

STATE OF OHIO
DEPARTMENT OF NATURAL
RESOURCES

DIVISION OF MINERAL
RESOURCES MANAGEMENT
WELL PERMIT

API WELL NUMBER

34-013-2-0583-00-00

FORM 51 REVISED 3/01

OWNER NAME, ADDRESS

ENERGY SEARCH INC (Owner #: 3793)

88 PRODUCTS LANE

MARIETTA

PRODUCTS LANE

OH 45750

2109

DATE ISSUED

4/21/2006

PERMIT EXPIRES

4/21/2007

TELEPHONE NUMBER

(740) 373-3050

IS HEREBY GRANTED PERMISSION TO:

Drill New Well, horizontally

AND ABANDON NEW WELL

IF UNPRODUCTIVE

PURPOSE OF WELL: Oil & Gas

SUBSTANCE TO BE STORED OR COMPLETION DATE IF PERMIT TO PLUG:

Cmplt'd Dt:

DESIGNATION AND LOCATION:

LEASE NAME

BOAN/MARCUM

WELL NUMBER

2-1

COUNTY

BELMONT

CIVIL TOWNSHIP

WASHINGTON

TRACT OR ALLOTMENT

FOOTAGE LOCATION

220'SL & 500'WL OF SEC 2

SECTION

8

LOT

FRACTION

QUARTER TOWNSHIP

X:

2443443

Y:

684516

TYPE OF TOOLS: Air Rotary/Fluid Rotary

PROPOSED TOTAL DEPTH

6200 FEET

GROUND LEVEL ELEVATION

1310 FEET

GEOLOGICAL FORMATION(S):

DEVONIAN SHALE

SPECIAL PERMIT CONDITIONS: Permit is subject to the attached terms and/or conditions

Horizontal Drilling Well Permit Conditions

CONDITIONALLY APPROVED CASING PROGRAM (SUBJECT TO APPROVAL OF THE OIL AND GAS WELL INSPECTOR):

CONDUCTOR MINIMUM OF 60' (IF AIR)

13 3/8" MINIMUM OF 410' CEMENT CIRCULATED TO SURFACE

9 5/8 " APPROX. 2100 ' THRU BERE A

7 " OPERATIONAL

4 OR 5" PRODUCTION CASING CEMENTED IF PRODUCTIVE

"BLOW OUT PREVENTOR REQUIRED" HAZARDOUS CONDITIONS MAY BE ENCOUNTERED

ALL DUE PRECAUTIONS SHOULD BE TAKEN

This permit is NOT TRANSFERABLE and expires 365 days after issuance, unless drilling has commenced prior thereto. This permit, or an exact copy thereof, must be displayed in a conspicuous and easily accessible place at the well site before permitted activity commences and remain until the well is completed. Ample notification to inspector is necessary. All mudding, cementing, placing and removing casing, and plugging operations must be done under the supervision of:

OIL AND GAS WELL INSPECTOR:

KAVAGE MIKE

P. O. BOX 224,

OLD WASHINGTON, OH 43768

Inspector's #: (740) 685-0713

District #: (740) 439-9079

JOE HOERST - Supervisor

(740) 896-2850

FIRE AND EMERGENCY NUMBERS

FIRE: () - 911

MEDICAL SERVICE () - 911

TARGET INFORMATION:

1620'SL & 952'ELOF SEC. 8

X= 2,442,048 Y= 685,968 ELEV.= 1170'

DEPUTY MINE INSPECTOR: MUST BE NOTIFIED IF WELL IN A COAL-BEARING TOWNSHIP IS TO BE PLUGGED AND ABANDONED.

Michael L. Sponsler

CHIEF, DIVISION OF MINERAL RESOURCES
MANAGEMENT

STATE OF OHIO
DEPARTMENT OF NATURAL
RESOURCES

**DIVISION OF MINERAL
RESOURCES MANAGEMENT
WELL PERMIT**

API WELL NUMBER

34-013-2-0583-00-00

FORM 51 REVISED 3/01

ENERGY SEARCH INC
88 PRODUCTS LANE
PRODUCTS LANE
MARIETTA, OH 45750-2109

The Ohio Department of Natural Resources
The Division of Mineral Resources Management
1855 Fountain Square Court, Building H-3
Columbus, Ohio 43224-1383

HORIZONTAL DRILLING PERMIT CONDITIONS

Within thirty (30) days of completion of drilling operations, the following items **must** be submitted to the Division of Mineral Resources Management:

- A copy of the bore hole deviation survey
- A revised surveyor's plat showing:
 1. Surface Location
 2. Actual entry into the producing formation
 3. Actual ending point of the bore hole in the producing formation
 4. X, Y coordinates of the above three points

Please also include a fifty-dollar (\$ 50.00) fee for the revised surveyor's plat.

DAILY ROUTE SLIP

Washington

APPLICATION NO. aPATT009406

TYPE: Drill New Well, horizontal

CONAME ENERGY SEARCH INC

API

WELL NAME /NO. BOAN/MARCUM

2-1

COUNTY 13 BELMONT

INITIALS

DATE

DATE APPLICATION REC'D

pn

3/23/2006

PERMIT FEE AND CHECK NO.

\$250.00

1190913117

RUSH AMOUNT RUSH CHECK NO.

\$0.00

0

APPLICATION ENTERED

pn

3/23/06 NM

APPLICATIONS AND PLATS SENT
FOR MINE APPROVAL

pn

3/23/06

COAL APPROVAL RECEIVED

OIL/GAS AFFIDAVIT REC'D

URBANIZED AREA NOTIFICATION SENT

URBANIZED AREA NOTIFICATION
SENT TO INSPECTOR/REC'D BACK

SAMPLES: YES _____/SPECIAL AREAS

GEOLOGIST APPROVAL

JS

4-10

DATA ENTRY /ISSUED

PERMIT: TAKEN _____ MAILED ☒

pc

4.21

FAX TO:

724-743-2661 / 740-373-5272

FINAL MAP CHECK ~~5/2~~

5/2

JS

COMMENTS:

mail Horizontal Drill permit conditions

Waiting on mine approval 4/10/06

Already

Paired this

PAH

Proof Sheet

APPL NUMBER aPATT009406

OWNER NUMBER 3793

URBANIZED AREA ? ☐

OWNER NAME ENERGY SEARCH INC

EXISTING WELL 0

API PERMIT NO

DISPOSAL PLAN 1 ND

APPL TYPE HX

DISPOSAL PLAN 2

TYPE OF WELL OG

DISPOSAL PLAN 3

VARIANCE REQUEST

DISPOSAL PLAN 4

WELL NAME BOAN/MARCUM

DISPOSAL PLAN 5

WELL NUMBER 2-1

PREV/PROPOSED TD 6200

DRILL UNIT ACRES 160

TYPE OF TOOL RTAF

PROPOSED FORMATIONS

WELL CLASS EDPW

DEVONIAN SHALE

FIRE PHONE () - 911

MEDICAL PHONE () - 911

COUNTY CODE 13

COUNTY NAME BELMONT

COAL (Y=-1/N=0) -1

CIVIL TOWNSHIP WASHINGTON

TARG CIVIL TWP WASHINGTON 3020

SURF QUAD CAMERON

TARG QUAD B168 CAMERON

SURF ORIG X 2,443,443

TARG ORIG X 2,442,048 2,443,097

SURF ORIG Y 684,516

TARG ORIG Y 685,968 684,877

GROUND ELEVATION 1310

TARG ELEV 1170 -0

SURF SEC 8

TARG SECTION 8

SURF LOT

TARG LOT

SURF QTR TWP

TARG QTR TWP

SURF ALLOT

TARG ALLOT

SURF TRACT

TARG TRACT

SURF FRACTION

TARG FRACTION

Proof Sheet

SURFACE FOOTAGE

220' SL & 500' WL of SEC. 2

TARGET FOOTAGE

1620' SL & 952' EL of SEC. 8

CASING PROGRAM

04		
60	13 3/8	410
07	9 5/8	2100
13	7	
19	4 or 5	
26		
27		

SPECIAL CONDITIONS/COMMENTS

- PER
AD

P 389 EL. $\frac{1310}{815}$
 495
 Be 1570
 20
 $\frac{1570}{495}$
 2085

COMPLETION DT

MINES APPROVAL

AFFIDAVIT APPROV

FINAL ENTRY DATE

TARGET:

1620' SL & 952' EL of SEC. 8

X: 2,442,048

Y: 685,968

Elev: 1170

APPLICATION FOR A PERMIT
OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF MINERAL RESOURCES MANAGEMENT
2045 Morse Road, Building H-3
COLUMBUS, OHIO 43229-6693

(614) 265-6633 http://www.dnr.state.oh.us/mineral/index.html

#1190913117

2500

PDH 9406 C

INSTRUCTIONS ON REVERSE SIDE		FORM 1: Rev. 9/2004/mpm
1. I, We (applicant) ENERGY SEARCH, INC. (address) 88 Products Lane, Marietta, OH 45750 hereby apply this date March 22, 20 06 for a permit to: <input type="checkbox"/> Reissue (check appropriate blank) <input type="checkbox"/> Revised Location & Reissue <input type="checkbox"/> Convert <input type="checkbox"/> Drill New Well <input type="checkbox"/> Plug Back <input type="checkbox"/> Deepen <input type="checkbox"/> Drill Directionally <input type="checkbox"/> Plug and Abandon <input type="checkbox"/> Reopen <input checked="" type="checkbox"/> Drill Horizontally <input type="checkbox"/> Orphan Well Program		
2. Owner # D-3739 Phone # 740/373-3050		
3. TYPE OF WELL: <input checked="" type="checkbox"/> Oil & Gas <input type="checkbox"/> Annular Disposal <input type="checkbox"/> Saltwater Injection <input type="checkbox"/> Stratigraphic Test <input type="checkbox"/> Storage of: _____ <input type="checkbox"/> Other (explain): _____ <input type="checkbox"/> Solution Mining* <input type="checkbox"/> Enhanced Recovery* * check appropriate box below <input type="checkbox"/> Input/Injection <input type="checkbox"/> Water Supply <input type="checkbox"/> Production/Extraction <input type="checkbox"/> Observation		
4. MAIL PERMIT TO: Energy Search, Inc., 88 Products Lane, Marietta, OH 45750	20. TYPE OF TOOLS: <input type="checkbox"/> Cable <input type="checkbox"/> Air Rotary <input type="checkbox"/> Cable & Air Rotary <input checked="" type="checkbox"/> Air & Fluid Rotary <input type="checkbox"/> Cable & Fluid Rotary <input type="checkbox"/> Fluid Rotary <input type="checkbox"/> Cable & Air Rotary & Fluid Rotary	
5. COUNTY: Belmont	21. PROPOSED CASING PROGRAM: 20" conductor to 60ft 13 3/8" to 700ft (if mine encountered) 9 5/8" to ~2500ft (through Berea) 4 1/2" or 5 1/2" to T.D. 8000' Possible 7" through curve	
6. CIVIL TOWNSHIP: Washington		
7. SECTION: 2 8. LOT:		
9. FRACTION: 10. QTR. TWP:		
11. TRACT/ALLOT:		
12. WELL #: 2-1		
13. LEASE NAME: Boan / Marcum		
14. PROPOSED TOTAL DEPTH: 6200' TVD - 8000' MD		
15. PROPOSED GEOLOGICAL FORMATION: Devonian Shale		
16. DRILLING UNIT IN ACRES (must be same as acres indicated on plat): 160	22. FIRE AND MEDICAL DEPARTMENT TELEPHONE NUMBERS: (closest to well site) FIRE: 911 - - - MEDICAL: 911 - - -	
17. IF PERMITTED PREVIOUSLY: API #: 34 0000 OWNER: WELL #: LEASE NAME: TOTAL DEPTH: GEOLOGICAL FORMATION:	23. MEANS OF INGRESS & EGRESS: Township Road 760 (Walters Road) County Road _____ Municipal Road _____ State Highway _____	
18. IF SURFACE RIGHTS ARE OWNED BY THE OHIO DEPARTMENT OF NATURAL RESOURCES: Division Name: _____ Division Phone: _____	24. IS THE WELL LOCATION OR PRODUCTION FACILITIES WITHIN AN URBANIZED AREA AS DEFINED BY 1509.03 ? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 25. WILL THE PROPOSED LOCATION OF THIS WELL REQUIRE THE NOTICE SPECIFIED UNDER 1509.06 (I) ? <input type="checkbox"/> Yes (Submit Copies) <input checked="" type="checkbox"/> No	
19. LANDOWNER ROYALTY INTEREST: Is There An Attached List ? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Name Helen M. Walter Address 54457 Clover Ridge Road, Powhatten Point, OH 43942 Name Nancy J. Boan and Randy L. Boan Address 48485 E. Captina Hwy., Jacobsburg, OH 43933 Name Patricia J. Marcum and Clifford Marcum Jr. Address 47715 SR556, Beallsville, OH 43716		

RECEIVED

MAR 23 2006

DIVISION OF MINERAL
RESOURCES MANAGEMENT

I, the undersigned, being first duly sworn, depose and state under penalties of law, that I am authorized to make this application, that this application was prepared by me or under my supervision and direction, and that the facts stated herein are true, correct, and complete, to the best of my knowledge.

I, the undersigned, further depose and state that I am the person who has the right to drill on the tract or drilling unit and to drill into and produce from a pool and to appropriate the oil or gas that I produce therefrom either for myself or others as described in this application. And furthermore, I the undersigned, being duly sworn, depose and state at this time that I am not liable for any final nonappealable order of a court for damage to streets, roads, highways, bridges, culverts, or drainage ways pursuant to Section 5577.12 of the Ohio Revised Code (ORC), and that the notice required under Section 1509.06 (I), ORC has been given. If applying for a permit to plug and abandon a well, I hereby certify that the written notices, as required in Section 1509.13, ORC, have been given.

That I hereby agree to conform with all provisions of Chapter 1509, ORC, and to all orders and rules issued by the Chief, Division of Mineral Resources Management.

Signature of Owner/Authorized Agent

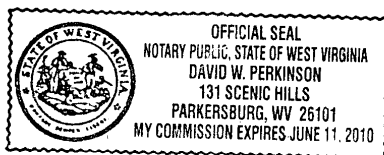
Name (Type or Print) R.A. Green

Title Production Foreman

If signed by Authorized Agent, a certificate of appointment of agent must be on file.

Sworn to and subscribed before me this the 22nd day of March, 2006.

DNR 5619 (rev. 9/04/mpm)



(Notary Public)

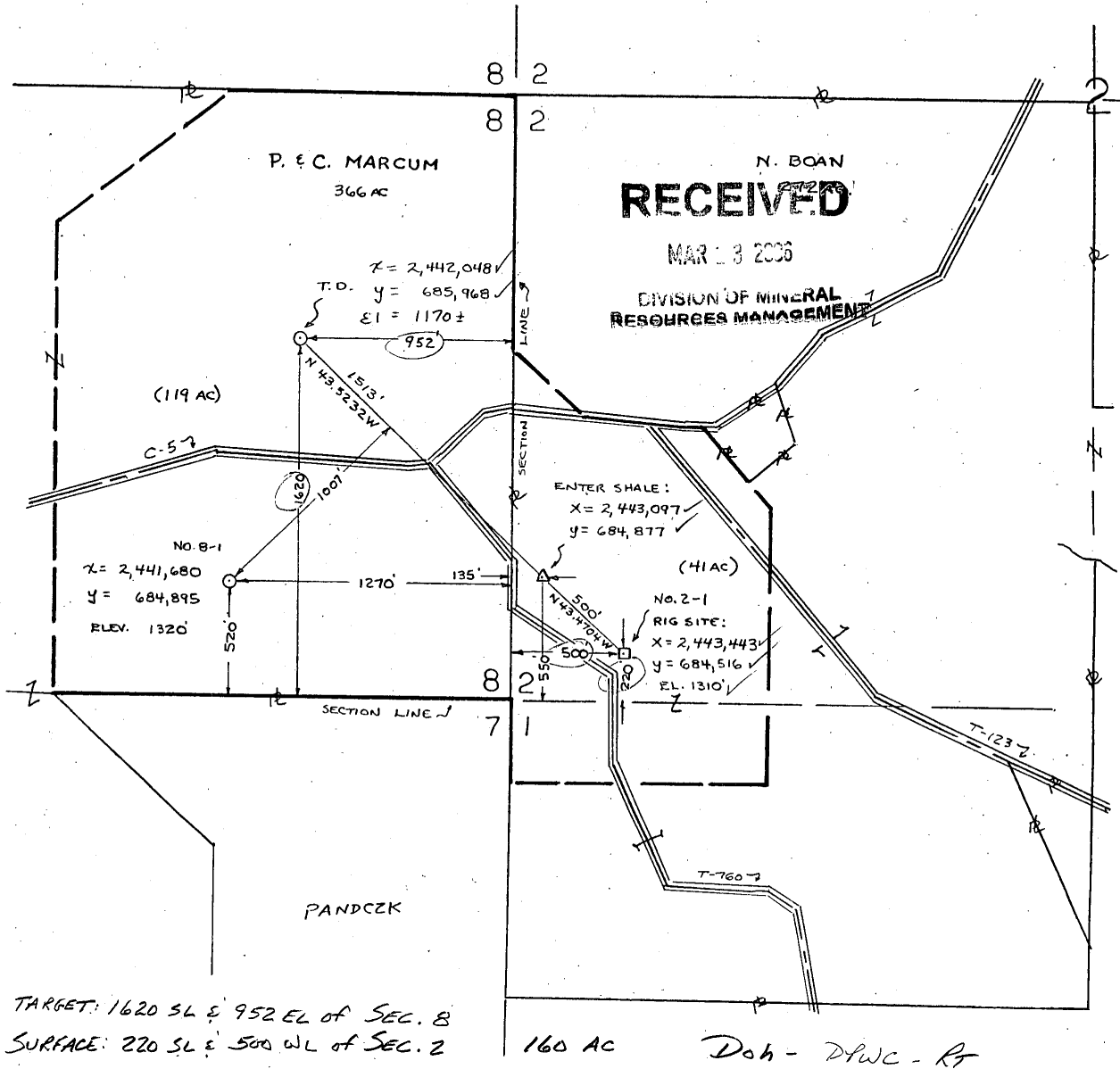
11-Jun-10

(Date Commission Expires)

"AMENDED PLAT"

PLAT SHOWING BOAN/MARCUM UNIT #2-1 (HORIZONTAL WELL)

MARCUM #8-1 (MONITOR WELL)



TARGET: 1620 SL & 952 EL OF SEC. 8
SURFACE: 220 SL & 500 WL OF SEC. 2

160 AC

Doh - DPWC - RT

I hereby certify that all drilling or producing wells within 1000 feet and all buildings and streams within 200 feet have been shown, there are no drilling unit lines nearer than 500 feet, that this plat is true and correct and was prepared according to the current State of Ohio, Department of Natural Resources, Division of Oil and Gas Regulations.

Joseph J. Spilke S-5862
REG. SURVEYOR
OPERATOR EOG RESOURCES, INC
ADDRESS 88 PRODUCTS LANE MARIETTA, OHIO 45750
SURFACE BOAN / MARCUM
LANDOWNER
MINERALS BOAN / MARCUM
WELL NO. 2-1 & 8-1 DRILLING UNIT AC. 160
COUNTY BELMONT
TWP. WASHINGTON
QUAD. CAMERON
OHIO PLANE COORDINATES
X ABOVE
Y ABOVE

0' 400' 800'
SCALE 1"=400'
SUBDIVISION CIVIL TWP. "H"
TWP. 54S
RANGE 4W 1st 36PH 1.
★ SPIKEP
QUARTER TWP. 5862
SECTION 2-8 LOT
TRACT
ALLOTMENT
FRACTION OTHER
ELEV. ABOVE DATE: 3-21-06

NORTH

RESTORATION PLAN
OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF MINERAL RESOURCES MANAGEMENT, 1855 FOUNTAIN SQ. CT., H-3, COLUMBUS, OH 43224-1383

1. DATE OF APPLICATION:	FORM 4: Revised 08/00/sly
2. OWNER NAME, ADDRESS, & TELEPHONE NO.:	3. API #: 3 4 ———— ** 14 —
	4. WELL #: 2-1
	5. LEASE NAME: BOAN
	6. PROPERTY OWNER: BOAN
	7. COUNTY: BELMONT
	8. CIVIL TOWNSHIP: WASHINGTON
11. CURRENT LAND USE: <input type="checkbox"/> Cropland <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Pasture <input type="checkbox"/> Idle Land <input type="checkbox"/> Wetlands <input type="checkbox"/> Recreational <input type="checkbox"/> Residential <input type="checkbox"/> Industrial <input type="checkbox"/> Unreclaimed strip mine <input type="checkbox"/> Woodland: (Circle Broad-leaved or Needlelike)	9. SECTION: Z 10. LOT:
	17. TYPE OF WELL: <input checked="" type="checkbox"/> Oil <input checked="" type="checkbox"/> Gas <input type="checkbox"/> Other
12. SLOPE GRADIENT & LENGTH DETERMINED FROM: <input type="checkbox"/> Ground Measurement <input checked="" type="checkbox"/> U.S. Geological Survey Topographical Maps <input type="checkbox"/> Other (explain) _____	18. STEEPEST SLOPE GRADIENT CROSSING SITE: <input checked="" type="checkbox"/> 0 to 2% <input type="checkbox"/> 2.1 to 8% <input type="checkbox"/> 8.1 to 10% <input type="checkbox"/> 10.1 to 24% <input type="checkbox"/> greater than 24%
13. TYPE OF FALL VEGETAL COVER: <input type="checkbox"/> Little or no vegetal cover <input checked="" type="checkbox"/> Short grasses <input type="checkbox"/> Tall weeds or short brush (1 to 2 ft.) <input type="checkbox"/> Brush or bushes (2 to 6 ft.) <input type="checkbox"/> Agricultural crops <input type="checkbox"/> Trees with sparse low brush <input type="checkbox"/> Trees with dense low brush	19. LENGTH OF STEEPEST SLOPE CROSSING SITE: <input type="checkbox"/> 1 to 100 ft <input checked="" type="checkbox"/> 101 to 200 ft <input type="checkbox"/> 201 to 400 ft <input type="checkbox"/> greater than 400 ft
14. SOIL & RESOILING MATERIAL AT WEBSITE: <input checked="" type="checkbox"/> Stockpile and protect topsoil to be used when preparing seedbed <input type="checkbox"/> Use of soil additives (e.g., lime, fertilizer) <input type="checkbox"/> No resoiling planned <input type="checkbox"/> Proposed alternative _____	20. RESTORATION OF DRILLING PITS: ** <input checked="" type="checkbox"/> Haul drilling fluids and fill pits <input type="checkbox"/> Use steel circulating tanks <input type="checkbox"/> Proposed alternative _____
	21. BACKFILLING AND GRADING AT SITE: <input type="checkbox"/> Construct diversions channeled to naturally established drainage systems <input type="checkbox"/> Construct terraces across slopes <input checked="" type="checkbox"/> Grade to approximate original contour <input type="checkbox"/> Grade to minimize erosion & control offsite runoff <input type="checkbox"/> Proposed alternative _____
15. DISPOSAL PLAN FOR TREES AND TREE STUMPS: <input type="checkbox"/> No trees disturbed <input type="checkbox"/> Haul to landfill <input type="checkbox"/> Cut into firewood <input type="checkbox"/> Sell to lumber company <input type="checkbox"/> Bury with landowner's approval <input type="checkbox"/> Mulch small trees and branches, erosion control <input checked="" type="checkbox"/> Use for wildlife habitat with landowner approval <input type="checkbox"/> Proposed alternative _____	22. VEGETATIVE COVER TO BE ESTABLISHED AT SITE: <input checked="" type="checkbox"/> Seeding plan <input type="checkbox"/> Sod <input type="checkbox"/> Agricultural crops <input type="checkbox"/> Trees and/or Bushes <input type="checkbox"/> Proposed alternative _____
16. SURFACE AND SUBSURFACE DRAINAGE FACILITIES: <input checked="" type="checkbox"/> No existing drainage facilities for removal of surface and/or subsurface water <input type="checkbox"/> Tile drainage system underlying land to be disturbed <input type="checkbox"/> Drain pipe(s) underlying land to be disturbed <input type="checkbox"/> Surface drainage facilities on land to be disturbed	23. ADDITIONAL HOLES: <input checked="" type="checkbox"/> Rat/Mouse, if used, will be plugged
	24. PROPOSED OR CURRENT LENGTH OF ACCESS ROAD: <input type="checkbox"/> 100 ft. or less <input checked="" type="checkbox"/> 101 to 500 ft. <input type="checkbox"/> 501 to 1500 ft. <input type="checkbox"/> greater than 1500 ft.
16. SURFACE AND SUBSURFACE DRAINAGE FACILITIES: <input checked="" type="checkbox"/> No existing drainage facilities for removal of surface and/or subsurface water <input type="checkbox"/> Tile drainage system underlying land to be disturbed <input type="checkbox"/> Drain pipe(s) underlying land to be disturbed <input type="checkbox"/> Surface drainage facilities on land to be disturbed	25. CURRENT LAND USE OF PATH OF ACCESS ROAD: <input type="checkbox"/> Cropland <input checked="" type="checkbox"/> Pasture <input type="checkbox"/> Commercial <input type="checkbox"/> Idle land <input type="checkbox"/> Wetlands <input type="checkbox"/> Recreational <input type="checkbox"/> Industrial <input type="checkbox"/> Residential <input type="checkbox"/> Unreclaimed strip mine <input type="checkbox"/> Woodland: (Circle Broad-leaved or Needlelike)

RECEIVED

MAR 23 2006

DIVISION OF MINERAL
RESOURCES MANAGEMENT

REQUIRED BY SECTION 1509.06 (L), OHIO REVISED CODE - FAILURE TO SUBMIT MAY RESULT IN AN ASSESSMENT OF CRIMINAL FINES NOT LESS THAN \$100.00 NOR MORE THAN \$2,000.00 OR CIVIL PENALTIES NOT LESS THAN \$4,000.00. **PITS MUST BE FILLED WITHIN FIVE MONTHS AFTER COMMENCEMENT OF THE WELL.

26. SURFACING MATERIAL FOR ACCESS ROAD: <input type="checkbox"/> Gravel <input type="checkbox"/> Brick and/or tile waste <input type="checkbox"/> Slag <input type="checkbox"/> Crushed stone <input checked="" type="checkbox"/> No surfacing material to be used <input type="checkbox"/> Proposed alternative _____ 	29. STEEPEST SLOPE GRADIENT ON ACCESS ROAD: <input checked="" type="checkbox"/> 0 to 5% <input type="checkbox"/> 6 to 10% <input type="checkbox"/> greater than 10%
27. PATH OF ACCESS ROAD TO BE DETERMINED BY: <input checked="" type="checkbox"/> Landowner <input type="checkbox"/> Contractor <input type="checkbox"/> Existing access road <input checked="" type="checkbox"/> Operator	30. APPROXIMATE LENGTH OF STEEPEST SLOPE ON ROAD: <input checked="" type="checkbox"/> 0 to 100 ft. <input type="checkbox"/> 101 to 200 ft. <input type="checkbox"/> 201 to 400 ft. <input type="checkbox"/> greater than 400 ft.
28. GRADING AND EROSION CONTROL PRACTICE ON ROAD: <input checked="" type="checkbox"/> Diversions <input type="checkbox"/> Water breaks <input type="checkbox"/> Drains <input type="checkbox"/> Outsloping of road <input type="checkbox"/> Open Top Culverts <input type="checkbox"/> Pipe Culverts <input type="checkbox"/> Filter Strips <input type="checkbox"/> Riprap <input type="checkbox"/> Proposed alternative _____ 	31. HAS LANDOWNER RECEIVED A COPY OF THIS RESTORATION PLAN? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

The undersigned hereby agrees to implement all restoration operations identified on this form, and conform to all provisions of Section 1509.072 of the Ohio Revised Code, and to all Orders and rules issued by the Chief, Division Mineral Resources Management.

Signature of Owner/Authorized Agent 
Name (Typed or Printed) Ricky A. Green Date 3-22-06

RESTORATION PLAN MUST BE SUBMITTED TO THE DIVISION IN DUPLICATE.

ROUTE SLIP FOR CORRECTION/CHANGE OF EXISTING PERMITS

DATE: 8/14/06 PERMIT # 583
PERSON RECEIVING REQUEST FOR CHANGE PAHY N
CO: Belmont TWP: Washington
OWNER/OPERATOR: EO9 Resources, Inc
LEASE NAME: BOAN / Marcum WELL NO: 2-1

CHANGES:

☒ change in acreage/drill unit and/or _____ as drilled plat for Directional Drill
_____ unit configuration only
(new plat submitted: ☒ yes ☐ no)
(fee required: ☒ yes ☐ no)
(check number: 1190962399)
_____ change in type of tool ☒ correction to footage description
(☐ surface ☒ target)
_____ change in formation/total depth _____ change in lease name/well number
☒ correction to x,y coordinates _____ change in casing program
(☐ surface ☒ target)
_____ other (specify) _____

CORRECTION SHOULD READ:

TARGET LOCATION: 1775' SL & 1120' EL of SEC. 8

X: 2,441,817

Y: 686,075

Elev: 1190

CHANGES AUTHORIZED BY: (GEOLOGIST) SO DATE: 8-25

HAS MINES BEEN NOTIFIED OF CHANGE: (where applicable) _____ yes _____ no by: _____

DATA ENTERED INTO COMPUTER/ISSUED BY: _____ DATE: _____

REISSUE PERMIT: _____ yes ☒ no ADD CORRECTION TO PERMIT LIST: ☒ yes _____ no

DATE CORRECTION NEEDED: _____ TO BE: _____ MAILED _____ FAXED ?

FAX NUMBER: _____ COMMENTS: _____



EOG Resources, Inc.
88 Products Lane
Marietta, OH 45750
Telephone (740) 373-3050
Fax (740) 373-5272

August 11, 2006

#533

Attn: Patty Nicklaus
Ohio Department of Natural Resources
Division of Oil and Gas
2045 Morse Road, Building H-3
Columbus, OH 43229-6693

VIA CERTIFIED MAIL

Re: Final Plat: Boan/Marcum #2-1, Belmont County, OH

Dear Patty:

Enclosed herein, please find Final Plat (1 original & 2 copies) and a check in the amount of \$50.00 for your review and further handling.

If you have any questions or need any additional information, please feel free to contact me at 740/525-5166.

Sincerely,

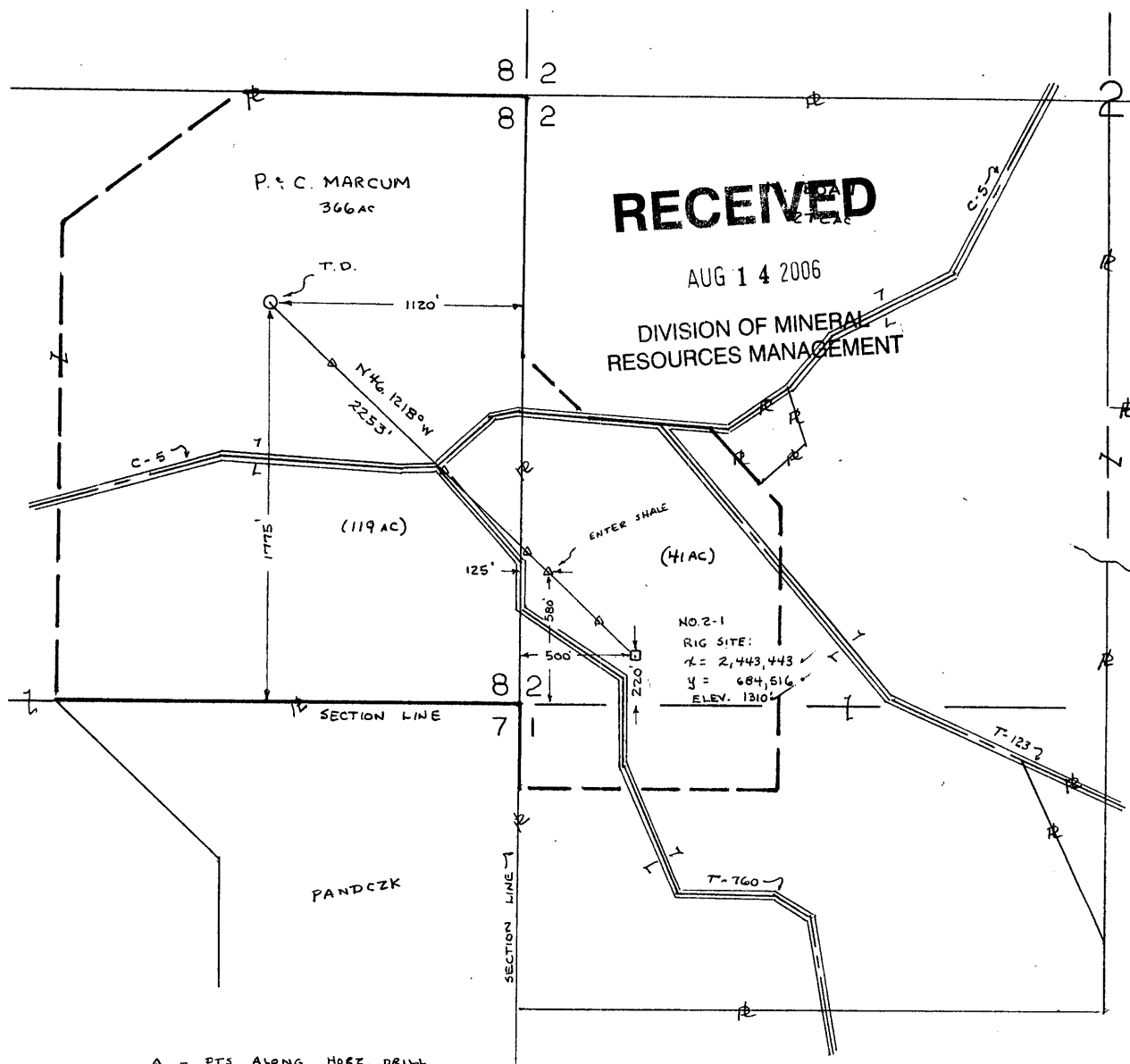
A handwritten signature in black ink, appearing to read "Dave Perkinson".

DAVE PERKINSON
Landman

RECEIVED

AUG 14 2006

DIVISION OF MINERAL
RESOURCES MANAGEMENT



Δ - PTS ALONG HORIZ. DRILL

160 AC

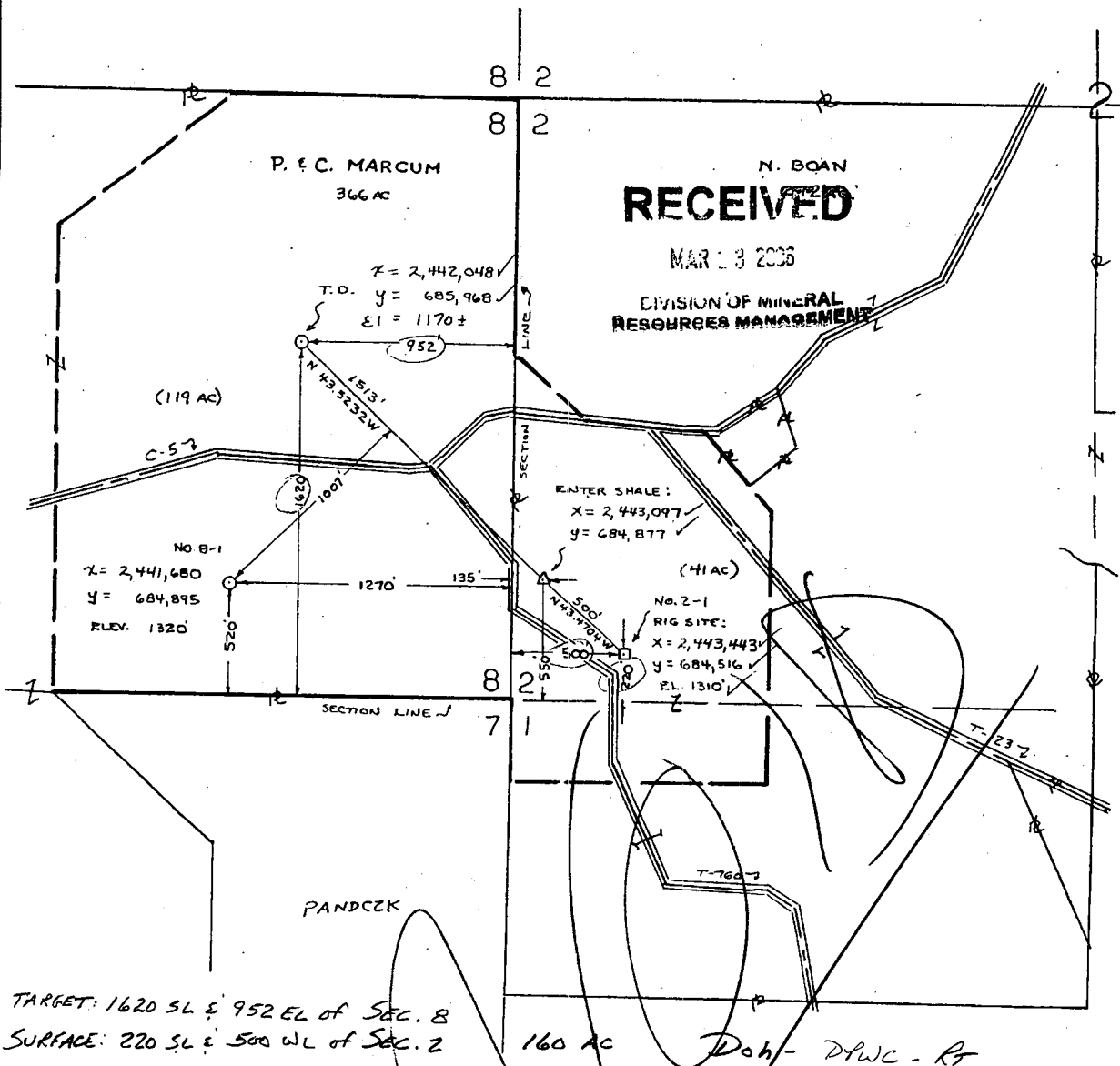
I hereby certify that all drilling or producing wells within 1000 feet and all buildings and streams within 200 feet have been shown, there are no drilling unit lines nearer than 500 feet, that this plat is true and correct and was prepared according to the current State of Ohio, Department of Natural Resources, Division of Oil and Gas Regulations.

<p><i>Joseph J. Spilke</i> S-5862 REG. SURVEYOR</p>		<p>0' 400' 800' SCALE 1"=400'</p>	
<p>OPERATOR <u>EOG RESOURCES, INC.</u> ADDRESS <u>88 Products Lane Marietta, Ohio 45750</u> SURFACE <u>BOAN / MARCUM</u></p>		<p>SUBDIVISION CIVIL TWP. <u>5N</u> <u>SPILKEP</u> TWP. <u>5N</u> <u>5862</u> RANGE <u>4W</u></p>	
<p>LANDOWNER MINERALS <u>BOAN / MARCUM</u></p>		<p>QUARTER TWP. <u>28</u> LOT <u>1</u> TRACT <u>1/90 ±</u> ALLOTMENT <u>1/90 ±</u> FRACTION <u>1/90 ±</u> OTHER <u>1/90 ±</u></p>	
<p>WELL NO. <u>2-1</u> DRILLING UNIT AC. <u>160</u> COUNTY <u>BELMONT</u> TWP. <u>WASHINGTON</u> QUAD. <u>CAMERON</u></p>		<p>ELEV. <u>N/A</u> DATE: <u>8-8-06</u></p>	
<p>OHIO PLANE COORDINATES X <u>2,441,817</u> Y <u>686,075</u></p>		<p>NORTH</p>	

"AMENDED PLAT"

PLAT SHOWING BOAN/MARCUM UNIT #2-1 (HORIZONTAL WELL)

MARCUM # B-1 (MONITOR WELL)



TARGET: 1620 SL & 952 EL OF SEC. 8
SURFACE: 220 SL & 500 WL OF SEC. 2

I hereby certify that all drilling or producing wells within 1000 feet and all buildings and streams within 200 feet have been shown, there are no drilling unit lines nearer than 500 feet, that this plat is true and correct and was prepared according to the current State of Ohio, Department of Natural Resources, Division of Oil and Gas Regulations.

Joseph J. Spilker S-5862
REG. SURVEYOR
OPERATOR EOG RESOURCES, INC
ADDRESS 88 PRODUCTS LANE MARIETTA, OHIO 45750
SURFACE BOAN / MARCUM
LANDOWNER
MINERALS BOAN / MARCUM
WELL NO. 2-1 & B-1 DRILLING UNIT AC. 160
COUNTY BELMONT
TWP. WASHINGTON
QUAD. CAMERON
OHIO PLANE COORDINATES
X ABOVE
Y ABOVE

0' 400' 800'
SCALE 1"=400'
SUBDIVISION SPILKER
TWP. 5862
RANGE 4W DEPTH 1
QUARTER 5862
SECTION 228 LQT
TRACT
ALLOTMENT
FRACTION OTHER
ELEV. ABOVE DATE: 3-21-06

NORTH

34-013-2-0583

INTER-OFFICE COMMUNICATION

TO: Tom Tugend, Deputy Chief, Division of Mineral Resources Management

FROM: Thomas J. Hines, Division of Mineral Resources Management *T J H*

DATE April 21, 2006

RE: Application #PATT9406

As the designee of the Chief, I have reviewed the attached Permit Application and find there are no affected mines in the area referred to on the attached map.

Therefore, pursuant to 1509.08 of the Ohio Revised Code, I am recommending approval of the permit application #PATT9406.

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Attachment



Ohio Department of Natural Resources

BOB TAFT, GOVERNOR

SAMUEL W. SPECK, DIRECTOR

Division of Mineral Resources Management

Michael L. Sponsler • Chief
2045 Morse Road - Bldg. H-3
Columbus, Ohio 43229-6693

Telephone (614) 265-6633 Fax: (614) 265-7998

April 4, 2006

Certified Mail
Return Receipt Requested
No. 7000 0600 0027 4731 1909

American Energy Corporation
43521 Mayhugh Hill Road
Beallsville, OHIO 43716

RE: Energy Search Inc.
88 Products Lane
Marietta, Ohio
Washington Township
#PATT9406

Dear Sir:

Pursuant to Ohio Revised Code 1509.08, the Division of Mineral Resources Management is required immediately to notify the owner or lessee of an affected mine that an application has been filed for a permit to drill, reopen, or convert a well. Two copies of the location of the well map is included for your examination.

As owner or lessee of an affected mine, you have the right to object to the location, or any location within fifty feet of the original location, as a possible site for relocation of the well. Any such objection shall be in writing to the Chief of the Division of Mineral Resources Management and clearly identify reasons for the objection. If applicable, the letter of objection shall also include a map with indications of the particular location(s) to which you object as a site for possible relocation of the well. Objections must be sent to the Chief within six (6) days following the receipt of this notice. If no objections are received within ten (10) days of receipt of this notice or if objections are unfounded, the Chief shall notify you of his findings and decision.

As either lessee or owner of the affected mine, you will have fifteen (15) days from the receipt of the Chief's findings and decision to appeal those findings and decision to the

Reclamation Commission in accordance with Section 1513.13 O.R.C.. At this hearing, you have the right to either appear on your own or be represented by counsel. You also have the right to present documents, witnesses, or other material relevant to the hearing and examine any witnesses, documents, or other materials used by the Chief in his decision.

If no objection is filed with the Reclamation Commission within fifteen (15) days after the receipt of the Chief's findings and decision, the Chief will approve the application to drill, reopen, plug or abandon and return the application and copy to the Chief of the Division of Mineral Resources Management.

Your prompt attention to this matter will be greatly appreciated.

Sincerely,

Thomas J. Hines /RSS

Thomas J. Hines, Manager
Permitting, Hydrology & Bonding

attachments



Ohio Department of Natural Resources

BOB TAFT, GOVERNOR

SAMUEL W. SPECK, DIRECTOR

Division of Mineral Resources Management

Michael L. Sponsler • Chief
2045 Morse Road - Bldg. H-3
Columbus, Ohio 43229-6693
Telephone (614) 265-6633 Fax: (614) 265-7998

April 4, 2006

Certified Mail
Return Receipt Requested
No. 7000 0600 0027 4731 1855

Attn: David Bartsch
Ohio Valley Coal Company
56854 Pleasant Ridge Road
Alledonia, Ohio 43902

RE: Energy Search Inc.
88 Products Lane
Marietta, Ohio
Washington Township
#PATT9406

Dear Sir:

Pursuant to Ohio Revised Code 1509.08, the Division of Mineral Resources Management is required immediately to notify the owner or lessee of an affected mine that an application has been filed for a permit to drill, reopen, or convert a well. Two copies of the location of the well map is included for your examination.

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If no objection is filed with the Reclamation Commission within fifteen (15) days after the receipt of the Chief's findings and decision, the Chief will approve the application to drill, reopen, plug or abandon and return the application and copy to the Chief of the Division of Mineral Resources Management.

Your prompt attention to this matter will be greatly appreciated.

Sincerely,

A handwritten signature in black ink that reads "Thomas J. Hines" followed by a stylized flourish or initials "LSS".

Thomas J. Hines, Manager
Permitting, Hydrology & Bonding

attachments

WELL COMPLETION RECORD (Form 8)

Ohio Department of Natural Resources
Division of Mineral Resources Management
2045 Morse Road, Bldg. H-3, Columbus, OH 43229-6693
Telephone: 614-265-6633 Fax: 614-265-7998

This report is due in duplicate 30 days after completion of the well. If the permit has expired and the well was not drilled, check the box below, sign on reverse side, and return to our office within 30 days after expiration

1. Owner #: 3793		3. API #: 34-013-2-0583	
2. Owner name, address and telephone numbers:		4. Type of Permit: New Well	
Energy Search, Inc. 88 Products Lane, Marietta, OH 45750		5. County: Belmont	
		6. Civil Township: Washington	
		7. Footage: 500'FWL & 200'FSL	
		8. Type of Well: Oil & Gas - Horizontal	
9. X surf: 2443443 Y surf: 684516		21. Date drilling commenced: 5/20/2006	
10. Quad:		22. Date drilling completed: 6/7/2006	
11. Section: 8 12. Lot:		23. Date put into production:	
13. Fraction:		24. Date plugged if dry:	
14. Qtr. Twp.		25. Producing formation: Marcellus Shale	
15. Tract:		26. Deepest formation: Marcellus Shale	
16. Allot:		27. Driller's total depth: 7803ft MD, 5810ft TVD	
17. Well #: #2-1		28. Logger's total depth: Schlumberger Log TD 5330ft	
18. Lease Name: Boan/Marcum Unit		29. Lost hole at _____ feet.	
19. PTD		20. Drilling Unit:	
30. Type of tools:		31. Type of completion:	
<input type="checkbox"/> Cable <input type="checkbox"/> Air Rotary		<input type="checkbox"/> Open Hole	
<input type="checkbox"/> Fluid Rotary <input checked="" type="checkbox"/> Air/Fluid Rotary		<input checked="" type="checkbox"/> Through Casing	
<input type="checkbox"/> Cable/Air Rotary <input type="checkbox"/> Service Rig		<input type="checkbox"/> Slotted Liner	
<input type="checkbox"/> Cable/Fluid Rotary <input type="checkbox"/> Cable/Air Rotary/Fluid Rotary		32. Elevation:	
		Ground Level: 1310	
		Derrick Floor: 1328	
		Kelly Bushing: 1328	
33. Perforated intervals and number of shots: Stage 1: 22shots 7409-7589MD; Stage 2: 22shots 7080-7260MD; Stage 3: 22shots 6756-6930MD, Stage 4: 22shots 6420-6555MD			
34. Method of shot, acid, or fracture treatments, production tests, pressures, etc.: See Addendum (Frac Procedure)			
SHOT:	ACID:	FLUID:	SAND:
Lbs. _____	Gals. 7000	Gals. _____	Lbs. 622,000
Qts. _____	Type: HCl	Bbl. 19,300	Sx. _____
Type: _____	Percent: 7.5	CO2 _____ ton	ISIP _____
		N2: _____ MSCF	5 min. SIP _____
			Avg. Rate _____ BPM
35. Mouse hole plugged:		Rat hole plugged:	
<input type="checkbox"/> Yes <input type="checkbox"/> No _____ Sacks <input type="checkbox"/> NA		<input type="checkbox"/> Yes <input type="checkbox"/> No _____ Sacks <input type="checkbox"/> NA	
36. Amount of initial production per day: (MCF) (Bbls.) (Bbls.)			
Natural: shows of gas & oil Gas _____ Oil _____ Brine _____			
After Treatment: still testing Gas 750 Oil _____ Brine _____			
SERC Data: Number of Tanks _____ Maximum Storage Capacity of all Tanks (bbls) _____			
37. Casing and tubing record: Please indicate which is used (cement or mudding)			
Type	Size	Feet Used in Drilling	Amount of Cement or Mud
Conductor/Drive Pipe:	30"	17'	6yds. Grout
	20"	78'	35sks Sakrete
Surface:	13 3/8"	735'	550sks (& 25Bbls grout)
Intermediate:	9 5/8"	2396'	372 sks
Production:	5 1/2"	7775' MD	775 sks
Tubing:	2 7/8"		5251'
Comments:			
38. Name of drilling contractor: Union Drilling (UDI) Rig #54			
39. Type of electrical and/or radioactivity logs run: Gamma Ray, Neutron, Density, caliper, Laterolog, MWD (all logs must be submitted)			
40. Name of logging company: Schlumberger, DDC			
DIVISION USE ONLY:			
Log Submitted:	Y / N	Well Class:	DPWC A/D
Confidential:	Y / N		

FORMATION	TOP	BASE	Shows of oil, gas, fresh water, or brine; indicate depth or interval	REMARKS
Freshwater Strata				
Glacial Deposits				
Coal Seams				
1st Cow Run				
Buell Run				
2nd Cow Run				
Salt Sand				
Maxton Sand				
Keener Sand				
Big Injun Sand		1968		
Squaw Sand				
Mississippian Shale				
Weir Sand	2130	2148		
Berea Sand	2330	2333		
Bedford Shale				
2nd Berea				
Ohio Shale	2333	7803MD		
Gantz				
Thirty Foot				
Gordon				
Cinnamon				
Big Lime				
Sylvania				
Oriskany				
Bass Island				
Salina				
Salt Section				
Newburg				
Lockport				
Little Lime				
Packer Shell				
Stray Clinton				
Red Clinton				
White Clinton				
Medina				
Queenston				
Utica				
Trenton				
Black River				
Gull River				
Glenwood Shale				
Knox Unconformity				
Beekmantown				
Rose Run				
Trempealeau/Copper Ridge				
"B" Zone				
Krysik				
Kerbel				
Conasauga				
Rome				
Mt. Simon				
Granite Wash				
Middle Run				
Granite				

I certify that the above information is true and correct to the best of my knowledge:

SIGNATURE  DATE 8.15.06

NAME (typed or printed) Kent C. Stewart TITLE Geologist

REPRESENTING EOG Resources, Inc.

FRAC PROCEDURE

Activity at Report Time: FILLING TANKS FOR FRAC 3 AND 4

Start	End	Hrs	Activity Description
06:00	11:00	5.0	RU BJ SERVICES TO FRAC
11:00	11:30	0.5	TEST LINES TO 5K PSIG
11:30	16:00	4.5	FRAC FIRST STAGE, 6 HOLES 7589.35, 4 HOLES 7545.11, 4 HOLES 7500.08, 4 HOLES 7455.08, 4 HOLES 7409.94. FRAC AS FOLLOWS PUMP 12 BBLS WTR, 24 BBLS 7.5% HCL ACID, 12 BBLS WTR W/ 10 BIOBALLS, 12 BBLS 7.5% HCL, 12 BBLS WTR W/ 10 BIOBALLS, 12 BBLS 7.5% HCL AND FLUSH TO PERFS W/ WTR. 500 PSI INC FROM BIOBALLS, SD, ISIP---2800 PSIG, FG---0.91, RESUME PUMPING AND PUMP 1430 BBLS WTR TO EST ACCEPTABLE RATE AND PRESSURE, FRAC W/ TOTAL OF 2707 BBLS WTR AND 152,282 # 100 MESH SAND. FINAL ISIP---2350, FG---0.84, AVG RATE---32.1BPM, MAX RATE---32.6, AVG PSI---4401, MAX PSI---5359--- TOTAL FLUID PUMPED---4962 BBLS
16:00	18:00	2.0	SECOND STAGE SET-UP---RU BASIC WL AND RIH W/ HALLIBURTON 8K COMPOSITE FRAC PLUG AND FIVE 3 3/8 PERF GUNS. SET PLUG @ 7,335', PU, POSITION AND PERF 5 -1/2" CSG @ 7260' W/6 SHTS, 7215' W/ 4 SHTS, 7170' W/ 4 SHTS, 7125' W/ 4 SHTS AND 7080' W/ 4 SHTS. POOH, PLUG SET AND ALL GUNS FIRED. LAY LUB OFF TO SIDE WTR USED IN PUMPDOWN---156 BBLS WTR USED TO DATE---5118 BBLS
18:00	22:00	4.0	SECOND STAGE TREATMENT---OPEN WH, WELL PSI---1726, DROP 2 1/4 " FRAC BALL AND PUMP 2000 GAL 7.5% ACID IN THREE STAGES W/ TWO 12 BBL WTR SPACERS W/ 10 BIOBALLS IN EACH SPACER. FLUSH ACID AND BALLS TO PERFS, 1200 PSI INC FROM FRAC BALL AND 300 PSI INC FROM BIOBALLS. SD, ISIP---2450, FG---0.85, RESUME PUMPING AND FRAC W/ 3,914 BBLS WTR AND 151,410 # 100 MESH SAND. FINAL ISIP---2320, FG---0.83, AVG RATE---29.6 BPM, MAX RATE---31.8 BPM, AVG PSI---3751, MAX PSI---5400 TOTAL FLUID PUMPED---4171 BBLS TOTAL FLUID PUMPED TO DATE---9289 BBLS
22:00	00:30	2.5	THIRD STAGE SET-UP---RU BASIC WL AND RIH W/ HALLIBURTON 8K COMPOSITE FRAC PLUG AND FIVE 3 3/8 PERF GUNS. SET PLUG @ 7005', PU, POSITION AND PERF 5 -1/2" CSG @ 6930' W/6 SHTS, 6885' W/ 4 SHTS, 6840' W/ 4 SHTS, 6795' W/ 4 SHTS AND 6756' W/ 4 SHTS. POOH, PLUG SET AND ALL GUNS FIRED. LAY LUB OFF TO SIDE. WTR USED IN PUMPDOWN---132 BBLS WTR USED TO DATE---9421 BBLS
09:45	13:15	3.5	THIRD STAGE TREATMENT---OPEN WH, WELL PSI---1800, DROP 2 1/4 " FRAC BALL AND PUMP 2000 GAL 7.5% ACID IN THREE STAGES W/ TWO 12 BBL WTR SPACERS W/ 10 BIOBALLS IN EACH SPACER. FLUSH ACID AND BALLS TO PERFS, 2100 PSI INC FROM FRAC BALL AND 300 PSI INC FROM BIOBALLS. SD, ISIP---2450, FG---0.85, RESUME PUMPING AND FRAC W/ 4103 BBLS WTR AND 151,039 # 100 MESH SAND. FINAL ISIP---2230, FG---0.82, AVG RATE---27.4 BPM, MAX RATE---31.0 BPM, AVG PSI---3974, MAX PSI---5400 TOTAL FLUID PUMPED---4103 BBLS TOTAL FLUID PUMPED TO DATE---13524 BBLS
13:15	15:15	2.0	FOURTH STAGE SET-UP---RU BASIC WL AND RIH W/ HALLIBURTON 8K COMPOSITE FRAC PLUG AND FIVE 3 3/8 PERF GUNS. SET PLUG @ 6675', PU, POSITION AND PERF 5 -1/2" CSG @ 6600' W/6 SHTS, 6555' W/ 4 SHTS, 6510' W/ 4 SHTS, 6465' W/ 4 SHTS AND 6420' W/ 4 SHTS. POOH, PLUG SET AND ALL GUNS FIRED. LAY LUB OFF TO SIDE. WTR USED IN PUMPDOWN---74 BBLS WTR USED TO DATE---13598 BBLS
15:15	19:30	4.25	FOURTH STAGE TREATMENT---OPEN WH, WELL PSI---1903, DROP 2 1/4 " FRAC BALL AND PUMP 2000 GAL 7.5% ACID IN THREE STAGES W/ TWO 12 BBL WTR SPACERS W/ 10 BIOBALLS IN EACH SPACER. FLUSH ACID AND BALLS TO PERFS, 2000 PSI INC FROM FRAC BALL AND 400 PSI INC FROM BIOBALLS. SD, ISIP---2455, FG---0.85, RESUME PUMPING AND FRAC W/ 5578 BBLS WTR AND 180,000 # 100 MESH SAND. FINAL ISIP---2300, FG---0.83, AVG RATE---27.0 BPM, MAX RATE---27.4 BPM, AVG PSI---3994, MAX PSI---5400 TOTAL FLUID PUMPED---5578 BBLS TOTAL FLUID PUMPED TO DATE---19176 BBLS
19:30	21:30	2.0	RU BASIC WL AND RIH W/ HALLIBURTON COMPOSITE BRIDGE PLUG. SET PLUG @ 5505', POOH AND RD BASIC WL. SECURE WELL FOR NIGHT. TOTAL FLUID PUMPED 19,300 BBLS TOTAL SAND 622000



EOG Resources, Inc.
88 Products Lane
Mareetta, OH 45750
Telephone (740) 373-3050
Fax (740) 373-5272

August 16, 2006

Mr. Steve Opritza, Geologist
Technical Review Section
Ohio Dept. of Natural Resources
Division of Oil and Gas
1855 Fountain Square Dr., Ct. H-3,
Columbus, Ohio 43224

Please find enclosed the following: Logs and Completion Report for the Boan/Marcum
#2-1 well in Belmont County/Washington Twp. - API# 34-013-2-0583-00-00

Please feel free to contact our office if you have any questions or need additional
information. You can contact me @ 740-373-3050 ext.1008

Sincerely,
EOG Resources, Inc.

Kent C. Stewart
Geologist

