

C1 1680

SEQUENCE NO. (MDE USE ONLY)

STATE OF MARYLAND WELL COMPLETION REPORT

THIS REPORT MUST BE SUBMITTED WITHIN 45 DAYS AFTER WELL IS COMPLETED.

(THIS NUMBER IS TO BE PUNCHED IN COLS. 3-6 ON ALL CARDS)

COUNTY NUMBER

DATE RECEIVED MM DD YY

DATE WELL COMPLETED MM DD YY

DEPTH OF WELL (TO NEAREST FOOT)

PERMIT NO. FROM "PERMIT TO DRILL WELL"

OWNER: Morris last name, Craig first name, 5420 Radel Ct., TOWN: Ellicott City

WELL LOG table with columns: DESCRIPTION, FEET (FROM, TO), check if water bearing. Includes handwritten entries: soft sandy brown, soft gray, med hard gray rock, hard gray rocks.

GROUTING RECORD: WELL HAS BEEN GROUTED (Y), TYPE OF GROUTING MATERIAL: CEMENT (CM), BENTONITE CLAY (BC), NO. OF BAGS: 24, NO. OF POUNDS: 1200.

CASING RECORD: MAIN CASING TYPE: STEEL (ST), Nominal diameter top (main) casing: 60 inch, Total depth of main casing: 400 feet.

OTHER CASING (if used) table with columns: diameter inch, depth (feet) from, to.

SCREEN RECORD: screen type or open hole: STEEL (ST), BRASS BRONZE (BR), OPEN HOLE (HO).

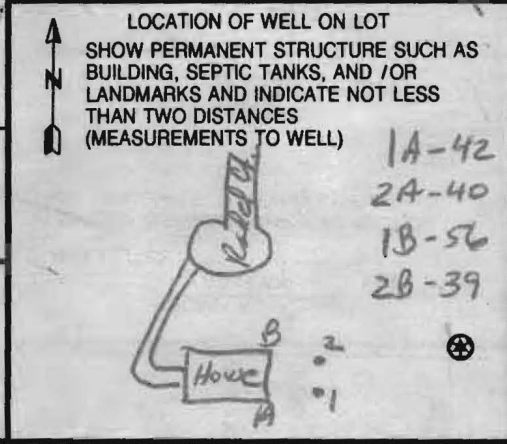
DEPTH (nearest ft.) table with columns: 1-2, 3-4, 5-6, 7-8, 9-10, 11-12, 13-14, 15-16, 17-18, 19-20, 21-22, 23-24, 25-26, 27-28, 29-30, 31-32, 33-34, 35-36, 37-38, 39-40, 41-42, 43-44, 45-46, 47-48, 49-50, 51-52.

GRAVEL PACK IF WELL DRILLED WAS FLOWING WELL: YES (Y) or NO (N).

MDE USE ONLY (NOT TO BE FILLED IN BY DRILLER): TELESCOPE CASING, LOG INDICATOR, OTHER DATA.

PUMPING TEST: HOURS PUMPED: 8.9, PUMPING RATE: 11.15 gal. per min., TYPE OF PUMP USED: air (A), piston (P), turbine (T), centrifugal (C), rotary (R), jet (J), submersible (S).

PUMP INSTALLED: DRILLER INSTALLED PUMP: YES, TYPE OF PUMP INSTALLED PLACE: 29, CAPACITY: GALLONS PER MINUTE: 31-35, PUMP HORSE POWER: 37-41, PUMP COLUMN LENGTH: 43-47, CASING HEIGHT: 49, LAND SURFACE: 50-51.



DRILLERS LIC. NO.: MW D 304, DRILLERS SIGNATURE: Daniel Kelly, LIC. NO.: MW D 877, SITE SUPERVISOR: Paul Holmes.

C1 1679 SEQUENCE NO. (MDE USE ONLY)

STATE OF MARYLAND WELL COMPLETION REPORT FILL IN THIS FORM COMPLETELY PLEASE TYPE

THIS REPORT MUST BE SUBMITTED WITHIN 45 DAYS AFTER WELL IS COMPLETED.

1 2 3 6 (THIS NUMBER IS TO BE PUNCHED IN COLS. 3-6 ON ALL CARDS)

COUNTY NUMBER

ST/CO USE ONLY DATE RECEIVED MM DD YY

DATE WELL COMPLETED MM DD YY

Depth of Well 22 400 26 (TO NEAREST FOOT)

PERMIT NO. FROM "PERMIT TO DRILL WELL" H0 95 - 1795

OWNER Morris last name 5420 Radcl Ct. first name Craig TOWN Ellicott City

WELL LOG Not required for driven wells

GROUTING RECORD yes no WELLS HAS BEEN GROUTED (Circle Appropriate Box) Y N

C3 PUMPING TEST

Table with columns: DESCRIPTION (Use additional sheets if needed), FEET (FROM, TO), check if water bearing. Rows include soft sandy brown, soft gray, red hard gray rock, hard gray rock.

TYPE OF GROUTING MATERIAL (Circle one) CEMENT CM BENTONITE CLAY BC NO. OF BAGS 24 NO. OF POUNDS 1200

HOURS PUMPED (nearest hour) 6 9 PUMPING RATE (gal. per min.) 11 15 METHOD USED TO MEASURE PUMPING RATE WATER LEVEL (distance from land surface) BEFORE PUMPING 17 20 ft. WHEN PUMPING 22 25 ft.

CASING RECORD casing types insert appropriate code below ST STEEL CO CONCRETE PL PLASTIC OT OTHER

PUMP INSTALLED DRILLER INSTALLED PUMP YES NO (CIRCLE) (YES or NO)

MAIN CASING TYPE Nominal diameter top (main) casing (nearest inch) Total depth of main casing (nearest foot)

IF DRILLER INSTALLS PUMP, THIS SECTION MUST BE COMPLETED FOR ALL WELLS. TYPE OF PUMP INSTALLED PLACE (A,C,J,P,R,S,T,O) IN BOX 29

OTHER CASING (if used) diameter inch depth (feet) from to

CAPACITY: GALLONS PER MINUTE (to nearest gallon) 31 35 PUMP HORSE POWER 37 41

SCREEN RECORD screen type or open hole insert appropriate code below ST STEEL BR BRASS PL PLASTIC HO OPEN HOLE OT OTHER

PUMP COLUMN LENGTH (nearest ft.) 43 47 CASING HEIGHT (circle appropriate box and enter casing height)

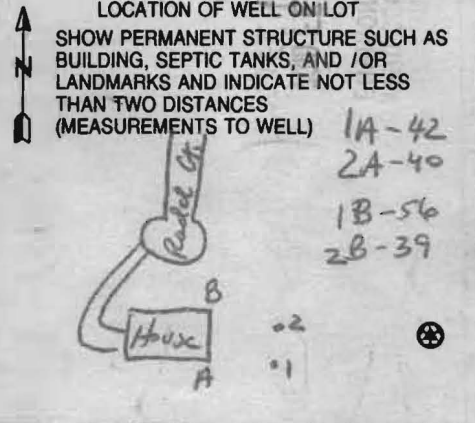
NUMBER OF UNSUCCESSFUL WELLS: 0 WELL HYDROFRACTURED yes no Y N

C2 DEPTH (nearest ft.) 1 2 3 4 5 6 7 8 9 11 15 17 21

LAND SURFACE (nearest foot) 49 51

CIRCLE APPROPRIATE LETTER A A WELL WAS ABANDONED AND SEALED WHEN THIS WELL WAS COMPLETED E ELECTRIC LOG OBTAINED P TEST WELL CONVERTED TO PRODUCTION WELL

E A C H S R E E N SLOT SIZE 1 2 3 DIAMETER OF SCREEN (NEAREST INCH) 58 60



DRILLERS LIC. NO. MW D 304 DRILLERS SIGNATURE (MUST MATCH SIGNATURE ON APPLICATION) LIC. NO. AW D 277

GRAVEL PACK IF WELL DRILLED WAS FLOWING WELL INSERT F IN BOX 68 MDE USE ONLY (NOT TO BE FILLED IN BY DRILLER) T (E.R.O.S.) W Q

SITE SUPERVISOR (sign. of driller or journeyman responsible for sitework if different from permittee)

TELESCOPE CASING LOG INDICATOR OTHER DATA 70 72 74 75 76

C 1 1681 SEQUENCE NO. (MDE USE ONLY)

STATE OF MARYLAND
WELL COMPLETION REPORT
 FILL IN THIS FORM COMPLETELY
 PLEASE TYPE

THIS REPORT MUST BE SUBMITTED WITHIN
 45 DAYS AFTER WELL IS COMPLETED.

1 2 3 6
 (THIS NUMBER IS TO BE PUNCHED
 IN COLS. 3-6 ON ALL CARDS)

COUNTY
 NUMBER

ST/CO USE ONLY
 DATE Received
 MM DD YY
 8 13

DATE WELL COMPLETED
 MM DD YY
 8 20 09
 Geo 22 120 26 Hole #3
 (TO NEAREST FOOT)

PERMIT NO.
 FROM "PERMIT TO DRILL WELL"
 40-95-1795
 28 29 30 31 32 33 34 35 36 37

OWNER Morris
 STREET OR RFD 3420 Radcl Ct. TOWN Ellicott City
 SUBDIVISION _____ SECTION _____ LOT _____

WELL LOG
 Not required for driven wells

STATE THE KIND OF FORMATIONS PENETRATED, THEIR
 COLOR, DEPTH, THICKNESS AND IF WATER BEARING

DESCRIPTION (Use additional sheets if needed)	FEET		check if water bearing
	FROM	TO	
soft sandy brown	0	45	
med gray rock	45	60	✓
med hard gray rock	60	85	✓
hard gray rock	85	120	✓

GROUTING RECORD (yes no)
 WELL HAS BEEN GROUTED Y N
 TYPE OF GROUTING MATERIAL (Circle one)
 CEMENT BENTONITE CLAY BC
 NO. OF BAGS 12 NO. OF POUNDS 1128
 GALLONS OF WATER 60
 DEPTH OF GROUT SEAL (to nearest foot)
 from 0 ft. to 47 ft.
 (enter 0 if from surface)

CASING RECORD
 casing types insert appropriate code below
 ST STEEL CO CONCRETE
 PL PLASTIC OT OTHER
 MAIN CASING TYPE
 Nominal diameter top (main) casing (nearest inch)! Total depth of main casing (nearest foot)
12 6 47
 60 61 63 64 66 70

OTHER CASING (if used)
 diameter inch depth (feet) from to

SCREEN RECORD
 screen type or open hole insert appropriate code below
 ST STEEL BR BRASS HO OPEN HOLE
 PL PLASTIC OT OTHER

C 3
PUMPING TEST
 HOURS PUMPED (nearest hour) 3
 PUMPING RATE (gal. per min.) 9.5
 METHOD USED TO MEASURE PUMPING RATE timer
 WATER LEVEL (distance from land surface)
 BEFORE PUMPING 38 ft.
 WHEN PUMPING 118 ft.
 TYPE OF PUMP USED (for test)
 A air P piston T turbine
 C centrifugal R rotary O other (describe below)
 J jet S submersible

PUMP INSTALLED
 DRILLER INSTALLED PUMP (CIRCLE) (YES or NO) YES NO
 IF DRILLER INSTALLS PUMP, THIS SECTION MUST BE COMPLETED FOR ALL WELLS.
 TYPE OF PUMP INSTALLED PLACE (A,C,J,P,R,S,T,O) IN BOX 29. 29
 CAPACITY: GALLONS PER MINUTE (to nearest gallon) 31 36
 PUMP HORSE POWER 37 41
 PUMP COLUMN LENGTH (nearest ft.) 43 47
 CASING HEIGHT (circle appropriate box and enter casing height)
 + above } LAND SURFACE
 - below } (nearest foot)

NUMBER OF UNSUCCESSFUL WELLS: 0
 WELL HYDROFRACTURED Y N

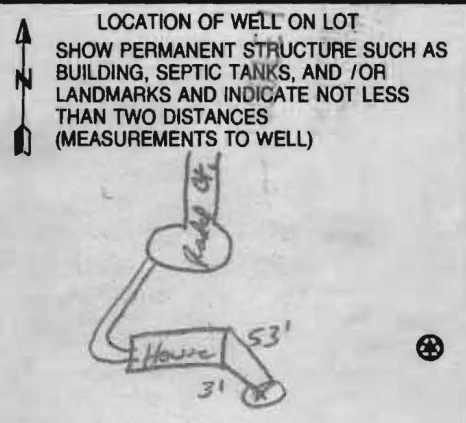
CIRCLE APPROPRIATE LETTER
A A WELL WAS ABANDONED AND SEALED WHEN THIS WELL WAS COMPLETED
E ELECTRIC LOG OBTAINED
P TEST WELL CONVERTED TO PRODUCTION WELL

I HEREBY CERTIFY THAT THIS WELL HAS BEEN CONSTRUCTED IN ACCORDANCE WITH COMAR 26.04.04 "WELL CONSTRUCTION" AND IN CONFORMANCE WITH ALL CONDITIONS STATED IN THE ABOVE CAPTIONED PERMIT, AND THAT THE INFORMATION PRESENTED HEREIN IS ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

DRILLERS LIC. NO. MWD 304
 DRILLERS SIGNATURE Paul Kelly
 LIC. NO. AWD 597
 SIGNATURE Paul Holmes

C 2
 DEPTH (nearest ft.)
 1 47 120
 2
 3
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GRAVEL PACK IF WELL DRILLED WAS FLOWING WELL INSERT F IN BOX 68 68
 MDE USE ONLY (NOT TO BE FILLED IN BY DRILLER)
 T (E.R.O.S.) W Q
 TELESCOPE CASING LOG INDICATOR OTHER DATA



B 1	6210	SEQUENCE NO. (MDE USE ONLY)	STATE OF MARYLAND APPLICATION FOR PERMIT TO DRILL WELL please type	STATE PERMIT NUMBER <u>HO - 95 - 1795</u>
2 3 6				fill in this form completely

Date Received (APA)
8 MM DD YY 13
Morris Craig

OWNER INFORMATION

15 Last Name Morris Owner First Name Craig 34

36 Street or RFD. 5420 RADEL Ct. 55

57 Town Ellicott City 70 State MD 72 Zip 21043 76

B 3 LOCATION OF WELL

8 COUNTY Howard 21

23 SUBDIVISION _____ 42

SECTION _____ LOT 3

52 NEAREST TOWN Columbia 71

MILES FROM TOWN (enter 0 if in town) 4 M I

DRILLER INFORMATION

Driller's Name David Kelly 76 License No. M W D 304 81

Firm Name Jones Well Drilling Inc.

Address 3700 Bush Rd. Jarrettsville Md 21084

Signature David Kelly Date 7/20/09

B 4

1 2 DIRECTION OF WELL FROM TOWN (CIRCLE BOX)

11 NEAR WHAT ROAD 5420 Radel Ct. 30

ON WHICH SIDE OF ROAD (CIRCLE APPROPRIATE BOX)

34 96 37 DISTANCE FROM ROAD FT

ENTER FT OR MI FT 38 39

TAX MAP: 31 BLK: _____ PARCEL 206

B 2 WELL INFORMATION

APPROX. PUMPING RATE (GAL. PER MIN.) _____ 8 12

AVERAGE DAILY QUANTITY NEEDED (GAL. PER DAY) _____ 14 20

USE FOR WATER (CIRCLE APPROPRIATE BOX)

DOMESTIC POTABLE SUPPLY & RESIDENTIAL IRRIGATION

FARMING (LIVESTOCK WATERING & AGRICULTURAL IRRIGATION)

INDUSTRIAL, COMMERCIAL, DEWATERING

PUBLIC WATER SUPPLY WELL

TEST, OBSERVATION, MONITORING

GEO-THERMAL 2 holes closed loop

NOT TO BE FILLED IN BY DRILLER HEALTH DEPARTMENT APPROVAL

COUNTY NAME Howard COUNTY NO. 13

STATE SIGNATURE _____ INSERT S →

DATE ISSUED 8/12/09 41

CO SIGNATURE [Signature] EXP. DATE _____

NORTH GRID 506 EAST GRID 860

50 55 57 63

APPROXIMATE DEPTH OF WELL 400 FEET

APPROXIMATE DIAMETER OF WELL 6 INCH

SHOW MAJOR FEATURES OF BOX & LOCATE WELL WITH AN X

SOURCES OF DRILLING WATER

- 1.
- 2.
- 3.

WRITE THE BOX NUMBER FROM THE MAP HERE

E 860

N 506

000
000

METHOD OF DRILLING (circle one)

BORED (or Augered) JETTED Jettted & DRIVEN

30 AIR-ROTary AIR-PERCussion ROTARY (Hydraulic Rotary)

37 CABLE REVerse-ROTary DRive-POINT

other _____

REPLACEMENT OR DEEPEMED WELLS (CIRCLE APPROPRIATE BOX)

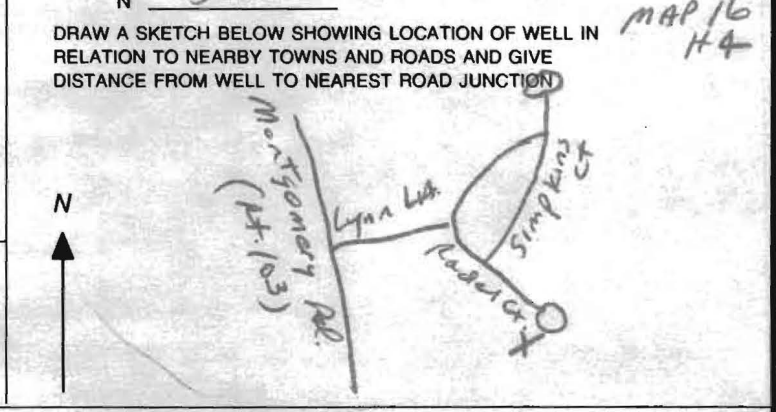
THIS WELL WILL NOT REPLACE AN EXISTING WELL

THIS WELL WILL REPLACE A WELL THAT WILL BE ABANDONED AND SEALED

39 THIS WELL WILL REPLACE A WELL THAT WILL BE USED AS A STANDBY-CONTACT LOCAL APPROVING AUTHORITY FOR POLICY ON STANDBY WELLS

THIS WELL WILL DEEPEM AN EXISTING WELL

PERMIT NUMBER OF WELL TO BE REPLACED OR DEEPEMED (IF AVAILABLE) 41 _____ 52



Not to be filled in by driller (MDE OR COUNTY USE ONLY)

APPROP. PERMIT NUMBER _____ G _____

PERMIT No. HO - 95 - 1795

70 71 72 73 74 75 76 77 78 79

SPECIAL CONDITIONS
NOTE - APPROVING AUTHORITIES SHOULD USE SEPARATE SHEET IF NEEDED



HOWARD COUNTY HEALTH DEPARTMENT

31095

DATE
7 / 21 / 09

LLK

Received From

Jones Well Drilling

PHONE #

3900 Bush Rd Gaithersville MD 20854

For

and thermal well
5420 Rockwell Ct.

CASH

CHECK

NO. 0

1888

one hundred sixty-

Dollars

\$

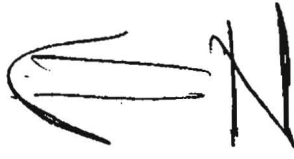
16090

Received By

LLK

Owner: Craig Morris
 5420 Radet Ct.
 Ellicott City, MD 21043

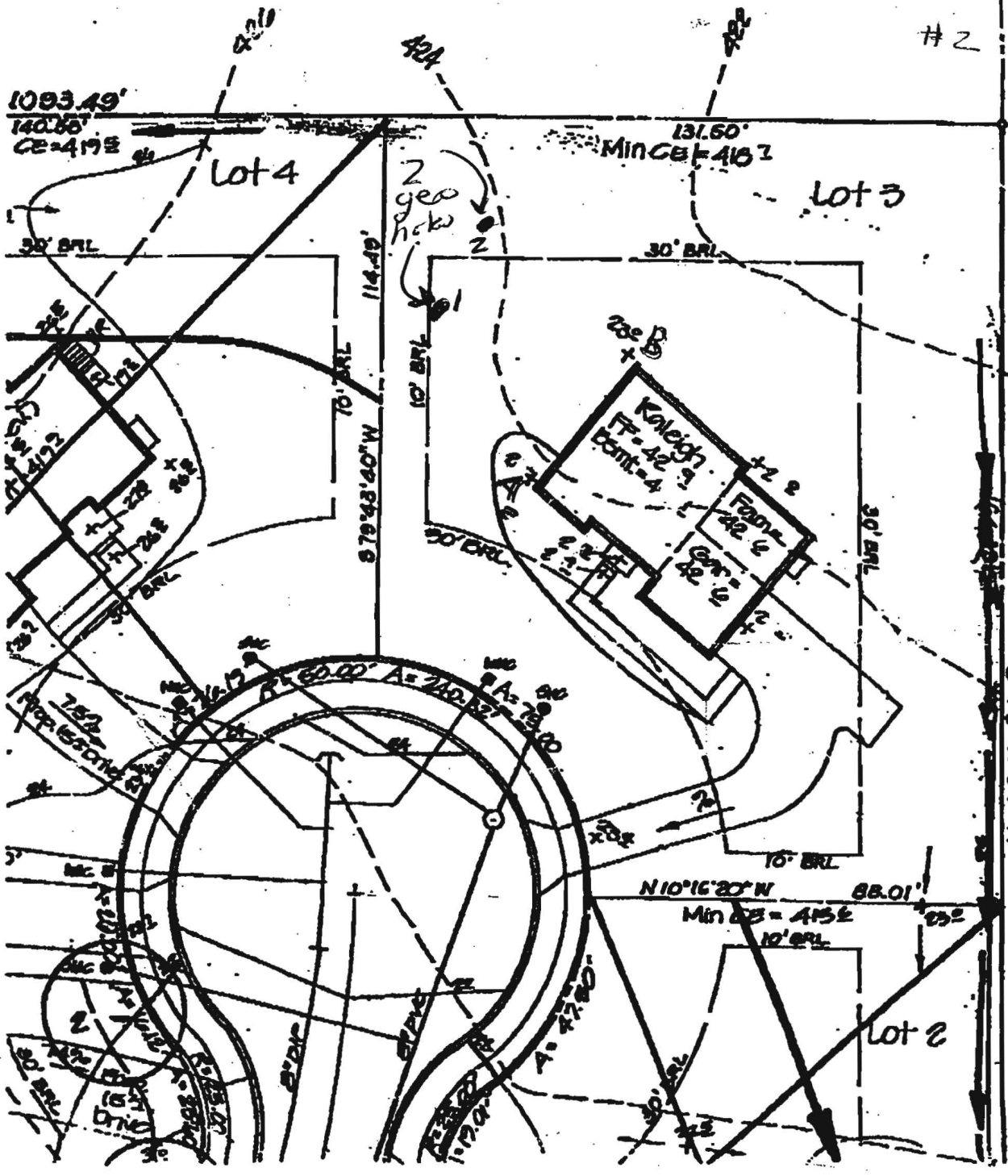
8/12/09 2 borewell sites OK
 (So)



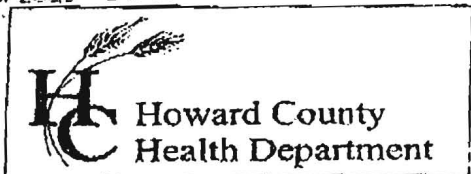
HVAC Contractor
 Ground Loop Heat/Air 410-836-1706

	A	B
#1	43	44
#2	56	44

House:
 2650 sq ft



P. 212



7178 Columbia Gateway Drive, Columbia MD 21046
 (410) 313-2640 Fax (410) 313-2648
 TDD (410) 313-2323 Toll Free 1-866-313-6300
 website: www.hchealth.org

Penny E. Borenstein, M.D., M.P.H., Health Officer

TO ALL INTERESTED PARTIES

When submitting a well permit application for a proposed well for new construction, please indicate one of the following:

Well Site Location:

5420 Radcl Ct.

Subdivision/Property Name	Lot#	Road Name
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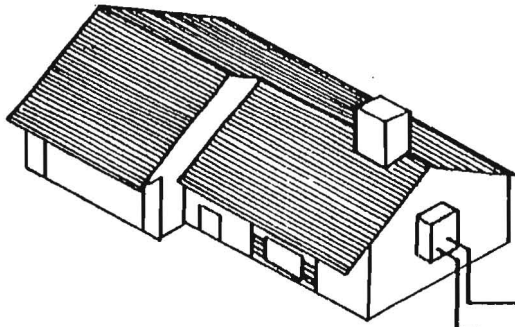
The well site has been staked by _____
 (professional land surveyor or company employing professional land surveyors)
 on _____ (date) and does not require a site inspection.

The well driller, builder or property owner will call the Health Department to schedule a time to meet in the field to verify the proposed well site location.

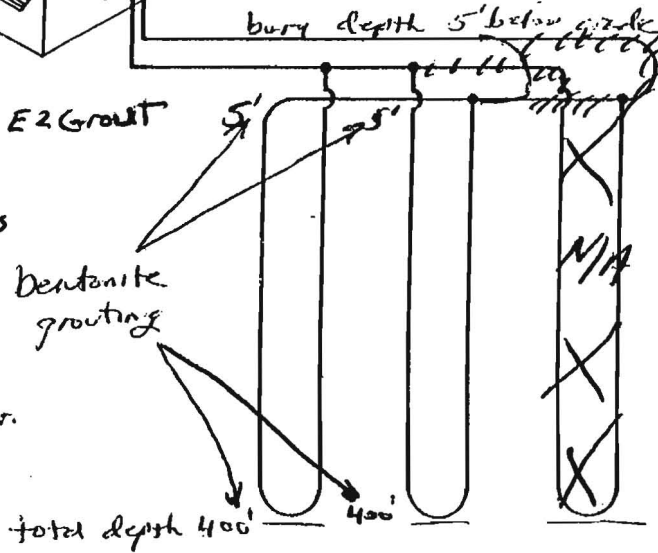
This sheet, along with two copies of an acceptable well site plan, must be attached to the green well permit application.

Revised 3/11/05

Driller: Jones Well Drilling Inc.
contact: David Kelly
410-692-6981



Wyo-Ben bentonite-E2 GROUT
grout (50 lb. bags)
mixed with 24 gallons
of water per
manufacturer specs
yields 27 gal slurry
with a 0.42 btu/ft-hr.
thermal conductivity



Earth Coil Type: Vertical - Single U-Bend
Water Flow: Parallel
Pipe Sizes: 1 1/4" double Loop

Bore Lengths: 400' x 2 holes (800' vertical bore)
Pipe Lengths: 800' x 2 (1600' vertical pipe)

FIGURE 4.5: Parallel Vertical Ground Heat Exchanger