Plot Lug Card CSD Mflm 38 Latitude -2 5.13 S 127 ACS. PT. OF 200 200 Source of Elevation USG5 El. 588 Road latersection Cow Run New Location Drill Deeper "), the undersigned, hereby certify that this map is correct to the best of my knowledge and Abandonment \Box 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. STATE OF WEST VIRGINIA Address BOX 98 RAVENSWOOD W.VA. DEPARTMENT OF MINES Farm THOMAS GOODWIN ET. AL. OIL AND GAS DIVISION CHARLESTON ___ Acres 200 Lease No 2969 Well (Farm) No. DEK#3 Serial No... WELL LOCATION FILE NO. JAC-1377 Elevation (Spirit Level) 593.0 Quadrangle RAVENSWOOD County JACKSON + 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. 1832 Engineer's Registration No.... - Denotes one inch spaces on border line of original Drawing No. tracing. Date_ 9-4-76 47-035 NOV 1 2 1976 Scale

6-6

F.

Deo bell

(2-50) Talestone



STATE OF WEST VIRGINIA DEPARTMENT OF MINES

OIL & GAS E-VISION DEFT. OF MINES

Oil and Gas Division WELL RECORD &

Quadrangle Ravenswood Permit No. <u>JAC - 1377</u>

RotaryXXX	Oil
Cable	GXXX
Recycling	Comb.
Water Flood	Storage
Disposal	
-	(Kind)

i unit in ili. Alteria			Kind
Casing and Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft. (Sks.)
Size 20-16 Cond.			isan biran safea ngga safeat a sa
13-10" 9 5/8	203	203	100 sax
7	2196	2196	75 sax
4 1/2	4437	4437	110 sax
2		4377	
	cementing reco	ord.	
	Tubing Size 20-16 Cond. 13-10" 9 5/8 8 5/8 7 5 1/2 4 1/2 3 2 Liners Used	Tubing Drilling Size 20-16 Cond. 13-10" 9 5/8 8 5/8 7 2196 5 1/2 4 1/2 4437 3 2 Liners Used	Tubing Drilling in Well Size 20-16 Cond. 13-10" 9 5/8 203 203 8 5/8 7 2196 2196 5 1/2 4 1/2 4437 4437 3 2 4377

Perforated 42 casing @ 4383 to 4384 with 16 shots.
Fractured with 685 bbl water and 32,500# sand
Open flow after frac = 143 MCF/Day. Shut in pressure = 1600 psi
Perforated 4164 to 4214 with 16 shots - O.F. = 215 Natural, 1325 psi.
Perforated 3535 - 3740 with 23 shots. Frac with 1291 bbl water & 80,000# sand. Shut
in pressure 800 psi O.F. = 353 MCFD.

Coal was encountered at _ _ Inches Fresh water__ Feet . __Salt Water_ Producing Sand Oriskany Sand, Marcellus & Br. Shale Depth 4283 to 4284

Formation Color Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water * Remarks
Red Shales and Sands	0	377	
Sand	377	381	The state of the s
Red Rock	381	509	*
Shale	509	549	
Red Rock	549	607	
Shale	607	637	
Red Rock	637	644	**
Shale	644	675	
Sand	675	685	
Red Rock	685	694	
Shale	694	753	
Sand	753	758	
Red Rock	758	775	
Shale	775	884	
Salt Sand	884	980	
Shale	980	998	
Sand	998	1015	
Shale	1015	1016	
Sand	1046	1074	
Shale	1074	1119	
Sand Shale Sand	1119	1140	The state of the s
Shale	1140	1409	
Sander of the same	1409	1430	
Shale	1430	1450	

(over)

^{*} Indicates Electric Log tops in the remarks section.

Eig Lime 1578 1617 1628 Shale 1628 1643 1796 Shale 1643 1796 2110 Coffee Shale 2110 2127 2127 Berea 2127 2137 3290 Brown Shale 3290 3744 4150 Marcellus Shale 4150 4285 4082 Orniskany Sand 4362 4384 TD Reiderhery L.S. 4384 TD 4455 Log Total Depth 4455 4455	Formation Color Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water * Remarks
	Big Lime Keener Sand Shale Injun Sand Shale Coffee Shale Berea Shale Brown Shale Brown Shale Onondaga L.S. Oriskany Sand Helderberg L.S.	1578 1617 1628 1643 1796 2110 2127 2137 3290 3744 4150 4285 4362	1617 1628 1643 1796 2110 2127 2137 3290 3744 4150 4285 4362 4384 TD	
	en de la companya de La companya de la co	r version with a simple way		
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Date October 10 19 7.7

APPROVED July Q. Day Co. Owner





DEPARTMENT OF MINES

Oil and Gas Division

OIL AND GAS WELL PERMIT APPLICATION

Charlest	on, W. Va.	n	DATE	Octobe	er 18, 1	976	
Surface Owner	Thomas R. Goodwin, et a	.7		Kaise	r Expl.	& Mining	Co.
	500 Church Street, Ripl	011 11 1/0	Company Address			swood, W	
	Same as above			omas R.	Goodwin	, et al.	200 ac
Address			ocation (wa		······································	THE RESERVE AND ASSESSMENT OF THE PARTY OF T	reek
Coal Owner			•	DEK #3			tion 601 KB
Address			District	<u>Inion</u>			ty Jackson
Coal Operator	Not operated		Quadrangle	Ravensw	ood 15'	Cottagev	ille 7½'
Addras S PERMIT MUST	BE POSTED AT THE WELL ST	Section 1					
provisions being	in accordance with Chapter 2 e, the location is hereby approve						•
		TATOM	ECTOR				
Annual transport of the second	. This permit shall expire	TO B	E NOTIFI	ED	Richard	Morris	
	commenced by 2-21-77	ADDRI	ESS		Grantsv	ille, W.	Va.
Deputy Director -	Oil & Gas Division	PHON	E _354-7	7259	-		
HENTLEMEN:	•						
The undersigned itle thereto, (or a Casto, et u	well operator is entitled to dr the case may be) under grant made to Commonwealth	or lease dated Gas Corp.	NOV.	22 orded on	196	6 by Jai	mes W.
The undersigned itle thereto, (or a Casto, et u. 966, in Jack	s the case may be) under grant X made to Commonwealth SON County, Book WELL DRILL DE	or lease dated Gas Corp. 103	NOV. and reco	. 22 orded on 18	1960 the 17t	6 by <u>Jai</u> h day	mes W. of December
The undersigned itle thereto, (or a Casto, et u. 966, in Jack	s the case may be) under grant X made to Commonwealth Son County, Book	or lease dated Gas Corp. 103	NOV. and reco	. 22 orded on 18	1960 the 17t	6 by <u>Jai</u> h day	mes W. of December
The undersigned itle thereto, (or a Casto, et u. 966, in Jack. XXXX NEW OIL	s the case may be) under grant X made to Commonwealth SON County, Book WELL DRILL DE	or lease dated Gas Corp. 103 EPER CORPLED BE	Nov. and reco Page 64 REDRI	. 22 orded on 48 LL IE 5, 196	196the 17th	6 by Jan h day	mes W. of December STIMULATE
itle thereto, (or a Casto, et u 966, in Jack XXXX NEW OIL The enclosed playe been notified The above nam	s the case may be) under grant X made to Commonwealth SON County, Book WELL DRILL DE AND GAS WELL ORIGINALLY at was prepared by a registered	or lease dated Gas Corp. 103 EPER DRILLED BE engineer or lic	Nov. and recovered page 64 REDRIFORE JUN sensed land	orded on 88 LL	the 1960 the 17th FRAC 9. and all coa	h day TURE OR downers an	nes W. of December STIMULATE d/or operators
The undersigned itle thereto, (or a Casto, et u. 966, in Jack. XXXX NEW OIL. The enclosed place been notified The above name make by Section Copies of this not coal owners at	made to Commonwealth County, Book County, Book WELL DRILL DE AND GAS WELL ORIGINALLY at was prepared by a registered as of the above date. ed coal owners and/or operator and the code, must be received their above shown respective as	or lease dated Gas Corp. 103 EPER DRILLED BE engineer or lic are hereby notified by, or filed we mailed by registed.	Page 64 REDRI FORE JUN Rensed land Ried that any with the Destered mail,	orded on 8 LL IE 5, 196 surveyor y objection or deliver day day	the 1960 the 17th FRAC 9. and all coan they wish of Mines wered to the a	by Jan h day CTURE OR d owners and to make, edithin ten (1) bove named befor	of December STIMULATE d/or operators or are required 0) days. *
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"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

JAC-1377

47-035

_PERMIT NUMBER

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

PROPOSED WORK ORDER TO XXXX DRILL			DEEPEN	FRACTURE-STIMULATE
DRILLING CONTRACTOR: (If Known)		RESPONSIBLE AGENT:		
NAME FWA Drilling Company Box 448, Elkview, W. Va. 25071 TELEPHONE 965-3379			NAME Bill W. B	ackus
				3, Charleston, W. Va.
				-3171
ESTIMATED	DEPTH OF COMPLE	ETED WELL: 4450	ROTARY XXXX	CABLE TOOLS
PROPOSED	GEOLOGICAL FORM	ATION: <u>Oriskany</u>		
TYPE OF W	ELL: OIL	GAS XXX	COMBSTORAG	E DISPOSAL
*		RECYCI	LING WATER FL	OODOTHER
TENTATIVE	CASING PROGRAM:			in the American Section 1997.
CASING	AND TUBING	USED FOR	LEFT IN	CEMENT FILL UP
		DRILLING	WELL	OR SACKS - CUBIC FT.
20 - 16				
13 - 10		0001	0001	700
9 - 5/8		2001	200'	100 Sax
8 - 5/8				
7 5 ½		2175'	2175'	75 Sax
3 ½ 4 ½		4450'	4450'	100 554
3		4400	4430	100 Sax
2				Perf. Top Perf. Bottom
Liners				Perf. Top
				Perf. Bottom
OF PLA TO DRILL I SUBMIT WELLS MUST TO FRACTU OIL AN BOND, OIL AN ING OR	AT. DEEPER OR REDRILI IFIVE (5) COPIES O DRILLED PRIOR TO ALSO BE SUBMITTEE RE - STIMULATE: ND/OR GAS WELL OR PERMANENT PLAT ND/OR GAS WELL OR SIGNAL PERMIT NUM	L: F OG - 1, SHOWING ORIGINATED AND ORIGINALLY DRILLED BEF AND ORIGINAL WELL RIGINALLY DRILLED ON . GENALLY DRILLED ON . GENALLY DRILLED ON .	GINAL PERMIT NUMBER A COPY OF THE PLAT AND ORE JUNE 5, 1929, FIVE (5) ECORD. AND/OR AFTER JUNE 5, 19 E BOND.	ND PERFORMANCE BOND. ON THE ORIGINAL WELL RECORD COPIES OG - 1, PERFORMANCE 29, FIVE COPIES OG - 1, SHOW-
The fol	lowing waiver must be	e completed by the coal o	perator if the permit is to be	s issued within ten days of receipt
thereof. WAIVER: I	the undersigned, Agen	t for		er or Operator of the coal under
thereof. WAIVER: I th	the undersigned, Agentis lease have examined	t for d and place on our mine Coal Company	Coal Company, Ownsmaps this proposed well locally have no objections to said	er or Operator of the coal under
thereof. WAIVER: I th	the undersigned, Agen is lease have examined the coviding operator has co	t for d and place on our mine Coal Company	Coal Company, Owns maps this proposed well local y have no objections to said egulations in Articles 4, 5, and	er or Operator of the coal under ation. well being drilled at this location,

Official Title