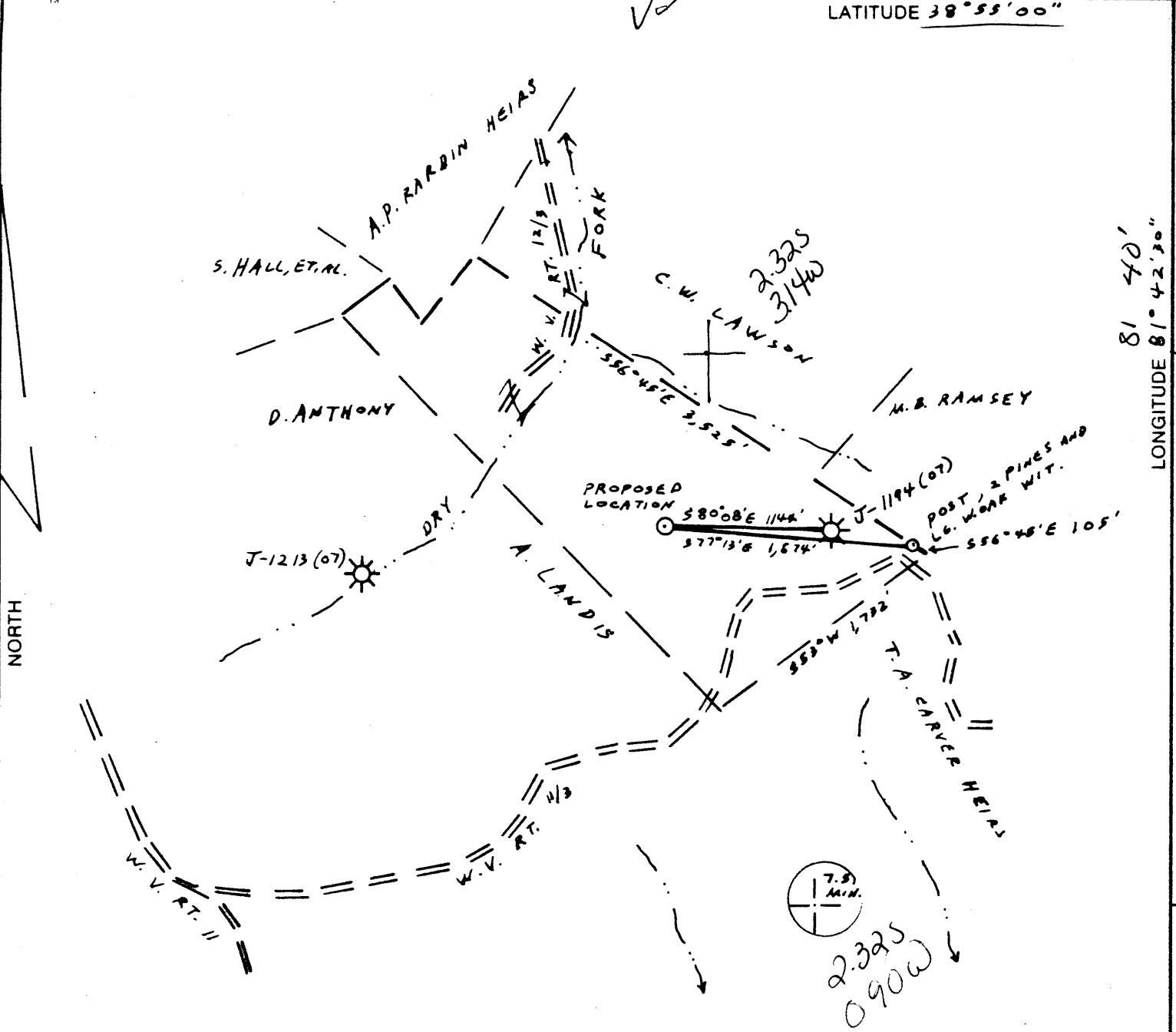


772 2215

4,790' LATITUDE 38°55'00"



REFERENCE POINTS:
 N 48°33'W 114' TO 10" PINE
 S 21°52'W 98' TO 10" PINE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

S4E6

FILE NO. 8-35
 DRAWING NO. _____
 SCALE 1" = 1,000'
 MINIMUM DEGREE OF ACCURACY 1:200
 PROVEN SOURCE OF ELEVATION HIGH POINT ELEV. 1017
2,130' S.E. OF LOCATION

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. 654

PLACE SEAL HERE

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION



DATE AUGUST 16, 1985
 OPERATOR'S WELL NO. KEM 655
 API WELL NO. 47-035-2063
 STATE COUNTY PERMIT

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS,") PRODUCTION ___ STORAGE X DEEP ___ SHALLOW X
 LOCATION: ELEVATION 874 WATER SHED DRY FORK
 DISTRICT RAVENSWOOD 2 COUNTY JACKSON
 QUADRANGLE SANDYVILLE 598 112 Ripley 15 WC4
 SURFACE OWNER W. H. RARDIN HEIRS ACREAGE 98
 OIL & GAS ROYALTY OWNER W. H. RARDIN HEIRS LEASE ACREAGE 98
 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 DEVONIAN NUBIA SHALE ESTIMATED DEPTH 4285'
 WELL OPERATOR KAISER EXPLORATION AND MINING CO. DESIGNATED AGENT R. A. PRYCE SEP 09 1985
 ADDRESS P.O. BOX B, RAVENSWOOD, W.V. 26164 ADDRESS P.O. BOX B, RAVENSWOOD, W.V. 26164

FORM IV-6 (8-78) H.T. HALL

COUNTY NAME PERMIT

465

IV-35
(Rev 8-81)

RECEIVED

OCT 15 1985

W. VA OIL & GAS
CONSERVATION COMMISSION



State of West Virginia
Department of Mines
Oil and Gas Division

Date 10/2/85
Operator's
Well No. KEM 655
Farm W.H. Rardin
API No. 47 - 035 - 2063

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: 874 Watershed Dry Fork
District: Ravenswood County Jackson Quadrangle Sandyville

COMPANY Kaiser Exploration and Mining Company

ADDRESS P.O. Box 8 Ravenswood WV 26164

DESIGNATED AGENT R.A. Pryce

ADDRESS same

SURFACE OWNER W.H. Rardin Heirs

ADDRESS

MINERAL RIGHTS OWNER W.H. Rardin Heirs

ADDRESS

OIL AND GAS INSPECTOR FOR THIS WORK Jerry

Tephabock ADDRESS Rt. 1 Box 101A Ripley WV

PERMIT ISSUED 25271

DRILLING COMMENCED 9/11/85

DRILLING COMPLETED 9/17/85

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 Cond.			
13-10"	242	242	200 sks Class A
9 5/8			3% CaCl ₂
8 5/8			1/2# sks fluocel
7	2269	2269	610 sks Class A
5 1/2			6% Gel, 3% CaCl ₂
4 1/2		4264	1/2# sks fluocel 250 sks
3			50/50 posmix
2			10% salt 12.5#/sks
Liners used			Gilsonite

GEOLOGICAL TARGET FORMATION Devonian Brown Shale Depth 3987-4196 feet

Depth of completed well 4296 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

OPEN FLOW DATA

Producing formation Devonian Brown Shale Pay zone depth 3987-4196 feet

Gas: Initial open flow 0 Mcf/d Oil: Initial open flow 0 Bbl/d

Final open flow (150 (est)) Mcf/d Final open flow 0 Bbl/d

Time of open flow between initial and final tests 4 hours

Static rock pressure 1000 psig (surface measurement) after 72 hours shut in

(If applicable due to multiple completion--)

Second producing formation Berea Sandstone Pay zone depth 2497-2507 feet

Gas: Initial open flow 0 Mcf/d Oil: Initial open flow 0 Bbl/d

Final open flow Mcf/d Oil: Final open flow 0 Bbl/d

Time of open flow between initial and final tests 4 hours

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

* Open flows are commingled

(Continue on reverse side)

OCT 28 1985

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

- 9/20/85 Young's Wireline Perf Brown Shale 20 holes (0.39" DIA.) Select Fire from 2987-4196.
- 9/20/85 ^{Up Dev → Huron} Young's Wireline Perf Berea Sandstone 20 holes (0.39 DIA.) Hollow Steel carrier from 2497-2502
- 9/24/85 Halliburton (fluid tN₂) Brown Shale-Breakdown 2300 psig. Treated at 3100 psig. Used 40,800 lbs 20/40² Sand; 576 mgcr N₂; Total Sand Laden fluid: 190 bbl; total fluid: 295 bbl; ISIP: 1900 psig.
- 9/24/85 Halliburton (fluid tN₂) Berea Sandston Breakdown 3600 psig. Treated at 2650 psig. Used 52,500 lbs 20/40² sand; 657 mgcr N₂; Total Sand Laden fluid: 237 bbl Total Fluid 305 bbl; ISIP: 2050 **WELL LOG** psig; 5-MIN SIP: 1850 psig.

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
					Including indication of all fresh and salt water, coal, oil and gas
Shale			0	400	
Sand			400	451	
Shale and Siltstone			451	665	
Sand			665	728	
Shale			728	793	
Sand			793	856	
Siltstone and Shale			856	1270	
Little Dunkard Sand			1270	1350	
Shale			1350	1454	
Big Dunkard Sand			1454	1689	
Siltstone			1784	1910	
Salt Sands			1784	1910	
Big Lime (Greenbrier)			1910	2000	
Big Injun Sand			2000	2062 ?	
Shale			2130	2462	
Coffee Shale			2462	2490	
Berea Sand			2490	2496	S/g
Shale - up to undiff			2496	3673	
Brown Shale ^{with Huron}			3673	4186	S/g @ 4135'
Shale ^{Jawa}			4186	4296	
Total Depth			4296		Huron @ T.D.

(Attach separate sheets as necessary)

KAISER EXPLORATION AND MINING COMPANY
Well Operator

By: R. A. P.

Date: October 7, 1985

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."

7/85

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AUG 26 1985



1) Date: August 20, 19 85
2) Operator's Well No. KEM #655
3) API Well No. 47 -035-2063
State County Permit

STATE OF WEST VIRGINIA

DEPARTMENT OF ENERGY, OIL AND GAS DIVISION

DIVISION OF OIL & GAS **APPLICATION FOR A WELL WORK PERMIT**
DEPARTMENT OF ENERGY

- 4) WELL TYPE: A Oil / Gas / B (If "Gas", Production / Underground storage / Deep / Shallow)
- 5) LOCATION: Elevation: 874' / Watershed: Dry Fork
- 6) WELL OPERATOR: Rajeev Ravenswood and Mining Company / County: Jackson / Quadrangle: Sandyville
- 7) DESIGNATED AGENT: R. A. Pryce / Address: Same
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED: Name Jerry Tephabock / Address Rt. 1, Box 101A Ripley, WV 25271
- 9) DRILLING CONTRACTOR: Name Clint Hurt / Address P. O. Box 388 Elkview, WV
- 10) PROPOSED WELL WORK: Drill / Drill deeper / Redrill / Stimulate / Plug off old formation / Perforate new formation / Other physical change in well (specify) _____
- 11) GEOLOGICAL TARGET FORMATION: Devonian Huron Shale 40
- 12) Estimated depth of completed well, 4285' feet
- 13) Approximate strata depths: Fresh, _____ feet; salt, _____ feet.
- 14) Approximate coal seam depths: _____ 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
Fresh water	10 3/4"			X		250'	250'	150 sks class A to surface	
Coal									Sizes
Intermediate	7"			X		2275'	2275'	65 sks 50/50 permix	
Production	4 1/2"			X		4285'	4285'	100 sks class A	
Tubing								225 sks 50/50 permix	
Liners									Perforations:
<u>SEE CAUSE NO. 82 ORDER NO. 1</u>									Top Bottom

OFFICE USE ONLY
DRILLING PERMIT

Permit number 47-035-2063 Date August 29 19 85

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 August 29, 1987 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <input checked="" type="checkbox"/>	Agent: <u>GPB</u>	Plat: <u>MH MH</u>	Casing Fee: <u>96 9020</u>	WPCP: <input checked="" type="checkbox"/>	S&E: <input checked="" type="checkbox"/>	Other: <input type="checkbox"/>
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NOTE: Keep one copy of this permit posted at the drilling location.

K. Danbar
Director, Division of Oil and Gas

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

File