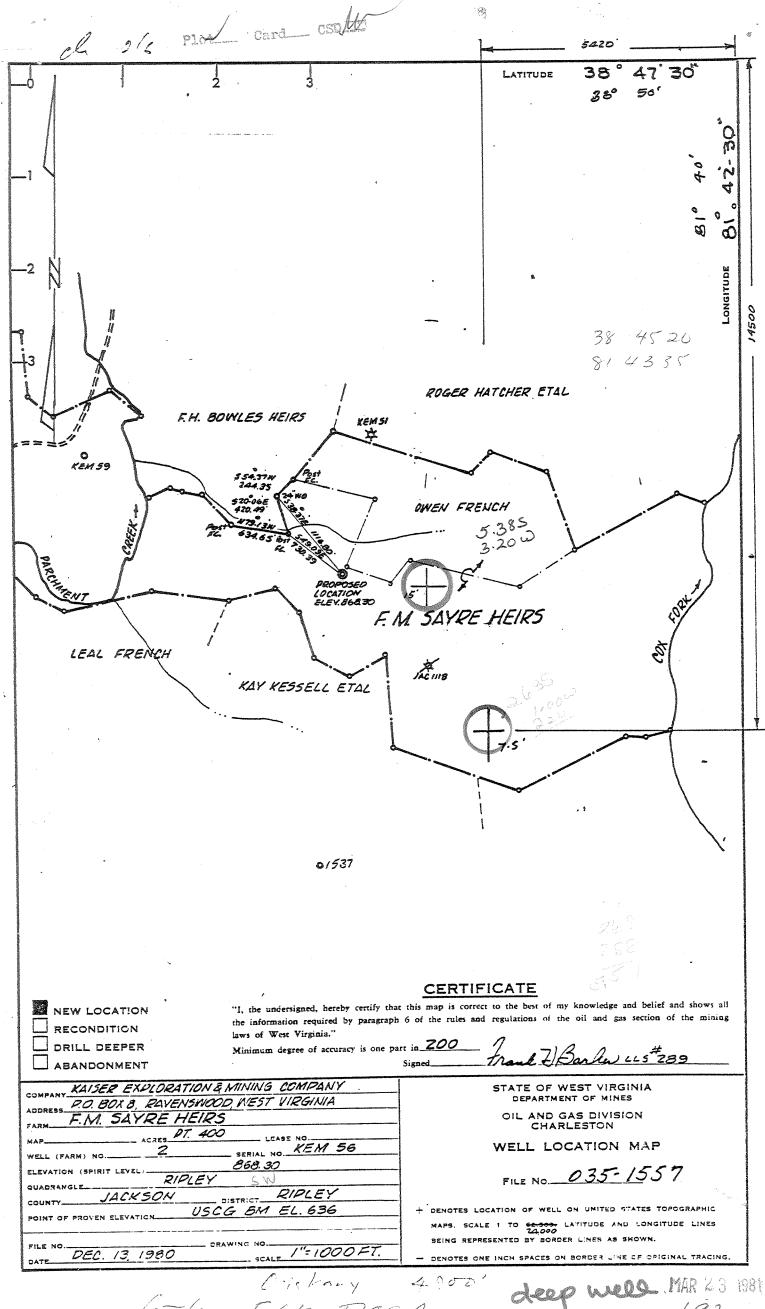


OWWO- DEEP WELL Y GIL ETK ARCO (Sissonville) (192)



ELK-POCA

192



IV-35 (Rev 8-81)

State of Mest Nirginia

Bepartment of Mines Gil und Gas Zivision

Date	June	20,	1986	
Oper	ator' No.	<b>s</b> KEM	56	
_	Sayr	•		
API	No4	7 -	035	-1557-F

### WELL OPERATOR'S REPORT

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

WEIL TYPE: Oil / Gas $\frac{\chi}{}$ / Liquid Injection (If "Gas," Production $\chi$ / Underground	_/ Wast d Storag	e Disposal e/ Deep	· / Shai	llow/)
District: Ripley County Jackso	chment Cr	eek		
COMPANY Kaiser Exploration & Mining Co.				Cement
ADDRESS P.O. Box 8 Ravenswood, WV 26164	Caging	Used in		fill up
DESIGNATED AGENT R. A. Pryce	Tubing	Drilling	in Well	Cu. ft.
ADDRESS same	Size			
SURFACE OWNER Floyd McKinley Sayre Heirs	20-16 Cond.			
ADDRESS P.O. Box 1777 Beckley, WV 25801	13-10"			
MINERAL RIGHTS OWNER Floyd McKinley Savre Heirs				
ADDRESS same	8 5/8			
OIL AND GAS INSPECTOR FOR THIS WORK Jerry	7			
Tephabock ADDRESS Rt, 1 Box 101A Ripley, WV	5 1/2			·
Prikmin issuru .) (Dide.	4 1/2			
DRILLING COMMENCED May 4, 1981	3			
DRILLING COMPLETED May 11, 1981 ( 11)	. 2			
IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSION OBTAINED ON	Liners used			
GEOLOGICAL TARGET FORMATION Oriskany		De <sub>l</sub>	oth 5051	fæt
Depth of completed well 5120 feet				
Water strata depth: Freshfeet;				
Coal seam depths:	Is coa	L being mi	ned in th	e area?
OPEN FLOW DATA  Producing formation Berea Sandstone	Pa	ay zone de	pth 2536	/2540 <b>feet</b>
30.00	Oil: D	- nitial ope	n flow	Bbl/d
Gas: Initial open flow Mcf/d Mcf/d Final open flow 218 COMM Mcf/d	Ysmië F	inal open	flow	Bbl/d
Time of open flow between init	ial and	final test	s 4 !	rours
*Static rock pressure 1000 psig(surface				
(If applicable due to multiple completion			Tacons de la constante de la c	
Second producing formation	P	ay zone de	pth_	feet
Gas: Initial open flow Mcf/d				
Final open flow Mcf/d	Oil: F	inal open	flow_	Bbl/d
Time of open flow between ini				
Static rock pressure psig(surface *Commingled with previously fractured Shall	e measure	ment) afte	er	

FORM IV-35 (REVERSE)

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.
See previous IV-35

6/11/86 Young's Wireline perf Berea from 2536' to 2540' with 16 shots

#### WELL LOG

WELL LOS							
FORMATION COLOR HARD	OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication o and salt water, coal,	f all fres oil and ga		
See previous IV-35							
			-				
					ar ra		

(Attach separate sheets as necessary)

Well Operator

BY: KAISER EXPLORATION AND MINING COMPANY

Date: June 20, 1986

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

1 - - JUN 2 2 1982

WELL UPERATOR'S REPORT

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

1. Pcrf. Marcellus Shale 4706-4919(KB), 20 holes, 2 1/8 glass jets on strip; .39 diameteron

2. Nitrogen fractured Marcellus shale w/ 8 BJ Hughes trucks, 7,500 SCF/min/truck; 60,000 SCF/ min total volume; breakdown was 2900 psig; treatment pressure was 2450 psig; instantaneous shut in pressure was 1600 psig; used 1,400,000 SCF of nitrogen (6/1/81).

3. Set retrieveable bridge plug at 4375 (KB); perf. Brown Shale from 4073-4313 (KB), 25 holes 3 1/2' glass jets on strip (9/16/81).

4. Foam fractured Brown Shale interval using 75 quality foam; 15,000# 80/100 sand; 45,000# 20/40/sand; 500 gal. 15% HCL acid; 225 bbl water sand ladened; 588,000 SCF of nitrogen at 12.5 BPM average rate, 2700 psig average pressure; breakdown was hydrostatic; maximum pressure was 2900 psig; instantaneous shut in pressure was 1000 psig.

WELL LOG

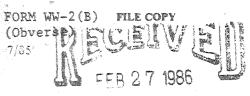
FORMATION	C-1	Hard or		Bottom	Remarks Including indication of all fresh
	Color	Caft	Top Feet	Feet	and salt water, coal, cil and gas
Sand				49	
Shale			49	60	
Sand			60	234	
Shale 'a			234	286	
Sand			286	9	
Shale		-	332	332	
Sand & Shale			8	392	
Shale			392	512	
Sand			51.2	645	
Shale			645	650	
Sand			650	710	
Shale			710	730	•
Sand			730	754	
Shale		No.	754	766	
Sand & Shale		-	766	846	
Sand			846	1172	
Shale			1172	1271	
Sand			1271	1319	•
			1319	1420	
Shale			1420	1774	
Sand			1774	1844	
Shale			1844	1858	•
Sand			1858	1926	
Big Lime (Greenbrier)			1926	2044	
Shale			2044	2078	
Big Injun Sand			2078	2138	
Shale	-	:	2138	2526	
Coffee Shale			2526	2548	•
Berea Sand			2548	2560	•
Shale			2560	3774	
Brown Shale			3774		Gas show 3318
Shale			3	4310	Gas show 4185
Marcellus Shale			4310	4672	Gas show 4450
Onondaga Lime			4672	4957	-
Oriskany Sand			4957	5035	Gas show 5050,5090
Helderberg Lime			5035	5094	
	OCLICATION		5094	5147	
Total Depth	OVER 1		e1 4-1		

(Attach separate sheets to complete as necessary;

					ANU	MINING	COMPANY	
	Well	QD.	erator	•				
				_			***	
			- A					
2	3У{			4. I'				
	}		_		1			
1	t s	Ger	neral	Manage	r			

Propulation C.OL(i) provides as

"The term 'log' or 'well lug' shall mean a systematic, detailed geologial resord of all formations, including oral, encountered in the drilling of a will."





1)	Date:	<u>Fe</u>	brua	iry.	LL,	1986	19
2)	Operator Well No.		KEM	#56	E.	Savr	(دي ع
3)	API Wel	ll No.	47		035	7,0	1557-F
-			State		Cou	inty	Permit

Permit

#### STATE OF WEST VIRGINIA DIVISION OF OIL & GASEPARTMENT OF ENERGY, OIL AND GAS DIVISION

DEP	ARTMEN	1 OF En	NEKGT	<u>A</u> 1	PPLICATIO	IN FOR A WELL	WORK PERMIT			
4) WELL TY	PE: A O	il	/ G	25	X/					
						Underground st	orage	_/ Deep	_/ Shallow	<u>X</u> /)
5) LOCATIO						Watershed:F				Manager Control of the Control of th
		trict:R			445	County:la	ackson	Quadrangle: _	<u>Ripley</u>	
6) WELL OP	ERATOR_	Kaisei	r Expl ining	orat Comp		25-53-0 7	) DESIGNATED	agent <u>R. A</u>	. Pryce	
Address		<del>-0-R</del> 1	<del>~~~~~~</del>			****	Address _	Same	2	William Control of the Control of th
	R.	vensw	ood, w	W_2	6164	- to the table and the table and the table and the table and table	-			
8) OIL & GA							) DRILLING CO			
								<u>ser Tools</u>		
Addres						wy mention were	Address S	ame		-
	Ripla	⊇Y, WY	252	71_		**************				
10) PROPOSE	ED WELL Y	WORK:			_/ Drill			/ Stimulate>	<u></u>	
			Plug of	ff old i	formation_	/ Perfora	te new formation_	<u>X</u>		
			Other p	hysical	change in w	vell (specify) <u>SQ</u> I	<u> Jeeze 4 1/2"</u>	casing: per	<u>forate,</u>	<u>stimulate</u>
							<u>ngle Berea,</u>	<u>Brown Shale</u>	<u> </u>	
12) Estim	ated depth o	of complete	ed well,	<u>earth</u>	4950	(PBTD)_feet				
13) Appro	oximate trat	a depths:	Fresh, _	N/A		feet; salt,	N/A	feet.		
14) Appro	oximate coa	i seam dep	ths:			ls coa	l being mined in the	area? Yes	/ No_	X/
15) CASING	and tubi	NG PROC	GRAM							
CASING OF		SPEC	IFICATION	s	81	FOOTAGE IN	TERVALS	CEMENT FILL-UP	PAC	CKERS
TUBING TYPE	Size	Grade	Weight per ft.	New	Used	For drilling	Left in well	OR SACKS	100	
Conductor									Kinds Ha	illiburton
Fresh water	10 3/	4 H-40	32 7	₹ y		248'(KB	) 248'(KB	150 sks	retriev	
Coal	1 20 00	11==0		1			,			'8 x 4 1/2
Intermediate	711	.K_55	20	1 X		2438'(KB	) 2438'(KB)	165 sks	1 500	U X T I) L
Production	/ 1/	N-80	7	-			5112 (KB)		Depths set	3825 (KB)
Tubing		8 J-55	-	Τŷ			3825'(KB	273 383	II Septiment	<u> </u>
Liner	1 6 36	0 0-33	7-7-0	1-					Perforations:	
2.6(40)2			i e	1					Top	Bottom
	1.		1	$\dagger$					4706	4917 (KI
		<u> </u>	1	1					4073	4313 (K)
	<u> </u>	<u> </u>	<u> </u>		1 11			<u>}</u>	11 40/3	4212 [K
*************	********************			***************************************		FFICE USE C	NIV			
	······································					RILLING PE				
				(A)		EVERIEIE! VO E EIE	ATANT R			
Permit number.	47	7 <u>-035</u> -	<u>-1557</u>	-Fra	<u>lc</u>		***************************************	Na	arch 20,	<sup>19</sup> 86
								Da	.te	' #F
This permit cov	ering the w	ell operate	or and we	il locati	ion shown b	elow is evidence o	f permission grante	d to drill in accorda	nce with the pe	ertinent legal re-
quirements sub	ect to the c	onditions	contained	herein	and on the	reverse nereot Noti	fication must be giv	en to the District Oil Il operator or his co	and Gas Inspe	ector. (Refer to
district oil and	ne construc gas inspecto	or 24 hour	s before a	ons and ictual p	ermitted wo	rk has commenced	(.)	in operator or mis con	JUNEOUS STEEL IS	ionis me propei
The marmitted :	rometric and	anneibad ir	s the Mari	os and	Amplication	mist and reclams	tion also subject to	any modifications :	and conditions	enseified on the
reverse hereof.	work is as w	escribed ii	1 CIR 1 ACAT	er manaer i	ushburearmur.	piet, ene reciente	aron pram, savjete et	mily mounteemons	ma conditions	specified on the
Permit expires	M S	irch 2	20, <u>1</u>	988		unless well	work is commenced	prior to that date and	i prosecuted wi	ith due diligence.
•										
Bond:	Agent	: 1	Plat:	Casi		ee WPCP	S&E	Other		
	1213		<u> </u>	M	5 969	7363 200				
\$							and the second s			
							- U Hrns	to bum.	aracuk	Tham
NOTE: Keep	one copy o	f this pern	nit posted	at the	drilling locat	tion.	rector. Div	ision of Oil	and Gas	
				***************************************					Dia vas	File
		See	the rever	se side :	of the APPI	LICANT'S COPY	for instructions to	the well operator.		•



DEPARTMENT OF MINES

OIL & GAS DIVISION Oil and Gas Division EFT. OF MINES

## OIL AND GAS WELL PERMIT APPLICATION

Charleston, W. Va.		DATE February 2.	., s., ssjer og ekense .1981	
Surface Owner Floyd McKinley	Savre beirs	Company Kaiser Exp	And the second of the second	ining Company
Address P. O. Box 1777 Beck	nt) lev WV 25801			25.54
Mineral Owner Same as above		Farm Floyd McKinl		
Address Same as above		Location (waters) Par		
Coal Owner Same as above		Well No KEM #56		868
Address Same as above		District Ripley		
Coal Operator None		Quadrangle Ripley		·
Address None		- dramangi	***************************************	
HIS PERMIT MUST BE POSTED AT	THE WELL SITE			
If provinons being in accordance with the W. Vo. Code, the location is be drilling. This permi	Tabou Personasiani	SPECTOR  BE NOTIFIEDRic	hard Morris	
perations have not commenced by	11-3-81 <b>AI</b>	DRESS P. O. Box 3	72, Grantsvill	e, WV
Deputy Director - Oil & Gas Division	PF	IONE 354-7259	•	
GENTLEMEN:				
OIL AND GAS WELL  The enclosed plat was prepared leave been notified as of the above described to the second secon	DRILL DEEPER ORIGINALLY DRILLED oy a registered engineer or	BEFORE JUNE 5, 1969	•	
The above named coal owners an to make by Section 3 of the Code,	d/or operator are hereby n must be received by, or fil	otified that any objection ed with the Department o	they wish to make	e, or are required
Copies of this notice and the encior coal owners at their above show same day with the mailing or deliver	losed plat were mailed by a	registered mail, or delivere	d to the above nam	ed coal operators
		Very truly yours,		
PLEASE SUBMIT COPIES OF AL GEOPHYSICAL LOGS DIRECTLY		Sign Name)	u U. P_	
WEST VIRGINIA GEOLOGICAL A	ND Address	P. O. Box	Vell Operator PLORATION AND M 8 Street	INING COMPANY
P. O. BOX 879 MORGANTOWN, WEST VIRGINIA	of Well Opera	Ravenswood		
AC-304 - 292-6331		West_Virgi		4
			State	
	BLANKET ROND	¥		
"SECTION 3 If no objections	are filed or found by the De	nariment of mines within:	a musti a se s	
notice and plat by the department of min	cs, to said proposed location, th	e department shall forthwith i	u period of ten days fi issue to the well opera-	trom the receipt of tor 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.

47-035-1557 PERMIT NUMBER

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

PROPOSED WORK ORDER TO	X DRILL	DEEPEN FRACTURE-STIMULATE				
DRILLING CONTRACTOR: (If		RESPONSIBLE AGENT				
NAME Not known at this	time					
ADDRESS			x 8, Ravenswood, WV			
TELEPHONE			71			
ESTIMATED DEPTH OF COMPL	ETED WELL: 4900'	ROTARY X	CABLE TOOLS			
PROPOSED GEOLOGICAL FORM						
TYPE OF WELL: OIL_	GASX	COMB. STORAG	E DISPOSAT			
			OOD OTHER			
TENTATIVE CASING PROGRAM	<u></u>					
CASING AND TUBING SIZE	USED FOR DRILLING	LEFT IN WELL	CEMENT HIL UP OR SACKS - CUBIC I-T.			
20 - 16						
13 - 10	0.7.0.1					
9 - 5/8 10 3/4	250'	250'	150 sks class A			
8 - 5/8	2/1501	24501	- CF - 100			
5 ½	2450	2450'	65 sks pozmix, 100 sks			
4 ½	4900'	4900'	225 sks pozmix			
3			Perf. Top			
2			Perf. Bottom			
Liners			Perf. Top			
4			Perf. Bottom			
TO DRILL DEEPER OR REDRILL SUBMIT FIVE (5) COPIES OF WELLS DRILLED PRIOR TO MUST ALSO BE SUBMITTED TO FRACTURE - STIMULATE: OIL AND/OR GAS WELL OR BOND, PERMANENT PLAT OIL AND/OR GAS WELL OR ING ORIGINAL PERMIT NUM	C:  OF OG - 1, SHOWING ORIGINATED PERMANENT OF THE PERMANCHING OR THE PERMANCHIN	PINAL PERMIT NUMBER AND COPY OF THE PLAT AND CORD.  CORD.  CORD.  CORD.  CORD.  CORD.  CORD.  CORD.	NO PERFORMANCE BOND. ON THE ORIGINAL WELL RECORD COPIES OG - 1, PERFORMANCE 29, FIVE COPIES OG - 1, SHOW-Inspector to be notified twenty-			
WAIVER: I the undersigned, Agen this lease have examined	for	Coal Company, Owners this proposed well local	lion.			
We the	Coal Company	have no objections to said w	vell being drilled at this location,			
providing operator has co	mplied with all rules and reg	rulations in Articles 4, 5, and	7, Chapter 22 of the West Virginia			
and take,			The state of the s			
		j:	or Coal Company			