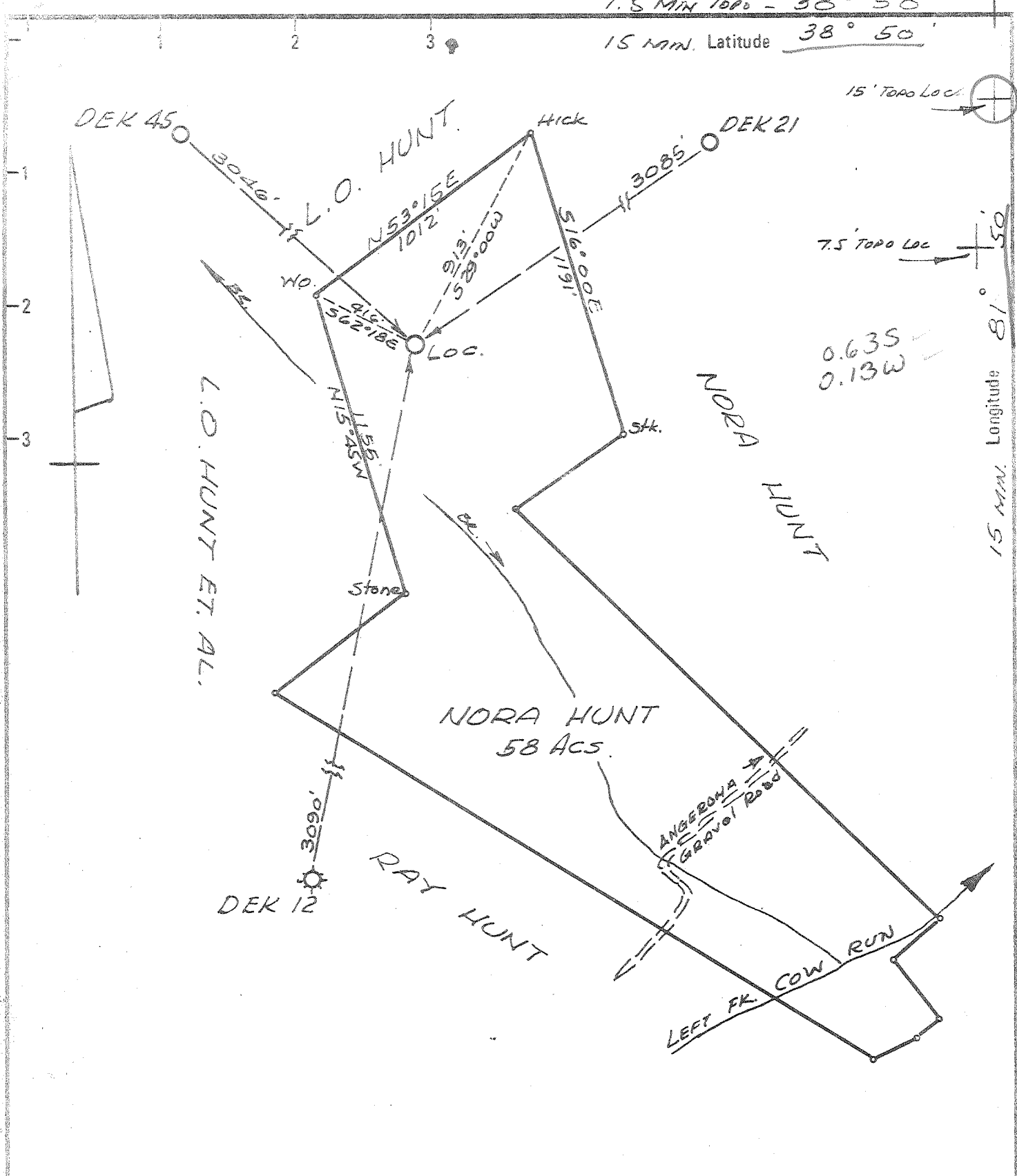


Plot Log Card
 7.5 MIN TOPO - 38° 50'
 15 MIN. Latitude 38° 50'



15' TOPO LOC
 7.5' TOPO LOC
 0.635
 0.13W
 15 MIN. Longitude 81° 50'
 7.6 MIN TOPO - 81° 50'

New Location
 Drill Deeper
 Abandonment

Minimum Error of Closure 1 IN. 200
 Source of Elevation USGS Elev. 616' Road Intersection
RT. FORK OF COW RUN
 "I, the undersigned, hereby certify that this map is correct to the best of my knowledge and belief and shows all the information required by paragraph 6 of the rules and regulations of the oil and gas section of the mining laws of West Virginia."

Company KAISER EXPL. & MINING Co.
 Address Box 98 RAVENSWOOD, W.VA.
 Farm NORA HUNT
 Tract _____ Acres 58.0 Lease No. 3297
 Well (Farm) No. DEK #46 Serial No. _____
 Elevation (Spirit Level) 879.0
 Quadrangle 7.5 COTTAGEVILLE
15 RAVENSWOOD SC
 County JACKSON District UNION
 Engineer N. Defton
 Engineer's Registration No. 1832
 File No. _____ Drawing No. _____
 Date 6-11-77 Scale 1" = 500'

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION
 CHARLESTON
 WELL LOCATION MAP
 FILE NO. JAC-1415

+ 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.

47-035 OCT 5 1977

N21664 Deep Well 4750' on 50' Providence (359)



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MAR - 6 1978

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
Oil and Gas Division

OIL & GAS DIVISION
DEPT. OF MINES

WELL RECORD 21

Rotary XXX Oil _____
Cable _____ Gas XXX _____
Recycling _____ Comb. _____
Water Flood _____ Storage _____
Disposal _____ (Kind) _____

Quadrangle Ravenswood 15'

Permit No. JAC-1415
47-035

Company Kaiser Exploration & Mining Co.
Address P.O. Box 98, Ravenswood, WV
Farm Nora Hunt Acres 58
Location (waters) Left Fork of Cow Run
Well No. DEK #46 Elev. 879
District Union County Jackson
The surface of tract is owned in fee by _____
Nora Hunt
Address Rt. 2, Cottageville, WV
Mineral rights are owned by Nora Hunt
Address Same
Drilling Commenced 8/26/77
Drilling Completed 9/7/77
Initial open flow 84 M cu. ft. _____ bbls.
Final production 516 MCFD caxx ft. per day _____ bbls.
Well open _____ hrs. before test 1425 RP.

Casing and Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft. (Sks.)
Size 20-16			
Cond. 13-10"			
9 5/8	254'	254'	110=To Surf.
8 5/8			
7	2528	2528	75 Sax=625'
5 1/2			
4 1/2		4742	150Sax=1653'
3			
2			
Liners Used			

Well treatment details:
Perforated 4 1/2" casing 4637-4639 w/16 shots

Attach copy of cementing record. Halliburton

Fractured with 703 bbl water and 43,000# sand

Coal was encountered at None Feet _____ Inches _____
Fresh water _____ Feet _____ Salt Water _____ Feet _____
Producing Sand Oriskany Depth 4637-4639

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	* Remarks
Surface			0	6		
Sand			6	15		
Red Rock			15	25		
Slate			25	30		
Red Rock			30	50		
Blue Slate			50	60		
Lime			60	70		
Red Rock			70	85		
Slate & Shells			85	110		
Red Rock			110	135		
Slate			135	185		
Red Rock			185	240		
Blue Slate			240	255		
Red Rock			255	263		
Sand			263	305		
Red Rock			305	325		
Gray Slate			325	335		
Blue Slate			335	355		
Red Rock			355	420		
Gray Slate			420	430		
Red Rock			430	445		
Sand			445	486		
Gray Slate			486	505		
Lime Shells			505	515		
Red Rock			515	535		

(over)

* Indicates Electric Log tops in the remarks section.

Formation	Color	Hard or Soft	Top Feet ±	Bottom Feet	Oil, Gas or Water	* Remarks
Sand			535	540		
Gray Slate			540	545		
Slate			545	565		
Red Rock			565	585		
Gray Shale			585	615		
Slate & Shells			615	635		
Sand			635	685		
Shale			685	736		
Lime & Shells			735	740		
Slate & Shells			740	755		
Blue Slate			755	780		
Sand			780	786		
Blue Clay			786	836		
Sand			836	850		
Red Rock			850	878		
Blue Clay			878	910		
Slate			910	922		
White Slate			922	947		
Red Rock			947	957		
Gray Shale			957	970		
Sand			970	997		
Grey Slate			997	1030		
Sand			1030	1064		
Slate			1064	1107		
Green Shale			1107	1133		
Sand			1133	1144		
Shale			1144	1177		
Sand			1177	1250		
Blue Slate			1250	1315		
Sand			1315	1325		
Slate			1325	1340		
Blue Slate			1340	1345		
White Slate			1345	1379		
Sand			1379	1428		
Slate			1428	1440		
Sand			1440	1447		
Slate			1447	1466		
Sand			1466	1497		
Shale			1497	1502		
Sand			1502	1526		
Slate			1526	1556		
Sand			1556	1575		
Slate			1575	1620		
Lime			1620	1650		
Black Slate			1650	1662		
White Sand			1662	1689		
Slate			1689	1731		
Sand			1731	1745		
Slate			1745	1752		
Maxon Sand			1752	1800		
Big Lime			1800	1930		
Shale			1930	1954		
Injun			1954	2102		
Shale			2102	2414		
Coffee Shale			2414	2430		
Berea			2430	2443		
Shale			2443	3582		
Brown Shale			3582	4021		
Shale			4021	4415		
Marcellus Shale			4415	4543		
Corniferous			4543	4624		
Oriskany			4624	4640		
Lime			4640	4734		HDBG

Date March 2, 19 78

APPROVED [Signature] Owner

By Operations Manager

(Title)



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
Oil and Gas Division

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OIL & GAS DIVISION
DEPT. OF MINES

OIL AND GAS WELL PERMIT APPLICATION

TO THE DEPARTMENT OF MINES,
Charleston, W. Va.

DATE June 13, 1977

Surface Owner Nora Hunt
Address Rt. 2, Cottageville, WV
Mineral Owner Nora Hunt
Address Rt. 2, Cottageville, W. Va.
Coal Owner Same as above
Address _____
Coal Operator Not operated
Address _____

Company Kaiser Exploration & Mining Co.
Address Box 98, Ravenswood, W. Va.
Farm Nora Hunt Acres 58 ac
Location (waters) Left Fork of Cow Run
Well No. DEK #46 Elevation 879
District Union County Jackson
Quadrangle Ravenswood 15', Cottageville 7 1/2'

THIS PERMIT MUST BE POSTED AT THE WELL SITE

All provisions being in accordance with Chapter 22, of the W. Va. Code, the location is hereby approved for drilling. This permit shall expire if operations have not commenced by 12-25-77.

INSPECTOR
TO BE NOTIFIED Richard Morris
ADDRESS Grantsville, W. Va.
PHONE 354-7259

[Signature]
Deputy Director - Oil & Gas Division

GENTLEMEN:

The undersigned well operator is entitled to drill upon the above named farm or tract of land for oil and gas, having fee title thereto, (or as the case may be) under grant or lease dated Sept. 15 1969 by A. C. Hunt, et al made to Commonwealth Gas Corp. and recorded on the 30th day of Sept. 1969 in Jackson County, Book 110 Page 570

XXX NEW WELL _____ DRILL DEEPER _____ REDRILL _____ FRACTURE OR STIMULATE
_____ OIL AND GAS WELL ORIGINALLY DRILLED BEFORE JUNE 5, 1969.

The enclosed plat was prepared by a registered engineer or licensed land surveyor and all coal owners and/or operators have been notified as of the above date.

The above named coal owners and/or operator are hereby notified that any objection they wish to make, or are required to make by Section 3 of the Code, must be received by, or filed with the Department of Mines within ten (10) days.*

Copies of this notice and the enclosed plat were mailed by registered mail, or delivered to the above named coal operators or coal owners at their above shown respective address _____ day _____ before, or on the same day with the mailing or delivery of this copy to the Department of Mines at Charleston, West Virginia.

PLEASE SUBMIT COPIES OF ALL
GEOPHYSICAL LOGS DIRECTLY TO:

Very truly yours, Kaiser Exploration & Mining Co.
(Sign Name) *[Signature]*
W. F. Wegener, Well Operator
Box 98

W. VA. OIL & GAS CONSERVATION COMMISSION
1613 WASHINGTON STREET, EAST
CHARLESTON, WEST VIRGINIA 25311

Address
of
Well Operator

Street
Ravenswood
City or Town
West Virginia
State

*SECTION 3 If no objections are filed or found by the Department of mines, within said period of ten days from the receipt of notice and plat by the department of mines, to said proposed location, the department shall forthwith issue to the well operator a permit reciting the filing of such plat, that no objections have been made by the coal operators or found thereto by the department and that the same is approved and the well operator authorized to proceed.

BLANKET BOND

"I have read and understand the reclamation requirements as set forth in Chapter 22, Article 4, Section 12-b and will carry out the specified requirements."

Signed by *[Signature]*

JAC-1415 PERMIT NUMBER

47-035

THIS IS AN ESTIMATE ONLY
ACTUAL INFORMATION WILL BE SUBMITTED ON OG-10 UPON COMPLETION

PROPOSED WORK ORDER TO XXX DRILL _____ DEEPEN _____ FRACTURE-STIMULATE _____
 DRILLING CONTRACTOR: (If Known) RESPONSIBLE AGENT:
 NAME FWA Drilling Co. NAME Bill W. Backus
 ADDRESS Box 448, Elkview, W. Va. ADDRESS Box 1433, Charleston, W. Va.
 TELEPHONE 965-3379 TELEPHONE 342-3171
 ESTIMATED DEPTH OF COMPLETED WELL: 4750' ROTARY XXX CABLE TOOLS _____
 PROPOSED GEOLOGICAL FORMATION: Oriskany
 TYPE OF WELL: OIL _____ GAS XXX COMB. _____ STORAGE _____ DISPOSAL _____
 RECYCLING _____ WATER FLOOD _____ OTHER _____

TENTATIVE CASING PROGRAM:

CASING AND TUBING SIZE	USED FOR DRILLING	LEFT IN WELL	CEMENT FILL UP OR SACKS - CUBIC FT.
20 - 16			
13 - 10			
9 - 5/8	250	250	110 Sax = To Surface
8 - 5/8			
7	2525	650	75 sax = 625'
5 1/2			
4 1/2	4750	4750	150 sax = 1800'
3			Perf. Top
2			Perf. Bottom
Liners			Perf. Top
			Perf. Bottom

APPROXIMATE FRESH WATER DEPTHS _____ FEET SALT WATER _____ FEET
 APPROXIMATE COAL DEPTHS None Anticipated
 IS COAL BEING MINED IN THE AREA? No BY WHOM? _____

TO DRILL:

SUBMIT FIVE (5) COPIES OF OG - 1, \$100.00 PERMIT FEE, PERFORMANCE BOND AND PERMANENT COPY OF PLAT.

TO DRILL DEEPER OR REDRILL:

SUBMIT FIVE (5) COPIES OF OG - 1, SHOWING ORIGINAL PERMIT NUMBER AND PERFORMANCE BOND. ON WELLS DRILLED PRIOR TO 1929, A PERMANENT COPY OF THE PLAT AND THE ORIGINAL WELL RECORD MUST ALSO BE SUBMITTED.

TO FRACTURE - STIMULATE:

OIL AND/OR GAS WELL ORIGINALLY DRILLED BEFORE JUNE 5, 1929, FIVE (5) COPIES OG - 1, PERFORMANCE BOND, PERMANENT PLAT AND ORIGINAL WELL RECORD.

OIL AND/OR GAS WELL ORIGINALLY DRILLED ON AND/OR AFTER JUNE 5, 1929, FIVE COPIES OG - 1, SHOWING ORIGINAL PERMIT NUMBER, AND PERFORMANCE BOND.

Required forms must be filed within ninety (90) days of completion for bond release. Inspector to be notified twenty-four (24) hours in advance.

The following waiver must be completed by the coal operator if the permit is to be issued within ten days of receipt thereof.

WAIVER: I the undersigned, Agent for _____ Coal Company, Owner or Operator of the coal under this lease have examined and place on our mine maps this proposed well location.

We the _____ Coal Company have no objections to said well being drilled at this location, providing operator has complied with all rules and regulations in Articles 4, 5, and 7, Chapter 22 of the West Virginia Code.

 For Coal Company

 Official Title