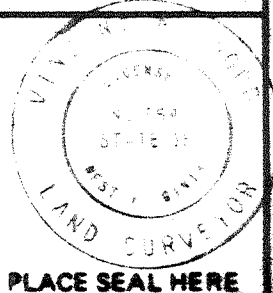


FILE NO. _____
 DRAWING NO. _____
 SCALE 1" = 500'
 MINIMUM DEGREE OF ACCURACY 1:200
 PROVEN SOURCE OF ELEVATION SPOT ELEV. 996
HIGH POINT, SOUTH OF SITE

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) Vernon A. Wood
 R.P.E. _____ L.L.S. 664



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

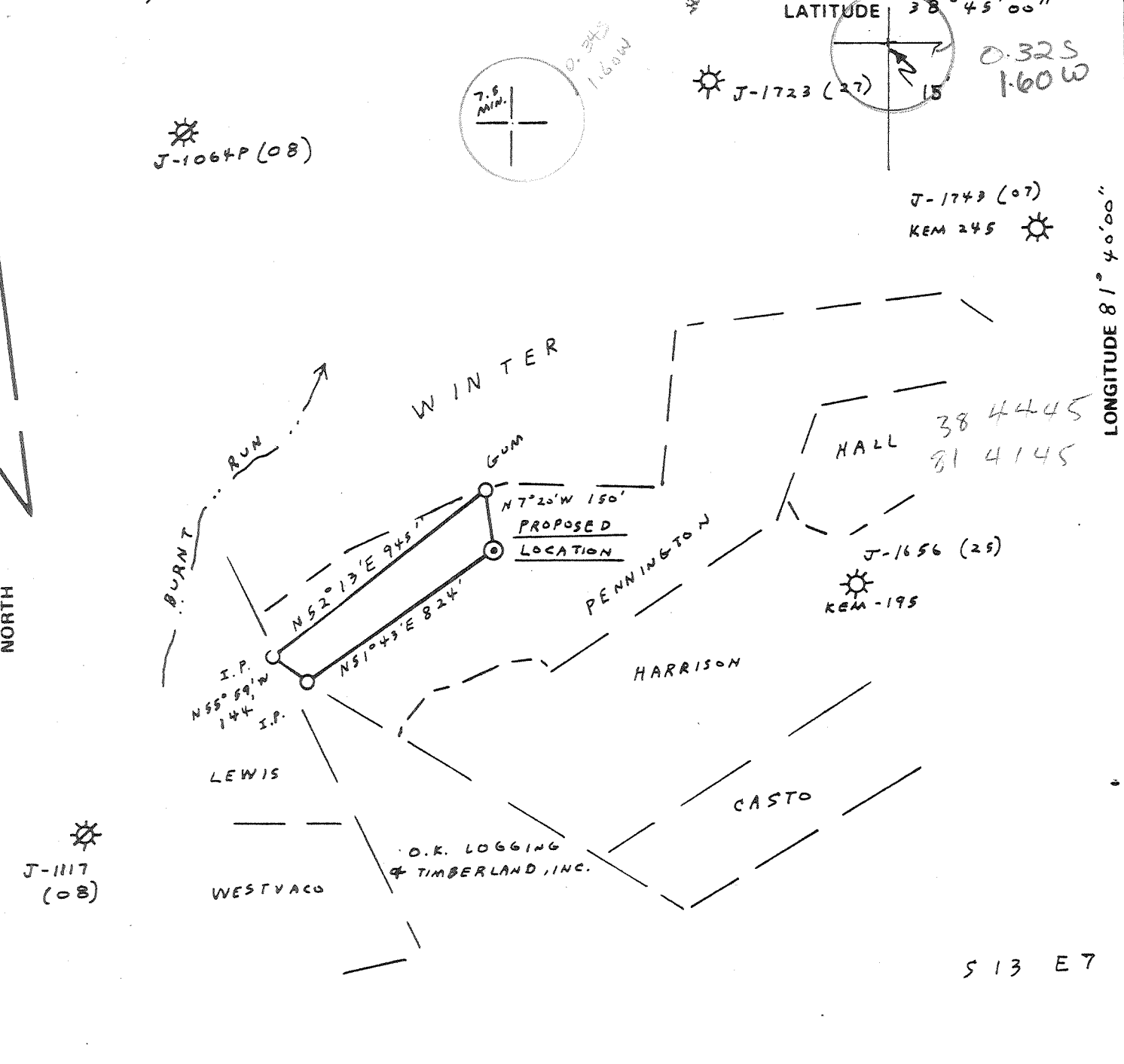


DATE AUGUST 18 1982
 OPERATOR'S WELL NO. KEM 173 REV.
 API WELL NO. _____
47 - 035 - 1655 - Red
 STATE COUNTY PERMIT
Free.

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 905 WATER SHED BURNT RUN
 DISTRICT RIPLEY COUNTY JACKSON
 QUADRANGLE KEM A
 SURFACE OWNER ARTHUR PENNINGTON ACREAGE 37.3
 OIL & GAS ROYALTY OWNER ARTHUR PENNINGTON, ET AL. LEASE ACREAGE 29.78
 LEASE NO. 88-02-055
 PROPOSED WORK: DRILL _____ 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 PENNINGTON BRN ESTIMATED DEPTH 4506
 WELL OPERATOR KAISER EXPLOR. & MIN. CO. DESIGNATED AGENT KAISER EXPLORATION AND MINING CO.
 ADDRESS P.O. BOX 8 RAVENSWOOD, W. V. 26164 ADDRESS P.O. BOX 8 RAVENSWOOD, W. V. 26164

MAY 14 1984



FILE NO. _____
 DRAWING NO. _____
 SCALE 1" = 500'
 MINIMUM DEGREE OF ACCURACY 1:200
 PROVEN SOURCE OF ELEVATION SPOT ELEV. 996
HIGH POINT, SOUTH OF SITE

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) Vincent W. Wood
 R.P.E. _____ L.L.S. 664

PLACE SEAL HERE

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



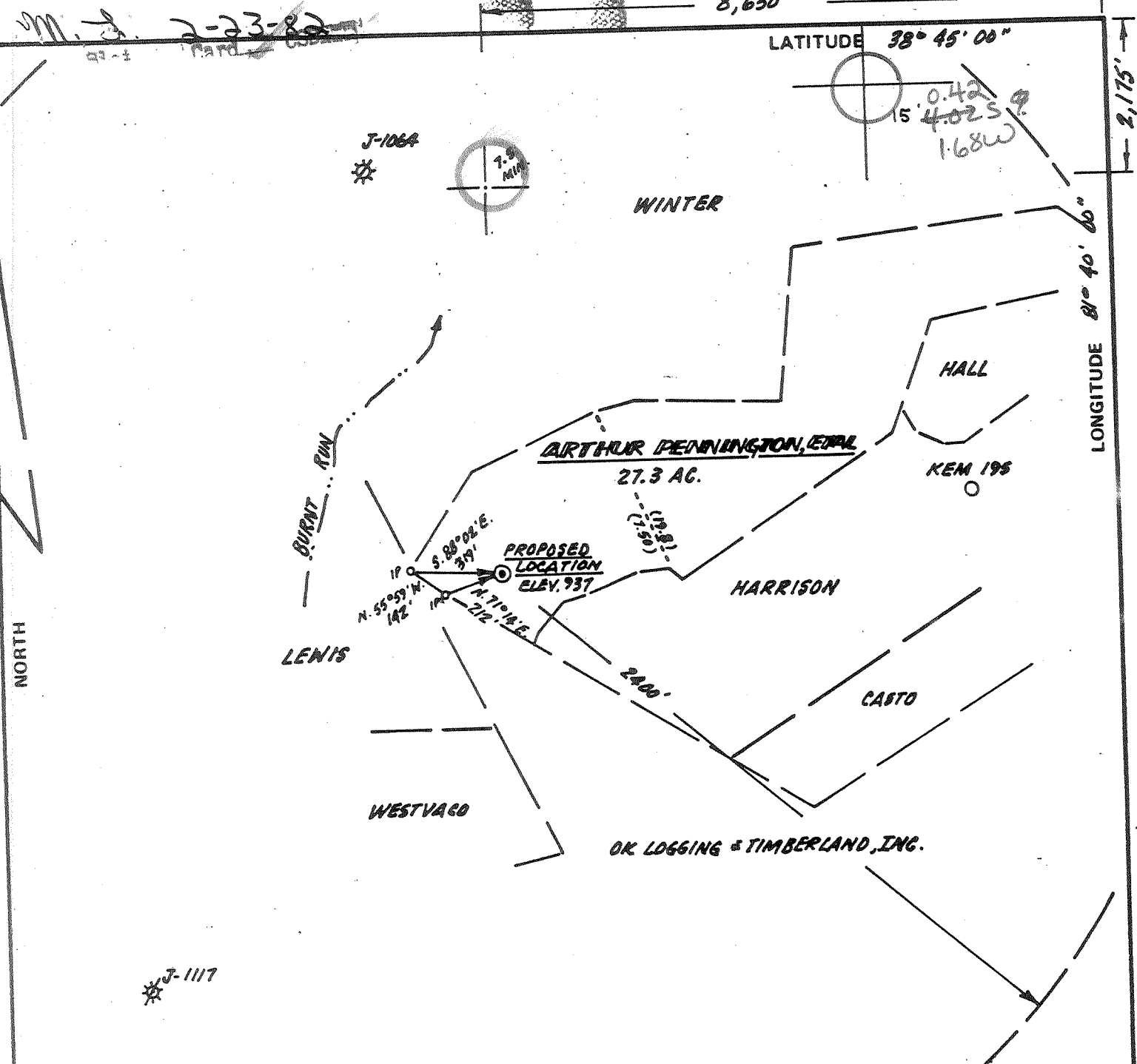
DATE AUGUST 18, 19 82
 OPERATOR'S WELL NO. KEM 173 REV.
 API WELL NO. 47-035-1655-Rev
 STATE COUNTY PERMIT

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 905 WATER SHED BURNT RUN
 DISTRICT RIPLEY COUNTY JACKSON
 QUADRANGLE KENNA 415' NW
 SURFACE OWNER ARTHUR PENNINGTON ACREAGE 27.3
 OIL & GAS ROYALTY OWNER ARTHUR PENNINGTON, ET AL. LEASE ACREAGE 29.78
 LEASE NO. 88-02-055
 PROPOSED WORK: DRILL X 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 ___
 TARGET FORMATION DEVONIAN BROWN SHALE ESTIMATED DEPTH 4586
 WELL OPERATOR KAISER EXPLOR. & MIN. CO. DESIGNATED AGENT KAISER EXPLORATION AND MINING CO.
 ADDRESS P.O. BOX 8 ADDRESS P.O. BOX 8
RAVENSWOOD, W. V. 26164 RAVENSWOOD, W. V. 26164

SEP 7 1982



J-1117

FILE NO. _____
 DRAWING NO. _____
 SCALE 1" = 500'
 MINIMUM DEGREE OF ACCURACY 1:200
 PROVEN SOURCE OF ELEVATION SPOT ELEV. 996
HIGH POINT SOUTH OF LCL.

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) Donnie L. Fisher
 R.P.E. _____ L.L.S. 670

LAND SURVEYOR
 PLACE SEAL HERE

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



DATE FEBRUARY 16, 19 82
 OPERATOR'S WELL NO. KEM 173
 API WELL NO. _____
47 - 035 - 1655
 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 937 WATER SHED BURNT RUN
 DISTRICT RIPLEY COUNTY JACKSON
 QUADRANGLE KENNA (7.5) KENNA (16') NW
 SURFACE OWNER ARTHUR PENNINGTON ACREAGE 27.3
 OIL & GAS ROYALTY OWNER ARTHUR PENNINGTON, ETAL LEASE ACREAGE 29.78
 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) _____
 PLUG AND ABANDON ___ CLEAN OUT AND REPLUG ___
 TARGET FORMATION SHALE ESTIMATED DEPTH 5102
 WELL OPERATOR KAIKER EXPLORATION & MINING DESIGNATED AGENT KAIKER EXPLORATION & MINING COMPANY
 ADDRESS PO BOX B, RAVENSWOOD, WEST VIRGINIA 26164 ADDRESS PO BOX B, RAVENSWOOD, WEST VIRGINIA 26164

MAR 18 1982

RECEIVED

IV-3
(Rev 8-81) NOV 17 1984



REVISED

OIL & GAS DIVISION
DEPT. OF MINES

State of West Virginia
Department of Mines
Oil and Gas Division

Date 12/28/84
Operator's
Well No. KEM 173
Farm A. Pennington
API No. 47 - 035 - 1655 - 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 ___ / Underground Storage ___ / Deep ___ / Shallow x /)

LOCATION: Elevation: 937' CT Watershed Burnt Run
District: Ripley County Jackson Quadrangle Kenna

COMPANY Kaiser Exploration and Mining Co.

ADDRESS P. O. Box 8 Ravenswood, WV 26164

DESIGNATED AGENT R. A. Pryce

ADDRESS Same

SURFACE OWNER Arthur Pennington

ADDRESS 5215 Tyler View Drive, Charleston, WV

MINERAL RIGHTS OWNER Same, et al

ADDRESS

OIL AND GAS INSPECTOR FOR THIS WORK Richard

Morris ADDRESS P. O. Box 372 Grantsville,

PERMIT ISSUED 2/26/82 (5-9-84) WV

DRILLING COMMENCED 8/17/82 10/15/84

DRILLING COMPLETED 8/23/82 12/14/84

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

Casing Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cord.			
13-10 ^{3/4}	598	598	375 sx
9 5/8			
8 5/8			
7	2616	2616	165 sx
5 1/2			
4 1/2	4573	4573	200 sx
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Devonian Brown Shale Depth 4162-4394 feet

Depth of completed well 4629 feet Rotary x / Cable Tools

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

Coal seam depths: N/A Is coal being mined in the area? NO
Drilled on fluid not known.

OPEN FLOW DATA

Producing formation Devonian Brown Shale Pay zone depth 4107-4392 feet

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

Final open flow 184 ⁴³⁴ Mcf/d Final open flow -- Bbl/d

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

Static rock pressure 1110 psig (surface measurement) after -- hours shut in
(If applicable due to multiple completion--)

Second producing formation Berea Sandstone Pay zone depth 2599-2609 feet

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

Final open flow 250 Mcf/d Oil: Final open flow -- Bbl/d

Time of open flow between initial and final tests 4 hours

Static rock pressure 800 psig (surface measurement) after 96 hours shut in

new
zone
completed

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

10/15/84 Young's to perf Berea with 30 (.39" dia) shots from 2599'-2609'.
 12/14/84 NOWSCO to X-link frac the Berea. Broke down formation with 500 gal of 15% HCl, ran 250 bbl gel pad, treated with 30 lb X-link gel @ 1650 psig, used #45,000 of 20/40 sand, #15,000 of 10/20 sand, total nitrogen: 187 mscf, total fluid: 636 bbl, ISIP: 1720 psig, 5 min SIP: 1650 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: Ronald Durst

Date: 12/28/84

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 sand, encountered in the drilling of a well."

NOV 11 1982
OIL & GAS DIVISION
DEPT OF MINES



Date September 10, 1982
Operator's
Well No. 173
Farm Pennington
API No. 47-035-1655

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

LOCATION: Elevation: 937' G ^{945K} Watershed Burnt Run
District: Ripley County Jackson Quadrangle Kenna

COMPANY Kaiser Exploration & Mining Co.
ADDRESS P. O. Box 8, Ravenswood
DESIGNATED AGENT Same
ADDRESS _____
SURFACE OWNER Arthur Pennington
ADDRESS 5215 Tyler View Drive, Charleston
MINERAL RIGHTS OWNER Same, et al
ADDRESS _____
OIL AND GAS INSPECTOR FOR THIS WORK Richard Morris
ADDRESS P.O. Box 372, Grantsville
PERMIT ISSUED 2/26/82
DRILLING COMMENCED 8/17/82
DRILLING COMPLETED 8/23/82 09/09/82

Casing & Tubing Size	Used in Drilling	Left in Well	Cement fill up Cu. ft.
20-16 Cond.			
13-10"	598	598	375 sx
9 5/8			
8 5/8			
7	2616	2616	165 sx
5 1/2			
4 1/2	4573	4573	200 sx
3			
2			
Liners used			

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

GEOLOGICAL TARGET FORMATION Devonian Brown shale Depth 4162-4394 feet
Depth of completed well 4629 feet Rotary x / Cable Tools _____
Water strata depth: Fresh _____ feet; Salt _____ feet
Coal seam depths: _____ Is coal being mined in the area? _____

OPEN FLOW DATA

Producing formation Devonian Brown Shale Pay zone depth 4107-4392 feet
Gas: Initial open flow 0 Mcf/d Oil: Initial open flow --- Bbl/d
Final open flow 184 Mcf/d Oil: Final open flow --- Bbl/d
Time of open flow between initial and final tests _____ hours
Static rock pressure 1110 psig (surface measurement) after _____ 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

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

- 9/08/82 Brown Shale perforation *Low Huron*
 20 shots from 4107-4392 (0.40" diameter holes)
- 9/09/82: Brown shale frac: 75 quality foam; total sand: 60,000# 20/40 sand; total fluid: 391 BBL; total nitrogen: 1,144,000 SCF; treating pressure: 3300 psig; break-down with 800 psig; displaced 500 gal of 15% HCL; instantaneous shut in pressure: 1400 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
Shale & siltstone			0	160	
Sandstone			160	193	
Shale			193	229	
Sandstone			229	625	
Siltstone & shale			625	750	
Sandstone			750	785	
Siltstone			785	890	
Sandstone			890	1100	
Siltstone			1100	1190	
Sandstone			1190	1310	
Siltstone & shale			1310	1410	
Sandstone & siltstone			1410	1570	
Siltstone			1570	1740	
Greenbrier Lime			1740	2096	
Shale			2096	2116	
Sandstone			2116	2230	
Shale			2230	2576	
Coffee Shale			2576	2599	
Berea Ss:			2599	2610	
Shale			2610	4162	s/g
Brown Shale			4162	4394	s/g @ 3980 , 3680, 3700 , 3806
Shale			4394	<u>4629-</u>	s/g @ 4215 , 4324 4210 to 4220
					T.D. s/g @ 4550 4525 to 4550

from log:
 to 3190
 ↑ pipe Check

from el. log:
 Subury 2578
 Berea 2598
 ush 2610
 ur Huron 3844
 Jawa 4398
 Angola 4553

4107
 2610
 1497

(Attach separate sheets as necessary)

Kaiser Exploration and Mining Company
 Well Operator

By: R.A.P.

Date: September 10, 1982

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 ~~and~~, encountered in the drilling of a well."

RECEIVED
FEB 25 1982
OIL AND GAS DIVISION
WEST VIRGINIA DEPARTMENT OF MINES



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

Oil and Gas Division

OIL AND GAS WELL PERMIT APPLICATION

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

DATE February 22, 1982

Surface Owner Arthur Pennington

Company Kaiser Exploration and Mining Company

Address 5215 Tyler View Drive, Charleston, WV

Address P. O. Box 8, Ravenswood, WV 26164

Mineral Owner Arthur Pennington, et al

Farm Arthur Pennington Acres 29.78

Address _____

Location (waters) Burnt Run

Coal Owner Same

Well No. KEM #173 Elevation ~~2978~~ 937

Address _____

District Ripley County Jackson

Coal Operator None

Quadrangle Kenna

Address _____

THIS PERMIT MUST BE POSTED AT THE WELL SITE
ALL PROVISIONS HEREIN IN ACCORDANCE WITH CHAPTER 22,

ARTICLE 4 OF THE W. VA. CODE, THE LOCATION IS HEREBY

INSPECTOR
TO BE NOTIFIED Richard Morris

APPROVED FOR drilling THIS PERMIT SHALL EXPIRE

10-26-82 ADDRESS P. O. Box 372, Grantsville, WV

IF OPERATIONS HAVE NOT COMMENCED BY _____

PHONE 354-7259

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 February 8 1982 by Arthur & Dorothy Pennington made to Kaiser Exploration and Mining Company and recorded on the _____ day of _____ 1982, 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.

Very truly yours,
(Sign Name) [Signature]

PLEASE SUBMIT COPIES OF ALL
GEOPHYSICAL LOGS DIRECTLY TO: **BLANKET BOND**

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

Address
of
Well Operator

Well Operator
Kaiser Exploration and Mining Company
P. O. Box 8
Street
Ravenswood
City or Town
West Virginia 26164
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.

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: 5102' 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	LEFT IN WELL	CEMENT FILL UP OR SACKS - CUBIC FT.
20 - 16			
13 - 10			
9 - 5/8 10 3/4"	250'	250'	150 sks class A
8 - 5/8			
7	2512'	2512'	65 sks 50/50 pozmix
5 1/2			100 sks class A
4 1/2	5102'	5102'	225 sks class A
3			Perf. Top
2			Perf. Bottom
Liners			Perf. Top
			Perf. Bottom

APPROXIMATE FRESH WATER DEPTHS 500 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
FILE COPY

APR 18 1984



1) Date: April 4, 19 84
 2) Operator's Well No. KEM-173
 3) API Well No. 47 - 035 - 1655 - FRAC
 State County Permit

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

- 4) WELL TYPE: A Oil / Gas /
 B (If "Gas", Production / Underground storage / Deep / Shallow)
 5) LOCATION: Elevation: 937' Watershed: Burnt Run
 District: Ripley County: Jackson Quadrangle: Kenna
 6) WELL OPERATOR ~~XEMGAS~~ 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. Tephabock
 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
 11) GEOLOGICAL TARGET FORMATION, Berea Sandstone Shale, Berea with tubing and packer.
 12) Estimated depth of completed well, 4629' feet
 13) Approximate trata depths: Fresh, 400 feet; salt, 850 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		
Conductor									Kinds <u>None</u>
Fresh water	<u>10 3/4</u>	<u>H</u>	<u>32.75</u>	<u>X</u>		<u>598' (KB)</u>	<u>598' (KB)</u>	<u>375 sks Neat</u>	
Coal								<u>65 sks Pozmix</u>	Sizes <u>-</u>
Intermediate	<u>7</u>	<u>K</u>	<u>20</u>	<u>X</u>		<u>2616' (KB)</u>	<u>2616' (KB)</u>	<u>100 sks Neat</u>	
Production	<u>4 1/2</u>	<u>K</u>	<u>10.50</u>	<u>X</u>			<u>4573' (KB)</u>	<u>200 sks Pozmix</u>	Perforations set <u>-</u>
Tubing									
Liners									Perforations: Top Bottom

OFFICE USE ONLY
DRILLING PERMIT

Permit number 47-035-1655-FRAC

Date May 9, 1984 19

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

Bond: <u>BB</u>	Agent: <u>MW</u>	Plat: <u>T-5</u>	Casing: <u>T-5</u>	Fee: <u>966</u> <u>954</u>
-----------------	------------------	------------------	--------------------	-------------------------------

Margaret J. Hesse
 Administrator, Office of Oil and Gas

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