

FILE NO. BK 73 PG 14
 DRAWING NO. _____
 SCALE 1" = 500'
 MINIMUM DEGREE OF ACCURACY 1-200
 PROVEN SOURCE OF ELEVATION USGS B.M. 207' N.E. LOC EL 618.0'

I THE UNDERSIGNED HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF MINES.
 (SIGNED) C. S. Valley Jr
 R.P.E. _____ E.L.S. 92

(217)
 982
 PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 FORM IV-B (8-78)



DATE OCT 30, 1982
 OPERATOR'S WELL NO. WI-008
 API WELL NO. _____
47 - 105 - 1011
 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION

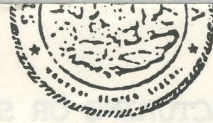
NOV 22 1982

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS,") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
 LOCATION: ELEVATION 628.62 WATERSHED LITTLE KANAWHA RIVER
 DISTRICT NEWARK COUNTY WIRT
 QUADRANGLE KANAWHA 7.5' Elizabeth 15' C
 SURFACE OWNER LITTLE KANAWHA CO. ACREAGE 123 AC TR
 OIL & GAS ROYALTY OWNER LITTLE KANAWHA CO LEASE ACREAGE 282
 LEASE NO. _____
 PROPOSED WORK: DRILL X CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___ PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____

PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___
 TARGET FORMATION MARCELLUS ESTIMATED DEPTH 5500' 66-0-unnamed
 WELL OPERATOR BOW VALLEY PETRO. INC. DESIGNATED AGENT W.E. STOVER
 ADDRESS 600 COMMERCE SQUARE ADDRESS BOX 235
CHARLESTON, WVA 25301 CULLODEN WVA 25510

DEEP

RECEIVED



IV-35
(Rev 8-81)

OCT - 4 1983

Date December 21, 1982

Operator's
Well No. WI-008

State of West Virginia
OIL & GAS DIVISION
DEPT. OF MINE Department of Mines
Oil and Gas Division

Farm Little Kanawha Co.

API No. 47 -105 - 1011

OCT 23 1983

REVISED

WELL OPERATOR'S REPORT
OF
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil / Gas / Liquid Injection / Waste Disposal
(If "Gas," Production / Underground Storage / Deep / Shallow)

LOCATION: Elevation: 628.62 Watershed Little Kanawha River
District: Newark County Wirt Quadrangle Kanawha 7.5'

COMPANY Bow Valley Petroleum, Inc.

ADDRESS 600 Commerce Sq. Charleston, WV.

DESIGNATED AGENT Robert Long

ADDRESS Culloden, WV.

SURFACE OWNER Little Kanawha Co.

ADDRESS Box 304 Parkersburg, WV. 26101

MINERAL RIGHTS OWNER Same

ADDRESS

OIL AND GAS INSPECTOR FOR THIS WORK Deo Mace

ADDRESS Sandridge, WV.

PERMIT ISSUED 11-14-82

DRILLING COMMENCED 11-17-82

DRILLING COMPLETED 12-1-82

IF APPLICABLE: PLUGGING OF DRY HOLE ON
CONTINUOUS PROGRESSION FROM DRILLING OR
REWORKING. VERBAL PERMISSION OBTAINED
ON

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.			
13-10"	80.65'	80.65'	70sks.
9 5/8	260.30	260.30	125sks.
8 5/8			
7	1861.75	1861.75	125sks.
5 1/2			
4 1/2	5162.80	5162.80	305sks.
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Devonian Shale Depth feet

Depth of completed well 5188 feet Rotary / Cable Tools

Water strata depth: Fresh 89' feet; Salt feet

Coal seam depths: N/A Is coal being mined in the area?

OPEN FLOW DATA

Producing formation Devonian Shale Pay zone depth feet

Gas: Initial open flow Show Mcf/d Oil: Initial open flow Bbl/d

Final open flow 120 Mcf/d Final open flow Show Bbl/d

Time of open flow between initial and final tests 24 hours

Static rock pressure 340 psig(surface measurement) after hours shut in

(If applicable due to multiple completion--)

Second producing formation Pay zone depth feet

Gas: Initial open flow Mcf/d Oil: Initial open flow Bbl/d

Final open flow Mcf/d Oil: Final open flow Bbl/d

Time of open flow between initial and final tests hours

Static rock pressure psig(surface measurement) after hours shut in

(Continue on reverse side)

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

1st Stage (N₂ Frac)

Perforations Interval = 17 shots 4104'-5030'
 1,400,000 5ft³ of N₂, 1000 gallons HCL
 A.I.R. 62,000 SCF/M. Breakdown 2710.

2nd Stage (N₂ Frac)

Perforations Interval = 32 shots 3154'-3709'
 900,000 5ft³ of N₂, 1000 gallons HCL. Drop 20 perf balls
 ARI 54,000 SCF/M. Breakdown 2670'.

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
Soil & Clay			0	16	
Sand			16	88	Water 89'
Red Rock & Shale			88	925	
Shale			925	1296	
Sand			1296	1420	
Shale			1420	1500	
Sand	White	Hard	1500'	1794	
Shale	Gray	Soft	1794	4720	
Shale	Black	Soft	4720	5170	
Electric Log Tops					
	Maxon		1376	1428	
	Injun Sand		1428	1731	
	Sunbury		2189	2207	
	Chemung		2207	3449	
	Marcellus		5102	5188	

(Attach separate sheets as necessary)

BOW VALLEY PETROLEUM, INC.

Well Operator

By: _____

Date: December 21, 1982

Note: Regulation 2.02(i) provides as follows:

"The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including those encountered in the drilling of a well."

DEC 23 1982



OIL & GAS DIVISION
DEPT. OF MINES
State of West Virginia
Department of Mines
Oil and Gas Division

Date December 21, 1982
Operator's Well No. WI-008
Farm Little Kanawha Co.
API No. 47 - 105 - 1011

JAN 03 1983

WELL OPERATOR'S REPORT
OF
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil X / Gas X / Liquid Injection / Waste Disposal /
(If "Gas," Production X / Underground Storage / Deep / Shallow X /)

LOCATION: Elevation: 628.62 Watershed Little Kanawha River
District: Newark County Wirt Quadrangle Kanawha 7.5'

COMPANY Bow Valley Petroleum Inc.
ADDRESS 600 Commerce Sq. Charleston, WV 25301
DESIGNATED AGENT W. E. Stover
ADDRESS Culloden, WV.
SURFACE OWNER Little Kanawha Co.
ADDRESS Box 304 Parkersburg, WV 26101
MINERAL RIGHTS OWNER Same
ADDRESS _____
OIL AND GAS INSPECTOR FOR THIS WORK Deo
Mace ADDRESS Sandridge, WV
PERMIT ISSUED 11-14-82
DRILLING COMMENCED 11-17-82
DRILLING COMPLETED 12-1-82

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.			
13-10"	80.65	80.65	70 sks
9 5/8	260.30	260.30	125 sks.
8 5/8			
7	1861.75	1861.75	125 sks.
5 1/2			
4 1/2	5162.80	5162.80	305 sks.
3			
2			
Liners used			

IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSION OBTAINED ON _____

GEOLOGICAL TARGET FORMATION Devonian Shale Depth _____ feet
Depth of completed well 5200 feet Rotary X / Cable Tools _____
Water strata depth: Fresh 89' feet; Salt _____ feet
Coal seam depths: N/A Is coal being mined in the area? No

OPEN FLOW DATA
Producing formation Rhinestreet Devonian Shale Pay zone depth ? 5170? feet
Gas: Initial open flow show Mcf/d Oil: Initial open flow _____ Bbl/d
Final open flow 120 Mcf/d Final open flow show Bbl/d
Time of open flow between initial and final tests 24 hours
Static rock pressure 340 psig (surface measurement) after _____ hours shut in
(If applicable due to multiple completion--)
Second producing formation _____ Pay zone depth _____ feet
Gas: Initial open flow _____ Mcf/d Oil: Initial open flow _____ Bbl/d
Final open flow _____ Mcf/d Oil: Final open flow _____ Bbl/d
Time of open flow between initial and final tests _____ hours
Static rock pressure _____ psig (surface measurement) after _____ hours shut in

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

Well fraced in two stages; each stage consisting of 750,000 sft³ N₂, with 500 gallons of acid for initial breakdown.

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
Soil & Clay			0	16	
Sand			16	88	
Red Rock & Shale			88	925	
Shale			925	1269	
Sand			1269	1420	
Shale			1420	1500	Encounter H ₂ O @1520'
Sand <i>injun?</i>			1500	1794	
Shale			1794	5170	
Lime					

Phonestreet @ TD

*5170
2200 x 200
2970*

*5170
629
4541*

(Attach separate sheets as necessary)

Bow Valley Petroleum Inc.

Well Operator

By: *Morris Comb*

Date: December 21, 1982

Note: Regulation 2.02(i) provides as follows:
"The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including ..., encountered in the drilling of a well."



1) Date: November 8, 1982
 2) Operator's Well No. - 008X INEXIMIX WI-008
 3) API Well No. 47 State 105 County 1011 Permit

DRILLING CONTRACTOR:

Ray Resources

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES, OIL AND GAS DIVISION

OIL AND GAS WELL PERMIT APPLICATION

- 4) WELL TYPE: A Oil / Gas X /
 B (If "Gas", Production X / Underground storage / Deep / Shallow X /)
- 5) LOCATION: Elevation: 628.62 Watershed: Little Kanawha River
 District: Newark County: Wirt Quadrangle: Kanawha 7.5"
- 6) WELL OPERATOR Low Valley Petroleum Inc. 11) DESIGNATED AGENT W.E. Stover
 Address 500 Commerce sq. Charleston W. Va. 25301 Address Culloden W.V.
- 7) OIL & GAS ROYALTY OWNER Little Kanawha Co. 12) COAL OPERATOR N/A
 Address P.O. Box 304 Parkersburg WV. 26101 Address
 Acreage 286
- 8) SURFACE OWNER Same as above 13) COAL OWNER(S) WITH DECLARATION ON RECORD:
 Address Name N/A
 Acreage 286 Address
 Name
 Address
- 9) FIELD SALE (IF MADE) TO:
 Address
- 10) OIL & GAS INSPECTOR TO BE NOTIFIED 14) COAL LESSEE WITH DECLARATION ON RECORD:
 Name Deo Mace Name N/A
 Address Rt. 1 Box 5 Sand Ridge WV. Ph. 655-7398 Address
- 15) PROPOSED WORK: Drill X / Drill deeper / Redrill / Fracture or stimulate
 Plug off old formation / Perforate new formation
 Other physical change in well (specify) Marcellus Shale (Devonian)
- 16) GEOLOGICAL TARGET FORMATION, Marcellus Shale (Devonian)
 17) Estimated depth of completed well, 3500 feet
 18) Approximate water strata depths: Fresh, 60, 85 feet; salt, N/A feet.
 19) Approximate coal seam depths: N/A Is coal being mined in the area? Yes / No X /
- 20) CASING AND TUBING PROGRAM

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NOV 10 1982
OIL & GAS DIVISION
DEPT. OF MINES

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS	
	Size	Grade	Weight per ft.	New	Used	For drilling	Left in well			
Conductor	15			X		30'	30'	surface		Kinds
Fresh water	9 5/8			X		250'	250'	to surface		
Coal										Sizes
Intermediate	7		23.5	X		2000	2000	to surface		
Production	4 1/2		10.5	X		5400	5400	275 sks		Depths set
Tubing										
Liners										Perforations:
										Top Bottom

- 21) EXTRACTION RIGHTS
 Check and provide one of the following:
 Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil or gas.
 The requirement of Code 22-4-1-(c) (1) through (4). (See reverse side for specifics.)
- 22) ROYALTY PROVISIONS
 Is the right to extract, produce or market the oil or gas based upon a lease or other continuing contract or contracts providing for flat well royalty or any similar provision for compensation to the owner of the oil or gas in place which is not inherently related to the volume of oil or gas so extracted, produced or marketed? Yes No
- If the answer above is No, nothing additional is needed. If the answer is Yes, you may use Affidavit Form IV-60.
- 23) Required Copies (See reverse side.)
- 24) Copies of this Permit Application and the enclosed plat and reclamation plan have been mailed by registered mail or delivered by hand to the above named coal operator, coal owner(s), and coal lessee on or before the day of the mailing or delivery of this Permit Application to the Department of Mines at Charleston, West Virginia.

Notary: _____ Signed: Geologist
 My Commission Expires _____ Its: _____

OFFICE USE ONLY
DRILLING PERMIT

Permit number 47-105-1011 Date November 10 1982

This permit covering the well operator and well location shown below is evidence of permission granted to drill in accordance with the pertinent legal requirements subject to the conditions contained herein and on the reverse hereof. **Notification must be given to the District Oil and Gas Inspector. (Refer to No. 10) Prior to the construction of roads, locations and pits for any permitted work.** In addition, the well operator or his contractor shall notify the proper district oil and gas inspector 24 hours before actual permitted work has commenced.)

Permit expires July 16, 1983 unless drilling is commenced prior to that date and prosecuted with due diligence.

Bond:	Agent:	Plat:	Casing	Fee

Administrator, Office of Oil and Gas