5 400 39°12' 30 LATITUDE 000 04 ./ COCHRAN ONGITUDE 8 PROPOSED 870 - 59'E N 85 T10 8057 50'E 0 s 2.2.4 OCT 17 1985 DIVISION OF OIL & GAS DEPARTMENT OF 1NE *** 7.5 U/U MM. N 17 E 8 2,400 FEET WELLS WITHIN NO I THE UNDERSIGNED, HEREBY CERTIFY THAT 5-68 FILE NO. THIS PLAT IS CORRECT TO THE BEST OF MY DRAWING NO._____ SCALE____*1 = 5 00* LU' ASFA KNOWLEDGE AND BELIEF AND SHOWS ALL THE SCALE_ INFORMATION REQUIRED BY LAW AND THE REGU-NO 664 MINIMUM DEGREE OF STATE OF LATIONS ISSUED AND PRESCRIBED BY THE DEPART-ACCURACY /:200 MENT OF MINES. PROVEN SOURCE OF r ELEVATION HIGH POINT ELEVATION 998, 200'S.E. OF LOCA TION (SIGNED)_Vince 100d W L.L.S. 664 R.P.E. PLACE SEAL HERE DATE MARCH 17 19 83 STATE OF WEST VIRGINIA 358 OPERATOR'S WELL NO. KEM DEPARTMENT OF MINES API WELL NO. OIL AND GAS DIVISION 47 10 STATE PERMIT COUNTY (+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WELL TYPE: OIL ____GAS X LIQUID INJECTION ____ WASTE DISPOSAL_ (IF "GAS,") PRODUCTION _X_STORAGE ___ DEEP_X_SHALLOW. RUN LOCATION: ELEVATION 936 PINE WATER SHED. WOOD DISTRICT HARRIS COUNTY QUADRANGLE LUBECK 44 NW_1 009 49 SURFACE OWNER MARY M. COCHRAN RADABAUGH _ACREAGE_ 49 OIL & GAS ROYALTY OWNER MARY M. COCHRAN RAPABAUGH LEASE ACREAGE 85-12-26/8 LEASE NO ._ REDRILL _FRACTURE OR _DRILL DEEPER_ FROPOSED WORK: DRILLX_CONVERT_ PERFORATE NEW STIMULATE ____PLUG OFF OLD FORMATION. OTHER PHYSICAL CHANGE IN WELL (SPECIFY). FORMATION_ 1986 27 <u>act</u> E ~0WWD-6-6 CLEAN OUT AND REPLUG. PLUG AND ABANDON New England (296 41.51 TARGET FORMATION ORISKANY _ESTIMATED DEPTH __ DESIGNATED AGENT KAISER EXPLORATION AND MINT FXFLOR. + MIN. CO. WELL OPERATOR KAISER

	×	\rightarrow	<u>.</u>
*	Plot Card CSD		
	$\frac{1}{2} = \frac{1}{2} = \frac{1}$	LONGITUDE 8/° 40'00"	
	HIHON HIHON		- 15 050
	111 5.75S 1.03W 15 15		
	7.5 2.87S 1.03W N/7 5 8		
	VO WELLS WITHIN 2,400 FEET		
	FILE NO. 5-68 DRAWING NO.	Ē	
	STATE OF WEST VIRGINIA DATE MARCH 17, 19.83 DEPARTMENT OF MINES OPERATOR'S WELL NO. OIL AND GAS DIVISION OPERATOR'S WELL NO. (+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS DATE MARCH 17, 19.83	-	
M IV-6 (878)	WELL TYPE: OILGASLIQUID INJECTIONWASTE DISPOSAL (IF "GAS,") PRODUCTION _X_STORAGEDEEP_X_SHALLOW LOCATION: ELEVATION <u>936</u> WATER SHED PINE RUN DISTRICT HARRIS 2 COUNTY WOOD QUADRANGLE UBECK 449 BELLVILLE 15'009 NWI SURFACE OWNER MARY M. COCHRAN RADABAUGH ACREAGE 49 OIL & GAS ROYALTY OWNER MARY M. COCHRAN RADABAUGH LEASE ACREAGE 49 LEASE NO. <u>85-12-26/8</u> DODDOGED WORK DDWLK CONVERT	-	CLAN CORM
FORM	STIMULATEPLUG OFF OLD FORMATIONPERFORATE NEW FORMATIONOTHER PHYSICAL CHANGE IN WELL (SPECIFY)	-	- hen
I NALL 1	PLUG AND ABANDON CLEAN OUT AND REPLUG (6. New England (296) TARGET FORMATION <u>ORISKANY</u> ESTIMATED DEPTH <u>4656</u> New England (296) WELL OPERATOR <u>KAISER EXPLOR & MINING</u> CO. DESIGNATED AGENT <u>KAISER EXPLORATION</u> AND MINING CO. ADDRESS <u>P.O. BOX 8</u> 465 ADDRESS <u>P.O. BOX 8</u> RAVENSWOOD W.Y. 26164 RAVENSWOOD W.Y. 26164	- -	

	· 1-0. 7-1-63. 1	1:34 1-	ŵ.
	Plot V Card CSD $PROPOSEP$ V V V V V V V V	LATITUDE 39°/2'30"	
	NO WELLS WITHIN 2.400 FEET	211 5.75 S 1.03 W 15 7.5 2.87 S 1.03 W N17 E 8	
FORM IV-6 (8-78)	978, 200'S.E. OF LOCATION R.P.E. LI STATE OF WEST VIRGINIA DEPARTMENT OF MINES OIL AND GAS DIVISION (+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WELL TYPE: OILGAS_LIQUID INJECTIONWASTE DISPOSAL (IF "GAS,") PRODUCTION_X STORAGEDEEP_X_SHALLOW. LOCATION 936 WATER SHED	HE BEST OF MY SHOWS ALL THE W AND THE REGU- D BY THE DEPART. $\frac{w \sigma \sigma d}{LS. 664}$ PLACE-SEAL HERE DATE <u>MARCH</u> 17, 19 <u>83</u> OPERATOR'S WELL NO. <u>KEM 358</u> API WELL NO. $\frac{47}{PT} - \frac{107}{1245} - \frac{1245}{PERMIT}$ STATE COUNTY PERMIT STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE STATE S	6421 Good
ו ד אאנו 👌	TARGET FORMATION ORISKANY ESTIMATED DEPTH 465 WELL OPERATOR KAISER EXPLOR & MIN. CO. DESIGNATED AGENT KAISI ADDRESS P.O. BOX 8 ADDRESS P.O.	ER CAPLORATION AND MITTING CO.	

QQ: 4-11-23	a to contract is	<	
Plot-me		LATITUDE 39°12'30"	
HINON		TORELTOR 87 5 MIN. 2. 87 5 M	\[
WELL TYPE: OILGAS LIQUID I (IF "GAS,") PRODUCTION LOCATION: ELEVATION936 DISTRICTHARRIS QUADRANGLEUBE SURFACE OWNERARY COCH OIL & GAS ROYALTY OWNERARY FROPOSED WORK: DRILLX_CONVE STIMULATEPI	I THE UNDERSIGNED, HEREBY THIS PLAT IS CORRECT TO TH KNOWLEDGE AND BELIEF AND S INFORMATION REQUIRED BY LAW LATIONS ISSUED AND PRESCRIBED MENT OF MINES. (SIGNED) <u>Vincent</u> <u>W</u> . R.P.E. LL. UNITED STATES TOPOGRAPHIC MAPS NJECTION WASTE DISPOSAL X STORAGE DEEP SHALLOW WATER SHED <u>PINE</u>	The BEST OF MY SHOWS ALL THE AND THE REGU- BY THE DEPART. $\frac{W \text{ ood}}{S. 664}$ PLACE SEAL HERE DATE <u>MARCH</u> 17, 19 83 OPERATOR'S WELL NO. <u>KEM 358</u> API WELL NO. $\frac{47}{STATE} - \frac{107}{COUNTY} - \frac{1245}{PERMIT}$ $\overline{R} UN$ \overline{P} $\overline{M} W$ 49 ASE ACREAGE 49 ASE ACREAGE 49 ADD 4.9.1002	5+71 (300M)
PLUG AND ABANDON CLEA TARGET FORMATION ORISKAN WELL OPERATOR <u>KAISER EXPLOR</u> ADDRESS P.O. BOX 8 <u>RAVENSWOOP</u> W	ESTIMATED DEPTH 4650	R EXPLORATION AND MINING CO.	

		,									· · ·			÷
an a						WEST		1) Dat	te:	Marc	h 15		19 84	
FORM IV-2(B) (Obverse)	FILE	COPY				E Bar En		2) Op	erator's					
7-83							5		ll No		KEM	the second s		
								3) AP	I Well I		tate	<u>107 - 12</u> County		nit
												•		
				DEPA		ATE OF WEST		DIVISI	ON			RENEW		
				AI	PPLICAT	ION FOR A WEI	LL WORK P	ERMIT						
4) WELL T	VDE. A	21			, ,									
4) WELLI	IPE: A C B (Ju If ''Gas''.	Productio	nas <u></u>	X	_/ Underground	storage		/ T	Jeen	Х	/ Shallow	//)	
5) LOCATI	ON: El	evation:	936			Watershed: _	<u>Pine Ru</u>	un		-			/)	
	Di	istrict:	Harris			County:W	lood		Q) uadrai	ngle:	Lubeck		
					on and	<u>l Min</u> ing Co			AGEN			Pryce		1999 - Andrews
Addre	SS		Box 8 swood,		26164	<u>.</u>	Add	ress	·····		ame			
8) OIL & G.	AS INSPEC				2010-	<u>F</u>	9) DRILLI		NTPA	CTOP.				
	lerry T						Name		nt Hu					
Addre			<u>x 101</u> A				Addı		. 0.					and the second se
	Rip	<u>ley, W</u>		271					<u>lkvi</u>		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	MAR	ANTE	11)
10) PROPOS	ED WELL	WORK:			/ Drill	•					ate]X	عرطيته	nan G	
			-			/ Perfor				-		1 miles	• • • • • • •	
11) GEOLOG	ICAL TAR	GET FO				well (specify) NY				··		INR !	2 1004	
12) Estin	nated depth	of comple	ted well,	.,	4656	jfeet							AS DIVIST	ON
							· ,		fee	et.		OIL & G		VES
					****	Is co	al being mine	d in the	area?	Yes		EPTNO	of MIL	
15) CASING	AND TUB			10	45									
CASING OR TUBING TYPE	Size	ł	CIFICATION Weight	1			INTERVALS		· 0	ENT FIL DR SACK	s	PAC	KERS	
Conductor	3120	Grade	per ft.	New	Used	For drilling	Left in y	well	((Cubic fee	0	Kinds		
Fresh water	10 3	4"		Х		250315	375256	3	150 9	sks	clas		urface	
Coal												Sizes DOZMIX		
Intermediate	<u>7"</u> 4 1			X		2110	2110	J						
Production	4 1	12	+	X		4656	4656	5	<u>225 s</u>	sks	50/5	A D poo zanix		
Tubing Liners	-	1										Perforations		
		1										Perforations: Top	Bottom	
													Doctoria	
•														
<u></u>						OFFICE USE (
······································						RILLING PE	and the second se						<u></u>	
	47-	107-12	245 - REI	NT.						M	1		10.04	,
Permit number		107 12								May	1, Date		19 84	<u>+</u>
quirements sub No. 8) Prior to	ject to the c	onditions ction of re	contained bads, locat	herein a ions and	nd on the pits for a	below is evidence of reverse hereof. No ny permitted work ork has commence	otification mu	ist be giv	ven to th	he Dist	cordand rict Oil	e with the pe and Gas Insp	ector. (Refer	to
	vork is as d	escribed in	n the Noti			, plat, and reclam	,	ibject to	any mo	odifica	tions an	d conditions	specified on t	he
Permit expires	May	1, 19	186			unless well	work is comr	menced p	prior to	that da	te and p	prosecuted wit	h due diligend	ce.
Bonder	Ager		Plat:	Casin	σ 1	Fee								
RONAKET	1 2801	7		Casili,								0		

NOTE: Kee	p one	copy	of	this	permit	posted	at	the	drilling	location.
-----------	-------	------	----	------	--------	--------	----	-----	----------	-----------

10

40

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

-

Administrator, Office of Oil and Gas

File



IV-35	
•••• • • •	
18 A A A A A	
(Rev 8-81)	
Stame a descel	

12-1-0- JIGNED -1-18-1	Date	7-17-84	
State of Mest Birginia	Operator Well No.	"S KEM #358	Cochran
Bepartment of Mines	Farm Mary	7 M. Cochran	Radabaugh
Gil und Cas Division	API NO.	47 - 107	- 1245
			REN

WELL OPERATOR'S REPORT

OF DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WEIL TYPE: Oil / Gas $_X$ / Liquid Injection (If "Gas," Production $_X$ / Undergroup	/ Wast	e Disposal e/ Deeg	1/ 5/ Sha	11aw/)
LOCATION: Elevation: 936 Watershed	PINE RUN			
District: HARRIS County WOOI			E LUBEC	CK
۵ ۵ - ۵				in an an a failing, grafter taken an
			andra marka and a sub-sub-sub-sub-sub-sub-sub-sub-sub-sub-	wite constant (1997-1997-1997) and a statistical statistical statistics of the statistic
COMPANY KAISER EXPLORATION & MINING COMPANY		un and a second sec		and was associated and a second s
ADDRESS P.O. Box 8, RAVENSWOOD, WV 26164	Casing	Used in	Left	Cement fill up
DESIGNATED AGENT R. A. PRYCE	Tubing	Drilling	in Well	Cu. ft.
ADDRESS SAME	Size			
SURFACE OWNER Mary M. Cochran Radabaugh	20-16 Cond.			
ADDRESS Rt. 1 Box 153, New England, WV 26154	13-10 ³ /4	368'	368'	200 sx Clears
MINERAL RIGHTS OWNER SAME	9 5/8			
ADDRESS SAME	8 5/8			
OIL AND GAS INSPECTOR FOR THIS WORK GLENN	7	1876'	1876'	175 sx 50/50 pozmix
ROBINSON ADDRESS MINERAL WELLS	5 1/2			
PERMIT ISSUED	4 1/2		4604'	220 sx 50/50 pozmix
DRILLING COMMENCED 6-11-84	3			12.5 #/sx Gilsonite
DRILLING COMPLETED 6-17-84	2			
IF APPLICABLE: PLUGGING OF DRY HOLE ON	ap 0	·		
CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSION OBTAINED	Liners used			
ON			L	
GEOLOGICAL TARGET FORMATION ORISKANY	anan maritan ar situ alkili kutawi u ini	Dep	th 4538	feet
Depth of completed well 4625'(KB) feet	Rotary x	/ Cabl	e Tools_	ny ng sana ng sang ng s
Water strata depth: Fresh N/A feet;	Salt_N/	<u> f</u> æt		
Coal seam depths: N/A	Is coal	being min	ed in the	area?_NO_
OPEN FLOW DATA				
Producing formation ORISKANY	Pay	zone dep	th 453	38 feet
Gas: Initial open flow 10 Mcf/d				An income de classes que che part de part de la construcción de la construcción de la construcción de la constru
Final open flow 3600 Mcf/d		al open f		
Time of open flow between init		nal tests	72 hc	NICS
Static rock pressure 1575 psig(surfac	e measurer	ment) afte	r <u>4</u> hou	rs shut in
(If applicable due to multiple completion				
Second producing formation	Pay	zone dep	th	feet
Gas: Initial open flow Mcf/d				Bbl/d
Final open flow Mcf/d	Oil: Fir	nal open f	low	Bbl/d
Time of open flow between init	ial and fi	inal tests	hc	urs
Static rock pressurepsig(surface	measureme	ent) after	hou	rs shut in
		(Conti	AU Rue on re	verse side)
		1001000		

FURA IV-35 (PEVLICE)

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 775 6/20/84 YOUNG'S WIRELINE PERF ORISKANY 20 holes (0.39 DIA) FROM 4538'-4544'. 6/22/84 BJ HUGHES FOAM FRAC. ORISKANY - DIDN'T BREAKDOWN. 6/26/84 YOUNG'S WIRELINE PERF. ORISKANY 20 holes (0.39 DIA.) FROM 4538'-4544'. 6/27/84 BJ HUGHES FOAM FRAC. ORISKANY - DROPPED 28% HCL. BREAKDOWN PRESSURE: 2720 psig. BREAKDOWN FLUID: FOAM. TREATING PRESSURE: 2130 psig. 30,000 lbs of 20/40 SAND. TOTAL N2: 380,000 SCF. TOTAL SAND LADEN FLUID: 129 Bbls. TOTAL FLUID: 204 Bbls. ISIP: 1620 psig. 5 min SIP: 1560 psig.

· . .

DEMONDUC

				REMARKS
E	CORMATION COLOR HARD OR SOFT	TOP FEET	BOTTOM FEET	Including indication of all fr
47017				and salt water, coal, oil and
	SOIL and SHALE	0	112	
	SHALE and SILTSTONE	112	208	
	SAND	208 [·]	X A	
	SAND	6 () () () () () () () () () (222	
		222	481	
	SAND	481	504	
	SHALE	504	. 560	
	SAND	560	582	
	SHALE	582	662	
	SAND	662	750	
	SHALE and SILTSTONE	750	1206	
	DUNKARD SAND	1206	1234	
	SAND and SHALE	1234	1564	
	SAND	1564	1612	
	SHALE	1612	1704	
	SALT SANDS	1704	1860	
	SHALE	1860	2198	and the second
-	COFFEE SHALE	2198	2220	$\partial \sigma_{ij} = \sigma_{ij} + \sigma_{ij}$
	BEREA SAND	2220	2222	S/G
	SHALE	2222	3370	S/G @ 2800
	BROWN SHALE	3370	3878	S/G @ 3780 and Magendian
	SHALE	3878	4110	
	MARCELLUS SHALE	4110	4434	S/G @ 4250
	ONONDAGA LIME	4434	4514	
	ORISKANY SAND	4514	4555	DIO A AEAN
	HELDERBERG LIME	4555	4555 4638	S/G @ 4540
	TOTAL DEPTH	4555 4638	4030	
	TOTAL DEPTR	4030		
		ADM COMMISSION AND ADMINISTER PROVIDENCE OF		
				•
				· · · ·

WELL LOG

 Λ

(Attach separate sheets as necessary)

KAISER EXPLORATION AND MINING COMPANY	
Well Operator	
By: RAP	93. ₁₀₀
Date: July 17, 1984	jake.

wan and all a second and the second		and the second of the second		۱۹۹۸ میلاد او است میلادی
	EST VILLE IN IN		WEIN	
		A A DAY		r
		MAY 07	1987 🕰	
IV-35 (Rev 8-81) DUUR AN	DI'	VISIBALOE O	legenher_	16, 1986
DEPARTMENT OF ENERY State of 2	lest Birgin	Well No	KEM #	358
	d of Mines		Mary Coc	
Obil und O	Sas Bivision	API NO.	47 - 10	<u>7 - 1245</u>
DIVISION OF ONLY GAS DEPARTMENT OF ENERGY				
	OR'S REPORT			
DRILLING, FRACTURING AND/OR SI	IMULATING, C	R PHYSICA	L CHANGE	
				3
WELL TYPE: Oil / Gas X / Liquid Inject (If "Gas," Production X / Underg	ion / Wast	e Disposa	1/	allow v /l
	•		P/ 0/4	
LOCATION: Elevation: 936 Watershed				
District: Harris County	Wood	Quadrangl	eLubec	<u>k</u>

COMPANY Kaiser Exploration and Mining Company	an <u>an an a</u>			
ADDRESS P. O. Box 8, Ravenswood, WV 26164	Casing	Used in	Left	Cement
DESIGNATED AGENT R. A. Pryce	Tubing	Drilling		fill up Cu. ft.
ADDRESS Same	Size			
SURFACE CHNER Mary M. Cochran Radabaugh	20-16 Cord,			
ADDRESS Rt. 1, Box 153, New England, WV 26	154 13-10"	368'	368'	200 sks
MINERAL RIGHTS OWNER Same	9 5/8	300		Class A
ADDRESS	8 5/8			
OIL AND GAS INSPECTOR FOR THIS WORK Glen	7	1876	1876	175 sks 50,6
Robinson ADDRESS Rt. 1, Mt. Pleasant Es Mineral Wells, WV	t. 5 1/2			pozmix
PERMIT ISSUED	4 1/2		4604'	220 sks 50/p bozmix
DRILLING COMMENCED 6/11/84	3			
DRILLING COMPLETED6/17/84	. 2			
IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR	······································			
REWORKING. VERBAL PERMISSION OBTAINED	Liners used			
GEOLOGICAL TARGET FORMATION Oriskany		Dep	th 453	8 feet
Depth of completed well 4625'(KB) feet				
Water strata depth: Fresh <u>N/A</u> feet				
Coal seam depths: <u>N/A</u>	Is coal	being min	ed in the	area? No
OPEN FLOW DATA Drilled on f				
· Producing formation <u>Devonian Brown Sh</u>	ale Pay	zone dep	th 2760 -	3880 feet
Gas: Initial open flow Mcf/d	Oil: Ini	tial open	flow -	- Bhl/d
Final open flow \$500 Mcf/d				
Time of open flow between in				
		-	Construction of the property of the property of	
worked (If applicable due to multiple completi		·		
Static rock pressure <u>*1000</u> psig(surf where <i>if applicable due to multiple completi</i> Second producing formation <u>Berea Sand</u>		zone dept	th 2222	2224 feet
Gas: Initial open flow Mcf/d	Oil: Ini	tial open	flow	Bb1 /d
Final open flow *500 Mcf/d				Bbl/d
Time of open flow between in			Construction of the local division of the lo	Contraction and an
Static rock pressure *1000 psig (surfa		_		
*Commingled		-		MAN + + 100%
•		(Contir	ue on re	verse side)

FORM IV-35 (REVERSE)

· • _

DETAILS OF PERFORATED INTERVALS, FRACIURING OR STIMULATING, PHYSICAL CHANGE, ETC. 11/3/86 Young to perforate the Brown Shale from 3686' to 3880' with 19 shots. 11/4/86 NOWSCO 75% foam frac w/625,000 scf of nitrogen, 261 bbl of water at 1850 psig. 11/4/86 NOWSCO 75% foam frac w/625,000 scf of nitrogen, 261 bbl of water at 1850 psig. ISIP: 1390 psig; 5 min SIP: 1170 psig 11/4/86 Young perforated the Grey Shale from 2760' to 2930' with 17 shots 11/4/86 NOWSCO 75% foam frac with 625,000 scf of nitrogen, 274 bbl of water at 1970 psig. ISIP: 770 psig; 5 min SIP: 730 psig 11/11/86 Young perforated the Berea Sand from 2222-2224' with 16 shots 11/13/86 NOWSCO 75% foam frac Berea Sand with 45,000# of 20/40 sand, 15,000# of 10/20 sand; 520,000 scf of nitrogen; 307 bbl of water at 1600 psig; ISIP: 1050 psig; 5 min SIP: 970 psig 5 min SIP: 970 psig. 1 \$

				. h	VELL LOG		
FORMATIC	IN COLOR	HARD OF	R SOFT	TOP FEET	BOTTOM FEET	REMARI Including indicat and salt water, o	tion of all
:						· · · · · · · · · · · · · · · · · · ·	<u></u>
E ORIGINA	L 0G-10				•		
********		: • •					
. 1	• 8	1	1				
•	8 4	:					
Ø			8				
	8					•	
	•	ê S		· · j			
	e al		8				
•••		1	•				
		:	i				
		9 9 9	• •				
		• 	· . :	• •		4 6	
		4	1				
:	-	į	•	1			- et a la l
•				•			
	۵	•					
		. 4					
		:		•	e a de la companya d La companya de la comp		
				· · · · · · · · · · · · · · · · · · ·			
**** [*] ***	: '			- Contraction of the Contraction			
e de f	· · ·		. 1	Attach sepa	rate sheats a	s necessary)	
•@	•		 		المتحرجة المحاجة	- ACCESSIENT AND	An A
		• • • •		. KAISER EXF	LORATION AND	MINING COMPANY	
•	1970 - 1970 -			Well O	perator		
.4				By:	AK		
- - 				Date: Dec	ember 16, 198	6	
		•	. . .	•		l .	and a second sec
Note:	Regulatio	on 2.02(+) prost	der as follo	~ \n \$,*8e* .
•	ine	tarm 'Lo	00'00'	Wall loal at	ows: hall mean a s ormations, in	ustematic	

		Sec. Contraction	مستريبة والالارامية	3 ت					
•		DEPATT	L MID CAS	WEST	1)	Date: 00	tober	13	<u>, 1286</u>
MW-2(B)	FILE COPY	0.	-		2)	Operator's		#358	N) Error
overse)				F(ATTA)A		Well No.	473	$\frac{\pi 330}{107}$	1245-Ren
5			. 7 19		3)	API Well N	State	County	Permit
		OC.	T 1 7 19	STAN STANCE AND			x		
• ·		(.) V	STAT	E OF WEST VIRC	GINIA				
		DEPA	ARTMENT OF	ENERGY, OIL A	ND GAS DI	VISION			
			APPLICATI	ON FOR A WELL	WORK PERM	<u>11T</u>			
		1 0	Х /						
4) WELL TYP	PE: A Oil	/ Gas	<u> </u>	/ Underground stor	age	/ D	eep	/ Shallow	/ <u>X</u> /)
5) LOCATIO		· 000		Watershed: Pil	ne Run		•		
) LOCATIO	District:	Harris	2	County: WOO	d			_Lubeck_	449
5) WELL OPH		the ounor	ration and	: 25350 7)	DESIGNAT	FED AGEN			
Address		<u>). Box 8'</u>			Address		Same	2	
			<u>WV 26164</u>		DRILLING		TOD		
	sinspector [*] Glen Robir		IED	9)	Name K		.10K.		
Name Address			sant Estat	es	Address				
Address	Mineral		WV 26150		• • • • • • • • •				
	D WELL WORI		/ Drill	deeper	/ Redrill	/	Stimulate_	<u> X </u>	
<i>) r</i> KO1 05 <i>L</i>			-ld farmation	V / Derforate	new format	ion Y	/ Set	permanent	bridge plug
		Other ph	ysical change in	well (specify) <u>iSO</u>	<u>late Ori</u>	<u>skany,</u>	<u>perf &</u>	<u>stimulat</u>	e Brown Shal
I) GEOLOGI	CAL TARGET I	ORMATION,	Brown Sha	<u>le & Berea S</u>	andstone	historic (<u>& Berea</u>	Sandstone
12) Estima	ated depth of com	pleted well, _	<u>3300.65</u>	BP-ID) feet					
	ximate trata dept		<u>N/A</u>	feet; salt,	N/A being mined ir	fe		/ No	X /
	ximate coal seam	depins	one	is coal	being mined if	i the area?	1 es	/ 140	/
	ND TUBING P		81	FOOTAGE INT	COVATE	II CEM	ENT FILL-UF	- РА	CKERS
CASING OR TUBING TYPE	1	SPECIFICATIONS		1	Left in well	0	R SACKS Cubic feet)		-
	Size Gra	ide per ft.	New Used	For drilling	1211 In west			Kinds	······
Conductor	10 2/1 1	-55 32.75		378'(KB)	378(KB	1 200	sks		
Fresh water	10 3/4 0	-00 02.10				,		Sizes	
ntermediate	7" J.	-55 20.0	Х	1986'(KB)	1986'(K	(B) 175_	sks		
Production		-80 11.6	Х	4614' (KB)	<u>4614'(</u> K	B) 220	sks	Depths set	
ubing									
inc. s	I							Perforations:	
	ll							Тор	Bottom
									
	<u>II</u>					<u> </u>			
				OFFICE USE O	NLY				
		na waanna ay		DRILLING PER					
								October 2	23 ₁₉ 86
	4.7	-107-1245	5-17						
'ermit number_	47	-107-1245	5-F					Date	
				helow is avidence of	nermission g	ranted to dr		Date dance with the	pertinent legal re-
			l location shown	below is evidence of reverse hereof _{Notif}	permission g	ranted to dr	ill in accor	dance with the	pertinent legal re-
This permit cov uirements subj	ering the well or ect to the condit	erator and wel	l location shown herein and on the	e reverse hereoi Notif	ication must I In addition, t	ranted to dr be given to t he well oper	ill in accor	dance with the	pertinent legal re- pector, (Refer to l notify the proper
This permit cov uirements subj o. 8) Prior to th listrict oil and p	ering the well or ect to the condit he construction of gas inspector 24	erator and wel ions contained f roads, locatio hours before ac	l location shown herein and on the ons and pits for a ctual permitted w	e reverse hereof Notif ny permitted work. ork has commenced.	ication must I In addition, t .)	be given to t he well oper	ill in accor he District ator or his	dance with the Oil and Gas Ins contractor shall	pector, (Refer to notify the proper
This permit cov juirements subj o. 8) Prior to th listrict oil and p The permitted v	ering the well or ect to the condit he construction of gas inspector 24	erator and wel ions contained f roads, locatio hours before ac	l location shown herein and on the ons and pits for a ctual permitted w	e reverse hereoi Notif	ication must I In addition, t .)	be given to t he well oper	ill in accor he District ator or his	dance with the Oil and Gas Ins contractor shall	pector, (Refer to notify the proper
This permit cov quirements subj o. 8) Prior to th listrict oil and p The permitted v everse hereof.	ering the well op ect to the condit he construction o gas inspector 24 work is as describ	erator and wel ions contained f roads, locatio hours before ac	l location shown herein and on tho ons and pits for a ctual permitted w re and Applicatio	e reverse hereof Notif ny permitted work. ork has commenced. n, plat, and reclamat	ication must I In addition, t .) ion plan, sub	be given to t he well oper ject to any п	ill in accor he District ator or his nodification	dance with the Oil and Gas Ins contractor shal	pector, (Refer to notify the proper
This permit cov quirements subj o. 8) Prior to tl district oil and g The permitted v reverse hereof.	ering the well op ect to the condit he construction o gas inspector 24 work is as describ	perator and well ons contained f roads, locatio hours before ac red in the Notic	l location shown herein and on tho ons and pits for a ctual permitted w re and Applicatio	e reverse hereof Notif ny permitted work. ork has commenced. n, plat, and reclamat	ication must I In addition, t .) ion plan, sub	be given to t he well oper ject to any п	ill in accor he District ator or his nodification	dance with the Oil and Gas Ins contractor shal	pector, (Refer to I notify the proper ns specified on the
quirements subj lo. 8) Prior to th district oil and p The permitted v reverse hereof. Permit expires	ering the well op ect to the condit he construction o gas inspector 24 work is as describ	perator and well ons contained f roads, locatio hours before ac red in the Notic	I location shown herein and on the ons and pits for a ctual permitted w e and Applicatio , 1988	e reverse hereol Notif ny permitted work. ork has commenced. n, plat, and reclamat unless well v	ication must I In addition, t .) ion plan, sub	be given to t he well oper ject to any n enced prior to	ill in accor he District ator or his nodification o that date	dance with the Oil and Gas Ins contractor shal	pector, (Refer to I notify the proper ns specified on the
This permit cov quirements subj lo. 8) Prior to th district oil and p The permitted v reverse hereof.	ering the well op ect to the condit he construction o gas inspector 24 work is as describ	perator and well ons contained f roads, location hours before according to the	l location shown herein and on the ons and pits for a ctual permitted w ee and Applicatio , 1988	e reverse hereof Notif ny permitted work. ork has commenced. n, plat, and reclamat	ication must I In addition, t .) ion plan, sub	be given to t he well oper ject to any п	ill in accor he District ator or his nodification o that date	dance with the Oil and Gas Ins contractor shal	pector, (Refer to I notify the proper ns specified on the
This permit cov quirements subj to. 8) Prior to th district oil and to The permitted v reverse hereof. Permit expires	ering the well op ect to the condit he construction o gas inspector 24 work is as describ	perator and well ons contained f roads, location hours before according to the	I location shown herein and on the ons and pits for a ctual permitted w e and Applicatio , 1988	e reverse hereol Notif ny permitted work. ork has commenced. n, plat, and reclamat unless well v	ication must I In addition, t .) ion plan, sub	be given to t he well oper ject to any n enced prior to	ill in accor he District ator or his nodification o that date	dance with the Oil and Gas Ins contractor shal	pector, (Refer to I notify the proper ns specified on the
This permit cov quirements subj lo. 8) Prior to th district oil and p The permitted v reverse hereof. Permit expires	ering the well op ect to the condit he construction o gas inspector 24 work is as describ	perator and well ons contained f roads, location hours before according to the	I location shown herein and on the ons and pits for a ctual permitted w e and Applicatio , 1988	e reverse hereol Notif ny permitted work. ork has commenced. n, plat, and reclamat unless well v	ication must I In addition, t .) ion plan, sub	be given to t he well oper ject to any n enced prior to	ill in accor he District ator or his nodification o that date	dance with the Oil and Gas Ins contractor shal	pector, (Refer to I notify the proper ns specified on the
This permit cov quirements subj o. 8) Prior to the district oil and p The permitted v reverse hereof. Permit expires	ering the well op ect to the condit he construction o gas inspector 24 work is as describ Oc Agent: MM	Prior and well fons contained f roads, locatio hours before ac ed in the Notic tober 23	l location shown herein and on the ons and pits for a ctual permitted w er and Application , 1988 Casing Casing (6)	reverse hereol Notif ny permitted work. ork has commenced n, plat, and reclamat unless well v Fee 9788	ication must I In addition, t) ion plan, sub work is comme SSF	be given to the well oper ject to any number of the prior to the prior	ill in accor he District ator or his nodification o that date r	dance with the Oil and Gas Inscontractor shall ns and condition and prosecuted	pector, (Refer to I notify the proper as specified on the with due diligence.
This permit cov quirements subj o. 8) Prior to th listrict oil and p the permitted v everse hereof. Permit expires Bond:	ering the well op ect to the condit he construction o gas inspector 24 work is as describ Oc Agent: MM	Prior and well fons contained f roads, locatio hours before ac ed in the Notic tober 23	I location shown herein and on the ons and pits for a ctual permitted w e and Applicatio , 1988	reverse hereol Notif ny permitted work. ork has commenced n, plat, and reclamat unless well v Fee 9788	ication must I In addition, t .) ion plan, sub	be given to t he well oper ject to any n enced prior to	ill in accor he District ator or his nodification o that date r	dance with the Oil and Gas Ins contractor shal	pector, (Refer to I notify the proper as specified on the with due diligence.

FORM L'-2 (Obverse)							SU WEST UN		1) D 2) O		COLUMN STREET,	, 19	83	
(6-82)											lo. <u>KEM 835</u>	8		
									3) A	PI W	/ell No	107 12	1 40 C	
	G CONTE	a property of					E OF WEST VIRG				State	County P	ermit	
	Hurt	<u>a nasu</u>	<u>ciace</u> s	D	EPARTME	ENT OF	MINES, OIL AN	ND GAS	DIVIS	SION				
Elkvin	ew, WV		1		OIL ANI) GAS	WELL PERMIT .	APPLIC	ATIO	N =				
4) WEI	LL TYPE:				X		Underground stor	age			/ Deep	_/ Shallow	_/)	
5) LOC	CATION:			936			Watershed:	Pine	e Rui	n			-	
O WEI				1 8 8 8 M			County:	DESIC	NIA TE		Quadrangle:	Lubeck		
	Address	. P.	0. 80	X 8	16100 8		ining Coll) —	Add			Same	Pryce		
7) OIL ROY					an Rad		ah 12)	COAL	OPER	ATC	DRMono			
	ddress		and the second s	Box 15	- Sector and the sector of the sector sector				dress		Hone			
			100 S. S. 100 S. S. 11	land,	WV 26	154								
			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				13)	COAL Name		ER(S	5) WITH DECLAR	ITH DECLARATION ON RECORD:		
	Address		ame				_	The set of the						
A	creage							Name			A SAME AND	and well a give		
9) FIEL	LD SALE	(IF MADI	E) TO :		No.		Constanting and		lress	-		the state of the s		
			D TO DE	NOTIFIE	20		14)			EE V	VITH DECLARAT	ION ON RECORD:		
	& GAS IN			NOTIFIE	,D			Name	iress	ton	0	and the second second		
	ddress	P. 0.	Box 6				- of the last			_				
15) PRO	POSED V	VORK:	Drill	×/			/ Redrill/ Perforate nev					/		
					nge in well				1				1. A.C.	
					0	r1sk	any							
(ELLINA)	Estimated Approxim	State State			1	21.02	feet feet; sa	lt			feet.			
	Approxim								ed in th	he are	ea? Yes	/ No		
20) CAS	SING ANE	TUBING	PROGR	AM										
	NG OR		SPI	ECIFICATIO	NS I I		FOOTAGE I	NTERVAL	S	-	CEMENT FILL-UP OR SACKS	PACKERS		
		Size	Grade	per ft.	New Us	sed	For drilling	Left	in well		(Cubic feet)	Kinds		
Conduct Fresh wa		10 2//	1.0		v		250 000		10			Kinds	-	
Coal		20 3/1		and with			CALC AND A	60	10.51	9	LOU SAS CIA	Sizes	-	
Intermed	diate	7"			X		2110'	21	10		100°\$8s°212	pgzmix		
Producti	ion	4 1/1	10		X		4656	-11	256	2	225 sks 50/1	Depths set		
Tubing							The local sector of the lo				THE REAL PROPERTY OF	Perforations:	_	
											See have not an	Top Botto	m	
		LDIGUES		-					Part Ser				_	
		vide one o l is the lea:	f the follo se or lease	es or other						he ri	ght to extract oil or	gas.		
				-4-1-(c) (1) through ((4). (Se	e reverse side for	specifics.	.)					
	ALTY PR			arket the o	oil or gas ba	used upo	on a lease or other	continuii	ng cont	ract	or contracts providi	ng for flat well royalty	or any	
simila	ar provisio	on for com	pensation	to the ov								e of oil or gas so extr		
	uced or ma				eeded. If t	he ansy	ver is Yes, you ma	v use Af	fidavit	For	m IV-60.			
23) Requ	ired Copie	es (See rev	erse side.)											
24) Copi	ies of this	Permit Ap	plication	and the en	closed plat	and re	clamation plan ha	ve been i	mailed	by r	egistered mail or de	livered by hand to the ication to the Departm	above ent of	
	es at Charl				i lessee on	OF DEIC	he the day of the	manning (Ji uciiv	ici y t	or this remit Appr	leation to the Departin	ciit oi	
Notary	y:			-			-	Signed:	The	>	to the second			
My Co	ommission	Expires					-	Its:	Ge	nei	ral Managor		-	
-						OF	FICE USE ON	ILY						
						DR	ILLING PERI	TIM			Acres 1	10		
Permit nu	mber					-					Dat	19 e		
This perm	nit coverin	g the well	operator	and well lo	ocation sho	wn bel	ow is evidence of	permissio	on gran	nted	to drill in accordan	ce with the pertinent le	egal re-	
quirement (Refer to)	ts subject (No. 10) Pr	to the cond ior to the c	ditions construction	ntained he	rein and or s, locations	and pit	verse hereof. Noti s for any permittee	fication work.	must b n addit	e giv tion,	en to the District O the well operator or	il and Gas Inspector. his contractor shall no	tify the	
			ecembe		1983	ernitte						prosecuted with due dil		
Permit exp	the second s	Agent		Plat:	Cas	sing	unless drill	mg is col	mienc	cu pr	to that date and	prosecuted with due di	Bened	

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

Administrator, Office of Oil and Gas