by any party on that date be inadmissible in that party's case in chief.

Your attention to this request is appreciated.

Very truly yours,  
  
William F. Carr

cc: W. Thomas Kellahin, Esq.  
Frank Cusimano, Esq.  
Bruce A. Connell, Esq.

01 OCT 23 AM 10:20  
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AND  
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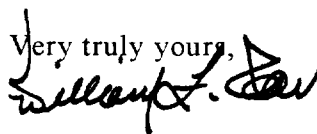
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CL. OFF. EXHIBIT 1 ENCL.  
OCT 23 AM 10:20