

New Location..
 Drill Deeper.....
 Abandonment..... *Partial Plug + Frac 7/9/84*

Company Cahot Oil & Gas Corp. of W.V.
 Address P.O. Box 628, Charleston, W.V. 25322
 Farm BLACK BETSY LAND CORP
 Tract _____ Acres 2500 Lease No. 3-468
 Well (Farm) No. 7 Serial No. S-1404
 Elevation (Spirit Level) 659.6'
 Quadrangle WINFIELD SE
 County PUTNAM District POCATALICO
 Engineer Kenneth R. Gosnell
 Engineer's Registration No. 2679
 File No. _____ Drawing No. _____
 Date APRIL 6, 1953 Scale 1" = 1320'

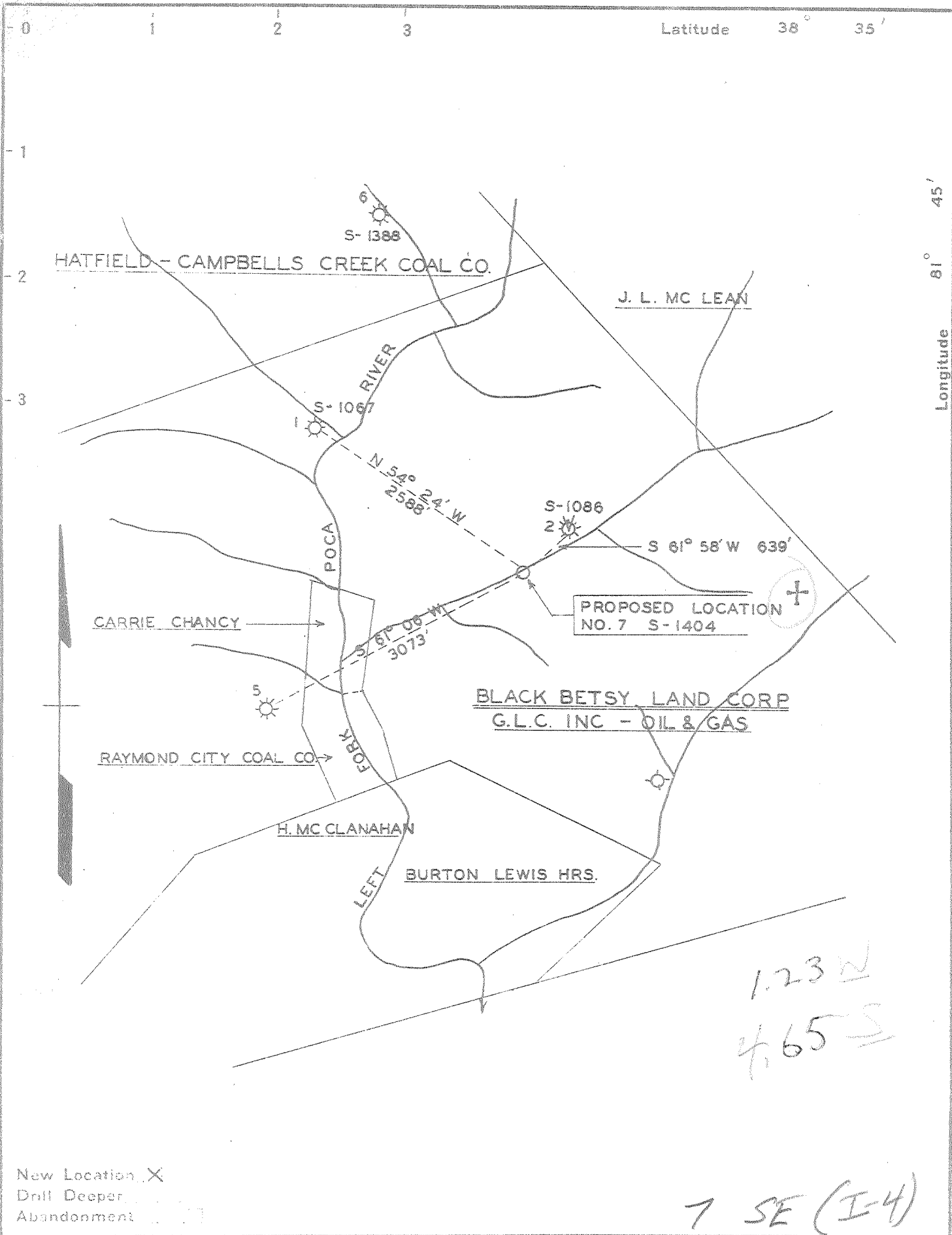
STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION
 CHARLESTON

WELL LOCATION MAP
 FILE NO. PUT-544-PP-Frac.

JUL 16 1984

+ Denotes location of well on United States Topographic Maps, scale 1 to 62,500, latitude and longitude lines being represented by border lines as shown.

- Denotes one inch spaces on border line of original tracing.



New Location X
 Drill Deeper
 Abandonment

Company GODFREY L. CABOT, INC.
 Address 900 UNION BLDG., CHARLESTON, W. VA.
 Farm BLACK BETSY LAND CORP
 Tract Acres. 2500 Lease No. 3-468
 Well (Farm) No. 7 Serial No. S-1404
 Elevation (Spirit Level) 659.6'
 Quadrangle WINFIELD - SE
 County PUTNAM District POCATAHICO
 Engineer Kenneth R. Goenell
 Engineer's Registration No. 2679
 File No. _____ Drawing No. _____
 Date APRIL 6, 1953 Scale 1" = 1320'

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

WELL LOCATION MAP
 FILE NO. Put-544

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6-6-1953

Deep Well V



W-35
(REV 8-81)

Date October 9, 1984
Operator's
Well No. #7
Farm Black Betsy
API No. 47 - 079 - 0544

State of West Virginia
Department of Mines
Oil and Gas Division

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

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

LOCATION: Elevation: 659.6' Watershed Lefthand Fork Poca River
District: Pocatalico County Putnam Quadrangle Winfield

COMPANY Cabot Oil & Gas Corporation of WV
ADDRESS Box 628, Charleston, WV 25322
DESIGNATED AGENT Robert E. Horrell
ADDRESS Box 628, Charleston, WV 25322
SURFACE OWNER See attached list
ADDRESS
MINERAL RIGHTS OWNER Cabot Oil & Gas Corp. of WV
ADDRESS Box 628, Charleston, WV 25322
OIL AND GAS INSPECTOR FOR THIS WORK Jerry
Holcomb ADDRESS RR #1, Box 28, Hamlin, WV
25523
PERMIT ISSUED 7/9/84
~~WORKOVER~~
~~DRILLING~~ COMMENCED 8/22/84
~~WORKOVER~~
~~DRILLING~~ COMPLETED 9/8/84

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.			
13-10"			
9 5/8			
8 5/8			
7	squeezed from		3972-3080'
5 1/2			
4 1/2			
3			
1 1/2		3932.60	
Liners used		w/seating nipple @ 3932'	

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

GEOLOGICAL TARGET FORMATION Huron Shale Depth 3416-3934 feet
Depth of completed well PBTD 3960 feet Rotary / Cable Tools
Water strata depth: Fresh feet; Salt feet
Coal seam depths: Is coal being mined in the area?

OPEN FLOW DATA
Producing formation Huron Shale Pay zone depth 3416-3934 feet
Gas: Initial open flow Mcf/d Oil: Initial open flow Bbl/d
4 hr. Final open flow (231) Mcf/d Final open flow Bbl/d
Time of open flow between initial and final tests hours

Static rock pressure 600 psig (surface measurement) after 72 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 NOV 13 1984 hours shut in

NOV 13 1984

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.
 MIRU Pool Well Service. Set cement plug from 4681-4550' w/35 sks. Perf squeeze perfs @ 3990' (4 holes). Set Halliburton retainer @ 3977'. Retainer would not open. Perf second set of squeeze perfs from 3970-3972'. Set second Halliburton cement retainer @ 3960'. Squeeze w/22 bbls, 50/50 Poz, 3% CaCl₂, 3/4 of 1% CFR-2. R/U McCullough. Ran GR & Cement Bond Log. LTD 3954'. TOC 3710'. Perf for 2nd squeeze @ 3574-3576' (8 holes). R/U Howco, squeezed w/50 sks Class A, 2% CaCl₂. Displaced plug to 3505'. Ran GR, Cement Bond Log from 3519-3000'. LTD 3519', TOC 3080'. Drilled out cement & wiper plug to cement retainer @ 3960'. Perforated 3414, 3416, 3434, 3454, 3464, 3466, 3758, 3778, 3836, 3847, 3856, 3865, 3872, 3879, 3912, 3923, 3927, 3929, 3930, 3934. Ran 111 jts. 3-1/2" tbg & RTTS Packer to 3396.3'. R/U B. J. Hughes. BD Shale @ 1880#. Pumped 1,000,000 SCF N₂ after breakdown @ 40,000 SCF/min. Treated w/400 sks 20/40 sand & 360,000 SCF/N₂ @ 20,000 SCF/min. AIR 40 bbls/min. ATP 2350#. TF 200 bbls, S/L 130 bbls, ISIP 420#, 15 min 260.

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
					Including indication of all fresh and salt water, coal, oil and gas
SEE ATTACHED ORIGINAL WELL RECORD					

(Attach separate sheets as necessary)

Cabot Oil & Gas Corporation of West Virginia

Well Operator

By: Robert E. Harrell

Date: October 9, 1984

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

GODFREY L. CABOT, INC.

WELL RECORD

SERIAL NO. **1104** OPERATING DISTRICT **7** Map Square Lot No. **11-30** Warrant No. **11-30**
 FARM **Black Jersey Land Co.** NO. **7** LEASE NO. **7**
 COUNTY **Putnam** TAX DISTRICT **Pocatalico** STATE **S. Va.**
 DRILLING COMMENCED **1-30-53** DRILLING COMPLETED **3-1-53**
 CONTRACTOR **Company tools** ADDRESS

ROCK PRESSURE RECORD (with well casing leak)
 Primary Sand 1000 lbs., in 12 hrs. Shale Sand, from 3300 feet to 3420 Init. Prod. 33 M. C. F. Gas
 Sand lbs., in hrs. Ordinary Sand, from 1691 to 1694 Init. Prod. 150 M. C. F. Gas
 Sand lbs., in hrs. Sand, from to Init. Prod. M. C. F. Gas

OPEN FLOW Time, Condition: **After shot** CASING RECORD

Qths	Water Mercury in	inch opening	SIZE	WEIGHT	USED IN DRILLING	LEFT IN WELL	HOW CASING SET
Volume	323	M. C. F.	13"	107	66	66	Bottom joint belled.
24 HOUR PRODUCTION TEST AFTER TUBING			10 3/4	10.5	794	794	Stope.
M. C. F.	Line Pressure		2-5/8"	218	1906	1906	S. H. Packer
Bbls. Oil	in 24 Hours		7"	218	1605	1605	Lead S. H. Packer

SHOOTING RECORD
 Shot with **60 lbs.** from **1637** to **1706** Date **3-1-53**
 Gauge Before **63** Shot **63** Gauge **15** Min. After **323** Shot

FORMATION	COLOR	TOP	BOTTOM	STEEL LINE MEASUREMENTS	HARD OR SOFT	OIL, GAS OR WATER	DEPTH FOUND	REMARKS
Soil		0	6					
Sand		6	10			Water	23'	
Clay		10	60					
Red Rock		60	100					
Clay		100	103					
Clay & Shell		103	170			Water	153'	
Red Rock		170	214					
Clay & Shell		214	348					
Red Rock		348	412					
Sand		412	510			Water	512	3-1/2 blrs. /hour.
Clay & Shell		510	560					
Sand		560	590					
Clay & Shell		590	675					
Sand		675	812					
Clay & Shell		812	1180					
Silt Sand		1180	1166			Water	1270	
Little Clay		1166	1500			Oil	1300	
Big Clay		1500	1754			Gas	1616	Not enough to gauge.
Clay Sand		1754	1806					
Clay, Dark		1806	1860					
Clay & Shell		1860	1875					
Clay, Black		1875	1955					
Clay & Shell		1955	1974					
Clay, Bricky		1974	2000					
Clay & Shell		2000	2130					
Clay		2130	2210					
Clay & Shell		2210	3375					
Brown Shale		3375	3520			Gas	3320	21 Net.
Shale & Shells		3520	3600			Gas	3420	26 Net.
Clay & Shell		3600	3850					
Brown Shale		3850	3950					
Clay & Shell		3950	4050					
Brown Shale		4050	4065					
Clay Shale		4065	4330					
Brown Shale		4330	4590					

SERIAL NO. **1104** FARM **Black Jersey** NO. **7** OPERATING DIST. **7** MAP SQUARE **11-30** LOT NO. **11-30** WARRANT NO.

FORMATION	COLOR	TOP	BOTTOM	STEEL LINE MEASUREMENTS	HARD OR SOFT	OIL, GAS OR WATER	DEPTH FOUND	REMARKS
Corniferous		4590	4635	4635				
Oriskany		4635	4706	4635		Gas	4637	Flow.
Line		4706	4712			Gas	4671-94;	150 Hec.
Broken Sand		4712						
Total Depth			4720					

TOTAL DEPTH

DATE _____

APPROVED _____

FOREMAN

Winfield
Out-544

GODFREY L. CABOT, INC.

WELL RECORD 7

SERIAL NO. 1404 OPERATING DISTRICT PN
 FARM Black Betsey Land Co. NO. 7 LEASE NO.
 COUNTY Putnam TAX DISTRICT Pocatalico STATE W. Va.
 DRILLING COMMENCED 4-30-53 DRILLING COMPLETED 8-1-53
 CONTRACTOR Company tools ADDRESS

Map Square
Lot No.
Warrant No. 41-30

ROCK PRESSURE RECORD (with small casing leak)
 Oriskany Sand 1000 lbs., in 12 hrs.
 Sand lbs., in hrs.
 Sand lbs., in hrs.

PRODUCING SAND RECORD
 Shale Sand, ~~from~~ @ 3380 and @ 3420 to Init. Prod. 33 M. C. F. Gas
 Oriskany Sand, from 4691 to 4694 Init. Prod. 150 M. C. F. Gas
 Sand, from to Init. Prod. M. C. F. Gas

OPEN FLOW
 Time, Condition: After shot
 10ths Water Mercury in three inch opening
 Volume 328 M. C. F.
 24 HOUR PRODUCTION TEST AFTER TUBING
 M. C. F. Line Pressure
 Bbls. Oil in 24 Hours

CASING RECORD

SIZE	WEIGHT	USED IN DRILLING	LEFT IN WELL	HOW CASING SET
13"	48#	66	66	Bottom joint belled.
10 3/4"	40.5	794	794	Shoe.
8 5/8"	24	1906	1906	B. H. Packer
7"	24#	4605	4605	Lead B. H. Packer

TUBED AND SHUT IN Date
 Packer, Size Kind
 Set, Depth Size Anchor
 Perf. Top Bottom
 Perf. Top Bottom
 ELEVATION: 660

SHOOTING RECORD
~~Shot~~
 Shot with 60 qts. from 4687 to 4706 Date 8/4/53
 Gauge Before { ~~Shot~~ Shot 60 Mcf Gauge 45 Min. { Acid } Shot 328 M

FORMATION	COLOR	TOP	BOTTOM	STEEL LINE MEASUREMENTS	HARD OR SOFT	OIL, GAS OR WATER	DEPTH FOUND	REMARKS
Soil		0	6					
Sand		6	40			water	28'	
Slate		40	60					
Red Rock		60	100					
Lime		100	103					
Slate & Shell		103	170			Water	153	
Red Rock		170	214					
Slate & Shell		214	348					
Red Rock		348	412					
Sand		412	540			Water	512	3-1/2 blrs. /hour.
Slate & Shell		540	560					
Sand		560	590					
Slate & Shell		590	675					
Sand		675	842					
Slate & Shell		842	1180					
Salt Sand		1180	1466			Water	1270	
Little Lime		1466	1530			S. Water	1330	
Big Lime		1530	1754			Gas	1616	Not enough to gauge.
Injun Sand		1754	1806					
Lime, Dark		1806	1860					
Slate & Shell		1860	1895					
Lime, Black		1895	1955					
Slate & Shell		1955	1974					
Lime, Gritty		1974	2000					
Slate & Shell		2000	2190					
Berea		2190	2210					
Slate & Shell		2210	3375					
Brown Shale		3375	3520			Gas	3380	21 Mcf.
Shale & Shells		3520	3800			Gas	3420	26 Mcf.
Slate & Shell		3800	3850					
Brown Shale		3850	3950					
Slate & Shell		3950	4050					
Brown Shale		4050	4065					
White Slate		4065	4330					
Brown Shale		4330	4590					





1) Date: June 11, 1984
 2) Operator's Well No. Black Betsy #7
 3) API Well No. 47 - 079 - 0544-PP-FRA
 State County Permit

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

- 4) WELL TYPE: A Oil / Gas X /
 B (If "Gas", Production X / Underground storage / Deep / Shallow X)
 5) LOCATION: Elevation: 659.6' Watershed: Lefthand Fork Poca River (KPIT)
 District: Pocatalico County: Putnam Quadrangle: Winfield 15', BANCROFT 7.5'
 6) WELL OPERATOR: Cabot Oil & Gas Corp. of WV 7) DESIGNATED AGENT: Robert E. Horrell
 Address: P. O. Box 628 Address: P. O. Box 628
Charleston, WV 25322 Charleston, WV 25322
 8) OIL & GAS INSPECTOR TO BE NOTIFIED 9) DRILLING CONTRACTOR:
 Name: Jerry Holcomb Name: Unknown
 Address: Rural Rt. 1, Box 28 Address:
Hamlin, WV 25523
 10) PROPOSED WELL WORK: Drill / Drill deeper / Redrill / Stir X
 Plug off old formation X / Perforate new formation
 Other physical change in well (specify) Plug back Oriskany
 11) GEOLOGICAL TARGET FORMATION, Huron Shale
 12) Estimated depth of completed well, 4580' feet
 13) Approximate strata depths: Fresh, 28, 153, 512 feet; salt, 1270, 1330 feet.
 14) Approximate coal seam depths: N/R Is coal being mined in the area? Yes / No
 15) CASING AND TUBING PROGRAM WORKOVER

RECEIVED
 JUN 14 1984
 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		Proposed	
Conductor	13					Existing	66		Kinds Baker	
Fresh water	10-3/4					Existing	794	on shoe	Bridge Plug	
Coal	8-5/8					Existing	1906	on packer	Sizes 7"	
Intermediate	7					Existing	4605	on packer		
Production									Depths set	4100'
Tubing									Perforations:	
Liners									Top	Bottom
Tubing	1-1/2		2.75	X		Proposed	4065			

3. Squeeze cement 7" casing from 4090-3000' 1. Set cement plug from 4720-4580'
 2. Set permanent bridge plug @ 4580'

OFFICE USE ONLY
 DRILLING PERMIT

Permit number 47-079-0544-PP-FRAC Date July 9, 19 84

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 July 9, 1986 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond:	Agent:	Plat:	Casing	Fee
BLANKET	<u>LO</u>	<u>MW</u>	<u>MW</u>	<u>013-214</u>

T. J. ...
 Administrator, Office of Oil and Gas

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

See the reverse side of the APPLICANT'S COPY for instructions to the well operator.

File