

FILE NO. \_\_\_\_\_  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY 1:200  
 PROVEN SOURCE OF ELEVATION SPOT ELEV 1008 ON HILL SOUTH OF PROPOSED LOC.

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) Donnis L Fisher  
 R.P.E. \_\_\_\_\_ L.L.S. 670

PLACE SEAL HERE

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

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
 (IF "GAS,") PRODUCTION X STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X

LOCATION: ELEVATION 952 WATER SHED GRASSLICK CREEK  
 DISTRICT RIPLEY COUNTY JACKSON  
 QUADRANGLE KENNA (really border w/ WV)

SURFACE OWNER JAMES K. SEXTON ACREAGE 75.6  
 OIL & GAS ROYALTY OWNER JAMES K. SEXTON LEASE ACREAGE 75.5  
 LEASE NO. \_\_\_\_\_

PROPOSED WORK: DRILL X CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION \_\_\_ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_

PLUG AND ABANDON \_\_\_ CLEAN OUT AND REPLUG \_\_\_  
 TARGET FORMATION SHALE ESTIMATED DEPTH 5141  
 WELL OPERATOR KAISER EXPLORATION & MINING DESIGNATED AGENT KAISER EXPLORATION & MINING COMPANY  
 ADDRESS PO BOX 8, RAVENSWOOD, WEST VIRGINIA 26164 ADDRESS PO BOX 8, RAVENSWOOD, WEST VIRGINIA 26164

STATE OF WEST VIRGINIA  
 DEPARTMENT OF MINES  
 OIL AND GAS DIVISION

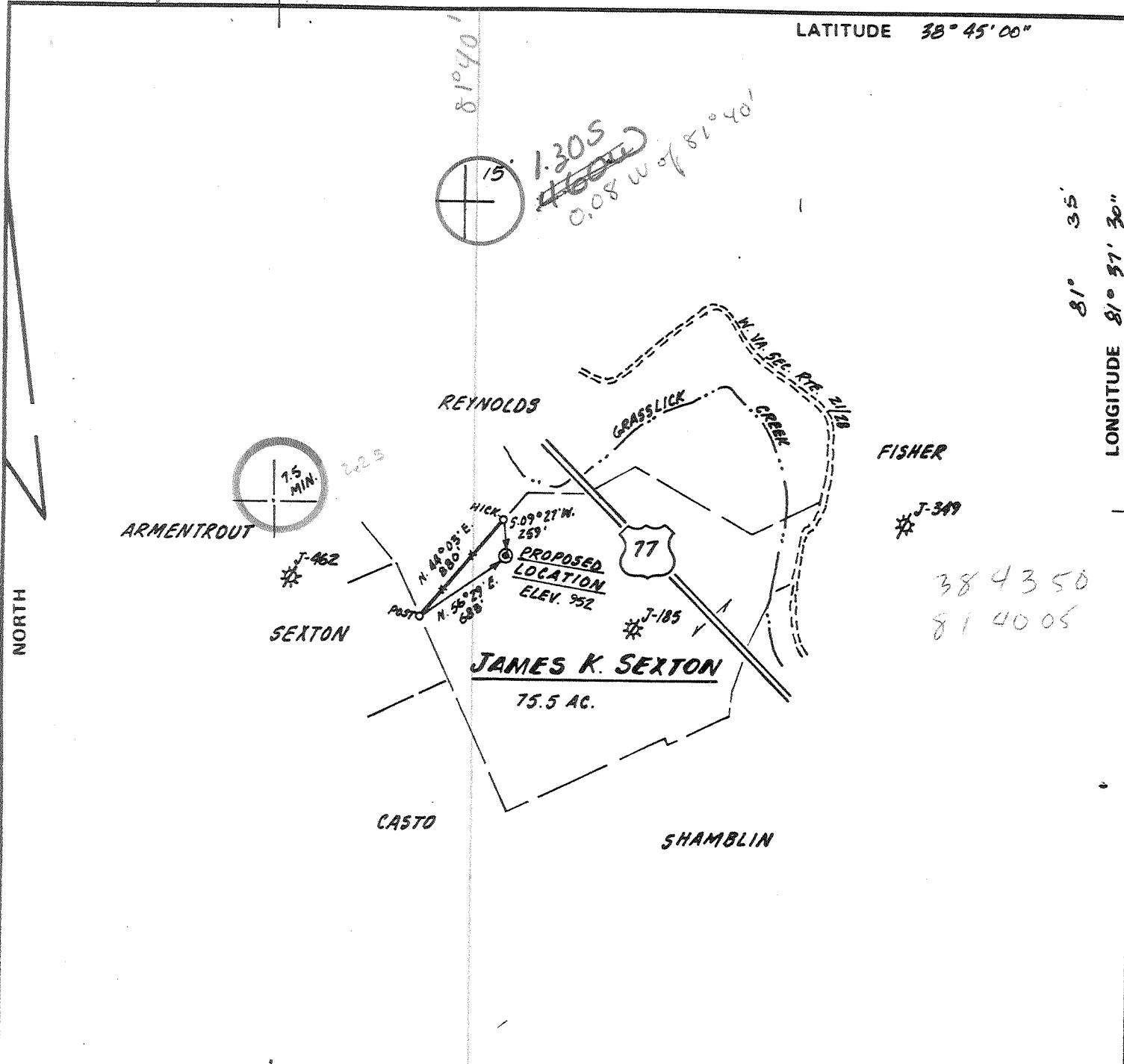
DATE OCTOBER 2, 19 81  
 OPERATOR'S WELL NO. KEM 137  
 API WELL NO. \_\_\_\_\_  
47 - 035 - 1620-Frac.  
 STATE COUNTY PERMIT

DEEP WELL

MAY 7 1984



OPERWEL 00W0 6-6 Elk-Poca (Sissonville) (192)



FILE NO. \_\_\_\_\_  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY 1:200  
 PROVEN SOURCE OF ELEVATION SPOT ELEV 1008 ON HILL SOUTH OF PROPOSED LOC.

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) Donnis L. A. [Signature]  
 R.P.E. \_\_\_\_\_ L.L.S. 670

PLACE SEAL HERE

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



DATE OCTOBER 2, 19 81  
 OPERATOR'S WELL NO. KEM 137  
 API WELL NO. \_\_\_\_\_  
47 - 035 - 1620  
 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA  
 DEPARTMENT OF MINES  
 OIL AND GAS DIVISION

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
 (IF "GAS,") PRODUCTION X STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X  
 LOCATION: ELEVATION 952 WATER SHED GRASSLICK CREEK  
 DISTRICT RIPLEY COUNTY JACKSON  
 QUADRANGLE KENNA 9 15' NW  
 SURFACE OWNER JAMES K. SEXTON ACREAGE 75.5  
 OIL & GAS ROYALTY OWNER JAMES K. SEXTON LEASE ACREAGE 75.5  
 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) \_\_\_\_\_

DEEP WELL

PLUG AND ABANDON \_\_\_ CLEAN OUT AND REPLUG \_\_\_  
 TARGET FORMATION SHALE ESTIMATED DEPTH 5141  
 WELL OPERATOR KAISER EXPLORATION & MINING DESIGNATED AGENT KAISER EXPLORATION & MINING COMPANY  
 ADDRESS PO BOX B, RAVENSWOOD, WEST VIRGINIA 26164 ADDRESS PO BOX B, RAVENSWOOD, WEST VIRGINIA 26164  
 1983 - DOWND - addit. zone treated

OCT 22 1981

RECEIVED



IV-35 (Rev 8-81)

NOV 17 1984

State of West Virginia

OIL & GAS DIVISION DEPT. OF MINES

Department of Mines Oil and Gas Division

REVISED

Date 12/20/84 Operator's Well No. KEM 137 Farm J. Sexton API No. 47 - 035 - 1620 FRAC

WELL OPERATOR'S REPORT OF

DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

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

LOCATION: Elevation: 952-960 Watershed Grasslick District: Ripley County Jackson Quadrangle Kenna

COMPANY Kaiser Exploration and Mining Company

ADDRESS P. O. Box 8 Ravenswood, WV 26164

DESIGNATED AGENT R. A. Pryce

ADDRESS Same

SURFACE OWNER James Sexton

ADDRESS Rt. 3, Ripley, WV 25271

MINERAL RIGHTS OWNER Same

ADDRESS

OIL AND GAS INSPECTOR FOR THIS WORK Richard Morris ADDRESS P. O. Box 372 Grantsville, WV

PERMIT ISSUED 5-4-84

DRILLING COMMENCED 10/12/81 07/15/83

DRILLING COMPLETED 10/19/81 06/28/84

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

Table with 4 columns: Casing & Tubing, Used in Drilling, Left in Well, Cement fill up Cu. ft. Rows include sizes 20-16, 13-10 3/4, 9 5/8, 8 5/8, 7, 5 1/2, 4 1/2, 3, 2, and Liners used.

GEOLOGICAL TARGET FORMATION Devonian Shales Depth 4866 feet

Depth of completed well 5130 feet Rotary X / Cable Tools

Water strata depth: Fresh N/A feet; Salt N/A feet

Coal seam depths: None Is coal being mined in the area? NO

OPEN FLOW DATA Drilled on fluid not known.

Producing formation Devonian Brown Shale Pay zone depth 4221-4424 feet

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

Final open flow 198 1241 Mcf/d Final open flow -- Bbl/d

Time of open flow between initial and final tests -- hours

Static rock pressure 900 psig (surface measurement) after 72 hours shut in

(If applicable due to multiple completion--)

Second producing formation Berea Sandstone Pay zone depth 2584-2591 feet

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

Final open flow 1043 Mcf/d Oil: Final open flow -- Bbl/d

Time of open flow between initial and final tests 4 hours

Static rock pressure 880 psig (surface measurement) after 72 hours shut in

new zone completed 6/28/84

(Continue on reverse side)

JAN 28 1985

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

7/15/83 NL McCullough to set permanent bridge plug @ 4470',  
 6/20/84 Young's to perf Berea with 28 holes (.39" dia) from 2584' to 2591'.  
 6/28/84 NOWSCO to foam frac Berea. Max. pressure: 2500 psig, treating pressure:  
 2200 psig, used #60,000 of 20/40 sand, total N<sub>2</sub>: 610 mscf, total fluid:  
 269 bbls, ISIP: 1900 psig, 5 min SIP: 1500 psig.

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 Original.					

(Attach separate sheets as necessary)

Kaiser Exploration and Mining Company  
Well Operator

By: R. W. Quast

Date: 12/20/84

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."

REVISED

Operator's Well No. KEM - 137

[09-78]

WELL OPERATOR'S REPORT  
OF

API Well No. 47 -035 -1620

W. H. H. Co. 10000 W. 10th St. Martinsburg, W. Va. 26001

DATE OF REPORT

WELL TYPE: Oil  / Gas  / Liquid Injection  / Waste Disposal   
(If "Gas", Production  / Underground storage  / Deep  / Blow

LOCATION: Elevation: 9526-9600 Watershed: Grasslick Creek  
District: Ripley County: Jackson Township: Kenna

WELL OPERATOR Kaiser Exploration and Mining Co. DESIGNATED AGENT SAME  
Address P. O. Box 8 Address \_\_\_\_\_  
Ravenswood, WV 26164

PERMITTED WORK: Drill  / Convert  / Drill deeper  / Ream  / Fracture or stimulate   
Plug off old formation  / Perforate new formation   
Other physical change in well (specify) \_\_\_\_\_  
MAY 1, 1983

PERMIT ISSUED ON October 8, 1981

OIL & GAS INSPECTOR FOR THE STATE OF WEST VIRGINIA  
DEPT. OF MINES

IF APPLICABLE: PLUGGING OF DRY HOLE OR CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING? VERBAL PERMISSION OBTAINED \_\_\_\_\_, 19\_\_\_\_

Name Richard Morris  
Address P. O. Box 372  
Grantsville, WV

GEOLOGICAL TARGET FORMATION: Devonian Shales Depth 4866 feet  
Depth of completed well, 5130 feet Rotary  / Cable Tools   
Water strata depth: Fresh, -- feet; salt, -- feet.  
Coal seam depths: NONE Is coal being mined in the area? NO  
Work was commenced October 12, 1981, and completed October 19, 1981

*Work-over 8/13/82* *8/18/82*

CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS				FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS
	Size	Grade	Weight per ft	New	Used	For drilling		
Conductor								Kinds NONE
Fresh water	10 3/4	H	32.75	X		263(KB)	263(KB)	150sx Class A
Coal								Sizes
Intermediate	7	K	20	X		2519(KB)	2519(KB)	65sx Pozmix 100sx Class A
Production	4 1/2	K	10.50	X			5130(KB)	225sx Pozmix
Plugging								Depth set
Miners								Perforations:
								Top Bottom
								4866 5101'(KB)

OPEN FLOW DATA

Producing formation Marcellus Shale Pay zone depth 4866 feet  
Gas: Initial open flow, N/A Mcf/d Oil: Initial open flow, 0 bbl/d  
Final open flow, 75 Mcf/d Final open flow, 0 bbl/d  
Time of open flow between initial and final tests, N/A hours  
Static rock pressure, 1175 psig (surface measurement) after 16 hours shut in

[If applicable due to multiple completion--]

Second producing formation Devonian Brown Shale Pay zone depth 4221-4424 feet  
Gas: Initial open flow, N/A Mcf/d Oil: Initial open flow, -- bbl/d  
Final open flow, 198 Mcf/d Final open flow, -- bbl/d  
Time of open flow between initial and final tests, -- hours  
Static rock pressure, 900 psig (surface measurement) after 72 hours shut in

*Additional zone completed*

*23 1983*

[08-78]

- DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.
- 11/23/81: Basin Surveys perforated Marcellus Shale selectively from 4866'-5101'(KB); 3 1/2" strip; 25 holes.
  - 11/30/81: BJ Hughes nitrogen fractured Marcellus Shale w/8 trucks, 8,000 SCF/min./truck or 64,000 SCF/min rate; Breakdown was 2800 psig; average treating pressure was 2850 psig; ISIP was 1890 PSIG; Used 1,344,000 SCF of nitrogen
  - 8/13/82: Brown shale perforation: 4221-4424' (KB); 23 shots with 3 1/8" select-fire hollow steel carriers, 0.39" diameter holes
  - 8/18/82: Brown shale frac: Breakdown pressure at 2000 psig; rate: 24 BPM; total sand: 80,000#; total nitrogen: 1,100,000 SCF; total fluid: 430 bbl; instantaneous shut in pressure: 100 psig.

WELL LOG

FORMATION	Color	Hard or Soft	Top Feet	Bottom Feet	Remarks Including indication of all free and salt water, coal, oil and gas
Soil & Shale					
Sand			0	240	
Shale			240	300	
Sand			300	325	
Shale			325	358	
Siltstone			358	478	
Shale			478	500	
Sand & Shale			500	560	
Shale			560	612	
Sand			612	709	
Shale & Siltstone			709	760	
Sand			760	1019	
Shale			1019	1053	
Salt Sand			1053	1204	
Sand & Shale			1204	1288	
Salt Sand			1288	1407	
Shale			1407	1539	
Sand			1539	1754	
Big Lime (Greenbrier)			1754	1863	
Shale Break			1863	1920	
Big Lime			1920	1943	
Shale			1943	2052	
Big Injun Sand			2052	2076	
Shale			2076	2206	
Coffee Shale (Sunbury)			2206	2571	
Berea Sand			2571	2592	
Shale			2592	2602	
Brown Shale			2602	3844	
Shale			3844	4426	Gas show @ 3668
Marcellus Shale			4426	4813	Gas show @ 4218, 4340, 4383
			4813	5148	Gas show @ 4578, 4790
Total Depth			5148		Gas show @ 4934

Onondaga @ 5131 - WTL

(Attach separate sheets to complete as necessary)

KAISER EXPLORATION AND MINING COMPANY

Well Operator

By

*[Signature]*

Its

Operation Manager

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 coal, encountered in the drilling of a well."

[08-78]

WELL OPERATOR'S REPORT  
OF

REPAIRS, THE TUBING AND/OR STEEL LINES, TO REMOVE CHANGE

WELL TYPE: Oil      / Gas X / Liquid Injection      / Waste Disposal       
(If "Gas", Production X / Underground storage      / Deep      / Shallow X)  
LOCATION: Elevation: 952 Watershed: Grasslick Creek  
District: Ripley County: Jackson Sub-tract: Kenna

WELL OPERATOR Kaiser Exploration and Mining Co. DESIGNATED AGENT SAME  
Address P. O. Box 8 Address       
Ravenswood, WV 26164

PERMITTED WORK: Drill X / Convert      / Drill deeper      / Re-drill      / Fracture or stimulate X  
Plug off old formation      / Perforate new formation      / **RECEIVED**  
Other physical change in well (specify)      **FEB 9 - 1962**

PERMIT ISSUED ON October 8, 19 81 OIL & GAS INSPECTOR FOR THIS WORK: **OIL AND GAS DIVISION  
WV DEPARTMENT OF MINES**  
Name Richard Morris  
Address P. O. Box 372  
Grantsville, WV

GEOLOGICAL TARGET FORMATION: Devonian Shales Depth 4866 feet  
Depth of completed well, 5130 feet Rotary X / Cable Tools       
Water strata depth: Fresh,      feet; salt,      feet.  
Coal seam depths: NONE Is coal being mined in the area? NO  
Work was commenced October 12, 19 81, and completed October 19, 19 81

CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS				FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS
	Size	Grade	Weight per ft	New	Used	For drilling		
Conductor								None
Fresh water	10 3/4	H	32.75	X		263(KB)	263(KB)	150sx Class A
Seal								Sizes
Intermediate	7	K	20	X		2519(KB)	2519(KB)	65sx Pozmix 100sx Class A
Production	4 1/2	K	10.50	X			5130(KB)	225sx Pozmix
Tubing								Deaths set
Liners								Perforations:
								Top Bottom
								4866 5101' (KB)

OPEN FLOW DATA

Producing formation Rivestreet Marcellus Shale Pay zone depth 4866-5101 feet  
Gas: Initial open flow, N/A Mcf/d Oil: Initial open flow, 0 bbl/d  
Final open flow, 75 Mcf/d Final open flow, 0 bbl/d  
Time of open flow between initial and final tests, N/A hours  
Static rock pressure, 1175 psig (surface measurement) after 16 hours shut in.  
[If applicable for 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 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.

NOV 15 1982

[08-78]

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.  
 11/23/81: Basin Surveys perforated Marcellus Shale selectively from 4866'-5101'(KB);  
 3½" strip; 25 holes.  
 11/30/81: BJ Hughes nitrogen fractured Marcellus Shale w/8 trucks, 8,000 SCF/min./truck  
 or 64,000 SCF/min rate; Breakdown was 2800 psig; average treating pressure  
 was 2850 psig; ISIP was 1890 PSIG; Used 1,344,000 SCF of nitrogen

WELL LOG

FORMATION	Color	Hard or Soft	Top Feet	Bottom Feet	Remarks Including indication of all fres and salt water, coal, oil and gas
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Sand			0	240	
Shale			240	300	
Sand			300	325	
Shale			325	358	
Siltstone			358	478	
Shale			478	500	
Sand & Shale			500	560	
Shale			560	612	
Sand			612	709	
Shale & Siltstone			709	760	
Sand			760	1019	
Shale			1019	1053	
Salt Sand			1053	1204	
Sand & Shale			1204	1288	
Salt Sand			1288	1407	
Shale			1407	1539	
Sand			1539	1754	
Big Lime (Greenbrier)			1754	1863	
Shale Break			1863	1920	
Big Lime			1920	1943	
Shale			1943	2052	
Big Injun Sand			2052	2076	
Shale			2076	2206	
Coffee Shale (Sunbury)			2206	2571	
Berea Sand			2571	2592	
Shale			2592	2602	
Brown Shale			2602	3844	Gas show @ 3668
Shale			3844	4426	Gas show @ 4218, 4340, 4383
Marcellus Shale			4426	4813	Gas show @ 4578, 4790
<del>Marcellus</del>			4813	5148	Gas show @ 4934
Total Depth			5148		
	from el-log				
	to p				
	Sunbury	2570			
	Berea	2592			
5148	WCU	2603			
3608	W. Huzar	3844			
2546	Jawa	4426			
	Angola	4564			
	Reinforced	4814			
	Somepa	4956			
	Marcellus	5119			
	Onondaga	5132			

(Attach separate sheets to complete as necessary)

KAISER EXPLORATION AND MINING COMPANY

Well Operator

By [Signature]  
 Its General Manager

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 soil, encountered in the drilling of a well."





STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES

RECEIVED

OCT 5 - 1981

Oil and Gas Division

OIL AND GAS DIVISION  
WV DEPARTMENT OF MINES

OIL AND GAS WELL PERMIT APPLICATION

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

DATE October 2, 1981  
Company Kaiser Exploration and Mining Company  
Address P. O. Box 8, Ravenswood, WV 26164  
Farm James K. Sexton Acres 75.5  
Location (waters) Grasslick Creek  
Well No. KEM #137 Elevation 952'  
District Ripley County Jackson  
Quadrangle Kenna

Surface Owner James K. Sexton  
Address Rt. 3, Ripley, WV 25271  
Mineral Owner Same  
Address \_\_\_\_\_  
Coal Owner Same  
Address \_\_\_\_\_  
Coal Operator None  
Address \_\_\_\_\_

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 6-8-82

INSPECTOR  
TO BE NOTIFIED Richard Morris  
ADDRESS P. O. Box 372, Grantsville, WV  
PHONE 354-7259

*Fred B. Burchett*  
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 October 2 1981 by James K & Barbara Sexton made to Kaiser Exploration and Mining Company and recorded on the \_\_\_\_\_ day of \_\_\_\_\_ 19\_\_\_\_ in Jackson County, Book \_\_\_\_\_ Page \_\_\_\_\_  
 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

Very truly yours,  
(Sign Name) K. A. P.  
Well Operator  
Kaiser Exploration and Mining Company  
P. O. Box 8  
Street  
Ravenswood  
City or Town  
West Virginia 26164  
State

Address of Well Operator

\*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 there to by the department and that the same is approved and the well operator authorized to proceed.

BLANKET BOND

47-035-1620

PERMIT NUMBER

PROPOSED WORK ORDER TO X DRILL \_\_\_\_\_ DEEPEN \_\_\_\_\_ FRACTURE-STIMULATE \_\_\_\_\_  
 DRILLING CONTRACTOR: (If Known) \_\_\_\_\_ RESPONSIBLE AGENT: \_\_\_\_\_  
 NAME Unknown at this time \_\_\_\_\_ NAME Robert A. Pryce \_\_\_\_\_  
 ADDRESS \_\_\_\_\_ ADDRESS P. O. Box 8, Ravenswood, WV 26164 \_\_\_\_\_  
 TELEPHONE \_\_\_\_\_ TELEPHONE 273-5371 \_\_\_\_\_  
 ESTIMATED DEPTH OF COMPLETED WELL: 5141' \_\_\_\_\_ ROTARY X \_\_\_\_\_ CABLE TOOLS \_\_\_\_\_  
 PROPOSED GEOLOGICAL FORMATION: Shale \_\_\_\_\_  
 TYPE OF WELL: OIL \_\_\_\_\_ GAS X \_\_\_\_\_ COMB. \_\_\_\_\_ STORAGE \_\_\_\_\_ DISPOSAL \_\_\_\_\_  
 RECYCLING \_\_\_\_\_ WATER FLOOD \_\_\_\_\_ OTHER \_\_\_\_\_

TENTATIVE CASING PROGRAM:

CASING AND TUBING SIZE	USED FOR DRILLING	LIFT IN WELL	CEMENT FILL UP OR SACKS - CUBIC FT.
20 - 16			
13 - 10 10 3/4"	250'	250'	150 sks class A
9 - 5/8			
8 - 5/8			
7	2500'	2500'	65 sks 50/50 pozmix
5 1/2			100 sks class A
4 1/2	5141'	5141'	225 sks 50/50 pozmix
3			Perf. Top
2			Perf. Bottom
Liners			Perf. Top
			Perf. Bottom

APPROXIMATE FRESH WATER DEPTHS \_\_\_\_\_ FEET \_\_\_\_\_ SALT WATER \_\_\_\_\_ FEET \_\_\_\_\_  
 APPROXIMATE COAL DEPTHS \_\_\_\_\_  
 IS COAL BEING MINED IN THE AREA? None \_\_\_\_\_ 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

**RECEIVED**

APR 18 1984



1) Date: April 4, 19 84  
 2) Operator's Well No. KEM-137  
 3) API Well No. 47 - 035 - 1620-FRAC  
 State County Permit

**OIL & GAS DIVISION**  
**DEPT. OF MINES** OF WEST VIRGINIA  
 DEPARTMENT OF MINES, OIL AND GAS DIVISION

**APPLICATION FOR A WELL WORK PERMIT**

- 4) WELL TYPE: A Oil  Gas  /  
 B (If "Gas", Production  / Underground storage  / Deep  / Shallow  /)
- 5) LOCATION: Elevation: 952' Watershed: Grasslick Creek  
 District: Ripley County: Jackson Quadrangle: Kenna
- 6) WELL OPERATOR KEMAS Kaiser Exp & Mining Co. 7) DESIGNATED AGENT R.A. Pryce  
 Address P. O. Box 8 Address Same  
Ravenswood, WV 26164
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED Name J. Tephahock  
 Address Ripley, WV 25271
- 9) DRILLING CONTRACTOR: Name Kaiser Drilling Rig #1  
 Address Ravenswood, WV 26164
- 10) PROPOSED WELL WORK: Drill  / Drill deeper  / Redrill  / Stimulate  /  
 Plug off old formation  / Perforate new formation  /  
 Other physical change in well (specify) Squeeze 4 1/2" csg; treat Berea; isolate Shale,
- 11) GEOLOGICAL TARGET FORMATION, Berea Sandstone Berea with tubing and packer
- 12) Estimated depth of completed well, 4470' (PBD) feet
- 13) Approximate trata depths: Fresh, 150 feet; salt, 700 feet.
- 14) Approximate coal seam depths: None Is coal being mined in the area? Yes  / No  /

15) CASING AND TUBING PROGRAM

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		Kinds		
Conductor										None	
Fresh water	10 3/4	H	40.50	X		263' (KB)	263' (KB)	150 sx Neat			
Coal											
Intermediate	7"	K	20	X		2519' (KB)	2519' (KB)	65 sks P 100 sks Neat			
Production	4 1/2"	K	10.50	X			5130' (KB)	225 sks p 200 sks set			
Tubing	2 3/8"	J	4.6	X			4395' (KB)				
Liners											
								Perforations:			
								PBD: 4470' KB		Top	Bottom
								Perm. Bridge Plug		4221	4424' (KB)

**OFFICE USE ONLY**  
**DRILLING PERMIT**

Permit number 47-035-1620-FRAC

May 4, 1984

Date

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.

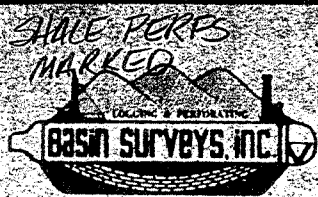
Permit expires May 4, 1986 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <b>BLANKET</b>	Agent: <input checked="" type="checkbox"/>	Plat: <u>MH</u>	Casing: <u>MH</u>	Fee: <u>967-033</u>
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*Margaret J. Hass*  
 Administrator, Office of Oil and Gas

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

47-035-01620



**Basin Surveys, Inc.**

**COMPENSATED DENSITY LOG**

FILING NO. PERMIT No. 47-035-1620  <i>Sh: good-fair</i>	COMPANY KAISER EXPLORATION & MINING COMPANY WELL JAMES K. SEXTON KEM#137 FIELD RIPLEY DISTRICT COUNTY JACKSON STATE W.VA. LOCATION: BRASSLICK CREEK QUAD: KENNA SEC _____ TWP _____ RGE _____	OTHER SERVICES:
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Permanent Datum: <u>GROUND LEVEL</u> ; Elev.: <u>952'</u> Log Measured From <u>KELLY BUSHING</u> , <u>8</u> Ft. Above Perm. Datum Drilling Measured From <u>KELLY BUSHING</u>	Elev.: K.B. <u>952'</u> D.F. <u>959'</u> G.L. <u>952'</u>
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Date	18 OCTOBER 81	19 OCTOBER 81
Run No.	ONE	TWO
Type Log	GR-CDL-CAL-TEMP	USGD
Depth-Driller	5130'	5130'
Depth-Logger	5148'	5148'
Bottom: logged interval	5144'	5148'
Top logged interval	2526' GR TO SURF.	2526'
Type fluid in hole	DRY-AIR DRILLED	DRY
Salinity, PPM Cl.	N/A	N/A
Density	N/A	N/A
Level	N/A	N/A
Max rec. temp., deg F.	N/A	N/A
Operating rig time	3 1/2 HRS.	1 1/2 HRS.
Recorded by	R. REINECKE	R. REINECKE
Witnessed by	MR DURST	MR MATHEINS

Run No.	Bore-Hole Record				Casing Record			
	Bit	From	To	Size	Wgt.	From	To	
ONE	6 1/4"	2526'	T.D.	7"	-	SURFACE	2526'	

THIS HEADING AND LOG CONFORMS TO API RP 33 FOLD HERE

EA

