

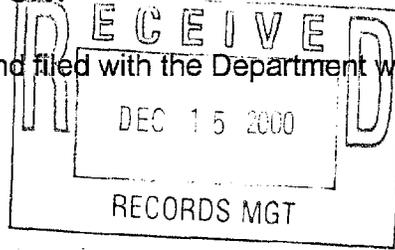
ARIZONA DEPARTMENT OF WATER RESOURCES

500 North 3rd Street
Phoenix, Arizona 85004

34-2464

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.



1. LAYNE CHRISTENSEN COMPANY
12030 EAST RIGGS ROAD
CHANDLER, AZ 85249-3710

2. Owner Name: CITY OF TUCSON
Address: TUCSON AZ 85726
City State Zip

3. Location: 14 S N/S 11 E EW 9 Section 1/4 NE 10-acre 1/4 SW 40-acre 1/4 NW 160-acre

4. Well Registration No. 55-583988 (Required)

5. Permit No. _____ (If Issued)

DESCRIPTION OF WELL

- 6. Total depth of hole 50 ft.
- 7. Type of casing 2" LCS & 2" PUC SCH-40
- 8. Diameter and length of casing 2" LCS in. from 0 to 20, 2" PUC in from 20 to 25
- 9. Method of sealing at reduction points _____
- 10. Perforated from 25 to 50, from _____ to _____ from _____ to _____
- 11. Size of cuts .020 Number of cuts per foot 288
- 12. If screen was installed: Length 25 ft. Diam 2" SCH-40 PUC in. Type FACTORY SLOTTED
- 13. Method of construction DRILLED
(drilled, dug, driven, bored, jetted, etc)
- 14. Date started 11 29 00
Month Day Year
- 15. Date completed 12 1 00
Month Day Year
- 16. Depth to water _____ ft. (If flowing well, so state)
- 17. Describe point from which depth measurements were made, and give sea level elevation if available
- 18. If flowing well, state method of flow regulation: _____
- 19. Remarks: WR-413B

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55- 583988
File No. D(14-11) 9 BCA
Received _____ By _____
Entered _____ By _____

RECEIVED DEC 2 8 2000

**ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION
500 North Third Street
Phoenix, Arizona 85004**

THIS AUTHORIZATION SHALL BE IN POSSESSION OF THE DRILLER DURING ALL DRILL OPERATIONS

WELL REGISTRATION NO: 55-583988

AUTHORIZED DRILLER: LAYNE CHRISTENSEN COMPANY

LICENSE NO: 7

NOTICE OF INTENTION TO DRILL A PIEZOMETER WELL(S) HAS BEEN FILED WITH THE DEPARTMENT BY:

WELL OWNER: CITY OF TUCSON - TUCSON WATER PO BOX 27210 TUCSON, AZ 85726

The well(s) is/are to be located in the:

NE ¼ of the SW ¼ of the NW ¼ Section 9 Township 14 SOUTH Range 11 EAST

No. of wells in this project: 1

THIS AUTHORIZATION EXPIRES AT MIDNIGHT ON THE 18TH DAY OF OCTOBER, 2001

MS

GROUNDWATER MANAGEMENT SUPPORT

**THE DRILLER MUST FILE A LOG OF THE WELL
WITHIN 30 DAYS OF COMPLETION OF DRILLING**



ARIZONA DEPARTMENT OF WATER RESOURCES

500 North 3rd Street, Phoenix, Arizona 85004

Telephone (602) 417-2470

Fax (602) 417-2422



JANE DEE HULL

Governor

RITA PEARSON MAGUIRE

Director

October 31, 2000

CITY OF TUCSON - TUCSON WATER
PO BOX 27210
TUCSON, AZ 85726

Registration No. 55-583988

File No. D(14-11) 9 BCA

Dear Well Owner:

Enclosed for your records is an annotated copy of the Notice of Intention to Drill a well. This is returned to you as evidence of compliance with A.R.S. §45-596. A drilling card has been mailed to your designated driller. Prior to drilling he must have it in his possession.

Since this well is being drilled as a Monitor well, or for Cathodic Protection, Grounding, Geotechnical or Piezometer purposes, our standard driller report form is also being furnished to the driller. He is required to complete it and return it to the Department within 30 days after the completion of the well. A Completion Report form is being furnished for monitor wells where pump installation is authorized. This must be completed within thirty days of installation as required by A.R.S. §45-600.

A Change of Well Information form is enclosed for your future use. If you deem it necessary to change the location of the proposed well, please notify the Department on the enclosed form. A properly amended Drilling Card will then be issued and must be in possession of the driller before drilling begins. During the drilling of a new well, if it is determined that it must be abandoned, then a Well Abandonment Completion Report must be submitted per R12-15-816.F.

Per A.R.S. §45-593, the person to whom a well is registered shall notify this Department of a change of ownership of the well and/or information pertaining to the physical characteristics of the well, in order to keep the well registration file current and accurate.

Sincerely,

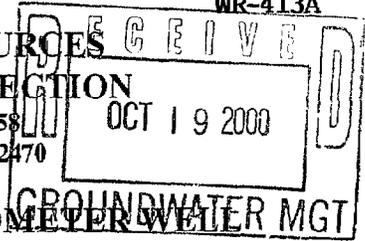
A handwritten signature in cursive script that reads "Toni Bergeman".

Toni Bergeman
Water Resource Technician
Groundwater Management Support Section

Enclosures

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

MAIL TO: P.O. BOX 458, PHOENIX, ARIZONA 85001-0458
FOR INFORMATION: CALL MONICA ORTIZ AT 602-417-2470



NOTICE OF INTENTION TO DRILL MONITOR/PIEZOMETER WELL

PLEASE READ GENERAL INSTRUCTIONS AND CONDITIONS ON REVERSE SIDE OF THIS FORM BEFORE COMPLETING.

1. Well/Land Location:

14 ~~NS~~ 11 ~~EW~~ 9
Township Range Section
NE 1/4 SW 1/4 NW 1/4
10 Acre 40 Acre 160 Acre

2. Position location of the well on the land:

Latitude 32 ° 13 ' 44 "
Longitude 111 ° 13 ' 53 "

3. County: Pima

4. Owner of the well:

City of Tucson /Tucson Water
Name Contact: Bruce Prior
PO Box 27210
Mailing Address
Tucson AZ 85726-7210
City State Zip
Telephone No. (520) 791-2689

5. Lessee of the land of wellsite:

N/A
Name
Mailing Address
City State Zip
Telephone No.

6. Owner of the Land of Wellsite:

City of Tucson
Name
PO Box 27210
Mailing Address
Tucson AZ 85726-7210
City State Zip
Telephone No. (520) 791-2689

7. Consulting firm:

N/A
Name
Contact Person
Telephone No.

8. Purpose of well drilled pursuant to this notice:

Monitor
Piezometer XX

9. If for deepening or modifying, list well registration number:

55- N/A

FOR DEPARTMENT USE ONLY
File No. 0(14-11) 9 bca
Filed 10/19/00 By [Signature]
Input By
DUPLICATE
Mailed 10/31/00 By [Signature]
Registration 55- 583488
AMA/INA Tucson
W/S 09 S/B 15

10. Will this proposed well be associated with a permit: Yes XX No

If yes, Permit No. 71-578806

11. Construction will start:

11 01 2000
Month Day Year

12. Period well will remain in use:

20 Months/Years

13. For monitoring wells, is pump equipment to be installed?

Yes No XX

(a) If yes, design pump capacity:

(b) What use will be made of the water:

14. Drilling Firm:

Layne Christensen
Name
12030 E. Riggs Rd
Mailing Address
Chandler AZ 85294
City State Zip
(480) 895-9336
Telephone No.
#7
DWR License Number
#A-04
ROC License Category

15. Proposed method of abandonment of well after project is completed: In accordance with R-12-15-816
pursuant to R12-15-816.

16. Is this well to monitor existing contamination? No Potential contamination: No Please explain: Piezometer
will monitor depth to possible perched vadose zone water.

17. If construction plans have been coordinated with Arizona Department of Environmental Quality, who is the agency contact? N/A

18. If construction plans have been coordinated with Arizona Department of Water Resources, who is the agency contact? N/A

19. WELL CONSTRUCTION PLAN:

- a) Drilling method (mud rotary, hollow-stem auger, etc.) Hollow-STEM Auger
- b) Borehole diameters: 9 inches from 0 feet to 50 feet.
- c) Casing materials (PVC, steel, hollow-stem auger, etc.)
 material Steel diameter 2 inches from 0 feet to 20 feet.
 material pvc diameter 2 inches from 20 feet to 25 feet.
- d) Method of sealing at reductions N/A
- e) Annular seal materials (cement, grout, etc.); method of placement (tremied, circulated):
 material Neat Cement method tremied from 0 feet to 20 feet.
 material Bentonite pellets method tremied from 20 feet to 23 feet.
- f) Filter packs (state material):
 material Silica Sand (8x12) from 23 feet to 50 feet.
- g) Perforations or screen specifications:
 Type Perforated PVC from 25 feet to 50 feet.
- h) Method of well development (bail, air lift, surge) _____
- i) Will surface or conductor casing extend above grade?: Yes XX No _____

20. Include detailed construction diagram showing expected water depth in feet below land surface, and details of vault, if specified.

I state that this Notice is filed in compliance with Rule A.A.C. R12-15-809, is complete and correct to the best of my knowledge and belief and that I understand the conditions set forth on this form.

Ralph R. Marra, Acting Chief Hydrologist [Signature] 10-16-01
 Type or Printed Name and Title Signature Land Owner Lessee of Wellsite, Title Date

Necessary Steps and Instructions to Obtain Drilling Authority (Monitor/Piezometer Wells)

1. Arizona Revised Statutes ("A.R.S.") § 45-596 provides that prior to drilling a monitor or piezometer well, a Notice of Intention to Drill must be filed with the Department. To assist you in understanding the substantive requirements for this application, copies of A.R.S. § 45-596 and Arizona Administrative Code ("A.A.C.") R12-15-810 are available thru the department bookstore.
2. Information to complete items 1, 2, and 3 may be available from your County Tax Receipt or your County Assessors Office.
3. Information to complete item 9 is available from your copy of the original Notice of Intent to Drill or our Records Division at (602)417-2405.
4. Information to complete items 11, 14 and 15 may be available from your driller.
5. If an individual other than the land owner or lessee signs this notice, an original **notarized** letter of authorization from the land owner/lessee, stating that the individual has permission to sign this specific Notice on his or her behalf, must accompany the Notice of Intention to Drill a Monitor/Piezometer Well.
6. Please complete two original notices with original signatures and include a \$10.00 check or money order for the processing fee, in accordance with A.R.S. § 45-113. Submit them to: P.O. Box 458, Phoenix, Arizona 85001-0458.

TIME FRAME FOR REVIEW OF YOUR APPLICATION

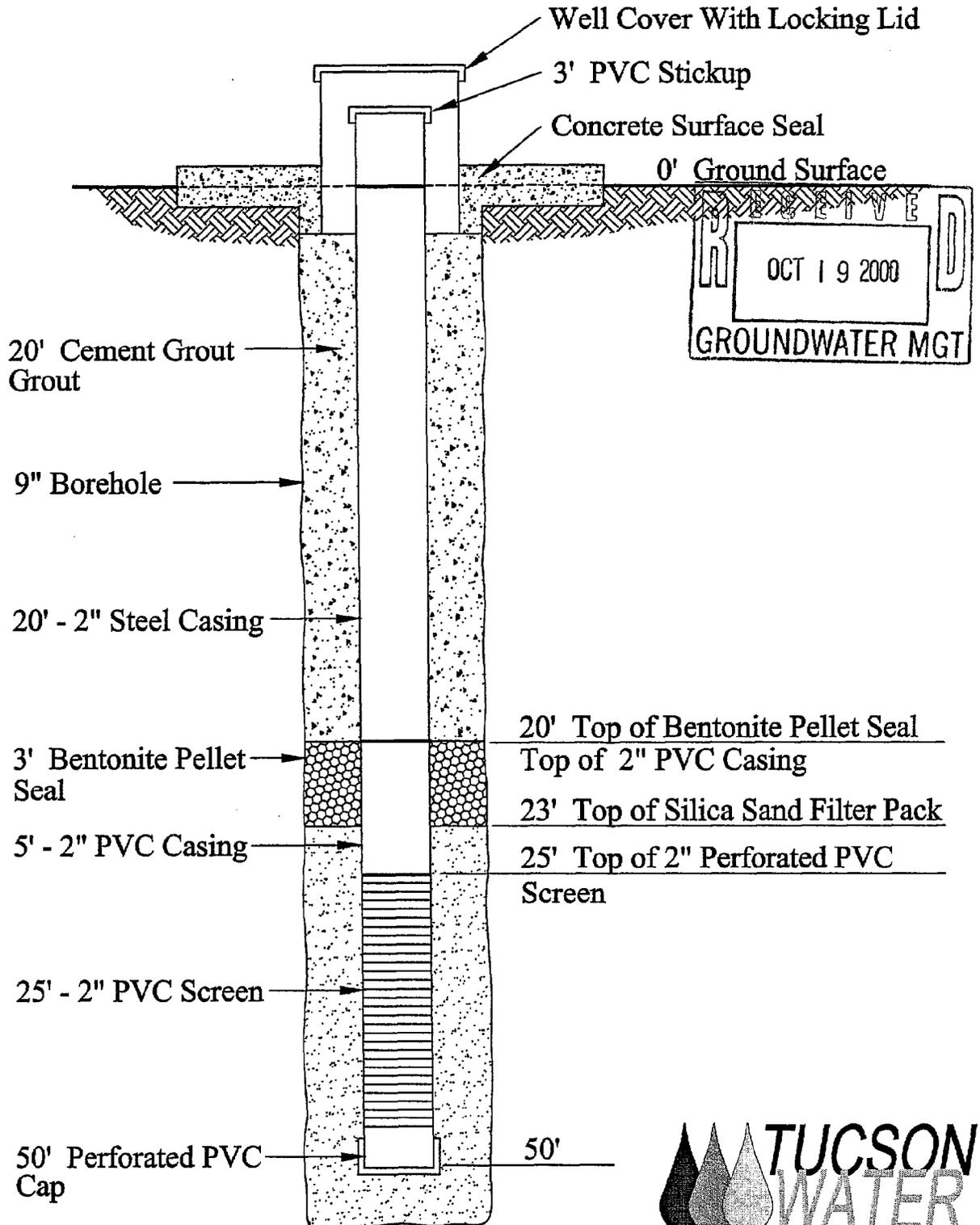
Within 15 days after receipt of your Notice of Intention, the Arizona Department of Water Resources ("Department") will determine whether your application should be granted or denied, unless this time is extended for lack of a complete application. If your application is incomplete, the Department will notify you in writing and will specify what information is necessary to make the application complete. Until the missing information is received, the time frame for review of your application will be suspended. Your application will not be complete until all of the requested information is received. If you do not supply the missing information within sixty (60) days, the Department may deem your application withdrawn and close the file.

At the end of its review, the Department will send you written notice either granting or denying your application for drilling authority. If your application is approved, the Drill Card will be mailed directly to the drilling company. If denied, the Department's notice will state justification for the denial and an explanation of your right to appeal.

Construction and Follow-up Requirements

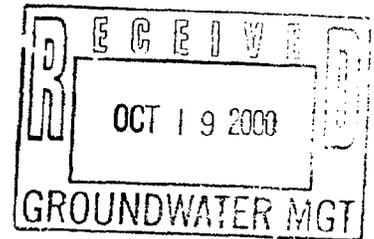
1. Construction and abandonment standards for all wells must be in accordance with Department Rules.
2. A.A.C. Rule R12-15-811(H)(2) requires a monitor well to be identified as such on the vault cover or at the top of the steel casing. Identification information must include the well registration number.
3. Pursuant to A.R.S. § 45-596(E), drilling, deepening or modification of the well must be completed within one year after the date of the Notice of Intent.
4. A Well Driller Report is required within thirty (30) days of completion of drilling. Within thirty (30) days after installation of pumping equipment in monitor wells, a Completion Report must be filed with the Department.
5. Pump equipment may not be installed on a well drilled for piezometer purposes. If a monitor well is pumped, pumping is limited to the maximum amount required for monitor purposes, but in no case may exceed 35 gallons per minute and an annual total volume of 10 acre feet.
6. Special construction standards required pursuant to A.A.C. Rule R12-15-821: _____

Well Construction Diagram





Tucson Water Department



October 16, 2000

ATTN: Mr. Al Ramsey
Groundwater Management Support Section
Arizona Department of Water Resources
P.O. Box 458
Phoenix, Arizona 85001-0458

Subject: Filing of Six Notices of Intention to Drill Monitor/Piezometer Wells

Dear Mr. Ramsey:

The Water Department intends to drill six shallow vadose zone piezometers in order to monitor potential perched water. The six piezometers are within the Clearwater (a.k.a. CAVSARP) facility in Avra Valley. Please find attached the above mentioned Notices of Intention (NOI) with construction diagrams. Also included is a Money Order (#068360700) for sixty dollars (\$60.00) to cover the processing fee for the NOI's. The drilling company, Layne Christensen, will begin drilling these piezometers as soon as drill cards are received from your office.

If you have any question regarding these NOI's, please direct your inquiry to Bruce Prior at (520) 791-2689.

Sincerely,

Ralph P. Marra
Acting Chief Hydrologist

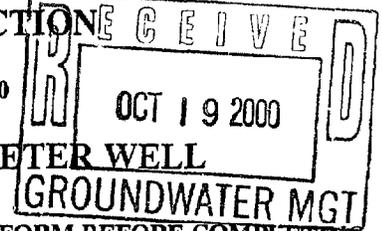
RM:BMP:adwr cavsarp NOI

Attachments

xc: Joe Babcock, Mike Sanders, Marie Light, Bruce Prior, Jeff Meyer (Errol L. Montgomery & Associates), Hydrology File

**ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION**

MAIL TO: P.O. BOX 458, PHOENIX, ARIZONA 85001-0458
FOR INFORMATION: CALL MONICA ORTIZ AT 602-417-2470



NOTICE OF INTENTION TO DRILL MONITOR/PIEZOMETER WELL

PLEASE READ GENERAL INSTRUCTIONS AND CONDITIONS ON REVERSE SIDE OF THIS FORM BEFORE COMPLETING

1. Well/land Location:

14 N/S 11 E/W 8
Township Range Section
SW 1/4 SW 1/4 SE 1/4
10 Acre 40 Acre 160 Acre

2. Position location of the well on the land:

Latitude 32 ° 13 ' 12 "
Longitude 111 ° 14 ' 34 "

3. County: Pima

4. Owner of the well:

City of Tucson/Tucson Water
Name Contact: Bruce Prior
PO Box 27210
Mailing Address
Tucson
City State Zip
Telephone No. (520) 791-2689

6. Owner of the Land of Wellsite:

City of Tucson
Name
P.O. Box 27210
Mailing Address
Tucson AZ 85726-7210
City State Zip
Telephone No. (520) 791-2689

7. Consulting firm:

N/A
Name
Contact Person
Telephone No. _____

8. Purpose of well drilled pursuant to this notice:

Monitor _____
Piezometer _____

9. If for deepening or modifying, list well registration number:

N/A

10. Will this proposed well be associated with a permit: Yes XX No _____

If yes, Permit No. 71-578806

11. Construction will start:

11 01 2000
Month Day Year

12. Period well will remain in use:

20 Months/Years

13. For monitoring wells, is pump equipment to be installed?

Yes _____ No XX

(a) If yes, design pump capacity: _____

(b) What use will be made of the water: _____

14. Drilling Firm:

he Christensen
20 E. Riggs Rd
g Address
iller AZ 85294
State Zip
895-9336
Phone No.
7
License Number
-04
License Category
R-12-16-816

MONEY ORDER

068360700
Payable at Norwest Bank Grand Junction
Downtown, N.A., Grand Junction, Colorado
82-40/1021

PAY EXACTLY
NOT GOOD OVER \$1,000
DATE Oct. 16, 2000
PAY TO THE ORDER OF AZ Dept. of Water Resources, Groundwater Mgmt. Support Section
City of Tucson/Tucson Water
P.O. Box 27210, Tsn, AZ 85726-7210
ISSUED BY Integrated Payment Systems Inc., Englewood, Colorado

PURCHASER, BY SIGNING YOU AGREE TO THE TERMS ON THE REVERSE SIDE.

pursuant to R12-15-816.

16. Is this well to monitor existing contamination? NO **Potential contamination:** NO **reason explain:** Piezometer

will monitor depth to possible perched vadose zone water.

17. If construction plans have been coordinated with Arizona Department of Environmental Quality, who is the agency contact? N/A

18. If construction plans have been coordinated with Arizona Department of Water Resources, who is the agency contact? N/A

City of Teecson

VARIANCE CHECKLIST - HYDROLOGY

DATE RECEIVED 10/19/00
DATE TO HYDRO 10/25/00
DATE TO GMSS 10-26-00

POTENTIAL REG. N° 55-
55-583987 THRU 55-583992

FRONT OF N.O.I COMPLETE/CORRECT: YES NO

VARIANCE (?) LETTER RECEIVED YES NO
WELL DIAGRAM (?) RECEIVED YES NO
SITE PLAN (?) RECEIVED YES NO

TYPE AND NUMBER OF WELLS:

6 MONITOR CATHODIC PROTECTION
 PIEZOMETER GROUNDING
 GEOTECHNICAL HEAT PUMP
 MINERAL EXPLORATION
 WATER PRODUCTION OTHER
DESCRIBE TYPE OF WELL

VARIANCE:

 REQUIRED GRANTED
✓ NOT REQUIRED NOT GRANTED
 LETTER ISSUED

ATTENTION!!! NOTICE OF INTENT TEAM:

 HARD COPY OF LETTER TO FOLLOW
 CALL FOR PICKUP

COMMENTS: OK - bzh

4/13