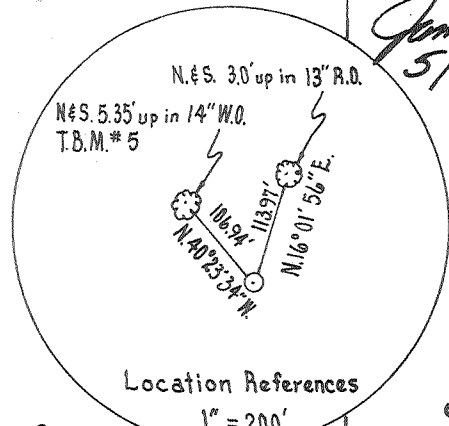


5,800'

LATITUDE 37° 47' 30"

*Janice*  
*5/10/91*



Location References  
1" = 200'

*Cole and Crane Real Estate Trust*  
*Tract 2, (1,123.56 Ac.) Pt. C-3917-12,096.64 Ac.*

W. W. McDonald Land Co.

W. Va. Coal & Coke  
Tract 1  
543.75 Ac.

W. Va. Coal & Coke  
Tract 2  
407.6 Ac.

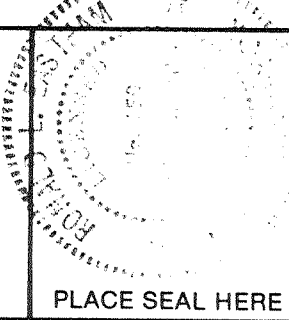
Omar Mining Co. Coordinates  
for Loc. Cole A-14  
S. 27,031.87 ~ E. 8,230.76

*Cole and Crane Real Estate Trust*  
*Tract 5, (6.33 Ac.) Pt. C-3917-12,096.64 Ac.*

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

FILE NO. \_\_\_\_\_  
DRAWING NO. \_\_\_\_\_  
SCALE 1" = 1,000'  
MINIMUM DEGREE OF ACCURACY 1:28,344  
PROVEN SOURCE OF ELEVATION U.S.C. & G.S. B.M. "D-35"  
Elev. = 762.961

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 ENERGY.  
(SIGNED) *Ronald L. East*  
R.P.E. \_\_\_\_\_ L.L.S. 150



STATE OF WEST VIRGINIA  
DEPARTMENT OF ENERGY  
OIL AND GAS DIVISION



DATE March 8, 19 91  
OPERATOR'S WELL NO. Cole & Crane R.E.T.  
API WELL NO. A-14; S.N. 134511  
47 - 045 - 1168  
STATE COUNTY PERMIT

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
(IF "GAS,") PRODUCTION X STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X  
LOCATION: ELEVATION 921.74 WATERSHED Miller Branch of Island Creek  
DISTRICT Logan 2 COUNTY Logan  
QUADRANGLE Logan d15 sw  
SURFACE OWNER Cole and Crane Real Estate Trust ACREAGE 12,096.64 Ac.  
OIL & GAS ROYALTY OWNER Cole and Crane Real Estate Trust LEASE ACREAGE 12,096.64 Ac.  
LEASE NO. C-3917  
PROPOSED WORK: DRILL X CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR  
STIMULATE \_\_\_ PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW  
FORMATION \_\_\_ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_

MAY 17 1991

PLUG AND ABANDON \_\_\_ CLEAN OUT AND REPLUG \_\_\_  
TARGET FORMATION Devonian Shale ESTIMATED DEPTH 4832' KB  
WELL OPERATOR Ashland Exploration Inc. DESIGNATED AGENT Forrest Burkett  
ADDRESS P.O. Box 391, Ashland, Ky. 41114 ADDRESS P.O. Box 379, Brenton, W.V. 24818

*DEEP WELL* *6-6* *manbar* *(273)*

LONGITUDE 81° 57' 30"

COUNTY NAME  
PERMIT

State of West Virginia  
DEPARTMENT OF ENERGY  
Division of Oil and Gas

Reviewed TMG  
Recorded \_\_\_\_\_

Well Operator's Report of Well Work

Farm name: COLE & CRANE REAL ESTATE Operator Well No.: A-14-S-134511

LOCATION: Elevation: 921.74 Quadrangle: LOGAN

District: LOGAN County: LOGAN  
Latitude: 8800 Feet South of 37 Deg. 47Min. 30 Sec.  
Longitude 5800 Feet West of 81 Deg. 57 Min. 30 Sec.

OCT 21 1991

Company: ASHLAND EXPLORATION, INC.  
P.O. BOX 391, A1-6  
ASHLAND, KY 41114-0391

Agent: FORREST BURKETT

Inspector: TIM BENNETT  
Permit Issued: 05/16/91  
Well work Commenced: 06-28-91  
Well work Completed: 10-03-91  
Verbal Plugging  
Permission granted on: \_\_\_\_\_  
Rotary X Cable \_\_\_\_\_ Rig  
Total Depth (feet) 4919  
Fresh water depths (ft) 3" stream @ 151'

Salt water depths (ft) Damp @ 1220'

Is coal being mined in area (Y/N)? N  
Coal Depths (ft): None noted while drlg.

Casing & Tubing Size	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
16"	103	103	30
11 3/4"	345	345	256
8 5/8"	2089	2089	594
5 1/2"	4887	4887	652
1.9" @ 4352' w/ ADL-1 PKR @ 3026' KB			
1.9" @ 2984'			

OPEN FLOW DATA

Producing formation Devonian Shale Pay zone depth (ft) 3102-4349  
 Gas: Initial open flow 0 MCF/d Oil: Initial open flow 0 Bbl/d  
 Final open flow 843/220 MCF/d Final open flow 0 Bbl/d  
 Time of open flow between initial and final tests 3 Hours  
 Static rock Pressure 600# psig (surface pressure) after 72 Hours

Berea 2965-2971  
 Second producing formation Weir & Big Lime Pay zone depth (ft) 2419-2479  
 Gas: Initial open flow 0 MCF/d Oil: Initial open flow 0 Bbl/d  
 Final open flow 377 MCF/d Final open flow 0 Bbl/d  
 Time of open flow between initial and final tests 3 Hours  
 Static rock Pressure 605# psig (surface pressure) after 72 Hours

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

For: ASHLAND EXPLORATION, INC.

By: James L. Stephens James L. Stephens, EngT  
Date: October 18, 1991

OCT 27 1991

<u>Formation or Rock Type</u>	<u>Top</u>	<u>Base</u>
Breathitt Formation	0	627
Lee Formation	627	1583
Pennington Formation	1583	2116
U. Maxton 1926-1958		
L. Maxton 2055-2116		
Little Lime	2116	2171
Big Lime	2171	2430
Borden	2430	2931
Sunbury Shale	2931	2960
Berea	2960	2976
Devonian Shale	2976	4900
Onondaga Ls.	4900	TD

DTD 4919

LTD 4916

Well Treatment:

Perf Huron 20H/3920-4349. N<sub>2</sub> frac using 500 gal fe inh HCl acid 7.6% and 1,150,000 SCF N<sub>2</sub> @ 100,000 SCF/min. BD @ 2190#, ATP 2650#, MTP 2730#, ISIP 2200#.

Perf Chagrin 20H/3102-3488. N<sub>2</sub> frac using 500 gal 7.6% fe inh HCl acid and 1,017,000 SCF N<sub>2</sub> @ 98,000 SCF/min. BD @ 2160#, ATP 2600#, MTP 2630#, ISIP 1800#.

Perf Berea 15H/2965-2971. 75 Quality foam frac Berea using 250 gal 15% inh fe acid, 280,000 SCF N<sub>2</sub> @ 7000 SCF/min and 63,500# 20/40 sand. BD 1190#, ATP 1100# @ 20 bpm foam rate, MTP 1430#, ISIP 870#, TF 238#.

Perf Big Lime and Weir 17H/2419-2479. 75 Quality ramp frac after breakdown. Foam acidize Big Lime/Eeir using 2000 gal 26% inh fe acid w/ 74,000 SCF N<sub>2</sub>. BD @ 1300#, ATP 1150# @ 7 bpm acid rate, 5000 SCF/min N<sub>2</sub> rate. Ramp frac using 20#/1000 gal gel system, 42,600# 20/40 sand and 265,000 SCF N<sub>2</sub> @ 11,044 SCF/min. BD @ 1300#, ATP 1257# @ 30 bpm foam rate, MTP 1450#, ISIP 1060#, 15 min 970#.

045-1168  
Issued 5/16/91  
Page 1 of 1  
Exp'd 5/16/93

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENERGY, DIVISION OF OIL AND GAS  
WELL WORK PERMIT APPLICATION

- 1) Well Operator: <sup>43</sup> Ashland Exploration, Inc. 2750 (2) 442  
Cole & Crane Real Estate Trust
- 2) Operator's Well Number: A-14, Serial #134511 3) Elevation: 921.74
- 4) Well type: (a) Oil  or Gas  /  
(b) If Gas: Production  / Underground Storage  /  
Deep  / Shallow  /
- 5) Proposed Target Formation(s): <sup>441</sup> Devonian Shale
- 6) Proposed Total Depth: 4832'KB feet
- 7) Approximate fresh water strata depths: 57'KB (Map WV-12)
- 8) Approximate salt water depths: 362'KB (Map WV-12)
- 9) Approximate coal seam depths: Upper Cedar Grove - Elev. 865' - Mined Out
- 10) Does land contain coal seams tributary to active mine? Yes  / No  /
- 11) Proposed Well Work: Drill & Stimulate New Well
- 12)

CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS		FOOTAGE INTERVALS			CEMENT
	Size	Grade	Weight per ft.	For drilling	Left in well	Fill-up (cu. ft.)
Conductor	16	LS	42.0	30	30	CTS
Fresh Water						CTS
Coal	11 3/4	H40	42.0	350	350	CTS
Intermediate	8 5/8	J55	24.0	1590	1590	CTS
Production	5 1/2	J55	15.5	4832	4832	As Needed
Tubing	1.9	J55	2.76	-	4782	Siphon
Liners						

**RECEIVED**  
Division of Energy

PACKERS : Kind \_\_\_\_\_  
Sizes \_\_\_\_\_  
Depths set \_\_\_\_\_

APR 29 91

For Division of Oil and Gas Use Only

506181  
12

Fee(s) paid:  Well Work Permit  Reclamation Fund  WPCP

Plat  WW-9  WW-2B  Bond Surety Blanket  Agent  
(Type)

12184

1) Date: April 26, 1991  
2) Operator's well number Serial #134511  
Cole & Crane Real Estate Trust #A-14  
3) API Well No: 47 - 045 - 1168  
State - County - Permit

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENERGY, DIVISION OF OIL AND GAS  
NOTICE AND APPLICATION FOR A WELL WORK PERMIT

REC'D  
APR 29 91

- |                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>4) Surface Owner(s) to be served:</p> <p>(a) Name <u>Cole &amp; Crane Real Estate Tr.</u><br/>Address <u>P.O. Box 610</u><br/><u>Omar, WV 25638</u></p> <p>(b) Name _____<br/>Address _____</p> <p>(c) Name _____<br/>Address _____</p> | <p>5) (a) Coal Operator:</p> <p>Name <u>N/A</u><br/>Address _____</p> <p>(b) Coal Owner(s) with Declaration<br/>Name <u>Same as No. 4(a)</u><br/>Address _____</p> <p>Name _____<br/>Address _____</p> <p>(c) Coal Lessee with Declaration<br/>Name <u>W-P Coal Company</u><br/>Address <u>P.O. Box 570</u><br/><u>Omar, WV 25638</u></p> |
| <p>6) Inspector <u>Tim Bennett</u><br/>Address <u>Route 2 Box 61-B</u><br/><u>Chapmanville, WV 25508</u><br/>Telephone (304)- <u>855-7705</u></p>                                                                                          |                                                                                                                                                                                                                                                                                                                                           |

TO THE PERSON(S) NAMED ABOVE TAKE NOTICE THAT:

\_\_\_\_\_ Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas OR

X Included is the information required by Chapter 22B, Article 1, Section 8(d) of the Code of West Virginia (see page 2)

I certify that as required under Chapter 22B of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through 2 on the above named parties, by:

- \_\_\_\_\_ Personal Service (Affidavit attached)
- X Certified Mail (Postmarked postal receipt attached)
- \_\_\_\_\_ Publication (Notice of Publication attached)

I have read and understand Chapter 22B and 38 CSR 11-18, and I agree to the terms and conditions of any permit issued under this application. I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator Ashland Exploration, Inc.  
By: W. Mark Parks *W. Mark Parks* DKC  
Its: Operations Manager  
Address P.O. Box 391  
Ashland, KY 41114  
Telephone 606-329-5989

Subscribed and sworn before me this 26th day of April, 1991

Hubert W. Donta Notary Public  
My commission expires November 23, 1994