

IV-35 (Rev 8-81)

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	NAL	19	1984	

State of West Wirginia OIL & GAS DIVISION
DEPT. OF MINES
Bil und M.

Date September 30, 1983
Operator's
Well No. KEM-355
Farm Wilbert & Clara Hoffman
<b>API No.</b> 47 - 107 - 1258

# WELL OPERATOR'S REPORT

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

	Stillwell	Hollow		
District: Harris County Wood	đ	Quadrangle	Luber	
•				
COMPANY Kaiser Exploration and Mining Company		•		
ADDRESS P. O. Box 8. Ravenswood WV	Caşing	Used in	Tef+	Cement
DESIGNATED AGENT Robert A. Pryce	GAE .	Drilling		fill up Cu. ft.
ADDRESS P. O. Box 8, Ravenswood, WV	Size	Dirring	TI METT	1
SURFACE OWNER Wilbert G. & Clara L. Hoffman	20-16			
ADDRESS Rt. 1, Box 46, New England, Wy	Cond.			200 sx Cla 3% CaCl, 1
MINERAL RIGHTS OWNER Same	13-10-3/4		297'	3% CaCl, 1 flocele
ADDRESS	9 5/8			
OIL AND GAS INSPECTOR FOR THIS WORK Homer	8 5/8			100 av 507
	7		1707'	100 sx <sub>1</sub> 58/
Dougherty ADDRESS Linden Rt Roy 3A. Looneyvillé, WV PERMIT ISSUED 5/4/83	5 1/2			
description of the section of the se	4 1/2		42521	
DRILLING COMMENCED 8/22/83	3			12 ½#/sk G
DRILLING COMPLETED 8/27/83	2			
IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR	Liners	•		
REWORKING. VERBAL PERMISSION OBTAINED	used			
CN				
GEOLOGICAL TARGET FORMATION Oriskany Sandsto	one	Dep	th 4150	fæt
Depth of completed well 4270' feet	Rotary x			
Water strata depth: Fresh NA feet;				
				· · · · · ·
Coll Sean depuis: None	,	•		<u> </u>
Coal seam depths: None	•			
OPEN FLOW DATA	•			
OPEN FLOW DATA Producing formation Oriskany Sandstone			•	
OPEN FLOW DATA  Producing formation Oriskany Sandstone  Gas: Initial open flow 20 Mcf/d	Oil: Ini	tial open	flow	Bbl/d
OPEN FLOW DATA  Producing formation <u>Oriskany Sandstone</u> Gas: Initial open flow <u>20</u> Mcf/d  Final open flow est 225 Mcf/d	Oil: Ini Fin	tial open al open f	flow	Bbl/d Bbl/d
OPEN FLOW DATA  Producing formation <u>Oriskany Sandstone</u> Gas: Initial open flow <u>20</u> Mcf/d  Final open flow <u>est</u> 225 Mcf/d  Time of open flow between init	Oil: Ini Fin ial and fi	tial open al open f nal tests	flowho	Bbl/d Bbl/d ours
OPEN FLOW DATA  Producing formation <u>Oriskany Sandstone</u> Gas: Initial open flow <u>20</u> Mcf/d  Final open flow <u>est. 225</u> Mcf/d  Time of open flow between init  Static rock pressure <u>1500</u> psig(surface	Oil: Ini Fin ial and fi e measurem	tial open al open f nal tests	flowho	Bbl/d Bbl/d ours
OPEN FLOW DATA  Producing formation <u>Oriskany Sandstone</u> Gas: Initial open flow <u>20</u> Mcf/d  Final open flow <u>est. 225</u> Mcf/d  Time of open flow between init  Static rock pressure <u>1500</u> psig(surface)  (If applicable due to multiple completion	Oil: Ini Fin ial and fi e measurem	tial open al open fi nal tests ent) after	flowhourhou	Bbl/d Bbl/d ours ors shut in
OPEN FLOW DATA  Producing formation <u>Oriskany Sandstone</u> Gas: Initial open flow <u>20</u> Mcf/d  Final open flow <u>est. 225</u> Mcf/d  Time of open flow between init  Static rock pressure <u>1500</u> psig(surface)  (If applicable due to multiple completion Second producing formation	Oil: Ini Fin ial and fi e measurem} Pay	tial open al open fi nal tests ent) after zone dep	flow hour hour hour	Bbl/d Bbl/d curs ars shut in feet
OPEN FLOW DATA  Producing formation <u>Oriskany Sandstone</u> Gas: Initial open flow <u>20</u> Mcf/d  Final open flow <u>est. 225</u> Mcf/d  Time of open flow between init  Static rock pressure <u>1500</u> psig(surface)  (If applicable due to multiple completion  Second producing formation  Gas: Initial open flow Mcf/d	Oil: Ini Fin ial and fi e measurem} Pay Oil: Ini	tial open al open final tests ent) after zone deponitial open	flow house h	Bbl/d Bbl/d ours ors shut in feet Bbl/d
OPEN FLOW DATA  Producing formation <u>Oriskany Sandstone</u> Gas: Initial open flow <u>20</u> Mcf/d  Final open flow <u>est. 225</u> Mcf/d  Time of open flow between init  Static rock pressure <u>1500</u> psig(surface)  (If applicable due to multiple completion Second producing formation	Oil: Ini Fin ial and fi e measurem) Pay Oil: Ini Oil: Fin	tial open final tests ent) after zone deponitial open final open f	flow hou th flow low	Bbl/d Bbl/d  Bbl/d  rurs  rs shut in  feet  Bbl/d  Bbl/d

FURM IV-35 (REVEICE)

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 9/1/83 - Oriskany Sandstone Perforation: 4184' - 4191', 3 holes/ft., 21 holes, 0.50" diameter.

9/6/83 - Oriskany Sandstone Fracture: 75 quality foam. Breakdown pressure = 1500 psig. 45,000# of 20/40 sand. Treating pressure = 2210 psig w/3 BPM & 10,000 SCF/min  $N_2$ . Total water of 276 bbls. 5 minute SI = 1790 psig.

#### WELL LOG

			REMARKS
FORMATION COLOR HARD OR SOFT	TOP FEET	BOTTOM FEET	Including indication of all fresh
			and salt water, coal, oil and gas
Soil and Shale	0	159	
Sand	159	205	
Siltstone and Shale	205	477	
Sand	477	564	
Shale	564	772	
Sand and Shale	772	847	
Shale	847	1024	
	1024	1114	
Sand (broken) Shale	1114	1180	
Share Little Dunkard Sand	1180	1238	
	1238	1274	
. Shale	1274	1356.	•
Big Dunkard Sand	1356	1471	
Shale and Siltstone		1600	
Salt Sands	1471		
Shale	1600	1952	
Coffee Shale	1952	1970	s/g
Berea Sand	1970	1973	5/6
Shale	1973	3101	0.40
Brown Shale	3101	3573	s/G
Shale	3573	4082	
Onondaga Lime	4082	4170 ·	•
Oriskany Sand	4170	4202	s/G
Helderberg Lime	4202	4277	
·Total Depth	4277		
			•
•			
	8		

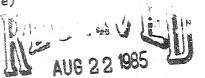
(Attach separate sheets as necessary)

KAISER EXPLORATION AND MINING COMPANY	
Well Operator	
Bu: IZ. A D.	•
Date: General Manager	

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 earl, encountered in the drilling of a well."

7/85





1)	Date: Aug	ust	14		. 19 85	
2)	Operator's Well No.	KEM	#355			1. /
3)	API Well No.	47		107	1258	Frac
•		State	,	County	Per	mit

STATE OF WEST VIRGINIA

(V) 1	, <del>.</del>	~ ; •	^ (	JAEP.	AR7	TME:	NT	OF	EN	IERC	ïΥ,	OIL	AND	GAS	DIV	ISION
177			51.4													

	Di DEF	VIDA	ivi or	ENERG	AF	PLICATIO	N FOR A WE	LL WORK PERM	<u>IT</u>		
4)	WELL TYP	E: A 0	il	/ Ga	s						
•		B (I	f "Gas", I	roduction		<u>X</u> /	Underground	d storage	/ Deep	✓ Shallow _	Χ
5)	LOCATION	۷: Ele	vation:	<u>769'</u>			Watershed:	Stillw	ell Hollow		
·		Dis	المناواء كأ	larris.	<del>, , , , , , ,</del>	oncond	County:	Wood	Quadrangle:	Lubeck	
6)	WELL OPE	RATOR	Na ISEI	inina (	omn-	CODE:	25350	7) DESIGNATI	ED AGENT R. A.	. Pryce	
	Address						465	Address	Same		
			Ravens	swood.	WV	26164					
8)	OIL & GAS	INSPEC	TOR TO	BE NOTIF	FIED			9) DRILLING			
	Name			1					<u>iser Exploratio</u>	<u>on and Mir</u>	<u>ling Co.</u>
	Address		1, #6				<del></del>	Address	P <u>. O. Box 8</u>		
		Mine	eral We	ells, d	NV				Ravenswood, W	<u>/ 26164 </u>	
10)	PROPOSE	D WELL	WORK:	Drill		/ Drill	deeper	/ Redrill	/ Stimulate		
,				Plug of	f old f	ormation	/ Perf	orate new formation	n χ / Set pe	ermanent b	oridge plu
				Other n	hyeical	chance in w	uell (enecify)		at 3030 .	calseal or	1 top of p
11)	GEOLOGI	CAL TAR	GET FOR	MATION	Br	own Sh	ale/Berea	401	frac Brown	n Shale; s	squeeze 4
/	12) Estima	ted denth	of complet	ed well.		3650'	fe		casing ove	er Berea	
	13) Approx	cimate trat	a depths:	Fresh.			feet; sa		feet.		
								,	he area? Yes	/ No	Χ ,
15)	CASING A										
,	SING OR	1		IFICATION!	9	Ħ	FOOTAG	E INTERVALS	CEMENT FILL-UP	i PACKE	me.
	BING TYPE	Size	Grade	Weight per ft.	New	Used	For drilling	Left in well	OR SACKS (Cubic feet)		
<u> </u>		Stze	Cermore	ger it.	idem	Useu	rot attmag	Leit in wen	(Capic reet)	Kinds	
	ductor	10 3/	<del>                                     </del>	<del>                                     </del>	У		297'	297'	200 sks c <sup>3</sup> a		
	h water	10 3/	† -	1			29/	29/	200 SI.S C'a		
Coal		7"	<del> </del>	<u> </u>		<del>                                     </del>	17071	17071	100 -1 - 7 -	Sizes	
	mediate	<u> </u>	d.,	1	X	1 1	1707'	1707'	100 sks cla		
Prod	luction	4 1/	4''		_X_	<del>                                     </del>	4252'	4252'	235 sks x 🗱	Deptember DOZ	<u>zm1 x</u>
Tubi	ng		1				·				***
Line	rs		1			<del>                                     </del>				Perforations:	
						<b></b>				Тор	Bottom
			<b> </b>								
										Service Control of the Control of th	***************************************
		·								····	
Wanne or the State of the State						0	FFICE USE	ONLY			
				W		D	RILLING P	PERMIT			
-		1. 7	707 10								19 05
Peri	mit number_	4/-	<u>-107-12</u>	38 Fr	1C				Se	<u>ptember 3</u>	85
This quir	s permit cove ements subje	ering the weet to the c	vell operate	or and wel	l locati herein a	on shown b and on the r	elow is evidence everse hereof	e of permission gra	nted to drill in accordan	ce with the pert	inent legal re-
io. 8 distr	B) Prior to the rict oil and g	e construc as inspect	tion of rea or 24 hour	ids, locations before a	ons and ctual pe	pits for any ermitted wor	permitted work has commen	·k. In addition, the iced.)	given to the District Oil well operator or his con	tractor shall not	ify the proper
	permitted werse hereof.	ork is as d	lescribed in	the Notic	e and A	Application,	plat, and recla	mation plan, subjec	t to any modifications as	nd conditions sp	ecified on the
Peri	mit expires _	<u>Se</u> p	otember	3, 19	987		unless w	ell work is commend	ed prior to that date and	prosecuted with	due diligence.
Supplied Sup	Bond:	Agent	: ]	Plat:	Casi	ng 96	Bo WPC	P S&E	Other		
-		ALB.		1 M		N 1969	000				
NO	TE: Keep o	ne copy o	of this perm	nit posted	at the c	Irilling locat	ion.	Director, D	ivision of Oil	and Co-	$\rightarrow$
		* * -	-					DIIECEUI, D.	TATSTON OF OTT	allu väS	/File

10-:	35				
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W.	A CONTRACTOR OF THE PROPERTY O	a te a tr	Date	Nove	mber	6,	198!
nf	Mest	Mirginia	Obstra	itor's			
			1.3 . 2 ma				

Department of Allines Gil und Una Division

API No. 47 - 107 1258-

## WELL OPERATOR'S REPORT

Finle

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

WELL TYPE: Oil / Gas X / Liquid Injection (If "Gas," Production X / Undergro	on/Was	ste Disposa ge / Dec		-11~. X ()	
ICCATION: Elevation: 769 Watershed	2427737		P	TITOM V/)	
District: Harris County Wood	<u>Stillwell F</u>	Ouadranal	a lubaa	1.	
G-	tti valuetti siinetti siinetti siineen kaaleen kaaleen siineen kaaleen siineen kaaleen siineen kaaleen saan ka		e Lunec	K	•
COMPANY Kaiser Exploration and Mining Company					
ADDRESS P. O. Box 8, Ravenswood, WV 26164		•		10-	<b>¬</b>
DESIGNATED AGENT R. A. Pryce	Casing	Used in		Cement fill up	
ADDRESS P. O. Box 8, Ravenswood, WV 26164	Tubing	Drilling	in Well	Cu. ft.	224
SURFACE CANER Wilbert & Clara Hoffman	Size 20-16				
ADDITIONS Rt. 1, Box 46, New England, WV	Copd. 10 3/4"				4
MINERAL RIGHTS OWNER Same	¥8xx0	297(KB)	297(KB)	200 sks c1	ass A
NDDRESS	9 5/8	ļ			-
OIL AND GAS INSPECIOR FOR THIS WORK Glen Robinso	8 5/8				
ADDRESSRt. 1. #6. Mineral Wells, W	7	1707'(KB)	1707'(KB	100 sks p ) 100 sks c	φZM1X Jass
	5 1/2				
DRULING COMMENCED 8/22/83 10/09/85	4 1/2		4252'(KB	) 235 sks p	∮zmix
RILLING COMPLETED 8/27/83 10/18/85	<u>3</u>				4
F APPLICABLE: PLUGGING OF DRY HOTE ON	2				oonis Contra
OMITINUOUS PROGRESSION FROM DRILLING OR EXORKING. VERBAL PERMISSION OBTAINED	Liners				
N OBTAINED	used				
POLOGICAL TARGET FORMATION Oriskany Sandstone		<u> </u>			
Depth of completed well 4270 foot n	)	Deptl	4150'	feet	
Depth of completed well 4270 feet Row Water strata depth: Fresh feet;	ocary X		Tools		•
Coal seam depths: None	Commission	feet			
Oriskany uneconomical: Plugged back to PEN FLOW DATA	DC TOW TOT	eing mined mations. d on fluid,		····	
Producing formation Devonian Shale					
Gas: Initial open flow Mcf/d C	rdy	zone depth	3350'-357	AND	
Final open flow Mcf/d				Bbl/d	
Time of open flow between initia		1 open flo	W	Bbl/d	
Static rock pressure 900 psig(surface	TYPE TELEPOON	ar costs	how	:S	
If applicable due to multiple completion	neadu du	ne, arter_	48 hours	shut in	
Second producing formation Berea Sandstone	) D-140 -	mono diniti		<b></b> .	•
Gas: Initial open flow Mel/d O	ile Toite	cone depen	<u> 1974'-197</u>		er,
*Final open flow 950 Mef/d 0		ial open f		llb1/d	, egyle
Time of open flow between initial	lawl Go	r ofxu TřC	<b>-</b>	IIb1/d	
Static rock pressure 900 psig(surface m	a am tine Sataurawant	after /	hours	u NOV 25	5 1985
* Test taken with zones commingled					
		(Continuo	on recon	over olde)	

WILS OF PERFORMED INTERVALS, FRACTUREDS OR STIMULATING, PHYSICAL CHARGE, ERC.

Young Wireline set Alpha permanent bridge plug in 4 1/2" casing at 3700'(KB); 10/9/85:

10/9/85: Young Wireline set Alpha permanent bridge plug in 4 1/2" casing at 3/00 (RB); dumped 2 dump bailers of calseal on top of plug. \*\*Coro.\*\*

10/17/85: Young Wireline perforated Brown Shale interval 3350'-3570' (KB), 19 holes; also perforated Berea Sandstone 1974'-1976' (KB), 8 holes; set Alpha frac plug at 2080'KB). NOWSCO performed 2 stage frac treatment in Brown Shale and Berea Sandstone (75 quality foam); Brown Shale: used 500 gal of 15% HCL acid, 60,000# 20/40 sand, 636,300 scf of nitrogen, 283 bbl water; breakdown was 1950 psig; 2150 psig avg. treating pressure; ISIP: 1300 psig, 5 min SIP: 1180 psig (40 BPM foam rate). BEREA: used 45,000# 20/40 sand, 15,000# 10/20 sand, 618,500 scf of nitrogen, 306 bbl water, 20 bbl/min foam rate: 1420 psig breakdown: 1670 psig avg treating pressure: 1100 psig ISIP; 960 psig

rate; 1420 psig breakdown; 1670 psig avg treating pressure: 1100 psig ISIP; 960 psig

5 min SIP.

### WELL LOG

٠				
TOY OF THE OF COUNTY	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas	1
ATTICH COLOR HARD OR SOFT	102 2332		and salt water, coal, oil and gas	ت
Same as previously submitt	ted .			
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			-	
		•	•	
; <del>-</del>				
•		8	8	

(Attach separate sheets as necessary)

KAISER EXPLORATION AND MINING COMPANY	
Well Operator	
Dy: DA Pa	*
Date: November 6, 1985	

Regulation 2.02(i) provides as follows: "The term "log" or well log" shall mean a systematic assignified record of all formations, including

DRILLING CONTRACTOR:

)	Date:	Annil	29	19_83

2) Operator's Well No.\_

3) API Well No. \_\_47 State Permit County

## STATE OF WEST VIRGINIA DEPARTMENT OF MINES, OIL AND GAS DIVISION

Elkview.	AV			OIL AND G	GAS WELL	PERMIT	APPLICATION		
4) WELL TYPE	8. A Oil		/ Gas	v /					
4) WELLIIPI			/ Gas oduction	- N	/ Under	roround sto	rage	/ Deen V	/ Shallow/)
) LOCATION		tion:	769	*	Water	rshed:	Stillwell H	ollow	, shanow,
, Localiton			darris		_ Coun			Quadrangle:	Lubeck
WELL OPER			CALL STREET, S	tion and				AGENT	
Address		0 B				-	Address	Same	
	Ra	vancu	ood WV	26164			_		
OIL & GAS								Alama .	
ROYALTY	, IIII			Clara L.	. Hofma	12)	COAL OPERAT	ror Mone	
Address		Rt. 1	, Box A	6			Address		
		THE RESERVE OF THE PERSON NAMED IN	ngland,	WV					
Acreage	-	195				13)			ATION ON RECORD:
B) SURFACE O	WNER	Same		-			Name	None	
Address							Address _		
							-		
Acreage							Name		
) FIELD SALI	E (IF MAD	E) 10:					Address		
Address						1.4)	COAL LESSEE	WITH DECLARATI	ION ON PECOPD.
O) OIL & GAS	INSPECTO	D TO DE	NOTIFIE	0		14)		WITH DECLARATI	
O) OIL & GAS  Name							Address		
Address			Box 3A				Addiess	The second second	
Addiess		ville							
) PROPOSED		Drill_	2	Drill deeper		/ Redrill	/ Fract	ure or stimulate	
, TROTOGED							w formation		
				ge in well (sp					
GEOLOGIC	AL TARGE								
17) Estimate						feet			
18) Approxi				26	9	_feet; sa	alt,	feet.	
19) Approxi						Is coal !	being mined in the a	area? Yes	/ No
) CASING AN	D TURING	G PROGE	AM						
	"				11			"	
CASING OR TUBING TYPE		SF	ECIFICATION   Weight	IS		FOOTAGE	INTERVALS	CEMENT FILL-UP OR SACKS	PACKERS
	Size	Grade	per ft.	New Used	For o	drilling	Left in well	(Cubic feet)	
Conductor									Kinds
Fresh water	10 3/	1 au		X	300 2	50	30030	150 sks clas	s A to surface
Coal								65 sks 50/6	Sizes
Intermediate	7"			X	-	300	1800	289 100 sks	class A
Production	41/	1211		X	42	275	4275	225 sks 50/5	Depths set
Tubing									Perforational
Liners									Perforations:  Top Bottom
									Top Bottom
The re 2) ROYALTY F Is the right to similar provis produced or	rovide one of ed is the lead quirement of PROVISION extract, pro- sion for con- marketed?	of the foll ase or leas of Code 2 NS oduce or n mpensatio Yes	es or other 2-4-1-(c) (1)  narket the own to the own No	il or gas based oner of the of	d upon a lead	ase or other	specifics.)	related to the volum	gas.  ng for flat well royalty or any e of oil or gas so extracted
the answer above Required Cop				cucu. If the	CHOWEI 15	i co, you ill	a, use Mildavit Pe	J. 1 1 00.	
				closed plat an	nd reclamat	ion plan ha	ave been mailed by	registered mail or del	ivered by hand to the above
named coal o	perator, co	al owner(	s), and coal						cation to the Department o
Mines at Cha	rleston, We	est Virgini	a.				A STATE OF THE PARTY		
Notary:							Signed:	al Manager	Table Control
My Commissio	n Expires_						Its: Gener	al Manager	
					OFFICE	TION C	TT X		E .
						USE O			
					DKILLI	NG PER	MIT		19 7
ermit number _								Date	
uirements subjec	t to the cor	nditions co	ontained her	ein and on the	he reverse l	hereof. Noti	ification must be g	d to drill in accordance	ce with the pertinent legal r
roper district oil	and gas ins	spector 24	nours before	re actual per	mitted wor	k nas com	nencea.)		
ermit expires	Jant	ary 4	, 1984	SA PARL		_unless dril	lling is commenced	prior to that date and	prosecuted with due diligence
Bond:	Agen	it:	Plat:	Casin	g .	Fee			
1010	V		Jake Jake	and the same		75	Adı	ministrator, Office of	Oil and Gas