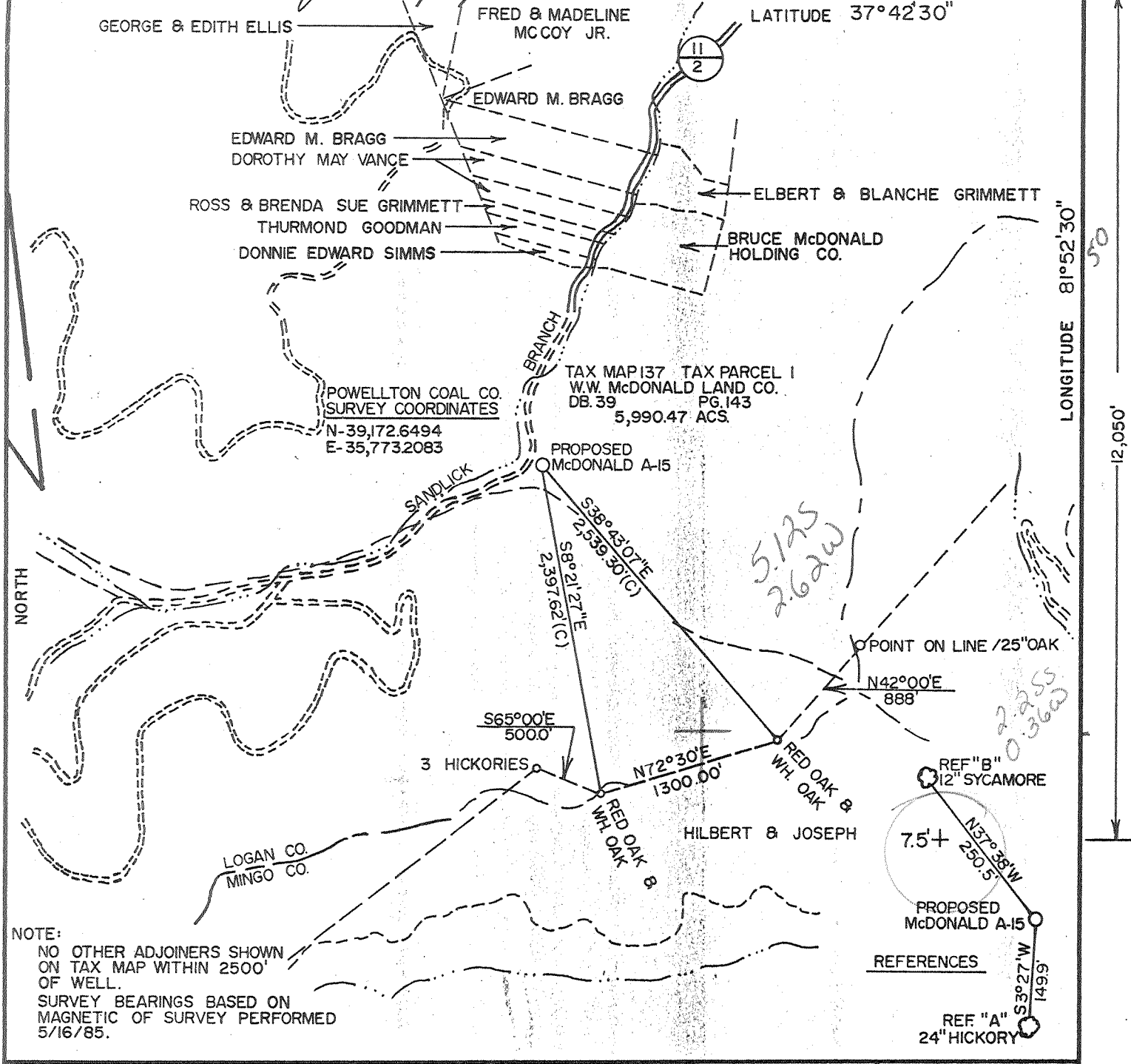


777U 8-20 85 *Janie 5/31/80* ✓ ✓ 45 ← 2,000' →



NOTE:
 NO OTHER ADJOINERS SHOWN ON TAX MAP WITHIN 2500' OF WELL.
 SURVEY BEARINGS BASED ON MAGNETIC OF SURVEY PERFORMED 5/16/85.

FILE NO. _____
 DRAWING NO. _____
 SCALE 1"=1000'
 MINIMUM DEGREE OF ACCURACY 1:2500
 PROVEN SOURCE OF ELEVATION McDONALD A-10/TAKEN FROM WELL PLAT ELEV. 1184.22'

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) *Fredrick G. Kelle*
 R. P. E. 6999 L. L. S.

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 FORM IV-6
 (8-78)

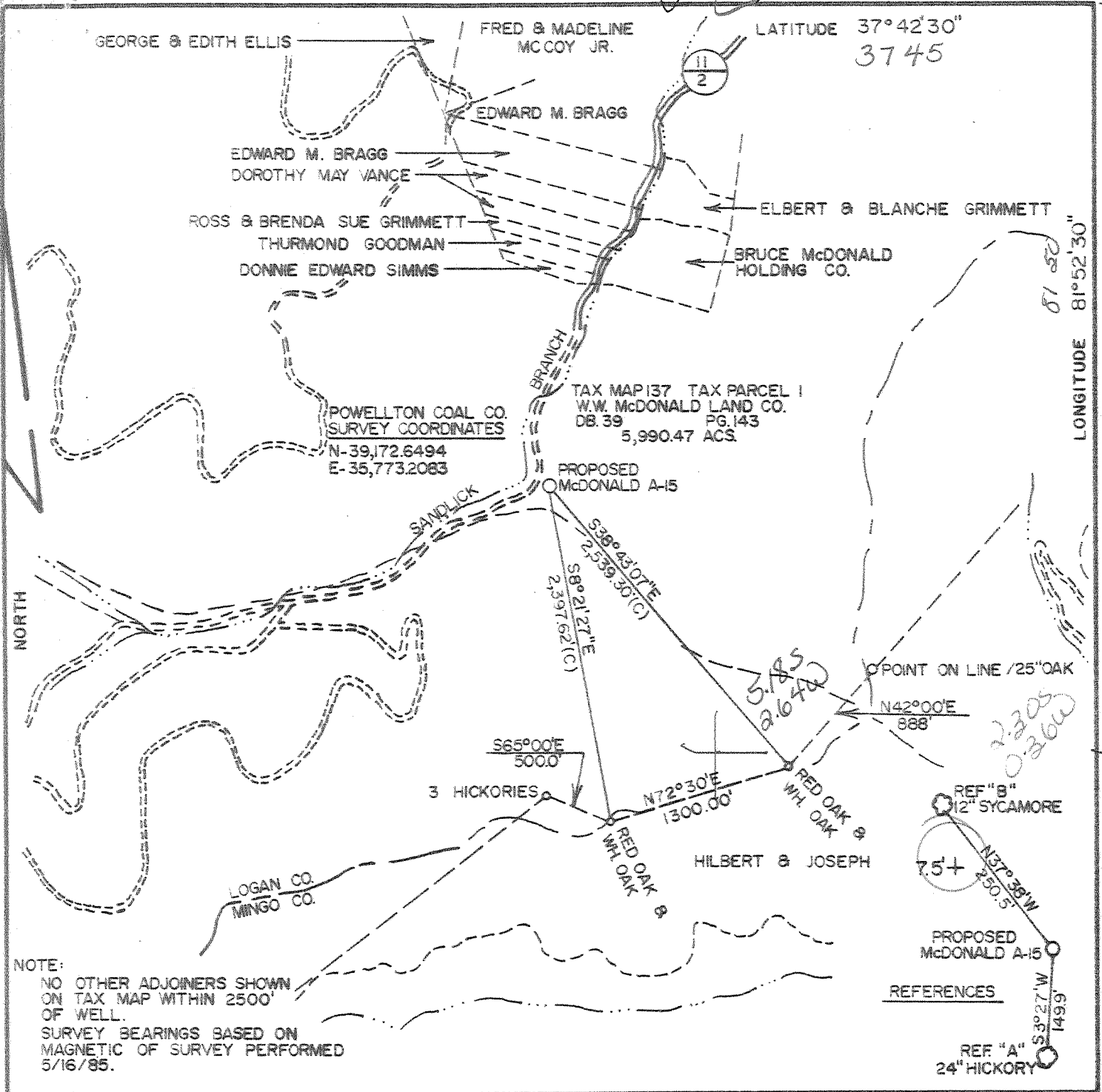


Department of Mines
 Oil & Gas Division

DATE MAY 16, 1985
 OPERATOR'S WELL NO. McDONALD A-15
 API WELL NO. 47-045-1099-Frac.
 STATE COUNTY PERMIT

WELL TYPE: OIL ___ GAS LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS", PRODUCTION STORAGE ___ DEEP SHALLOW ___
 LOCATION: ELEVATION 888.45' WATER SHED SANDLICK CREEK OF GUYANDOTTE RIVER
 DISTRICT TRIADELPHIA 3 COUNTY LOGAN
 QUADRANGLE MAN 456 049 2 Gilbert NC
 SURFACE OWNER W.W. McDONALD LAND CO. ACREAGE 5,990.47 ACS. 6084 ACS. PART OF
 OIL & GAS ROYALTY OWNER W.W. McDONALD LAND CO. LEASE ACREAGE 8666.505 ACS.
 LEASE NO. _____
 PROPOSED WORK: DRILL 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 ___ **DEEPWELL**
 TARGET FORMATION BEREA / Devonian Shale ESTIMATED DEPTH 5,250'
 WELL OPERATOR Cities Service Oil and Gas Corp. DESIGNATED AGENT Paul Phillips
 ADDRESS P.O. Box 873 ADDRESS P.O. Box 873
Charleston, WV 25323 Charleston, WV 25323
277U - 6-16 Gilbert (271) JUN 3 1988

LONGITUDE 81°52'30" 50 12,050' LOGAN 1099-Frac.



NOTE:
 NO OTHER ADJOINERS SHOWN
 ON TAX MAP WITHIN 2500'
 OF WELL.
 SURVEY BEARINGS BASED ON
 MAGNETIC OF SURVEY PERFORMED
 5/16/85.

FILE NO. _____
 DRAWING NO. _____
 SCALE 1"=1000'
 MINIMUM DEGREE OF
 ACCURACY 1:2500
 PROVEN SOURCE OF
 ELEVATION McDONALD A-10/TAKEN
 FROM WELL PLAT ELEV. 1184.22'

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) Fredrick H. Kelle
 R. P. E. 6999 L. L. S. _____

PLACE SEAL HERE

(+) DENOTES LOCATION OF
 WELL ON UNITED STATES
 TOPOGRAPHIC MAPS
 FORM IV-6
 (8-78)



Department of Mines
 Oil & Gas Division

DATE MAY 16, 1985
 OPERATOR'S WELL NO. McDONALD A-15
 API WELL NO. _____
47 - 045 - 1099
 STATE COUNTY PERMIT

WELL TYPE: OIL ___ GAS LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS", PRODUCTION STORAGE ___ DEEP SHALLOW ___
 LOCATION: ELEVATION 888.45 WATER SHED SANDLICK CREEK OF GUYANDOTTE RIVER
 DISTRICT TRIADELPHIA 3 COUNTY LOGAN
 QUADRANGLE MAN 456 049 = NC2 Gilbert
 SURFACE OWNER W.W. McDONALD LAND CO. ACREAGE 5,990.47 ACS. 6084 ACS. PART OF
 OIL & GAS ROYALTY OWNER W.W. McDONALD LAND CO. LEASE ACREAGE 8666.505 ACS.
 LEASE NO. _____
 PROPOSED WORK: DRILL 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 6-6 Gilbert (27)
 TARGET FORMATION BEREA / Devonian Shale ESTIMATED DEPTH 5,250'
 WELL OPERATOR Cities Service Oil and Gas Corp. DESIGNATED AGENT Paul Phillips
 ADDRESS P.O. Box 873 169 ADDRESS P.O. Box 873
Charleston, WV 25323 Charleston, WV 25323
 DEEP WELL

SEP 16 1985

Rec 8/15/86
FERC



State of West Virginia
DEPARTMENT OF ENERGY
Oil and Gas Division

Date January 31, 1986
Operator's
Well No. "A" #15
Farm McDonald Land Co.
API No. 47 - 045 - 1099

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

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

LOCATION: Elevation: 888 Watershed Sandlick Creek of Guyandotte River
District: Triadelphia County Logan Quadrangle Man

ANY Cities Service Oil & Gas Corporation
ADDRESS P. O. Box 873, Charleston, WV 25323
DESIGNATED AGENT Paul D. Phillips
ADDRESS P. O. Box 873, Charleston, WV 25323
FACE OWNER Paul C. Winter; W.W. McDonald Land
ADDRESS P. O. Box 1770, Logan, WV 25601
GENERAL RIGHTS OWNER W. W. McDonald Land Co.
ADDRESS P. O. Box 1770, Logan, WV 25601
LAND AND GAS INSPECTOR FOR THIS WORK Arthur
Clair ADDRESS P.O. Box 468, Brenton, WV
24818

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 16"	46'	46'	Surface
Cond. 11-3/4"	250'	250'	Surface
9 5/8			
8 5/8	2167'	2167'	Surface
7			
5 1/2			
4 1/2	5196'	5196'	TOC 2636'
3			
2-3/8"	4566'	4566'	
Liners used			

PERMIT ISSUED September 3, 1985
DRILLING COMMENCED October 7, 1985
DRILLING COMPLETED October 31, 1985
IF APPLICABLE: PLUGGING OF DRY HOLE ON
CONTINUOUS PROGRESSION FROM DRILLING OR
WORKING. VERBAL PERMISSION OBTAINED

GEOLOGICAL TARGET FORMATION Oriskany Depth 5168 feet
Depth of completed well 5231 feet Rotary x / Cable Tools
Water strata depth: Fresh feet; Salt 900 feet
Coal seam depths: Is coal being mined in the area? Yes

OPEN FLOW DATA

Producing formation Devonian Shale Pay zone depth 4425 feet
Gas: Initial open flow Mcf/d Oil: Initial open flow Bbl/d
Final open flow 696 Mcf/d Final open flow Bbl/d
Time of open flow between initial and final tests 24 hours
Static rock pressure 800 psig (surface measurement) after 18 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

OCT 20 1986

(Continue on reverse side)

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

Interval 4425'-4555'. Pumped 1.3 MMCF N₂, followed by 500 gallon 20% HCL and then 1.3 MMCF N₂. ATP 4350 ISIP 2100. AIR 95 MCF/Min.

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
					Including indication of all fresh and salt water, coal, oil and gas
Shaley Sand			0	120	
Sand			120	255	
Sandy Shale			255	290	
Shaley Sand			290	320	
Sand			320	400	
Sandy Shale			400	445	
Sand			445	490	
Sandy Shale			490	600	
Shaley Sand			600	640	
Sandy Shale			640	710	
Sand			710	1070	Salt Water at 900'.
Sandy Shale			1070	1120	
Salt Sand			1120	1300	
Shaley Sand			1300	1620	
2nd Maxon			1620	1710	
Shaley Sand			1710	1860	
3rd Maxon			1860	1940	
Shaley Sand			1940	2170	
Big Lime			2170	2480	
Sandy Shale			2480	2700	
Shale			2700	3060	
Berea			3060	3090	
Devonian Shale			3090	5130	
Onondaga			5130	5170	
Oriskany			5170	5200	
Shale - Hard.			5200	5231	

401 3090
 810 4115
 822 4340
 825 4690
 830 4890
 835 5090
 842 5110
 5130

(Attach separate sheets as necessary)

Cities Service Oil and Gas Corporation
 Well Operator
 By: Paul Phillips, Region Operations Manager
 Date: January 31, 1986

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."

OCT 27 1988

State of West Virginia
 DEPARTMENT OF ENERGY
 Division of Oil and Gas
 DEPARTMENT OF ENERGY

Well Operator's Report of Well Work

Farm name: McDONALD, W.W. LAND CO. Operator Well No.: A-15, GW-1968

LOCATION: Elevation: 888.45 Quadrangle: MAN

District: TRIADELPHIA County: LOGAN
 Latitude: 12050 Feet South of 37 Deg. 42Min. 30 Sec.
 Longitude 2000 Feet West of 81 Deg. 52 Min. 30 Sec.

Company: OXY USA, INC.
 P.O. BOX 873
 CHARLESTON, WV

Agent: DELBERT G. OLIVER

Inspector: ARTHUR ST. CLAIR
 Permit Issued: 06/01/88
 Well work Commenced: 6-20-88
 Well work Completed: 7-7-88
 Verbal Plussings
 Permission granted on: 6-1-88
 Rotary Cable Rig
 Total Depth (feet) 5231'
 Fresh water depths (ft) _____

 Salt water depths (ft) 900'

 Is coal being mined in area (Y/N)? No
 Coal Depths (ft): _____

Size Conductor	Used in	Left	Cement Fill Up
16"	46'	46'	15 sx
Fresh Wtr			
11.75"	250'	250'	150 sx
Intermediate			
8.625"	2167'	2167'	700 sx
Production			
4.5"	5196'	5196'	240 sx
Tubing			
2.375"		4150'	

OPEN FLOW DATA

Producing formation Devonian Shale Pay zone depth (ft) 4136-4555'
 Gas: Initial open flow 304 MCF/d Oil: Initial open flow _____ Bbl/d
 Final open flow 298 MCF/d Final open flow _____ Bbl/d
 Time of open flow between initial and final tests 8 Hours
 Static rock Pressure 240 psig (surface pressure) after 83 Hours
 Second producing formation _____ Pay zone depth (ft) _____
 Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d
 Final open flow _____ MCF/d Final open flow _____ Bbl/d
 Time of open flow between initial and final tests _____ Hours
 Static rock Pressure _____ psig (surface pressure) after _____ Hours

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

OCT 28 1988

Delbert G. Oliver
 For: OXY USA, INC.
 By: Delbert G. Oliver
 Date: October 25, 1988

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

Devonian Shale 4425'-4555' with 42 holes. Pumped 1.3 MMCF N2, followed by 500 gallon 20% HCL and then 1.3 MMCF N2. ATP 4350, ISIP 2100. AIR 95 MCF/min. Fracture stimulated with 52,000#, 20/50 sand, 1-2 1/2 ppg in 85-90 quality nitrogen foam.

Devonian Shale 4136'-4336' with 25 holes. Fracture stimulated with 86,000# 20/50 sand, 1-3 ppg in 85-90 quality nitrogen foam.

New zone comp.

WELL LOG

<u>FORMATION</u>	<u>TOP (FEET)</u>	<u>BOTTOM (FEET)</u>	<u>REMARKS</u>
Shaley Sand	0	120	
Sand	120	255	
Sandy Shale	255	290	
Shaley Sand	290	320	
Sand	320	400	
Sandy Shale	400	445	
Sand	445	490	
Sandy Shale	490	600	
Shaley Sand	600	640	
Sandy Shale	640	710	
Sand	710	1070	Salt Water @ 900'
Sandy Shale	1070	1120	
Salt Sand	1120	1300	
Shaley Sand	1300	1620	
2nd Maxon	1620	1710	
Shaley Sand	1710	1860	
3rd Maxon	1860	1940	
Shaley Sand	1940	2170	
Big Lime	2170	2480	
Sandy Shale	2480	2700	
Shale	2700	3060	
Berea	3060	3090	
Devonian Shale	3090	5130	
Onondaga	5130	5170	
Oriskany	5170	5200	
Shale	5200	5231	
TOTAL DEPTH	5231		

RECEIVED
OCT 27 1988

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

OCT 28 1988

7/22

STATE OF WEST VIRGINIA
 DEPARTMENT OF ENERGY, DIVISION OF OIL AND GAS
 WELL WORK PERMIT APPLICATION

- 1) Well Operator: ³⁰⁷² OXY USA INC. 36205, 3, 456
- 2) Operator's Well Number: McDonald Land Co. A-15, GW-1968 3) Elevation: 888.45
- 4) Well type: (a) Oil / or Gas /
 (b) If Gas: Production / Underground Storage /
 Deep / Shallow /
- 5) Proposed Target Formation(s): ⁴⁴¹ Devonian Shale
- 6) Proposed Total Depth: 5231 TVD feet
- 7) Approximate fresh water strata depths: 130'
- 8) Approximate salt water depths: 900'
- 9) Approximate coal seam depths: 80-82'; 189-192'; 507'; 855'; 1099'
- 10) Does land contain coal seams tributary to active mine? Yes / No /
- 11) Proposed Well Work: OK.
- 12) PERF & FRACTURE NEW FORMATION (4135-4336')
CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS		FOOTAGE INTERVALS			CEMENT
	Size	Grade	Weight per ft.	For drilling	Left in well	Fill-up (cu. ft.)
Conductor	16			46	46	15 sx
Fresh Water	11 3/4	K-55	42	250	250	150 sx
Coal						<i>existing</i>
Intermediate	8 5/8	K-55	24 & 36	2167	2167	700 sx
Production	4 1/2	N80	11.6	5196	5196	240 sx
Tubing	2 3/8	N80 & J55	4.7		POOH	
Liners						

PACKERS : Kind _____
 Sizes _____
 Depths set _____

RECEIVED
 MAY 27 1988

30068
 15
 For Division of Oil and Gas Use Only

Fee(s) paid: Well Work Permit Reclamation Fund WPCP
 Plat WW-9 WW-2B Bond 503 Louke. Agent
 (Type)

DIVISION OF OIL & GAS
 DEPARTMENT OF ENERGY

RECEIVED
MAY 27 1988

1) Date: May 20, 1988
2) Operator's well number
McDonald Land Co. A-15, GW-1968 1099-Frac.
3) API Well No: 47 - 045 - 1009
State - County - Permit

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY
STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY, DIVISION OF OIL AND GAS

NOTICE AND APPLICATION FOR A WELL WORK PERMIT

- 4) Surface Owner(s) to be served:
- (a) Name W. W. McDonald Land Co.
Address P. O. Box 1170
Logan, WV 25601
 - (b) Name _____
Address _____
 - (c) Name _____
Address _____
- 5) (a) Coal Operator:
- Name Powellton Coal Co.
Address Mallory, WV 25634
Attn: Dino Paletti
 - (b) Coal Owner(s) with Declaration
Name W. W. McDonald Land Co.
Address P. O. Box 1170
Logan, WV 25601
 - Name _____
Address _____
- 6) Inspector Arthur St. Clair
Address P. O. Box 468
Brenton, WV 24818
Telephone (304)-732-4507 (436-4507)
- (c) Coal Lessee with Declaration
Name _____
Address _____

TO THE PERSON(S) NAMED ABOVE TAKE NOTICE THAT:

_____ Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas OR
x Included is the information required by Chapter 22B, Article 1, Section 8(d) of the Code of West Virginia (see page 2)

I certify that as required under Chapter 22B of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through 4 on the above named parties, by:

- _____ Personal Service (Affidavit attached)
- x Certified Mail (Postmarked postal receipt attached)
- _____ Publication (Notice of Publication attached)

I have read and understand Chapter 22B and 38 CSR 11-18, and I agree to the terms and conditions of any permit issued under this application. I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator OXY USA, INC.
By: Delbert G. Oliver *Delbert G. Oliver*
Its: Project Manager
Address P. O. Box 873
Charleston, WV 25323
Telephone 304-344-8383

Subscribed and sworn before me this 20 day of May, 1988

Donald J. Bay
My commission expires June 11, 1989
Commissioner
Notary Public



1) Date: August 12, 1985
2) Operator's Well No. McDonald Land Co. "A" #15
3) API Well No. 47-045-1099 State County Permit

AUG 15 1985

STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY, OIL AND GAS DIVISION
DEPARTMENT OF ENVIRONMENTAL AFFAIRS
APPLICATION FOR A WELL WORK PERMIT

- 4) WELL TYPE: A Oil / Gas X
5) LOCATION: Elevation: 888.45' Watershed: Sandlick Creek of Guyandotte River
6) WELL OPERATOR Cities Service Oil & Gas Corp. P. O. Box 873 169 Charleston, WV 25323
7) DESIGNATED AGENT Paul D. Phillips P. O. Box 873 Charleston, WV 25323
8) OIL & GAS INSPECTOR TO BE NOTIFIED Name Arthur St. Clair Address P. O. Box 468 Brenton, WV 24818
9) DRILLING CONTRACTOR: Name Unknown
10) PROPOSED WELL WORK: Drill X / Drill deeper / Redrill / Stimulate X
11) GEOLOGICAL TARGET FORMATION, Berea or Devonian Shale 401
12) Estimated depth of completed well, 5250' feet
13) Approximate strata depths: Fresh, 130' feet; salt, 1660' feet.
14) Approximate coal seam depths: 80'-82', 189'-192' Is coal being mined in the area? Yes X / No

15) CASING AND TUBING PROGRAM

Table with columns: CASING OR TUBING TYPE, SPECIFICATIONS (Size, Grade, Weight per ft., New, Used), FOOTAGE INTERVALS (For drilling, Left in well), CEMENT FILL-UP OR SACKS (Cubic feet), PACKERS (Kinds, Sizes, Depths set, Perforations: Top, Bottom)

OFFICE USE ONLY
DRILLING PERMIT

Permit number 47-045-1099 Date September 3 19 85

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. 8) 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.)

The permitted work is as described in the Notice and Application, plat, and reclamation plan, subject to any modifications and conditions specified on the reverse hereof.

Permit expires September 3, 1987 unless well work is commenced prior to that date and prosecuted with due diligence.

Table with checkboxes for Bond, Agent (ATS), Plat (MU), Casing (M), Fee (104322), WPCP, S&E, Other

NOTE: Keep one copy of this permit posted at the drilling location.

Director, Division of Oil and Gas