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Chevron Standard Limited
P.O. Box 100,
Virden, Manitoba.
R0M 2C0

ATTENTION: Mr. G. W. Cruickshank, P. Eng.,
Area Supervisor.

Dear Sir:

Re: West Butler Unit No. 1 -
1977 Subsurface Pressure Survey.

In response to your letter dated August 26, 1977, and in accordance with Rule No. 5 of the Pressure Maintenance Rules of Order No. PM 21 pertaining to West Butler Unit No. 1, the Board hereby exempts Chevron Standard Limited, as Unit Operator, from the annual reservoir pressure survey requirement for 1977.

Yours sincerely,



J. S. Roper,
Deputy Chairman.

JSR/dw

c.c.: Jas. T. Cawley, P. Eng.
Dr. Ian Haugh.





Jas. T. Cawley 946-7438
CHAIRMAN
J. S. ROPER 946-7859
DEPUTY CHAIRMAN
Dr. I. Haugh 633-9543
MEMBER

DEPARTMENT OF MINES, RESOURCES
& ENVIRONMENTAL MANAGEMENT
THE OIL AND NATURAL GAS CONSERVATION BOARD
989 Century Street
Winnipeg, Manitoba
R3H 0W4

Chevron Standard Limited,
Box 100,
Virden, Manitoba.
RCM 2C0

Attention: Mr. G. W. Cruickshank, P. Eng.,
Area Supervisor.

Dear Sir:

Re: West Butler Unit No. 1
1977 Subsurface Pressure Survey

In response to your letter dated August 26, 1977 and in accordance with Rule No. 5 of the Pressure Maintenance Rules of Order No. PM 21 pertaining to West Butler Unit No. 1, the Board hereby exempts Chevron Standard Limited, as Unit Operator, from the annual reservoir pressure survey requirement for 1977.

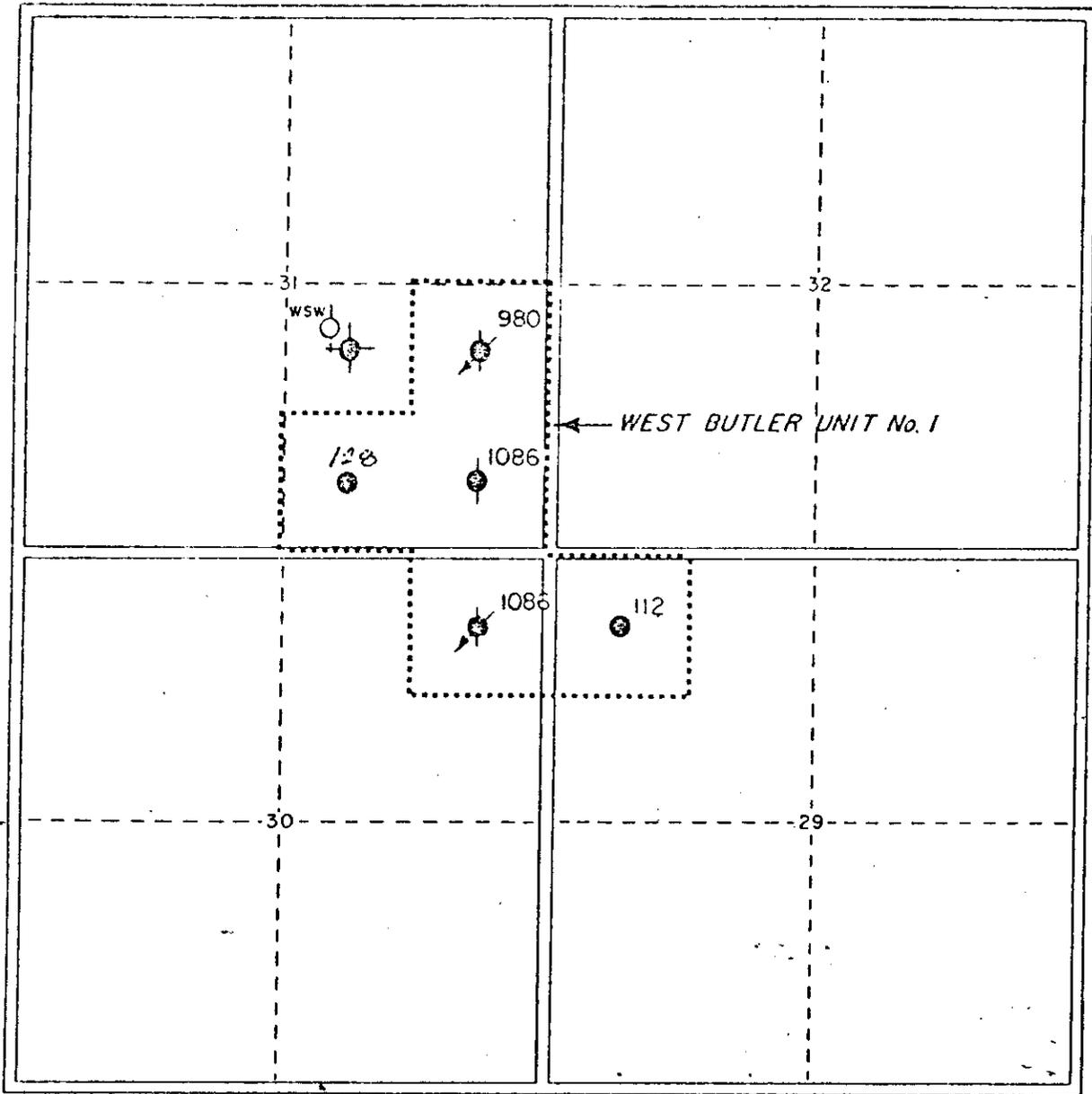
The Unit Operator shall however, carry out a comprehensive subsurface pressure survey for the Unit in 1978 and shall submit such survey program to the Petroleum Branch for approval prior to commencing same.

Yours sincerely,

J. S. Roper,
Deputy Chairman.

HCM/et

R 29 W.P.M.



T.9

LEGEND

- INJECTION WELL
- SUSPENDED WELL
- WSW WATER SOURCE WELL

Figures in Psi

OIL & GAS CONSERVATION BOARD
WEST BUTLER # 1
TEMPORARY SUSPENSION OF WATER INJECTION

FIGURE 1
WEST BUTLER UNIT No. 1

SEPT. 14/1976

SCALE: 3" = 1 MILE

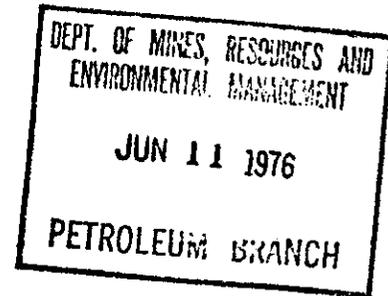
PRESSURE SURVEY
JUNE - JULY 1976



Chevron Standard Limited

June 10, 1976
Box 100
Virden, Manitoba

Department of Mines, Resources
and Environmental Management
Mineral Resources Division
Petroleum Branch
993 Century Street
WINNIPEG, Manitoba
R3H 0W4



ATTENTION: Mr. H.C. Moster

WEST BUTLER UNIT NO. 1
1976 Subsurface Pressure Survey

Gentlemen:

In regard to your letter of June 7, 1976 pertaining to the subject unit, Chevron Standard Limited wished to advise that subsurface pressure measurements will be conducted on all Mississippian Wells in the unit during 1976.

Subsurface measurements were obtained on producing wells, 13-29-9-29 and 2-31-9-29 utilizing an acoustical well sounder during May, 1976 following a shut-in period in excess of four months. Road conditions prevented completion of the survey which was to consist of bottom hole recorder runs on water injection wells 16-30-9-29 and 8-31-9-29. It is estimated that this survey will be completed in June of this year. The survey report will be submitted to your office upon completion.

In the future our proposed subsurface pressure survey program will be submitted to your office for approval.

Yours truly,

G.W. Cruickshank
Area Supervisor

inter-departmental memo

To: The Oil and Natural Gas
 Conservation Board:
 Jas. T. Cawley, P. Eng., Chairman,
 J.S. Roper, Deputy Chairman,
 I. Haugh, Member. ←

Date 77 08 31

From H. C. Moster, Department of Mines, Resources
 Director, & Environmental Management
 Petroleum Branch, Natural Resources Division

Subject

HM SEP 2 1977

ASSISTANT DEPUTY MINISTER

Subject:

Application by Chevron Standard Limited to waive the requirement of having to carry out a subsurface pressure survey in 1977 on West Butler Unit No. 1.

Background:

The West Butler Field is located approximately twenty miles west of the Town of Virden. The discovery well in the Field was Chevron West Butler 1-31-9-29 which was drilled by California Standard Co. (Chevron) in November 1955. The Field presently contains seven wells, including five wells in West Butler Unit No. 1. This Unit was formed on September 1, 1972 with Chevron Standard Limited being the Unit Operator. The Unit presently consists of two oil producing wells, one suspended oil well and two suspended water injection wells (see attached map).

In 1972, a waterflood scheme was initiated in the Unit using two wells for water injection purposes. The injection was temporarily suspended in November 1974 due to the inavailability of an adequate water source well (water productivity from the existing water source well had been low and volumes of water were insufficient for voidage fill-up and reservoir pressure build-up). On September 14, 1976 the Board approved the temporary suspension of water injection subject to certain conditions among which was the requirement that Chevron continue to carry out annual subsurface pressure measurements during the suspension period. The last subsurface pressure survey was carried out during May - July 1976.

Currently, Chevron has tentative plans to drill out three new injection wells around the well located on Isd. 13-29-9-29 (pilot waterflood scheme) to test the feasibility of waterflood response on a full scale five-spot injection pattern.

Discussion:

Chevron has submitted an application to this Branch requesting permission not to carry out the required subsurface pressure survey for 1977 on West Butler Unit No. 1.

First Fold

Chevron's justification for this request can be summarized as follows:

1. The results of the 1977 measurements would be similar to those of 1976 due to:
 - (a) Reservoir fluid withdrawal for the last year has been minimal.
 - (b) The production history for West Butler's reservoir indicates low permeability.
2. As a result of the apparent low permeability, lengthy shut-in periods would be required to obtain meaningful results (lost revenue coupled with the cost of the survey may not justify same).
3. Chevron is prepared to carry out a subsurface pressure survey in 1978.

Section 5 under the Pressure Maintenance Rules of Order No. PM 21 pertaining to the subject Unit states as follows:

5. At least annually, unless otherwise directed by the Board, the Unit Operator shall determine the reservoir pressure in the producing wells in the Unit to the satisfaction of the Board.

This Branch is of the opinion that the reasons provided by Chevron in its application are reasonable. Below is a list of figures showing the production/injection statistics for West Butler Field:

Estimated Original-Oil-In-Place	2,500,000 STB
Projected Primary Recovery	160,000 STB
	or 6.4% of OOIP
Cum. Oil Prod. to end of July 1976	163,667 STB
Cum. Oil Prod. from beginning of Aug./76 to end of July/77	3,635 STB
Cum. Water Injection to date	70,074 Bbl.

The results of the 1976 pressure survey showed a difference of more than 900 psi in bottom pressure between production and injection wells which supports the contention of a low permeability reservoir. Since injection was suspended in November 1974, the pressures should have stabilized somewhat over the period from 1974 to 1976. Further, pressure build-up on the injection wells was high and reached 1080 psig, which is more than the original reservoir pressure (1050 psig), although the volume of water injected (prior to the suspension) was low.

Since Chevron is planning to implement a pilot waterflood scheme in the Field, with some tangible results expected within six months of the implementation date, which would approximately coincide with the date of the proposed 1978 survey, the results of the 1977 survey, if carried out, would likely neither be conclusive nor comprehensive.

Recommendation:

That the Board exempt Chevron Standard Limited from its obligation of having to carry out a subsurface pressure survey for West Butler Unit No. 1 in 1977.

A draft letter to that effect is attached for the Board's consideration.



H. C. Moster

SE/et
Attachs.



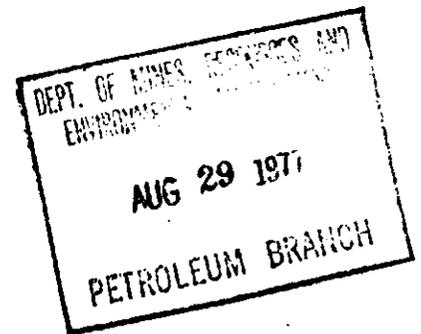
Chevron Standard Limited

Box 100
Virden, Manitoba
ROM 200
1977-08-26
File #668.29

Province of Manitoba
Department of Mines, Resources
& Environmental Management
Petroleum Branch
989 Century Street
Winnipeg, Manitoba
R3H 0W4

Attention: Mr. H.C. Moster, P. Eng.
Director, Petroleum Branch

Re: West Butler Unit No. 1
1977 Subsurface Pressure Survey



Gentlemen:

In regards to your request that annual subsurface pressure measurements be carried out during the suspension of the water-flood program, Chevron Standard Limited hereby requests permission to be relieved of the measurements for 1977.

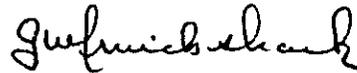
We have reason to believe that the results of the 1977 measurements would be similar to those done in 1976. The reservoir withdrawals for the last year have been minimal. In addition, the production history for this reservoir indicates low permeability.

.../2

To get meaningful subsurface pressure measurements, a lengthy shut-in period would be required. A comprehensive subsurface pressure survey consisting of all Mississippian completions was conducted in 1976.

We will be prepared to carry out measurements in 1978. If there are any questions, please contact Mr. Glen Cruickshank at the above letterhead address.

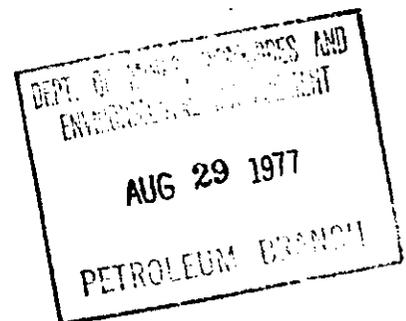
Yours very truly,



G.W. Cruickshank, P. Eng.

Area Supervisor

TS/ba



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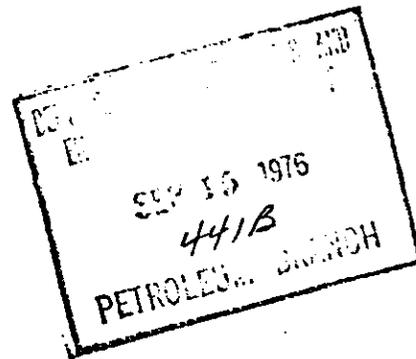
SEP 14 1976

Chevron Standard Limited,
400 - Fifth Avenue S.W.,
Calgary, Alberta.
T2P 0L7

ATTENTION: Mr. A. Zanberg.

Dear Mr. Zanberg:

Re: West Butler Unit No. 1.



In response to your request of July 12, 1976, the Board approves the temporary suspension of water injection into the wells Chevron West Butler Prov. 16-30-9-29 and Chevron West Butler 8-31-9-29 for a maximum period of two years from July 1, 1976, subject to the following conditions:

1. Unit operations are continued according to good engineering practices.
2. Annual subsurface pressure measurements are carried out during the suspension period.
3. The required Unit monthly and annual progress reports are submitted.
4. Prior to March 15, 1977, the Unit operator shall submit to the Petroleum Branch for discussion two proposals for resuming water injection. Such proposals should include data on injected water supply source, capacity, suitability, method of treatment, fill up time, costs, economic projections, and other relevant information.

This temporary suspension is issued subject to the Act and regulations in force from time to time whether made before or after this date.

Yours sincerely,

J.S. Roper
J. S. Roper,
Deputy Chairman.

JSR/dv

c.c.: Mr. J. Zedde.

b.c.: Jas. T. Cavley.
I. Haugh.
H. C. Moster. ✓