

to P.K. 1/4/78

Press Hard - Write Clearly - Use Ball-Point Pen or Typewriter - Press Hard

40197

Mall To:
Water Supply Section
Division of Environmental Control
Tenthall Building
Dover, Delaware 19901

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL

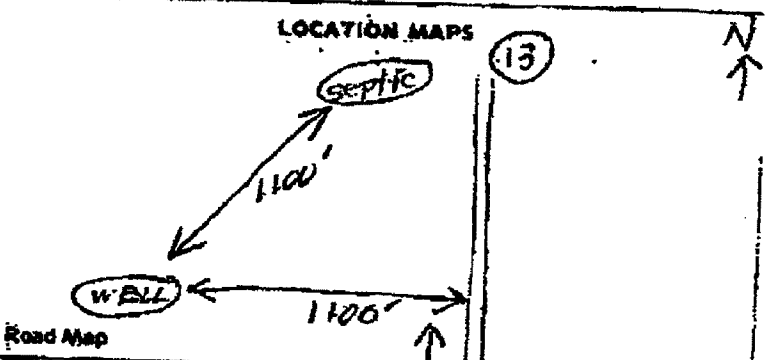
APPLICATION MUST BE
SUBMITTED AND PERMIT
RECEIVED BEFORE DRILLING
IS STARTED.

APPLICATION FOR A PERMIT TO DRILL A WELL
(To be completed by a licensed water well driller)

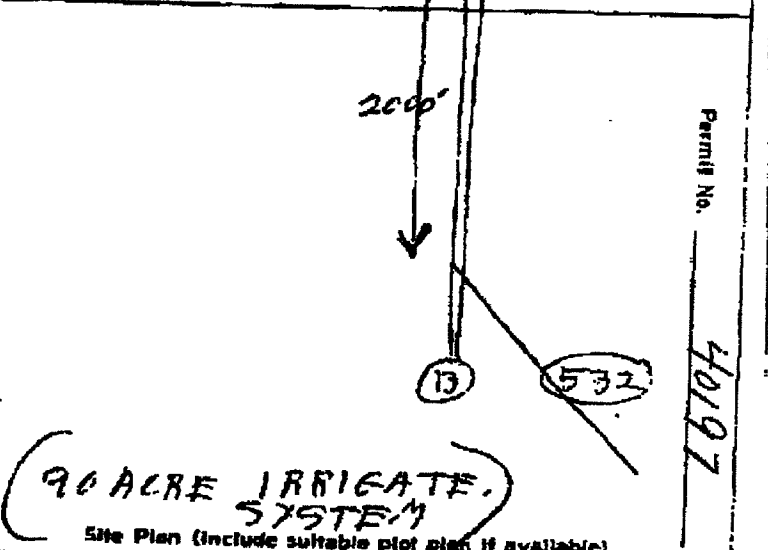
Owner: Earl Passwaters
Telephone Number: 337-7762
Mailing Address: R.D. 1 - Box 66A
Bridgetown, Del. 19933

Date of Application: 12 Mon. 29 Day 77 Year
Estimated Date of Construction: 30 days
Driller: Delmarva Drill Co. License No. 14
Pump Installer: 11 License No. 4

WELL INFORMATION (circle one)
Purpose: Test Well Replacement Well Option to convert
Use: Domestic - Public - Commercial
Industrial - Agriculture - Other
Describe Other: _____
Is this a replacement well? yes no
Reason for replacement: _____
Date abandoned well is to be sealed: _____
How _____
Has an application been made for an approved sewage
disposal system? yes no
Permit Number: _____



PROPOSED WELL CONSTRUCTION
Method of drilling: Rev. Rotary
Approximate total depth of well: 100 ft.
Name of aquifer: Pleistocene
Casing diameter (s) inner of outer (in.) 15 18
Casing Material: PVC
Screen Material: PVC
Tentative Screen Setting: between 50 and 100 ft.
Estimated length of screen: 40-50 ft.
Will the well be gravel packed? yes no
Type of grout: Clay From: 0 ft. to 20 ft.
Desired capacity of the well: 1000 gpm
Maximum daily use: 1,500,000 gpd



I hereby affirm the information I have furnished is accurate and correct
F. B. [Signature] Applicant (circle)
Representative

(90 ACRE IRRIGATE SYSTEM)
Site Plan (include suitable plot plan if available)

For Official Use Only. -- Do Not Write Below This Line.

Pursuant to provisions of 7 Delaware Code, Chapter 69, permission is hereby granted to construct and use a well as described above. All current regulations governing well construction and water resource use must be followed. The following conditions must be observed: (attached)
This permit expires: 11/26/79

SIGNED: Michael J. Pagan

A completion report must be filed with the Division of Environmental Control within twenty-one (21) days after completion of this well. Failure to do so may result in license suspension.

Permit Number: 40197
Report filed: 7-10-78

Delmarva Drilling Co., Inc.

TELEPHONE 302/337-8284

P. O. BOX 188

BRIDGEVILLE, DELAWARE 19933

Water Well Contractors

CUSTOMER Earl Passwaters ~~XXXXXXXXXX~~ # 4 JOB 4285
ADDRESS Bridgeville, Del. Willey Farm DATE 3/7/78
LOCATION 1100' W. of St. 13, 2000' N. of 532 & 13 intersection

#40197

GROUND	FEET FROM GROUND SURFACE		WELL LOG	
	0 TO	TO		
	0 - 1		top soil	
	1 - 3		gray clay	
	3 - 20		fine to med. tan sand	
	20 - 70		fine to coarse tan sand	
	70 - 80		fine to med. tan sand & iron ore layer	
	80 - 89		fine to coarse tan sand	
	89 - 92		rock & iron ore	
	92 - 93		gray clay	

WELL NO. <u>1</u>	DIAMETER OF WELL <u>15"</u>	DEPT. OF WELL <u>93'</u>
MRS. PUMPED _____	SLUT SIZE <u>.045</u>	TYPE OF CASING <u>PVC</u>
CAPACITY G.P.M. _____	DILLING MACHINE NO. <u>led-A</u>	LENGTH OF CASING <u>53'</u>
STATIC LEVEL _____	DRIER <u>G. Pierson</u>	DISTANCE TO TOP OF SCREEN <u>53-03</u>
PUMPING LEVEL _____	GRAVEL <u>#2</u>	TYPE SCREEN <u>PVC</u>
SPECIFIC CAPACITY _____	BAGS OF CEMENT _____	SIZE OF SCREEN <u>15"</u>
PUMPED WITH _____	DATE WELL COMPLETED <u>3/8/78</u>	
DEPTH OF CEMENT FOOT <u>43-0</u>		
DEPTH GRAVEL PACKED <u>43-93</u>		

DRIER'S HELPER Bill Cowgill George Pierson
WELL DRILLER SIGNATURE

To Pk. 1/12/78

40257

Mail To: JHR
Water Supply Section
Division of Environmental Control
Tetmell Building
Dover, Delaware 19901

Press Hard - Write Clearly - Use Ball-Point Pen or Typewriter - Press Hard

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL

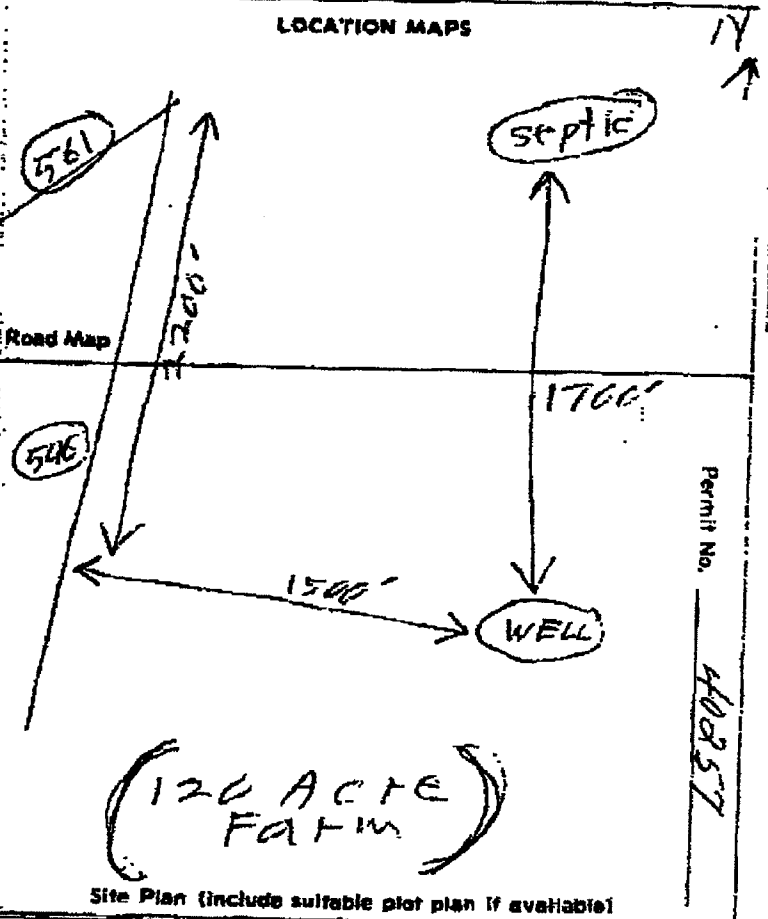
APPLICATION MUST BE
SUBMITTED AND PERMIT
RECEIVED BEFORE DRILLING
IS STARTED.

APPLICATION FOR A PERMIT TO DRILL A WELL
(To be completed by a licensed water well driller)

Owner: Earl Passwaters
Telephone Number: 337-7762
Mailing Address: R.D. 1 - Box 66A
Bridgetown, Del. 19933

Date of Application: 1 Mon 10 Day 78 Year
Estimated Date of Construction: 30 days
Driller: Delmarra Drill License No. 14
Pump Installer: 11 License No. 11

WELL INFORMATION (circle one)
Purpose: Test Well Permanent Well Option to convert
Use: Domestic - Public - Commercial
Industrial Agriculture - Other
Describe Other: _____
Is this a replacement well? yes no
Reason for replacement: _____
Date abandoned well is to be sealed: _____
How _____
Has an application been made for an approved sewage disposal system? yes no
Permit Number: _____



PROPOSED WELL CONSTRUCTION
Method of drilling: Rev. Rotary
Approximate total depth of well: 100 ft.
Name of aquifer: Flintstone
Casing diameter (s) inner of outer (in.): 15
Casing Material: PVC
Screen Material: PVC
Tentative Screen Setting: between 50 and 100 ft.
Estimated length of screen: 40 ft.
Will the well be gravel packed? yes no
Type of grout: Clay From: 0 ft. to 20 ft.
Desired capacity of the well: 1000 gpm
Maximum daily use: 1,500, 000 gpd

I hereby affirm the information I have furnished is accurate and correct
Applicant (circle):
Representative

For Official Use Only. - Do Not Write Below This Line.

Pursuant to provisions of 7 Delaware Code, Chapter 60, permission is hereby granted to construct and use a well as described above. All current regulations governing well construction and water resource use must be followed. The following conditions must be observed: As above

This permit expires: 2/2/77

SIGNED: Michael R. [Signature]

A completion report must be filed with the Division of Environmental Control within twenty-one (21) days after completion of this well. Failure to do so may result in license suspension.

Permit Number: 40257
Report filed: 2-18-78

Delmarva Drilling Co., Inc.

P. O. BOX 188

BRIDGEVILLE, DELAWARE 19938

Water Well Contractors

CUSTOMER Earl Passwaters (Anderson Farm) JOB 4285
 ADDRESS Bridgeville, Del. DATE 3/1/78
 LOCATION 1500' W. of Rt. 546, 2200' S. of 561 & 546 junction

#40057

		FEET FROM GROUND SURFACE 0 TO	WELL LOG
GROUND	↑ TOTAL DEPTH - FT. 100' ← CASING 60'	0 - 1	top soil
		1 - 5	fine - coarse tan sand & clay
		5 - 34	fine - coarse tan sand
		34 - 36	iron ore & clay
		36 - 48	med.-coarse tan sand
		48 - 54	fine-coarse white sand
		54 - 67	fine-coarse tan sand
		67 - 75	coarse tan sand & rocks
		75 - 84	rocks & gravel
		84 - 100	fine to coarse tan sand & gravel
		100 - 100	gray and blue clay
	← SCREEN		

WELL NO. <u>I</u>	DIAMETER OF WELL <u>15"</u>	DEPTH OF WELL <u>100'</u>
WRS. PUMPED <u>I</u>	SLOT SIZE <u>.045</u>	TYPE OF CASING <u>PVC</u>
CAPACITY G.P.M. <u>1000</u>	DRILLING MACHINE NO. <u>Jed-A</u>	LENGTH OF CASING <u>60'</u>
STATIC LEVEL <u>3' 5"</u>	DRILLER <u>Pierson & Cowgill</u>	DISTANCE TO TOP OF SCREEN <u>60-100</u>
PUMPING LEVEL <u>25' 0"</u>	SHAFT <u>#2</u>	TYPE SCREEN <u>PVC</u>
SPECIFIC CAPACITY <u>45</u>	BAGS OF CEMENT <u>---</u>	SIZE OF SCREEN <u>15"</u>
PUMPED WITH <u>turbine</u>	DATE WELL COMPLETED <u>3/2/78</u>	
DEPTH OF CEMENT GROUT <u>30-0</u>		
DEPTH GRAVEL PACKED <u>45-100</u>		

DRILLER'S HELPER Cannon, Jones Pierson, Cowgill
 WELL DRILLER SIGNATURE

3

P.K. 3/4/77

32797

Mail To: Water Supply Section
Division of Environmental Control
Tamm Building
Dover, Delaware 19901

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL

APPLICATION MUST BE
SUBMITTED AND PERMIT
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IS STARTED.

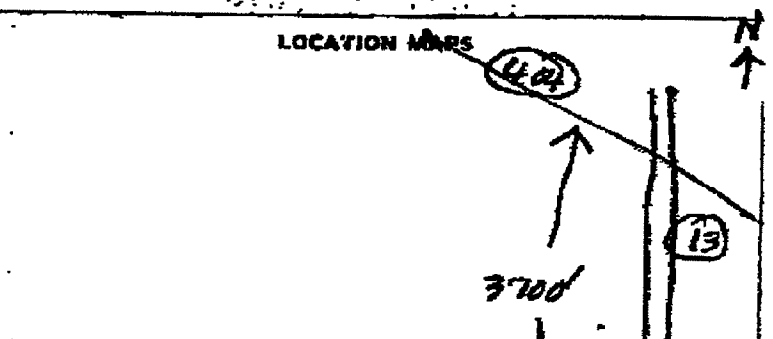
APPLICATION FOR A PERMIT TO DRILL A WELL

To be completed by a licensed water well driller

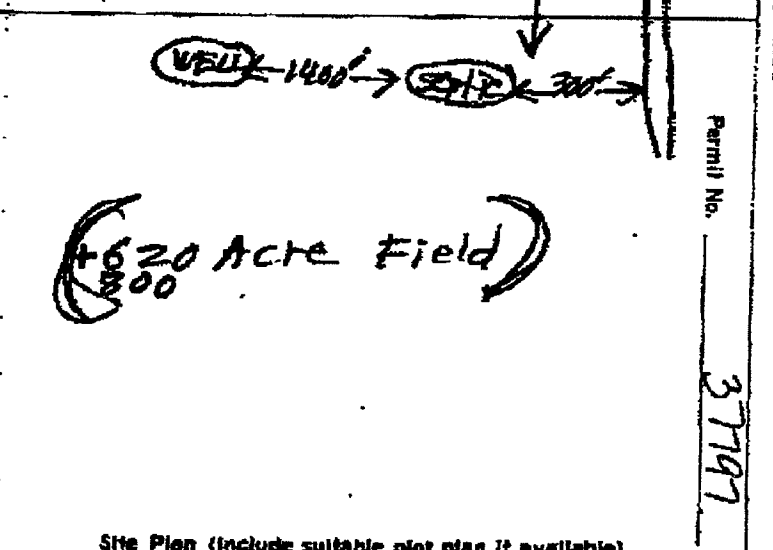
Owner: Earl L. Passwaters
Telephone Number: 332-2762
Mailing Address: Rt 1 - Box 66A
Bridgeville, Del 19937

Date of Application: 2 Mon. 28 Day 77 Year
Estimated Date of Construction: 30 days
Driller: Delmarva Drill Co. License No. 14
Pump Installer: 12 11 11 License No. 14

WELL INFORMATION (circle one)
Purpose: Test Well Assessment Well Option to convert
Use: Domestic Public Commercial
Industrial Agriculture Other
Describe Other: _____
Is this a replacement well? yes no
Reason for replacement: _____
Date abandoned well is to be sealed: _____
How: _____
Has an application been made for an approved sewage disposal system? yes no
Permit Number: _____



PROPOSED WELL CONSTRUCTION
Method of drilling: REV-Rotary
Approximate total depth of well: 100 ft.
Name of aquifer: PLEISTOCENE
Casing diameter (s) 15"
Inner or outer (in.) 15"
Casing Material: PVC
Screen Material: PVC
Tentative Screen Setting: between 50 and 100 ft.
Estimated length of screen: 50 ft.
Will the well be gravel packed? yes no
Type of gravel: CLAY From: 0 ft. to 20 ft.
Desired capacity of the well: 800 gpm
Maximum daily use: 1,000,000 gpd



I hereby affirm the information I have furnished is accurate and correct.
Earl L. Passwaters (Applicant's Representative)

Site Plan (include suitable plot plan if available)

For Official Use Only. -- Do Not Write Below This Line.

Pursuant to provisions of 7 Delaware Code, Chapter 60, permission is hereby granted to construct and use a well as described above. All current regulations governing well construction and water resource use must be followed. The following conditions must be observed: attached

This permit expires: 7-13-78

SIGNED: John T. Egan
Permit Number: 37797
Report filed: 3/24/78

A completion report must be filed with the Division of Environmental Control within twenty-one (21) days after completion of this well. Failure to do so may result in license suspension.

JDR

Delmarva Drilling Co., Inc.

P. O. BOX 188

BRIDGEVILLE, DELAWARE 19933

Permit # 377
Water Well Contractors

CUSTOMER Earl Pasgwaters JOB 3745
 ADDRESS Bridgeville, Del. DATE 4/15/77
 LOCATION 2,700' west of Rt. 13, 2700' S. of N. boundary line

GROUND	FEET FROM GROUND SURFACE		WELL LOG
	0 TO	TO	
	0-1		top soil
	1-15		fine med. tan sand & white clay
	15-29		fine med. tan sand w/orange clay
	29-32		fine coarse tan sand w/iron ore
	32-58		fine coarse tan sand
	58-59		iron ore
	59-96		med. fine coarse tan sand & gravel
	96-		orange & blue clay

Diagram: A vertical well casing is shown with a total depth of 96 feet. The casing is labeled '56' and '96'. A screen is located at the bottom of the casing, labeled 'SCREEN' and '96'. The ground surface is indicated by an upward arrow.

WELL NO. <u>1</u>	DIAMETER OF WELL <u>15"</u>	DEPT. OF WELL <u>96'</u>
NRS. PUMPED <u>2</u>	SLOT SIZE <u>.045</u>	TYPE OF CASING <u>PVC</u>
CAPACITY G.P.M. <u>1000</u>	DRILLING MACHINE NO. <u>JED-A</u>	LENGTH OF CASING <u>56'</u>
STATIC LEVEL <u>91.6m</u>	DRILLER <u>B. Cowgill</u>	DISTANCE TO TOP OF SCREEN <u>56-96</u>
PUMPING LEVEL <u>29.6m</u>	GRAVEL <u>#2</u>	TYPE SCREEN <u>PVC</u>
SPECIFIC CAPACITY <u>50</u>	BAGS OF CEMENT <u>clay</u>	SIZE OF SCREEN <u>15"</u>
PUMPED WITH <u>Turbine</u>	DATE WELL COMPLETED <u>4/15/77</u>	
DEPTH OF CEMENT GROUT <u>clay #6-0</u>	DRILLER'S HELPER <u>Cannon</u>	<u>Cowgill</u>
DEPTH GRAVEL PACKED <u>96-46</u>		WELL DRILLER SIGNATURE

(2)

1/29/81

DH

Press Hard - Write Clearly - Use Ball-Point Pen or Typewriter - Press Hard

Mail To: Water Supply Section
Division of Environmental Control
Tetnall Building P.O. Box 1401
Dover, Delaware 19901
PLEASE PRINT

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL

APPLICATION MUST BE
SUBMITTED AND PERMIT
RECEIVED BEFORE DRILLING
IS STARTED.

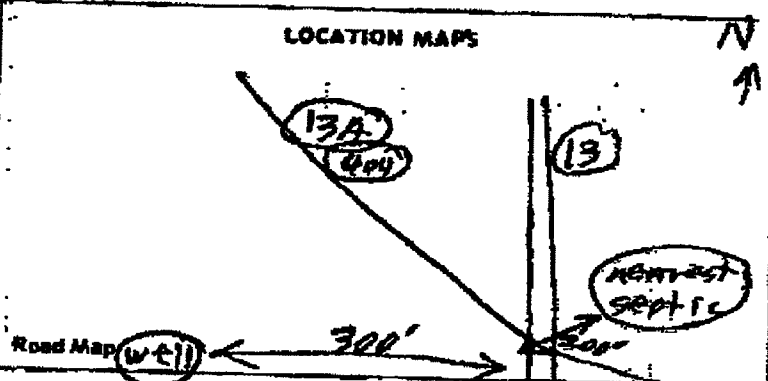
APPLICATION FOR A PERMIT TO DRILL A WELL

(To be completed by a licensed water well driller)

Owner: Earl Passwaters
Telephone Number: 337-7762
Mailing Address: B D I - Box 66A
SUSSEX, BRIDGEVILLE 19933
County: _____ Zip: _____

Date of Application: 1 Mon. 27 Day 81 Year
Estimated Date of Construction: 30 days
Driller: Delmarva Drill Co. License No. 14
Pump Installer: " " License No. " "

WELL INFORMATION (circle one)
Purpose: Test Well ~~General Well~~ Option to convert
Use: Domestic - Public - Commercial
Industrial - Other
Describe Other: irrigation
Is this a replacement well? yes
Reason for replacement: _____
Date abandoned well is to be sealed: _____
How _____
Has an application been made for an approved sewage
disposal system? yes
Permit Number: _____



PROPOSED WELL CONSTRUCTION
Method of drilling: Rev-Katana
Approximate total depth of well: 110 ft.
Name of aquifer: plasticene
Casing diameter (s) 16
inner to outer (in.)
Casing Material: PVC
Screen Material: PVC
Tentative Screen Setting: between 45 and 100 ft.
Estimated length of screen: 60 ft.
Will the well be gravel packed? no
Type of grout: Clay From: 2 ft. to 24 ft.
Desired capacity of the well: 600 gpm
Maximum daily use: 500,000 gpd

(Willow Farm
Irrigation 50 Acres)

Permit No. 047662

I hereby affirm the information I have furnished
is accurate and correct
Earl Passwaters Applicant (circle)
Representative

Site Plan (include suitable plot plan if available)

For Official Use Only -- Do Not Write Below This Line.

Pursuant to provisions of Delaware Code, Chapter 60, permission is hereby granted to construct and use a well as described above. All current regulations governing well construction and water resource use must be followed. The following conditions must be observed: ()
This permit expires: _____

A completion report must be filed with the Division of Environmental Control within twenty-one (21) days after completion of this well.
Failure to do so may result in license suspension.

SIGNED: _____
Permit Number: 47662
Report filed _____

11/26/2883 15:45 382-739-7764

WATER RESOURCES

PAGE 18/21

WATER SUPPLY BRANCH
Blue Hen Mail Office
Box 1401
Dover, Delaware 19901

DOCUMENT 40-00/78/0.

PLEASE RETURN TO:



WELL COMPLETION REPORT

1. Permit Number: 77662
Owner of well:
Earl Acwaters

11. Gravel pack: Type MORJE #1 & 2
From 30 to 96 feet

2. Use of water: Domestic Public
Industrial Agricultural Irrigation
Commercial Other

12. Static Water Level: Date 3/17/81
8 Ft. (Below/Above) Ground Surface

3. Method of Drilling: Jet Dig
Driven Rotary: Mud Rev. Air
Other

13. Pumping Water Level: 10 Ft. below grade
after 2 1/2 hours at 60 gpm

4. Test Well Observation Production

14. Well Head Completion:
Type: Pitless Adapter Other N/A
Inches above grade

5. Total Well Depth: 90' feet
Date Completed 3/17/81
Month Day Year

15. Type of Permanent Pump Installed:
Pump Manuf. N/A
Rated capacity _____
Pump intake setting _____ Ft. below grade

6. If this is a replacement well, how was
previous well abandoned?
N/A

16. The completed well is
a. at least 5' from any overhang
b. at least 50' from any septic tank
c. at least 10' from town sewer line
d. at least 100' from the nearest
edge of any tilefield
(if well is cased less than 50')
e. at least 50' from the edge of any
tilefield if casing (not including
screen) is more than 50' in depth

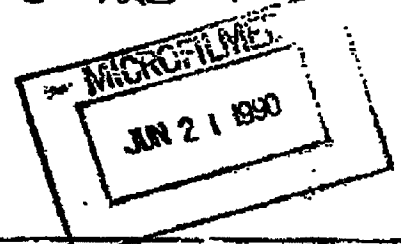
7. Casing Material: Steel PVC Concrete
Diameter 4" in. From 0 to 40 feet

17. The nearest neighbors (circle one)
septic tank tile field, cesspool, or
privy is _____ from completed well.

8. Screen Material: Steel PVC Concrete
Diameter 4" inches
Setting from 40 to 90 feet

18. Is completed well located as shown on
application form?
If no, describe location change.....
TWO WELLS 125' APART

9. Grout Type: Cement Bentonite Clay
Other _____
From 0 to 20 feet



10. Non-grout Backfill of Well Annulus
Type NATURAL From 30 to 30 feet

Company Name DELMARVA Drilling Co
Signature of Water Well Contractor Allen W. [Signature] Date 3/17/81



**GROUND WATER
DISCHARGES SECTION**
(302) 739 - 4761

**DOMESTIC SEPTIC
PERMITS BRANCH**

**LARGE WASTEWATER
SYSTEMS BRANCH**

FAX: (302) 739 - 3491

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
& ENVIRONMENTAL CONTROL
DIVISION OF WATER RESOURCES
89 KINGS HIGHWAY, P.O. BOX 1401
DOVER, DELAWARE 19903

WATER SUPPLY SECTION
(302) 739 - 4793

**WATER ALLOCATION
BRANCH**

**GROUND WATER
PROTECTION BRANCH**

WELL PERMITTING BRANCH

FAX: (302) 739 - 3491

IRRIGATION WATER ALLOCATION

ALLOCATION NO: 94-0021
EFFECTIVE DATE: February 10, 1995
EXPIRATION DATE: February 10, 2025

Pursuant to the provisions of 6010f, 7 Del. C., an allocation of water is hereby granted to:

W. G. Passwaters Enterprises, Inc.
RD 2, Box 239
Bridgeville, Delaware 19933

For the withdrawal and use of water from the following water facilities (wells used for irrigation):

<u>Well #</u>	<u>Location</u>	<u>Aquifer</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Maximum Pumping Capacity (gpm)</u>
Home Farm #1	S. of CR 565 W. of CR 600	Columbia	38°45'03"	75°34'20"	700
Home Farm #2	S. of CR 565 W. of CR 600	Columbia	38°45'10"	75°34'28"	700
Spicer Farm	E. of RT. 13 S. of CR 600	Columbia	38°45'08"	75°35'15"	700
Smith Farm	N. of CR 594 W. of CR 596	Columbia	38°45'44"	75°31'56"	500
Bulow Farm	E. of CR 594 N. of RT. 40	Columbia	38°45'23"	75°31'30"	700

OTHER APPROVALS

1. This approval is subject to review every five years from the effective date by the Division of Water Resources.
2. Approval for discharge of this water must be obtained from the Division of Water Resources.

Delaware's good nature depends on you!

EQUIPMENT REQUIREMENTS

Each water facility must be equipped, at minimum, with an elapsed-time meter which will record the hourly running time of the pump. Wherever possible, the use of in-line totalizing flow meters is recommended and encouraged.

2. All wells must be equipped with the following mechanism to allow the measurement of water levels: a readily accessible 1/2" diameter capped port. Air-line gages are not permitted.
3. All wells presently not conforming to the above requirement must be corrected accordingly at the next time of rehabilitation or within five (5) years of the effective date of this permit.

REPORTING PROCEDURE

1. For each permitted water-facility; readings of either elapsed running-time or, where equipped with a flow meter, actual pumpage must be taken and recorded at least monthly.
2. Measurement of water levels will not be required, except at the specific request of the Division of Water Resources.
3. The elapsed running-time (or pumpage) data recorded for #1 (above) is to be used to calculate volumes of withdrawals. This, and all other requested information, must be recorded on a form provided by the Division, then submitted to the Division no later than January 31 of each year, or more frequently if requested.

ALLOCATION

1. In any twenty-four hour period: Pumpage from all wells may not exceed 4,752,000 gallons.
2. In any thirty-day period: Pumpage from all wells may not exceed 103,185,000 gallons.
3. In any twelve-month period: Pumpage from all wells may not exceed 206,370,400 gallons.

4. Withdrawals for the facilities listed below may not exceed the following limits:

<u>Well #</u>	<u>Permit #</u>	<u>Maximum Pumping Rate (gallons per day)</u>	<u>Maximum Pumping Level (feet below land surface)</u>
Home #1	56668	1,008,000	-----
Home #2	56667	1,008,000	-----
Spicer	72410	1,008,000	-----
Smith	72411	720,000	-----
Bulow	99879	1,008,000	-----

5. The water allocated herein shall be used for the purpose of agricultural irrigation only. This water shall be applied to a 380± acre portion of the total 380± acres irrigated, as shown on the map accompanying the permit application.
6. Any change in the intended use of the water, the withdrawal sources, the withdrawal's locations, or the irrigated acreage must receive prior approval from the Division of Water Resources.
7. The allocated water is restricted for use between March 1st and November 1st only.
8. All laws and regulations governing the construction, operation, maintenance, and repair of water wells and water supplies in the State of Delaware will be obeyed.
9. Representatives of the Division of Water Resources, Delaware Geological Survey, and the U.S. Geological Survey may inspect the water facilities, conduct any tests, and collect any samples, at any time deemed necessary.
10. This allocation is specifically subject to the requirements of 7 Del. C.s6031.
11. If the withdrawal of water pursuant to this allocation has significant adverse affects including, but not limited to, reduction of streamflows, lowering of water levels, migration of pollutants, or encroachment of salt water, the Division of Water Resources may require action to rectify the problem.
12. This permit is transferable only if the requirements of the Regulations Governing the Allocation of Water are met and, written approval is obtained from the Division of Water Resources.

ALLOCATION NO. 94-0021
W. G. Passwaters Inc.
Page Four

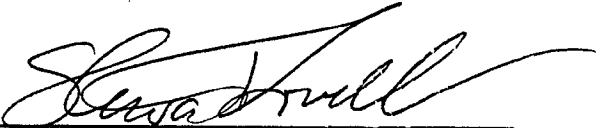
13. Violations of conditions of this permit are subject to penalties provided in 7 Del. C., Chapter 60.

CONSERVATION REQUIREMENTS

This approval is contingent on the permit holder's practice of reasonable efforts to conserve water by eliminating unnecessary water-use. The permit holder must develop maximum feasible efficiency in the use of this water in accordance with best management practices for water application rates and scheduling.

The permit holder must demonstrate compliance with these conditions upon request by the Division of Water Resources.

Signed: _____


Stewart Lovell, P.G.
Manager
Water Supply Section

Date: _____

Feb. 10, 1995

cc: United States Geological Survey