



Minimum Error of Closure 1 IN 206  
 Source of Elevation U.S.G.S. Elev. 969' Road Intersection NORTH OF WELL LOC.  
 "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 L.G. GRIFFITH ET AL.  
 Tract \_\_\_\_\_ Acres 72.0 Lease No. \_\_\_\_\_  
 Well (Farm) No. DEK# 16 Serial No. \_\_\_\_\_  
 Elevation (Spirit Level) 821.0  
 Quadrangle RIPLEY NC  
 County JACKSON District RAVENSWOOD  
 Engineer N.L. Sefton  
 Engineer's Registration No. 1832  
 File No. \_\_\_\_\_ Drawing No. \_\_\_\_\_  
 Date 8-28-76 Scale 1" = 500'

STATE OF WEST VIRGINIA  
 DEPARTMENT OF MINES  
 OIL AND GAS DIVISION  
 CHARLESTON  
**WELL LOCATION MAP**  
 FILE NO. JAC-1385  
 + 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** DEC 15 1976

Correct to 6-6-00 6-0. ELK POCA (SISSONVILLE) Deep well 192



STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES

Handwritten signature

JUN 23 1980

Oil and Gas Division  
WELL RECORD <sup>12</sup>

OIL & GAS DIVISION  
DEPT. OF MINES

Rotary XX Oil \_\_\_\_\_  
Cable \_\_\_\_\_ Gas XX  
Recycling \_\_\_\_\_ Comb. \_\_\_\_\_  
Water Flood \_\_\_\_\_ Storage \_\_\_\_\_  
Disposal \_\_\_\_\_ (Kind)

Quadrangle Ripley  
Permit No. JAC 1385

Company Kaiser Exploration and Mining Company  
Address P. O. Box 8, Ravenswood, WV 26164  
Farm L. G. Griffith Acres 72  
Location (waters) Copper Fork of Sandy Creek  
Well No. DEK #16 Elev. 821  
District Ravenswood County Jackson  
The surface of tract is owned in fee by \_\_\_\_\_  
L. G. Griffith et ux  
Address Rt. 3, Sandyville, WV  
Mineral rights are owned by Same as above  
Address Same  
Drilling Commenced December 8, 1976  
Drilling Completed December 18, 1976  
Initial open flow 0 cu. ft. \_\_\_\_\_ bbls.  
Final production 220 M cu. ft. per day -- bbls.  
Well open 12 hrs. before test 750 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	205'	205'	100 sx
8 5/8			
7	2230'	2230'	75 sx
5 1/2			
4 1/2	4955'	4955'	215 sx
3			
2		2345'	
Liners Used			

Well treatment details:

Attach copy of cementing record.

Well failed to produce in line from Oriskany and Brown shale; set permanent bridge plug in 4 1/2" casing at 2735' (K.B.); perforated Berea 2350'-52' (K.B.) w/4 holes, and stray sand 2630'-2650' (K.B.) w/5 holes; fracture stimulated two zones w/30,000# 80/100 sand, 30,000# 20/40 sand, 568 HHP, 302,000 SCF of nitrogen and a total of 790 BBL of water (585 BBL sand laden); work done 4/7 - 4/8/80.

Coal was encountered at -- Feet -- Inches  
Fresh water -- Feet -- Salt Water -- Feet --  
Producing Sand Berea & Stray Depth 2350'-52'; 2630'-2650'

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	* Remarks
Red Shales			0	162		<i>work-over (Berea) Completion date 4/8/80</i>
Sand			162	173		
Red Rock			173	237		
Shale			237	360		
Sand			360	384		
Shale			384	411		
Red Rock			411	453		
Shale			453	482		
Red Rock			495	502		
Shale			502	536		
Sand			536	552		
Red Rock			552	578		
Shale			578	586		
Sand			586	674		
Shale			674	692		
Red Rock			692	711		
Shale			711	730		
Sand			730	769		
Red Rock			769	888		
Shale			888	955		
Red Rock			955	1008		
Shale			1008	1068		
Red Rock			1068	1097		

(over)

\* Indicates Electric Log tops in the remarks section.

JUL 25 1980

Formation	Color	Hard or Soft	Top Feet <sup>(2)</sup>	Bottom Feet	Oil, Gas or Water	* Remarks
Shale			1097	1110		
Salt Sand			1110	1174		
Shale			1174	1234		
Sand			1234	1258		
Shale			1258	1368		
Sand			1368	1442		
Shale			1442	1500		
Sand			1500	1540		
Shale			1540	1680		
Maxon			1680	1748		
Big Lime			1748	1863		
Kenner Sand			1863	1887		
Shale			1887	1926		
Injun Sand			1926	1976		
Shale			1976	2334		
Coffee Shale			2334	2358		
Berea Sand			2358	2362		
Shale			2362	3546		
Brown Shale			3546	4103		
Shale			4103	4518		
Marcellus Shale			4518	4748		
Onondaga L.S.			4748	4844		
Oriskany Sand			4844	4893		
Helderberg L.S.			4893	4976		
Log Total Depth				4976		

Date April 21, 1980

APPROVED IZAP  
Operations Manager

Owner



RECEIVED

OCT 12 1977

RECEIVED

FEB 15 1978

STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES

Oil and Gas Division

OIL & GAS DIVISION  
DEPT. OF MINES

OIL & GAS DIVISION  
DEPT. OF MINES

WELL RECORD

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

Quadrangle Ripley

Permit No. JAC 1385

Company Kaiser Exploration & Mining Co.  
Address Box 98, Ravenswood, W. Va.  
Farm L.G. Griffith Acres 72  
Location (waters) Cooper Fork of Sandy Creek  
Well No. DEK #16 Elev. 821  
District Ravenswood County Jackson  
The surface of tract is owned in fee by  
L.G. Griffith, et ux  
Address Rt. 3, Sandyville, W. Va.  
Mineral rights are owned by Same as above  
Address \_\_\_\_\_  
Drilling Commenced December 8, 1976  
Drilling Completed December 18, 1976  
Initial open flow Show cu. ft. -0- bbls.  
Final production 150 M cu. ft. per day \_\_\_\_\_ bbls.  
Well open \_\_\_\_\_ hrs. before test 720 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	205	205	100 Sax
8 5/8			
7	2230	2230	75 Sax
5 1/2			
4 1/2	4955	4955	215 Sax
3			
2			
Liners Used			

Well treatment details:

Attach copy of cementing record.

Perforated: 4856'-4858' with 16 shots  
Frac with 470 bbl water and 13,000# sand - tested non-commercial after frac. Perf. Marcellus  
' 4470-4746 w/26 shots - no treatment. Perf. Br. Shale 3820-4098 w/27 shots - frac with  
~~XXXXXXXXXXXXXXXXXXXX~~ 1020 bbls. water & 85,000# sand & 1000 gal HCl.

Coal was encountered at \_\_\_\_\_ Feet \_\_\_\_\_ Inches  
Fresh water \_\_\_\_\_ Feet Salt Water \_\_\_\_\_ Feet  
Producing Sand Oriskany Sand ~~Dev.~~ Shale & Marcellus Depth 3820-4098- & 4470-4746

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	* Remarks
Red Shales			0	162		
Sand			162	173		
Red Rock			173	237		
Shale			237	360		
Sand			360	384		
Shale			384	411		
Red Rock			411	453		
Shale			453	482		
Sand			482	495		
Red Rock			495	502		
Shale			502	536		
Sand			536	552		
Red Rock			552	578		
Shale			578	586		
Sand			586	674		
Shale			674	692		
Red Rock			692	711		
Shale			711	730		
Sand			730	769		
Red Rock			769	888		
Shale			888	955		
Red Rock			955	1008		
Shale			1008	1068		
Red Rock			1068	1097		

(over)

\* Indicates Electric Log tops in the remarks section.

FEB 21 1978

Formation	Color	Hard or Soft	Top Feet <sup>8</sup> / <sub>15</sub>	Bottom Feet	Oil, Gas or Water	* Remarks
Shale			1097	1110		
Salt Sand			1110	1174		
Shale			1174	1234		
Sand			1234	1258		
Shale			1258	1368		
Sand			1368	1442		
Shale			1442	1500		
Sand			1500	1540		
Shale			1540	1680		
Maxon			1680	1748		
Big Lime			1760	1863		
Keener Sand			1863	1887		
Shale			1887	1926		
Injun Sand			1926	1976		
Shale			1976	2334		
Coffee Shale			2334	2358		
Berea Sand			2358	2362		
Shale			2362	3546		
Brown Shale			3546	4103		
Shale			4103	4518		
Marcellus Shale			4518	4748		
Onondaga L.S.			4748	4844		
Oriskany Sand			4844	4893		
Helderberg L.S.			4893	4976		
Log Total Depth				4976		

Date October 10, 19 77

APPROVED

Ralph A. Payne

Owner

By Staff Petroleum Geologist

(Title)



STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES

Oil and Gas Division

WELL RECORD

RECEIVED

OCT 12 1977

OIL & GAS DIVISION  
DEPT. OF MINES

Quadrangle Ripley

Permit No. JAC 1385

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

Company Kaiser Exploration & Mining Co.  
Address Box 98, Ravenswood, W.Va.  
Farm L.G. Griffith Acres 72  
Location (waters) Cooper Fork of Sandy Creek  
Well No. DEK #16 Elev. 821  
District Ravenswood County Jackson  
The surface of tract is owned in fee by \_\_\_\_\_  
L.G. Griffith, et ux  
Address Rt. 3, Sandyville, W.Va.  
Mineral rights are owned by Same as above  
Address \_\_\_\_\_  
Drilling Commenced December 8, 1976  
Drilling Completed December 18, 1976  
Initial open flow Show cu. ft. -0- bbls.  
Final production \_\_\_\_\_ cu. ft. per day \_\_\_\_\_ bbls.  
Well open \_\_\_\_\_ hrs. before test \_\_\_\_\_ RP.  
Well treatment details:

Casing and Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft. (Sks.)
Size			
20-16			
Cond.			
13-10"			
9 5/8	205	205	100 Sax
8 5/8			
7	2230	2230	75 Sax
5 1/2			
4 1/2	4955	4955	215 Sax
3			
2			
Liners Used			

Attach copy of cementing record.

Perforated: 4856'-4858' with 16 shots  
Frac with 470 bbl water and 13,000# sand

Testing not complete.

Coal was encountered at \_\_\_\_\_ Feet \_\_\_\_\_ Inches  
Fresh water \_\_\_\_\_ Feet \_\_\_\_\_ Salt Water \_\_\_\_\_ Feet \_\_\_\_\_  
Producing Sand Oriskany Sand Depth \_\_\_\_\_

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	* Remarks
Red Shales			0	162		
Sand			162	173		
Red Rock			173	237		
Shale			237	360		
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Red Rock			692	711		
Shale			711	730		
Sand			730	769		
Red Rock			769	888		
Shale			888	955		
Red Rock			955	1008		
Shale			1008	1068		
Red Rock			1068	1097		

(over)

OCT 21 1977

\* Indicates Electric Log tops in the remarks section.

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	* Remarks
Shale			1097	1110		
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Shale			1540	1680		
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Big Lime			1760	1863		
Keener Sand			1863	1887		
Shale			1887	1926		
Injun Sand			1926	1976		
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Berea Sand			2358	2362		
Shale			2362	3546		
Brown Shale			3546	4103		
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Onondaga L.S.			4748	4844		
Oriskany Sand			4844	4893		
Helderberg L.S.			4893	4976		
Log Total Depth				4976		

Date October 10, 19 77

APPROVED Robert A. Payne, Owner

By Staff Petroleum Geologist  
(Title)



STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES

Oil and Gas Division

OIL AND GAS WELL PERMIT APPLICATION

RECEIVED  
DEC 3 1976

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

DATE December 3, 1976

Surface Owner L. G. Griffith, et ux  
Address Rt. 3, Sandyville, W. Va.  
Mineral Owner L. G. Griffith, et al  
Address Rt. 3, Sandyville, 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 L. G. Griffith Acres 72 acres  
Location (waters) Copper Fork of Sandy Creek  
Well No. DEK #16 Elevation 821 Gr.  
District Ravenswood County Jackson  
Quadrangle Ripley 15', Sandyville 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 4-3-77.

INSPECTOR Richard J. Morris  
TO BE NOTIFIED \_\_\_\_\_  
ADDRESS P.O. Box 372, Grantsville, W.Va.  
PHONE 354-7259

Robert H. Powell  
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 January 24 1976 by L. G. Griffith et ux made to Devon Corporation & Eason Oil Co. and recorded on the 3rd day of November 1976, in Jackson County, Book 142 Page 142

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:

WEST VIRGINIA GEOLOGICAL AND  
ECONOMIC SURVEY  
P. O. BOX 879  
MORGANTOWN, WEST VIRGINIA 26505  
AC-304 - 292-6331

Address  
of  
Well Operator

Very truly yours, KAISER EXPLORATION & MINING CO.  
(Sign Name) Donald H Powell  
Well Operator

Box 98  
       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

JAC-1385 PERMIT NUMBER

"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 Donald H Powell

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 Ray Resources Corp. NAME Bill W. Backus  
 ADDRESS 630 Commerce Square, Charleston, WV ADDRESS Box 1433, Charleston, WV  
 TELEPHONE 344-8393 TELEPHONE 343-3171  
 ESTIMATED DEPTH OF COMPLETED WELL: 5000 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	200	200	100 Sax
8 - 5/8			
7	2500	2500	75 Sax
5 1/2			
4 1/2	5000	5000	110 Sax
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

47-35-1385



**COMPENSATED  
FORMATION DENSITY LOG**  
Gamma-Gamma

COUNTY FIELD or LOCATION WELL COMPANY	COMPANY	KAISER EXPLORATION AND MINING COMPANY		
	WELL	L.G. GRIFFITH DEK #16		
	FIELD	WILDCAT		
	COUNTY	JACKSON	STATE	WEST VIRGINIA
	Location:	API Serial No.	47-035-JAC 1385	Other Services:
	Sec.	Twp.	Rge.	DIL SNP TEMP.

Permanent Datum:	GROUND LEVEL	Elev.:	821	Elev.:	K.B. 831
Log Measured From	KB		10	Ft. Above Perm. Datum	D.F. -
Drilling Measured From	KB				G.L. 821

Date	12/17/76			
Run No.	ONE			
Depth-Driller	4964			
Depth-Logger	4976			
Btm. Log Interval	4974			
Top Log Interval	2245			
Casing-Driller	7" @ 2240	@	@	@
Casing-Logger	2244			
Bit Size	6 1/4			
Type Fluid in Hole	AIR-GAS			
Fluid Level	-			
Dens.	Visc.	-	-	
pH	Fluid Los	-	- ml	ml ml ml ml
Source of Sample	-			
R <sub>m</sub> @ Meas. Temp.	- @ - °F	@ °F	@ °F	@ °F
R <sub>mf</sub> @ Meas. Temp.	- @ - °F	@ °F	@ °F	@ °F
R <sub>mc</sub> @ Meas. Temp.	- @ - °F	@ °F	@ °F	@ °F
Source: R <sub>mf</sub>   R <sub>mc</sub>	-   -			
R <sub>m</sub> @ BHT	- @ - °F	@ °F	@ °F	@ °F
Time Since Circ.	-			
Max. Rec. Temp.	115 °F	°F	°F	°F
Equip.   Location	7717   DUBOIS			
Recorded By	BYRD			
Checked By	MR. YOUSE			

Gamma Ray

Caliper Curve

2300

DEK-16

4 HOLES

2400

BULK DENSITY

COMPENSATION

POROSITY

AREA

