

FILE NO. 333 14 5-

VOLUME

**SUBJECT** WATERBATER UNIT NO. 1

1972 -

[illegible]

T-3-90

FILE NO. 333 14 51



The Oil and Natural Gas  
Conservation Board

Room 309  
Legislative Building  
Winnipeg, Manitoba, CANADA  
R3C 0V8

(204) 945-3130

MAR 9 1987

Chevron Canada Resources Limited  
500 - Fifth Avenue S.W.  
Calgary, Alberta  
T2P 0L7

Attention: Mr. D. P. Lougheed

Dear Sirs:

Re: Chevron Whitewater Prov. 4-21-3-21 (WPM)

Your letter of February 20, 1987 regarding recompletion of the subject well and its deletion from Part XXII of the Plan for Unit Operation - Whitewater Unit No. 1 is acknowledged. We note, however, that the 4-21-3-21 (WPM) tract will continue to receive allocated production in accordance with the provisions of the above mentioned Unit Plan.

Yours sincerely,

**ORIGINAL SIGNED BY  
CHARLES S. KANG**

Charles S. Kang  
Chairman

LRD/lk

b.c. Wm. McDonald  
B. Ball  
Petroleum



**Chevron Canada Resources Limited**

500 - Fifth Avenue S.W., Calgary, Alberta T2P 0L7

R A Pashelka  
General Counsel

1987-02-20



Plan for Unit Operation  
Whitewater Unit No. 1

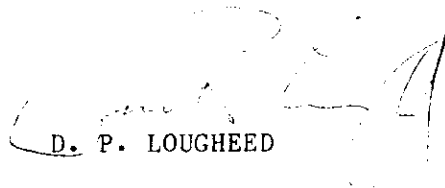
The Oil and Natural Gas Conservation Board,  
Room 309 Legislative Building,  
Winnipeg, Manitoba.  
R3C 0V8

Attention: Mr. Charles S. Kang, Chairman

Dear Mr. Kang:

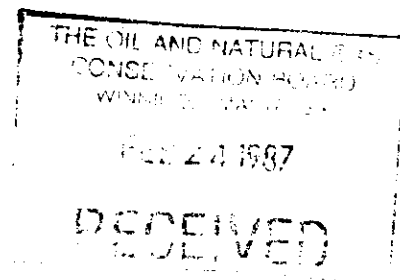
Chevron Canada Resources Limited, as Operator of the subject Unit, wishes to advise that the well, Chevron Whitewater Prov. 4-21-3-21 WPM (formerly Copperhead Whitewater 4-21-3-21 WPM), has been recompleted from the Mississippian - Whitewater Lake zone to the Spearfish zone and should therefore be deleted from Part XXII of the subject Plan for Unit Operation.

Yours very truly,

  
D. P. LOUGHEED

/ps

pc: Clare Moster, Bill McDonald  
C. Kang, Feb.25/87





## Chevron Standard Limited

400 - Fifth Ave. S.W., Calgary, Alberta T2P 0L7

R. A. Park  
Manager - Production

1979-10-29

Representative Change  
Operating Committee  
Whitewater Unit No. 1

The Oil and Natural Gas Conservation Board  
Province of Manitoba  
310 Legislative Building  
Winnipeg, Manitoba  
R3C 0V8

Gentlemen:

We wish to advise you that as of October 1, 1979, the representative of Chevron Standard Limited on the Operating Committee for the subject unit will be:

D. A. Zeeuwen  
Chevron Standard Limited  
P.O. Box 100  
Virden, Manitoba  
ROM 2C0

The alternates are Messrs. P. Pisio and D. R. Henderson who are located at the letterhead address.

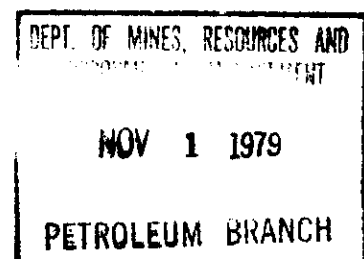
Yours very truly,



R. A. PARK

DRH/njs

cc: Mr. D. A. Zeeuwen



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

77 03 01  
H. C. Moster,  
Director,  
Petroleum Branch.

XXXXX

Subject:

Order No. PM 32 — Whitewater Unit No. 1  
(Amendment to Reservoir Pressure Measurement Requirements)

Background:

The Whitewater Field is located approximately 50 miles SE of the Town of Virden, and about 45 miles SW of the City of Brandon. The Field was discovered in September 1953 by the California Standard Co. and presently contains 14 wells classified as follows:

- 4 — Oil Producers
- 2 — Water Injection
- 1 — Water Source
- 7 — Abandoned

Whitewater Unit No. 1 became effective July 1st, 1971. The Unit consists of six wells, the two injectors and four producers (see attached map).

Order No. PM 16 (currently Section 7 under Manitoba Revised Regulation M160 - RSP) for Whitewater Unit No. 1 was issued by the Board on June 17, 1971 permitting the Unit Operator to conduct pressure maintenance operations by the injection of water into the reservoir. Water injection commenced in January 1973.

Discussion:

Chevron Standard Limited, as Unit Operator of Whitewater Unit No. 1, made application dated February 23, 1977 requesting that subsurface pressure surveys be taken only every three (3) years for the subject Unit.

Section 5 of Schedule G of Manitoba Revised Regulation M160 - RSP 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."

The last subsurface pressure survey on the field was carried out in November 1975 with an Acoustical Well Sounder. No surveys were taken in 1976. Although reservoir pressure data is limited for the Whitewater pool, available information suggests that the pressure of the pool has been maintained. Original (discovery) reservoir pressure is estimated at 1050 psig. Recorded pressure in November 1975 was 1089 psig and 644 psig on two of the wells in the Unit while recorded pressure was 1027 psig in 1970.

Because the pool is small, selection of the wells to be surveyed is limited and the results may be inconclusive. If economics are taken into consideration, costs of running the survey on an annual basis, plus the lost revenue resulting from the wells having to be shut-in could prove uneconomical in the future.

Responses to water injection is limited on two of the producing wells, however, voidage calculations (attached) indicate that a satisfactory voidage balance is being maintained between water injection to, and fluids withdrawn from, the Unitized Strata.

Recommendations:

For the preceding reasons, it is recommended that the attached Order No. PM 52 pertaining to Whitewater Unit No. 1 be approved and presented to the Minister for signing.

Please return the signed original and copies to the Branch for final disposition.

H. C. Moster

SE/et  
Attachs.

WHITEWATER UNIT NO. 1

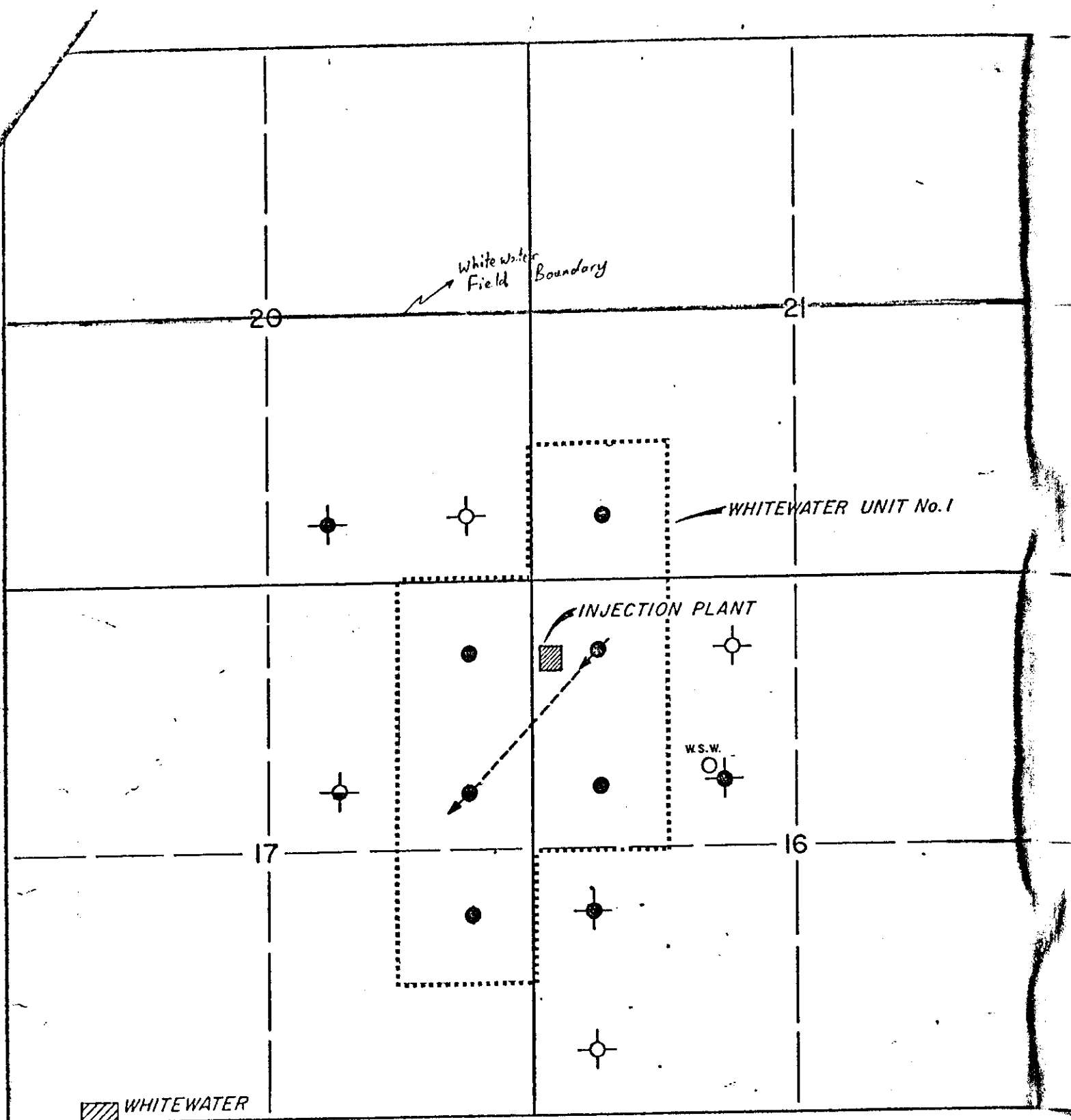
1. Voidage Calculations, month of January 1977

Oil Produced (STB)	1,434	
Water Produced (STB)	1,240	
Oil Formation Volume Factor	1.05	
Water Formation Volume Factor	1.00	
Voidage Oil (Res. Bbls.)	1,505	
Voidage Water (Res. Bbls.)	1,240	
Total Voidage (Res. Bbls.)	2,745	
Water Injection (Bbls.) *	7,933	
Net Voidage (Res. Bbls.)	-5,188	
Net Voidage Rate, January 1977 (Res. Bbls./day)	-167.4	

2. Voidage Calculations, Cumulative to end of January 1977

Cum. Oil Produced (STB)	408,487	
Cum. Water Produced (STB)	48,123	
Oil Formation Volume Factor	1.05	
Water Formation Volume Factor	1.00	
Cum. Oil Voidage (Pre & after Unitization Res. Bbls.)	428,911	
Cum. Water Voidage (Pre & after Unitization Res. Bbls.)	48,123	
Total Cum. Voidage (Res. Bbls.)	477,034	
Total Cum. Water Injection to end of Jan./77 (Res. Bbls.)	395,573	
Total Cum. Net Voidage (Res. Bbls.)	81,461	

\* Maximum Injection Pressure 1,300 psig.



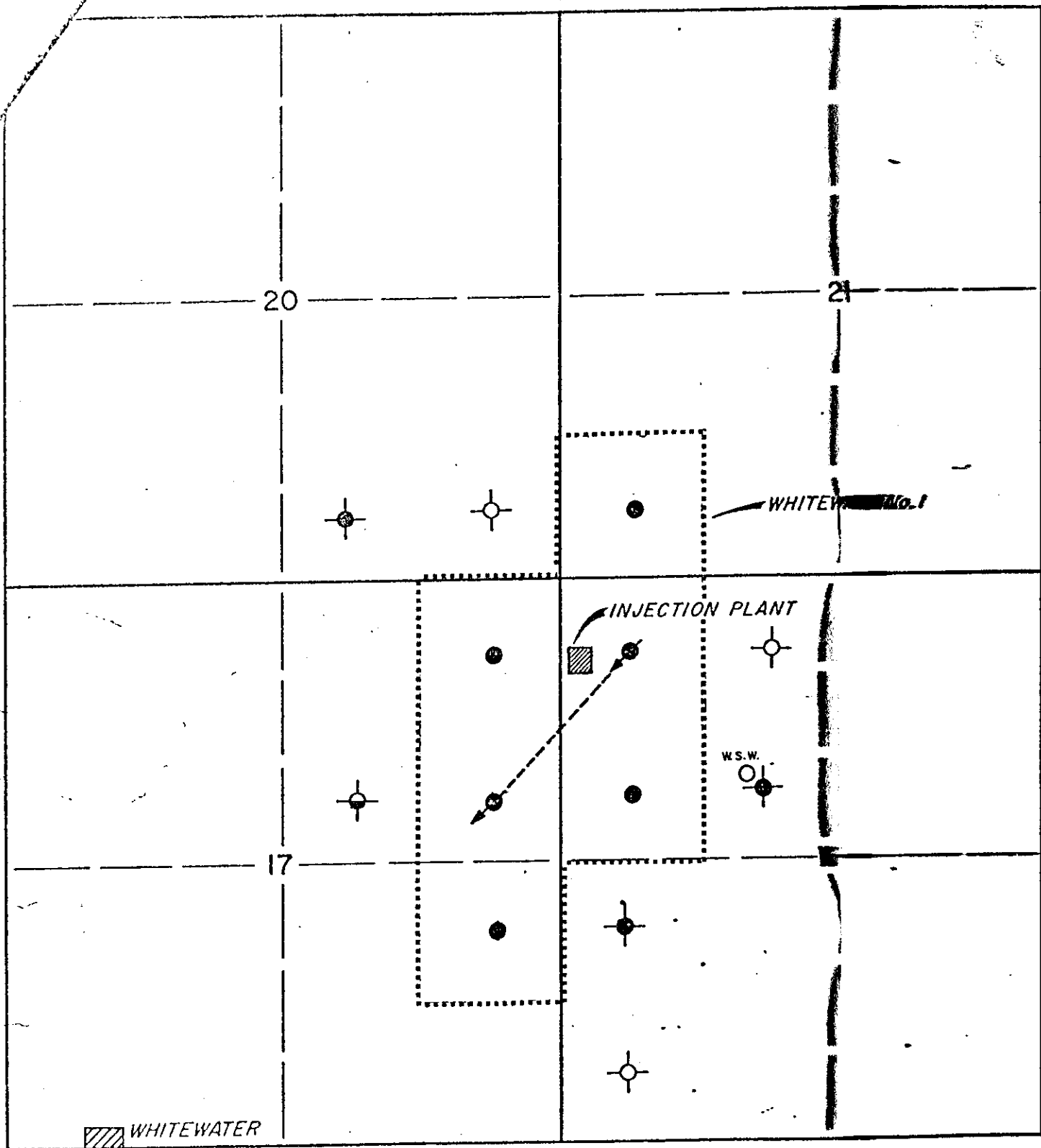
TWP 3 RGE 21 WPM

# LEGEND

- INJECTION WELL
- W.S.W. WATER SOURCE WELL

FIGURE 1  
 WHITEWATER UNIT No. 1  
 AS OF DECEMBER 31, 1975  
 SCALE: 4" = 1 MILE





TWP 3 RGE 21 WPM

LEGEND



-  INJECTION WELL
-  W.S.W. WATER SOURCE WELL

FIGURE 1  
 WHITEWATER UNIT No. 1  
 AS OF DECEMBER 31, 1975  
 SCALE: 4" = 1 MILE

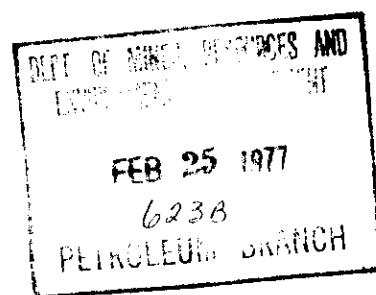


## Chevron Standard Limited

Box 100  
Virden, Manitoba  
February 23, 1977

Exemption from Annual Subsurface  
Pressure Survey.  
Whitewater Unit #1

Province of Manitoba  
Department of Mines, Resources  
and Environmental Management  
993 Century Street  
WINNIPEG, Manitoba  
R3H 0W4



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

Gentlemen:

Pursuant to Section 7 of Manitoba Revised Regulation M160-R8 Chevron Standard Limited as operator of Whitewater Unit No.1 hereby request exemption from Annual Subsurface Pressure surveys. We further request that subsurface pressure surveys be taken only every three (3) years. The following is submitted in support of this application.

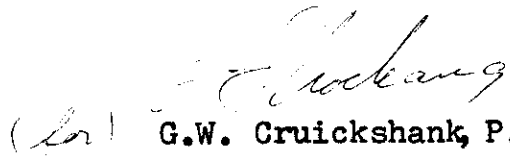
1. During November, 1975 bottom hole pressure measurements were taken on wells 8-17-3-21 and 4-21-3-21 with an Acoustical Well Sounder. Calculated bottom hole pressures of 1089 psig and 644 psig respectively were determined. The bottom hole pressure at the 8-17 well has ~~been~~ increased 62 psig. from 1027 psig. recorded in June, 1970 by a Bottom Hole Pressure Bomb.
2. Adequate voidage replacement has been maintained since

the effective date of the Unit, July 1, 1971. Water injection has exceeded withdrawals by 64,722 barrels for an average net voidage rate of -177 reservoir barrels per day.

3. Due to a limited reservoir, the stage of the waterflood and adequate voidage replacement, Subsurface Pressure surveys should not be required on an annual basis.
4. Performance of producing wells will be used to monitor waterflood response.
5. Subject to your approval, the next subsurface pressure survey will be run in 1978 since a 1976 survey was not conducted.

Further information if required may be obtained by contacting the undersigned at the above letterhead address.

Yours very truly,

  
(Encl) G.W. Cruickshank, P.Eng.  
Area Supervisor

L.G. Thorhaug/dw



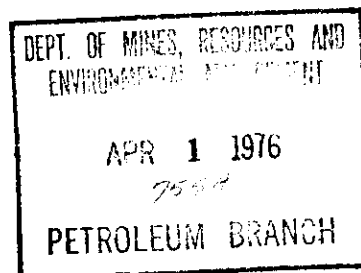
## **Chevron Standard Limited**

400 - Fifth Ave. S.W., Calgary, Alberta T2P 0L7

March 29, 1976

### Performance of Whitewater Unit No. 1

Province of 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, P.Eng.  
Director, Petroleum Branch

Gentlemen:

Enclosed are three copies of the annual progress report for the year 1975 for Whitewater Unit No. 1.

As requested in your letter of December 29, 1975, the performance of the unit was reviewed and summarized as follows. Injection of water in Whitewater Unit No. 1 commenced in 1973 at rates of 200 to 300 BWPd. Production response at two producing wells, 12-16 and 16-17-3-21 W1, was apparent within three months of the commencement of injection when the producing rate for these two wells essentially tripled. The well 4-21-3-21 W1 had been suspended in 1968 at producing rates of 1 to 2 BOPd. After water injection commenced in 1973, the well resumed production at producing rates up to 6 BOPd. Production from well 8-17-3-21 W1 did not respond to injection. However, the bottom hole pressure was recorded as 1089 psig in November 1975, as compared with the initial reservoir pressure of 1050 psig.

The well was recently acidized and stabilized production rates should be available in a few weeks. If the rework on the well 8-17 is successful, consideration will be given to reworking the well 4-21 to further improve its productivity.

Water injection has been limited by the injectivity of the two injection wells. Original injectivity estimates of 400 BWPd per well were not achieved as the injection rate never exceeded 350 BWPd for both wells. The limited injectivity forestalled further consideration of injection of a polymer slug which, in turn, would further reduce injectivity. The

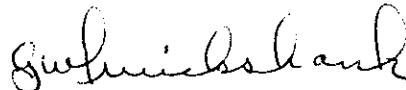
March 29, 1976

present injection rate exceeds reservoir voidage and as of December 31, 1975, cumulative net injection for the project was 206,000 reservoir barrels as compared to cumulative pre-unit voidage of 356,000 reservoir barrels.

Production response has been substantially less than the estimated 190 BOPD for the project because of limited injectivity. The production rate has, however, increased from the pre-injection rate of 30 BOPD to 68 BOPD in February 1976. The production rate is expected to further increase depending upon the success of the rework on the well 8-17 and the possible rework on the well 4-21.

In summary, the performance of Whitewater Unit No. 1 indicates that the waterflood has been successful. However, the degree of response has not been as great as originally anticipated because of limited water injectivity. Increased production is anticipated if the rework program is successful.

Yours very truly,



G. W. CRUICKSHANK, P.Eng.  
Area Supervisor

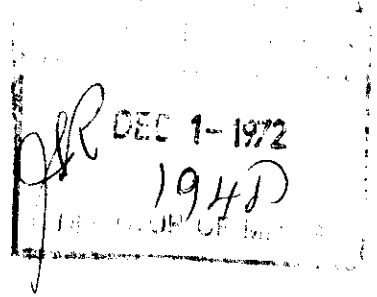
JDScott/mff  
Enclosures



## Chevron Standard Limited

400 - Fifth Ave. S.W., Calgary, Alberta T2P 0L7

November 29, 1972



The Oil and Natural Gas Conservation Board  
Department of Mines and Natural Resources  
Province of Manitoba  
901 Norquay Building  
401 York Avenue  
Winnipeg, Manitoba

Attention: Mr. J. S. Roper

Gentlemen:

Please be advised that Chevron Standard Limited hereby designates the following representative and alternate representative to the Operating Committee for Whitewater Unit No. 1:

Representative

Mr. L. D. Brown  
Box 100  
Virden, Manitoba  
R0M 2C0

Alternate

Mr. J. D. Scott  
400 Fifth Avenue S.W.  
Calgary, Alberta  
T2P 0L7

In accordance with Section 5.03 (c) of the "Plan" governing the subject Unit, Chevron Standard Limited is appointed the Unit Operator for Whitewater Unit No. 1. As the representative of Chevron Standard Limited, the sole Working Interest Owner in the subject Unit, Mr. L. D. Brown shall act as Chairman of the Operating Committee.

Yours very truly,

*for John D. Scott*

L. D. BROWN, Chairman pro tem  
Whitewater Unit No. 1  
Operating Committee

JDSScott/lc

## DEPARTMENT OF MINES AND NATURAL RESOURCES

## ROUTE SLIP

TO

J.S. Roper

FROM

F.S. Gancey

TO

FROM

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> For your approval or revision                       | <input type="checkbox"/> Reply direct with copy to me                | <input type="checkbox"/> Please sign   |
| <input type="checkbox"/> For your information                                | <input type="checkbox"/> Please supply data for my reply             | <input type="checkbox"/> Please return |
| <input type="checkbox"/> Please take action                                  | <input type="checkbox"/> Return with comments and/or recommendations | <input type="checkbox"/> Please see me |
| <input type="checkbox"/> Extracts of minutes for your information and action | <input type="checkbox"/> Investigate and report                      | <input type="checkbox"/> Please phone  |
| <input type="checkbox"/> Please draft reply for signature of                 |  |  |

Date

July 19/72

Subject

Ransom.

Message

Grady Johnson has been unable to contact Ransom as of this date. He will attempt to contact him by mail and will also be in Boissevain again this week and will try to find his whereabouts.

MNR-A-94

Use reverse side if necessary

Stan  
Has Tracy contacted  
Ransom?  
If so - what reaction did  
he get?  
July 19/72



DEPARTMENT OF MINES, RESOURCES AND ENVIRONMENTAL MANAGEMENT

ROUTE SLIP

TO

*G. Lopez*

FROM

*JR*

TO

*FSG*

FROM

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> For your approval or revision                       | <input type="checkbox"/> Reply direct with copy to me                | <input type="checkbox"/> Please sign   |
| <input type="checkbox"/> For your information                                | <input type="checkbox"/> Please supply data for my reply             | <input type="checkbox"/> Please return |
| <input type="checkbox"/> Please take action                                  | <input type="checkbox"/> Return with comments and/or recommendations | <input type="checkbox"/> Please see me |
| <input type="checkbox"/> Extracts of minutes for your information and action | <input type="checkbox"/> Investigate and report                      | <input type="checkbox"/> Please phone  |
| <input type="checkbox"/> Please draft reply for signature of                 |  |  |

Date

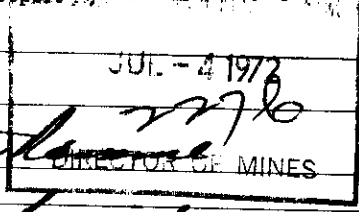
*July 2/72*

Subject

*JUL - 4 1972*

Message

*Why not let Brian Langson*



*know even if we know it*

*will not create a problem.*

*Shay*

*do you or Shay know Brian Langson. If so please advise him I*  
*Copy forwarded Shay to interview Langson (by FSG)*

MVR 1-94

Use reverse side if necessary

## DEPARTMENT OF MINES, RESOURCES AND ENVIRONMENTAL MANAGEMENT

## ROUTE SLIP

TO

*M. J. Gobert*

FROM

*J. Roper*

TO

FROM

☐ For your approval or revision☐ Reply direct with copy to me☐ Please sign☒ For your information☐ Please supply data for my reply☐ Please return☐ Please take action☐ Return with comments and/or recommendations☐ Please see me☐ Extracts of minutes for your information and action☐ Investigate and report☐ Please phone☐ Please draft reply for signature of

Date

*June 29/72*

Subject

*Whitewater Unit*

Message

DEPT. of MINES, RESOURCES and  
ENVIRONMENTAL MANAGEMENT

JUL 3 1972

*2278*  
ASSISTANT DEPUTY  
MINISTER'S OFFICE

MNR-A-94

Use reverse side if necessary

INTER-DEPARTMENTAL MEMORANDUM



PROVINCE  
OF  
MANITOBA

FROM R. S. GAMEY  
Reservoir Engineer

DATE JUNE 29, 1972

TO M. J. GOBERT - Senior Assistant Deputy Minister  
J. S. ROPER - Director of Mines

SUBJECT PROPOSED RE-ENTRY OF ABANDONED WELL IN WHITEWATER FIELD

APPLICANT: Chevron Standard Limited

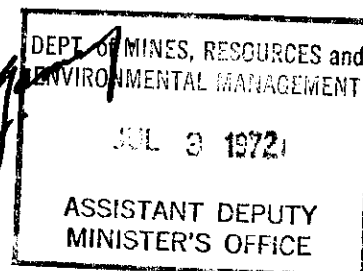
LOCATION: 11 - 16 - 3 - 21

PROPOSAL: It is planned to re-enter a former well location which was abandoned "dry" in 1954, for the purpose of testing the Swan River Sands (at approximately 1970') as a source of water supply for pressure maintenance in the WHITEWATER UNIT NO. 1. A service rig from Virden would be used to re-enter and drill out the abandonment plugs.

REMARKS: The "former" Whitewater Lake area extends south to include all of Section 20 and a portion of the west half of Section 21-3-21.

Any drilling location on Section 16 should pose no threat to the pollution of the present Whitewater Lake or its former bed.

A sketch map of the Whitewater Unit area and proposed re-entry location is attached.



- No definite date set -
- Application to reenter 11-16 expected to be received in about 2 weeks
- Reentry to commence after rig is finished in West Butler field - (2 to 4 weeks?)

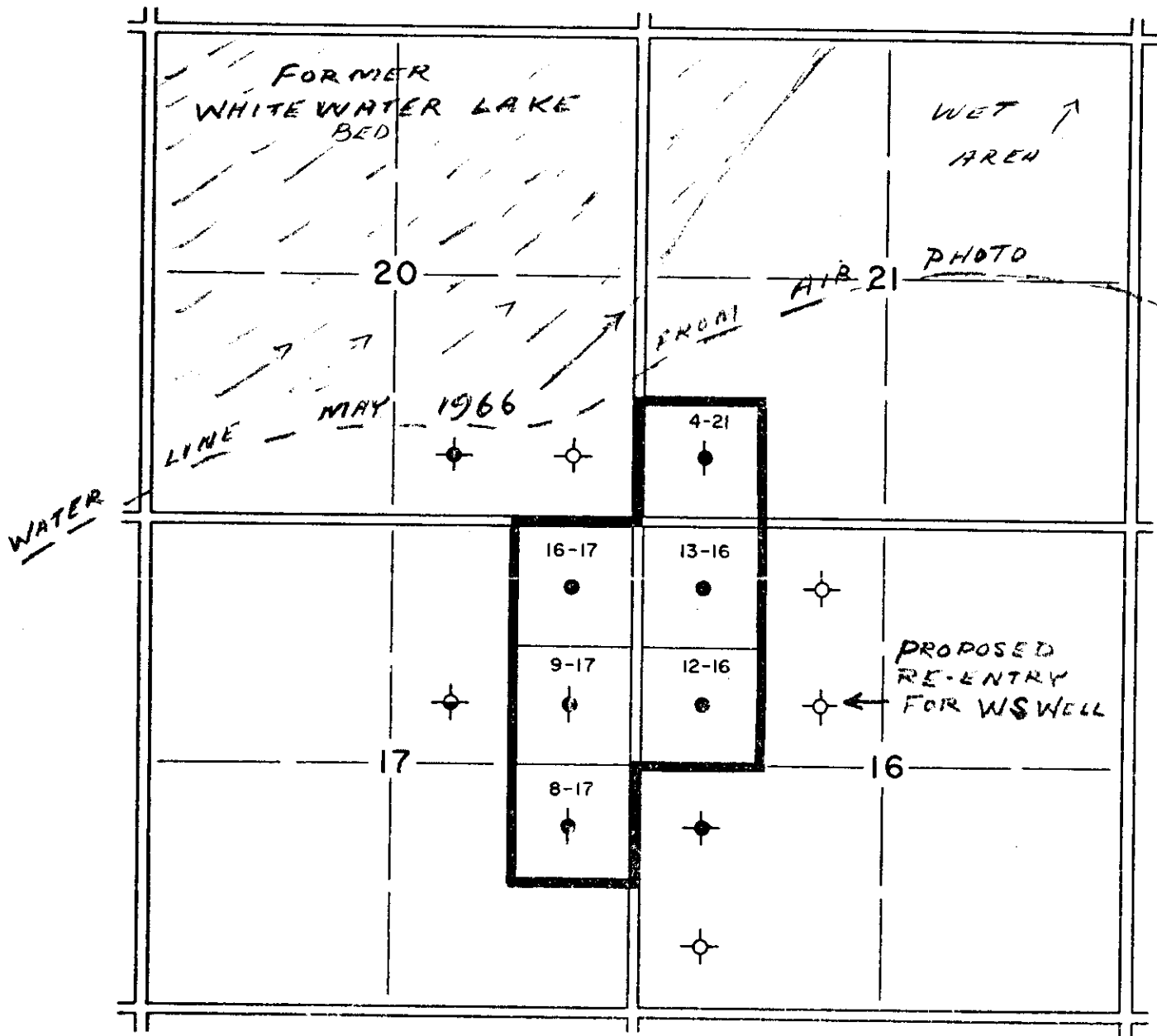
WHITE WATER

PART XXIV

MAP OF UNIT AREA

DL-4172

DIRECTOR



TWP 3 RGE 21 WPM

LEGEND

- OILWELL
- 8-17

 ● NUMBERED TRACT
- UNIT BOUNDARY

SCALE: 3" = 1 MILE

April 26, 1972.

Mr. R.R. McDaniel,  
800 Western Union Building,  
640 - 8th Avenue, S.W.,  
Calgary 2, Alberta.

Dear Mr. McDaniel:

Re: Progress Report No. 1 - 1971 -  
Whitewater Unit No. 1

We are forwarding a copy of the above noted Progress Report,  
Chevron Standard Limited, prepared by the Unit Operator.

We would appreciate receiving any comments that you may have  
on the report.

Yours sincerely,

A handwritten signature in dark ink, appearing to be 'J.S.R.', written in a cursive style.

Encl.

JSR/gh

*2 copies to FSG  
1 for Virden  
26/4/72  
Geo H*

# TRANSMITTAL SLIP

TO Mr Winston Mair / The Oil and Natural Gas Conservation Board / Winnipeg, Manitoba.

On April - 0 19 72 We shipped to you by mail the following

2 copies of the Whitewater Unit Map, Progress Report No.

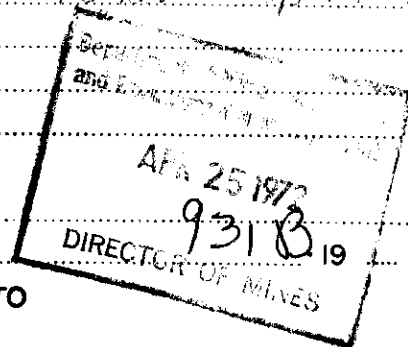
## REMARKS

Received above

Signed

Date

RETURN THIS SLIP TO



60-4A-CS

acknowledgment returned to Chevron April 24/72 au.

*George  
1 copy with letter to M. McNamee  
2 copies to FSG (1 for Vindin)*

Shaper.  
for usual distribution  
M. H.

MICROFILMED

TO \_\_\_\_\_

HERE

July 199



June 24, 1971


Mr. Lindsay Brown, Area Supervisor  
Chevron Standard Limited  
Box 100  
Virden, Manitoba

Dear Mr. Brown:

Re: Whitewater Unit No. 1

In accordance with Section 5.03 of the "Plan" governing the above Unit, the Board has selected you to act as Chairman pro tem of the organization meeting of the Operating Committee.

Yours very truly,

  
J. S. Roper  
Deputy Chairman

FSG/h

cc: Mr. J. G. Trowell  
Chevron Standard Limited  
400 Fifth Avenue S.W.  
Calgary 1, Alberta

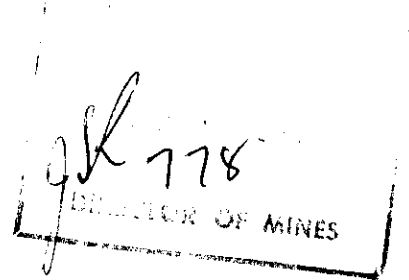


## Chevron Standard Limited

400 Fifth Avenue S.W., Calgary 1, Alberta

May 17, 1971

*F.S.G.*



Proposed Whitewater

Unit No. 1

Our File No. 56,249

Mr. J. S. Roper, Member,  
The Oil and Natural Gas  
Conservation Board,  
Province of Manitoba,  
Winnipeg 1, Manitoba.

Dear Sir:

At the Board Hearing on May 14th Mr. Gamey asked me to send to you thirty-eight (38) copies of the proposed Plan for Unit Operation Governing the Unitized Management Operation and Further Development of Whitewater Unit No. 1 We are sending the same today by Canadian Pacific Express.

Yours very truly,

E. H. GAUDET, Chairman,  
Proposed Whitewater Unit  
No. 1 Legal Committee.

EHG/ps

cc: Mr. S. Gamey,  
Department of Mines and Natural Resources.