

C1 20707

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 COLUMNS 2-6 ON ALL CARDS)

COUNTY NUMBER

ST/CO USE ONLY

DATE WELL COMPLETED

Depth of Well

PERMIT NO. FROM "PERMIT TO DRILL WELL"

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, WELL SITE ADDRESS, TOWN, 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 FROM TO

check if water bearing

Table with 3 columns: Description, Feet From, Feet To. Includes entries like Soft Clay, Red Clay, Brn Clay, etc.

18 bags x 26 gal bag = 468 gal / 45'

NUMBER OF UNSUCCESSFUL WELLS:

WELL HYDROFRACTURED (Y/N)

CIRCLE APPROPRIATE LETTER A WELL WAS ABANDONED AND SEALED WHEN THIS WELL WAS COMPLETED

I HEREBY CERTIFY THAT THIS WELL HAS BEEN CONSTRUCTED IN ACCORDANCE WITH COMAR 28.04.04 "WELL CONSTRUCTION" AND IN CONFORMANCE WITH ALL CONDITIONS STATED IN THE ABOVE CAPTIONED PERMIT...

DRILLERS LIC. NO. MWD 553, DRILLERS SIGNATURE

LIC. NO. DW D 942

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

GROUTING RECORD

WELL HAS BEEN GROUTED (Circle Appropriate Box) Y N

TYPE OF GROUTING MATERIAL (Circle one)

CEMENT CM BENTONITE CLAY BC

NO. OF BAGS 18 NO. OF POUNDS 468

GALLONS OF WATER 330 gal

DEPTH OF GROUT SEAL (to nearest foot)

from 48 TOP 52 ft. to 54 BOTTOM 58 ft. (enter 0 if from surface)

CASING RECORD

casings 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)

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

DEPTH (nearest ft.)

EACH CASING SLOT SIZE 1, 2, 3; DIAMETER OF SCREEN (NEAREST INCH) from to

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

TELESCOPE CASING LOG INDICATOR OTHER DATA

C 3

PUMPING TEST

HOURS PUMPED (nearest hour) 8 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.

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 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

CAPACITY: GALLONS PER MINUTE (to nearest gallon) 31 35

PUMP HORSE POWER 37 41

PUMP COLUMN LENGTH (nearest ft.) 43 47

CASING HEIGHT (circle appropriate box and enter casing height) + above, - below, LAND SURFACE (nearest foot)

LATITUDE 39.211047, LONGITUDE 76.737366 (DEFAULT COORD. WGS 84)

NOTES: Montgomery, + test 1000, Blumendi, Rowanberry

B 1	26042	SEQUENCE NO. (MDE USE ONLY)	STATE OF MARYLAND APPLICATION FOR PERMIT TO DRILL WELL please type 545187	STATE PERMIT NUMBER 40-95-2614 <small>70 fill in this form completely 79</small>
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OWNER INFORMATION

Date Received (APA) **01/12/13**
8 MM DD YY 13

Howard County MD
15 Last Name Owner First Name 34

3410 Colant House Dr
36 Street or RFD 55

Ellicott City MD 21043
57 Town 70 State 72 Zip 76

B 3 LOCATION OF WELL

Howard County
8 COUNTY 21

23 SUBDIVISION 42

SECTION **44** 46 LOT **48** 50

Elkridge MD
52 NEAREST TOWN 71

DRILLER INFORMATION

C. John Herms **MWD 553**
Driller's Name 76 License No. 81

Allied Environmental Svcs
Firm Name

PO Box 129, Annapolinc MD 20701
Address

C. John Herms **11/8/13**
Signature Date

B 4 SOURCES OF DRILLING WATER

6910 Montgomery Rd
11 STREET ADDRESS 30

ON WHICH SIDE OF ROAD (CIRCLE APPROPRIATE BOX)

NORTH
W 32 E
WEST S EAST
SOUTH

34 37 DISTANCE FROM ROAD

ENTER FT OR MI **38** 39

TAX MAP: _____ BLK: _____ PARCEL _____

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

OPEN LOOP GEOTHERMAL

CLOSED LOOP GEOTHERMAL

NOT TO BE FILLED IN BY DRILLER HEALTH DEPARTMENT APPROVAL

Howard **13**
COUNTY NAME COUNTY NO.

STATE SIGNATURE _____ INSERT S →

DATE ISSUED **12/11/13** **12/11/14**
43 MM DD YY 48 CO SIGNATURE EXP. DATE

APPROXIMATE DEPTH OF WELL **450** FEET
24 26

APPROXIMATE DIAMETER OF WELL **6** INCH
NEAREST INCH

METHOD OF DRILLING (circle one)

BORED (or Augered) JETTED Jetted & DRIVEN

AIR-ROTary AIR-PERcussion ROTARY (Hydraulic Rotary)

SABLE 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

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

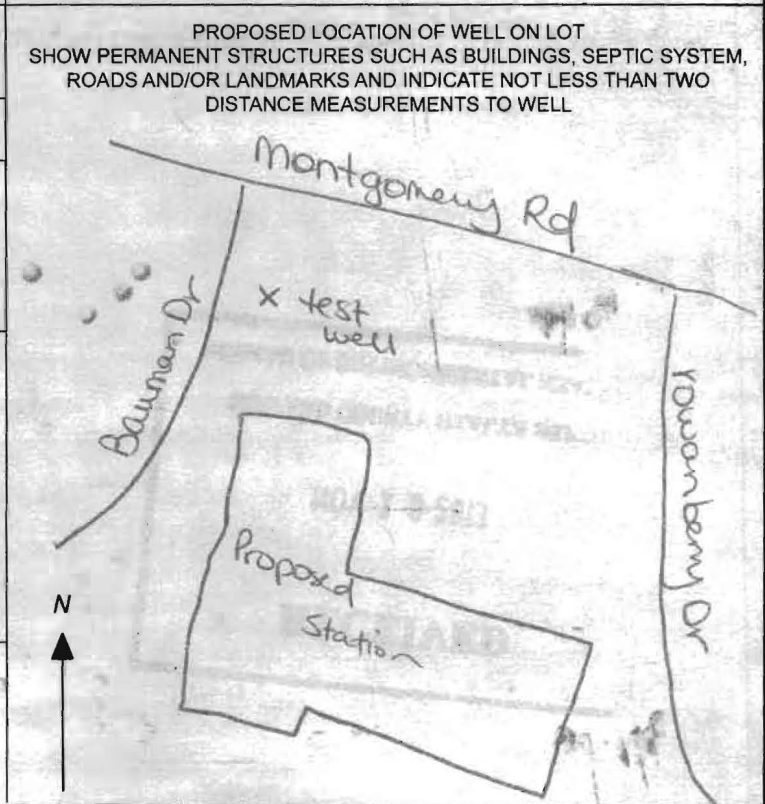
THIS WELL WILL DEEPEM AN EXISTING WELL

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. **40-95-2614**
70 71 72 73 74 75 76 77 78 79



SPECIAL CONDITIONS

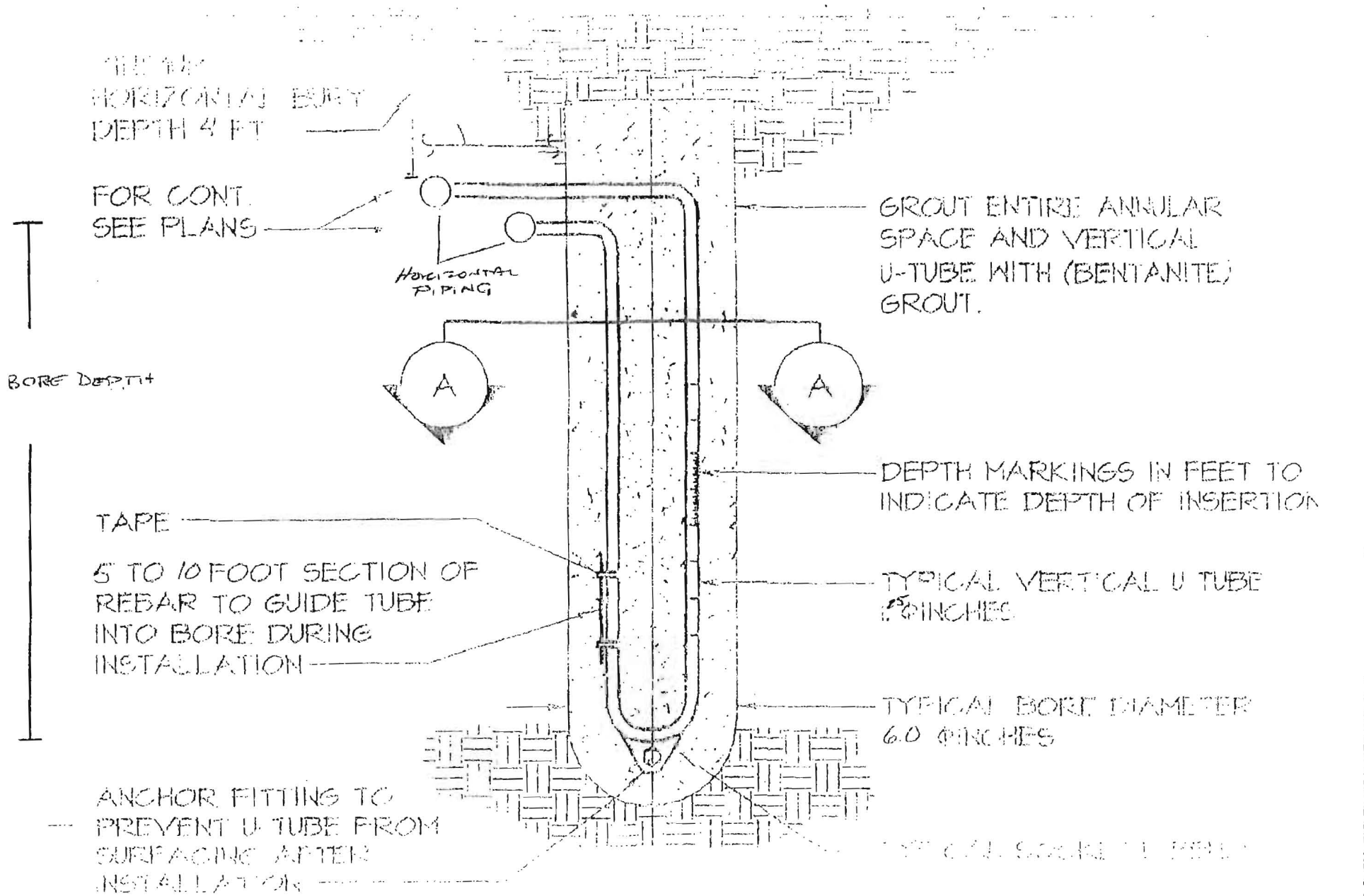
NOTE APPROVING AUTHORITIES SHOULD USE SEPARATE SHEET IF NEEDED

HOWARD COUNTY GROUTING PROCEDURE

Boreholes will be grouted from the bottom to the top via a tremie pipe and positive displacement pump. Bentonite grout, known as Quik-Grout will be used according to the manufacturer's specifications to achieve a consistency of at least 20% solids (24 gallons potable water/50 lb. sack of grout) and a permeability no more than $2.5 \text{ E}(-08) \text{ cm/sec}$. Grouting will be completed immediately after installing the geothermal loop and no later than twenty-four (24) hours after installing the geothermal loop. Open boreholes/annular space will be protected as necessary to prevent the entry of surface water or pollutants.

GRADE

EACH BORE HOLE (TYP.)



HORIZONTAL BURY DEPTH 4 FT

FOR CONT. SEE PLANS

HORIZONTAL PIPING

GROUT ENTIRE ANULAR SPACE AND VERTICAL U-TUBE WITH (BENTONITE) GROUT.

BORE DEPTH

TAPE

5 TO 10 FOOT SECTION OF REBAR TO GUIDE TUBE INTO BORE DURING INSTALLATION

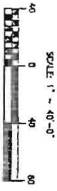
DEPTH MARKINGS IN FEET TO INDICATE DEPTH OF INSERTION

TYPICAL VERTICAL U TUBE 6 INCHES

TYPICAL BORE DIAMETER 6.0 INCHES

ANCHOR FITTINGS TO PREVENT U-TUBE FROM SURFACING AFTER INSTALLATION

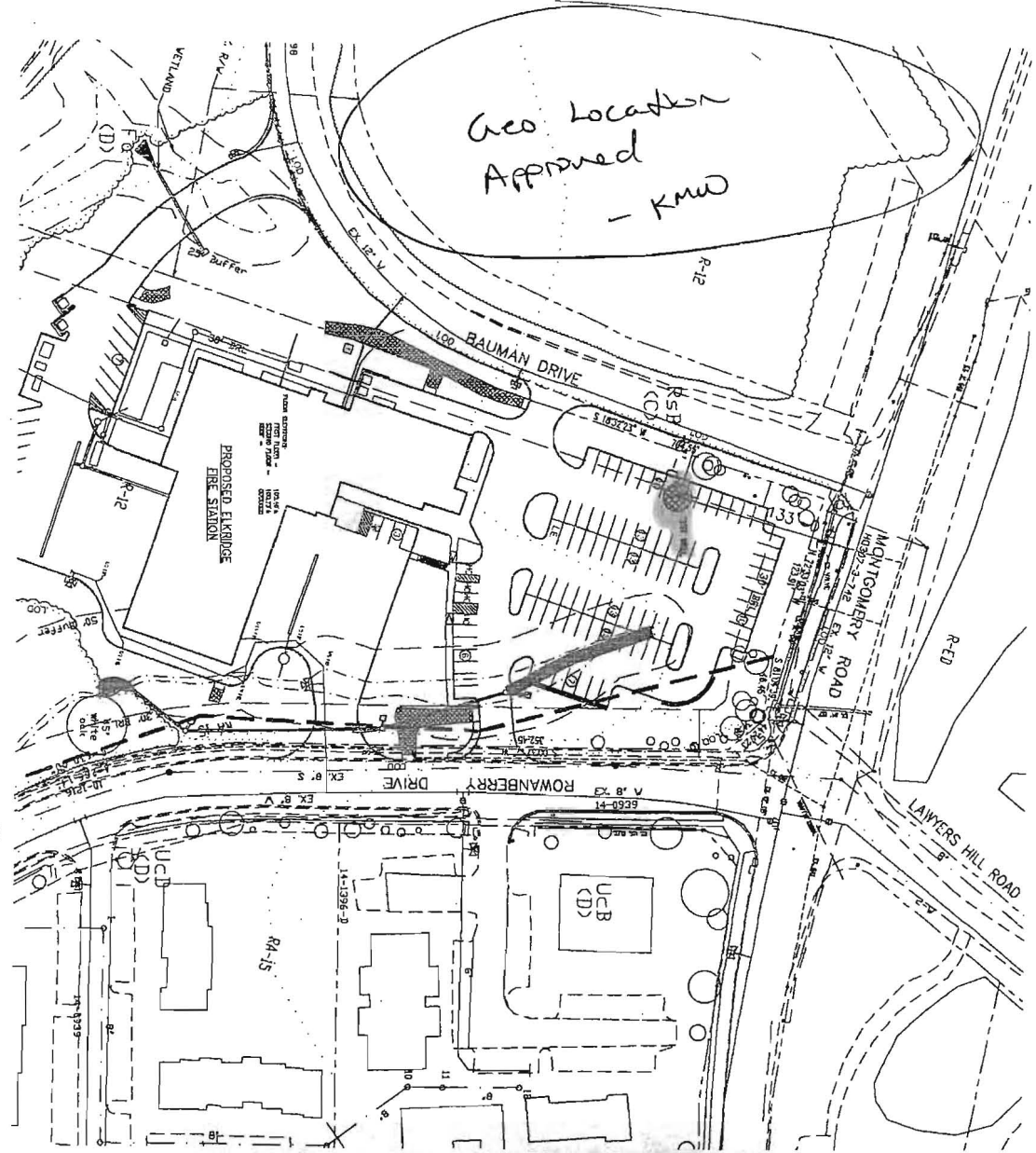
TYPICAL SORE TIE REBAR



12/11/13

Geo Location
Approved
- KMD

GEOTHERMAL TEST WELL LOCATION
Scale: 1" = 40'-0"



DO NOT REMOVE THIS TAG
DEPARTMENT OF THE ENVIRONMENT
WELL PERMIT NUMBER

HO-95-2614

INFORMATION-GIVE NUMBER AND WRITE
1800 WASHINGTON BLVD.
BALTIMORE, MARYLAND 21230

ISSUED FOR BID 10-7-13

PROGRESS SET GEOTEST 1	DATE: 12/11/13	PROJECT ADDRESS: ELKRIDGE FIRE STATION
	DATE: 12/11/13	



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