GREENMEADOWS WELLFIELD HYDROLOGIC TESTING AND MODELING FOR PUMPAGE IMPACTS ASSESSMENT

ADDL/REVISED SUBMITTAL

APR 0 8 1993

Prepared For

FLORIDA CITIES WATER COMPANY
4837 SWIFT ROAD, SUITE 100
SARASOTA, FLORIDA 34231

Prepared By The

ViroGroup
Air • Water • Soil
TECHNOLOGY

Missimer Division

GREENMEADOWS WELLFIELD HYDROLOGIC
TESTING AND MODELING FOR PUMPAGE
IMPACTS ASSESSMENT

FLORIDA CITIES WATER COMPANY
4837 SWIFT ROAD, SUITE 100
SARASOTA, FLORIDA 34231

MARCH, 1993

ViroGroup, Inc./Missimer Division
428 Pine Island Road, S.W.
Cape Coral, Florida 33991

Project Number: 01-02491.00

Wm. Scott Manahan
Project Manager

W. Kirk Martin, P.G. #079
Director of Hydrology Services
Date: 3-26-93

RPT5/01-02491.00/GNG

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Missimer Division
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March 26, 1993

Ms. Julie L. Karleskint, P.E.
Operations Manager
Florida Cities Water Company
4837 Swift Road, Suite 100
Sarasota, Florida 34231

Re: Greenmeadows Wellfield Impacts Assessment Report

Dear Julie:

Enclosed are two copies of the above referenced report. The report details the methods of investigation used at the wellfield along with the results and conclusions obtained. In addition, recommendations concerning the wellfield development, operation, and monitoring are presented.

I was pleased to have the opportunity to work with the FCWC Greenmeadows and technical staff. Please note that Missimer Division is available to provide additional assistance during the permitting process if required. Feel free to contact me if you have any questions or comments concerning the report.

Sincerely,

Wm. Scott Manahan
Hydrologic Engineer

WSM:gng

encls.

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I. CONCLUSIONS AND RECOMMENDATIONS

In order to address questions regarding potential for impacts to wetlands in and around the Greenmeadows Wellfield, a program of aquifer hydraulic testing and computer simulation of drawdown due to wellfield withdrawal was conducted. Based on that study the following conclusions and recommendations are given.

A. Conclusions

1) Two significant water bearing units termed the Water-Table and Sandstone Aquifers are present within the upper 200 feet of sediments beneath the project site. The Water-Table aquifer is comprised of two sub-units at the wellfield. A clayey sand layer is present from land surface to approximately five to ten feet in depth. Beneath the surficial sands lies a highly permeable limestone unit. The aquifer is considered a semi-unconfined system. A thick sequence of very low permeability clay separates the Water-Table Aquifer from the underlying Sandstone Aquifer. The Sandstone Aquifer is comprised of a heterogeneous mixture of limestone, sandstone, sand, shell, and clay. This aquifer is well confined by low permeability sediments both above and below.

2) An aquifer performance test (APT) was conducted on the Sandstone Aquifer at the Greenmeadows Wellfield water treatment plant site. Calculated transmissivity values ranged from 23,300 gpd/ft to 65,500 gpd/ft. Storage coefficient values ranged from 1.05×10^{-5} to 2.80×10^{-4}. Leakance values ranged from 1.10×10^{-4} to 1.65×10^{-3} gpd/ft^3. The values used for computer modeling purposes are:

   Transmissivity = 30,000 gpd/ft
   Storage = 1.5×10^{-4}
   Leakance = 2.9×10^{-4} gpd/ft^3

3) An aquifer performance test (APT) was also conducted on the Water-Table Aquifer at the Greenmeadows Wellfield Water Treatment Plant site. Calculated transmissivity values ranged from 1,600,000 gpd/ft to 3,234,000 gpd/ft. Specific yield values could not be determined from the test data, however, a value of 0.15 was estimated based on the site geology. The values used for computer modeling purposes are:

   Transmissivity = 1,500,000 gpd/ft
   Specific Yield = 0.15

4) A numerical computer model was developed to simulate the Water-Table and Sandstone Aquifers beneath the project site. The model utilizes a fine grid of variably spaced flow cells and aquifer coefficients determined from on-site testing. The model was constructed in a quasi-three dimensional fashion with three layers separated by leakance terms. The water-table aquifer is separated into two layers to account for the large difference in hydraulic conductivity between the upper and lower part of the aquifer. In addition, the Lee County 3-D Model developed by the South Florida Water Management District (SFWMD) was used to assess the wellfield impacts on a regional level.

5) Computer hydraulic modeling results indicate that the requested allocation of 12.0 MGD can be withdrawn from the Water-Table and Sandstone aquifers at the site without causing adverse impacts to the environment or other permitted users.

6) A monitoring program is currently in effect at the wellfield. Water levels are measured in the production wells, two Sandstone Aquifer monitor wells, and at one staff gage. In addition, the United States Geological Survey (USGS) monitors water levels in three wells at the water treatment plant site.

B. Recommendations

1) The Florida Cities Water Company should proceed with the proposed wellfield expansion of 10 additional wells tapping the Water-Table and Sandstone aquifers. The wells should be constructed as shallow and deep well pairs north and east of the water treatment plant at the locations shown on Figure VI-1 of this report.

2) The existing and proposed wells should be operated on a rotational basis with approximately 1/2 to 2/3 of the wells running at any one time. The rotational schedule will be operated to meet demands and minimize pumpage impacts. A description of the proposed wellfield operation is given in Section VII of this report.

3) A test hole should be drilled prior to production well construction at each of the proposed well sites. An on-site hydrogeologist should collect cuttings for lithologic analysis and recommend casing depths and completion techniques based on site specific geologic conditions. Open hole or screened completions may be used depending upon formation characteristics.

4) Step-drawdown specific capacity testing of newly constructed production wells should be conducted. Pump sizing and setting depths can be determined based on results of the specific capacity testing and analysis of interference drawdowns.

5) The existing monitoring program at the wellfield should be expanded and updated to obtain additional data. Electronic water level sensing and recording devices should be installed in wells tapping both the Sandstone and Water-Table aquifers. These devices provide accurate water level measurements at user

specified time intervals. The proposed monitoring plan is described in Section VII of this report.

II. INTRODUCTION

ViroGroup, Inc./Missimer Division was authorized by Florida Cities Water Company (FCWC) in December, 1992 to conduct a hydrogeologic study to assess impacts due to groundwater withdrawals from the Greenmeadows Wellfield. The study was required to address sufficiency questions raised by the South Florida Water Management District (SFWMD) during the water use permit renewal/modification process. The wellfield presently consists of 27 existing wells completed into the Water-Table and Sandstone Aquifers located in South Lee County as shown on Figure II-1. Ten additional wells are proposed to expand the wellfield capacity. The scope of the project included the following: 1) Construction of piezometers and observation wells into the appropriate aquifers, 2) Detailed aquifer testing in both the Water-Table and Sandstone aquifers for determination of relevant aquifer parameters, 3) Development of a 3-dimensional groundwater flow model of the aquifer system beneath the wellfield, 4) Determination of optional withdrawal scenarios to minimize impacts while maximizing yield, and 5) Preparation of a report detailing results of the investigation with recommendations made as necessary. The ultimate goal of the investigation was to provide support documentation to aid in permitting water use at the wellfield. The following report details the testing procedures and modeling techniques used during the investigation and the results obtained.

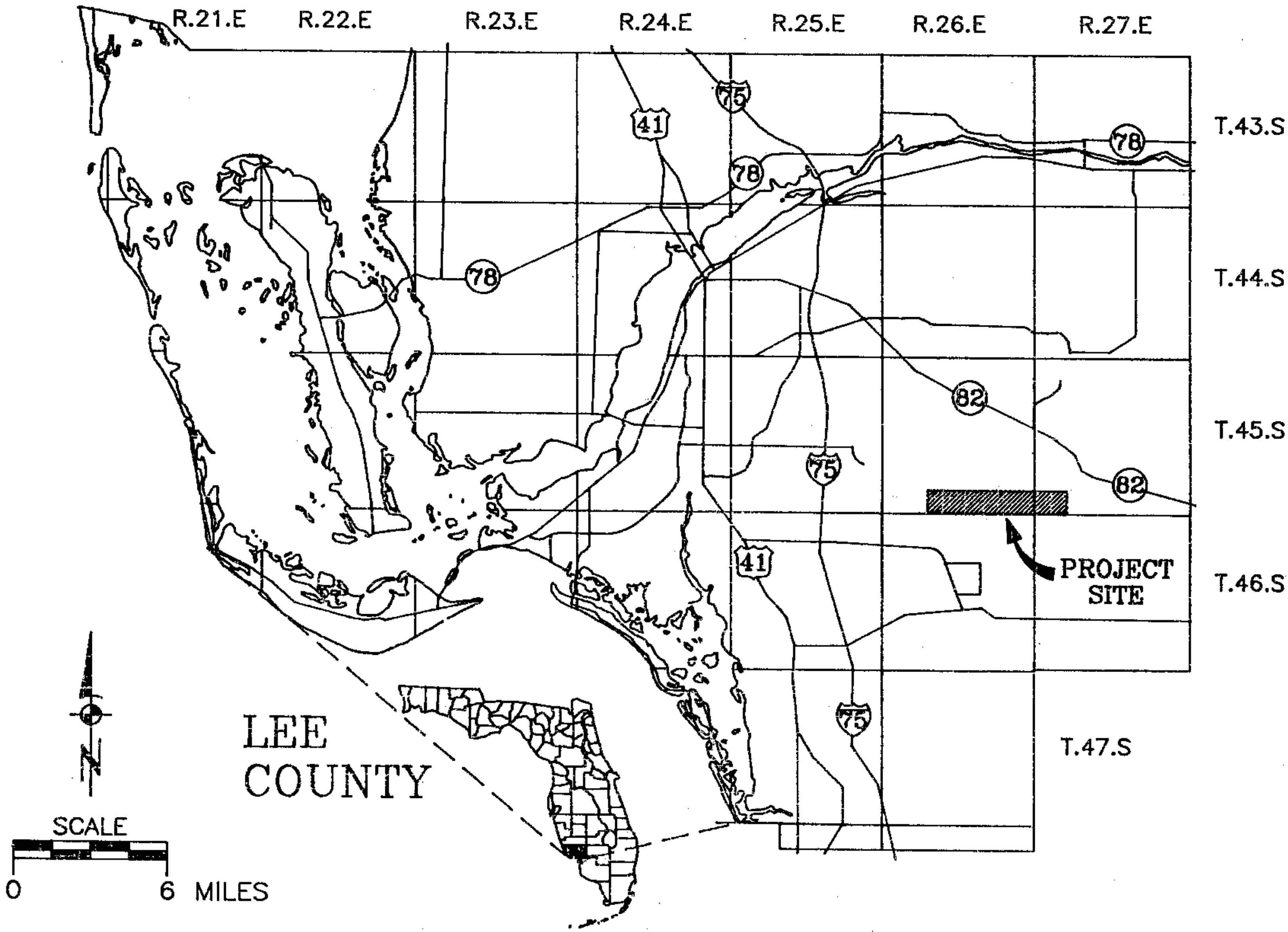

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FIGURE II-1. MAP SHOWING THE LOCATION OF GREENMEADOWS WELLFIELD.

III. SITE INVESTIGATION METHODS

In order to obtain site specific lithologic data and provide a detailed hydraulic analysis of the sediments underlying the Greenmeadows Wellfield, it was necessary to construct two test wells and three shallow piezometers at the site. In addition, aquifer performance testing was required to obtain the pertinent aquifer hydraulic coefficients.

A. Well Construction

A well was completed into the sandstone aquifer at the water treatment plant site near Sandstone Aquifer Production Well #2 as shown on Figure III-1. Well LM-3870 was constructed on January 26, 1993 to assess site specific hydrologic conditions and for use as an observation well during aquifer performance testing. Construction of the well was supervised by a Missimer Division hydrologist who collected formation samples for lithologic analysis. A geologist's log of the sediments encountered during drilling is included in Appendix A.

The mud rotary method was used to advance an 8-inch diameter borehole to a depth of 200 feet below land surface. A section of 4-inch diameter, 0.030" slot schedule 40 PVC screen, 100 feet long was placed in the hole followed by 100 feet of 4-inch diameter schedule 40 PVC well casing. The screened section was then gravel packed with 6-20 sand to approximately 10 feet above the top of the screen. Compressed air was used to develop the well until the produced water was relatively clear and free of sediments.

After air development was completed, the casing annulus was grouted with portland cement from the top of the gravel pack material to land surface using the tremie pipe method. Construction details of the Sandstone Aquifer observation well (LM-3870) are shown on Figure III-2.

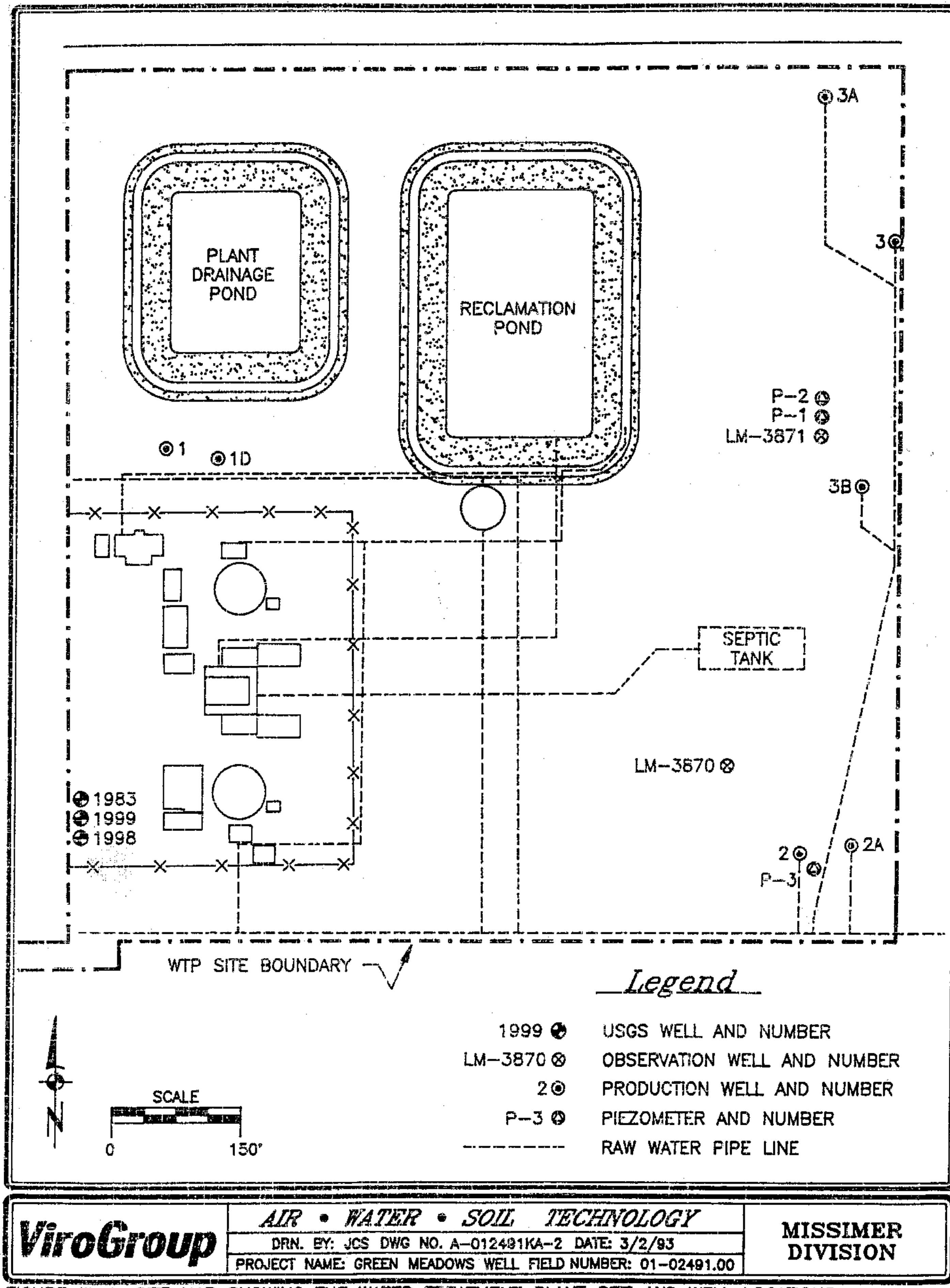

FIGURE III-1. SITE MAP SHOWING THE WATER TREATMENT PLANT SITE AND WELL LOCATIONS.

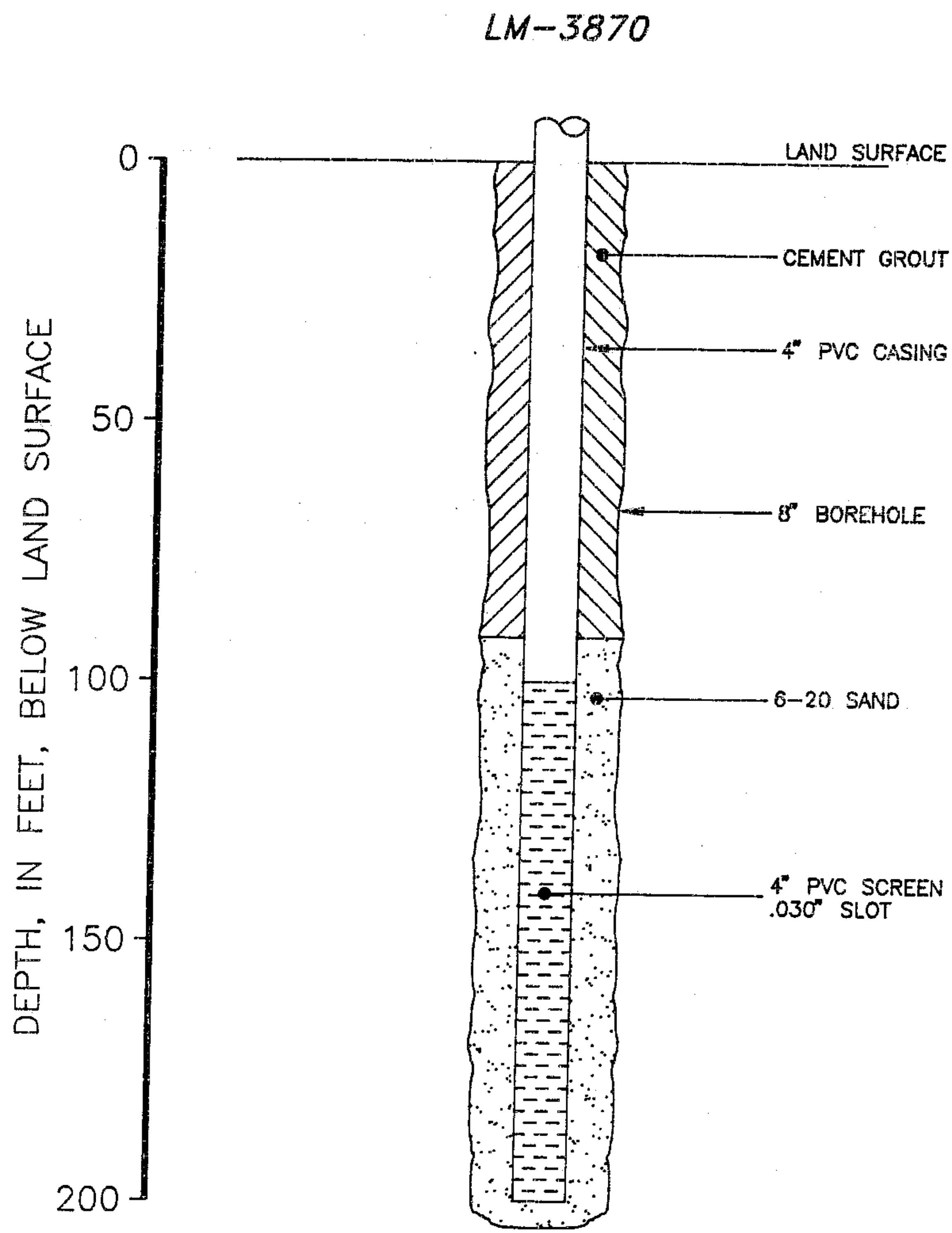

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FIGURE III-2. CONSTRUCTION DETAILS OF SANDSTONE AQUIFER OBSERVATION WELL LM-3870.

An additional observation well (LM-3871) was installed in the Water-Table Aquifer production zone at the water treatment plant site near Water-Table Production Well #3b at the location shown on Figure III-1. This well was also constructed utilizing the mud rotary method. An 8-inch diameter borehole was drilled to a depth of 20 feet below land surface. A 4 7/8" diameter bit was then used to drill to a total depth of 46 feet below land surface. Twenty feet of 4-inch diameter schedule 40 PVC casing was placed in the borehole with a rubber packer at the bottom to form a seal. Air development was used to remove drilling mud and cuttings from the well. After air development was completed, the casing annulus was grouted from bottom to land surface using the tremie pipe method. A schematic diagram showing construction details of the well is provided as Figure III-3.

Two shallow piezometers were installed adjacent to well LM-3871. These piezometers were constructed to determine the degree of separation between the upper and lower part of the water-table aquifer. One of the piezometers was designated P-1 and was completed in the upper part of the water-table aquifer. The screened section extends from 2 to 7 feet below land surface and is located within the clayey sand layers present above the lower limestone unit. This piezometer was constructed to show the effects on the water-table caused by pumpage from the lower portion of the water-table aquifer. The other piezometer, designated P-2, was completed with blank pipe driven approximately 1/2 foot into the clayey sand unit present beneath the site. This piezometer was constructed for slug testing purposes to determine the vertical hydraulic conductivity of the semi-confining unit. A diagram showing construction details of the piezometers is included as Figure III-4.

A shallow piezometer (P-3) was constructed approximately 38 feet southeast of sandstone aquifer production well #2. This piezometer was constructed to determine what effect pumpage from the sandstone aquifer has on the water-table. The piezometer was constructed to a depth of 5 feet below land surface with 1 1/2-inch diameter schedule 40 PVC pipe and one foot of slotted pipe at the bottom.

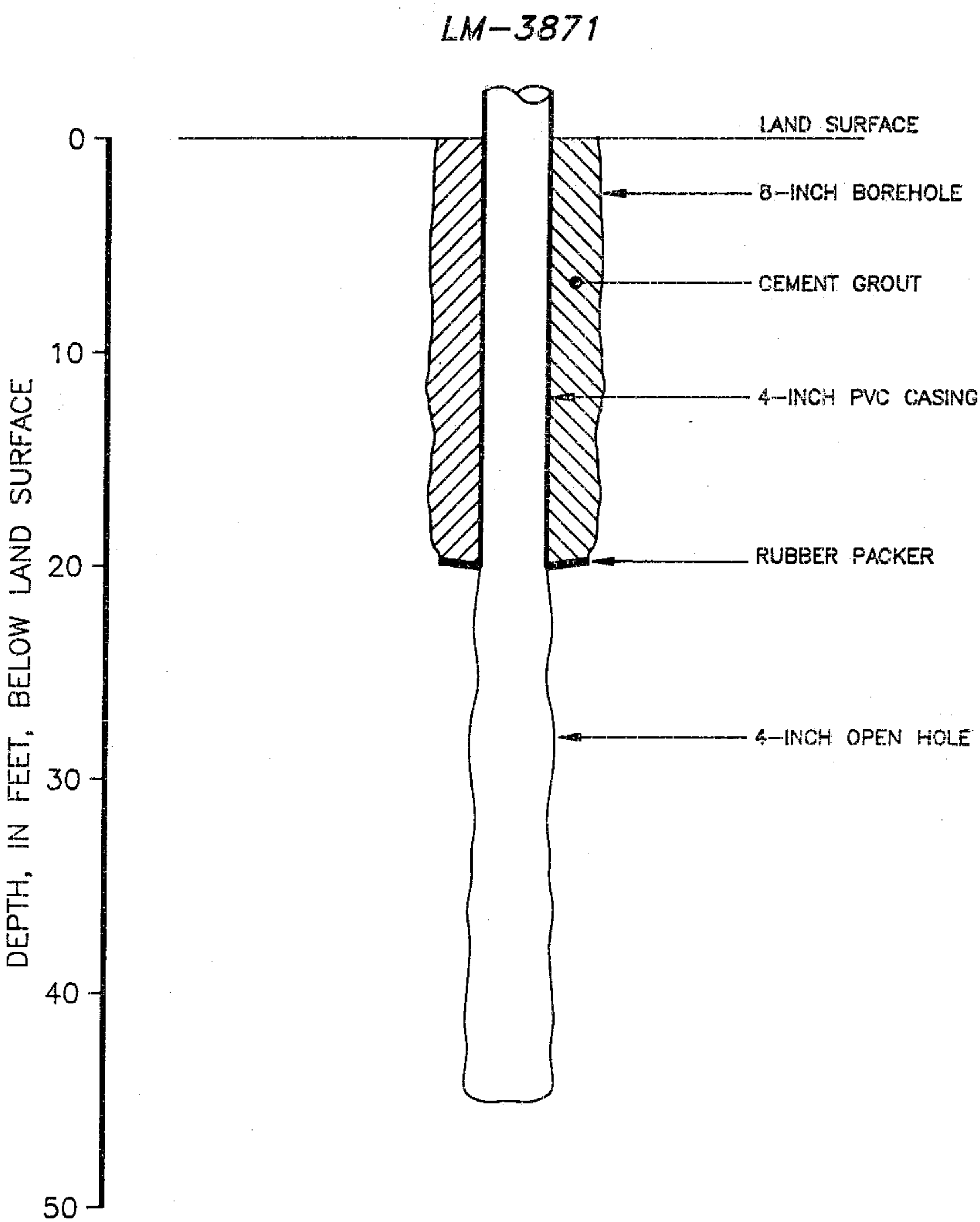

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FIGURE III-3. CONSTRUCTION DETAILS OF WATER-TABLE OBSERVATION WELL LM-3871.

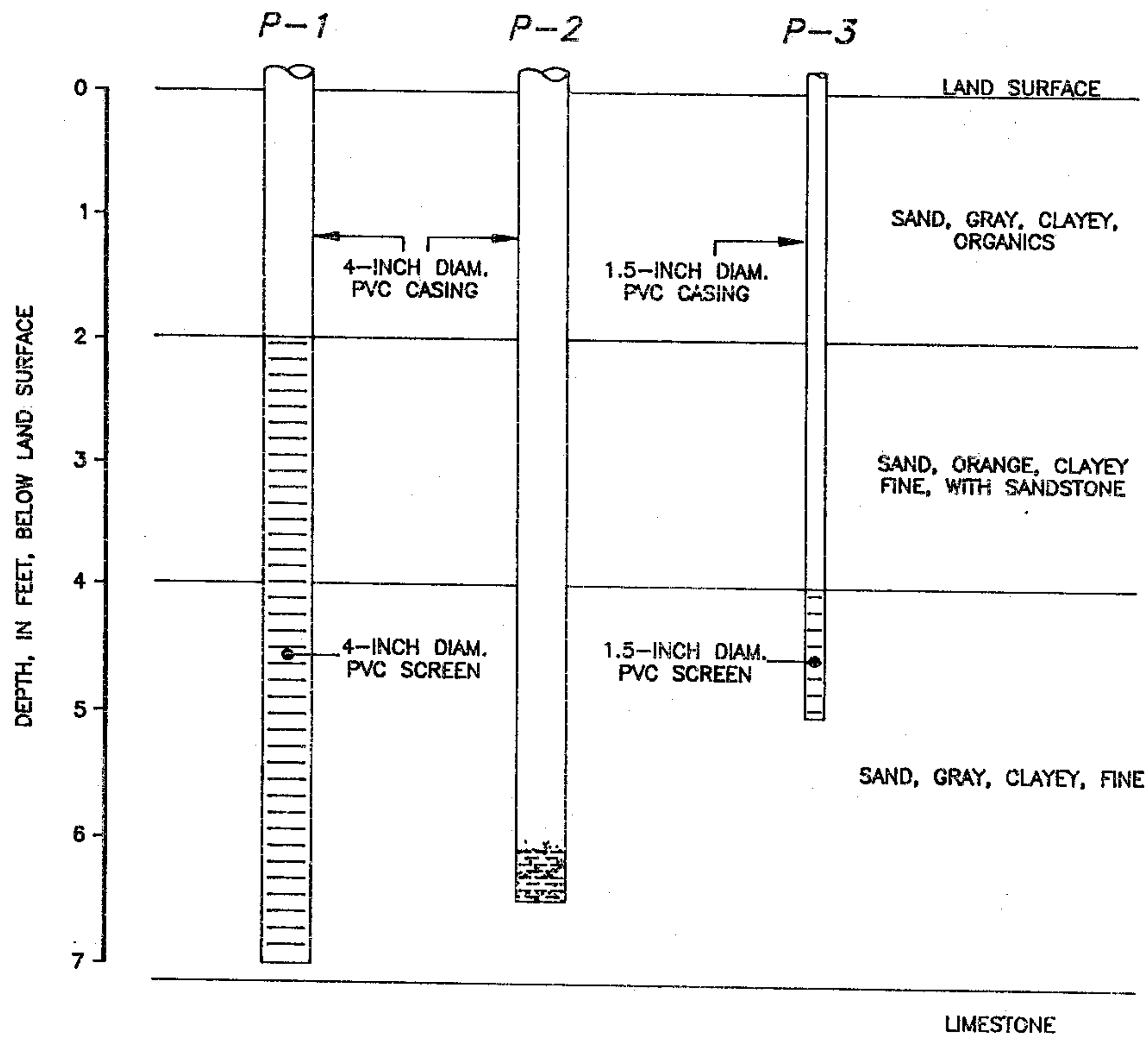

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FIGURE III-4. SCHEMATIC DIAGRAM SHOWING CONSTRUCTION DETAILS OF THE PIEZOMETERS CONSTRUCTED.

Construction details are included on Figure III-4. Construction details of the wells and piezometers installed for this investigation are summarized in Table III-1.

B. Aquifer Testing

1. Sandstone Aquifer

An aquifer performance test (APT) was conducted on the Sandstone Aquifer at the water treatment plant site. Wellfield pumpage was stabilized to the extent possible and all production wells within 1.5 miles of the test site were shut down approximately 28 hours prior to starting the test. Other production wells were pumped as steady as possible during the entire background and APT period. Background water levels were monitored in both the sandstone aquifer and water-table aquifer production zones after stabilizing wellfield pumpage. Down to water levels were referenced to NGVD roughly by measuring the height of the casing top above land surface which is at elevation 25 feet NGVD based on the topographic map of the area. Electronic data loggers coupled to pressure transducers were used to measure and record the background water levels as well as drawdown and recovery during the APT. The data are included in Appendix B. Graphs showing background water level changes in each aquifer prior to the test are included as Figures III-5 and III-6. Inspection of Figure III-5 shows that the potentiometric surface of the Sandstone Aquifer rose rapidly and then approached equilibrium after wellfield pumpage was stabilized. The characteristic shape of the curve indicates that water levels were recovering in the aquifer after pumpage near the test site had ceased. Complete recovery of water levels in the aquifer was not possible due to time constraints. Water levels in the Water-Table Aquifer exhibited a slow generally decreasing trend prior to the Sandstone APT. A water level decline of approximately 0.12 feet was noted in the 24 hours prior to starting the test. This decline is attributed to evapotranspiration.

TABLE III-1. CONSTRUCTION DETAILS OF THE RECENTLY COMPLETED TEST WELLS AND PIEZOMETERS AT GREENMEADOWS WELLFIELD

WELL	DIAMETER (inches)	TOTAL DEPTH (feet)	CASED DEPTH (feet)	FINISH	AQUIFER
LM-3870	4	200	100	0.030" SLOTTED PIPE	SANDSTONE
LM-3871	4	46	20	OPEN HOLE	WATER-TABLE
P-1	4	7	2	0.030" SLOTTED PIPE	WATER-TABLE
P-2	4	6	6.5	DRIVEN INTO FORMATION	WATER-TABLE
P-3	1.5	5	4	0.030" SLOTTED PIPE	WATER-TABLE

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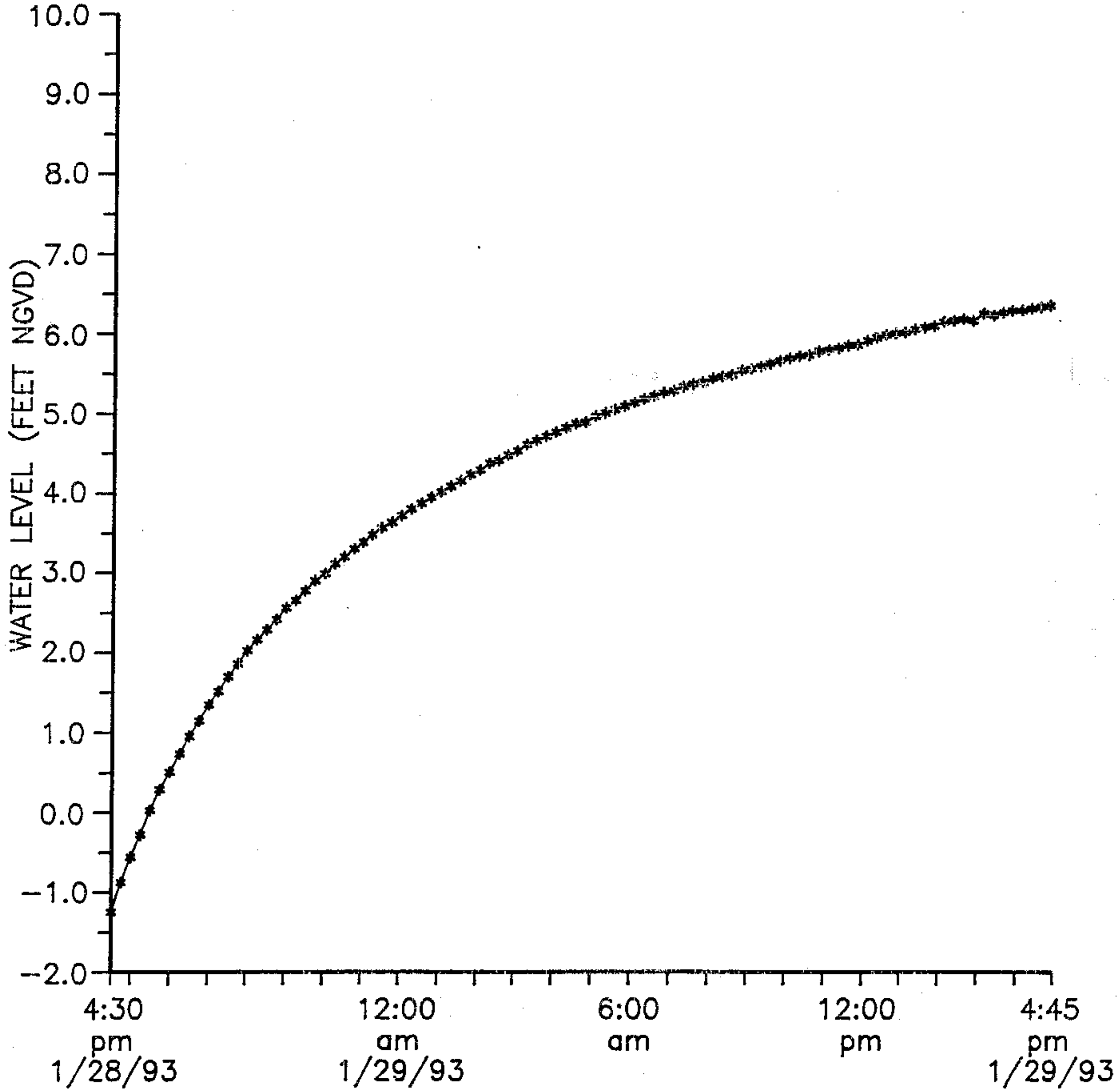

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FIGURE III-5. BACKGROUND WATER LEVELS IN THE SANDSTONE AQUIFER PRIOR TO THE SANDSTONE AQUIFER APT.

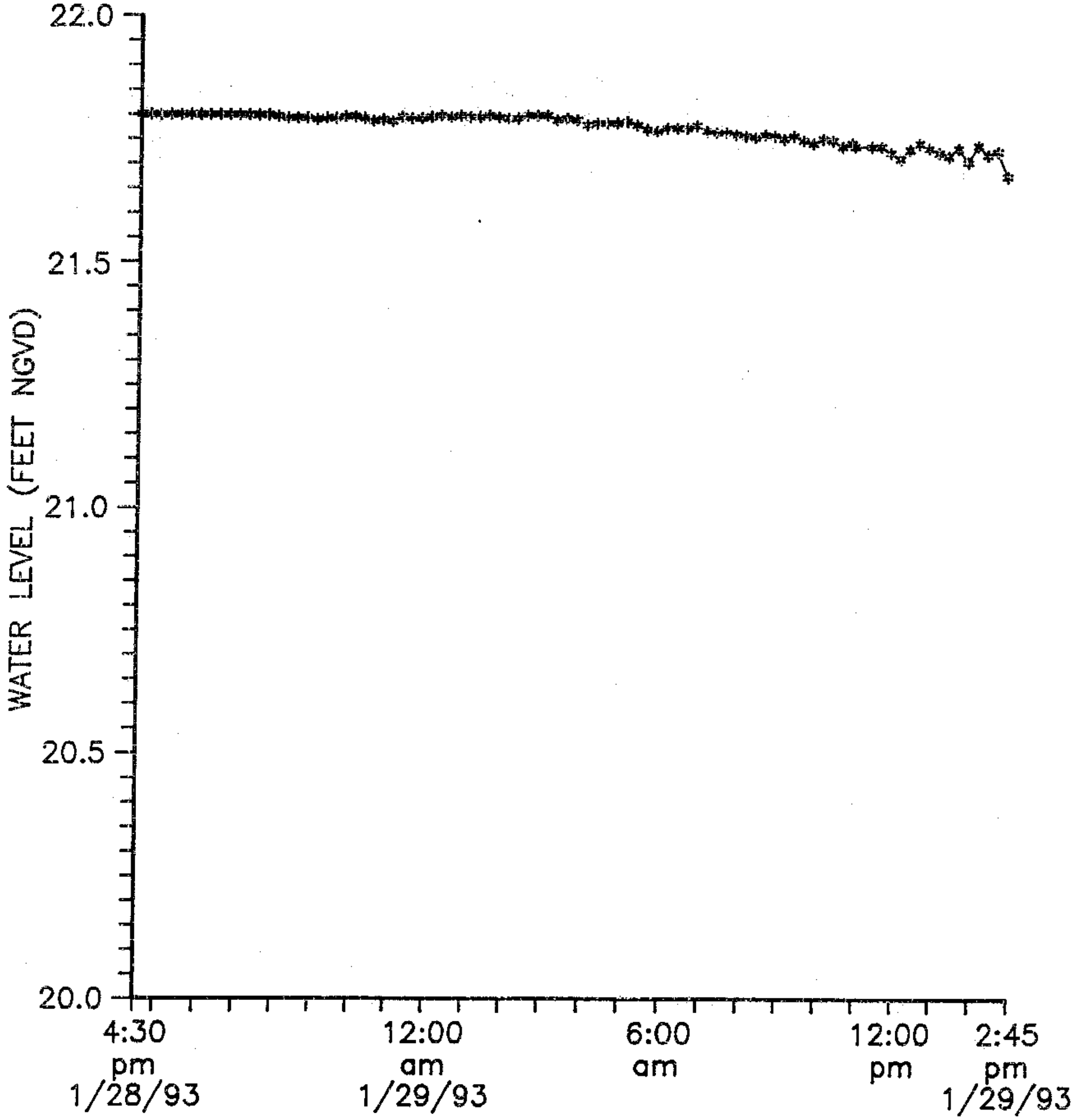

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FIGURE III-6. BACKGROUND WATER LEVELS IN THE WATER-TABLE PRODUCTION ZONE PRIOR TO THE SANDSTONE AQUIFER APT.

The Sandstone Aquifer APT was started at 5:45 PM on January 29, 1993. The existing Sandstone Aquifer production well #2 was used as the test/production well and pumped at a continuous rate of 630 gpm for 7100 minutes. A vertical shaft turbine production pump was used to make withdrawals and flow measurements were made by viewing the flowmeter. Discharged water was piped to the treatment plant through the existing distribution network. Drawdowns in the aquifer were monitored in three primary observation wells. Sandstone Aquifer monitor well LM-3870 and Sandstone Aquifer production well #1 are located 145 feet and 860 feet respectively from the test/production well and are shown on Figure III-1. Water levels were also monitored in Sandstone Aquifer production well #4 which is not shown on the figure but is located 1835 feet due east of the test/production well. In addition, water levels were monitored in shallow piezometer P-3 located 38 feet southeast of the test/production well as shown on Figure III-1. This piezometer was monitored to determine the effect of Sandstone Aquifer pumpage on the water-table surface.

Recovery of water levels in the aquifer was monitored for 14 hours after stopping pumpage. The background, drawdown, and recovery data collected for the test was transferred to a computer and plotted for analysis. Analysis of the data is discussed in Section V of this report.

2. Water-Table Aquifer

An aquifer performance test was also conducted on the Water-Table Aquifer at the water treatment plant site. Wellfield pumpage had been stabilized previously for the Sandstone Aquifer APT. All production wells within 1 mile of the test site were shut down 24 hours before starting the Water-Table Aquifer APT. Background water levels were monitored in both the Water-Table production zone and the upper part of the water-table aquifer for six hours prior to starting the APT. Plots showing the water level changes are included as Figures III-7 and III-8. Inspection of both figures

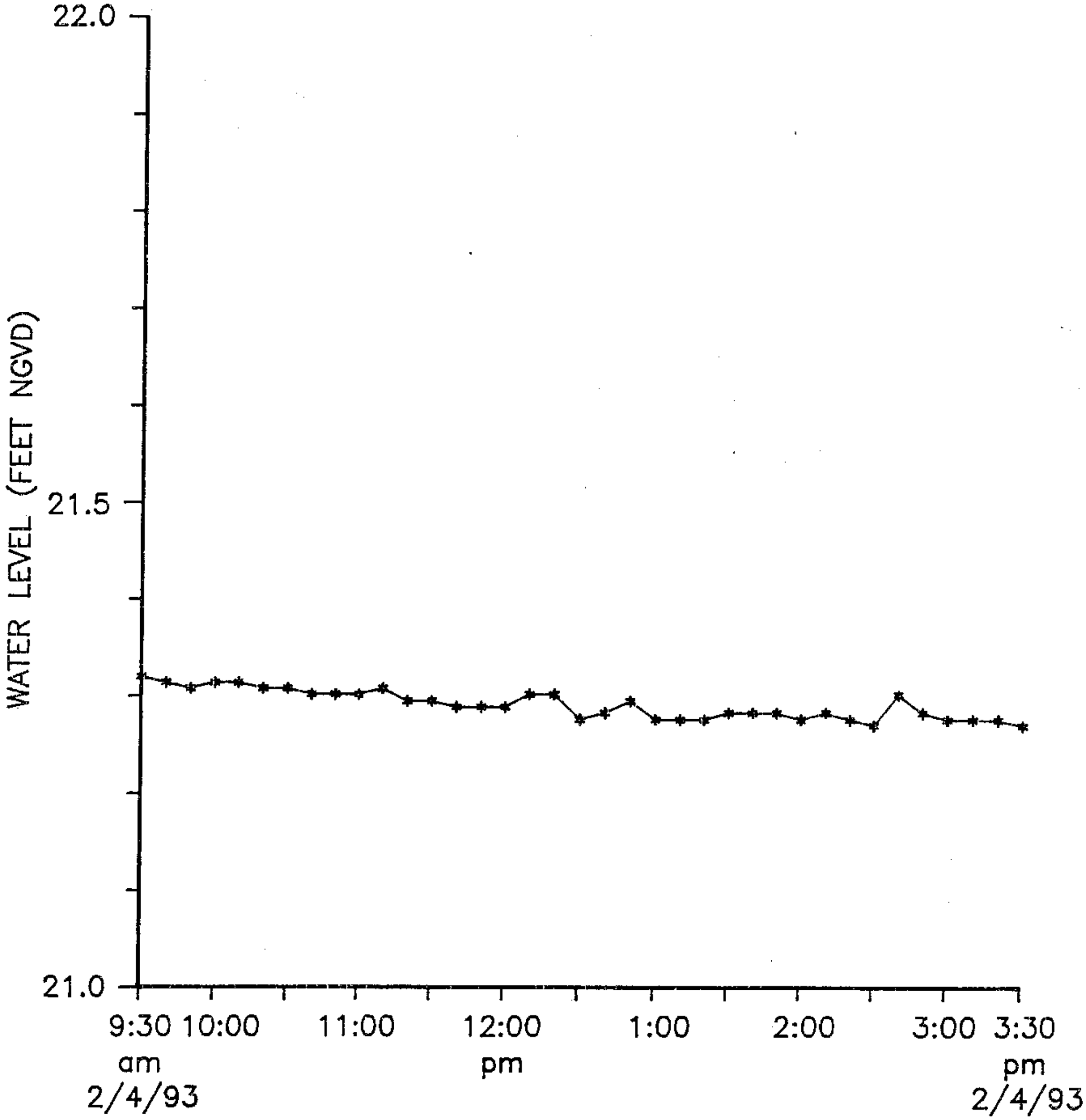

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FIGURE III-7. BACKGROUND WATER LEVELS IN THE WATER-TABLE PRODUCTION ZONE PRIOR TO THE WATER-TABLE APT.

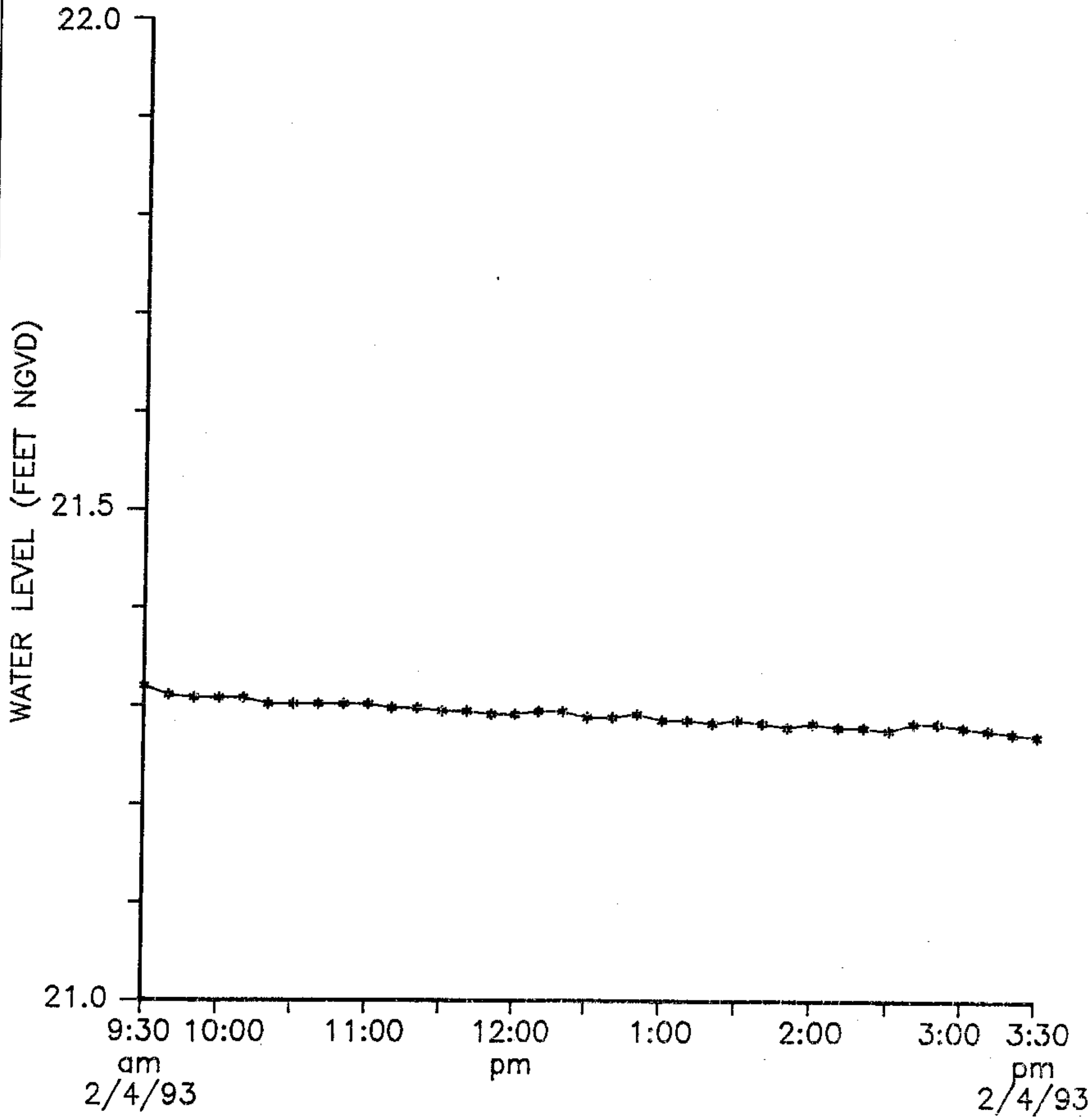

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FIGURE III-8. BACKGROUND WATER LEVELS IN THE UPPER WATER-TABLE PRIOR TO THE WATER-TABLE APT.

indicates that water levels were slowly decreasing at a rate of roughly 0.01 foot per hour. This decline is attributed to evapotranspiration.

The Water-Table Aquifer APT was started at 4:00 PM on February 4, 1993. Water-Table Aquifer production well #3B was used as the test/production well and pumped with a vertical shaft turbine pump at a continuous rate of 490 gpm for 5300 minutes. Discharged water was piped away from the test area to the water treatment plant through the existing raw water lines. Flow rate was checked periodically throughout the test by observing the flowmeter. Drawdowns in the aquifer were monitored in well LM-3871 and production well #3A. These wells are located 71 feet and 340 feet respectively from the test production well. Water levels in the upper part of the water-table aquifer were monitored in piezometer P-1. The relative positions of the wells and piezometers are shown on Figure III-1. Data loggers and pressure transducers were again used to measure and record the water level data.

Upon completion of pumpage, water level recovery in the aquifer was monitored in well #3A for 44 minutes. Data collected for the test were downloaded from the data loggers to a computer and then plotted for analysis.

Instantaneous injection "slug" tests were conducted at the water treatment plant site to further define the shallow aquifer hydraulic characteristics. The slug tests were conducted on piezometers P-1 and P-2. The data obtained were used to determine values for both the vertical and horizontal hydraulic conductivity of the upper sediments.

IV. HYDROGEOLOGIC CONDITIONS

A. Regional Description

Numerous investigations of the geology and hydrology of the area surrounding the Greenmeadows Wellfield have been conducted by the U.S. Geological Survey, South Florida Water Management District, and various consultants including Missimer Division. The description provided herein is a compilation of information obtained from these sources. A reference section has been provided at the end of this report.

Hydrogeology

The shallow geologic section beneath central Lee County is quite complex as it is an inhomogeneous mixture of carbonate and clastic sediments. However, several regionally extensive stratigraphic units can be delineated within the upper 200 feet. A generalized stratigraphic column of the sediments underlying southern Lee County is provided as Figure IV-1. A brief description of the geologic section follows.

The Pamlico Sand is the uppermost unit encountered beneath central Lee County. It occurs over most of the area and reaches a thickness of up to 35 feet in some locations. It is a late pleistocene deposit comprised primarily of fine to medium grained quartz sand. The unit frequently contains silt and clay deposits as well as organic material particularly in the upper part of the unit near land surface.

Beneath the surficial sands lies the Tamiami Formation. This formation is comprised primarily of sandy limestone which frequently contains abundant shell, coral, and other constituents. The unit has a thickness ranging from 20 to more than 50 feet in central Lee County and often is very permeable due to the vuggy nature of the rock caused by secondary solutioning. This unit forms the productive portion of the water-table aquifer.

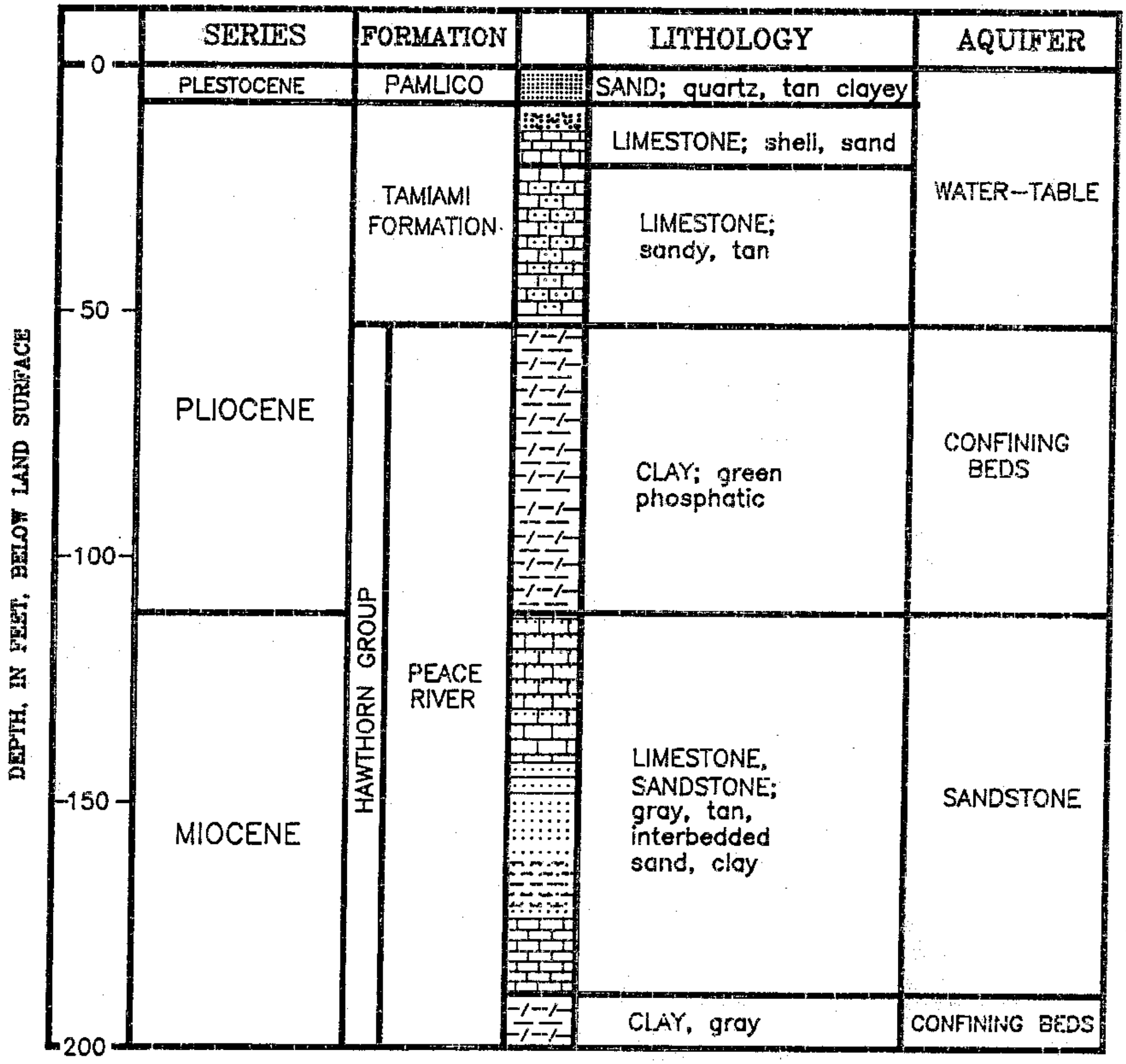

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FIGURE IV-1 DIAGRAM SHOWING THE LITHOLOGIES AND AQUIFER LOCATIONS IN CENTRAL LEE COUNTY.

A low permeability clay unit within the Peace River Formation underlies the Tamiami Formation and marks the top of the Hawthorn Group. This unit is referred to as the Cape Coral Clay and is typically a green clay or dolosilt layer with variable amounts of quartz sand and phosphate. Thickness of the unit varies from approximately 30 to 80 feet in central Lee County. The low permeability of this unit provides confinement for the underlying sandstone aquifer.

A heterogeneous mixture of sandy limestone, sandstone, sand, shell, and clay lies beneath the Cape Coral Clay member. The thickness of this unit is quite variable in Lee County ranging from less than 40 feet to over 100 feet. The Sandstone Aquifer is comprised of permeable sediments within the Lehigh Acres sandstone member of the Peace River Formation. The productivity of the aquifer varies greatly depending upon lithology and aquifer thickness.

Beneath the Sandstone Aquifer lies a unit comprised of highly phosphatic low permeability clay and dolosilt layers that represent the base of the Peace River Formation. This unit forms the underlying confining unit beneath the Sandstone Aquifer.

B. Site Specific Conditions

The geologic and hydrologic conditions at Greenmeadows were determined by constructing two test wells (LM-3870 and LM-3871) at the water treatment plant site. The well locations are shown on Figure III-1 and geologist's logs of sediments encountered during drilling are included in Appendix A.

The geologic sequence encountered during test well drilling was found to be generally similar to the regional description provided. The Pamlico Sand unit varied in thickness from 5 to 7 feet in the test wells. The unit was comprised of low permeability clayey sand and organics with minor sandstone lenses encountered at a depth of 3 to 4 feet.

The Tamiami Formation was encountered below the Pamlico sand and extended to depths of 45 and 46 feet below land surface in the test wells. The primary lithology of this unit was a hard, light gray, fossiliferous, sandy limestone. The vuggy nature of the rock provides a high permeability.

A 55 feet thick sequence of dense green clay was encountered beneath the limestone unit. Fine phosphate was a common ancillary component along with minor amounts of sand, shell and limestone fragments. The apparent permeability of this unit is very low.

A gray, sandy limestone layer with occasional shell was encountered from approximately 100 to 145 feet below land surface. The unit exhibited good moldic porosity and had a medium to high apparent permeability. The majority of production from the Sandstone Aquifer wells probably occurs within this layer.

The final sequence encountered during test well drilling was a heterogeneous sequence of clay, sandstone, marl, and limestone layers which extend to a depth of 200 feet below land surface. These layers have a low apparent permeability.

V. HYDRAULIC DATA ANALYSIS

A. Sandstone Aquifer

Analysis of the data collected during the aquifer performance test conducted on the sandstone aquifer was accomplished using the method developed by Cooper (1963). Logarithmic plots of time vs. drawdown were constructed using data from the three primary observation wells. No unusual boundary conditions were noted on the graphs which are included as Figures V-1 through V-3. The plots were compared to the appropriate type curves and match points were obtained. The data were substituted into the following equations to obtain the aquifer coefficients of Transmissivity, Storage, and Leakance.

$$T = \frac{114.6 \quad Q \quad L(u,v)}{s} \qquad (1)$$

$$S = \frac{Tt}{1.87\, r^2\, (1/u)} \qquad (2)$$

$$L = \frac{T\,(r/b)^2}{r^2} \qquad (3)$$

where,

T = transmissivity (gpd/ft)
Q = pumping rate (gpm)
s = drawdown (feet)
L (u,v) = curve function
(1/u) = curve function
S = storage coefficient, dimensionless
t = time (days)
r = distance from pumped well (feet)
r/b = curve function (=2v)
L = Leakance (gpd/ft^3)

Additional analysis was conducted with the method developed by Jacob (1952) using semi-logarithmic plots of drawdown vs. time which are included as Figures V-4 through V-6. A straight line segment is selected from each plot for this method and the

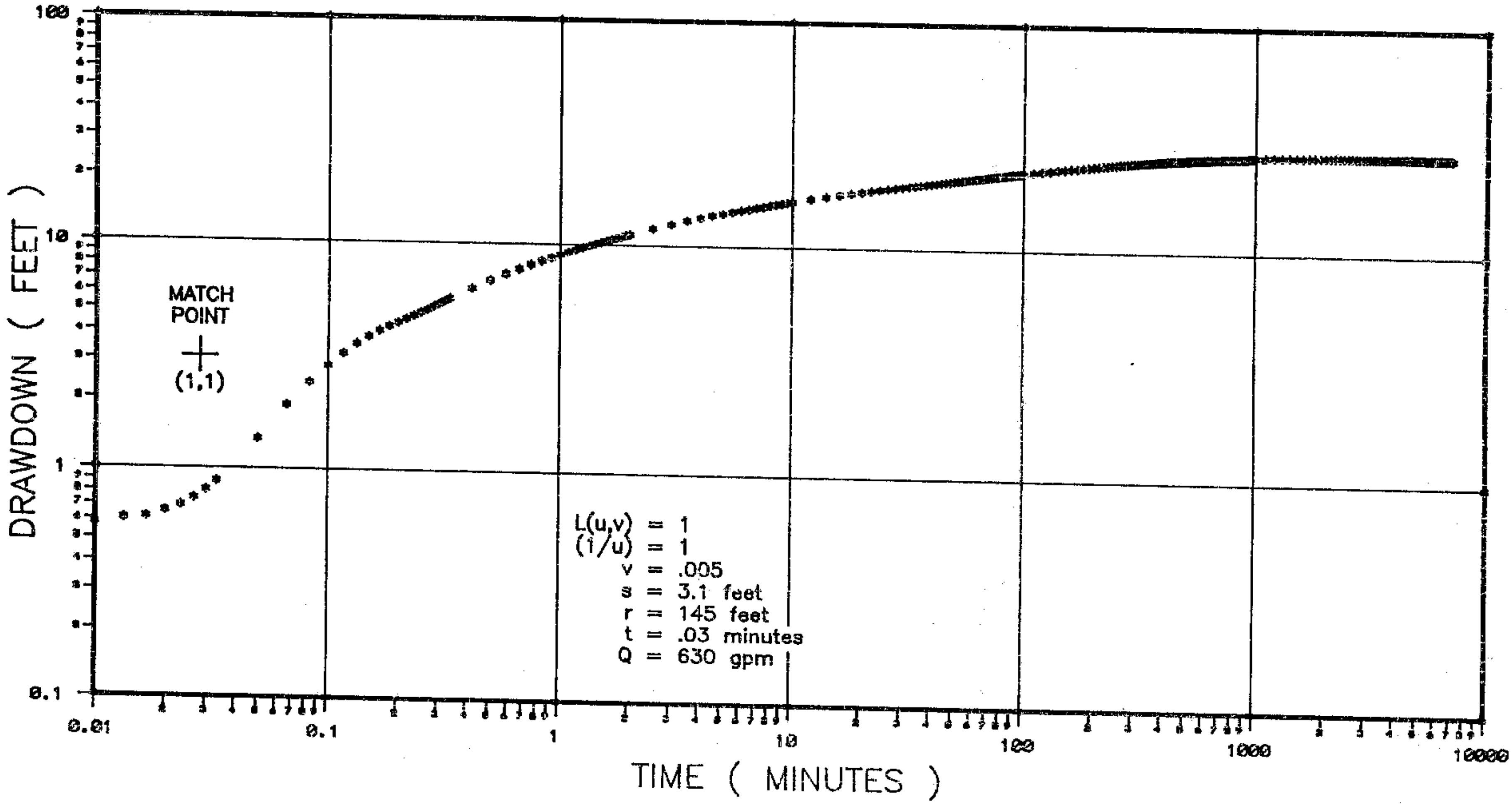

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FIGURE V-1. LOGARITHMIC PLOT OF DRAWDOWN vs TIME FOR SANDSTONE AQUIFER OBSERVATION WELL LM-3870.

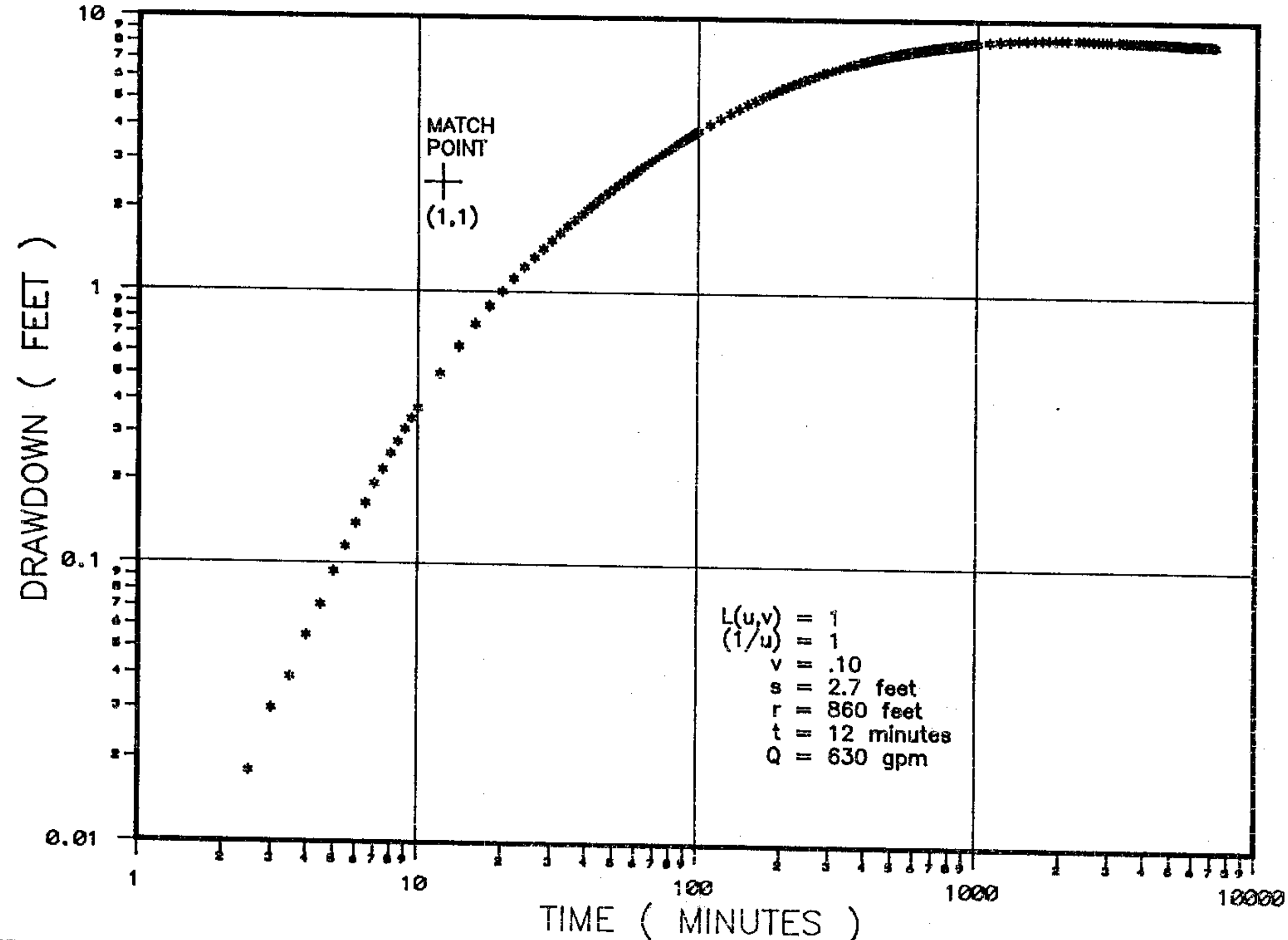

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FIGURE V–2. LOGARITHMIC PLOT OF DRAWDOWN vs TIME FOR SANDSTONE AQUIFER PRODUCTION WELL No.1

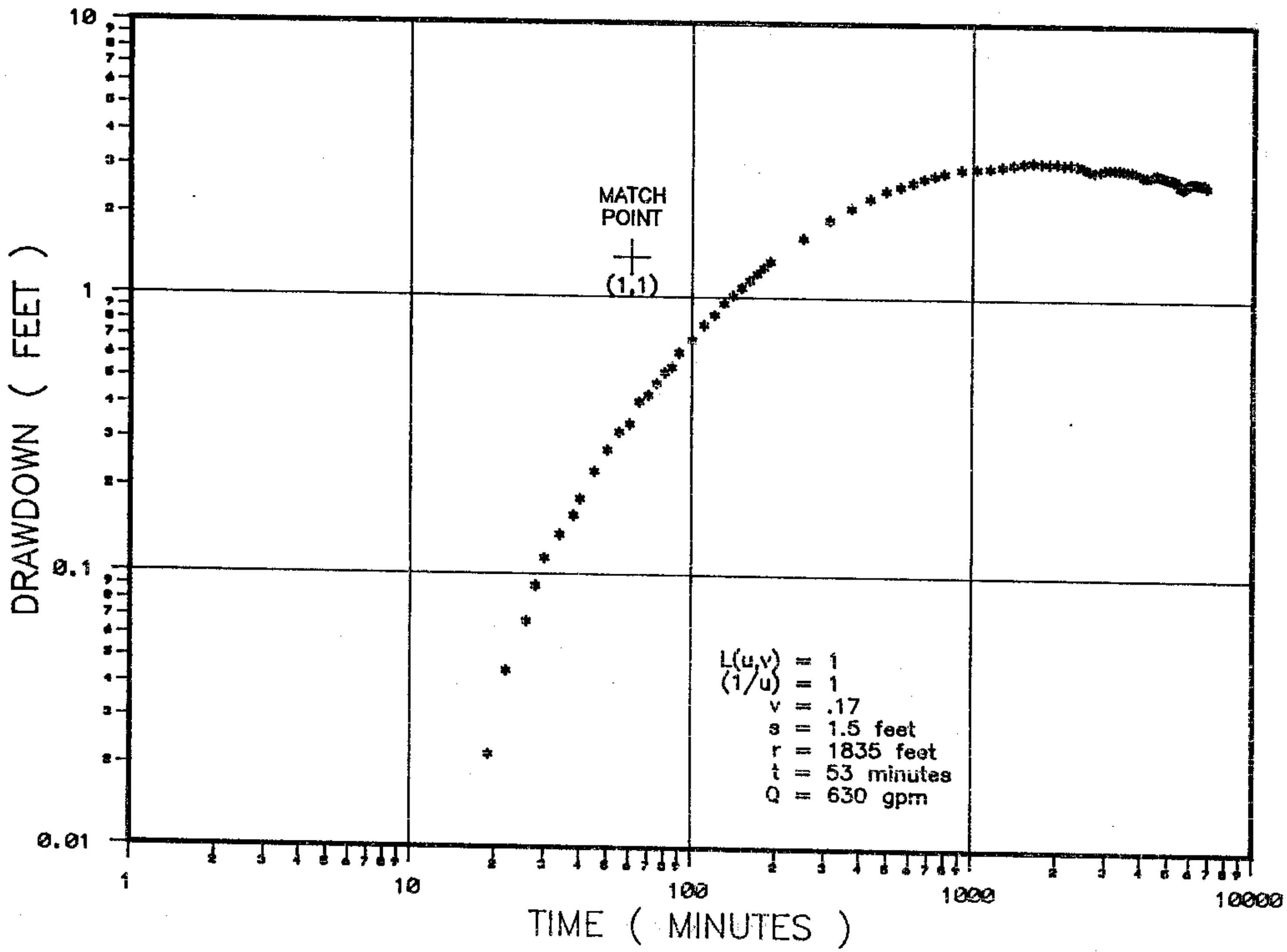

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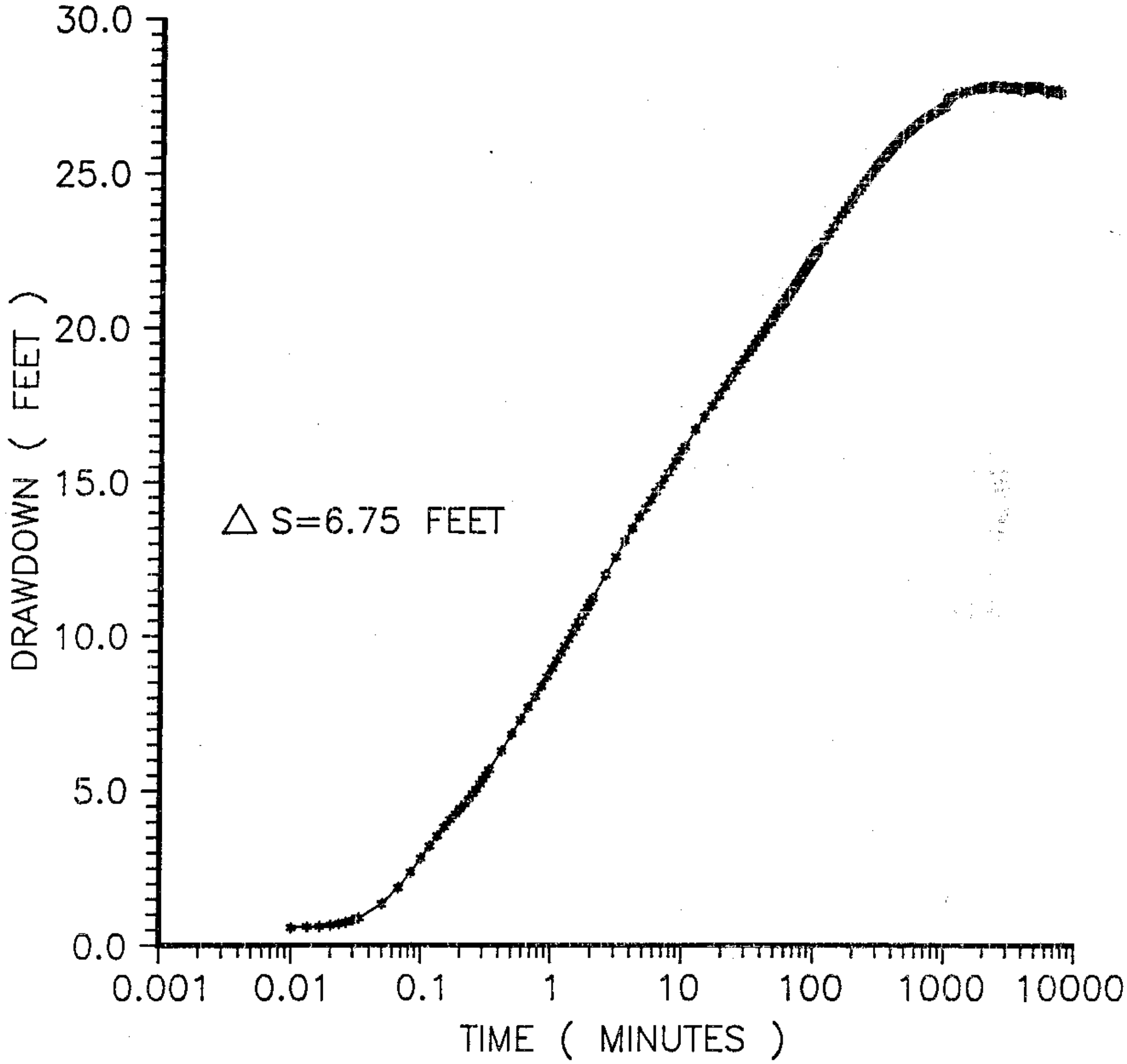
FIGURE V-3. LOGARITHMIC PLOT OF DRAWDOWN vs TIME FOR SANDSTONE AQUIFER PRODUCTION WELL No.4



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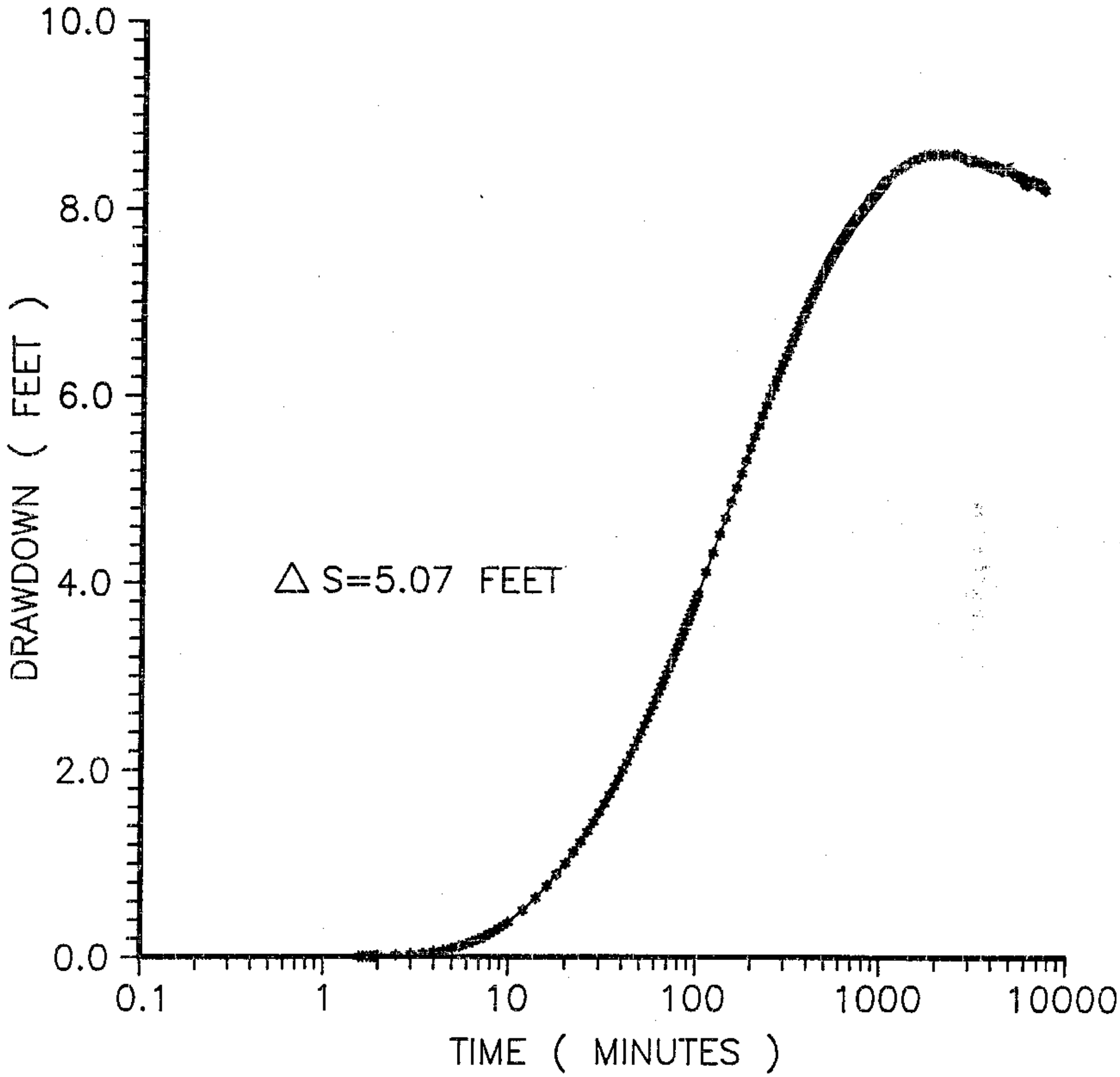
	PROJECT NAME: GREENMEADOWS NUMBER: 01-02491.00	

FIGURE V-4. SEMI-LOG PLOT OF DRAWDOWN vs. TIME IN OBSERVATION WELL LM-3870.



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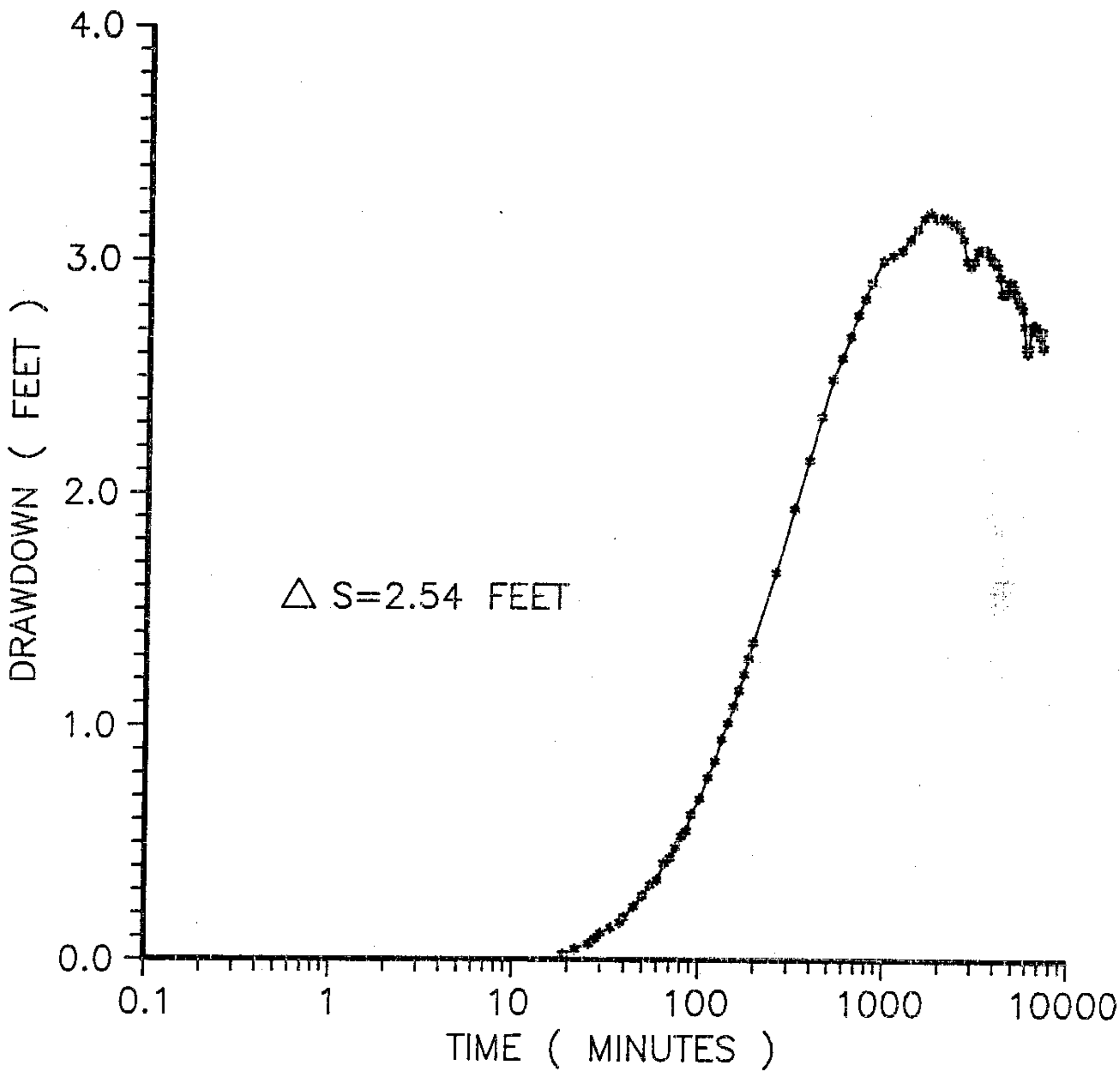
	PROJECT NAME: GREENMEADOWS NUMBER: 01-02491.00	

FIGURE V-5. SEMI-LOG PLOT OF DRAWDOWN vs. TIME IN PRODUCTION WELL SS#1.



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	PROJECT NAME: GREENMEADOWS NUMBER: 01-02491.00	

FIGURE V-6. SEMI-LOG PLOT OF DRAWDOWN vs. TIME IN PRODUCTION WELL SS#4.

change in drawdown between one log cycle is determined and substituted into equation (4) to determine transmissivity. Storage coefficient values are determined utilizing equation (5). Leakance values cannot be determined with this method.

$$T = \frac{264\,Q}{\Delta s} \quad (4)$$

$$S = \frac{Tto}{4790\,r^2} \quad (5)$$

where,

Δs = Head difference between log cycles (feet)
to = time at zero drawdown (minutes)

A summary of the hydraulic coefficients calculated for the Sandstone Aquifer at the site is given in Table V-1. The values obtained using each of the two methods are relatively similar.

The response in shallow water-table piezometer P-3 during the Sandstone Aquifer APT is shown in Figure V-7. The piezometer was completed into the upper part of the water-table aquifer at distance of 38 feet from the test/production well. Moderate normal water level fluctuations due to daily evapotransporation patterns were noted until approximately 5200 minutes into the test at which point a rapid decline in water levels occurred. This drawdown is attributed to agricultural pumpage in the farm field located adjacent to the water treatment plant site on the south side. Recovery of water levels in the shallow water-table was monitored after terminating pumpage and is shown on Figure V-8. The figure shows that water levels increased approximately 0.2 feet before stabilizing. It is concluded that the Sandstone Aquifer pumpage from well #2 has a potential drawdown effect of up to 0.2 feet on the water-table aquifer in the immediate vicinity of the well site.

TABLE V-1. AQUIFER HYDRAULIC COEFFICIENTS CALCULATED FOR THE SANDSTONE AQUIFER

CURVE MATCHING METHOD			
WELL	TRANSMISSIVITY (GPD/FT)	STORAGE COEFFICIENT	LEAKANCE (GPD/FT^3)
LM-3870	23,300	1.24×10^{-5}	1.10×10^{-4}
SS #1	26,700	1.60×10^{-4}	1.44×10^{-3}
SS #4	48,000	2.80×10^{-4}	1.65×10^{-3}
STRAIGHT-LINE METHOD			
WELL	TRANSMISSIVITY (GPD/FT)	STORAGE COEFFICIENT	LEAKANCE*
LM-3870	24,600	1.05×10^{-5}	N/A
SS #1	32,800	1.67×10^{-4}	N/A
SS #4	65,500	2.15×10^{-4}	N/A

*LEAKANCE VALUES CANNOT BE DETERMINED UTILIZING THIS METHOD.

TABL5/01-02491.TAB/GNG

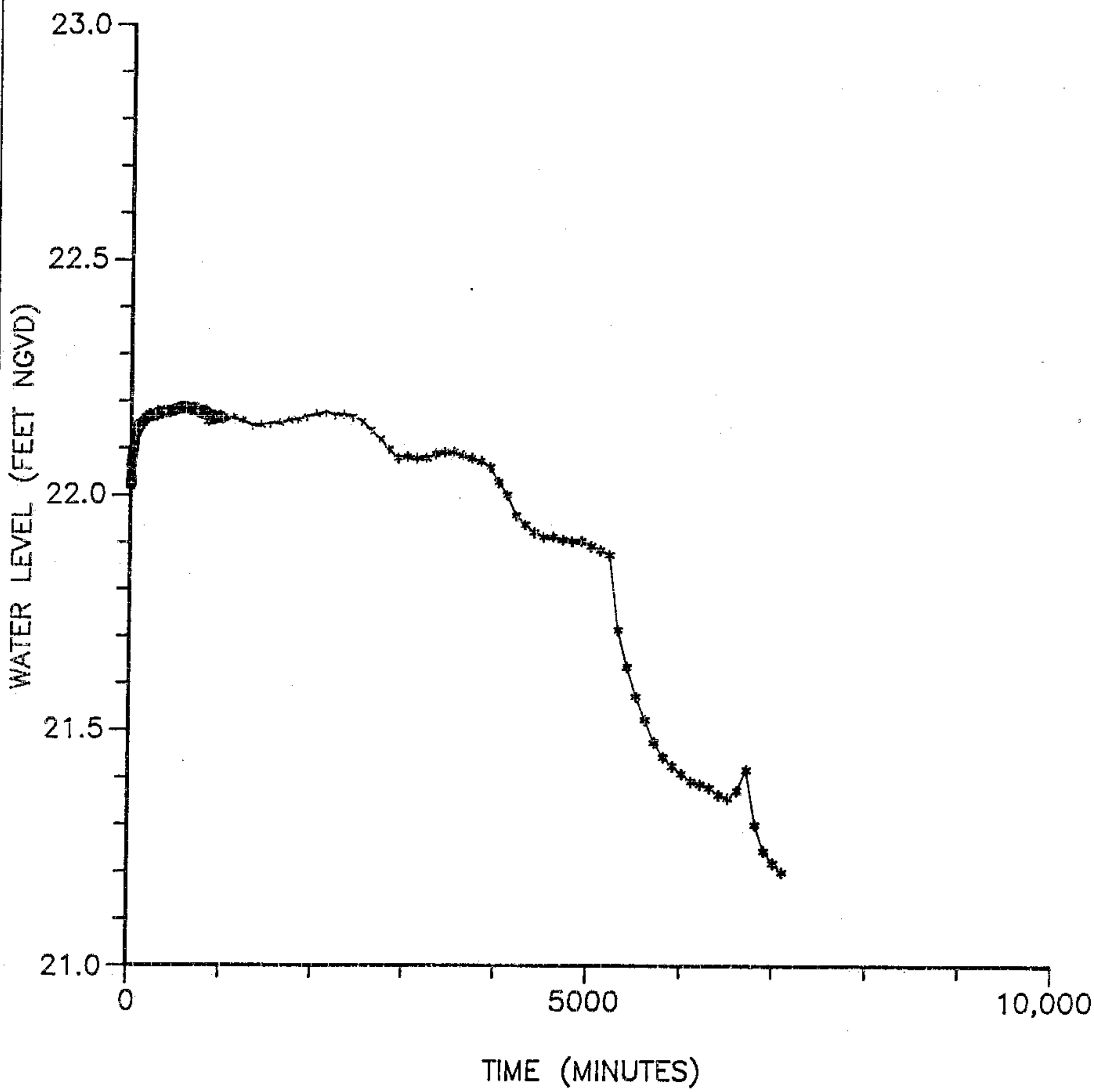

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FIGURE V-7. WATER LEVELS IN THE SHALLOW WATER-TABLE AQUIFER DURING THE SANDSTONE AQUIFER APT.

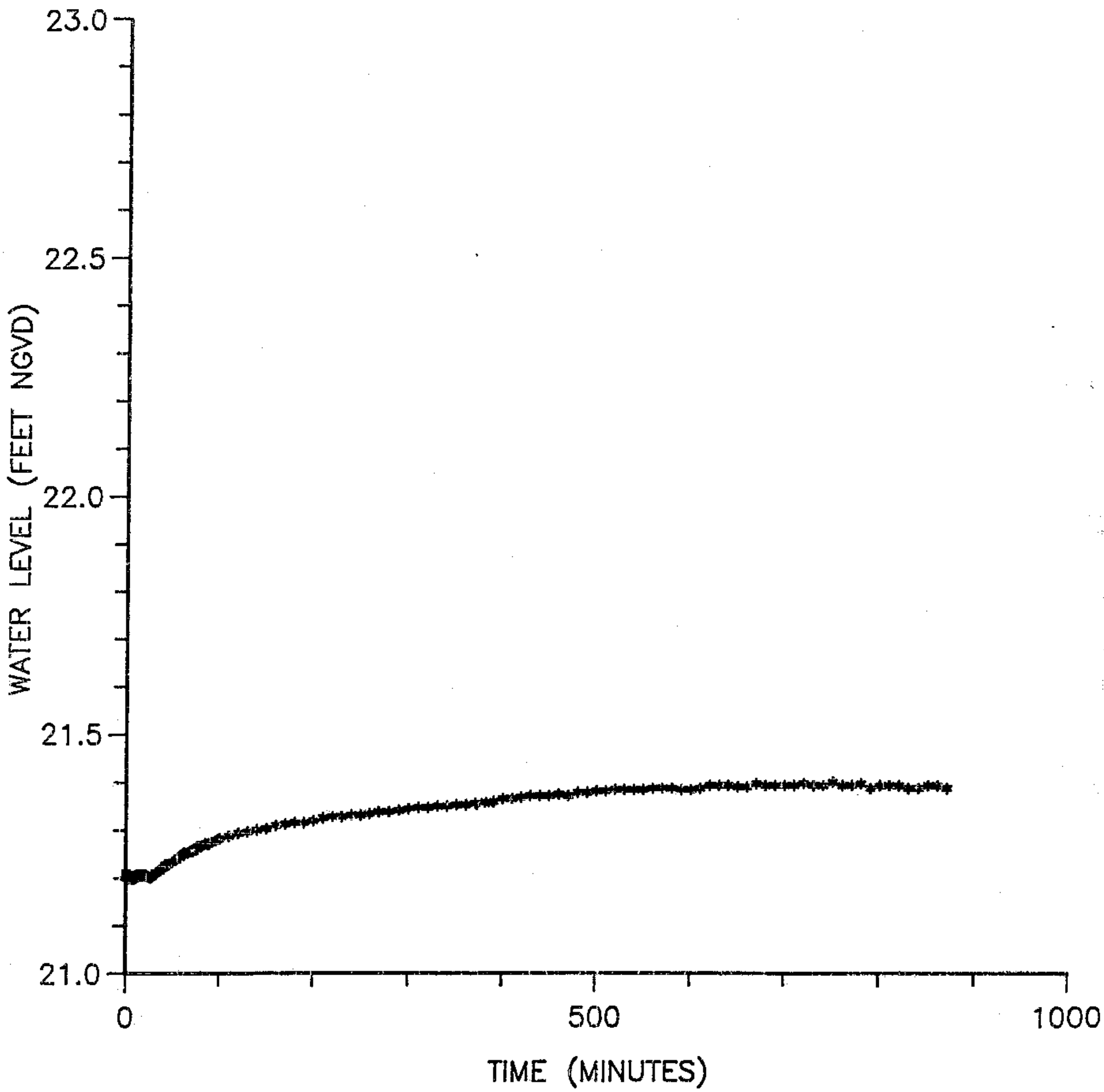

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FIGURE V-8. RECOVERY IN THE SHALLOW WATER-TABLE AQUIFER AFTER THE SANDSTONE AQUIFER APT.

B. Water-Table Aquifer

Analysis of the aquifer performance test data from the Water-Table aquifer was accomplished utilizing the method developed by Boulton (1963). Logarithmic plots of time vs. drawdown were constructed using data from the two primary observation wells LM-3871 and #3A. The plots, shown on Figures V-9 and V-10, were compared to the appropriate type curves and match points between the observed data and type curves were obtained. The match point data were used along with the measured flow rate in the following equation to determine the aquifer transmissivity.

$$T = \frac{114.6\ Q\ W(u)}{s} \qquad (6)$$

where,

T = transmissivity (gpd/ft)
Q = pumping rate (gpm)
W(u) = curve function
s = drawdown (feet)

Although the test was run for a total of 5300 minutes; an anomalous condition occurred at approximately 1000 minutes into the test which effectively terminated the collection of useful data. The additional drawdown noticed in the observation wells was most likely due to agricultural pumpage in adjacent farm fields. Intermittent rainfall also occurred later in the test which caused water levels to recover. Useful data were not collected for a sufficient period of time to obtain specific yield values. However, a conservative value of 0.15 is estimated for the site based on the geologic conditions present.

Additional analysis with the method developed by Jacob (1952) was conducted to confirm the transmissivity values obtained using the curve matching method. Semi-logarithmic plots of drawdown vs. time were constructed for wells LM-3871 and #3A and are included as Figures V-11 and V-12. Equation (4) was used to calculate

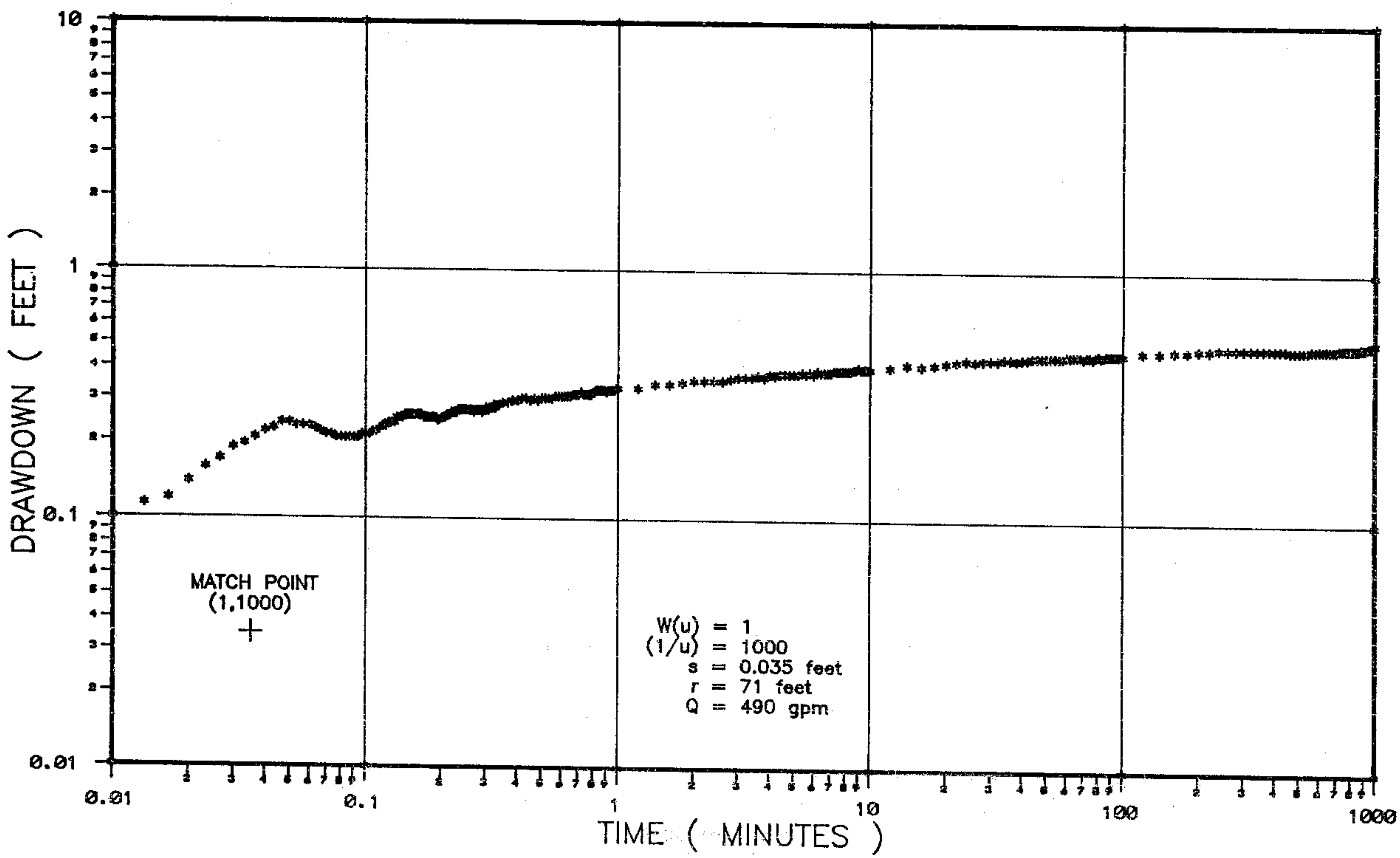

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FIGURE V-9. DRAWDOWN IN WATER-TABLE AQUIFER OBSERVATION WELL LM-3871 DURING THE WATER-TABLE APT.

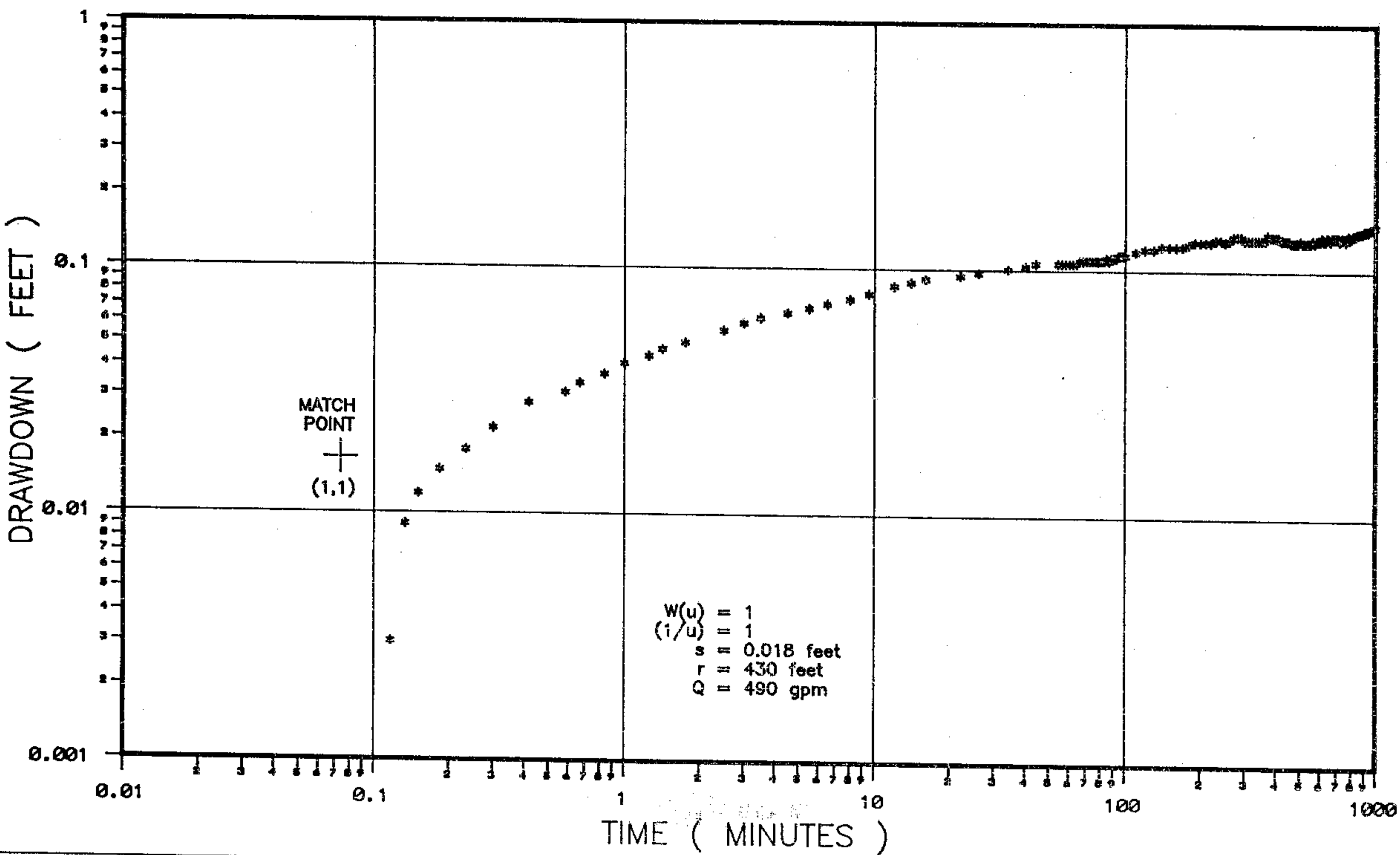

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FIGURE V-10. DRAWDOWN IN WATER-TABLE AQUIFER PRODUCTION WELL No.3A DURING THE WATER-TABLE APT.

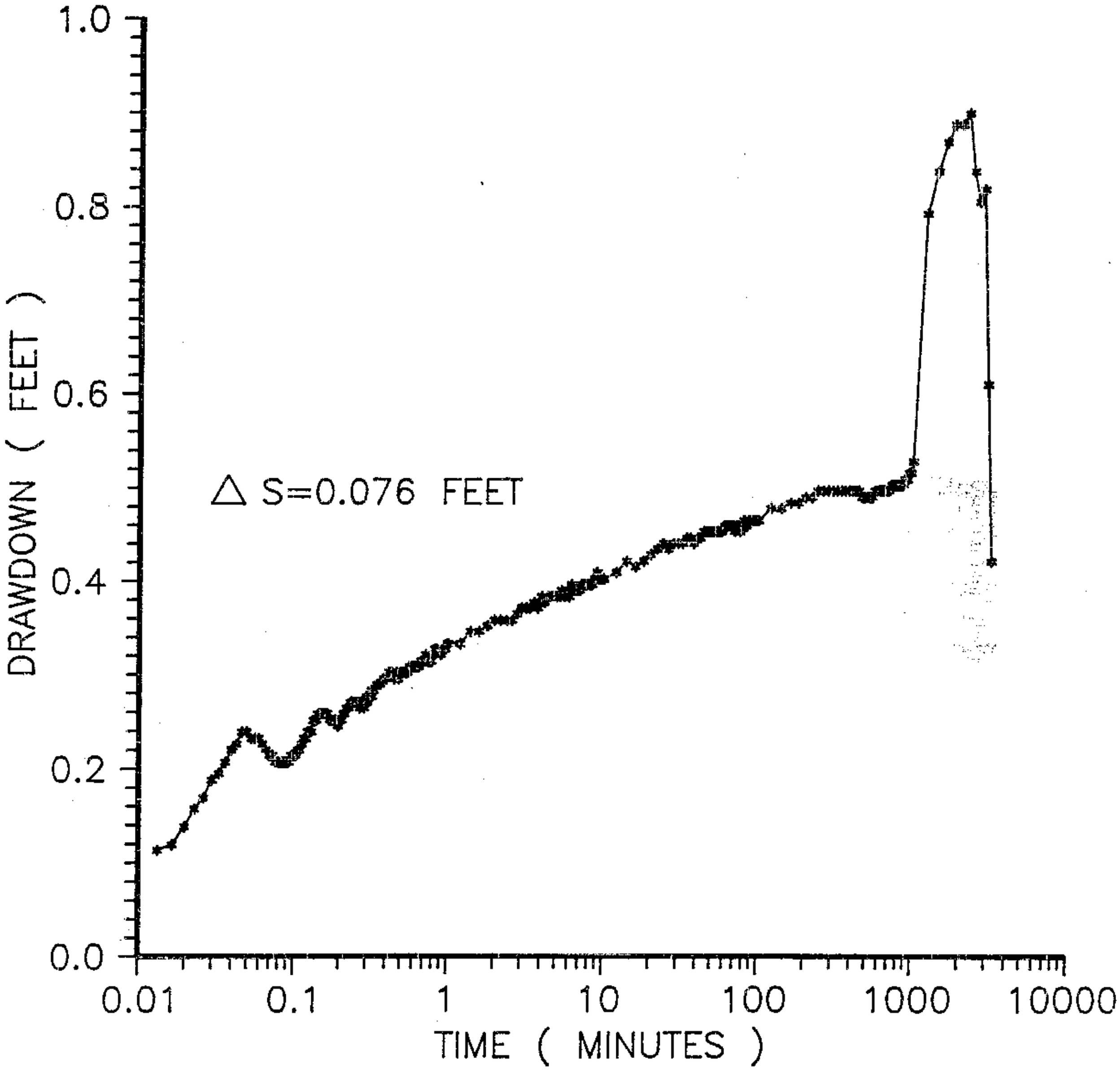

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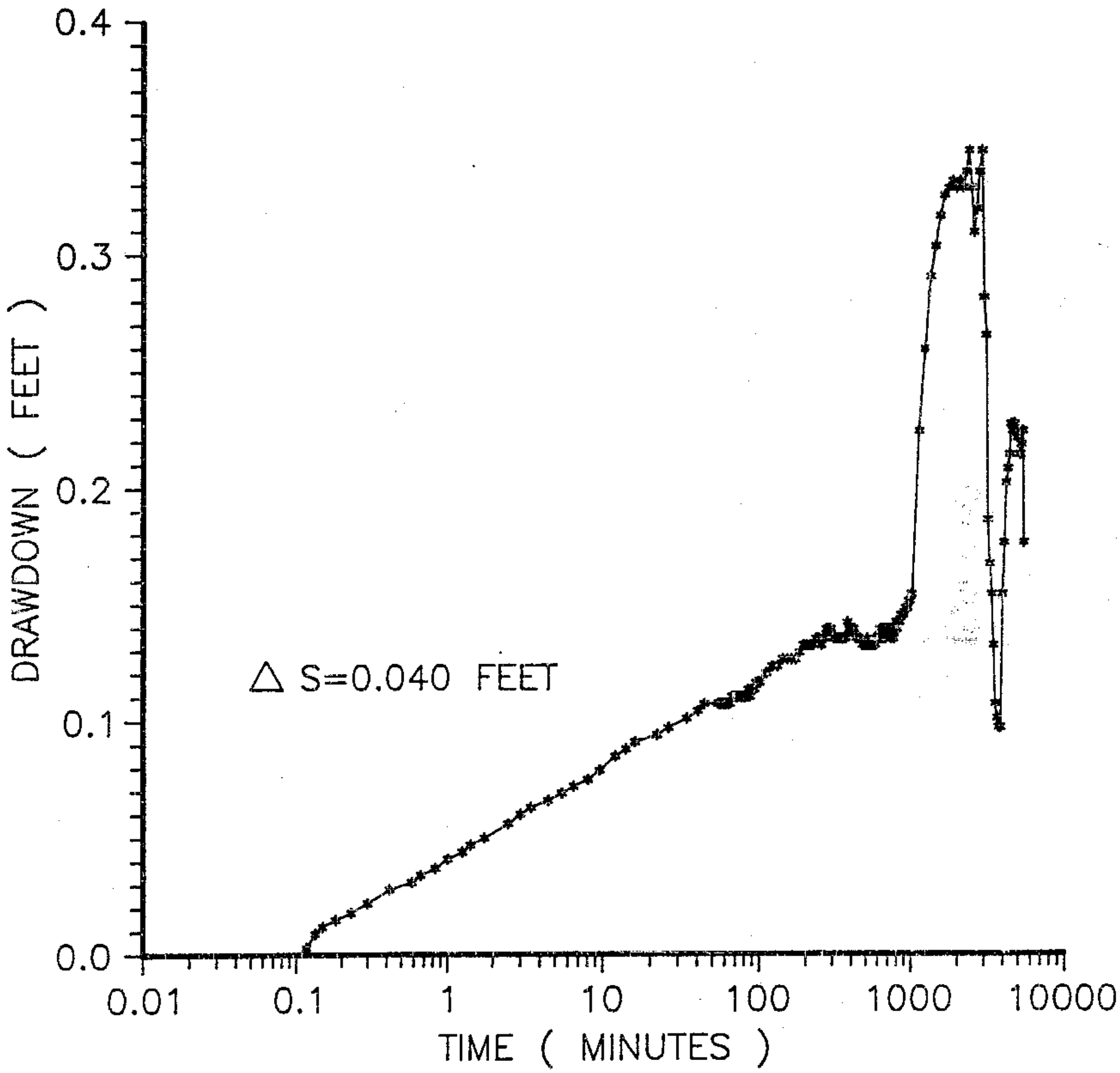
FIGURE V-11. SEMI-LOG PLOT OF DRAWDOWN vs TIME IN OBSERVATION WELL LM-3871.



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PROJECT NAME: GREENMEADOWS NUMBER: 01-02491.00

FIGURE V-12. SEMI-LOG PLOT OF DRAWDOWN vs. TIME IN PRODUCTION WELL #3A.

transmissivity values for both wells. The hydraulic coefficients determined from aquifer performance testing of the Water-Table Aquifer at the site are summarized in Table V-2. Inspection of the table indicates that both of the analytic methods yielded similar results.

Water levels in the upper part of the water-table aquifer were monitored in piezometer P-1 during the Water-Table Aquifer APT. This zone was monitored to assess the degree of separation between the upper and lower parts of the water-table aquifer that is provided by the clayey sand deposits. Review of the time and head data does indicate a significant degree of separation within the aquifer. For example after 10 minutes of pumpage during the APT a drawdown of 0.40 feet was recorded in production zone monitor well LM-3871 while only 0.09 feet of drawdown was noted in piezometer P-1 which is located approximately the same distance from the pumped well. Similarly, after 100 minutes of pumping, well LM-3871 experienced 0.47 feet of drawdown while only 0.34 feet of drawdown was measured in P-1. The delayed response to pumpage in the upper sediments indicates that the water-table aquifer exhibits the characteristics of a semi-unconfined system at the water treatment plant site.

The data collected from the instantaneous injection "slug" tests performed at the site were analyzed to assess the hydraulic characteristics of the shallow sediments. The data from piezometer P-1 were analyzed using four different methods. The analysis results are included in Appendix C. A value for horizontal hydraulic conductivity of 2.6 feet/day was selected based on the slug test results and observed geologic conditions. This represents the upper six to seven feet of sediments at the treatment plant site which is comprised primarily of clayey sands. The vertical hydraulic conductivity value obtained was roughly one order of magnitude smaller at 0.265 ft/day. This value was determine from the slug data obtained from piezometer P-2. The analysis method utilized is included in Appendix C.

TABLE V-2. AQUIFER HYDRAULIC COEFFICIENTS OF THE WATER-TABLE AQUIFER

WELL	TRANSMISSIVITY (GPD/FT)	SPECIFIC YIELD*
CURVE MATCHING METHOD		
LM-3871	1,600,000	0.15
#3A	3,120,000	0.15
STRAIGHT-LINE METHOD		
WELL	**TRANSMISSIVITY (GPD/FT)**	**SPECIFIC YIELD***
LM-3871	1,700,000	0.15
#3A	3,234,000	0.15

*VALUES ESTIMATED

TABL5/01-02491.TAB/GNG

VI. COMPUTER MODELLING AND IMPACTS ASSESSMENT

A. Introduction

Two numerical models were developed to examine both the local and regional impacts of the requested 1997 withdrawals. The major objectives of the modeling effort are:

1. To determine drawdown at on/off-site wetlands resulting from projected 1997 withdrawals from the Greenmeadows wellfield, and
2. To determine the regional scale effect of the additional withdrawals.

A fine grid model to simulate water-table and Sandstone aquifer response at and close to the Greenmeadows wellfield was developed to investigate impact to on-site wetlands. A larger scale simulation was done using the SFWMD Lee County model to examine regional effect of the proposed increased withdrawal rates.

B. Fine Grid Model

1. Introduction

To examine drawdown in the water-table and Sandstone aquifers resulting from increased withdrawals at the Greenmeadows wellfield, a three dimensional finite difference model of the wellfield and its vicinity was developed. Variable cell widths were used with smaller grid cells near wells or areas of anticipated rapid head changes. A discussion of the hydrologic setting and modeling considerations are provided in this section.

2. Hydrogeologic Setting

The shallow aquifer system at the Greenmeadows wellfield is made up of two significant aquifers, the water-table and the Sandstone aquifer. These have been described in Section IV of this report. Several wetland sites occur throughout the project area where the water-table intercepts the ground surface; these are shown in Figure VI-1.

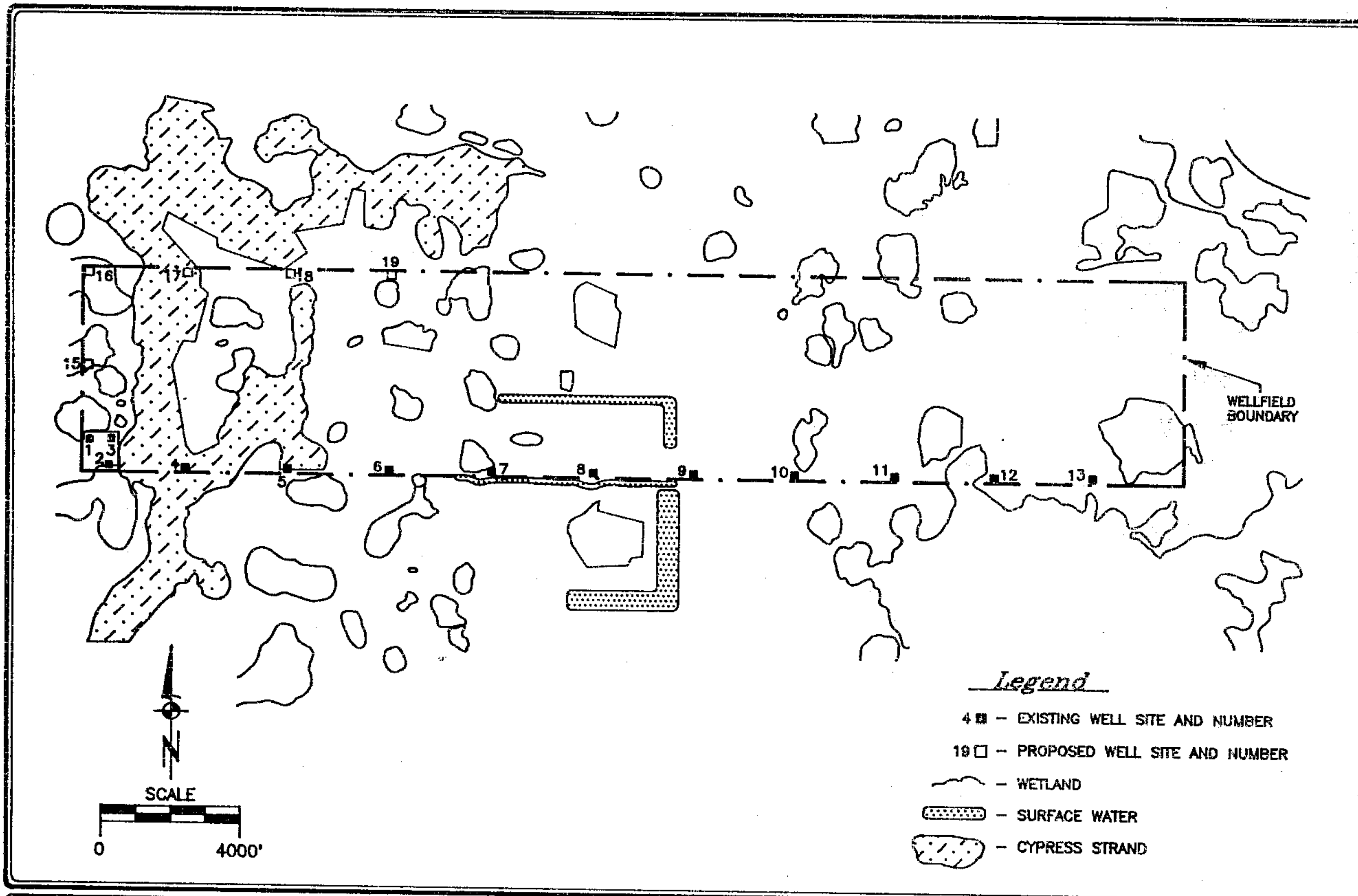

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FIGURE VI-1. MAP SHOWING WELLFIELD AND WETLAND AREAS.

3. Conceptual Model

A quasi three dimensional model of the project site was developed. The major aquifers were represented by a three layer model. The top two layers represent the water-table while the third model layer represents the Sandstone aquifer. A thin clayey sand deposit separates the two water-table layers. The Sandstone aquifer is separated from the water-table aquifer by a leaky confining bed. The quasi three-dimensional model represents the confining clay layers by a leakance term obtained by dividing the vertical hydraulic conductivity of the confining beds by their respective thickness.

Hydraulic properties of each of the model layers are assigned based on results obtained from aquifer performance tests conducted at the water treatment plant site located at the western end of the wellfield. Test procedures and results are described in Sections III and V of this report.

A specific yield of 0.15 is assumed for the water-table aquifer. This value was estimated based on the geology of the site and is considered a conservative estimate as it falls within the lower range of specific yield typically observed for unconfined aquifers. The choice of a higher value for the specific yield would result in reduced drawdown for similar withdrawal rates.

The water-table aquifer was represented by two layers, a relatively tight shallow surface layer underlain by a more permeable production zone. Hydraulic conductivity of 2.6 ft/day and average thickness of 6 feet were assigned for the upper water-table aquifer. Hydraulic conductivity of the water-table production zone was 5012.5 ft/day with layer thickness of 40 feet. The total water table transmissivity used in the model was 1,500,000 gpd/ft. This is slightly less than the lower test result presented in section V. The hydraulic connection between the two layers of the water table aquifer is controlled by the thin, clayey sand deposit that separates them. The leakance specified in the model is vertical hydraulic conductivity, k_v, divided by the thickness of the low permeability deposits. A leakance of 0.396 gpd/ft^3 is used in the model.

For the Sandstone aquifer, a uniform transmissivity of 4010 ft^2/day is applied. Storage in the Sandstone aquifer was determined from on-site aquifer performance test data. The computed storage ranged from 1.23×10^{-5} to 2.8×10^{-4}, Sandstone storage of 1.5×10^{-4} is used in the model. Sandstone leakance values determined from on site testing ranged from 1.1×10^{-4} gpd/ft^3 to 1.65×10^{-3} gpd/ft^3. A value of 2.9×10^{-4} gpd/ft^3 was used in the model. Table VI-1 shows a summary of the aquifer parameters used in the model.

4. Boundary Conditions and Hydraulic Controls

Rock pits are represented in the model by the river package which allows recharge to the aquifer or drainage from the aquifer depending on the water level within the pits and the head in the aquifer.

Core model area extends 1 mile around the well field. No flow boundaries are applied at the model perimeter located 1.5 miles beyond the core model area. The no-flow boundaries result in drawdown estimates which are slightly higher than is expected especially within the immediate vicinity of the boundary.

5. Model Design and Results

The U.S. Geological Survey modular three-dimensional finite difference groundwater flow code, MODFLOW, was used to generate the model of the project site. A 79 x 31 variably spaced grid was superimposed over the site and is included in the appendix as Figure D1. Cell widths vary from 200 feet to over 1 mile; with the smaller cells corresponding to well locations and areas where rapid changes in head are anticipated. The larger cells are used at the boundaries and at areas where head change is less rapid. Withdrawal from wells were from layers two and three, corresponding to the lower portion of the water-table aquifer and the Sandstone

TABLE VI-1.

SUMMARY DATA OF AQUIFER PARAMETERS USED IN MODEL

MODEL LAYER	K (ft/day)	Thickness (feet)	SY_a S_b	Vcont (/day)
Layer 1 Upper water-table	2.6	6	0.15_a	*
clayey Sand unit	*	*	*	0.053
Layer 2 Lower water-table	5012.5	40	0.1500_a 0.0005_b	*
Hawthorn confining bed	*	*	*	3.9×10^{-5}
	T (ft^2/day)			
Layer 3 Sandstone	4010	-	0.00015_b	*
No flow boundary				

a: specific yield, used by model when aquifer is unconfined
b: storage coefficient used by model when aquifer is confined

TABLE VI-2.

WATER-TABLE WELLS, CELL LOCATION AND WELL CAPACITY

ROW NUMBER	COLUMN NUMBER	PRODUCTION CAPACITY (gpm)	WELL NUMBER	ACTIVITY	
				PERIOD 1	PERIOD 2
21	9	150	WELL 1D	✓	
23	12	150	WELL 2A		✓
20	12	150	WELL 3A	✓	
21	12	150	WELL 3B		✓
23	17	150	WELL 4A	✓	
23	23	150	WELL 5A		✓
23	29	230	WELL 6A	✓	✓
23	35	150	WELL 7A	✓	
23	41	230	WELL 8A	✓	✓
23	47	230	WELL 9A	✓	✓
23	53	230	WELL 10A	✓	✓
23	59	230	WELL 11A	✓	✓
23	65	230	WELL 12A	✓	✓
23	71	150	WELL 13A		✓
15	9	150	WELL 15A	✓	
9	9	150	WELL 16A		✓
9	17	150	WELL 17A	✓	
9	23	150	WELL 18A		✓
9	29	150	WELL 19A	✓	

TABLE VI-3.

SANDSTONE AQUIFER WELLS, CELL LOCATION AND WELL CAPACITY

ROW NUMBER	COLUMN NUMBER	PRODUCTION CAPACITY (gpm)	WELL NUMBER	ACTIVITY	
				PERIOD 1	PERIOD 2
21	9	500	WELL 1	✓	
23	12	500	WELL 2	✓	✓
20	12	500	WELL 3		✓
23	17	500	WELL 4	✓	
23	23	500	WELL 5	✓	✓
23	29	500	WELL 6		✓
23	35	500	WELL 7	✓	
23	41	500	WELL 8	✓	✓
23	47	500	WELL 9		✓
23	53	500	WELL 10	✓	
23	59	500	WELL 11	✓	✓
23	65	500	WELL 12		✓
23	71	500	WELL 13	✓	
15	9	500	WELL 15	✓	✓
9	9	500	WELL 16		✓
9	17	500	WELL 17	✓	
9	23	500	WELL 18	✓	✓
9	29	500	WELL 19		✓

aquifer. Well locations were represented by well cells with specified withdrawal rates listed in tables VI-2 and VI-3.

Aquifer response to withdrawals for a 90 day period was simulated. The following assumptions were made and incorporated into the model.

1. There is no recharge from precipitation over the project area during the 90 day modeling period.
2. Surface water features within the study area are represented as river cells (in the MODFLOW river package) and would serve as source or drains depending on the head within the adjacent model cells.

Ten stress periods were used to simulate the 90 day withdrawal scenario. Withdrawals were alternated between wells such that different wells were active in successive stress periods. Figures VI-2 and VI-3 show location of active wells in successive stress periods. This method was used to most realistically simulate the wellfield pumpage. The withdrawal capacity of the wellfield exceeds the requested allocation so wells can be used intermittently.

A total production of approximately 12 MGD was simulated from the two aquifers. Maximum drawdowns of less than a foot were observed for the water-table aquifer, and less than 60 feet for the Sandstone aquifer. Figures VI-4 and VI-5 show the contour of drawdown in the water-table aquifer and the Sandstone aquifer resulting from the withdrawal rates shown in Tables VI-2 and VI-3. The model output file showing the drawdown within each model cell is provided in Appendix D.

Based on the model results, it is clear that less than 1 foot of drawdown is observed at the water table as a result of the projected 1997 withdrawal rates.

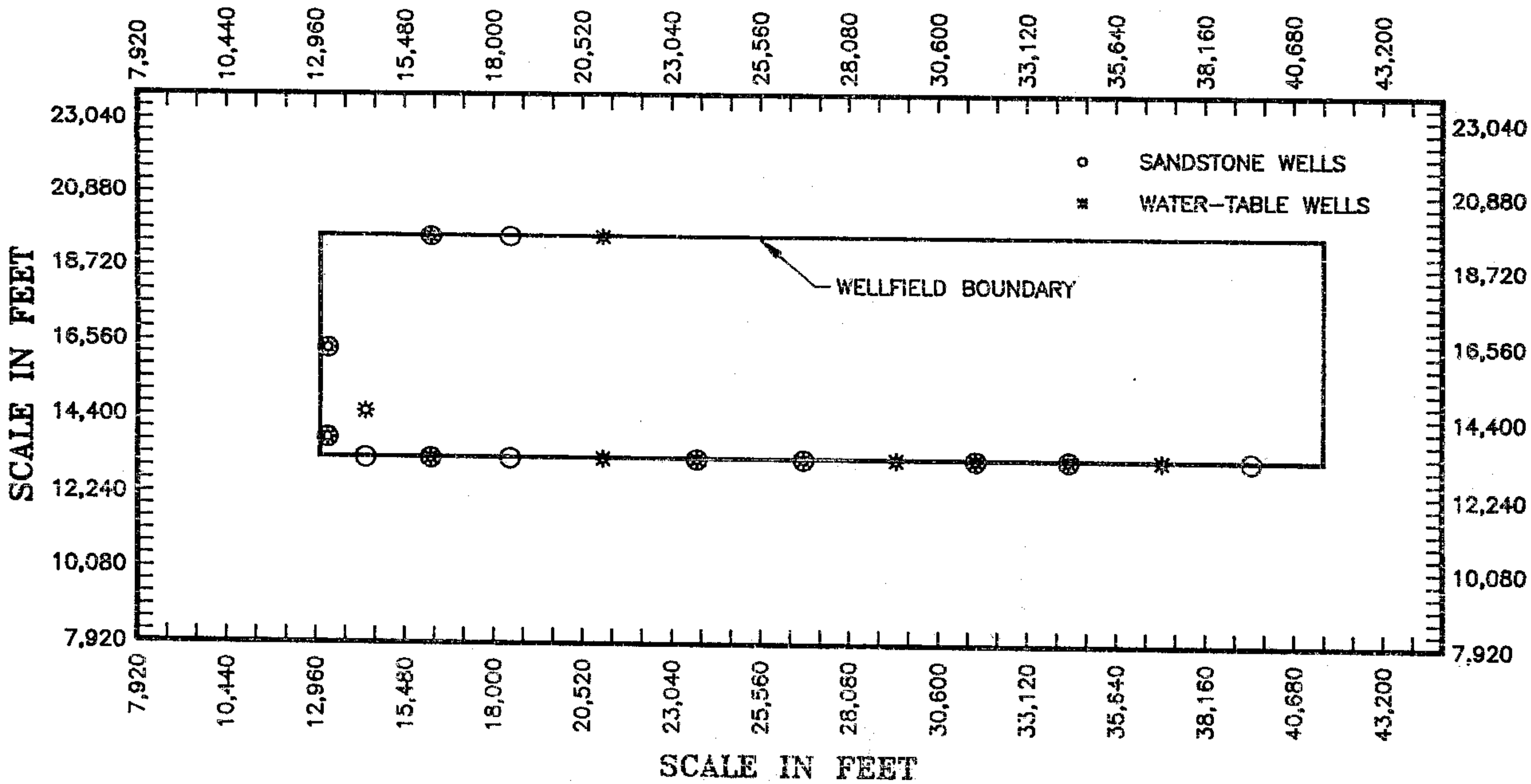

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FIGURE VI-2. LOCATION OF ACTIVE WATER-TABLE AND SANDSTONE AQUIFER WELLS IN THE FIRST STRESS PERIOD.

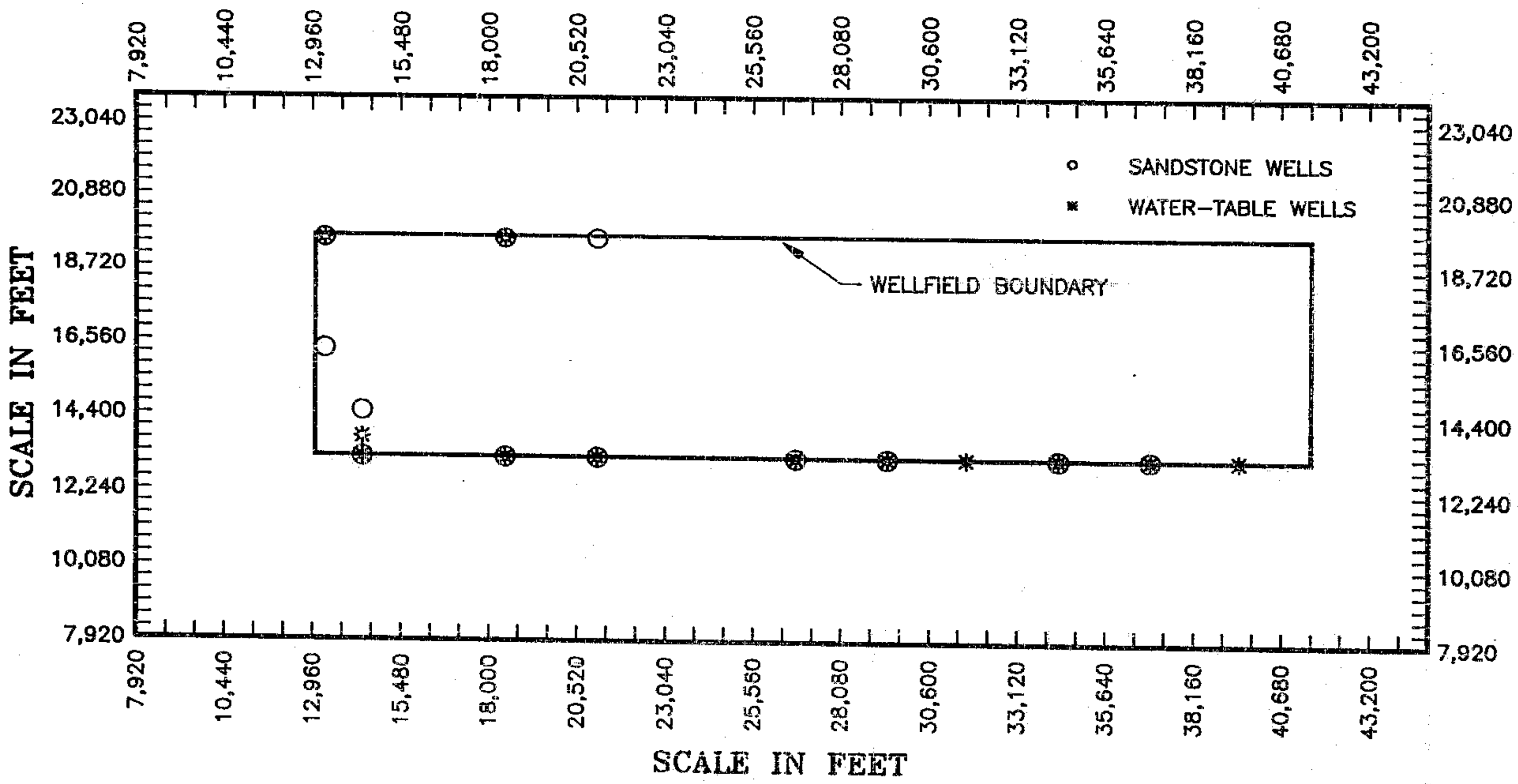

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FIGURE VI-3. LOCATION OF ACTIVE WATER-TABLE AND SANDSTONE AQUIFER WELLS IN THE SECOND STRESS PERIOD.

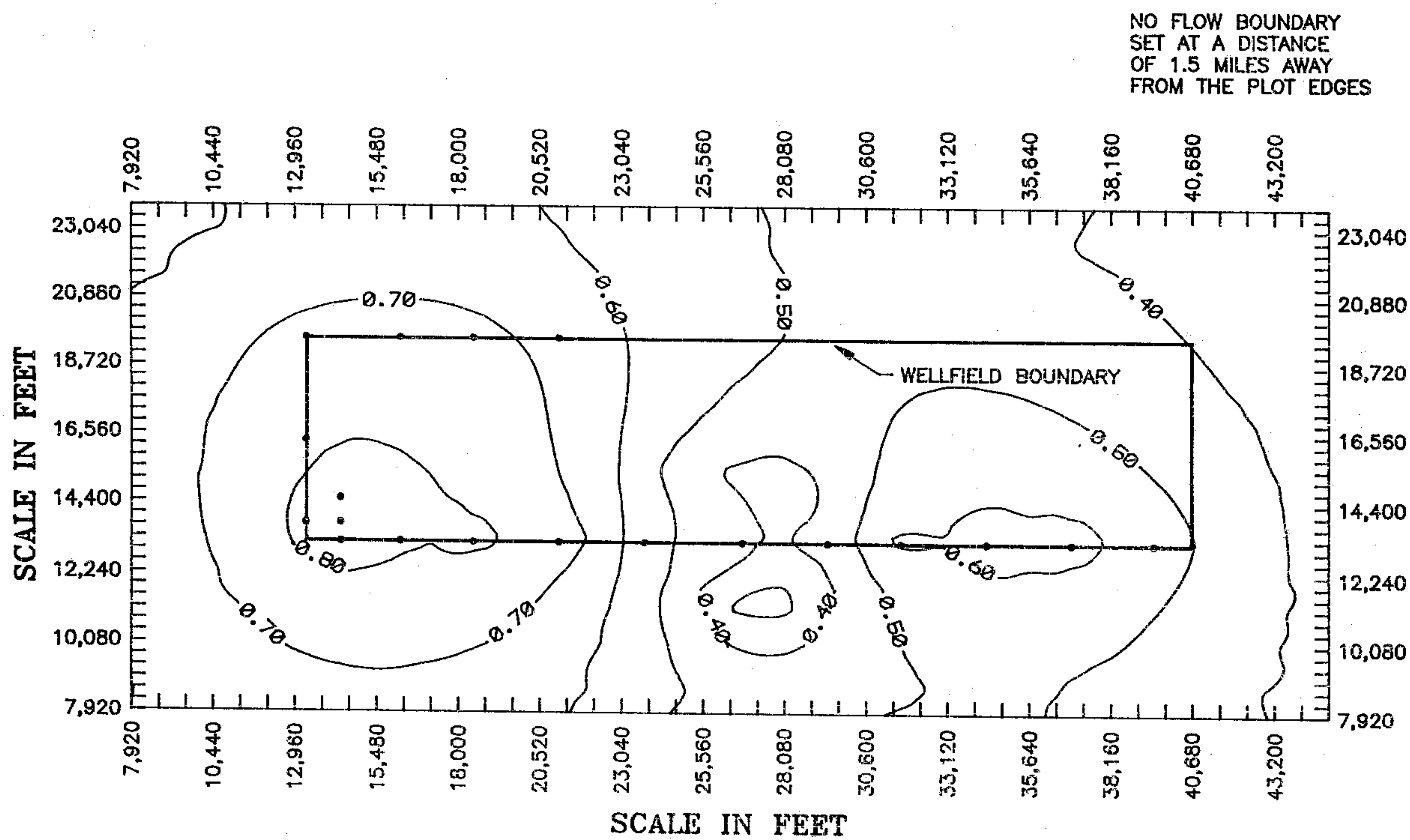

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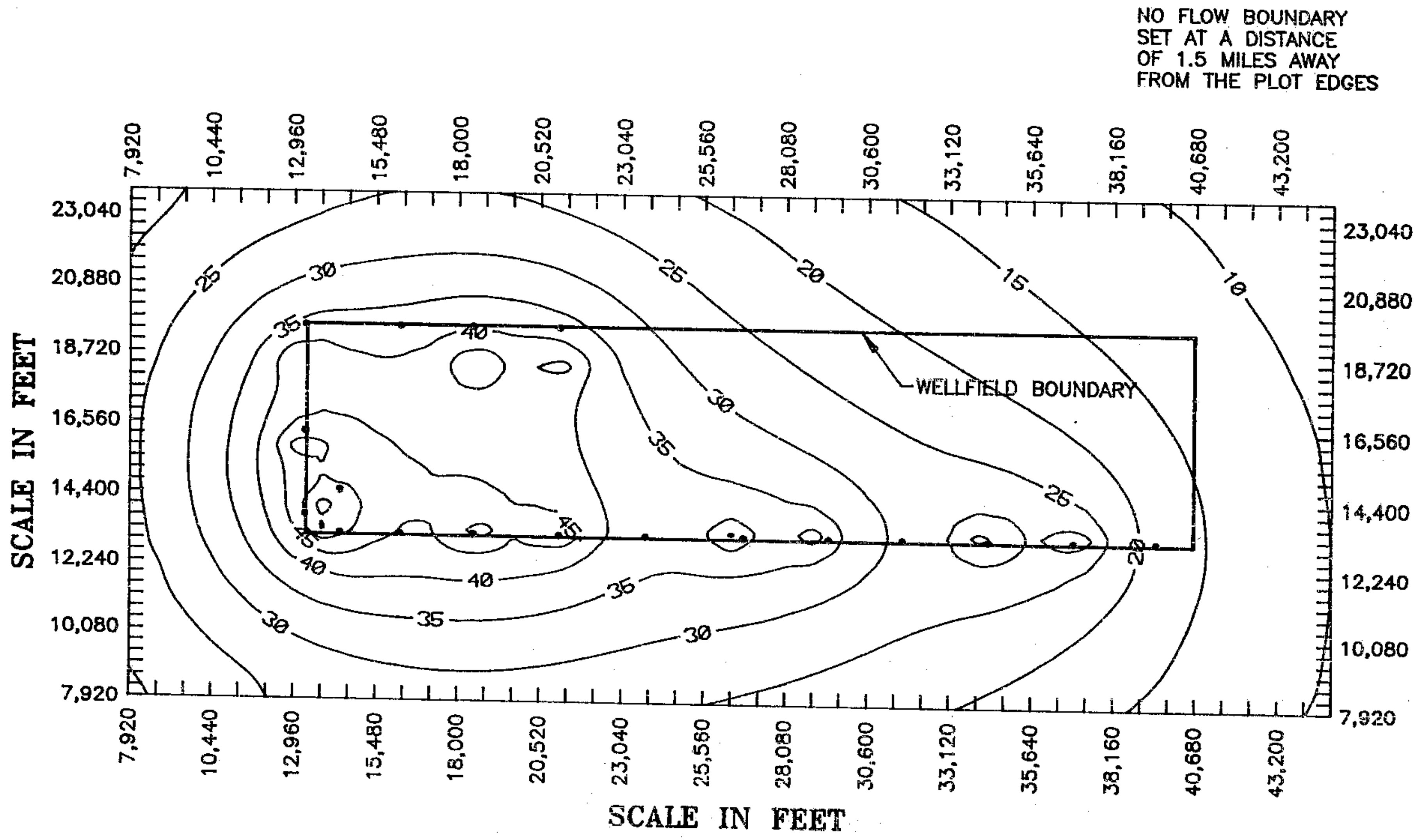
FIGURE VI-4. CONTOUR OF DRAWDOWN IN THE WATER-TABLE AQUIFER AT THE END OF 90 DAYS USING MAXIMUM DAILY WITHDRAWAL RATE OF 12 mgd.



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	PROJECT NAME: GREEN MEADOWS PROJECT NUMBER: 01-02491.00	

FIGURE VI-5. CONTOUR OF DRAWDOWN IN THE SANDSTONE AQUIFER AT THE END OF 90 DAYS USING MAXIMUM DAILY WITHDRAWL RATE OF 12 mgd.

C. Regional Model

1. Introduction

The SFWMD three dimensional finite difference Lee County model (Bower et al. 1990) was used to determine the regional effect of additional withdrawals from the Greenmeadows wellfield. Cumulative impacts were assessed by running the model with the proposed 1997 maximum daily withdrawal rate from Greenmeadows.

2. Hydrogeologic Setting

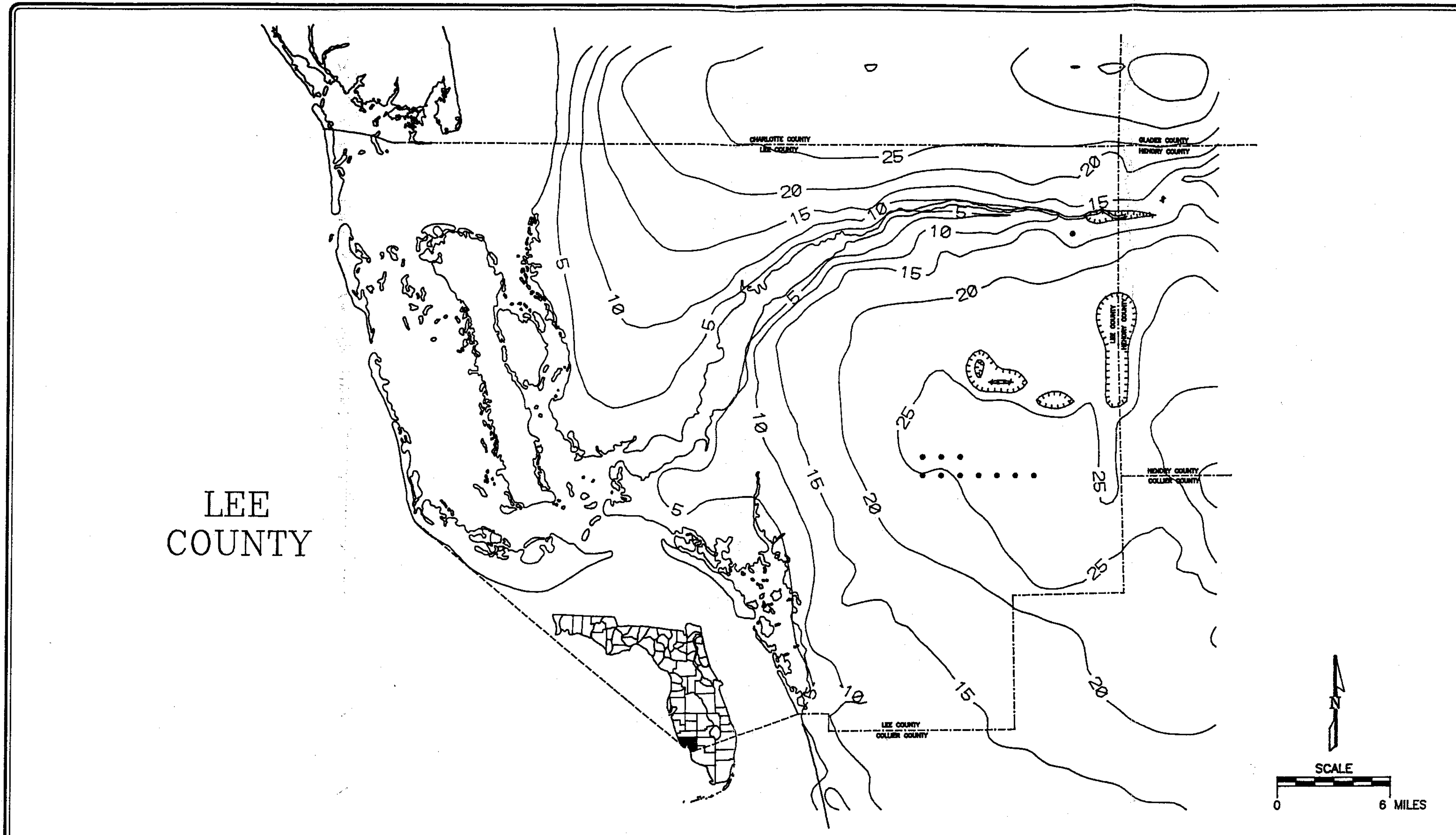
The steady state SFWMD model of Bower et al. (1990) was used with no modification to the aquifer parameters. The well package was however modified to achieve the modeling objective. The modifications to the well package are described below.

3. Well Package

Well package used for this study was generated by the planning department of the SFWMD and represents the 1990 withdrawals from Lee County. The withdrawals corresponding to the Greenmeadows well field were modified to show proposed 1997 withdrawals from the Greenmeadows wellfield. The 1997 withdrawals are identical to those used in the fine grid model.

4. Results

The computed steady state piezometric surface for the water-table and Sandstone aquifer based on proposed 1997 Greenmeadows withdrawals are shown in Figures VI-6 and VI-7.



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	PROJECT NAME: GREEN MEADOWS WELLFIELD PROJECT NUMBER: 01-02491.00	

FIGURE VI-6. CONTOUR OF COMPUTED HEADS (FEET NGVD) IN WATER-TABLE AQUIFER AT END OF 90 DAY SIMMULATION WITH PROPOSED 1997 WITHDRAWALS FROM GREEN MEADOWS WELLFIELD (REGIONAL MODEL)

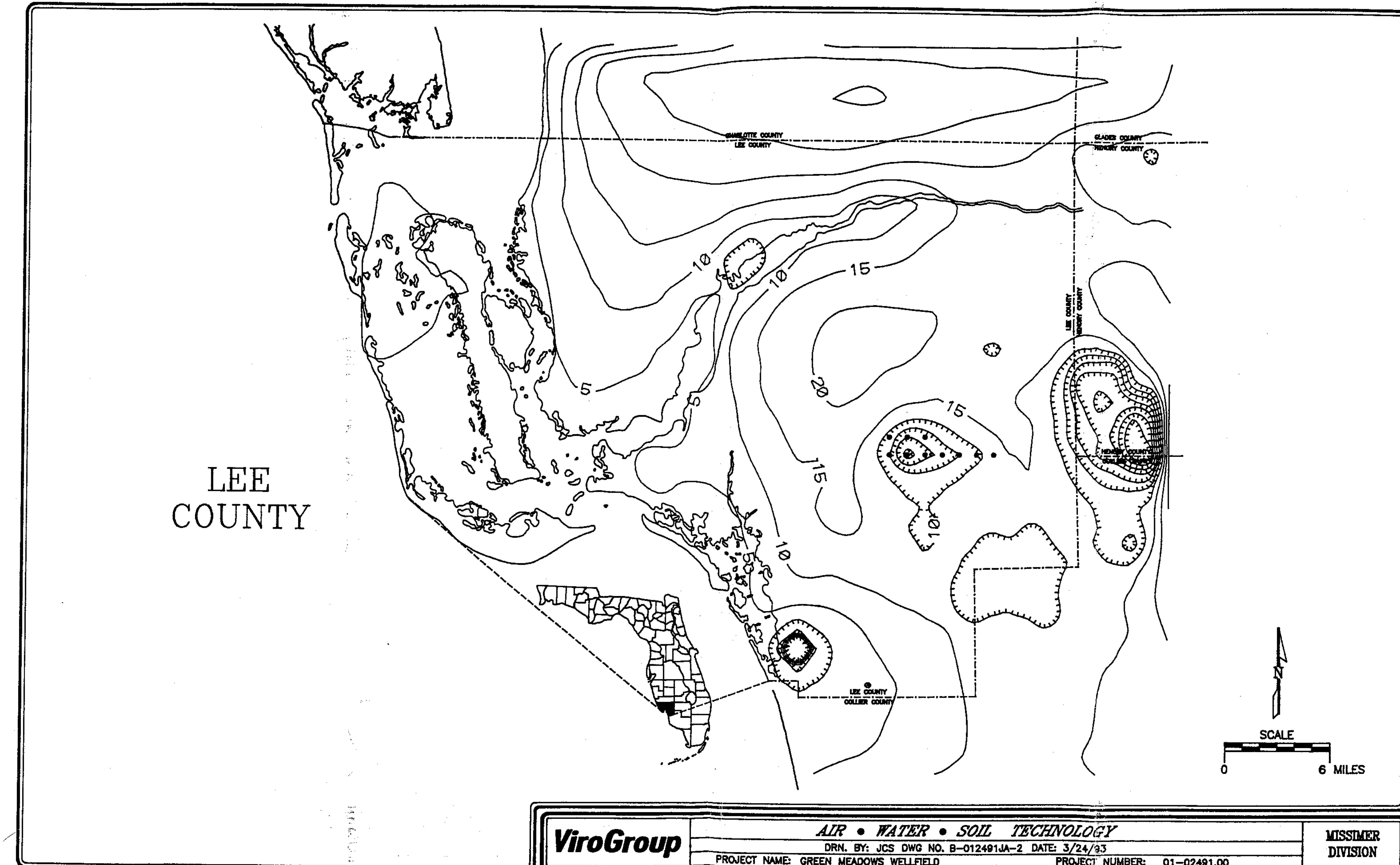


FIGURE VI-7. CONTOUR OF COMPUTED HEADS (FEET NGVD) IN SANDSTONE AQUIFER AT END OF 90 DAY SIMMULATION WITH PROPOSED 1997 WITHDRAWAL FROM GREEN MEADOWS WELLFIELD (REGIONAL MODEL)

5. Model Limitation

While the regional model provides a good tool for assessing the far-field impact of the proposed increased withdrawals from the study area, we suggest caution in the interpretation of the regional model results based on the following attributes of the model.

- The model grid cells have a 1 x 1 mile dimensions. Computed piezometric heads are thus averaged over a one square mile cell and variations at a smaller resolution are unrecoverable by the model.
- Future withdrawals from other wellfields within the County are not represented. The computed heads do not take into account potential increased withdrawals for other users.

We recommend use of the fine grid model for determining aquifer response to the 1997 withdrawals at and close to the wellfield.

VII. WELLFIELD OPERATION AND MONITORING

A. Wellfield Operation

The impacts associated with pumpage from the Greenmeadows Wellfield were simulated with a numerical computer model as described in Section VI of this report. Numerous scenarios were run using various pumping rates and withdrawal locations. A withdrawal scenario was determined that yielded minimized impacts and was practical for implementation. A description of the wellfield scheduling follows.

In order to supply the maximum demand of 12 MGD projected for 1997 a combination of Sandstone Aquifer and Water-Table Aquifer withdrawals will be required. Approximately 70 to 75% of this pumpage will be from the Sandstone Aquifer and 25 to 30% will be from the Water-Table Aquifer. Presently, there are 13 production wells tapping the Sandstone Aquifer and 14 production wells tapping the Water-Table Aquifer. The proposed wellfield expansion would include constructing 5 additional wells into each aquifer.

Sandstone Aquifer wells will be pumped at a rate of approximately 500 gpm each with roughly one half to two thirds of the wells operating at any given time. Production will be cycled to the inactive wells approximately every 7 to 10 days. Cycling the wells will help to minimize impacts.

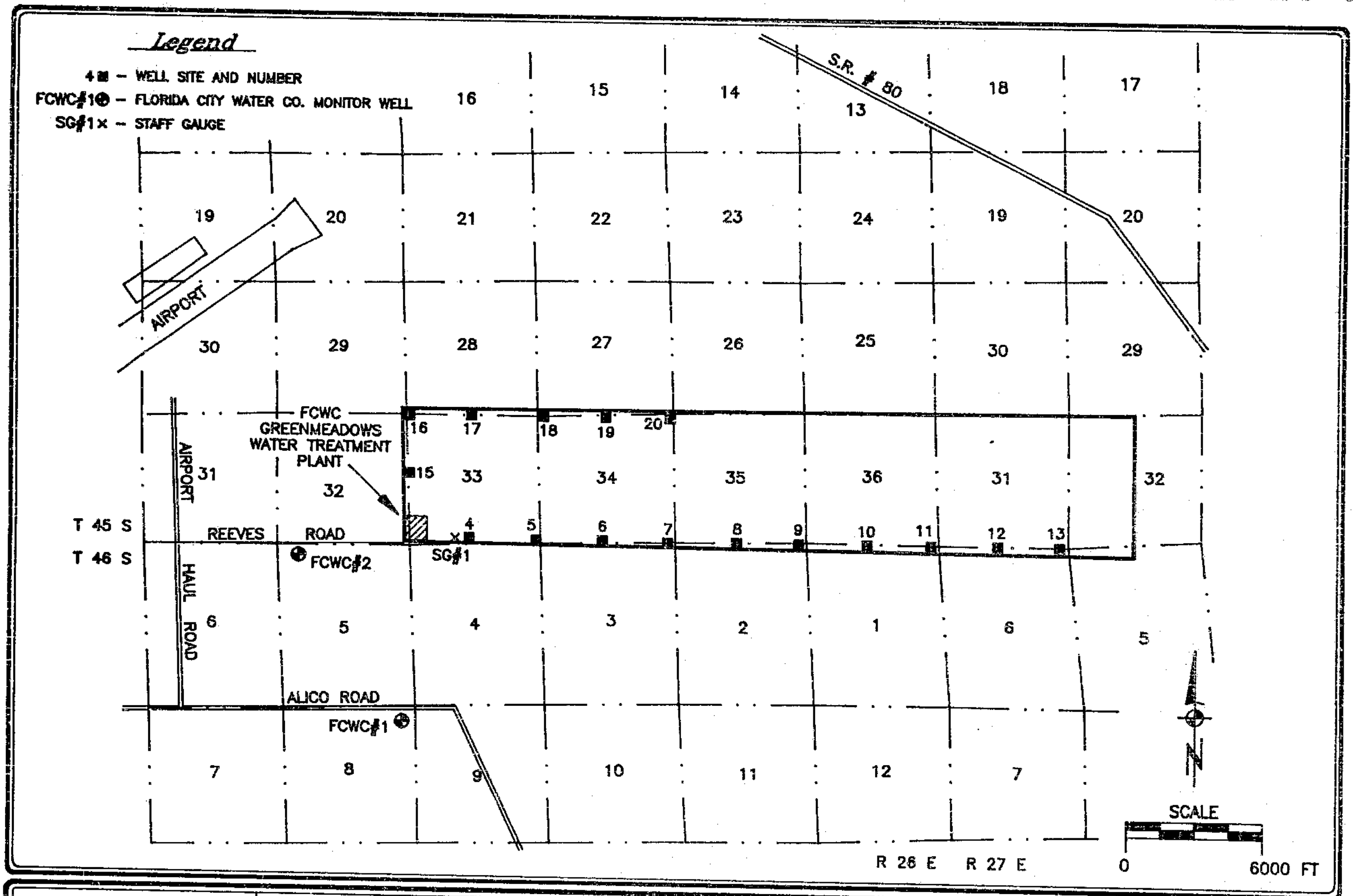
The Water-Table Aquifer wells will also be cycled to minimize impacts. Withdrawals will vary in these wells from 150 gpm to 230 gpm. Greater withdrawal rates are specified for wells located distant from wetland areas. In addition some of the wells (#'s 6A, 8A, 9A, 10A, 11A, 12A) will be run continuously and not included in the cycling. These wells are again located distant from wetland areas.

The proposed wellfield scheduling was determined based on results of computer simulations of anticipated drawdown impacts due to maximum day usage for 90 days without recharge. Actual wellfield scheduling will vary based on demand and monitoring data. It is likely that withdrawals from less than half the wells will be required to meet average day demands. Withdrawals from certain wells are restricted based on water levels observed at staff gauges placed in on-site wetland areas. The wellfield scheduling utilized will need to comply with limiting conditions stipulated on the water use permit and will be conducted to minimize impacts.

B. Monitoring Plan

Water level monitoring is currently being conducted in the vicinity of the Greenmeadows Wellfield. The United States Geological Survey (USGS) monitors water levels in three wells located at the southwest corner of the water treatment plant site. The wells, numbered L-1983, L-1998, and L-1999 tap the Upper (Mid) Hawthorn, Sandstone, and Water-Table aquifers respectively. The Sandstone Aquifer well is equipped with a recorder that takes hourly water level measurements. The other two wells are monitored monthly by USGS staff. Locations of the wells are shown on Figure III-1.

Florida Cities Water Company personnel monitor two Sandstone Aquifer wells on a monthly basis. Well FCWC #1 is located adjacent to Alico Road approximately one mile south of the water treatment plant site. Well FCWC #2 is located approximately 1/2 mile west of the water treatment plant on the south side of Reeve's Road. These wells were originally equipped with continuous water level recorders. However, only monthly water measurements have been made for the past several years. The well locations are shown on Figure VII-1. In addition, static and pumping water levels in the production wells are measured monthly.



ViroGroup	AIR • WATER • SOIL TECHNOLOGY DRN. BY: JCS DWG NO. A-012491KC-2 DATE: 3/17/93 PROJECT NAME: GREENMEADOWS WELLFIELD PROJECT NUMBER: 01-02491.00	MISSIMER DIVISION

FIGURE VII-1. MAP SHOWING WELLFIELD AND LOCATIONS OF MONITOR WELLS AND THE STAFF GAUGE.

The water treatment plant personnel also take readings from a staff gauge located in the western part of the wellfield near well site #4 as shown on Figure VII-1. Pumpage from Water-Table Aquifer wells at sites 1 through 4 is restricted based upon the staff gauge readings. During the dry season (November 1 to May 31) pumpage is allowed only when water levels exceed 22.86 feet NGVD. During the wet season pumpage is allowed when water levels exceed 25.47 feet. An additional staff gauge is proposed for installation between well sites 11 and 12. This gauge had not been installed as of March 1, 1993.

The following recommendations concerning wellfield monitoring should be considered to improve the effectiveness of the monitoring program. An electronic data logger should be installed in one or both of the Florida Cities Water Company Sandstone Aquifer monitor wells. These devices accurately measure water levels at intervals specified by the installer and can be placed inside the wells for security and protection from the elements. Water level data can be transferred directly from the data logger to a computer for submittal to regulating agencies or for data analysis. The water level data can be used to evaluate wellfield performance and identify potential problems.

An additional data logger should be installed in either a new or existing Water-Table Aquifer monitor well. Placing a shallow water-table aquifer monitor well between well sites 11 and 12 in lieu of the proposed staff gauge would enable water level measurements when levels fall below land surface. The location of this well should be approved by SFWMD staff. The data from this well can be used in conjunction with the existing staff gauge data to assess wetland hydroperiod duration.

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APPENDIX A

GEOLOGIST'S LOGS

GEOLOGIST'S LOG OF WELL LM-3870

DEPTH (feet)	DESCRIPTION
0 - 2	SAND, LIGHT OLIVE GRAY (5Y 5/2), FINE, WELL SORTED, CLAYEY, OCCASIONAL ORGANICS.
2 - 5	SAND, DARK YELLOWISH ORANGE (10YR 6/6), FINE,WELL SORTED, CLAYEY, SANDSTONE LENSE AT 3 FEET.
5 - 10	LIMESTONE, YELLOWISH GRAY (5Y 8/1), SOFT, VERY SANDY, COMMON SHELL.
10 - 12	LIMESTONE, VERY PALE ORANGE (10YR 8/2), HARD, WELL INDURATED, SANDY, OCCASIONAL SHELL.
12 - 19	LIMESTONE, VERY PALE ORANGE (10YR 8/2), SOFT TO MEDIUM HARD, SANDY, ABUNDANT SHELL.
19 - 35	LIMESTONE, YELLOWISH GRAY (5Y 8/1), HARD, WELL INDURATED, MICRITIC MATRIX, OCCASIONAL SHELL.
35 - 45	LIMESTONE, LIGHT GRAY (N7), SOFT, MARLY, COMMON SHELL.
45 - 79	CLAY, DUSKY YELLOW GREEN (5GY 5/2), PHOSPHATIC, MINOR SHELL AND LIMESTONE.
79 - 99	CLAY, GRAYISH OLIVE GREEN (5GY 3/2), HIGHLY PHOSPHATIC, MINOR SHELL AND LIMESTONE.
99 - 109	LIMESTONE, YELLOWISH GRAY (5Y 7/2), MEDIUM HARD, SANDY, CASTS AND MOLDS, OCCASIONAL SHELL.
109 - 119	LIMESTONE, LIGHT OLIVE GRAY (5Y 5/1), MEDIUM HARD, SANDY, MOLDIC, VUGGY, OCCASIONAL SHELL.
119 - 139	LIMESTONE, YELLOWISH GRAY (5Y 7/2), SOFT TO MEDIUM HARD, FRIABLE, SANDY, CASTS AND MOLDS, COMMON SHELL.
139 - 145	LIMESTONE, AS ABOVE.

GEOLOGIST'S LOG OF WELL LM-3370
CONTINUED:

DEPTH (feet)	DESCRIPTION
145 - 150	CLAY, OLIVE GRAY (5Y 3/2), PHOSPHATIC, COMMON LIMESTONE AND SHELL FRAGMENTS.
150 - 155	SANDSTONE, LIGHT OLIVE GRAY (5Y 5/2), HARD, WELL INDURATED, FINE GRAINED, CLAY INTERBEDDED.
155 - 175	CLAY, GRAYISH OLIVE GREEN (5GY 3/2), FINELY PHOSPHATIC, COMMON SHELL FRAGEMENTS.
175 - 190	CLAY, YELLOWISH GRAY (5Y 8/1), FINELY PHOSPHATIC, MINOR SHELL AND LIMESTONE INTERBEDDED.
190 - 195	LIMESTONE, YELLOWISH GRAY (5Y 8/1), SOFT, FRIABLE, MARLY, CAST AND MOLDS, FINLEY PHOSPHATIC, CLAY INTERBEDDED.
195 - 200	CLAY, YELLOWISH GRAY (5Y 8/1), SOFT, STICKY, OCCASIONAL LIMESTONE AND SHELL FRAGMENTS.

GEOLOGIST'S LOG OF WELL LM-3871

DEPTH (feet)	DESCRIPTION
0 - 2	SAND, LIGHT OLIVE GRAY (5Y 6/2), FINE, WELL SORTED, CLAYEY, COMMON ORGANICS.
2 - 4	SAND, GRAYISH ORANGE (10YR 7/4), FINE, WELL SORTED, CLAYEY, MINOR SANDSTONE LENSES.
4 - 7	SAND, YELLOWISH GRAY (5Y 7/2), VERY FINE TO FINE, WELL SORTED, CLAYEY.
7 - 19	SANDSTONE, YELLOWISH GRAY (5Y 7/2) TO LIGHT GRAY (N7), HARD, WELL INDURATED, MEDIUM GRAINED, COMMON SHELL.
19 - 29	LIMESTONE, VERY PALE ORANGE (10YR 8/2), VERY HARD, WELL INDURATED, MINOR SHELL.
29 - 46	LIMESTONE, GRAYISH ORANGE (10YR 7/4) TO LIGHT GRAY (N7), MEDIUM HARD, CASTS AND MOLDS, VUGGY, COMMON SHELL, TRACE MARL.

APPENDIX B

TIME AND HEAD DATA

BACKGROUND WATER LEVELS IN THE WATER-TABLE AQUIFER PRODUCTION ZONE PRIOR TO THE SANDSTONE AQUIFER APT

TIME (MINUTES)	HEAD (FEET)	TIME (MINUTES)	HEAD (FEET)
0	0.13	675	0.121
15	0.13	690	0.111
30	0.13	705	0.115
45	0.13	720	0.115
60	0.13	735	0.115
75	0.13	750	0.118
90	0.13	765	0.111
105	0.13	780	0.102
120	0.13	795	0.099
135	0.13	810	0.105
150	0.13	825	0.105
165	0.13	840	0.105
180	0.13	855	0.11
195	0.13	870	0.099
210	0.127	885	0.096
225	0.124	900	0.096
240	0.124	915	0.092
255	0.124	930	0.089
270	0.121	945	0.086
285	0.124	960	0.092
300	0.124	975	0.089
315	0.127	990	0.083
330	0.127	1005	0.089
345	0.124	1020	0.08
360	0.118	1035	0.074
375	0.121	1050	0.083
390	0.118	1065	0.08
405	0.127	1080	0.067
420	0.124	1095	0.074
435	0.124	1100	0.067
450	0.127	1125	0.067
465	0.13	1140	0.067
480	0.127	1155	0.055
495	0.13	1170	0.042
510	0.127	1185	0.061
525	0.127	1200	0.074
540	0.13	1215	0.064
555	0.127	1230	0.055
570	0.124	1245	0.048
585	0.124	1260	0.064
600	0.13	1275	0.036
615	0.13	1290	0.07
630	0.13	1305	0.051
645	0.121	1320	0.058
660	0.124	1335	0.007

BACKGROUND WATER LEVELS IN THE SANDSTONE AQUIFER PRIOR TO THE SANDSTONE AQUIFER APT

TIME (MINUTES)	HEAD (FEET)	TIME (MINUTES)	HEAD (FEET)
0	0.114	690	6.132
15	0.488	705	6.189
30	0.804	720	6.24
45	1.083	735	6.259
60	1.388	750	6.335
75	1.647	765	6.373
90	1.869	780	6.418
105	2.098	795	6.462
120	2.313	810	6.506
135	2.503	825	6.551
150	2.706	840	6.589
165	2.871	855	6.634
180	3.055	870	6.659
195	3.22	885	6.71
210	3.385	900	6.742
225	3.524	915	6.767
240	3.651	930	6.811
255	3.778	945	6.837
270	3.924	960	6.856
285	4.019	975	6.913
300	4.14	990	6.932
315	4.266	1005	6.964
330	4.355	1020	7.001
345	4.476	1035	7.034
360	4.565	1050	7.065
375	4.666	1065	7.091
390	4.749	1080	7.103
405	4.844	1095	7.154
420	4.933	1110	7.167
435	5.003	1125	7.192
450	5.091	1140	7.224
465	5.174	1155	7.23
480	5.244	1170	7.281
495	5.32	1185	7.319
510	5.389	1200	7.357
525	5.459	1215	7.375
540	5.523	1230	7.389
555	5.605	1245	7.427
570	5.662	1260	7.452
585	5.745	1275	7.465
600	5.783	1290	7.522
615	5.847	1305	7.535
630	5.897	1320	7.554
645	5.98	1335	7.535
660	6.03	1350	7.624
675	6.081	1365	7.605

BACKGROUND WATER LEVELS IN THE SANDSTONE AQUIFER PRIOR TO THE SANDSTONE AQUIFER APT

1380	7.637	1425	7.687
1395	7.662	1440	7.707
1410	7.668	1455	7.726

DRAWDOWN IN OBSERVATION WELL LM-3870
DURING THE SANDSTONE AQUIFER APT

TIME (MINUTES)	HEAD (FEET)	TIME (MINUTES)	HEAD (FEET)
0.0100	0.577	2.5000	11.982
0.0133	0.603	3.0000	12.576
0.0166	0.615	3.5000	13.095
0.0200	0.653	4.0000	13.494
0.0233	0.692	4.5000	13.867
0.0266	0.742	5.0000	14.145
0.0300	0.806	5.5000	14.417
0.0333	0.882	6.0000	14.689
0.0500	1.339	6.5000	14.892
0.0666	1.872	7.0000	15.113
0.0833	2.368	7.5000	15.315
0.1000	2.818	8.0000	15.505
0.1166	3.211	8.5000	15.688
0.1333	3.548	9.0000	15.827
0.1500	3.827	9.5000	16.030
0.1666	4.061	10.0000	16.144
0.1833	4.252	12.0000	16.706
0.2000	4.417	14.0000	17.123
0.2166	4.575	16.0000	17.484
0.2333	4.740	18.0000	17.799
0.2500	4.898	20.0000	18.096
0.2666	5.044	22.0000	18.355
0.2833	5.216	24.0000	18.595
0.3000	5.368	26.0000	18.804
0.3166	5.520	28.0000	18.993
0.3333	5.672	30.0000	19.183
0.4166	6.294	32.0000	19.335
0.5000	6.845	34.0000	19.499
0.5833	7.307	36.0000	19.663
0.6666	7.700	38.0000	19.796
0.7500	8.055	40.0000	19.941
0.8333	8.372	42.0000	20.080
0.9166	8.670	44.0000	20.174
1.0000	8.949	46.0000	20.320
1.0833	9.214	48.0000	20.440
1.1666	9.449	50.0000	20.560
1.2500	9.677	52.0000	20.667
1.3333	9.886	54.0000	20.768
1.4166	10.095	56.0000	20.831
1.5000	10.279	58.0000	20.964
1.5833	10.449	60.0000	21.065
1.6666	10.627	62.0000	21.166
1.7500	10.772	64.0000	21.235
1.8333	10.931	66.0000	21.336
1.9166	11.083	68.0000	21.425
2.0000	11.228	70.0000	21.494

DRAWDOWN IN OBSERVATION WELL LM-3870 DURING THE SANDSTONE AQUIFER APT

72.0000	21.576	460.000	26.275
74.0000	21.677	470.000	26.307
76.0000	21.740	480.000	26.345
78.0000	21.828	490.000	26.363
80.0000	21.885	500.000	26.414
82.0000	21.967	510.000	26.439
84.0000	22.024	520.000	26.452
86.0000	22.106	530.000	26.502
88.0000	22.157	540.000	26.527
90.0000	22.226	550.000	26.546
92.0000	22.277	560.000	26.572
94.0000	22.346	570.000	26.616
96.0000	22.409	580.000	26.641
98.0000	22.472	590.000	26.672
100.000	22.523	600.000	26.698
110.000	22.794	610.000	26.704
120.000	23.034	620.000	26.723
130.000	23.261	630.000	26.735
140.000	23.488	640.000	26.786
150.000	23.658	650.000	26.798
160.000	23.822	660.000	26.792
170.000	23.980	670.000	26.817
180.000	24.150	680.000	26.836
190.000	24.302	690.000	26.868
200.000	24.415	700.000	26.874
210.000	24.535	710.000	26.880
220.000	24.680	720.000	26.918
230.000	24.787	730.000	26.943
240.000	24.882	740.000	26.937
250.000	24.983	750.000	26.950
260.000	25.077	760.000	26.969
270.000	25.172	770.000	26.994
280.000	25.285	780.000	27.006
290.000	25.336	790.000	27.013
300.000	25.437	800.000	27.038
310.000	25.468	810.000	27.032
320.000	25.531	820.000	27.057
330.000	25.607	830.000	27.082
340.000	25.670	840.000	27.076
350.000	25.739	850.000	27.088
360.000	25.796	860.000	27.107
370.000	25.865	870.000	27.107
380.000	25.916	880.000	27.120
390.000	25.954	890.000	27.139
400.000	26.023	900.000	27.158
410.000	26.042	910.000	27.151
420.000	26.099	920.000	27.145
430.000	26.174	930.000	27.322
440.000	26.206	940.000	27.347
450.000	26.256	950.000	27.410

DRAWDOWN IN OBSERVATION WELL LM-3870 DURING THE SANDSTONE AQUIFER APT

960.000	27.397	3900.00	27.782
970.000	27.410	4000.00	27.782
980.000	27.435	4100.00	27.750
990.000	27.435	4200.00	27.788
1000.00	27.485	4300.00	27.775
1100.00	27.555	4400.00	27.788
1200.00	27.611	4500.00	27.794
1300.00	27.637	4600.00	27.794
1400.00	27.687	4700.00	27.788
1500.00	27.719	4800.00	27.794
1600.00	27.756	4900.00	27.750
1700.00	27.763	5000.00	27.763
1800.00	27.775	5100.00	27.744
1900.00	27.788	5200.00	27.725
2000.00	27.775	5300.00	27.706
2100.00	27.800	5400.00	27.649
2200.00	27.813	5500.00	27.611
2300.00	27.819	5600.00	27.611
2400.00	27.794	5700.00	27.637
2500.00	27.807	5800.00	27.649
2600.00	27.807	5900.00	27.687
2700.00	27.756	6000.00	27.687
2800.00	27.763	6100.00	27.687
2900.00	27.775	6200.00	27.674
3000.00	27.769	6300.00	27.668
3100.00	27.775	6400.00	27.655
3200.00	27.775	6500.00	27.662
3300.00	27.763	6600.00	27.649
3400.00	27.744	6700.00	27.668
3500.00	27.700	6800.00	27.700
3600.00	27.681	6900.00	27.637
3700.00	27.668	7000.00	27.580
3800.00	27.788	7100.00	27.586

DRAWDOWN IN SANDSTONE AQUIFER PRODUCTION WELL #1 DURING THE SANDSTONE AQUIFER APT

TIME (MINUTES)	HEAD (FEET)	TIME (MINUTES)	HEAD (FEET)
1.5833	0.002	60	2.754
1.6666	0.005	62	2.826
1.75	0.005	64	2.89
1.8333	0.005	66	2.953
1.9166	0.005	68	3.019
2	0.008	70	3.076
2.5	0.018	72	3.133
3	0.03	74	3.196
3.5	0.039	76	3.256
4	0.055	78	3.31
4.5	0.071	80	3.367
5	0.093	82	3.42
5.5	0.115	84	3.481
6	0.14	86	3.531
6.5	0.165	88	3.585
7	0.194	90	3.635
7.5	0.219	92	3.686
8	0.251	94	3.736
8.5	0.279	96	3.784
9	0.311	98	3.831
9.5	0.342	100	3.882
10	0.374	110	4.113
12	0.504	120	4.321
14	0.633	130	4.52
16	0.763	140	4.697
18	0.886	150	4.868
20	1.003	160	5.023
22	1.123	170	5.174
24	1.234	180	5.313
26	1.341	190	5.446
28	1.445	200	5.566
30	1.546	210	5.683
32	1.641	220	5.797
34	1.739	230	5.901
36	1.828	240	5.999
38	1.916	250	6.091
40	2.005	260	6.186
42	2.087	270	6.271
44	2.166	280	6.353
46	2.248	290	6.423
48	2.324	300	6.502
50	2.403	310	6.568
52	2.476	320	6.634
54	2.551	330	6.697
56	2.618	340	6.761
58	2.687	350	6.818

DRAWDOWN IN SANDSTONE AQUIFER
PRODUCTION WELL #1 DURING THE
SANDSTONE AQUIFER APT

360	6.871
370	6.922
380	6.982
390	7.026
400	7.074
410	7.118
420	7.162
430	7.206
440	7.244
450	7.285
460	7.32
470	7.358
480	7.393
490	7.428
500	7.459
510	7.491
520	7.519
530	7.551
540	7.579
550	7.604
560	7.63
570	7.655
580	7.68
590	7.702
600	7.725
610	7.75
620	7.772
630	7.797
640	7.816
650	7.835
660	7.854
670	7.873
680	7.889
690	7.911
700	7.924
710	7.943
720	7.958
730	7.971
740	7.987
750	8.003
760	8.015
770	8.031
780	8.041
790	8.053
800	8.069
810	8.085
820	8.097
830	8.113
840	8.123
850	8.135
860	8.145
870	8.161
880	8.173
890	8.183
900	8.189
910	8.202
920	8.211
930	8.227
940	8.237
950	8.255
960	8.268
970	8.278
980	8.293
990	8.306
1000	8.315
1100	8.391
1200	8.442
1300	8.486
1400	8.524
1500	8.549
1600	8.571
1700	8.581
1800	8.581
1900	8.581
2000	8.581
2100	8.578
2300	8.581
2400	8.581
2500	8.56
2600	8.543
2700	8.518
2800	8.515
2900	8.511
3000	8.518
3200	8.505
3300	8.486
3400	8.477
3500	8.464
3600	8.451
3700	8.448
3800	8.455
3900	8.455
4000	8.439
4100	8.413
4200	8.41
4300	8.417
4400	8.417
4500	8.413

DRAWDOWN IN SANDSTONE AQUIFER
PRODUCTION WELL #1 DURING THE
SANDSTONE AQUIFER APT

4600	8.41	5900	8.293
4700	8.398	6000	8.3
4800	8.382	6100	8.3
4900	8.363	6200	8.287
5000	8.35	6300	8.274
5100	8.35	6400	8.265
5200	8.353	6500	8.262
5300	8.344	6600	8.265
5400	8.315	6700	8.271
5500	8.284	6800	8.262
5600	8.259	6900	8.23
5700	8.265	7000	8.211
5800	8.278	7100	8.202

DRAWDOWN IN SANDSTONE AQUIFER
PRODUCTION WELL #4 DURING THE
SANDSTONE AQUIFER APT

TIME (MINUTES)	HEAD (FEET)	TIME (MINUTES)	HEAD (FEET)
19.00	0.022	1630.002	3.21
22.00	0.045	1750.003	3.187
26.00	0.068	1870.002	3.187
28.00	0.091	1990.002	3.187
30.00	0.114	2110.003	3.164
34.00	0.138	2230.002	3.164
38.00	0.161	2350.002	3.141
40.00	0.184	2470.001	3.094
45.00	0.23	2590.001	3.002
50.00	0.276	2710.000	2.979
55.00	0.322	2830.001	3.002
60.00	0.345	2950.002	3.048
65.00	0.415	3070.002	3.048
70.00	0.438	3190.003	3.048
75.00	0.484	3310.002	3.048
80.00	0.53	3430.002	3.025
85.00	0.553	3550.003	3.002
90.00	0.623	3670.002	3.002
100.00	0.692	3790.002	2.979
110.00	0.784	3910.003	2.933
120.0024	0.854	4030.001	2.863
130.0032	0.946	4150.000	2.863
140.0025	1.015	4270.003	2.863
150.0033	1.085	4390.002	2.91
160.0027	1.154	4510.002	2.91
170.0035	1.223	4630.003	2.886
180.0028	1.293	4750.002	2.863
190.0022	1.362	4870.002	2.84
250.0027	1.662	4990.003	2.817
310.0032	1.939	5110.002	2.817
370.0022	2.147	5230.002	2.794
430.0027	2.332	5350.003	2.725
490.0032	2.494	5470.001	2.632
550.0022	2.586	5590.000	2.609
610.0027	2.679	5710.001	2.632
670.0032	2.771	5830.002	2.702
730.0022	2.84	5950.002	2.725
790.0027	2.91	6070.003	2.725
910.0022	3.002	6190.002	2.725
1030.001	3.025	6310.002	2.702
1150.001	3.048	6430.003	2.702
1270.000	3.094	6550.002	2.679
1390.001	3.141	6670.002	2.702
1510.002	3.187	6790.003	2.632

WATER LEVEL CHANGES IN THE UPPER WATER-TABLE AQUIFER DURING THE SANDSTONE AQUIFER APT

TIME (MINUTES)	HEAD (FEET)
0.0033	0.171
0.0066	0.174
0.01	0.174
0.0133	0.174
0.0166	0.174
0.02	0.171
0.0233	0.168
0.0266	0.171
0.03	0.171
0.0333	0.174
0.05	0.174
0.0666	0.174
0.0833	0.174
0.1	0.171
0.1166	0.168
0.1333	0.174
0.15	0.177
0.1666	0.171
0.1833	0.168
0.2	0.171
0.2166	0.174
0.2333	0.174
0.25	0.174
0.2666	0.171
0.2833	0.171
0.3	0.171
0.3166	0.174
0.3333	0.171
0.4166	0.168
0.5	0.174
0.5833	0.171
0.6666	0.171
0.75	0.168
0.8333	0.168
0.9166	0.168
1	0.165
1.0833	0.171
1.1666	0.165
1.25	0.168
1.3333	0.168
1.4166	0.165
1.5	0.165
1.5833	0.168
1.6666	0.165
1.75	0.165
1.8333	0.165
1.9166	0.165
2	0.168
2.5	0.162
3	0.162
3.5	0.158
4	0.158
4.5	0.158
5	0.158
5.5	0.152
6	0.152
6.5	0.146
7	0.139
7.5	0.139
8	0.13
8.5	0.13
9	0.127
9.5	0.127
10	0.124
2	0.127
14	0.117
16	0.111
18	0.108
20	0.108
22	0.105
24	0.105
26	0.105
28	0.098
30	0.098
32	0.095
34	0.092
36	0.086
38	0.086
40	0.083
42	0.079
44	0.076
46	0.076
48	0.07
50	0.064
52	0.06
54	0.064
56	0.064
58	0.06
60	0.064
62	0.06
64	0.057
66	0.054

WATER LEVEL CHANGES IN THE
UPPER WATER-TABLE AQUIFER
DURING THE SANDSTONE AQUIFER APT

68	0.057	430	0.016
70	0.057	440	0.016
72	0.054	450	0.013
74	0.051	460	0.013
76	0.051	470	0.016
78	0.051	480	0.013
80	0.051	490	0.013
82	0.048	500	0.01
84	0.045	510	0.013
86	0.051	520	0.01
88	0.048	530	0.007
90	0.048	540	0.01
92	0.048	550	0.007
94	0.048	560	0.007
96	0.048	570	0.01
98	0.048	580	0.007
100	0.041	590	0.007
110	0.041	600	0.007
120	0.041	610	0.01
130	0.041	620	0.01
140	0.035	630	0.01
150	0.035	640	0.013
160	0.029	650	0.013
170	0.029	660	0.01
180	0.029	670	0.01
190	0.032	680	0.01
200	0.022	690	0.013
210	0.026	700	0.013
220	0.026	710	0.01
230	0.026	720	0.016
240	0.026	730	0.019
250	0.026	740	0.019
260	0.022	750	0.016
270	0.022	760	0.022
280	0.026	770	0.016
290	0.016	780	0.016
300	0.022	790	0.016
310	0.019	800	0.016
320	0.019	810	0.022
330	0.019	820	0.019
340	0.022	830	0.038
350	0.016	840	0.026
360	0.016	850	0.026
370	0.016	860	0.032
380	0.019	870	0.029
390	0.016	880	0.032
400	0.016	890	0.026
410	0.016	900	0.032
420	0.019	910	0.032

WATER LEVEL CHANGES IN THE
UPPER WATER-TABLE AQUIFER
DURING THE SANDSTONE AQUIFER APT

920	0.029	3700	0.114
930	0.029	3800	0.12
940	0.029	3900	0.133
950	0.029	4000	0.165
960	0.026	4100	0.192
970	0.029	4200	0.236
980	0.032	4300	0.255
990	0.026	4400	0.271
1000	0.032	4500	0.281
1100	0.029	4600	0.281
1200	0.035	4700	0.287
1300	0.045	4800	0.29
1400	0.045	4900	0.29
1500	0.041	5000	0.3
1600	0.041	5100	0.309
1700	0.035	5200	0.319
1800	0.032	5300	0.48
1900	0.026	5400	0.559
2000	0.022	5500	0.622
2100	0.016	5600	0.672
2200	0.022	5700	0.72
2300	0.022	5800	0.751
2400	0.026	5900	0.77
2500	0.035	6000	0.786
2600	0.054	6100	0.802
2700	0.073	6200	0.808
2800	0.095	6300	0.815
2900	0.114	6400	0.83
3000	0.111	6500	0.837
3100	0.114	6600	0.821
3200	0.114	6700	0.777
3300	0.105	6800	0.894
3400	0.101	6900	0.95
3500	0.101	7000	0.976
3600	0.108	7100	0.995

RECOVERY IN OBSERVATION WELL LM-3870
AFTER THE SANDSTONE AQUIFER APT

TIME (MINUTES)	HEAD (FEET)	TIME (MINUTES)	HEAD (FEET)
0.0010	0.056	1.8333	10.81
0.0033	0.081	1.9166	10.93
0.0066	0.1	2	11.05
0.01	0.113	2.5	11.657
0.0133	0.132	3	12.663
0.0166	0.157	3.5	12.625
0.02	0.182	4	13.023
0.0233	0.22	4.5	13.377
0.0266	0.258	5	13.693
0.03	0.302	5.5	13.985
0.0333	0.346	6	14.238
0.05	0.649	6.5	14.472
0.0666	1.046	7	14.693
0.0833	1.512	7.5	14.902
0.1	2.048	8	15.085
0.1166	2.628	8.5	15.262
0.1333	3.227	9	15.421
0.15	3.795	9.5	15.579
0.1666	4.312	10	15.731
0.1833	4.754	12	16.282
0.2	5.095	14	16.725
0.2166	5.366	16	17.07
0.2333	5.562	18	17.421
0.25	5.707	20	17.719
0.2666	5.833	22	17.985
0.2833	5.959	24	18.219
0.3	6.073	26	18.454
0.3166	6.205	28	18.662
0.3333	6.357	30	18.853
0.4166	7.051	32	19.03
0.5	7.43	34	19.207
0.5833	7.79	36	19.366
0.6666	8.112	38	19.524
0.75	8.39	40	19.67
0.8333	8.662	42	19.809
0.9166	8.889	44	19.942
1	9.123	46	20.076
1.0833	9.357	48	20.202
1.1666	9.559	50	20.329
1.25	9.749	52	20.437
1.3333	9.906	54	20.557
1.4166	10.09	56	20.665
1.5	10.235	58	20.772
1.5833	10.406	60	20.874
1.6666	10.545	62	20.975
1.75	10.684	64	21.076

RECOVERY IN OBSERVATION WELL LM-3870
AFTER THE SANDSTONE AQUIFER APT

66	21.178	400	26.653
68	21.267	410	26.722
70	21.362	420	26.786
72	21.451	430	26.85
74	21.539	440	26.913
76	21.615	450	26.97
78	21.698	460	27.021
80	21.78	470	27.072
82	21.857	480	27.129
84	21.926	490	27.18
86	22.009	500	27.237
88	22.072	510	27.282
90	22.142	520	27.332
92	22.212	530	27.377
94	22.275	540	27.421
96	22.345	550	27.459
98	22.408	560	27.51
100	22.471	570	27.548
110	22.763	580	27.586
120	23.036	590	27.631
130	23.283	600	27.669
140	23.518	610	27.7
150	23.727	620	27.739
160	23.937	630	27.777
170	24.127	640	27.808
180	24.298	650	27.84
190	24.47	660	27.872
200	24.622	670	27.91
210	24.78	680	27.942
220	24.92	690	27.974
230	25.053	700	27.999
240	25.18	710	28.031
250	25.301	720	28.056
260	25.415	730	28.088
270	25.535	740	28.113
280	25.631	750	28.139
290	25.732	760	28.164
300	25.84	770	28.19
310	25.929	780	28.215
320	26.031	790	28.234
330	26.113	800	28.259
340	26.202	810	28.279
350	26.285	820	28.304
360	26.361	830	28.323
370	26.437	840	28.348
380	26.519	850	28.361
390	26.583	860	28.38
		870	28.399

RECOVERY IN SANDSTONE AQUIFER
PRODUCTION WELL #1 AFTER THE
SANDSTONE AQUIFER APT

TIME (MINUTES)	HEAD (FEET)	TIME (MINUTES)	HEAD (FEET)
0.0001	0.001	1.9166	0.015
0.0033	0.003	2	0.019
0.0066	0.003	2.5	0.022
0.01	0.006	3	0.031
0.0133	0.003	3.5	0.044
0.0166	0.006	4	0.06
0.02	0.006	4.5	0.075
0.0233	0.006	5	0.094
0.0266	0.006	5.5	0.117
0.03	0.009	6	0.139
0.0333	0.009	6.5	0.167
0.05	0.006	7	0.192
0.0666	0.006	7.5	0.221
0.0833	0.009	8	0.249
0.1	0.006	8.5	0.281
0.1166	0.009	9	0.309
0.1333	0.006	9.5	0.341
0.15	0.009	10	0.372
0.1666	0.006	12	0.499
0.1833	0.009	14	0.622
0.2	0.009	16	0.745
0.2166	0.009	18	0.869
0.2333	0.009	20	0.986
0.25	0.012	22	1.099
0.2666	0.012	24	1.21
0.2833	0.012	26	1.317
0.3	0.009	28	1.419
0.3166	0.012	30	1.516
0.3333	0.009	32	1.614
0.4166	0.009	34	1.706
0.5	0.009	36	1.798
0.5833	0.009	38	1.886
0.6666	0.006	40	1.972
0.75	0.012	42	2.054
0.8333	0.009	44	2.139
0.9166	0.012	46	2.218
1.0833	0.009	48	2.297
1.1666	0.012	50	2.37
1.25	0.012	52	2.446
1.3333	0.012	54	2.518
1.4166	0.012	56	2.591
1.5	0.012	58	2.66
1.5833	0.015	60	2.73
1.6666	0.015	62	2.796
1.75	0.015	64	2.863
1.8333	0.015	66	2.926

RECOVERY IN SANDSTONE AQUIFER PRODUCTION WELL #1 AFTER THE SANDSTONE AQUIFER APT

68	2.989	420	7.518
70	3.052	430	7.575
72	3.115	440	7.625
74	3.176	450	7.676
76	3.236	460	7.729
78	3.293	470	7.774
80	3.349	480	7.821
82	3.406	490	7.868
84	3.463	500	7.916
86	3.517	510	7.957
88	3.571	520	8.001
90	3.624	530	8.042
92	3.675	540	8.08
94	3.726	550	8.118
96	3.779	560	8.156
98	3.827	570	8.194
100	3.874	580	8.229
110	4.105	590	8.263
120	4.31	600	8.298
130	4.522	610	8.333
140	4.711	620	8.365
150	4.891	630	8.399
160	5.059	640	8.428
170	5.217	650	8.456
180	5.366	660	8.485
190	5.511	670	8.513
200	5.644	680	8.542
210	5.773	690	8.567
220	5.893	700	8.592
230	6.01	710	8.617
240	6.121	720	8.643
250	6.228	730	8.668
260	6.329	740	8.69
270	6.421	750	8.715
280	6.519	760	8.738
290	6.607	770	8.76
300	6.693	780	8.782
310	6.775	790	8.801
320	6.857	800	8.82
330	6.933	810	8.842
340	7.006	820	8.858
350	7.078	830	8.88
360	7.148	840	8.896
370	7.214	850	8.914
380	7.278	860	8.933
390	7.341	870	8.949
400	7.401	880	8.965
410	7.461	890	8.981

WATER LEVEL CHANGES IN THE
UPPER WATER-TABLE AQUIFER
AFTER THE SANDSTONE AQUIFER APT

TIME (MINUTES)	HEAD (FEET)	TIME (MINUTES)	HEAD (FEET)
0	0.003	1.8333	0.003
0.0033	0	1.9166	0
0.0066	0.003	2	0
0.01	0.003	2.5	0
0.0133	0	3	0
0.0166	0	3.5	0
0.02	0	4	0
0.0233	0	4.5	0
0.0266	0	5	0
0.03	0	5.5	0
0.0333	0	6	0
0.05	0	6.5	0
0.0666	0	7	0
0.0833	0	7.5	0
0.1	0	8	0
0.1166	0.003	8.5	0
0.1333	0.006	9	0
0.15	0.009	9.5	0.003
0.1666	0.012	10	0
0.1833	0.006	12	0.006
0.2	0.003	14	0.006
0.2166	0	16	0.006
0.2333	0	18	0.006
0.25	0	20	0.006
0.2666	0	22	0.006
0.2833	0	24	0.003
0.3	0	26	0
0.3166	0	28	0.003
0.3333	0	30	0.006
0.4166	0.003	32	0.012
0.5	0.003	34	0.012
0.5833	0	36	0.015
0.6666	0	38	0.018
0.75	0.003	40	0.022
0.8333	0.003	42	0.028
0.9166	0.003	44	0.028
1	0.003	46	0.028
1.0833	0.003	48	0.034
1.1666	0.003	50	0.034
1.25	0.003	52	0.037
1.3333	0.003	54	0.037
1.4166	0	56	0.044
1.5	0.003	58	0.044
1.5833	0.003	60	0.05
1.6666	0	62	0.053
1.75	0	64	0.053

WATER LEVEL CHANGES IN THE
UPPER WATER-TABLE AQUIFER
AFTER THE SANDSTONE AQUIFER APT

66	0.053
68	0.056
70	0.056
72	0.056
74	0.063
76	0.066
78	0.066
80	0.066
82	0.069
84	0.072
86	0.072
88	0.072
90	0.075
92	0.075
94	0.078
96	0.078
98	0.082
100	0.082
110	0.088
120	0.094
130	0.097
140	0.101
150	0.104
160	0.11
170	0.113
180	0.116
190	0.116
200	0.12
210	0.126
220	0.129
230	0.129
240	0.132
250	0.132
260	0.135
270	0.139
280	0.139
290	0.142
300	0.145
310	0.148
320	0.148
330	0.151
340	0.151
350	0.154
360	0.154
370	0.157
380	0.1
390	0.161
400	0.167
410	0.167
420	0.17
430	0.173
440	0.173
450	0.173
460	0.176
470	0.173
480	0.18
490	0.18
500	0.183
510	0.183
520	0.186
530	0.186
540	0.186
550	0.186
560	0.189
570	0.189
580	0.189
590	0.186
600	0.186
610	0.189
620	0.195
630	0.195
640	0.195
650	0.192
660	0.192
670	0.199
680	0.195
690	0.195
700	0.195
710	0.195
720	0.199
730	0.195
740	0.195
750	0.202
760	0.195
770	0.195
780	0.199
790	0.189
800	0.195
810	0.195
820	0.195
830	0.189
840	0.189
850	0.195
860	0.195
870	0.189

BACKGROUND WATER LEVELS IN THE WATER-TABLE PRIOR TO THE WATER-TABLE APT

TIME (MINUTES)	HEAD (FEET)
0	0.06
10	0.054
20	0.048
30	0.054
40	0.054
50	0.048
60	0.048
70	0.042
80	0.042
90	0.042
100	0.048
110	0.035
120	0.035
130	0.029
140	0.029
150	0.029
160	0.042
170	0.042
180	0.016
190	0.023
200	0.035
210	0.016
220	0.016
230	0.016
240	0.023
250	0.023
260	0.023
270	0.016
280	0.023
290	0.016
300	0.01
310	0.042
320	0.023
330	0.016
340	0.016
350	0.016
360	0.01

BACKGROUND WATER LEVELS IN THE UPPER WATER-TABLE PRIOR TO THE WATER-TABLE APT

TIME (MINUTES)	HEAD (FEET)
0	0.06
10	0.051
20	0.048
30	0.048
40	0.048
50	0.042
60	0.042
70	0.042
80	0.042
90	0.042
100	0.038
110	0.038
120	0.035
130	0.035
140	0.032
150	0.032
160	0.035
170	0.035
180	0.029
190	0.029
200	0.032
210	0.026
220	0.026
230	0.023
240	0.026
250	0.023
260	0.019
270	0.023
280	0.019
290	0.019
300	0.016
310	0.023
320	0.023
330	0.019
340	0.016
350	0.013
360	0.01

DRAWDOWN IN WATER-TABLE AQUIFER
OBSERVATION WELL LM-3871
DURING THE WATER-TABLE APT

TIME (MINUTES)	HEAD (FEET)
0.0001	0.107
0.0033	0.107
0.0066	0.107
0.01	0.113
0.0133	0.113
0.0166	0.119
0.02	0.138
0.0233	0.157
0.0266	0.169
0.03	0.188
0.0333	0.195
0.0366	0.207
0.04	0.22
0.0433	0.226
0.0466	0.239
0.05	0.239
0.0533	0.232
0.0566	0.232
0.06	0.232
0.0633	0.226
0.0666	0.22
0.07	0.214
0.0733	0.214
0.0766	0.207
0.08	0.207
0.0833	0.207
0.0866	0.207
0.09	0.207
0.0933	0.207
0.0966	0.214
0.1	0.214
0.1033	0.214
0.1066	0.22
0.11	0.22
0.1133	0.226
0.1166	0.232
0.12	0.232
0.1233	0.239
0.1266	0.239
0.13	0.239
0.1333	0.251
0.1366	0.251
0.14	0.251
0.1433	0.258
0.1466	0.258
0.15	0.258

TIME (MINUTES)	HEAD (FEET)
0.1533	0.258
0.1566	0.258
0.16	0.258
0.1633	0.258
0.1666	0.258
0.17	0.251
0.1733	0.251
0.1766	0.251
0.18	0.251
0.1833	0.251
0.1866	0.251
0.19	0.251
0.1933	0.245
0.1966	0.245
0.2	0.251
0.2033	0.251
0.2066	0.251
0.21	0.258
0.2133	0.258
0.2166	0.258
0.22	0.264
0.2233	0.264
0.2266	0.264
0.23	0.264
0.2333	0.27
0.2366	0.27
0.24	0.27
0.2433	0.27
0.2466	0.27
0.25	0.27
0.2533	0.27
0.2566	0.27
0.26	0.27
0.2633	0.27
0.2666	0.27
0.27	0.264
0.2733	0.27
0.2766	0.27
0.28	0.27
0.2833	0.27
0.2866	0.27
0.29	0.264
0.2933	0.27
0.2966	0.27
0.3	0.276
0.3033	0.27

DRAWDOWN IN WATER-TABLE AQUIFER
OBSERVATION WELL LM-3871
DURING THE WATER-TABLE APT

0.3066	0.27	1.2	0.333
0.31	0.276	1.4	0.346
0.3133	0.276	1.6	0.346
0.3166	0.276	1.8	0.352
0.32	0.276	2	0.358
0.3233	0.283	2.2	0.358
0.3266	0.276	2.4	0.358
0.33	0.283	2.6	0.358
0.3333	0.283	2.8	0.365
0.35	0.289	3	0.371
0.3666	0.289	3.2	0.371
0.3833	0.295	3.4	0.371
0.4	0.295	3.6	0.377
0.4166	0.302	3.8	0.371
0.4333	0.302	4	0.383
0.45	0.295	4.2	0.377
0.4666	0.302	4.4	0.383
0.4833	0.295	4.6	0.383
0.5	0.302	4.8	0.383
0.5166	0.302	5	0.383
0.5333	0.302	5.2	0.383
0.55	0.302	5.4	0.39
0.5666	0.308	5.6	0.383
0.5833	0.308	5.8	0.39
0.6	0.308	6	0.383
0.6166	0.308	6.2	0.396
0.6333	0.308	6.4	0.39
0.65	0.308	6.6	0.39
0.6666	0.314	6.8	0.39
0.6833	0.314	7	0.39
0.7	0.314	7.2	0.396
0.7166	0.321	7.4	0.396
0.7333	0.314	7.6	0.396
0.75	0.314	7.8	0.396
0.7666	0.314	8	0.396
0.7833	0.314	8.2	0.396
0.8	0.321	8.4	0.396
0.8166	0.327	8.6	0.402
0.8333	0.327	8.8	0.402
0.85	0.327	9	0.409
0.8666	0.327	9.2	0.402
0.8833	0.327	9.4	0.402
0.9	0.321	9.6	0.402
0.9166	0.327	9.8	0.402
0.9333	0.327	10	0.402
0.95	0.327	12	0.409
0.9666	0.327	14	0.421
0.9833	0.333	16	0.415
1	0.333	18	0.421

DRAWDOWN IN WATER-TABLE AQUIFER
OBSERVATION WELL LM-3871
DURING THE WATER-TABLE APT

20	0.428
22	0.434
24	0.44
26	0.434
28	0.44
30	0.44
32	0.44
34	0.446
36	0.446
38	0.44
40	0.446
42	0.446
44	0.453
46	0.453
48	0.453
50	0.453
52	0.453
54	0.453
56	0.453
58	0.453
60	0.459
62	0.459
64	0.459
66	0.459
68	0.459
70	0.453
72	0.459
74	0.459
76	0.453
78	0.459
80	0.465
82	0.459
84	0.459
86	0.465
88	0.465
90	0.465
92	0.465
94	0.465
96	0.465
98	0.465
100	0.465
120	0.478
140	0.478
160	0.484
180	0.484
200	0.49
220	0.49
240	0.497
260	0.497
280	0.497
300	0.497
320	0.497
340	0.497
360	0.497
380	0.497
400	0.497
420	0.497
440	0.497
460	0.49
480	0.49
500	0.49
520	0.49
540	0.49
560	0.497
580	0.497
600	0.497
620	0.497
640	0.497
660	0.497
680	0.497
700	0.497
720	0.503
740	0.503
760	0.503
780	0.503
800	0.503
820	0.503
840	0.503
860	0.503
880	0.509
900	0.509
920	0.509
940	0.516
960	0.516
980	0.516
1000	0.528
1200	0.792
1400	0.837
1600	0.868
1800	0.887
2000	0.887
2200	0.899
2400	0.837
2600	0.805
2800	0.818
3000	0.61
3200	0.421

DRAWDOWN IN WATER-TABLE AQUIFER
PRODUCTION WELL #3A DURING
THE WATER-TABLE APT

TIME (MINUTES)	HEAD (FEET)	TIME (MINUTES)	HEAD (FEET)
0.1166	0.003	86.0000	0.110
0.1333	0.009	88.0000	0.113
0.1500	0.012	90.0000	0.113
0.1833	0.015	92.0000	0.113
0.2333	0.018	94.0000	0.116
0.3000	0.022	96.0000	0.116
0.4166	0.028	98.0000	0.116
0.5833	0.031	100.000	0.116
0.6666	0.034	110.000	0.120
0.8333	0.037	120.000	0.123
1.0000	0.041	130.000	0.123
1.2500	0.044	140.000	0.126
1.4166	0.047	150.000	0.126
1.7500	0.050	160.000	0.126
2.5000	0.056	170.000	0.126
3.0000	0.060	180.000	0.129
3.5000	0.063	190.000	0.132
4.5000	0.066	200.000	0.132
5.5000	0.069	210.000	0.132
6.5000	0.072	220.000	0.132
8.0000	0.075	230.000	0.135
9.5000	0.079	240.000	0.135
12.0000	0.085	250.000	0.132
14.0000	0.088	260.000	0.135
16.0000	0.091	270.000	0.139
22.0000	0.094	280.000	0.139
26.0000	0.097	290.000	0.139
34.0000	0.101	300.000	0.135
40.0000	0.104	310.000	0.135
44.0000	0.107	320.000	0.135
54.0000	0.107	330.000	0.135
56.0000	0.107	340.000	0.135
58.0000	0.107	350.000	0.135
60.0000	0.107	360.000	0.135
62.0000	0.107	370.000	0.142
64.0000	0.107	380.000	0.139
66.0000	0.110	390.000	0.139
68.0000	0.110	400.000	0.139
70.0000	0.110	410.000	0.139
72.0000	0.110	420.000	0.135
74.0000	0.110	430.000	0.135
76.0000	0.110	440.000	0.135
78.0000	0.110	450.000	0.135
80.0000	0.110	460.000	0.132
82.0000	0.110	470.000	0.132
84.0000	0.113	480.000	0.132

DRAWDOWN IN WATER-TABLE AQUIFER
PRODUCTION WELL #3A DURING
THE WATER-TABLE APT

490.000	0.132	970.000	0.151
500.000	0.135	980.000	0.151
510.000	0.132	990.000	0.154
520.000	0.132	1000.00	0.154
530.000	0.132	1100.00	0.224
540.000	0.132	1200.00	0.259
550.000	0.132	1300.00	0.290
560.000	0.135	1400.00	0.303
570.000	0.132	1500.00	0.316
580.000	0.135	1600.00	0.325
590.000	0.135	1700.00	0.328
600.000	0.135	1800.00	0.331
610.000	0.139	1900.00	0.328
620.000	0.135	2000.00	0.331
630.000	0.135	2100.00	0.328
640.000	0.139	2200.00	0.335
650.000	0.139	2300.00	0.344
660.000	0.135	2400.00	0.328
670.000	0.139	2500.00	0.309
680.000	0.139	2600.00	0.319
690.000	0.139	2700.00	0.335
700.000	0.139	2800.00	0.344
710.000	0.139	2900.00	0.281
720.000	0.135	3000.00	0.265
730.000	0.139	3100.00	0.186
740.000	0.139	3200.00	0.167
750.000	0.139	3300.00	0.154
760.000	0.135	3400.00	0.132
770.000	0.139	3500.00	0.107
780.000	0.142	3600.00	0.101
790.000	0.139	3700.00	0.097
800.000	0.139	3800.00	0.097
810.000	0.142	3900.00	0.154
820.000	0.142	4000.00	0.176
830.000	0.142	4100.00	0.202
840.000	0.145	4200.00	0.208
850.000	0.145	4300.00	0.214
860.000	0.145	4400.00	0.227
870.000	0.145	4500.00	0.224
880.000	0.145	4600.00	0.227
890.000	0.145	4700.00	0.224
900.000	0.148	4800.00	0.221
910.000	0.148	4900.00	0.221
920.000	0.148	5000.00	0.214
930.000	0.148	5100.00	0.218
940.000	0.148	5200.00	0.224
950.000	0.151	5300.00	0.176
960.000	0.151		

DRAWDOWN IN THE UPPER WATER-TABLE
DURING THE WATER-TABLE APT

TIME (MINUTES)	HEAD (FEET)	TIME (MINUTES)	HEAD (FEET)
0.0000	0.000	8.4000	0.072
0.1000	0.000	8.6000	0.075
0.2000	0.000	8.8000	0.075
0.3000	0.000	9.0000	0.075
0.4000	0.000	9.2000	0.078
0.5000	0.000	9.4000	0.082
0.6000	0.003	9.6000	0.082
0.7000	0.003	9.8000	0.085
0.8000	0.003	10.0000	0.085
0.9000	0.003	12.0000	0.101
1.0000	0.003	14.0000	0.113
1.2000	0.006	16.0000	0.123
1.4000	0.009	18.0000	0.142
1.6000	0.009	20.0000	0.154
1.8000	0.012	22.0000	0.164
2.0000	0.012	24.0000	0.173
2.2000	0.015	26.0000	0.183
2.4000	0.018	28.0000	0.192
2.6000	0.018	30.0000	0.199
2.8000	0.022	32.0000	0.208
3.0000	0.025	34.0000	0.214
3.2000	0.025	36.0000	0.224
3.4000	0.028	38.0000	0.230
3.6000	0.031	40.0000	0.236
3.8000	0.034	42.0000	0.243
4.0000	0.034	44.0000	0.249
4.2000	0.037	46.0000	0.255
4.4000	0.037	48.0000	0.262
4.6000	0.041	50.0000	0.265
4.8000	0.041	52.0000	0.268
5.0000	0.044	54.0000	0.274
5.2000	0.044	56.0000	0.281
5.4000	0.047	58.0000	0.284
5.6000	0.047	60.0000	0.287
5.8000	0.050	62.0000	0.293
6.0000	0.050	64.0000	0.296
6.2000	0.053	66.0000	0.300
6.4000	0.053	68.0000	0.303
6.6000	0.056	70.0000	0.306
6.8000	0.060	72.0000	0.309
7.0000	0.060	74.0000	0.312
7.2000	0.060	76.0000	0.315
7.4000	0.063	78.0000	0.319
7.6000	0.066	80.0000	0.322
7.8000	0.066	82.0000	0.325
8.0000	0.069	84.0000	0.325
8.2000	0.069	86.0000	0.325

DRAWDOWN IN THE UPPER WATER-TABLE
DURING THE WATER-TABLE APT

88.0000	0.328	620.000	0.439
90.0000	0.331	640.000	0.439
92.0000	0.334	660.000	0.439
94.0000	0.338	680.000	0.442
96.0000	0.338	700.000	0.442
98.0000	0.341	720.000	0.442
100.000	0.344	740.000	0.442
120.000	0.363	760.000	0.442
140.000	0.375	780.000	0.445
160.000	0.385	800.000	0.445
180.000	0.398	820.000	0.448
200.000	0.398	840.000	0.451
220.000	0.410	860.000	0.451
240.000	0.416	880.000	0.451
260.000	0.416	900.000	0.454
280.000	0.420	920.000	0.454
300.000	0.426	940.000	0.454
320.000	0.429	960.000	0.458
340.000	0.426	980.000	0.461
360.000	0.429	1000.00	0.464
380.000	0.432	1200.00	0.679
400.000	0.435	1400.00	0.732
420.000	0.432	1600.00	0.783
440.000	0.435	1800.00	0.805
460.000	0.432	2000.00	0.808
480.000	0.432	2200.00	0.814
500.000	0.432	2400.00	0.802
520.000	0.432	2600.00	0.739
540.000	0.432	2800.00	0.754
560.000	0.435	3000.00	0.590
580.000	0.435	3200.00	0.413
600.000	0.439		

RECOVERY IN WATER-TABLE PRODUCTION
WELL #3 AFTER THE WATER-TABLE APT

TIME (MINUTES)	HEAD (FEET)	TIME (MINUTES)	HEAD (FEET)
0.0001	0.001	1.8333	0.066
0.0133	0.003	1.9166	0.066
0.0233	0.006	2.0000	0.066
0.0666	0.015	2.5000	0.069
0.0833	0.018	3.0000	0.072
0.1000	0.022	3.5000	0.075
0.1166	0.025	4.0000	0.075
0.1333	0.025	4.5000	0.079
0.1500	0.028	5.0000	0.079
0.1666	0.031	5.5000	0.082
0.1833	0.034	6.0000	0.082
0.2000	0.034	6.5000	0.082
0.2166	0.034	7.0000	0.082
0.2333	0.037	7.5000	0.085
0.2500	0.037	8.0000	0.082
0.2666	0.037	8.5000	0.085
0.2833	0.037	9.0000	0.085
0.3000	0.041	9.5000	0.085
0.3166	0.041	10.0000	0.088
0.3333	0.041	12.0000	0.082
0.4166	0.041	14.0000	0.085
0.5000	0.044	16.0000	0.088
0.5833	0.047	18.0000	0.091
0.6666	0.047	20.0000	0.091
0.7500	0.050	22.0000	0.091
0.8333	0.050	24.0000	0.091
0.9166	0.053	26.0000	0.097
1.0000	0.053	28.0000	0.091
1.0833	0.053	30.0000	0.091
1.1666	0.056	32.0000	0.091
1.2500	0.060	34.0000	0.091
1.3333	0.060	36.0000	0.091
1.4166	0.060	38.0000	0.094
1.5000	0.063	40.0000	0.094
1.5833	0.063	42.0000	0.094
1.6666	0.063	44.0000	0.101
1.7500	0.066		

TIME AND HEAD DATA FOR PIEZOMETER #1
SLUG IN TEST - 2

TIME (MINUTES)	HEAD (FEET)	TIME (MINUTES)	HEAD (FEET)
0.067	1.295	1.750	0.489
0.083	0.897	1.833	0.483
0.100	0.648	1.917	0.477
0.117	0.610	2.000	0.470
0.133	0.584	2.500	0.439
0.150	0.575	3.000	0.417
0.167	0.562	3.500	0.401
0.183	0.562	4.000	0.382
0.200	0.559	4.500	0.366
0.217	0.559	5.000	0.350
0.233	0.559	5.500	0.338
0.250	0.559	6.000	0.325
0.267	0.559	6.500	0.309
0.283	0.559	7.000	0.297
0.300	0.559	7.500	0.284
0.317	0.559	8.000	0.278
0.333	0.559	8.500	0.262
0.417	0.559	9.000	0.252
0.500	0.556	9.500	0.243
0.583	0.556	10.000	0.230
0.667	0.553	12.000	0.186
0.750	0.550	14.000	0.158
0.833	0.546	16.000	0.129
0.917	0.540	18.000	0.104
1.000	0.537	20.000	0.085
1.083	0.531	22.000	0.069
1.167	0.524	24.000	0.053
1.250	0.518	26.000	0.056
1.333	0.515	28.000	0.034
1.417	0.508	30.000	0.028
1.500	0.499	32.000	0.018
1.583	0.496	34.000	0.018
1.667	0.493		

TIME AND HEAD DATA FOR PIEZOMETER #1
SLUG OUT TEST - 1

TIME (MINUTES)	HEAD (FEET)
0.033	1.390
0.050	1.333
0.067	1.276
0.083	1.191
0.100	1.137
0.117	1.093
0.133	1.049
0.150	1.008
0.167	0.973
0.183	0.938
0.200	0.907
0.217	0.878
0.233	0.853
0.250	0.831
0.267	0.812
0.283	0.793
0.300	0.774
0.317	0.758
0.333	0.745
0.417	0.692
0.500	0.660
0.583	0.635
0.667	0.616
0.750	0.600
0.833	0.587
0.917	0.578
1.000	0.565
1.083	0.556
1.167	0.549
1.250	0.543
1.333	0.534
1.417	0.527
1.500	0.521
1.583	0.518
1.667	0.512
1.750	0.505

TIME (MINUTES)	HEAD (FEET)
1.833	0.499
1.917	0.496
2.000	0.489
2.500	0.464
3.000	0.442
3.500	0.417
4.000	0.398
4.500	0.379
5.000	0.363
5.500	0.350
6.000	0.335
6.500	0.316
7.000	0.306
7.500	0.300
8.000	0.287
8.500	0.274
9.000	0.268
9.500	0.259
10.000	0.249
12.000	0.221
14.000	0.195
16.000	0.170
18.000	0.167
20.000	0.154
22.000	0.142
24.000	0.129
26.000	0.113
28.000	0.116
30.000	0.113
32.000	0.110
34.000	0.107
36.000	0.104
38.000	0.101
40.000	0.101
42.000	0.088
44.000	0.091
46.000	0.088

TIME AND HEAD DATA FOR PIEZOMETER #1
SLUG OUT TEST -2

TIME (MINUTES)	HEAD (FEET)
0.0666	1.258
0.0833	1.194
0.1000	1.147
0.1166	1.103
0.1333	1.062
0.1500	1.024
0.1666	0.989
0.1833	0.957
0.2000	0.926
0.2166	0.900
0.2333	0.875
0.2500	0.853
0.266	0.831
0.2833	0.812
0.3000	0.793
0.3166	0.774
0.3333	0.758
0.4166	0.701
0.5000	0.663
0.5833	0.638
0.6666	0.619
0.7500	0.600
0.8333	0.587
0.9166	0.575
1.0000	0.565
1.0833	0.556
1.1666	0.546
1.2500	0.540
1.3333	0.534
1.4166	0.527
1.5000	0.521
1.5833	0.515
1.6666	0.505
1.7500	0.502
1.8333	0.496

TIME (MINUTES)	HEAD (FEET)
1.9166	0.493
2.0000	0.486
2.5000	0.458
3.0000	0.436
3.5000	0.417
4.0000	0.398
4.5000	0.379
5.0000	0.363
5.5000	0.347
6.0000	0.331
6.5000	0.319
7.0000	0.309
8.0000	0.290
8.5000	0.278
9.0000	0.265
9.5000	0.252
10.0000	0.246
12.0000	0.221
14.0000	0.205
16.0000	0.186
18.0000	0.173
20.0000	0.161
22.0000	0.148
24.0000	0.139
26.0000	0.132
28.0000	0.126
32.0000	0.120
34.0000	0.113
36.0000	0.110
38.0000	0.110
40.0000	0.104
42.0000	0.101

PIEZOMETER P-2
FALLING HEAD TEST DATA

TIME (MINUTES)	HEAD (FEET)	TIME (MINUTES)	HEAD (FEET)
2.2000	1.455	34.0000	1.424
2.4000	1.449	36.0000	1.430
2.6000	1.449	38.0000	1.443
2.8000	1.455	40.0000	1.418
3.0000	1.455	42.0000	1.424
3.2000	1.455	44.0000	1.430
3.4000	1.462	46.0000	1.418
3.6000	1.462	48.0000	1.424
3.8000	1.455	50.0000	1.424
4.0000	1.455	52.0000	1.405
4.2000	1.455	54.0000	1.437
4.4000	1.455	56.0000	1.418
4.6000	1.462	58.0000	1.418
4.8000	1.455	60.0000	1.424
5.0000	1.455	62.0000	1.424
5.2000	1.455	64.0000	1.424
5.4000	1.443	66.0000	1.418
5.6000	1.449	68.0000	1.418
5.8000	1.455	70.0000	1.412
6.0000	1.449	72.0000	1.418
6.2000	1.449	74.0000	1.418
6.4000	1.455	76.0000	1.412
6.6000	1.462	78.0000	1.418
6.8000	1.462	80.0000	1.405
7.0000	1.449	82.0000	1.412
7.2000	1.443	84.0000	1.418
7.4000	1.462	86.0000	1.412
7.6000	1.449	88.0000	1.405
7.8000	1.455	90.0000	1.412
8.0000	1.455	92.0000	1.418
8.2000	1.449	94.0000	1.405
8.4000	1.455	96.0000	1.405
8.6000	1.455	98.0000	1.399
8.8000	1.468	100.000	1.405
9.0000	1.468	120.000	1.393
9.2000	1.462	140.000	1.393
9.4000	1.462	160.000	1.380
9.6000	1.455	180.000	1.374
9.8000	1.443	200.000	1.368
10.0000	1.449	220.000	1.368
12.0000	1.437	240.000	1.355
14.0000	1.437	260.000	1.349
16.0000	1.430	280.000	1.342
18.0000	1.437	300.000	1.336
20.0000	1.437		
22.0000	1.449		
24.0000	1.443		
26.0000	1.443		
28.0000	1.430		
30.0000	1.430		
32.0000	1.424		

APPENDIX C

SLUG TEST ANALYSES

1) BOUWER & RICE EQUATION

$$K = \frac{Rc*Rc * \ln(Re/Rw)}{2*Le} * \frac{1}{T} * \ln(Y1/Y2)$$

A) For partially penetrating wells the term ln(Re/Rw) is:

$$\ln(Re/Rw) = \frac{1}{\left(\frac{1.1}{\ln(Lw/Rw)} + \frac{A + B * \ln\{(H - Lw)/Rw\}}{Le/Rw}\right)}$$

B) For fully penetrating wells the term ln(Re/Rw) is:

$$\ln(Re/Rw) = \frac{1}{\left(\frac{1.1}{\ln(Lw/Rw)} + \frac{C}{Le/Rw}\right)}$$

where
- K = hydraulic conductivity
- Rc = radius of well/screen casing
- Re = effective radial distance over which delta-y is dissipated
- Rw = borehole radius
- H = saturated thickness of aquifer
- A = the Bouwer and Rice 'A' parameter
- B = the Bouwer and Rice 'B' parameter
- C = the Bouwer and Rice 'C' parameter
- Lw = depth below water table to bottom of screen
- Le = length of wetted screen
- Y1 = drawdown (or up) at time T1
- Y2 = drawdown (or up) at time T2
- T = time between T1 and T2

2) U.S. NAVY EQUATION FOR A CASED BOREHOLE WITH SCREEN

$$K = \frac{Rc * Rc}{2 * Le * T} * \ln(Le/Rw) * \ln(Y1/Y2)$$

3) HVORSLEV EQUATION FOR A CASED BOREHOLE WITH SCREEN

$$K = \frac{4 * Rc * Rc}{8 * Le * BTL} * \ln\left(\frac{2 * m * Le}{2 * Rw}\right) \quad \text{for} \quad \frac{m * Le}{2 * Rw} > 4$$

m = square root of horizontal to vertical

hydraulic conductivity ratio
BTL = basic time lag, time at 63% of full recovery

If static water level occurs in screened interval Rc is adjusted:

Rc = SQRT[(1-n)*Rc*RC + (n)*Rw*Rw]

where n is specific yield of sand/gravel pack in well annulus

VARIABLES for well: PIEZOMETER 1 SLUG IN TEST #2

Adjusted Rc =	0.220 ft,	(2.65 inches)
Rw =	0.333 ft,	4.00 inches
H =	34.48	ft
A =	1.77	(dimensionless)
B =	0.25	(dimensionless)
ln(Re/Rw) =	1.08	(partially penetrating)
C =	1.03	(dimensionless)
ln(Re/Rw) =	1.48	(fully penetrating)
Lw =	2.54	ft
Le =	2.54	ft
Y1 =	0.50	ft
Y2 =	0.19	ft
T =	10.70	minutes
BTL =	10.70	minutes
m =	3.16	

			FT/DAY	GPD/FT^2
Bouwer & Rice, 1976:			--------	--------
Partially penetrating well:	K	=	1.39	10.4
Fully penetrating well:	K	=	1.89	14.1
U.S. NAVY, 1974:	K	=	2.60	19.4
HVORSLEV, 1951:	K	=	4.10	30.7

VARIABLES for well: PIEZOMETER 1 SLUG OUT TEST #1

```
Adjusted Rc =    0.220 ft,  ( 2.65 inches)
       Rw =  0.333 ft,  4.00 inches
        H = 34.48  ft
        A =  1.77  (dimensionless)
        B =  0.25  (dimensionless)
ln(Re/Rw) =  1.08  (partially penetrating)
        C =  1.03  (dimensionless)
ln(Re/Rw) =  1.48  (fully penetrating)
       Lw =  2.54  ft
       Le =  2.54  ft
       Y1 =  0.50  ft
       Y2 =  0.19  ft
        T = 12.20  minutes
      BTL = 12.20  minutes
        m =  3.16
```

			FT/DAY	GPD/FT^2
Bouwer & Rice, 1976:				
Partially penetrating well:	K	=	1.22	9.1
Fully penetrating well:	K	=	1.66	12.4
U.S. NAVY, 1974:	K	=	2.28	17.1
HVORSLEV, 1951:	K	=	3.59	26.9

VARIABLES for well: PIEZOMETER 1 SLUG OUT TEST #2

```
Adjusted Rc =    0.220 ft,  ( 2.65 inches)
       Rw =  0.333 ft,  4.00 inches
        H = 34.48  ft
        A =  1.77  (dimensionless)
        B =  0.25  (dimensionless)
ln(Re/Rw) =  1.08  (partially penetrating)
        C =  1.03  (dimensionless)
ln(Re/Rw) =  1.48  (fully penetrating)
       Lw =  2.54  ft
       Le =  2.54  ft
       Y1 =  0.50  ft
       Y2 =  0.19  ft
        T = 12.30  minutes
      BTL = 12.30  minutes
        m =  3.16
```

			FT/DAY	GPD/FT^2
Bouwer & Rice, 1976:				
Partially penetrating well:	K	=	1.21	9.0
Fully penetrating well:	K	=	1.64	12.3
U.S. NAVY, 1974:	K	=	2.26	16.9
HVORSLEV, 1951:	K	=	3.56	26.7

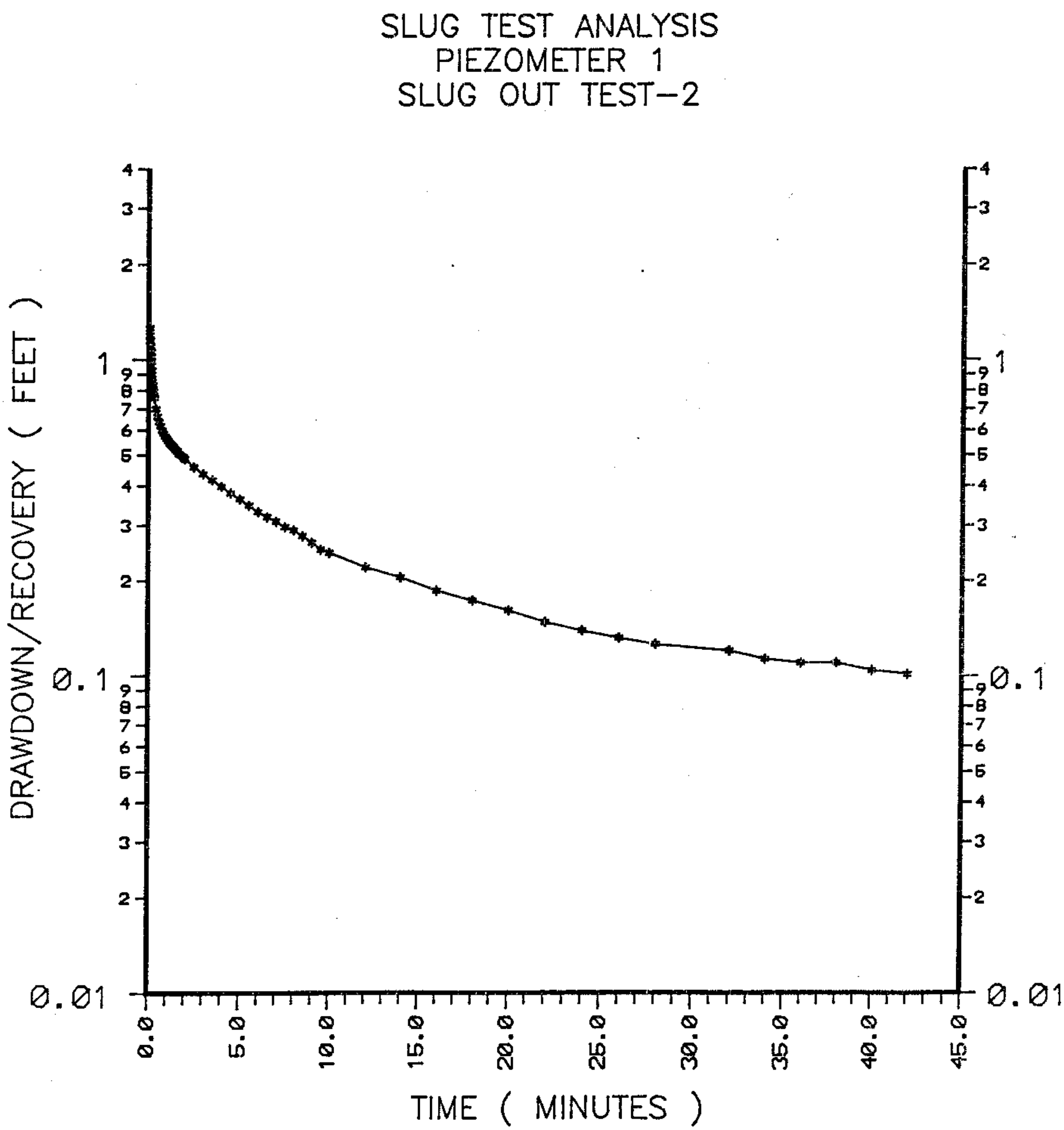
VERTICAL HYDRAULIC CONDUCTIVITY ANALYSIS (U.S. NAVY 1974)

$$K = \frac{2\pi r + 11L}{11\,(T_2 - T_1)} \ln \frac{h_1}{h_2}$$

VARIABLES for well: PIEZOMETER 2

R = 0.1667 feet
L = 0.5000 feet
t_1 = 0 minutes
t_2 = 300 minutes
h_1 = 1.4519 feet
h_2 = 1.3231 feet

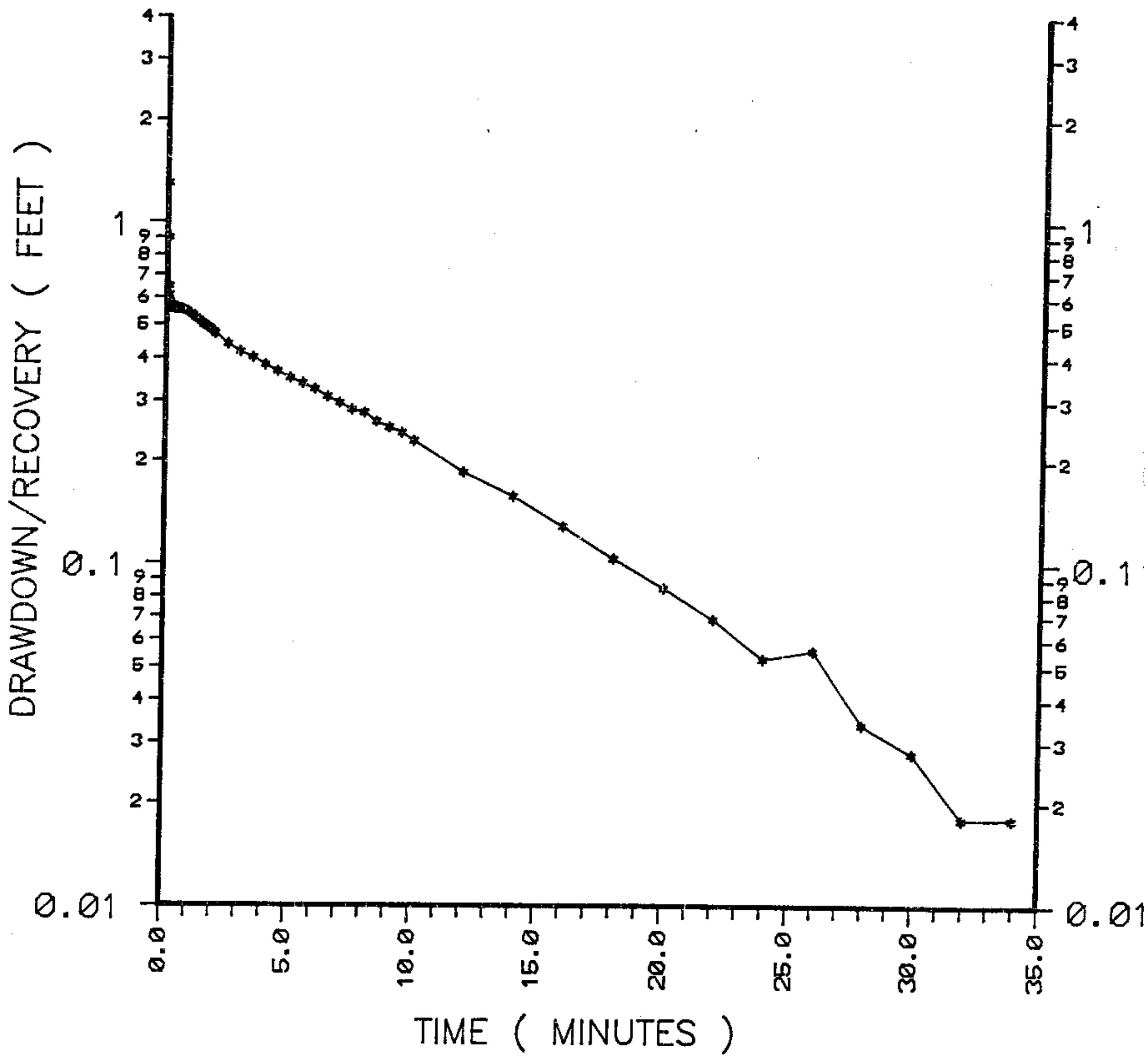
		FT/DAY	GPD/FT^2
U.S. NAVY, 1974:	K_v =	0.265	1.98



ViroGroup	AIR • WATER • SOIL TECHNOLOGY		MISSIMER DIVISION
	DRN. BY: JCS DWG NO. A-012491ER-2 DATE: 3/2/93		
	PROJECT NAME: GREENMEADOWS	NUMBER: 01-02491.00	

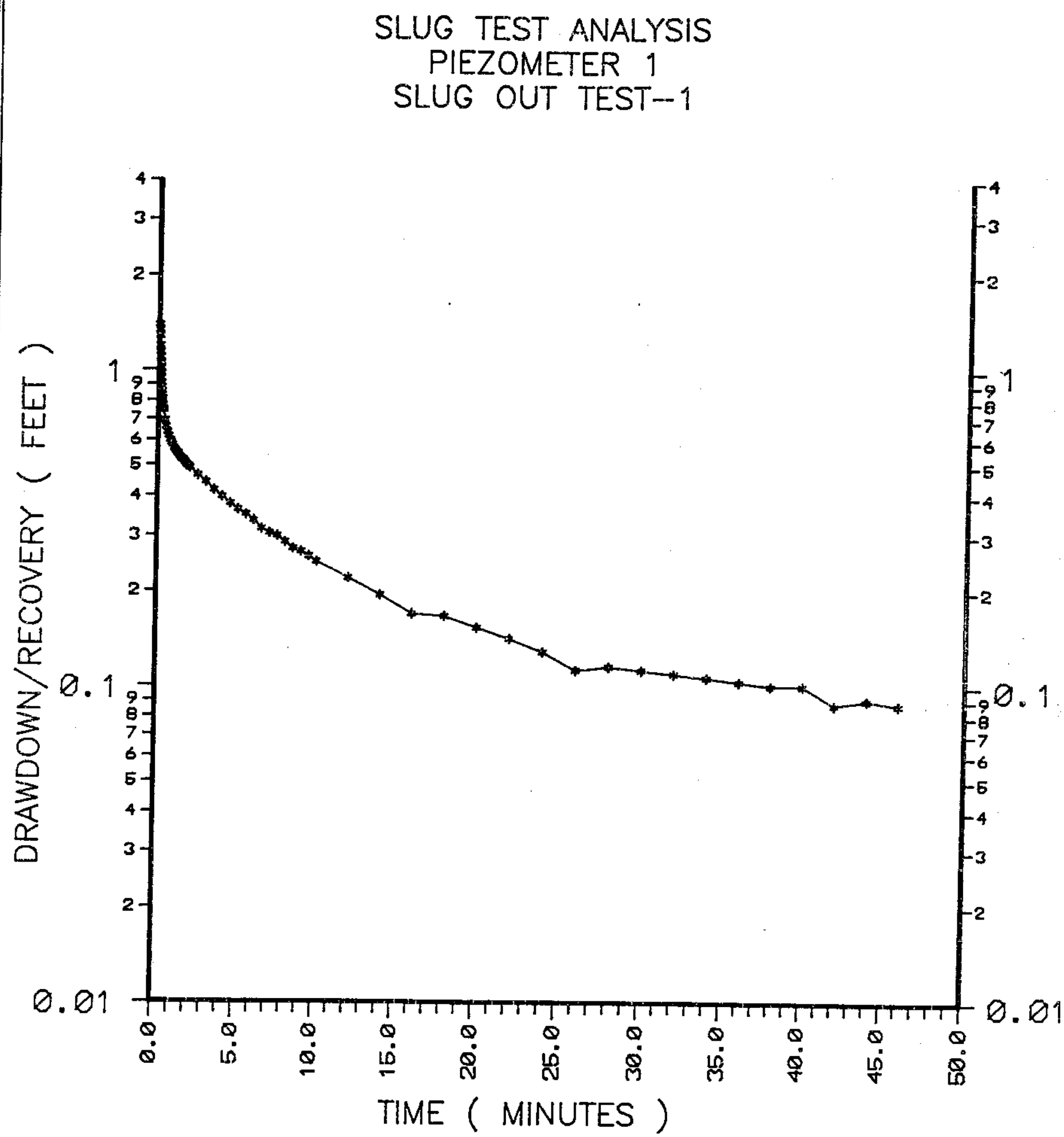
FIGURE C-1.

SLUG TEST ANALYSIS
PIEZOMETER 1
SLUG IN TEST-2



ViroGroup	*AIR • WATER • SOIL TECHNOLOGY*	MISSIMER DIVISION
	DRN. BY: JCS DWG NO. A-012491EP-2 DATE: 3/2/93	
	PROJECT NAME: GREENMEADOWS NUMBER: 01-02491.00	

FIGURE C-3.



ViroGroup | *AIR • WATER • SOIL TECHNOLOGY* | MISSIMER DIVISION

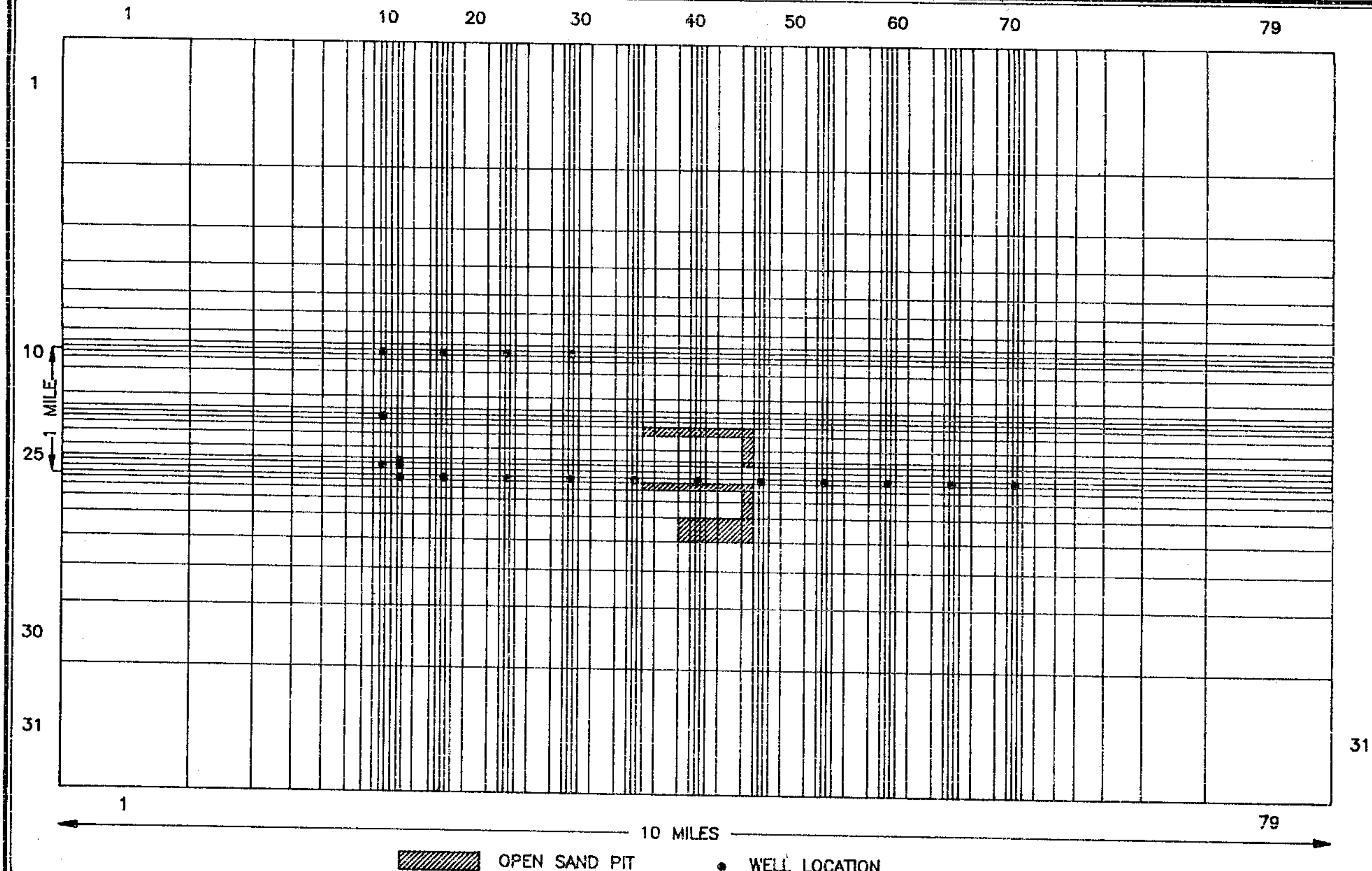
DRN. BY: JCS DWG NO. A-012491EQ-2 DATE: 3/2/93

PROJECT NAME: GREENMEADOWS NUMBER: 01-02491.00

FIGURE C-2.

APPENDIX D

COMPUTER MODEL DATA



ViroGroup | AIR • WATER • SOIL TECHNOLOGY

DRN. BY: JCS DWG NO. A-012491PK-1 DATE: 3/17/93

PROJECT NAME: GREEN MEADOWS PROJECT NUMBER: 01-02491.00

MISSIMER DIVISION

APPENDIX D . MODEL GRID SHOWING LOCATION OF WELLS AND ON-SITE SAND PITS.

BASIC INPUT FILE

```
MISSIMER & ASSOCIATES GROUNDWATER MODELING
MODEL # 1  FINE SCALE NEAR SITE IMPACT ASSESSMENT
          3         31          79          10          4
 11 12  0 14  0  0  0  0 00  0  0 22 23
          0          1
        1       1 (7912)          -3   LAYER 1 REPRESENTS-WATER TABLE I (UPPER PORTION)
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        1       1 (7912)          -3   LAYER 2 REPRESENTS WATER-TABLE II (LOWER PORTION)
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2	9	9	0
2	9	17	-28877.00
2	9	23	0
2	9	29	-28877.00
3	21	9	-96256.68
3	23	12	-96256.68
3	20	12	0
3	23	17	-96256.68
3	23	23	-96256.68
3	23	29	0
3	23	35	-96256.68
3	23	41	-96256.68
3	23	47	0
3	23	53	-96256.68
3	23	59	-96256.68
3	23	65	0
3	23	71	-96256.68
3	15	9	-96256.68
3	9	9	0
3	9	17	-96256.68
3	9	23	-96256.68
3	9	29	0
37	1		
2	21	9	0
2	23	12	-28877.00
2	20	12	0
2	21	12	-28877.00
2	23	17	0
2	23	23	-28877.00
2	23	29	-41390.4
2	23	35	0
2	23	41	-44278.07
2	23	47	-44278.07
2	23	53	-44278.07
2	23	59	-44278.07
2	23	65	-44278.07
2	23	71	-38502.7
2	15	9	0
2	9	9	-28877.00
2	9	17	0
2	9	23	-28877.00
2	9	29	0
3	21	9	0
3	23	12	-96256.68
3	20	12	-96256.68
3	23	17	0
3	23	23	-96256.68
3	23	29	-96256.68
3	23	35	0
3	23	41	-96256.68
3	23	47	-96256.68
3	23	53	0
3	23	59	-96256.68
3	23	65	-96256.68
3	23	71	0
3	15	9	-96256.68
3	9	9	-96256.68
3	9	17	0
3	9	23	-96256.68
3	9	29	-96256.68
37	1		
2	21	9	-28877.00
2	23	12	0
2	20	12	-28877.00
2	21	12	0
2	23	17	-28877.00
2	23	23	0
2	23	29	-41390.4
2	23	35	-28877.00
2	23	41	-44278.07
2	23	47	-44278.07
2	23	53	-44278.07
2	23	59	-44278.07
2	23	65	-44278.07
2	23	71	0
2	15	9	-28877.00
2	9	9	0
2	9	17	-28877.00
2	9	23	0
2	9	29	-28877.00
3	21	9	-96256.68
3	23	12	-96256.68
3	20	12	0
3	23	17	-96256.68
3	23	23	-96256.68
3	23	29	0
3	23	35	-96256.68
3	23	41	-96256.68
3	23	47	0
3	23	53	-96256.68
3	23	59	-96256.68
3	23	65	0
3	23	71	-96256.68
3	15	9	-96256.68
3	9	9	0
3	9	17	-96256.68
3	9	23	-96256.68
3	9	29	0
37	1		
2	21	9	0
2	23	12	-28877.00
2	20	12	0
2	21	12	-28377.00
2	23	17	0
2	23	23	-28877.00
2	23	29	-41390.4
2	23	35	0
2	23	41	-44278.07
2	23	47	-44278.07
2	23	53	-44278.07
2	23	59	-44278.07
2	23	65	-44278.07
2	23	71	-38502.7
2	15	9	0
2	9	9	-28877.00
2	9	17	0
2	9	23	-28877.00
2	9	29	0
3	21	9	0
3	23	12	-96256.68
3	20	12	-96256.68
3	23	17	0
3	23	23	-96256.68
3	23	29	-96256.68
3	23	35	0
3	23	41	-96256.68
3	23	47	-96256.68
3	23	53	0
3	23	59	-96256.68
3	23	65	-96256.68
3	23	71	0
3	15	9	-96256.68
3	9	9	-96256.68
3	9	17	0
3	9	23	-96256.68
3	9	29	-96256.68

PRECONDITIONED CONJUGATE GRADIENT PACKAGE

1	50	1		PCG package		
.0001	.01	1.0	0	1	0	0

OUTPUT CONTROL PACKAGE

1	1	0	90		RECORD 1	
0	1	0	0	sp1	REC.2	
0	0	0	0	sp1	REC.3	
-1	1	0	0	sp2	REC.2	
-1	1	0	0	sp3	REC.2	
-1	1	0	0	sp4	REC.2	
-1	1	0	0	sp5	REC.2	
-1	1	0	0	sp6	REC.2	
-1	1	0	0	sp7	REC.2	
-1	1	0	0	sp8	REC.2	
-1	1	0	0	sp9	REC.2	
0	1	0	0	sp10	REC.2	
1	1	0	1	sp10	REC.3	WRITE HD & DD

RIVER PACKAGE

	51	0			
	51	0			
1	1	17	37	-0.2	50000
2	1	17	38	-0.2	100000
3	1	17	39	-0.2	50000
4	1	17	40	-0.2	22000
5	1	17	41	-0.2	20000
6	1	17	42	-0.2	22000
7	1	17	43	-0.2	50000
8	1	17	44	-0.2	100000
9	1	17	45	-0.2	50000
10	1	18	45	-0.2	180000
11	1	19	45	-0.2	138000
12	1	20	45	-0.2	120000
13	1	25	45	-0.2	240000
14	1	26	45	-0.2	300000
15	1	27	45	-0.2	335000
16	1	27	44	-0.2	500000
17	1	27	43	-0.2	250000
18	1	27	42	-0.2	110000
19	1	27	41	-0.2	100000
20	1	27	40	-0.2	110000
21	1	27	39	-0.2	250000
22	1	24	37	-0.2	10000
23	1	24	38	-0.2	20000
24	1	24	39	-0.2	10000
25	1	24	40	-0.2	4400
26	1	24	41	-0.2	4000
27	1	24	42	-0.2	4400
28	1	24	43	-0.2	10000
29	1	24	44	-0.2	20000
30	1	24	45	-0.2	10000
31	2	17	37	-0.2	50000
32	2	17	38	-0.2	100000
33	2	17	39	-0.2	50000
34	2	17	40	-0.2	22000
35	2	17	41	-0.2	20000
36	2	17	42	-0.2	22000
37	2	17	43	-0.2	50000
38	2	17	44	-0.2	100000
39	2	17	45	-0.2	50000
40	2	18	45	-0.2	180000
41	2	19	45	-0.2	138000
42	2	20	45	-0.2	120000
43	2	25	45	-0.2	240000
44	2	26	45	-0.2	300000
	2	27	45	-0.2	335000
	2	27	44	-0.2	500000
	2	27	43	-0.2	250000
	2	27	42	-0.2	110000
	2	27	41	-0.2	100000
	2	27	40	-0.2	110000
	2	27	39	-0.2	250000
	-1	0			
	-1	0			
	-1	0			
	-1	0			
	-1	0			
	-1	0			
	-1	0			
	-1	0			
	-1	0			

44 fur

MODFLOW OUTPUT FILE

```
U.S. GEOLOGICAL SURVEY MODULAR FINITE-DIFFERENCE GROUND-WATER MODEL

CODE MODIFICATIONS BY:

  MISSIMER DIVISION: VIROGROUP, INC.
  P.O. BOX 151306
  CAPE CORAL, FL  33915-1306
  (813) 574-1919

MISSIMER & ASSOCIATES GROUNDWATER MODELING
JOB NO.  ______.  MODEL # 1  FINE SCALE NEAR SITE IMPACT ASSESSMENT


   3 LAYERS          31 ROWS          79 COLUMNS
 10 STRESS PERIOD(S) IN SIMULATION
 MODEL TIME UNIT IS DAYS
 I/O UNITS:
 ELEMENT OF IUNIT:  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
        I/O UNIT: 11 12  0 14  0  0  0  0  0  0  0 22 23  0  0  0  0  0  0  0  0  0  0  0

BAS1 -- BASIC MODEL PACKAGE, VERSION 1, 9/1/87
 INPUT READ FROM UNIT  1
 ARRAYS RHS AND BUFF WILL SHARE MEMORY.
 STARTING HEADS WILL BE SAVED
   71143 ELEMENTS IN X ARRAY ARE USED BY BAS
   71143 ELEMENTS OF X ARRAY USED OUT OF  400000

BCF2 -- BLOCK-CENTERED FLOW PACKAGE, VERSION 2, 7/1/91
INPUT READ FROM UNIT 11
 TRANSIENT SIMULATION
 CELL-BY-CELL FLOWS WILL BE RECORDED ON UNIT 34
 HEAD AT CELLS THAT CONVERT TO DRY=  -888.00
 WETTING CAPABILITY IS NOT ACTIVE
      LAYER  AQUIFER TYPE
      -------------------
        1          1
        2          3
        3          0
   22044 ELEMENTS IN X ARRAY ARE USED BY BCF
   93187 ELEMENTS OF X ARRAY USED OUT OF  400000

WEL1 -- WELL PACKAGE, VERSION 1, 9/1/87
 INPUT READ FROM 12
 MAXIMUM OF    37 WELLS
     148 ELEMENTS IN X ARRAY ARE USED FOR WELLS
   93335 ELEMENTS OF X ARRAY USED OUT OF  400000

RIV1 -- RIVER PACKAGE, VERSION 1, 9/1/87
 INPUT READ FROM UNIT 14
 MAXIMUM OF    51 RIVER NODES
     306 ELEMENTS IN X ARRAY ARE USED FOR RIVERS
   93641 ELEMENTS OF X ARRAY USED OUT OF  400000

PCG2 -- CONJUGATE GRADIENT SOLUTION PACKAGE, VERSION 2, 5/1/88
 INPUT READ FROM UNIT 23
 MAXIMUM OF    1 CALLS OF SOLUTION ROUTINE
 MAXIMUM OF   50 INTERNAL ITERATIONS PER CALL TO SOLUTION ROUTINE
 MATRIX PRECONDITIONING TYPE :     1
  29788 ELEMENTS IN X ARRAY ARE USED BY PCG
 123429 ELEMENTS OF X ARRAY USED OUT OF 400000


MISSIMER & ASSOCIATES GROUNDWATER MODELING
JOB NO.  ______.  MODEL # 1  FINE SCALE NEAR SITE IMPACT ASSESSMENT


 BOUNDARY ARRAY FOR LAYER  1 WILL BE READ ON UNIT  1 USING FORMAT: (7912)

 BOUNDARY ARRAY FOR LAYER  2 WILL BE READ ON UNIT  1 USING FORMAT: (7912)

 BOUNDARY ARRAY FOR LAYER  3 WILL BE READ ON UNIT  1 USING FORMAT: (7912)

 AQUIFER HEAD WILL BE SET TO  999.99     AT ALL NO-FLOW NODES (IBOUND=0).

 INITIAL HEAD =  0.0000000E+00 FOR LAYER  1

 INITIAL HEAD =  0.0000000E+00 FOR LAYER  2

 INITIAL HEAD =  0.0000000E+00 FOR LAYER  3

 HEAD PRINT FORMAT IS FORMAT NUMBER   1    DRAWDOWN PRINT FORMAT IS FORMAT NUMBER   1

 HEADS WILL BE SAVED ON UNIT  0    DRAWDOWNS WILL BE SAVED ON UNIT 90

 OUTPUT CONTROL IS SPECIFIED EVERY TIME STEP

 COLUMN/ROW ANISOTROPY =    1.000000

 DELR (delta x) WILL BE READ ON UNIT 11 USING FORMAT: (10F8.0)

 DELC (delta y) WILL BE READ ON UNIT 11 USING FORMAT: (10F8.0)

 PRIMARY STORAGE COEF =  0.1500000      FOR LAYER  1

 HYDRAULIC CONDUCTIVITY =   2.600000      FOR LAYER  1

 BOTTOM ELEVATION =  -6.000000       FOR LAYER  1

 LEAKANCE (VCONT) =  0.5300000E-01 FOR LAYER  1

 PRIMARY STORAGE COEF =  0.5000000E-03 FOR LAYER  2

 HYDRAULIC CONDUCTIVITY =   5012.500      FOR LAYER  2

 BOTTOM ELEVATION =  -51.00000       FOR LAYER  2

 LEAKANCE (VCONT) =  0.3900000E-04 FOR LAYER  2

 SECONDARY STORAGE COEF. =  0.1500000      FOR LAYER  2

 TOP ELEVATION =  -11.00000      FOR LAYER  2

 PRIMARY STORAGE COEF =  0.1500000E-03 FOR LAYER  3

 TRANSMISSIVITY =   4010.000      FOR LAYER  3


SOLUTION BY THE CONJUGATE-GRADIENT METHOD
------------------------------------------------------------------
MAXIMUM NUMBER OF CALLS TO PCG ROUTINE                   =         1
MAXIMUM ITERATIONS PER CALL TO PCG                       =        50
MATRIX PRECONDITIONING TYPE                              =         1
RELAXATION FACTOR (ONLY USED WITH PRECOND. TYPE 1)       =   0.10000E+01
PARAMETER OF POLY. PRECOND. = 2 (2) OR IS CALCULATED     :         0
HEAD CHANGE CRITERION FOR CLOSURE                        =   0.10000E-03
RESIDUAL CHANGE CRITERION FOR CLOSURE                    =   0.10000E-01
PCG HEAD AND RESIDUAL CHANGE PRINTOUT INTERVAL           =         1
ALL PRINTING FROM THE SOLVER IS SUPPRESSED (1)           =         0
FOR NPCOND=1, DO (0) OR DO NOT (1) RECALCULATE
               CHOLESKY DIAGONAL EACH OUTER ITERATION    =         0

 STRESS PERIOD NO.    1, LENGTH =    9.000000
 ----------------------------------------------
   NUMBER OF TIME STEPS =       1
    MULTIPLIER FOR DELT =     1.000
 INITIAL TIME STEP SIZE =   9.000000

 37 WELLS ACTIVE IN CURRENT STRESS PERIOD
```

LAYER	ROW	COL	STRESS RATE	WELL NO.
2	21	9	-28877.	1
2	23	12	0.00000E+00	2
2	20	12	-28877.	3
2	21	12	0.00000E+00	4
2	23	17	-28877.	5
2	23	23	0.00000E+00	6
2	23	29	-41390.	7
2	23	35	-28877.	8
2	23	41	-44278.	9
2	23	47	-44278.	10
2	23	53	-44278.	11
2	23	59	-44278.	12
2	23	65	-44278.	13
2	23	71	0.00000E+00	14
2	15	9	-28877.	15
2	9	9	0.00000E+00	16
2	9	17	-28877.	17
2	9	23	0.00000E+00	18
2	9	29	-28877.	19
3	21	9	-96257.	20
3	23	12	-96257.	21
3	20	12	0.00000E+00	22

```
     3   23   17    -96257.         23
     3   23   23    -96257.         24
     3   23   29    0.00000E+00     25
     3   23   35    -96257.         26
     3   23   41    -96257.         27
     3   23   47    0.00000E+00     28
     3   23   53    -96257.         29
     3   23   59    -96257.         30
     3   23   65    0.00000E+00     31
     3   23   71    -96257.         32
     3   15    9    -96257.         33
     3    9    9    0.00000E+00     34
     3    9   17    -96257.         35
     3    9   23    -96257.         36
     3    9   29    0.00000E+00     37

  51 RIVER REACHES ACTIVE IN THIS STRESS PERIOD

   1 CALLS TO PCG ROUTINE FOR TIME STEP    1 IN STRESS PERIOD  1
  31 TOTAL ITERATIONS

MAXIMUM HEAD CHANGE FOR EACH ITERATION:     MAXIMUM RESIDUAL FOR EACH ITERATION:
 NO. HEAD CHANGE LAYER,ROW,COL                NO.  RESIDUAL    LAYER,ROW,COL
--------------------------------------      -------------------------------------
   1  -40.59        ( 3, 21,  9)              1  0.8302E+05  ( 2, 27, 44)
   2  -15.70        ( 3, 23, 41)              2  0.6250E+05  ( 2, 27, 44)
   3  -7.194        ( 3, 23, 17)              3  0.4388E+05  ( 2, 27, 44)
   4  -2.596        ( 3,  4, 22)              4  0.3259E+05  ( 2, 27, 44)
   5   1.577        ( 3,  1,  5)              5  0.2117E+05  ( 2, 27, 44)
   6   1.425        ( 3,  6,  8)              6  0.1193E+05  ( 2, 27, 44)
   7  0.7297        ( 3,  2,  5)              7   7239.      ( 2, 27, 44)
   8  0.4936        ( 3,  6,  8)              8   4452.      ( 2, 27, 44)
   9 -0.2120        ( 3,  7, 20)              9   2624.      ( 2, 27, 44)
  10 -0.1832        ( 3, 18,  5)             10   1586.      ( 1, 27, 44)
  11  0.7750E-01    ( 3, 21,  6)             11   870.9      ( 1, 27, 44)
  12 -0.5824E-01    ( 3,  3, 27)             12   459.8      ( 1, 27, 44)
  13 -0.2196E-01    ( 3,  4,  6)             13   274.3      ( 1, 27, 44)
  14 -0.1364E-01    ( 3,  5,  2)             14   163.0      ( 1, 27, 44)
  15  0.8004E-02    ( 3, 22, 16)             15   93.28      ( 1, 27, 44)
  16  0.6445E-02    ( 3, 14, 22)             16   53.63      ( 1, 27, 44)
  17  0.2734E-02    ( 3,  2, 45)             17   30.74      ( 1, 27, 44)
  18  0.1661E-02    ( 3, 20, 71)             18   17.40      ( 1, 27, 44)
  19 -0.8936E-03    ( 3, 15, 15)             19   10.61      ( 1, 27, 44)
  20  0.6521E-03    ( 3, 14, 16)             20   5.751      ( 1, 27, 44)
  21 -0.3272E-03    ( 3, 23, 28)             21   3.102      ( 1, 27, 44)
  22 -0.1418E-03    ( 3, 13, 71)             22   1.889      ( 1, 27, 44)
  23 -0.1020E-03    ( 3, 17, 41)             23   1.075      ( 1, 27, 44)
  24 -0.6549E-04    ( 3,  9, 53)             24  0.6409      ( 1, 27, 44)
  25  0.2994E-04    ( 3, 26, 69)             25  0.3774      ( 1, 27, 44)
  26  0.2704E-04    ( 3, 16, 71)             26  0.1976      ( 1, 27, 44)
  27 -0.8941E-05    ( 3, 13,  4)             27  0.1084      ( 1, 27, 44)
  28  0.5599E-05    ( 3,  5, 69)             28  0.5933E-01  ( 1, 27, 44)
  29 -0.2785E-05    ( 3, 13,  3)             29  0.3417E-01  ( 1, 27, 44)
  30  0.1365E-05    ( 3, 13, 71)             30  0.1863E-01  ( 1, 27, 44)
  31  0.8438E-06    ( 3, 16, 46)             31  0.9961E-02  ( 1, 27, 44)

HEAD/DRAWDOWN PRINTOUT FLAG = 1
 TOTAL BUDGET PRINTOUT FLAG = 0
CELL-BY-CELL FLOW TERM FLAG = 0

OUTPUT FLAGS FOR ALL LAYERS ARE THE SAME:
  HEAD    DRAWDOWN  HEAD  DRAWDOWN
PRINTOUT  PRINTOUT  SAVE    SAVE
----------------------------------
    0         0       0       0


VOLUMETRIC BUDGET FOR ENTIRE MODEL AT END OF TIME STEP  1 IN STRESS PERIOD  1
------------------------------------------------------------------------------
     CUMULATIVE VOLUMES        L**3       RATES FOR THIS TIME STEP       L**3/T
     ------------------                   ------------------------

  IN:                                      IN:
  ---                                      ---
     STORAGE          =   0.14945E+08         STORAGE          =   0.16605E+07
     CONSTANT HEAD    =   0.00000E+00         CONSTANT HEAD    =   0.00000E+00
     WELLS            =   0.00000E+00         WELLS            =   0.00000E+00
     RIVER LEAKAGE    =    56157.             RIVER LEAKAGE    =    6239.7
              TOTAL IN =   0.15001E+08                  TOTAL IN =   0.16668E+07
  OUT:                                     OUT:
  ----                                     ----
     STORAGE          =   0.00000E+00         STORAGE          =   0.00000E+00
     CONSTANT HEAD    =   0.00000E+00         CONSTANT HEAD    =   0.00000E+00
     WELLS            =   0.14580E+08         WELLS            =   0.16200E+07
     RIVER LEAKAGE    =   0.42098E+06         RIVER LEAKAGE    =    46775.
             TOTAL OUT =   0.15001E+08                 TOTAL OUT =   0.16660E+07
              IN - OUT =    8.0000                      IN - OUT =   0.75000
  PERCENT DISCREPANCY =      0.00         PERCENT DISCREPANCY =      0.00
  INPUT/OUTPUT RATIO  =      1.00         INPUT/OUTPUT RATIO  =      1.00


TIME SUMMARY AT END OF TIME STEP  1 IN STRESS PERIOD  1
                      SECONDS     MINUTES     HOURS      DAYS       YEARS
                   -----------------------------------------------------------
   TIME STEP LENGTH 0.7776E+06  0.1296E+05   216.0      9.000     0.2464E-01
 STRESS PERIOD TIME 0.7776E+06  0.1296E+05   216.0      9.000     0.2464E-01
TOTAL SIMULATION TIME 0.7776E+06 0.1296E+05  216.0      9.000     0.2464E-01

  STRESS PERIOD NO.    2, LENGTH =   9.000000
  ----------------------------------------------

    NUMBER OF TIME STEPS =      1
     MULTIPLIER FOR DELT =     1.000
  INITIAL TIME STEP SIZE =   9.000000

  37 WELLS ACTIVE IN CURRENT STRESS PERIOD
   LAYER   ROW   COL   STRESS RATE    WELL NO.
  ----------------------------------------------
      2    21     9    0.00000E+00      1
      2    23    12    -28877.          2
      2    20    12    0.00000E+00      3
      2    21    12    -28877.          4
      2    23    17    0.00000E+00      5
      2    23    23    -28877.          6
      2    23    29    -41390.          7
      2    23    35    0.00000E+00      8
      2    23    41    -44278.          9
      2    23    47    -44278.         10
      2    23    53    -44278.         11
      2    23    59    -44278.         12
      2    23    65    -44278.         13
      2    23    71    -38503.         14
      2    15     9    0.00000E+00     15
      2     9     9    -28877.         16
      2     9    17    0.00000E+00     17
      2     9    23    -28877.         18
      2     9    29    0.00000E+00     19
      3    21     9    0.00000E+00     20
      3    23    12    -96257.         21
      3    20    12    -96257.         22
      3    23    17    0.00000E+00     23
      3    23    23    -96257.         24
      3    23    29    -96257.         25
      3    23    35    0.00000E+00     26
      3    23    41    -96257.         27
      3    23    47    -96257.         28
      3    23    53    0.00000E+00     29
      3    23    59    -96257.         30
      3    23    65    -96257.         31
      3    23    71    0.00000E+00     32
      3    15     9    -96257.         33
      3     9     9    -96257.         34
      3     9    17    0.00000E+00     35
      3     9    23    -96257.         36
      3     9    29    -96257.         37
  REUSING RIVER REACHES FROM LAST STRESS PERIOD

     1 CALLS TO PCG ROUTINE FOR TIME STEP    1 IN STRESS PERIOD  2
    29 TOTAL ITERATIONS

  MAXIMUM HEAD CHANGE FOR EACH ITERATION:      MAXIMUM RESIDUAL FOR EACH ITERATION:
   NO. HEAD CHANGE LAYER,ROW,COL                 NO.  RESIDUAL    LAYER,ROW,COL
  --------------------------------------       -------------------------------------
     1  -16.85        ( 3,  9, 29)               1 -0.6290E+05  ( 3, 23, 17)
     2  -8.211        ( 3, 20, 12)               2 -0.3377E+05  ( 3, 23, 17)
     3  -4.230        ( 3,  9, 29)               3 -0.1269E+05  ( 3, 21,  9)
     4   2.181        ( 3,  8, 28)               4    9807.     ( 3, 21, 11)
     5   1.215        ( 3, 15, 58)               5    6998.     ( 3, 21, 11)
     6  0.8992        ( 3,  7, 22)               6    3989.     ( 3, 21, 11)
     7  0.5849        ( 3, 10, 16)               7    2078.     ( 3, 21, 11)
     8  0.2716        ( 3, 23,  6)               8    877.7     ( 3, 21, 11)
     9  0.1299        ( 3,  9, 12)               9   -545.5     ( 3, 25, 69)
    10 -0.9668E-01    ( 3,  7, 16)              10    385.7     ( 3, 11, 27)
    11 -0.5612E-01    ( 3, 25, 63)              11    213.9     ( 3, 22, 10)
```

NO.	HEAD CHANGE	LAYER,ROW,COL
12	-0.2964E-01	(3, 13, 21)
13	-0.1683E-01	(3, 20, 47)
14	0.9403E-02	(3, 21, 11)
15	0.6079E-02	(3, 14, 28)
16	0.4068E-02	(3, 2, 52)
17	0.1719E-02	(3, 14, 62)
18	-0.7467E-03	(3, 14, 5)
19	-0.7861E-03	(3, 14, 11)
20	-0.3917E-03	(3, 14, 4)
21	-0.2406E-03	(3, 15, 8)
22	-0.1027E-03	(3, 9, 45)
23	-0.5061E-04	(3, 14, 69)
24	0.4018E-04	(3, 7, 58)
25	0.2027E-04	(3, 14, 52)
26	0.1350E-04	(3, 2, 8)
27	0.7011E-05	(3, 9, 8)
28	-0.4066E-05	(3, 12, 8)
29	-0.1682E-05	(3, 17, 53)

NO.	RESIDUAL	LAYER,ROW,COL
12	123.2	(3, 22, 10)
13	-68.87	(3, 21, 19)
14	-44.66	(3, 21, 37)
15	27.31	(3, 21, 31)
16	13.74	(3, 21, 31)
17	7.559	(3, 23, 9)
18	4.053	(3, 23, 9)
19	-2.167	(3, 26, 68)
20	-1.079	(3, 26, 14)
21	0.6464	(3, 5, 33)
22	0.5546	(3, 24, 8)
23	0.3704	(3, 24, 8)
24	0.1706	(3, 24, 8)
25	0.9108E-01	(3, 20, 32)
26	0.4336E-01	(3, 6, 12)
27	0.2673E-01	(3, 25, 7)
28	0.1748E-01	(3, 25, 7)
29	0.7405E-02	(3, 25, 7)

HEAD/DRAWDOWN PRINTOUT FLAG = 1
TOTAL BUDGET PRINTOUT FLAG = 0
CELL-BY-CELL FLOW TERM FLAG = 0
REUSING PREVIOUS VALUES OF IOFLG

VOLUMETRIC BUDGET FOR ENTIRE MODEL AT END OF TIME STEP 1 IN STRESS PERIOD 2

CUMULATIVE VOLUMES	L**3	RATES FOR THIS TIME STEP	L**3/T
IN:		IN:	
STORAGE =	0.28726E+08	STORAGE =	0.15312E+07
CONSTANT HEAD =	0.00000E+00	CONSTANT HEAD =	0.00000E+00
WELLS =	0.00000E+00	WELLS =	0.00000E+00
RIVER LEAKAGE =	0.68505E+06	RIVER LEAKAGE =	69878.
TOTAL IN =	0.29411E+08	TOTAL IN =	0.16011E+07
OUT:		OUT:	
STORAGE =	3168.6	STORAGE =	352.07
CONSTANT HEAD =	0.00000E+00	CONSTANT HEAD =	0.00000E+00
WELLS =	0.28987E+08	WELLS =	0.16007E+07
RIVER LEAKAGE =	0.42098E+06	RIVER LEAKAGE =	0.00000E+00
TOTAL OUT =	0.29411E+08	TOTAL OUT =	0.16011E+07
IN - OUT =	8.0000	IN - OUT =	-0.25000
PERCENT DISCREPANCY =	0.00	PERCENT DISCREPANCY =	0.00
INPUT/OUTPUT RATIO =	1.00	INPUT/OUTPUT RATIO =	1.00

TIME SUMMARY AT END OF TIME STEP 1 IN STRESS PERIOD 2

	SECONDS	MINUTES	HOURS	DAYS	YEARS
TIME STEP LENGTH	0.7776E+06	0.1296E+05	216.0	9.000	0.2464E-01
STRESS PERIOD TIME	0.7776E+06	0.1296E+05	216.0	9.000	0.2464E-01
TOTAL SIMULATION TIME	0.1555E+07	0.2592E+05	432.0	18.00	0.4928E-01

STRESS PERIOD NO. 3, LENGTH = 9.000000

NUMBER OF TIME STEPS = 1
MULTIPLIER FOR DELT = 1.000
INITIAL TIME STEP SIZE = 9.000000

37 WELLS ACTIVE IN CURRENT STRESS PERIOD
REUSING RIVER REACHES FROM LAST STRESS PERIOD

1 CALLS TO PCG ROUTINE FOR TIME STEP 1 IN STRESS PERIOD 3
29 TOTAL ITERATIONS

MAXIMUM HEAD CHANGE FOR EACH ITERATION:

NO.	HEAD CHANGE	LAYER,ROW,COL
1	12.44	(3, 9, 29)
2	5.921	(3, 20, 12)
3	-3.614	(3, 23, 17)
4	-2.306	(3, 8, 28)
5	1.054	(3, 10, 27)
6	0.9829	(3, 8, 10)
7	-0.3984	(3, 10, 16)
8	0.3020	(3, 10, 8)
9	-0.1471	(3, 9, 12)

MAXIMUM RESIDUAL FOR EACH ITERATION:

NO.	RESIDUAL	LAYER,ROW,COL
1	0.6365E+05	(3, 23, 17)
2	0.3433E+05	(3, 23, 17)
3	-0.1171E+05	(3, 21, 11)
4	-9959.	(3, 21, 11)
5	-7133.	(3, 21, 11)
6	-4093.	(3, 21, 11)
7	-2071.	(3, 21, 11)
8	801.8	(3, 19, 12)
9	-551.3	(3, 11, 27)

NO.	HEAD CHANGE	LAYER,ROW,COL
10	0.7157E-01	(3, 7, 16)
11	-0.4325E-01	(3, 11, 15)
12	-0.2695E-01	(3, 3, 22)
13	-0.1896E-01	(3, 13, 30)
14	0.9248E-02	(3, 7, 24)
15	0.4243E-02	(3, 20, 54)
16	0.3263E-02	(3, 14, 22)
17	0.1757E-02	(3, 21, 49)
18	-0.8307E-03	(3, 14, 14)
19	0.6351E-03	(3, 14, 11)
20	-0.4042E-03	(3, 18, 12)
21	0.1785E-03	(3, 15, 8)
22	-0.9944E-04	(3, 23, 8)
23	0.5286E-04	(3, 24, 8)
24	-0.3843E-04	(3, 7, 58)
25	0.2170E-04	(3, 14, 64)
26	0.1185E-04	(3, 4, 8)
27	-0.6987E-05	(3, 9, 8)
28	0.2980E-05	(3, 25, 7)
29	-0.2178E-05	(3, 24, 18)

NO.	RESIDUAL	LAYER,ROW,COL
10	-392.0	(3, 11, 27)
11	-217.1	(3, 22, 10)
12	-122.6	(3, 22, 10)
13	66.45	(3, 21, 19)
14	-43.24	(3, 21, 49)
15	-27.00	(3, 21, 31)
16	-13.76	(3, 21, 31)
17	-7.485	(3, 23, 9)
18	-3.854	(3, 23, 9)
19	2.039	(3, 20, 31)
20	1.072	(3, 24, 9)
21	-0.6414	(3, 20, 32)
22	-0.5643	(3, 24, 8)
23	-0.3778	(3, 24, 8)
24	-0.1732	(3, 24, 8)
25	-0.8536E-01	(3, 20, 32)
26	-0.4163E-01	(3, 6, 12)
27	-0.2785E-01	(3, 25, 7)
28	-0.1800E-01	(3, 25, 7)
29	-0.7129E-02	(3, 25, 7)

HEAD/DRAWDOWN PRINTOUT FLAG = 1
TOTAL BUDGET PRINTOUT FLAG = 0
CELL-BY-CELL FLOW TERM FLAG = 0
REUSING PREVIOUS VALUES OF IOFLG

VOLUMETRIC BUDGET FOR ENTIRE MODEL AT END OF TIME STEP 1 IN STRESS PERIOD 3

CUMULATIVE VOLUMES	L**3	RATES FOR THIS TIME STEP	L**3/T
IN:		IN:	
STORAGE =	0.42043E+08	STORAGE =	0.14797E+07
CONSTANT HEAD =	0.00000E+00	CONSTANT HEAD =	0.00000E+00
WELLS =	0.00000E+00	WELLS =	0.00000E+00
RIVER LEAKAGE =	0.19769E+07	RIVER LEAKAGE =	0.14353E+06
TOTAL IN =	0.44020E+08	TOTAL IN =	0.16233E+07
OUT:		OUT:	
STORAGE =	32532.	STORAGE =	3262.7
CONSTANT HEAD =	0.00000E+00	CONSTANT HEAD =	0.00000E+00
WELLS =	0.43567E+08	WELLS =	0.16200E+07
RIVER LEAKAGE =	0.42098E+06	RIVER LEAKAGE =	0.00000E+00
TOTAL OUT =	0.44020E+08	TOTAL OUT =	0.16233E+07
IN - OUT =	-20.000	IN - OUT =	-2.8750
PERCENT DISCREPANCY =	0.00	PERCENT DISCREPANCY =	0.00
INPUT/OUTPUT RATIO =	1.00	INPUT/OUTPUT RATIO =	1.00

TIME SUMMARY AT END OF TIME STEP 1 IN STRESS PERIOD 3

	SECONDS	MINUTES	HOURS	DAYS	YEARS
TIME STEP LENGTH	0.7776E+06	0.1296E+05	216.0	9.000	0.2464E-01
STRESS PERIOD TIME	0.7776E+06	0.1296E+05	216.0	9.000	0.2464E-01
TOTAL SIMULATION TIME	0.2333E+07	0.3888E+05	648.0	27.00	0.7392E-01

STRESS PERIOD NO. 4, LENGTH = 9.000000

NUMBER OF TIME STEPS = 1
MULTIPLIER FOR DELT = 1.000
INITIAL TIME STEP SIZE = 9.000000

37 WELLS ACTIVE IN CURRENT STRESS PERIOD

LAYER	ROW	COL	STRESS RATE	WELL NO.
2	21	9	0.00000E+00	1
2	23	12	-28877.	2
2	20	12	0.00000E+00	3
2	21	12	-28877.	4
2	23	17	0.00000E+00	5
2	23	23	-28877.	6
2	23	29	-41390.	7
2	23	35	0.00000E+00	8
2	23	41	-44278.	9
2	23	47	-44278.	10
2	23	53	-44278.	11
2	23	59	-44278.	12
2	23	65	-44278.	13

LAYER	ROW	COL	STRESS RATE	WELL NO.
2	23	71	-36503.	14
2	15	9	0.00000E+00	15
2	9	9	-28877.	16
2	9	17	0.00000E+00	17
2	9	23	-28877.	18
2	9	29	0.00000E+00	19
3	21	9	0.00000E+00	20
3	23	12	-96257.	21
3	20	12	-96257.	22
3	23	17	0.00000E+00	23
3	23	23	-96257.	24
3	23	29	-96257.	25
3	23	35	0.00000E+00	26
3	23	41	-96257.	27
3	23	47	-96257.	28
3	23	53	0.00000E+00	29
3	23	59	-96257.	30
3	23	65	-96257.	31
3	23	71	0.00000E+00	32
3	15	9	-96257.	33
3	9	9	-96257.	34
3	9	17	0.00000E+00	35
3	9	23	-96257.	36
3	9	29	-96257.	37

REUSING RIVER REACHES FROM LAST STRESS PERIOD

1 CALLS TO PCG ROUTINE FOR TIME STEP 1 IN STRESS PERIOD 4
29 TOTAL ITERATIONS

MAXIMUM HEAD CHANGE FOR EACH ITERATION:

NO.	HEAD CHANGE	LAYER,ROW,COL
1	-13.33	(3, 9, 29)
2	-6.587	(3, 20, 12)
3	-3.759	(3, 9, 29)
4	2.262	(3, 8, 28)
5	1.018	(3, 7, 52)
6	-0.8915	(3, 8, 10)
7	0.4511	(3, 10, 16)
8	-0.2843	(3, 10, 8)
9	0.1428	(3, 9, 12)
10	-0.7939E-01	(3, 7, 16)
11	-0.4623E-01	(3, 25, 63)
12	-0.2439E-01	(3, 13, 21)
13	0.1786E-01	(3, 13, 30)
14	-0.9016E-02	(3, 7, 24)
15	0.4286E-02	(3, 14, 28)
16	0.2843E-02	(3, 2, 52)
17	-0.1545E-02	(3, 21, 49)
18	0.8005E-03	(3, 14, 14)
19	-0.6956E-03	(3, 14, 11)
20	0.3424E-03	(3, 22, 16)
21	-0.2012E-03	(3, 15, 8)
22	0.9451E-04	(3, 23, 8)
23	-0.5110E-04	(3, 24, 8)
24	0.4000E-04	(3, 7, 58)
25	-0.1947E-04	(3, 14, 64)
26	0.1151E-04	(3, 2, 8)
27	0.6981E-05	(3, 9, 8)
28	-0.3261E-05	(3, 25, 7)
29	0.1921E-05	(3, 24, 18)

MAXIMUM RESIDUAL FOR EACH ITERATION:

NO.	RESIDUAL	LAYER,ROW,COL
1	-0.6372E+05	(3, 23, 17)
2	-0.3442E+05	(3, 23, 17)
3	0.1171E+05	(3, 21, 11)
4	9970.	(3, 21, 11)
5	7150.	(3, 21, 11)
6	4103.	(3, 21, 11)
7	2070.	(3, 21, 11)
8	-801.5	(3, 19, 12)
9	551.5	(3, 11, 27)
10	393.5	(3, 11, 27)
11	217.6	(3, 22, 10)
12	122.6	(3, 22, 10)
13	-66.35	(3, 21, 19)
14	43.03	(3, 21, 49)
15	26.99	(3, 21, 31)
16	13.76	(3, 21, 31)
17	7.503	(3, 23, 9)
18	3.873	(3, 23, 9)
19	-2.048	(3, 20, 31)
20	-1.075	(3, 24, 9)
21	0.6402	(3, 20, 32)
22	0.5667	(3, 24, 8)
23	0.3797	(3, 24, 8)
24	0.1743	(3, 24, 8)
25	0.8585E-01	(3, 20, 32)
26	0.4198E-01	(3, 6, 12)
27	0.2810E-01	(3, 25, 7)
28	0.1815E-01	(3, 25, 7)
29	0.7196E-02	(3, 25, 7)

HEAD/DRAWDOWN PRINTOUT FLAG = 1
TOTAL BUDGET PRINTOUT FLAG = 0
CELL-BY-CELL FLOW TERM FLAG = 0
REUSING PREVIOUS VALUES OF IOFLG

VOLUMETRIC BUDGET FOR ENTIRE MODEL AT END OF TIME STEP 1 IN STRESS PERIOD 4

CUMULATIVE VOLUMES	L**3	RATES FOR THIS TIME STEP	L**3/T
IN:		IN:	
STORAGE =	0.54802E+08	STORAGE =	0.14177E+07
CONSTANT HEAD =	0.00000E+00	CONSTANT HEAD =	0.00000E+00
WELLS =	0.00000E+00	WELLS =	0.00000E+00
RIVER LEAKAGE =	0.36793E+07	RIVER LEAKAGE =	0.18916E+06
TOTAL IN =	0.58482E+08	TOTAL IN =	0.16068E+07
OUT:		OUT:	
STORAGE =	87224.	STORAGE =	6076.8
CONSTANT HEAD =	0.00000E+00	CONSTANT HEAD =	0.00000E+00
WELLS =	0.57973E+08	WELLS =	0.16007E+07
RIVER LEAKAGE =	0.42098E+06	RIVER LEAKAGE =	0.00000E+00
TOTAL OUT =	0.58482E+08	TOTAL OUT =	0.16068E+07
IN - OUT =	-24.000	IN - OUT =	-0.50000
PERCENT DISCREPANCY =	0.00	PERCENT DISCREPANCY =	0.00
INPUT/OUTPUT RATIO =	1.00	INPUT/OUTPUT RATIO =	1.00

TIME SUMMARY AT END OF TIME STEP 1 IN STRESS PERIOD 4

	SECONDS	MINUTES	HOURS	DAYS	YEARS
TIME STEP LENGTH	0.7776E+06	0.1296E+05	216.0	9.000	0.2464E-01
STRESS PERIOD TIME	0.7776E+06	0.1296E+05	216.0	9.000	0.2464E-01
TOTAL SIMULATION TIME	0.3110E+07	0.5184E+05	864.0	36.00	0.9856E-01

STRESS PERIOD NO. 5, LENGTH = 9.000000

NUMBER OF TIME STEPS = 1
MULTIPLIER FOR DELT = 1.000
INITIAL TIME STEP SIZE = 9.000000

37 WELLS ACTIVE IN CURRENT STRESS PERIOD

LAYER	ROW	COL	STRESS RATE	WELL NO.
2	21	9	-28877.	1
2	23	12	0.00000E+00	2
2	20	12	-28877.	3
2	21	12	0.00000E+00	4
2	23	17	-28877.	5
2	23	23	0.00000E+00	6
2	23	29	-41390.	7
2	23	35	-28877.	8
2	23	41	-44278.	9
2	23	47	-44278.	10
2	23	53	-44278.	11
2	23	59	-44278.	12
2	23	65	-44278.	13
2	23	71	0.00000E+00	14
2	15	9	-28877.	15
2	9	9	0.00000E+00	16
2	9	17	-28877.	17
2	9	23	0.00000E+00	18
2	9	29	-28877.	19
3	21	9	-96257.	20
3	23	12	-96257.	21
3	20	12	0.00000E+00	22
3	23	17	-96257.	23
3	23	23	-96257.	24
3	23	29	0.00000E+00	25
3	23	35	-96257.	26
3	23	41	-96257.	27
3	23	47	0.00000E+00	28
3	23	53	-96257.	29
3	23	59	-96257.	30
3	23	65	0.00000E+00	31
3	23	71	-96257.	32
3	15	9	-96257.	33
3	9	9	0.00000E+00	34
3	9	17	-96357.	35
3	9	23	-96257.	36
3	9	29	0.00000E+00	37

REUSING RIVER REACHES FROM LAST STRESS PERIOD

1 CALLS TO PCG ROUTINE FOR TIME STEP 1 IN STRESS PERIOD 5
29 TOTAL ITERATIONS

MAXIMUM HEAD CHANGE FOR EACH ITERATION:

NO.	HEAD CHANGE	LAYER,ROW,COL
1	13.07	(3, 9, 29)
2	6.372	(3, 20, 12)
3	3.623	(3, 9, 29)
4	-2.282	(3, 8, 28)
5	-1.006	(3, 7, 52)
6	0.9108	(3, 8, 10)
7	-0.4386	(3, 10, 16)
8	0.2873	(3, 10, 8)
9	-0.1447	(3, 9, 12)
10	0.7641E-01	(3, 7, 16)
11	0.4446E-01	(3, 25, 63)

MAXIMUM RESIDUAL FOR EACH ITERATION:

NO.	RESIDUAL	LAYER,ROW,COL
1	0.6373E+05	(3, 23, 17)
2	0.3443E+05	(3, 23, 17)
3	-0.1171E+05	(3, 21, 11)
4	-9972.	(3, 21, 11)
5	-7152.	(3, 21, 11)
6	-4107.	(3, 21, 11)
7	-2072.	(3, 21, 11)
8	801.9	(3, 19, 12)
9	-551.6	(3, 11, 27)
10	-393.5	(3, 11, 27)
11	-217.7	(3, 22, 10)

12	-0.2419E-01	(3, 3, 22)	12	-122.6	(3, 22, 10)
13	-0.1833E-01	(3, 13, 30)	13	66.34	(3, 21, 19)
14	0.9006E-02	(3, 7, 24)	14	-43.06	(3, 21, 49)
15	-0.4120E-02	(3, 14, 28)	15	-27.01	(3, 21, 31)
16	0.2864E-02	(3, 14, 22)	16	-13.78	(3, 21, 31)
17	0.1608E-02	(3, 21, 49)	17	-7.499	(3, 23, 9)
18	-0.8162E-03	(3, 14, 14)	18	-3.868	(3, 23, 9)
19	0.6717E-03	(3, 14, 11)	19	2.045	(3, 20, 31)
20	-0.3627E-03	(3, 22, 16)	20	1.078	(3, 24, 9)
21	0.1925E-03	(3, 15, 8)	21	-0.6408	(3, 20, 32)
22	-0.9703E-04	(3, 23, 8)	22	-0.5668	(3, 24, 8)
23	0.5111E-04	(3, 24, 8)	23	-0.3800	(3, 24, 8)
24	-0.3950E-04	(3, 7, 58)	24	-0.1746	(3, 24, 8)
25	0.1998E-04	(3, 14, 64)	25	-0.8575E-01	(3, 20, 32)
26	-0.1122E-04	(3, 2, 8)	26	-0.4199E-01	(3, 6, 12)
27	-0.7043E-05	(3, 9, 8)	27	-0.2811E-01	(3, 25, 7)
28	0.3144E-05	(3, 25, 7)	28	-0.1817E-01	(3, 25, 7)
29	-0.2035E-05	(3, 24, 18)	29	-0.7215E-02	(3, 25, 7)

HEAD/DRAWDOWN PRINTOUT FLAG = 1
TOTAL BUDGET PRINTOUT FLAG = 0
CELL-BY-CELL FLOW TERM FLAG = 0
REUSING PREVIOUS VALUES OF IOFLG

VOLUMETRIC BUDGET FOR ENTIRE MODEL AT END OF TIME STEP 1 IN STRESS PERIOD 5

CUMULATIVE VOLUMES	L**3	RATES FOR THIS TIME STEP	L**3/T
IN:		IN:	
STORAGE =	0.67321E+08	STORAGE =	0.13909E+07
CONSTANT HEAD =	0.00000E+00	CONSTANT HEAD =	0.00000E+00
WELLS =	0.00000E+00	WELLS =	0.00000E+00
RIVER LEAKAGE =	0.58233E+07	RIVER LEAKAGE =	0.23822E+06
TOTAL IN =	0.73144E+08	TOTAL IN =	0.16291E+07
OUT:		OUT:	
STORAGE =	0.16948E+06	STORAGE =	9139.7
CONSTANT HEAD =	0.00000E+00	CONSTANT HEAD =	0.00000E+00
WELLS =	0.72553E+08	WELLS =	0.16200E+07
RIVER LEAKAGE =	0.42098E+06	RIVER LEAKAGE =	0.00000E+00
TOTAL OUT =	0.73144E+08	TOTAL OUT =	0.16291E+07
IN - OUT =	8.0000	IN - OUT =	4.3750
PERCENT DISCREPANCY =	0.00	PERCENT DISCREPANCY =	0.00
INPUT/OUTPUT RATIO =	1.00	INPUT/OUTPUT RATIO =	1.00

TIME SUMMARY AT END OF TIME STEP 1 IN STRESS PERIOD 5

	SECONDS	MINUTES	HOURS	DAYS	YEARS
TIME STEP LENGTH	0.7776E+06	0.1296E+05	216.0	9.000	0.2464E-01
STRESS PERIOD TIME	0.7776E+06	0.1296E+05	216.0	9.000	0.2464E-01
TOTAL SIMULATION TIME	0.3888E+07	0.6480E+05	1080.	45.00	0.1232

STRESS PERIOD NO. 6, LENGTH = 9.000000

NUMBER OF TIME STEPS = 1
MULTIPLIER FOR DELT = 1.000
INITIAL TIME STEP SIZE = 9.000000

37 WELLS ACTIVE IN CURRENT STRESS PERIOD

LAYER	ROW	COL	STRESS RATE	WELL NO.
2	21	9	0.00000E+00	1
2	23	12	-28877.	2
2	20	12	0.00000E+00	3
2	21	12	-28877.	4
2	23	17	0.00000E+00	5
2	23	23	-28877.	6
2	23	29	-41390.	7
2	23	35	0.00000E+00	8
2	23	41	-44278.	9
2	23	47	-44278.	10
2	23	53	-44278.	11
2	23	59	-44278.	12
2	23	65	-44278.	13
2	23	71	-38503.	14
2	15	9	0.00000E+00	15
2	9	9	-28877.	16
2	9	17	0.00000E+00	17
2	9	23	-28877.	18
2	9	29	0.00000E+00	19
3	21	9	0.00000E+00	20
3	23	12	-96257.	21
3	20	12	-96257.	22
3	23	17	0.00000E+00	23
3	23	23	-96257.	24
3	23	29	-96257.	25
3	23	35	0.00000E+00	26
3	23	41	-96257.	27
3	23	47	-96257.	28
3	23	53	0.00000E+00	29
3	23	59	-96257.	30
3	23	65	-96257.	31
3	23	71	0.00000E+00	32
3	15	9	-96257.	33
3	9	9	-96257.	34
3	9	17	0.00000E+00	35
3	9	23	-96257.	36
3	9	29	-96257.	37

REUSING RIVER REACHES FROM LAST STRESS PERIOD

1 CALLS TO PCG ROUTINE FOR TIME STEP 1 IN STRESS PERIOD 6
29 TOTAL ITERATIONS

MAXIMUM HEAD CHANGE FOR EACH ITERATION: NO.	HEAD CHANGE	LAYER,ROW,COL	MAXIMUM RESIDUAL FOR EACH ITERATION: NO.	RESIDUAL	LAYER,ROW,COL
1	-13.15	(3, 9, 29)	1	-0.6374E+05	(3, 23, 17)
2	-6.450	(3, 20, 12)	2	-0.3444E+05	(3, 23, 17)
3	-3.680	(3, 9, 29)	3	0.1171E+05	(3, 21, 11)
4	2.265	(3, 8, 28)	4	9972.	(3, 21, 11)
5	-1.005	(3, 10, 27)	5	7153.	(3, 21, 11)
6	-0.9105	(3, 8, 10)	6	4108.	(3, 21, 11)
7	0.4389	(3, 10, 16)	7	2074.	(3, 21, 11)
8	-0.2883	(3, 10, 8)	8	-801.8	(3, 19, 12)
9	0.1432	(3, 9, 12)	9	551.6	(3, 11, 27)
10	-0.7774E-01	(3, 7, 16)	10	393.5	(3, 11, 27)
11	-0.4513E-01	(3, 25, 63)	11	217.8	(3, 22, 10)
12	-0.2368E-01	(3, 13, 21)	12	122.7	(3, 22, 10)
13	0.1807E-01	(3, 13, 30)	13	-66.39	(3, 21, 19)
14	-0.9061E-02	(3, 7, 24)	14	43.08	(3, 21, 49)
15	0.4133E-02	(3, 14, 28)	15	27.03	(3, 21, 31)
16	-0.2850E-02	(3, 14, 22)	16	13.80	(3, 21, 31)
17	-0.1596E-02	(3, 21, 49)	17	7.503	(3, 23, 9)
18	0.8032E-03	(3, 14, 14)	18	3.872	(3, 23, 9)
19	-0.6824E-03	(3, 14, 11)	19	-2.046	(3, 20, 31)
20	0.3540E-03	(3, 22, 16)	20	-1.077	(3, 24, 9)
21	-0.1963E-03	(3, 15, 8)	21	0.6414	(3, 20, 32)
22	0.9538E-04	(3, 23, 8)	22	0.5669	(3, 24, 8)
23	-0.5159E-04	(3, 24, 8)	23	0.3801	(3, 24, 8)
24	0.3951E-04	(3, 7, 58)	24	0.1747	(3, 24, 8)
25	-0.1988E-04	(3, 14, 64)	25	0.8598E-01	(3, 20, 32)
26	0.1119E-04	(3, 2, 8)	26	0.4210E-01	(3, 6, 12)
27	0.6961E-05	(3, 9, 8)	27	0.2811E-01	(3, 25, 7)
28	-0.3204E-05	(3, 25, 7)	28	0.1817E-01	(3, 25, 7)
29	0.1979E-05	(3, 24, 18)	29	0.7220E-02	(3, 25, 7)

HEAD/DRAWDOWN PRINTOUT FLAG = 1
TOTAL BUDGET PRINTOUT FLAG = 0
CELL-BY-CELL FLOW TERM FLAG = 0
REUSING PREVIOUS VALUES OF IOFLG

VOLUMETRIC BUDGET FOR ENTIRE MODEL AT END OF TIME STEP 1 IN STRESS PERIOD 6

CUMULATIVE VOLUMES	L**3	RATES FOR THIS TIME STEP	L**3/T
IN:		IN:	
STORAGE =	0.79386E+08	STORAGE =	0.13406E+07
CONSTANT HEAD =	0.00000E+00	CONSTANT HEAD =	0.00000E+00
WELLS =	0.00000E+00	WELLS =	0.00000E+00
RIVER LEAKAGE =	0.82505E+07	RIVER LEAKAGE =	0.25969E+06
TOTAL IN =	0.87637E+08	TOTAL IN =	0.16103E+07
OUT:		OUT:	
STORAGE =	0.25573E+06	STORAGE =	9532.8
CONSTANT HEAD =	0.00000E+00	CONSTANT HEAD =	0.00000E+00

WELLS =	0.86960E+08	WELLS =	0.16007E+07
RIVER LEAKAGE =	0.42098E+06	RIVER LEAKAGE =	0.00000E+00
TOTAL OUT =	0.87637E+08	TOTAL OUT =	0.16103E+07
IN - OUT =	-8.0000	IN - OUT =	-2.0000
PERCENT DISCREPANCY =	0.00	PERCENT DISCREPANCY =	0.00
INPUT/OUTPUT RATIO =	1.00	INPUT/OUTPUT RATIO =	1.00

TIME SUMMARY AT END OF TIME STEP 1 IN STRESS PERIOD 6

	SECONDS	MINUTES	HOURS	DAYS	YEARS
TIME STEP LENGTH	0.7776E+06	0.1296E+05	216.0	9.000	0.2464E-01
STRESS PERIOD TIME	0.7776E+06	0.1296E+05	216.0	9.000	0.2464E-01
TOTAL SIMULATION TIME	0.4666E+07	0.7776E+05	1296.	54.00	0.1478

STRESS PERIOD NO. 7, LENGTH = 9.000000

NUMBER OF TIME STEPS = 1
MULTIPLIER FOR DELT = 1.000
INITIAL TIME STEP SIZE = 9.000000

37 WELLS ACTIVE IN CURRENT STRESS PERIOD

LAYER	ROW	COL	STRESS RATE	WELL NO.
2	21	9	-28877.	1
2	23	12	0.00000E+00	2
2	20	12	-28877.	3
2	21	12	0.00000E+00	4
2	23	17	-28877.	5
2	23	23	0.00000E+00	6
2	23	29	-41390.	7
2	23	35	-28877.	8
2	23	41	-44278.	9
2	23	47	-44278.	10
2	23	53	-44278.	11
2	23	59	-44278.	12
2	23	65	-44278.	13
2	23	71	0.00000E+00	14
2	15	9	-28877.	15
2	9	9	0.00000E+00	16
2	9	17	-28877.	17
2	9	23	0.00000E+00	18
2	9	29	-28877.	19
3	21	9	-96257.	20
3	23	12	-96257.	21
3	20	12	0.00000E+00	22
3	23	17	-96257.	23
3	23	23	-96257.	24
3	23	29	0.00000E+00	25
3	23	35	-96257.	26
3	23	41	-96257.	27
3	23	47	0.00000E+00	28
3	23	53	-96257.	29
3	23	59	-96257.	30
3	23	65	0.00000E+00	31
3	23	71	-96257.	32
3	15	9	-96257.	33
3	9	9	0.00000E+00	34
3	9	17	-96257.	35
3	9	23	-96257.	36
3	9	29	0.00000E+00	37

REUSING RIVER REACHES FROM LAST STRESS PERIOD

1 CALLS TO PCG ROUTINE FOR TIME STEP 1 IN STRESS PERIOD 7
29 TOTAL ITERATIONS

MAXIMUM HEAD CHANGE FOR EACH ITERATION: / MAXIMUM RESIDUAL FOR EACH ITERATION:

NO.	HEAD CHANGE	LAYER,ROW,COL	NO.	RESIDUAL	LAYER,ROW,COL
1	13.12	(3, 9, 29)	1	0.6374E+05	(3, 23, 17)
2	6.410	(3, 20, 12)	2	0.3444E+05	(3, 23, 17)
3	3.647	(3, 9, 29)	3	-0.1171E+05	(3, 21, 11)
4	-2.278	(3, 8, 28)	4	-9972.	(3, 21, 11)
5	-1.009	(3, 7, 52)	5	-7153.	(3, 21, 11)
6	0.9048	(3, 8, 10)	6	-4109.	(3, 21, 11)
7	-0.4419	(3, 10, 16)	7	-2074.	(3, 21, 11)
8	0.2862	(3, 10, 8)	8	801.9	(3, 19, 12)
9	-0.1445	(3, 9, 12)	9	-551.5	(3, 11, 27)
10	0.7684E-01	(3, 7, 16)	10	-393.5	(3, 11, 27)
11	0.4476E-01	(3, 25, 63)	11	-217.8	(3, 22, 10)
12	-0.2392E-01	(3, 3, 22)	12	-122.7	(3, 22, 10)
13	-0.1824E-01	(3, 13, 30)	13	66.39	(3, 21, 19)
14	0.8987E-02	(3, 7, 24)	14	-43.09	(3, 21, 49)
15	-0.4159E-02	(3, 14, 28)	15	-27.04	(3, 21, 31)
16	0.2830E-02	(3, 14, 22)	16	-13.81	(3, 21, 31)
17	0.1594E-02	(3, 21, 49)	17	-7.502	(3, 23, 9)
18	-0.8154E-03	(3, 14, 14)	18	-3.872	(3, 23, 9)
19	0.6749E-03	(3, 14, 11)	19	2.046	(3, 20, 31)
20	-0.3589E-03	(3, 22, 16)	20	1.077	(3, 24, 9)
21	0.1938E-03	(3, 15, 8)	21	-0.6410	(3, 20, 32)
22	-0.9665E-04	(3, 23, 8)	22	-0.5669	(3, 24, 8)
23	0.5095E-04	(3, 24, 8)	23	-0.3801	(3, 24, 8)
24	-0.3961E-04	(3, 7, 58)	24	-0.1748	(3, 24, 8)
25	0.1982E-04	(3, 14, 64)	25	-0.5591E-01	(3, 20, 32)
26	-0.1130E-04	(3, 2, 5)	26	-0.4211E-01	(3, 6, 12)
27	-0.7039E-05	(3, 9, 8)	27	-0.2812E-01	(3, 25, 7)
28	0.3158E-05	(3, 25, 7)	28	-0.1818E-01	(3, 25, 7)
29	-0.2012E-05	(3, 24, 18)	29	-0.7223E-02	(3, 25, 7)

HEAD/DRAWDOWN PRINTOUT FLAG = 1
TOTAL BUDGET PRINTOUT FLAG = 0
CELL-BY-CELL FLOW TERM FLAG = 0
REUSING PREVIOUS VALUES OF IOFLG

VOLUMETRIC BUDGET FOR ENTIRE MODEL AT END OF TIME STEP 1 IN STRESS PERIOD 7

CUMULATIVE VOLUMES	L**3	RATES FOR THIS TIME STEP	L**3/T
IN:		IN:	
STORAGE =	0.91273E+08	STORAGE =	0.13207E+07
CONSTANT HEAD =	0.00000E+00	CONSTANT HEAD =	0.00000E+00
WELLS =	0.00000E+00	WELLS =	0.00000E+00
RIVER LEAKAGE =	0.11036E+08	RIVER LEAKAGE =	0.30951E+06
TOTAL IN =	0.10231E+09	TOTAL IN =	0.16302E+07
OUT:		OUT:	
STORAGE =	0.34745E+06	STORAGE =	10191.
CONSTANT HEAD =	0.00000E+00	CONSTANT HEAD =	0.00000E+00
WELLS =	0.10154E+09	WELLS =	0.16200E+07
RIVER LEAKAGE =	0.42098E+06	RIVER LEAKAGE =	0.00000E+00
TOTAL OUT =	0.10231E+09	TOTAL OUT =	0.16302E+07
IN - OUT =	-16.000	IN - OUT =	0.25000
PERCENT DISCREPANCY =	0.00	PERCENT DISCREPANCY =	0.00
INPUT/OUTPUT RATIO =	1.00	INPUT/OUTPUT RATIO =	1.00

TIME SUMMARY AT END OF TIME STEP 1 IN STRESS PERIOD 7

	SECONDS	MINUTES	HOURS	DAYS	YEARS
TIME STEP LENGTH	0.7776E+06	0.1296E+05	216.0	9.000	0.2464E-01
STRESS PERIOD TIME	0.7776E+06	0.1296E+05	216.0	9.000	0.2464E-01
TOTAL SIMULATION TIME	0.5443E+07	0.9072E+05	1512.	63.00	0.1725

STRESS PERIOD NO. 8, LENGTH = 9.000000

NUMBER OF TIME STEPS = 1
MULTIPLIER FOR DELT = 1.000
INITIAL TIME STEP SIZE = 9.000000

37 WELLS ACTIVE IN CURRENT STRESS PERIOD

LAYER	ROW	COL	STRESS RATE	WELL NO.
2	21	9	0.00000E+00	1
2	23	12	-28877.	2
2	20	12	0.00000E+00	3
2	21	12	-28877.	4
2	23	17	0.00000E+00	5
2	23	23	-28877.	6
2	23	29	-41390.	7
2	23	35	0.00000E+00	8
2	23	41	-44278.	9
2	23	47	-44278.	10
2	23	53	-44278.	11
2	23	59	-44278.	12
2	23	65	-44278.	13
2	23	71	-38503.	14
2	15	9	0.00000E+00	15
2	9	9	-28877.	16
2	9	17	0.00000E+00	17

LAYER	ROW	COL	STRESS RATE	WELL NO.
2	9	23	-28877.	18
2	9	29	0.00000E+00	19
3	21	9	0.00000E+00	20
3	23	12	-96257.	21
3	20	12	-96257.	22
3	23	17	0.00000E+00	23
3	23	23	-96257.	24
3	23	29	-96257.	25
3	23	35	0.00000E+00	26
3	23	41	-96257.	27
3	23	47	-96257.	28
3	23	53	0.00000E+00	29
3	23	59	-96257.	30
3	23	65	-96257.	31
3	23	71	0.00000E+00	32
3	15	9	-96257.	33
3	9	9	-96257.	34
3	9	17	0.00000E+00	35
3	9	23	-96257.	36
3	9	29	-96257.	37

REUSING RIVER REACHES FROM LAST STRESS PERIOD

1 CALLS TO PCG ROUTINE FOR TIME STEP 1 IN STRESS PERIOD 8
29 TOTAL ITERATIONS

MAXIMUM HEAD CHANGE FOR EACH ITERATION:

NO.	HEAD CHANGE	LAYER,ROW,COL
1	-13.14	(3, 9, 29)
2	-6.436	(3, 20, 12)
3	-3.671	(3, 9, 29)
4	2.265	(3, 8, 28)
5	-1.005	(3, 10, 27)
6	-0.9117	(3, 8, 10)
7	0.4380	(3, 10, 16)
8	-0.2886	(3, 10, 8)
9	0.1432	(3, 9, 12)
10	-0.7756E-01	(3, 7, 15)
11	-0.4503E-01	(3, 25, 63)
12	0.2361E-01	(3, 3, 22)
13	0.1809E-01	(3, 13, 30)
14	-0.9057E-02	(3, 7, 24)
15	0.4120E-02	(3, 14, 28)
16	-0.2858E-02	(3, 14, 22)
17	-0.1600E-02	(3, 21, 49)
18	0.8035E-03	(3, 14, 14)
19	-0.6807E-03	(3, 14, 11)
20	0.3549E-03	(3, 22, 16)
21	-0.1958E-03	(3, 15, 8)
22	0.9546E-04	(3, 23, 8)
23	-0.5160E-04	(3, 24, 8)
24	0.3944E-04	(3, 7, 58)
25	-0.1990E-04	(3, 14, 64)
26	0.1116E-04	(3, 2, 8)
27	0.6954E-05	(3, 9, 8)
28	-0.3197E-05	(3, 25, 7)
29	0.1979E-05	(3, 24, 18)

MAXIMUM RESIDUAL FOR EACH ITERATION:

NO.	RESIDUAL	LAYER,ROW,COL
1	-0.6374E+05	(3, 23, 17)
2	-0.3445E+05	(3, 23, 17)
3	0.1171E+05	(3, 21, 11)
4	9971.	(3, 21, 11)
5	7154.	(3, 21, 11)
6	4110.	(3, 21, 11)
7	2075.	(3, 21, 11)
8	-801.9	(3, 19, 12)
9	551.5	(3, 11, 27)
10	393.5	(3, 11, 27)
11	217.9	(3, 22, 10)
12	122.8	(3, 22, 10)
13	-66.43	(3, 21, 19)
14	43.12	(3, 21, 49)
15	27.06	(3, 21, 31)
16	13.82	(3, 21, 31)
17	7.506	(3, 23, 9)
18	3.874	(3, 23, 9)
19	-2.046	(3, 20, 31)
20	-1.076	(3, 24, 9)
21	0.6418	(3, 20, 32)
22	0.5670	(3, 24, 8)
23	0.3802	(3, 24, 8)
24	0.1749	(3, 24, 8)
25	0.8610E-01	(3, 20, 32)
26	0.4219E-01	(3, 6, 12)
27	0.2811E-01	(3, 25, 7)
28	0.1818E-01	(3, 25, 7)
29	0.7238E-02	(1, 31, 1)

HEAD/DRAWDOWN PRINTOUT FLAG = 1
TOTAL BUDGET PRINTOUT FLAG = 0
CELL-BY-CELL FLOW TERM FLAG = 0
REUSING PREVIOUS VALUES OF IOFLG

VOLUMETRIC BUDGET FOR ENTIRE MODEL AT END OF TIME STEP 1 IN STRESS PERIOD 8

CUMULATIVE VOLUMES	L**3	RATES FOR THIS TIME STEP	L**3/T
IN:		IN:	
STORAGE =	0.10276E+09	STORAGE =	0.12764E+07
CONSTANT HEAD =	0.00000E+00	CONSTANT HEAD =	0.00000E+00
WELLS =	0.00000E+00	WELLS =	0.00000E+00
RIVER LEAKAGE =	0.14046E+08	RIVER LEAKAGE =	0.33445E+06
TOTAL IN =	0.11681E+09	TOTAL IN =	0.16108E+07
OUT:		OUT:	
STORAGE =	0.43818E+06	STORAGE =	10082.
CONSTANT HEAD =	0.00000E+00	CONSTANT HEAD =	0.00000E+00
WELLS =	0.11595E+09	WELLS =	0.16007E+07
RIVER LEAKAGE =	0.42098E+06	RIVER LEAKAGE =	0.00000E+00
TOTAL OUT =	0.11681E+09	TOTAL OUT =	0.16108E+07
IN - OUT =	-16.000	IN - OUT =	-0.25000
PERCENT DISCREPANCY =	0.00	PERCENT DISCREPANCY =	0.00
INPUT/OUTPUT RATIO =	1.00	INPUT/OUTPUT RATIO =	1.00

TIME SUMMARY AT END OF TIME STEP 1 IN STRESS PERIOD 8

	SECONDS	MINUTES	HOURS	DAYS	YEARS
TIME STEP LENGTH	0.7776E+06	0.1296E+05	216.0	9.000	0.2464E-01
STRESS PERIOD TIME	0.7776E+06	0.1296E+05	216.0	9.000	0.2464E-01
TOTAL SIMULATION TIME	0.6221E+07	0.1037E+06	1728.	72.00	0.1971

STRESS PERIOD NO. 9, LENGTH = 9.000000

NUMBER OF TIME STEPS = 1
MULTIPLIER FOR DELT = 1.000
INITIAL TIME STEP SIZE = 9.000000

37 WELLS ACTIVE IN CURRENT STRESS PERIOD

LAYER	ROW	COL	STRESS RATE	WELL NO.
2	21	9	-28877.	1
2	23	12	0.00000E+00	2
2	20	12	-28877.	3
2	21	12	0.00000E+00	4
2	23	17	-28877.	5
2	23	23	0.00000E+00	6
2	23	29	-41390.	7
2	23	35	-28877.	8
2	23	41	-44278.	9
2	23	47	-44278.	10
2	23	53	-44278.	11
2	23	59	-44278.	12
2	23	65	-44278.	13
2	23	71	0.00000E+00	14
2	15	9	-28877.	15
2	9	9	0.00000E+00	16
2	9	17	-28877.	17
2	9	23	0.00000E+00	18
2	9	29	-28877.	19
3	21	9	-96257.	20
3	23	12	-96257.	21
3	20	12	0.00000E+00	22
3	23	17	-96257.	23
3	23	23	-96257.	24
3	23	29	0.00000E+00	25
3	23	35	-96257.	26
3	23	41	-96257.	27
3	23	47	0.00000E+00	28
3	23	53	-96257.	29
3	23	59	-96257.	30
3	23	65	0.00000E+00	31
3	23	71	-96257.	32
3	15	9	-96257.	33
3	9	9	0.00000E+00	34
3	9	17	-96257.	35
3	9	23	-96257.	36
3	9	29	0.00000E+00	37

REUSING RIVER REACHES FROM LAST STRESS PERIOD

1 CALLS TO PCG ROUTINE FOR TIME STEP 1 IN STRESS PERIOD 9
29 TOTAL ITERATIONS

MAXIMUM HEAD CHANGE FOR EACH ITERATION:

NO.	HEAD CHANGE	LAYER,ROW,COL
1	13.12	(3, 9, 29)
2	6.413	(3, 20, 12)
3	3.650	(3, 9, 29)
4	-2.277	(3, 8, 28)
5	-1.009	(3, 7, 52)
6	0.9043	(3, 8, 10)
7	-0.4420	(3, 10, 16)
8	0.2861	(3, 10, 8)
9	-0.1444	(3, 9, 12)
10	0.7686E-01	(3, 7, 16)
11	0.4479E-01	(3, 25, 63)
12	-0.2388E-01	(3, 3, 22)
13	-0.1823E-01	(3, 13, 30)
14	0.8984E-02	(3, 7, 24)
15	-0.4159E-02	(3, 14, 28)

MAXIMUM RESIDUAL FOR EACH ITERATION:

NO.	RESIDUAL	LAYER,ROW,COL
1	0.6374E+05	(3, 23, 17)
2	0.3445E+05	(3, 23, 17)
3	-0.1171E+05	(3, 21, 11)
4	-9971.	(3, 21, 11)
5	-7154.	(3, 21, 11)
6	-4110.	(3, 21, 11)
7	-2075.	(3, 21, 11)
8	802.0	(3, 19, 12)
9	-551.4	(3, 11, 27)
10	-393.5	(3, 11, 27)
11	-217.9	(3, 22, 10)
12	-122.8	(3, 22, 10)
13	66.43	(3, 21, 19)
14	-43.12	(3, 21, 49)
15	-27.06	(3, 21, 31)

NO.	HEAD CHANGE	LAYER,ROW,COL
16	0.2827E-02	(3, 14, 22)
17	0.1593E-02	(3, 21, 49)
18	-0.8151E-03	(3, 14, 14)
19	0.6749E-03	(3, 14, 11)
20	-0.3583E-03	(3, 22, 16)
21	0.1938E-03	(3, 15, 8)
22	-0.9656E-04	(3, 23, 8)
23	0.5094E-04	(3, 24, 8)
24	-0.3959E-04	(3, 7, 58)
25	0.1980E-04	(3, 14, 64)
26	-0.1130E-04	(3, 2, 8)
27	-0.7028E-05	(3, 9, 8)
28	0.3161E-05	(3, 25, 7)
29	-0.2009E-05	(3, 24, 18)

NO.	RESIDUAL	LAYER,ROW,COL
16	-13.82	(3, 21, 31)
17	-7.504	(3, 23, 9)
18	-3.874	(3, 23, 9)
19	2.047	(3, 20, 31)
20	1.076	(3, 24, 9)
21	-0.6414	(3, 20, 32)
22	-0.5669	(3, 24, 8)
23	-0.3802	(3, 24, 8)
24	-0.1749	(3, 24, 8)
25	-0.8603E-01	(3, 20, 32)
26	-0.4220E-01	(3, 6, 12)
27	-0.2812E-01	(3, 25, 7)
28	-0.1818E-01	(3, 25, 7)
29	0.7245E-02	(1, 31, 1)

HEAD/DRAWDOWN PRINTOUT FLAG = 1
TOTAL BUDGET PRINTOUT FLAG = 0
CELL-BY-CELL FLOW TERM FLAG = 0
REUSING PREVIOUS VALUES OF IOFLG

VOLUMETRIC BUDGET FOR ENTIRE MODEL AT END OF TIME STEP 1 IN STRESS PERIOD 9

CUMULATIVE VOLUMES	L**3	RATES FOR THIS TIME STEP	L**3/T
IN:		IN:	
STORAGE =	0.11411E+09	STORAGE =	0.12609E+07
CONSTANT HEAD =	0.00000E+00	CONSTANT HEAD =	0.00000E+00
WELLS =	0.00000E+00	WELLS =	0.00000E+00
RIVER LEAKAGE =	0.17371E+08	RIVER LEAKAGE =	0.36941E+06
TOTAL IN =	0.13148E+09	TOTAL IN =	0.16303E+07
OUT:		OUT:	
STORAGE =	0.53127E+06	STORAGE =	10343.
CONSTANT HEAD =	0.00000E+00	CONSTANT HEAD =	0.00000E+00
WELLS =	0.13053E+09	WELLS =	0.16200E+07
RIVER LEAKAGE =	0.42098E+06	RIVER LEAKAGE =	0.00000E+00
TOTAL OUT =	0.13148E+09	TOTAL OUT =	0.16303E+07
IN - OUT =	-8.0000	IN - OUT =	1.2500
PERCENT DISCREPANCY =	0.00	PERCENT DISCREPANCY =	0.00
INPUT/OUTPUT RATIO =	1.00	INPUT/OUTPUT RATIO =	1.00

TIME SUMMARY AT END OF TIME STEP 1 IN STRESS PERIOD 9

	SECONDS	MINUTES	HOURS	DAYS	YEARS
TIME STEP LENGTH	0.7776E+06	0.1296E+05	216.0	9.000	0.2464E-01
STRESS PERIOD TIME	0.7776E+06	0.1296E+05	216.0	9.000	0.2464E-01
TOTAL SIMULATION TIME	0.6998E+07	0.1166E+06	1944.	81.00	0.2218

STRESS PERIOD NO. 10, LENGTH = 9.000000

NUMBER OF TIME STEPS = 1
MULTIPLIER FOR DELT = 1.000
INITIAL TIME STEP SIZE = 9.000000

37 WELLS ACTIVE IN CURRENT STRESS PERIOD

LAYER	ROW	COL	STRESS RATE	WELL NO.
2	21	9	0.00000E+00	1
2	23	12	-28877.	2
2	20	12	0.00000E+00	3
2	21	12	-28877.	4
2	23	17	0.00000E+00	5
2	23	23	-28877.	6
2	23	29	-41390.	7
2	23	35	0.00000E+00	8
2	23	41	-44278.	9
2	23	47	-44278.	10
2	23	53	-44278.	11
2	23	59	-44278.	12
2	23	65	-44278.	13
2	23	71	-38503.	14
2	15	9	0.00000E+00	15
2	9	9	-28877.	16
2	9	17	0.00000E+00	17
2	9	23	-28877.	18
2	9	29	0.00000E+00	19
3	21	9	0.00000E+00	20
3	23	12	-96257.	21
3	20	12	-96257.	22
3	23	17	0.00000E+00	23
3	23	23	-96257.	24
3	23	29	-96257.	25
3	23	35	0.00000E+00	26
3	23	41	-96257.	27
3	23	47	-96257.	28
3	23	53	0.00000E+00	29
3	23	59	-96257.	30
3	23	65	-96257.	31
3	23	71	0.00000E+00	32
3	15	9	-96257.	33
3	9	9	-96257.	34
3	9	17	0.00000E+00	35
3	9	23	-96257.	36
3	9	29	-96257.	37

REUSING RIVER REACHES FROM LAST STRESS PERIOD

1 CALLS TO PCG ROUTINE FOR TIME STEP 1 IN STRESS PERIOD 10
29 TOTAL ITERATIONS

MAXIMUM HEAD CHANGE FOR EACH ITERATION:

NO.	HEAD CHANGE	LAYER,ROW,COL
1	-13.14	(3, 9, 29)
2	-6.434	(3, 20, 12)
3	-3.670	(3, 9, 29)
4	2.265	(3, 8, 28)
5	-1.005	(3, 10, 27)
6	-0.9115	(3, 6, 10)
7	0.4379	(3, 10, 16)
8	-0.2866	(3, 10, 8)
9	0.1432	(3, 9, 12)
10	-0.7750E-01	(3, 7, 15)
11	-0.4501E-01	(3, 25, 63)
12	0.2361E-01	(3, 3, 22)
13	0.1809E-01	(3, 13, 30)
14	-0.9051E-02	(3, 7, 24)
15	0.4119E-02	(3, 14, 28)
16	-0.2857E-02	(3, 14, 22)
17	-0.1600E-02	(3, 21, 49)
18	0.8038E-03	(3, 14, 14)
19	-0.6801E-03	(3, 14, 11)
20	0.3549E-03	(3, 22, 16)
21	-0.1956E-03	(3, 15, 8)
22	0.9545E-04	(3, 23, 8)
23	-0.5157E-04	(3, 24, 8)
24	0.3942E-04	(3, 7, 58)
25	-0.1989E-04	(3, 14, 64)
26	0.1115E-04	(3, 2, 8)
27	0.6952E-05	(3, 9, 8)
28	-0.3195E-05	(3, 25, 7)
29	0.1982E-05	(3, 24, 18)

MAXIMUM RESIDUAL FOR EACH ITERATION:

NO.	RESIDUAL	LAYER,ROW,COL
1	-0.6374E+05	(3, 23, 17)
2	-0.3446E+05	(3, 23, 17)
3	0.1171E+05	(3, 21, 11)
4	9971.	(3, 21, 11)
5	7155.	(3, 21, 11)
6	4111.	(3, 21, 11)
7	2076.	(3, 21, 11)
8	-801.9	(3, 19, 12)
9	551.4	(3, 11, 27)
10	393.5	(3, 11, 27)
11	217.9	(3, 22, 10)
12	122.8	(3, 22, 10)
13	-66.46	(3, 21, 19)
14	43.14	(3, 21, 49)
15	27.08	(3, 21, 31)
16	13.83	(3, 21, 31)
17	7.507	(3, 23, 9)
18	3.876	(3, 23, 9)
19	-2.047	(3, 20, 31)
20	-1.076	(3, 24, 9)
21	0.6421	(3, 20, 32)
22	0.5671	(3, 24, 8)
23	0.3803	(3, 24, 8)
24	0.1751	(3, 24, 8)
25	0.8620E-01	(3, 20, 32)
26	0.4261E-01	(1, 31, 1)
27	0.2812E-01	(3, 25, 7)
28	0.1818E-01	(3, 25, 7)
29	0.7464E-02	(1, 31, 1)

HEAD/DRAWDOWN PRINTOUT FLAG = 1
TOTAL BUDGET PRINTOUT FLAG = 0
CELL-BY-CELL FLOW TERM FLAG = 0

OUTPUT FLAGS FOR ALL LAYERS ARE THE SAME:

HEAD PRINTOUT	DRAWDOWN PRINTOUT	HEAD SAVE	DRAWDOWN SAVE
1	1	0	1

DRAWDOWN IN LAYER 1 AT END OF TIME STEP 1 IN STRESS PERIOD 10

	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	53	54	55
	56	57	58	59	60	61	62	63	64	65	66
	67	68	69	70	71	72	73	74	75	76	77
	78	79									
1	0.450	0.473	0.487	0.497	0.504	0.508	0.511	0.513	0.514	0.515	0.515
	0.516	0.517	0.519	0.519	0.520	0.520	0.520	0.520	0.519	0.518	0.517
	0.516	0.516	0.514	0.511	0.507	0.504	0.503	0.501	0.499	0.493	0.487
	0.483	0.481	0.479	0.476	0.469	0.461	0.457	0.455	0.453	0.449	0.441
	0.433	0.429	0.427	0.425	0.421	0.413	0.404	0.400	0.398	0.396	0.392
	0.384	0.376	0.372	0.369	0.367	0.363	0.355	0.347	0.343	0.341	0.339
	0.335	0.327	0.319	0.316	0.314	0.312	0.308	0.301	0.293	0.284	0.273
	0.257	0.236									
2	0.475	0.507	0.528	0.543	0.554	0.561	0.566	0.568	0.570	0.571	0.573
	0.574	0.575	0.577	0.579	0.579	0.579	0.579	0.579	0.578	0.576	0.574
	0.573	0.572	0.570	0.564	0.558	0.554	0.552	0.550	0.546	0.537	0.528
	0.523	0.521	0.518	0.513	0.504	0.494	0.489	0.487	0.484	0.480	0.470
	0.461	0.457	0.455	0.453	0.448	0.440	0.432	0.428	0.426	0.424	0.420
	0.412	0.404	0.400	0.398	0.396	0.392	0.384	0.375	0.371	0.369	0.367
	0.363	0.354	0.346	0.342	0.339	0.337	0.333	0.325	0.316	0.306	0.292
	0.273	0.248									
3	0.490	0.530	0.558	0.578	0.593	0.603	0.609	0.612	0.614	0.616	0.618
	0.620	0.622	0.625	0.626	0.626	0.627	0.627	0.627	0.625	0.622	0.619
	0.618	0.616	0.613	0.605	0.596	0.591	0.588	0.585	0.579	0.563	0.555
	0.549	0.546	0.542	0.536	0.524	0.512	0.507	0.504	0.501	0.496	0.486
	0.477	0.473	0.471	0.468	0.465	0.457	0.450	0.446	0.444	0.442	0.439
	0.432	0.425	0.421	0.419	0.417	0.414	0.406	0.398	0.394	0.391	0.389
	0.385	0.376	0.367	0.362	0.360	0.357	0.353	0.344	0.334	0.323	0.307
	0.286	0.257									
4	0.501	0.546	0.579	0.603	0.622	0.635	0.643	0.647	0.650	0.652	0.654
	0.656	0.659	0.662	0.663	0.664	0.664	0.664	0.664	0.662	0.658	0.655
	0.653	0.650	0.646	0.637	0.624	0.618	0.614	0.610	0.603	0.588	0.572
	0.565	0.561	0.556	0.549	0.534	0.521	0.515	0.512	0.509	0.503	0.493
	0.485	0.481	0.479	0.477	0.473	0.467	0.461	0.459	0.457	0.455	0.453
	0.447	0.441	0.438	0.436	0.434	0.431	0.424	0.416	0.411	0.409	0.407
	0.402	0.393	0.384	0.379	0.376	0.373	0.368	0.359	0.348	0.335	0.318
	0.295	0.264									
5	0.508	0.558	0.595	0.622	0.645	0.661	0.670	0.676	0.679	0.682	0.684
	0.686	0.689	0.692	0.693	0.693	0.694	0.694	0.693	0.691	0.687	0.683
	0.681	0.678	0.673	0.661	0.646	0.638	0.633	0.628	0.620	0.601	0.583
	0.574	0.569	0.564	0.555	0.538	0.524	0.517	0.514	0.510	0.505	0.495
	0.487	0.484	0.482	0.480	0.478	0.473	0.469	0.467	0.466	0.465	0.463
	0.459	0.454	0.451	0.449	0.448	0.445	0.438	0.430	0.426	0.424	0.421
	0.417	0.407	0.397	0.392	0.389	0.386	0.381	0.371	0.359	0.345	0.326
	0.301	0.268									
6	0.514	0.567	0.607	0.638	0.664	0.684	0.696	0.703	0.707	0.710	0.712
	0.714	0.716	0.718	0.719	0.719	0.719	0.719	0.719	0.717	0.713	0.710
	0.708	0.705	0.698	0.682	0.664	0.655	0.649	0.643	0.633	0.611	0.589
	0.579	0.573	0.567	0.558	0.539	0.523	0.516	0.512	0.508	0.503	0.493
	0.486	0.483	0.482	0.481	0.479	0.476	0.474	0.473	0.473	0.472	0.471
	0.469	0.465	0.463	0.461	0.460	0.457	0.451	0.443	0.439	0.437	0.434
	0.430	0.420	0.409	0.404	0.401	0.398	0.392	0.382	0.369	0.354	0.334
	0.307	0.272									
7	0.518	0.573	0.616	0.649	0.679	0.703	0.721	0.732	0.738	0.740	0.740
	0.739	0.739	0.739	0.740	0.741	0.741	0.741	0.739	0.737	0.738	0.739
	0.737	0.733	0.722	0.698	0.678	0.669	0.663	0.656	0.644	0.617	0.592
	0.581	0.574	0.568	0.557	0.535	0.518	0.511	0.507	0.503	0.497	0.487
	0.482	0.481	0.480	0.479	0.479	0.478	0.478	0.478	0.478	0.478	0.478
	0.477	0.475	0.473	0.472	0.471	0.469	0.463	0.456	0.451	0.449	0.446
	0.442	0.432	0.420	0.415	0.411	0.408	0.402	0.391	0.377	0.361	0.340
	0.311	0.275									
8	0.520	0.577	0.620	0.655	0.686	0.712	0.733	0.753	0.767	0.762	0.756
	0.752	0.750	0.749	0.751	0.753	0.755	0.753	0.749	0.746	0.751	0.760
	0.765	0.754	0.734	0.706	0.685	0.677	0.672	0.664	0.648	0.620	0.593
	0.581	0.574	0.567	0.555	0.532	0.514	0.506	0.502	0.499	0.493	0.483
	0.479	0.478	0.478	0.477	0.477	0.479	0.480	0.481	0.481	0.482	0.482
	0.482	0.481	0.479	0.478	0.477	0.475	0.470	0.462	0.458	0.456	0.453
	0.449	0.438	0.426	0.421	0.417	0.414	0.408	0.396	0.382	0.365	0.343
	0.314	0.277									
9	0.521	0.578	0.623	0.658	0.690	0.716	0.739	0.764	0.802	0.774	0.763
	0.758	0.755	0.754	0.757	0.760	0.767	0.760	0.755	0.751	0.757	0.772
	0.799	0.766	0.739	0.709	0.688	0.682	0.682	0.668	0.651	0.621	0.593
	0.580	0.573	0.566	0.553	0.530	0.511	0.504	0.499	0.496	0.490	0.480
	0.477	0.476	0.476	0.476	0.477	0.479	0.481	0.483	0.483	0.484	0.485
	0.485	0.484	0.483	0.482	0.481	0.479	0.474	0.466	0.462	0.460	0.457
	0.453	0.442	0.430	0.424	0.421	0.417	0.411	0.399	0.384	0.367	0.345
	0.315	0.278									
10	0.522	0.580	0.625	0.661	0.693	0.720	0.742	0.762	0.777	0.771	0.765
	0.762	0.760	0.759	0.761	0.763	0.765	0.762	0.759	0.755	0.759	0.768
	0.773	0.761	0.741	0.712	0.691	0.682	0.677	0.668	0.652	0.622	0.593
	0.580	0.572	0.564	0.552	0.527	0.508	0.500	0.496	0.492	0.486	0.477
	0.474	0.474	0.474	0.474	0.475	0.479	0.482	0.484	0.485	0.486	0.487
	0.488	0.488	0.487	0.486	0.485	0.483	0.478	0.471	0.467	0.464	0.461
	0.457	0.446	0.434	0.428	0.424	0.420	0.414	0.402	0.387	0.369	0.346
	0.316	0.278									

11	0.524	0.583	0.629	0.666	0.699	0.726	0.746	0.758	0.765	0.767	0.767
	0.766	0.766	0.766	0.767	0.767	0.767	0.766	0.764	0.761	0.761	0.760
	0.758	0.753	0.742	0.716	0.693	0.682	0.675	0.668	0.653	0.623	0.592
	0.578	0.570	0.562	0.548	0.522	0.502	0.494	0.489	0.485	0.479	0.470
	0.469	0.469	0.470	0.471	0.473	0.479	0.484	0.487	0.488	0.489	0.491
	0.494	0.494	0.493	0.492	0.492	0.490	0.485	0.478	0.474	0.471	0.469
	0.464	0.453	0.440	0.434	0.430	0.426	0.420	0.407	0.392	0.373	0.349
	0.319	0.280									
12	0.528	0.588	0.637	0.676	0.710	0.736	0.752	0.761	0.766	0.769	0.772
	0.774	0.776	0.778	0.777	0.777	0.777	0.776	0.774	0.769	0.762	0.758
	0.754	0.750	0.742	0.721	0.698	0.685	0.677	0.669	0.655	0.623	0.589
	0.573	0.563	0.553	0.537	0.507	0.484	0.475	0.471	0.467	0.460	0.452
	0.454	0.457	0.459	0.462	0.466	0.478	0.488	0.492	0.495	0.497	0.500
	0.506	0.508	0.508	0.508	0.507	0.506	0.502	0.495	0.491	0.488	0.485
	0.480	0.468	0.455	0.448	0.444	0.439	0.432	0.418	0.401	0.381	0.356
	0.323	0.283									
13	0.530	0.592	0.642	0.682	0.718	0.745	0.762	0.773	0.778	0.782	0.785
	0.787	0.788	0.790	0.788	0.787	0.786	0.785	0.783	0.777	0.767	0.762
	0.758	0.754	0.746	0.727	0.703	0.690	0.682	0.673	0.658	0.623	0.583
	0.563	0.551	0.539	0.518	0.481	0.455	0.446	0.441	0.436	0.430	0.421
	0.428	0.435	0.440	0.445	0.455	0.475	0.492	0.499	0.503	0.506	0.512
	0.520	0.524	0.525	0.525	0.525	0.525	0.521	0.514	0.510	0.507	0.504
	0.498	0.486	0.471	0.463	0.458	0.454	0.446	0.430	0.411	0.389	0.362
	0.327	0.286									
14	0.531	0.593	0.644	0.685	0.721	0.749	0.768	0.781	0.788	0.791	0.792
	0.793	0.795	0.795	0.794	0.792	0.791	0.790	0.787	0.780	0.770	0.764
	0.761	0.757	0.749	0.730	0.706	0.693	0.684	0.676	0.660	0.624	0.581
	0.558	0.544	0.530	0.506	0.464	0.438	0.428	0.423	0.418	0.411	0.402
	0.410	0.421	0.428	0.436	0.449	0.475	0.495	0.503	0.508	0.512	0.518
	0.528	0.533	0.534	0.535	0.535	0.534	0.531	0.524	0.520	0.517	0.514
	0.508	0.494	0.479	0.471	0.466	0.461	0.452	0.436	0.416	0.393	0.364
	0.329	0.287									
15	0.531	0.594	0.645	0.686	0.723	0.752	0.771	0.785	0.799	0.796	0.796
	0.797	0.799	0.799	0.797	0.795	0.794	0.792	0.789	0.782	0.772	0.766
	0.762	0.758	0.751	0.732	0.708	0.694	0.686	0.677	0.662	0.624	0.580
	0.555	0.541	0.525	0.498	0.454	0.427	0.417	0.412	0.407	0.400	0.390
	0.398	0.412	0.421	0.430	0.445	0.475	0.497	0.506	0.511	0.515	0.522
	0.533	0.539	0.540	0.540	0.541	0.540	0.537	0.530	0.526	0.523	0.520
	0.514	0.500	0.484	0.475	0.470	0.465	0.456	0.439	0.418	0.395	0.366
	0.330	0.288									
16	0.532	0.595	0.646	0.687	0.725	0.754	0.774	0.787	0.795	0.798	0.800
	0.801	0.803	0.802	0.800	0.798	0.797	0.795	0.792	0.784	0.774	0.768
	0.764	0.760	0.753	0.734	0.710	0.697	0.688	0.679	0.663	0.625	0.579
	0.553	0.537	0.520	0.487	0.441	0.415	0.405	0.400	0.395	0.387	0.376
	0.383	0.402	0.413	0.424	0.442	0.475	0.499	0.509	0.514	0.519	0.526
	0.538	0.544	0.545	0.546	0.547	0.546	0.543	0.536	0.532	0.529	0.526
	0.520	0.505	0.489	0.480	0.475	0.470	0.460	0.443	0.421	0.397	0.367
	0.331	0.288									
17	0.532	0.595	0.647	0.689	0.726	0.756	0.777	0.789	0.796	0.801	0.805
	0.807	0.809	0.807	0.804	0.802	0.800	0.798	0.795	0.787	0.777	0.771
	0.767	0.763	0.756	0.737	0.713	0.700	0.692	0.683	0.666	0.627	0.579
	0.552	0.534	0.513	0.244	0.236	0.232	0.231	0.230	0.229	0.228	0.226
	0.226	0.387	0.403	0.416	0.438	0.475	0.503	0.514	0.519	0.524	0.532
	0.545	0.552	0.554	0.555	0.555	0.555	0.552	0.545	0.541	0.538	0.534
	0.528	0.513	0.496	0.487	0.481	0.476	0.466	0.447	0.425	0.399	0.369
	0.333	0.289									
18	0.533	0.596	0.647	0.690	0.728	0.760	0.782	0.796	0.804	0.810	0.815
	0.818	0.820	0.816	0.811	0.808	0.806	0.803	0.799	0.790	0.781	0.776
	0.772	0.768	0.761	0.743	0.720	0.707	0.699	0.689	0.672	0.630	0.581
	0.556	0.540	0.524	0.495	0.449	0.421	0.409	0.403	0.396	0.385	0.360
	0.211	0.369	0.390	0.408	0.435	0.478	0.510	0.523	0.530	0.535	0.544
	0.557	0.567	0.570	0.571	0.571	0.571	0.567	0.561	0.557	0.554	0.550
	0.543	0.526	0.508	0.499	0.493	0.487	0.476	0.455	0.430	0.403	0.372
	0.334	0.290									
19	0.533	0.596	0.647	0.689	0.729	0.762	0.787	0.805	0.817	0.826	0.836
	0.841	0.838	0.825	0.817	0.814	0.810	0.807	0.802	0.793	0.787	0.783
	0.780	0.776	0.768	0.749	0.731	0.719	0.711	0.701	0.682	0.635	0.587
	0.563	0.549	0.534	0.510	0.467	0.442	0.430	0.423	0.415	0.400	0.367
	0.211	0.372	0.394	0.413	0.440	0.484	0.523	0.539	0.546	0.552	0.560
	0.571	0.585	0.590	0.592	0.592	0.590	0.563	0.581	0.578	0.575	0.571
	0.562	0.540	0.523	0.514	0.508	0.502	0.489	0.463	0.436	0.407	0.374
	0.336	0.292									
20	0.533	0.596	0.646	0.688	0.727	0.761	0.789	0.810	0.827	0.840	0.857
	0.876	0.853	0.829	0.820	0.815	0.812	0.809	0.803	0.794	0.790	0.789
	0.786	0.782	0.772	0.752	0.739	0.731	0.724	0.713	0.690	0.638	0.590
	0.567	0.553	0.539	0.516	0.474	0.452	0.445	0.438	0.429	0.409	0.371
	0.206	0.386	0.408	0.425	0.447	0.488	0.532	0.553	0.562	0.567	0.571
	0.579	0.598	0.607	0.610	0.609	0.603	0.592	0.594	0.595	0.593	0.588
	0.575	0.548	0.533	0.526	0.521	0.513	0.497	0.467	0.438	0.409	0.376
	0.337	0.292									
21	0.533	0.595	0.646	0.687	0.726	0.760	0.788	0.813	0.836	0.846	0.868
	0.903	0.860	0.831	0.820	0.816	0.813	0.809	0.803	0.794	0.793	0.794
	0.793	0.787	0.775	0.754	0.744	0.742	0.736	0.724	0.696	0.640	0.591
	0.569	0.556	0.542	0.519	0.477	0.459	0.456	0.451	0.439	0.414	0.374
	0.363	0.402	0.423	0.436	0.453	0.490	0.539	0.565	0.576	0.579	0.579
	0.584	0.607	0.621	0.626	0.623	0.612	0.597	0.603	0.609	0.610	0.602
	0.584	0.552	0.539	0.536	0.532	0.523	0.503	0.470	0.440	0.410	0.376
	0.338	0.293									

22	0.533	0.595	0.645	0.686	0.724	0.758	0.786	0.809	0.826	0.841	0.861
	0.878	0.857	0.829	0.819	0.817	0.815	0.810	0.802	0.793	0.794	0.802
	0.806	0.795	0.777	0.754	0.749	0.757	0.762	0.740	0.701	0.641	0.593
	0.572	0.560	0.545	0.520	0.478	0.464	0.472	0.477	0.455	0.418	0.374
	0.378	0.422	0.451	0.453	0.458	0.491	0.546	0.583	0.604	0.598	0.586
	0.587	0.615	0.640	0.655	0.643	0.620	0.601	0.611	0.629	0.639	0.622
	0.592	0.556	0.546	0.550	0.553	0.537	0.509	0.472	0.441	0.410	0.377
	0.338	0.293									
23	0.533	0.594	0.644	0.684	0.722	0.755	0.782	0.803	0.818	0.834	0.857
	0.895	0.851	0.825	0.817	0.816	0.819	0.809	0.800	0.790	0.794	0.809
	0.836	0.802	0.777	0.753	0.751	0.772	0.817	0.755	0.702	0.640	0.593
	0.574	0.567	0.547	0.519	0.476	0.462	0.484	0.532	0.467	0.416	0.370
	0.378	0.437	0.509	0.468	0.458	0.491	0.548	0.600	0.665	0.615	0.589
	0.588	0.618	0.658	0.717	0.660	0.624	0.602	0.615	0.647	0.701	0.640
	0.595	0.557	0.548	0.563	0.597	0.550	0.511	0.473	0.441	0.411	0.377
	0.339	0.294									
24	0.532	0.593	0.642	0.682	0.719	0.751	0.776	0.795	0.808	0.820	0.835
	0.845	0.836	0.818	0.811	0.809	0.807	0.803	0.796	0.787	0.789	0.796
	0.799	0.790	0.773	0.750	0.745	0.752	0.755	0.735	0.698	0.638	0.591
	0.570	0.558	0.543	0.341	0.322	0.314	0.316	0.317	0.308	0.292	0.272
	0.273	0.409	0.438	0.444	0.452	0.488	0.543	0.579	0.599	0.595	0.585
	0.586	0.614	0.638	0.651	0.641	0.620	0.601	0.611	0.627	0.636	0.620
	0.592	0.556	0.546	0.550	0.551	0.536	0.509	0.473	0.442	0.411	0.378
	0.339	0.294									
25	0.532	0.592	0.640	0.679	0.714	0.744	0.766	0.781	0.791	0.799	0.807
	0.811	0.812	0.805	0.799	0.797	0.795	0.792	0.787	0.780	0.778	0.777
	0.775	0.771	0.761	0.742	0.731	0.725	0.719	0.708	0.684	0.633	0.587
	0.565	0.551	0.538	0.514	0.467	0.435	0.425	0.417	0.406	0.383	0.344
	0.205	0.366	0.392	0.411	0.436	0.481	0.530	0.552	0.562	0.567	0.572
	0.580	0.601	0.611	0.615	0.613	0.607	0.595	0.598	0.601	0.599	0.594
	0.580	0.551	0.537	0.531	0.526	0.518	0.501	0.471	0.441	0.411	0.378
	0.340	0.295									
26	0.530	0.589	0.635	0.672	0.705	0.731	0.748	0.760	0.766	0.772	0.777
	0.780	0.783	0.783	0.780	0.779	0.777	0.775	0.772	0.766	0.760	0.756
	0.754	0.750	0.743	0.727	0.709	0.698	0.691	0.682	0.665	0.623	0.579
	0.556	0.543	0.529	0.505	0.453	0.400	0.380	0.370	0.360	0.344	0.315
	0.205	0.335	0.360	0.382	0.415	0.468	0.510	0.526	0.535	0.541	0.551
	0.565	0.579	0.584	0.586	0.587	0.586	0.581	0.577	0.574	0.572	0.568
	0.560	0.540	0.522	0.513	0.508	0.501	0.489	0.465	0.438	0.410	0.378
	0.340	0.295									
27	0.528	0.584	0.627	0.661	0.689	0.710	0.723	0.731	0.736	0.740	0.743
	0.746	0.749	0.752	0.752	0.751	0.750	0.749	0.747	0.742	0.735	0.730
	0.727	0.724	0.718	0.702	0.683	0.671	0.664	0.656	0.642	0.607	0.566
	0.545	0.531	0.518	0.492	0.429	0.212	0.210	0.209	0.208	0.207	0.207
	0.206	0.329	0.352	0.372	0.403	0.454	0.489	0.503	0.510	0.517	0.527
	0.543	0.553	0.556	0.557	0.558	0.558	0.556	0.550	0.546	0.544	0.540
	0.534	0.519	0.503	0.494	0.489	0.483	0.474	0.455	0.432	0.407	0.377
	0.340	0.296									
28	0.524	0.576	0.614	0.643	0.666	0.682	0.692	0.698	0.701	0.704	0.707
	0.709	0.712	0.715	0.716	0.716	0.716	0.715	0.714	0.710	0.703	0.698
	0.696	0.693	0.687	0.673	0.654	0.644	0.638	0.631	0.619	0.591	0.557
	0.540	0.529	0.519	0.499	0.457	0.413	0.397	0.390	0.383	0.375	0.367
	0.381	0.394	0.402	0.410	0.425	0.454	0.478	0.488	0.493	0.498	0.505
	0.518	0.525	0.527	0.527	0.528	0.528	0.526	0.521	0.517	0.514	0.512
	0.507	0.495	0.480	0.473	0.468	0.464	0.456	0.441	0.422	0.400	0.373
	0.338	0.296									
29	0.517	0.563	0.596	0.620	0.638	0.650	0.658	0.662	0.665	0.667	0.669
	0.671	0.673	0.676	0.677	0.677	0.677	0.677	0.676	0.673	0.667	0.663
	0.661	0.658	0.654	0.642	0.627	0.618	0.613	0.608	0.599	0.578	0.553
	0.541	0.534	0.527	0.514	0.489	0.466	0.457	0.452	0.448	0.442	0.435
	0.438	0.441	0.444	0.447	0.452	0.464	0.475	0.480	0.483	0.485	0.490
	0.496	0.499	0.500	0.500	0.500	0.500	0.497	0.491	0.488	0.486	0.483
	0.479	0.469	0.457	0.451	0.447	0.443	0.437	0.424	0.409	0.390	0.366
	0.335	0.295									
30	0.506	0.544	0.570	0.588	0.602	0.610	0.616	0.619	0.621	0.622	0.624
	0.625	0.627	0.629	0.630	0.630	0.630	0.630	0.630	0.628	0.624	0.621
	0.620	0.618	0.614	0.606	0.596	0.590	0.587	0.583	0.577	0.564	0.549
	0.542	0.538	0.534	0.526	0.512	0.500	0.494	0.492	0.489	0.485	0.478
	0.474	0.474	0.473	0.473	0.473	0.474	0.475	0.475	0.476	0.476	0.476
	0.476	0.475	0.474	0.473	0.472	0.470	0.466	0.460	0.456	0.454	0.452
	0.448	0.440	0.430	0.425	0.422	0.419	0.413	0.403	0.391	0.376	0.356
	0.329	0.293									
31	0.487	0.515	0.533	0.545	0.553	0.559	0.563	0.565	0.566	0.567	0.568
	0.569	0.570	0.572	0.573	0.573	0.574	0.574	0.574	0.573	0.572	0.570
	0.570	0.569	0.567	0.563	0.558	0.555	0.553	0.552	0.549	0.542	0.535
	0.531	0.529	0.527	0.523	0.516	0.509	0.505	0.503	0.502	0.498	0.492
	0.486	0.483	0.482	0.480	0.478	0.473	0.466	0.465	0.464	0.462	0.460
	0.455	0.449	0.446	0.445	0.443	0.440	0.433	0.426	0.423	0.421	0.418
	0.415	0.407	0.398	0.394	0.392	0.389	0.385	0.377	0.367	0.355	0.340
	0.318	0.288									

DRAWDOWN IN LAYER 2 AT END OF TIME STEP 1 IN STRESS PERIOD 10

	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	53	54	55
	56	57	58	59	60	61	62	63	64	65	66
	67	68	69	70	71	72	73	74	75	76	77
	78	79									
1	0.468	0.490	0.505	0.514	0.521	0.526	0.529	0.530	0.531	0.532	0.533
	0.534	0.535	0.536	0.537	0.537	0.537	0.537	0.537	0.536	0.535	0.534
	0.533	0.532	0.531	0.527	0.523	0.520	0.519	0.517	0.515	0.509	0.502
	0.499	0.497	0.495	0.491	0.484	0.476	0.472	0.470	0.468	0.464	0.456
	0.447	0.443	0.441	0.439	0.435	0.426	0.418	0.414	0.412	0.409	0.405
	0.397	0.389	0.385	0.382	0.380	0.376	0.368	0.359	0.356	0.353	0.351
	0.347	0.339	0.331	0.327	0.325	0.323	0.320	0.313	0.305	0.295	0.283
	0.267	0.246									
2	0.492	0.525	0.546	0.561	0.572	0.579	0.583	0.586	0.587	0.589	0.590
	0.591	0.593	0.595	0.596	0.596	0.596	0.596	0.596	0.595	0.593	0.591
	0.590	0.588	0.586	0.581	0.574	0.570	0.568	0.565	0.561	0.553	0.543
	0.538	0.536	0.533	0.528	0.518	0.508	0.504	0.501	0.498	0.493	0.484
	0.475	0.471	0.468	0.466	0.462	0.453	0.445	0.441	0.439	0.437	0.433
	0.425	0.417	0.413	0.410	0.408	0.404	0.396	0.388	0.384	0.381	0.379
	0.375	0.366	0.358	0.353	0.351	0.349	0.345	0.337	0.328	0.317	0.303
	0.284	0.259									
3	0.508	0.548	0.576	0.596	0.611	0.621	0.626	0.630	0.632	0.634	0.636
	0.637	0.639	0.642	0.643	0.643	0.643	0.644	0.643	0.642	0.638	0.635
	0.634	0.632	0.629	0.621	0.611	0.606	0.603	0.600	0.594	0.582	0.569
	0.563	0.560	0.556	0.550	0.538	0.526	0.520	0.517	0.514	0.509	0.499
	0.490	0.486	0.483	0.481	0.477	0.469	0.462	0.459	0.457	0.455	0.451
	0.444	0.437	0.434	0.432	0.429	0.426	0.418	0.410	0.406	0.403	0.401
	0.397	0.388	0.379	0.374	0.372	0.369	0.364	0.356	0.346	0.334	0.318
	0.296	0.268									
4	0.519	0.564	0.597	0.622	0.640	0.653	0.661	0.665	0.668	0.670	0.672
	0.674	0.676	0.679	0.680	0.680	0.681	0.681	0.680	0.678	0.674	0.671
	0.669	0.666	0.662	0.652	0.639	0.632	0.628	0.624	0.617	0.601	0.585
	0.578	0.574	0.569	0.562	0.547	0.534	0.528	0.524	0.521	0.516	0.505
	0.497	0.493	0.491	0.489	0.485	0.479	0.473	0.470	0.469	0.467	0.465
	0.459	0.453	0.450	0.448	0.446	0.443	0.435	0.427	0.423	0.421	0.419
	0.414	0.405	0.395	0.391	0.388	0.385	0.380	0.371	0.360	0.347	0.329
	0.305	0.274									
5	0.526	0.576	0.613	0.640	0.663	0.679	0.689	0.694	0.698	0.700	0.702
	0.704	0.706	0.708	0.709	0.709	0.709	0.709	0.709	0.707	0.703	0.700
	0.697	0.694	0.689	0.676	0.659	0.651	0.646	0.641	0.632	0.614	0.595
	0.586	0.581	0.576	0.567	0.550	0.536	0.529	0.525	0.522	0.516	0.506
	0.498	0.495	0.493	0.491	0.489	0.484	0.480	0.478	0.477	0.476	0.474
	0.470	0.465	0.463	0.461	0.459	0.456	0.450	0.442	0.438	0.436	0.433
	0.429	0.419	0.409	0.404	0.401	0.398	0.393	0.383	0.371	0.357	0.338
	0.312	0.279									
6	0.532	0.585	0.625	0.656	0.682	0.703	0.716	0.723	0.727	0.729	0.731
	0.732	0.733	0.734	0.734	0.734	0.734	0.734	0.733	0.732	0.730	0.727
	0.725	0.722	0.715	0.696	0.676	0.666	0.660	0.654	0.644	0.622	0.601
	0.590	0.584	0.579	0.569	0.550	0.534	0.527	0.523	0.519	0.513	0.503
	0.497	0.494	0.493	0.492	0.490	0.487	0.485	0.484	0.484	0.483	0.482
	0.480	0.476	0.474	0.473	0.471	0.469	0.463	0.455	0.451	0.449	0.446
	0.442	0.432	0.421	0.416	0.413	0.410	0.404	0.394	0.381	0.365	0.345
	0.318	0.283									
7	0.536	0.591	0.634	0.667	0.697	0.722	0.741	0.754	0.760	0.761	0.760
	0.758	0.756	0.754	0.753	0.752	0.752	0.752	0.752	0.752	0.757	0.758
	0.757	0.752	0.739	0.713	0.688	0.677	0.670	0.664	0.652	0.627	0.603
	0.591	0.585	0.578	0.567	0.546	0.528	0.521	0.517	0.513	0.507	0.497
	0.492	0.491	0.490	0.489	0.489	0.488	0.489	0.489	0.489	0.489	0.489
	0.488	0.486	0.485	0.484	0.482	0.480	0.475	0.467	0.463	0.461	0.458
	0.454	0.444	0.432	0.427	0.423	0.420	0.414	0.403	0.389	0.373	0.351
	0.322	0.286									
8	0.538	0.594	0.638	0.673	0.704	0.731	0.755	0.777	0.793	0.785	0.777
	0.772	0.767	0.763	0.762	0.761	0.761	0.761	0.760	0.761	0.771	0.783
	0.790	0.776	0.753	0.720	0.694	0.682	0.675	0.668	0.655	0.629	0.603
	0.591	0.584	0.577	0.565	0.542	0.524	0.516	0.512	0.508	0.502	0.493
	0.488	0.488	0.487	0.487	0.487	0.489	0.491	0.491	0.492	0.492	0.493
	0.493	0.492	0.490	0.490	0.489	0.487	0.482	0.474	0.470	0.468	0.465
	0.461	0.450	0.439	0.433	0.429	0.426	0.420	0.408	0.394	0.377	0.354
	0.325	0.287									
9	0.539	0.596	0.641	0.676	0.708	0.736	0.761	0.789	0.836	0.799	0.784
	0.778	0.772	0.768	0.756	0.766	0.756	0.765	0.765	0.766	0.776	0.797
	0.831	0.790	0.758	0.723	0.697	0.685	0.677	0.670	0.657	0.630	0.603
	0.590	0.583	0.575	0.563	0.540	0.521	0.313	0.509	0.505	0.499	0.490
	0.486	0.485	0.485	0.486	0.486	0.489	0.492	0.493	0.494	0.494	0.495
	0.495	0.495	0.494	0.493	0.492	0.491	0.486	0.478	0.474	0.472	0.469
	0.465	0.454	0.442	0.436	0.433	0.429	0.423	0.411	0.396	0.379	0.356
	0.326	0.288									
10	0.540	0.598	0.643	0.679	0.711	0.739	0.763	0.786	0.803	0.795	0.786
	0.781	0.776	0.772	0.771	0.770	0.770	0.770	0.769	0.770	0.779	0.791
	0.797	0.784	0.760	0.726	0.699	0.687	0.679	0.672	0.659	0.631	0.603
	0.589	0.582	0.574	0.561	0.537	0.517	0.509	0.505	0.501	0.495	0.486
	0.483	0.483	0.453	0.484	0.485	0.488	0.492	0.494	0.495	0.496	0.497
	0.499	0.499	0.498	0.497	0.496	0.494	0.490	0.483	0.479	0.476	0.474
	0.469	0.458	0.446	0.440	0.436	0.433	0.426	0.414	0.399	0.381	0.358
	0.328	0.289									

11	0.542	0.601	0.647	0.684	0.717	0.744	0.765	0.778	0.785	0.786	0.785
	0.784	0.782	0.779	0.778	0.777	0.777	0.777	0.776	0.776	0.779	0.780
	0.778	0.772	0.759	0.730	0.703	0.690	0.683	0.675	0.661	0.632	0.602
	0.587	0.579	0.571	0.557	0.531	0.510	0.502	0.498	0.494	0.488	0.479
	0.477	0.478	0.479	0.480	0.482	0.488	0.494	0.497	0.498	0.499	0.501
	0.504	0.505	0.504	0.504	0.503	0.502	0.497	0.490	0.486	0.484	0.481
	0.476	0.465	0.453	0.446	0.443	0.439	0.432	0.419	0.404	0.385	0.361
	0.330	0.291									
12	0.546	0.606	0.654	0.693	0.726	0.751	0.767	0.776	0.781	0.784	0.787
	0.788	0.790	0.791	0.790	0.790	0.789	0.788	0.787	0.784	0.778	0.774
	0.770	0.766	0.757	0.735	0.709	0.696	0.688	0.679	0.665	0.633	0.598
	0.581	0.571	0.562	0.546	0.515	0.492	0.483	0.478	0.474	0.468	0.460
	0.462	0.465	0.467	0.470	0.475	0.486	0.497	0.502	0.504	0.507	0.510
	0.516	0.518	0.519	0.519	0.518	0.517	0.514	0.507	0.503	0.500	0.497
	0.493	0.481	0.467	0.461	0.456	0.452	0.445	0.431	0.414	0.394	0.368
	0.335	0.294									
13	0.548	0.610	0.659	0.699	0.733	0.758	0.774	0.783	0.788	0.791	0.795
	0.797	0.800	0.801	0.801	0.800	0.799	0.798	0.796	0.791	0.782	0.777
	0.773	0.769	0.761	0.741	0.715	0.701	0.693	0.684	0.668	0.633	0.591
	0.571	0.558	0.546	0.525	0.487	0.461	0.452	0.447	0.442	0.436	0.427
	0.434	0.442	0.447	0.452	0.462	0.484	0.501	0.508	0.512	0.516	0.521
	0.530	0.535	0.536	0.536	0.536	0.536	0.533	0.526	0.522	0.519	0.517
	0.511	0.499	0.484	0.476	0.472	0.467	0.459	0.443	0.424	0.402	0.374
	0.339	0.296									
14	0.549	0.611	0.661	0.701	0.736	0.762	0.778	0.787	0.792	0.796	0.800
	0.802	0.805	0.807	0.806	0.805	0.804	0.803	0.800	0.794	0.785	0.780
	0.776	0.772	0.764	0.744	0.718	0.704	0.695	0.686	0.670	0.633	0.589
	0.565	0.551	0.537	0.513	0.470	0.444	0.433	0.428	0.424	0.417	0.408
	0.416	0.427	0.435	0.442	0.456	0.483	0.504	0.512	0.517	0.521	0.527
	0.538	0.544	0.545	0.546	0.546	0.546	0.543	0.536	0.532	0.529	0.527
	0.521	0.508	0.493	0.485	0.480	0.475	0.466	0.449	0.429	0.405	0.376
	0.341	0.298									
15	0.549	0.612	0.662	0.702	0.737	0.764	0.780	0.790	0.795	0.799	0.803
	0.806	0.809	0.810	0.809	0.808	0.806	0.805	0.803	0.796	0.787	0.781
	0.778	0.773	0.766	0.746	0.720	0.706	0.697	0.688	0.672	0.633	0.587
	0.562	0.547	0.531	0.504	0.459	0.432	0.422	0.417	0.412	0.405	0.395
	0.403	0.418	0.427	0.436	0.452	0.482	0.505	0.515	0.520	0.524	0.531
	0.543	0.549	0.551	0.551	0.552	0.552	0.549	0.542	0.538	0.536	0.533
	0.527	0.514	0.498	0.490	0.485	0.480	0.471	0.453	0.432	0.408	0.378
	0.342	0.298									
16	0.550	0.613	0.663	0.703	0.739	0.766	0.782	0.792	0.798	0.803	0.807
	0.810	0.812	0.814	0.812	0.810	0.809	0.808	0.805	0.798	0.789	0.783
	0.779	0.775	0.768	0.748	0.722	0.708	0.700	0.690	0.673	0.634	0.586
	0.560	0.544	0.526	0.493	0.446	0.420	0.410	0.404	0.400	0.392	0.381
	0.388	0.407	0.419	0.430	0.449	0.482	0.507	0.517	0.523	0.528	0.535
	0.547	0.555	0.556	0.557	0.558	0.558	0.555	0.549	0.545	0.542	0.539
	0.533	0.519	0.503	0.495	0.490	0.484	0.475	0.457	0.435	0.410	0.379
	0.343	0.299									
17	0.550	0.613	0.664	0.704	0.740	0.768	0.786	0.797	0.803	0.808	0.812
	0.815	0.818	0.818	0.816	0.814	0.812	0.811	0.808	0.801	0.792	0.786
	0.782	0.778	0.771	0.751	0.726	0.712	0.703	0.693	0.676	0.635	0.586
	0.558	0.540	0.520	0.475	0.427	0.402	0.392	0.387	0.381	0.373	0.359
	0.361	0.392	0.408	0.422	0.444	0.482	0.511	0.522	0.528	0.533	0.541
	0.554	0.563	0.565	0.566	0.566	0.566	0.564	0.558	0.554	0.551	0.548
	0.542	0.527	0.511	0.502	0.497	0.491	0.481	0.462	0.438	0.412	0.381
	0.344	0.300									
18	0.551	0.614	0.664	0.706	0.742	0.772	0.791	0.804	0.812	0.818	0.824
	0.827	0.829	0.827	0.822	0.820	0.818	0.815	0.812	0.805	0.797	0.792
	0.788	0.784	0.776	0.757	0.733	0.719	0.710	0.700	0.682	0.638	0.587
	0.561	0.545	0.528	0.499	0.452	0.424	0.413	0.406	0.400	0.388	0.364
	0.331	0.373	0.394	0.413	0.440	0.484	0.518	0.531	0.538	0.544	0.553
	0.567	0.577	0.580	0.582	0.582	0.582	0.579	0.574	0.570	0.567	0.564
	0.557	0.541	0.524	0.515	0.510	0.504	0.493	0.470	0.444	0.417	0.384
	0.346	0.301									
19	0.551	0.614	0.664	0.705	0.743	0.774	0.797	0.813	0.825	0.834	0.844
	0.849	0.848	0.836	0.828	0.824	0.821	0.819	0.814	0.808	0.803	0.800
	0.797	0.793	0.784	0.764	0.744	0.731	0.723	0.712	0.692	0.643	0.591
	0.566	0.552	0.537	0.513	0.470	0.445	0.433	0.426	0.418	0.403	0.370
	0.331	0.376	0.398	0.417	0.445	0.490	0.530	0.546	0.554	0.560	0.569
	0.581	0.596	0.601	0.603	0.603	0.602	0.595	0.594	0.592	0.589	0.585
	0.577	0.556	0.541	0.533	0.527	0.520	0.507	0.479	0.450	0.420	0.387
	0.348	0.303									
20	0.551	0.613	0.663	0.704	0.742	0.774	0.798	0.818	0.832	0.847	0.865
	0.879	0.864	0.841	0.830	0.825	0.822	0.819	0.814	0.808	0.808	0.807
	0.895	0.801	0.790	0.767	0.752	0.743	0.735	0.724	0.700	0.645	0.593
	0.569	0.554	0.541	0.518	0.476	0.455	0.448	0.441	0.432	0.412	0.374
	0.339	0.390	0.412	0.429	0.452	0.494	0.540	0.560	0.570	0.575	0.580
	0.583	0.608	0.618	0.621	0.620	0.615	0.604	0.607	0.609	0.607	0.602
	0.590	0.564	0.552	0.547	0.542	0.534	0.517	0.484	0.453	0.422	0.388
	0.349	0.303									
21	0.551	0.613	0.663	0.703	0.741	0.773	0.798	0.819	0.836	0.853	0.881
	0.924	0.875	0.843	0.830	0.825	0.821	0.818	0.814	0.808	0.811	0.814
	0.813	0.807	0.794	0.769	0.757	0.754	0.748	0.734	0.705	0.647	0.594
	0.570	0.556	0.542	0.520	0.479	0.462	0.459	0.454	0.442	0.417	0.377
	0.366	0.406	0.427	0.440	0.457	0.496	0.546	0.572	0.584	0.588	0.587
	0.593	0.617	0.631	0.637	0.634	0.624	0.609	0.616	0.623	0.624	0.616
	0.599	0.569	0.560	0.559	0.556	0.546	0.524	0.487	0.455	0.423	0.389
	0.349	0.304									

22	0.551	0.612	0.662	0.702	0.739	0.771	0.797	0.818	0.835	0.853	0.878
	0.899	0.873	0.841	0.828	0.823	0.820	0.817	0.812	0.807	0.813	0.824
	0.830	0.818	0.797	0.770	0.763	0.770	0.773	0.750	0.711	0.647	0.595
	0.570	0.556	0.543	0.520	0.480	0.466	0.474	0.479	0.457	0.421	0.377
	0.381	0.426	0.455	0.457	0.463	0.497	0.553	0.591	0.612	0.606	0.595
	0.596	0.625	0.651	0.666	0.654	0.632	0.613	0.624	0.643	0.653	0.636
	0.607	0.573	0.567	0.576	0.581	0.563	0.530	0.490	0.456	0.424	0.389
	0.350	0.304									
23	0.551	0.612	0.661	0.700	0.737	0.768	0.794	0.814	0.830	0.848	0.876
	0.923	0.869	0.838	0.825	0.820	0.817	0.814	0.810	0.805	0.813	0.833
	0.868	0.827	0.797	0.769	0.764	0.784	0.830	0.765	0.712	0.647	0.594
	0.570	0.556	0.542	0.519	0.479	0.466	0.487	0.537	0.470	0.419	0.373
	0.381	0.440	0.514	0.472	0.463	0.497	0.555	0.607	0.674	0.623	0.598
	0.597	0.628	0.669	0.729	0.671	0.635	0.615	0.628	0.661	0.716	0.654
	0.611	0.574	0.570	0.592	0.636	0.578	0.533	0.490	0.457	0.424	0.390
	0.350	0.305									
24	0.550	0.611	0.659	0.698	0.734	0.765	0.789	0.808	0.822	0.836	0.852
	0.865	0.853	0.831	0.820	0.816	0.813	0.810	0.806	0.802	0.808	0.818
	0.822	0.812	0.792	0.766	0.758	0.764	0.766	0.745	0.707	0.645	0.593
	0.569	0.555	0.541	0.517	0.475	0.457	0.462	0.464	0.444	0.408	0.364
	0.365	0.413	0.442	0.448	0.457	0.494	0.550	0.587	0.607	0.603	0.593
	0.596	0.624	0.649	0.662	0.652	0.631	0.614	0.624	0.641	0.650	0.635
	0.607	0.573	0.567	0.575	0.579	0.562	0.531	0.490	0.457	0.425	0.390
	0.351	0.305									
25	0.550	0.610	0.657	0.695	0.730	0.758	0.780	0.795	0.805	0.814	0.823
	0.827	0.828	0.818	0.811	0.807	0.805	0.803	0.799	0.794	0.796	0.796
	0.795	0.790	0.779	0.758	0.744	0.737	0.730	0.719	0.694	0.640	0.590
	0.566	0.552	0.539	0.515	0.470	0.438	0.427	0.420	0.408	0.386	0.347
	0.312	0.369	0.395	0.414	0.440	0.487	0.537	0.560	0.570	0.575	0.580
	0.589	0.611	0.622	0.625	0.624	0.618	0.607	0.611	0.614	0.613	0.608
	0.595	0.568	0.557	0.553	0.548	0.539	0.521	0.488	0.456	0.425	0.391
	0.351	0.306									
26	0.548	0.607	0.652	0.689	0.721	0.746	0.763	0.775	0.782	0.787	0.792
	0.795	0.798	0.797	0.793	0.791	0.790	0.788	0.786	0.781	0.777	0.773
	0.770	0.767	0.760	0.742	0.722	0.711	0.702	0.693	0.675	0.631	0.584
	0.561	0.547	0.533	0.508	0.456	0.402	0.383	0.372	0.362	0.346	0.317
	0.289	0.338	0.364	0.386	0.420	0.474	0.517	0.534	0.542	0.550	0.360
	0.575	0.590	0.595	0.597	0.597	0.597	0.593	0.590	0.588	0.585	0.582
	0.574	0.555	0.540	0.531	0.526	0.519	0.507	0.481	0.453	0.424	0.390
	0.352	0.306									
27	0.546	0.602	0.645	0.678	0.705	0.726	0.739	0.747	0.751	0.755	0.759
	0.761	0.764	0.767	0.766	0.765	0.765	0.764	0.762	0.757	0.750	0.746
	0.743	0.739	0.733	0.717	0.695	0.683	0.676	0.667	0.652	0.616	0.574
	0.551	0.538	0.523	0.497	0.433	0.325	0.302	0.292	0.285	0.276	0.269
	0.286	0.332	0.356	0.377	0.408	0.460	0.497	0.511	0.518	0.525	0.535
	0.552	0.563	0.566	0.568	0.569	0.569	0.568	0.563	0.559	0.557	0.554
	0.548	0.534	0.518	0.509	0.504	0.499	0.489	0.469	0.446	0.420	0.389
	0.351	0.307									
28	0.542	0.593	0.632	0.660	0.683	0.699	0.708	0.714	0.717	0.720	0.723
	0.725	0.728	0.731	0.731	0.731	0.731	0.731	0.730	0.725	0.718	0.713
	0.710	0.707	0.701	0.687	0.667	0.656	0.650	0.643	0.630	0.601	0.566
	0.548	0.538	0.526	0.507	0.463	0.419	0.403	0.395	0.388	0.379	0.372
	0.386	0.399	0.408	0.416	0.432	0.462	0.486	0.496	0.502	0.507	0.514
	0.528	0.535	0.537	0.538	0.539	0.539	0.538	0.533	0.529	0.527	0.524
	0.520	0.508	0.494	0.486	0.482	0.478	0.470	0.454	0.435	0.413	0.385
	0.350	0.307									
29	0.535	0.581	0.614	0.637	0.655	0.667	0.674	0.679	0.681	0.683	0.686
	0.687	0.689	0.692	0.693	0.693	0.693	0.693	0.692	0.689	0.682	0.678
	0.676	0.673	0.668	0.656	0.640	0.631	0.626	0.621	0.611	0.589	0.564
	0.551	0.544	0.537	0.524	0.497	0.474	0.465	0.460	0.456	0.450	0.442
	0.446	0.449	0.452	0.455	0.460	0.473	0.484	0.490	0.492	0.495	0.499
	0.507	0.510	0.511	0.511	0.511	0.511	0.509	0.503	0.500	0.498	0.496
	0.491	0.481	0.469	0.463	0.460	0.456	0.449	0.437	0.421	0.403	0.378
	0.347	0.307									
30	0.524	0.562	0.588	0.606	0.619	0.628	0.633	0.636	0.638	0.639	0.641
	0.642	0.644	0.646	0.647	0.647	0.647	0.647	0.646	0.644	0.639	0.637
	0.635	0.633	0.629	0.621	0.610	0.604	0.600	0.597	0.591	0.576	0.561
	0.554	0.550	0.545	0.538	0.523	0.511	0.505	0.502	0.499	0.495	0.488
	0.485	0.484	0.483	0.483	0.483	0.484	0.485	0.486	0.486	0.487	0.487
	0.487	0.486	0.485	0.484	0.484	0.482	0.478	0.472	0.468	0.466	0.464
	0.460	0.452	0.442	0.437	0.434	0.431	0.426	0.416	0.403	0.388	0.368
	0.341	0.304									
31	0.505	0.533	0.551	0.562	0.571	0.577	0.580	0.582	0.583	0.584	0.585
	0.586	0.588	0.589	0.590	0.590	0.590	0.591	0.591	0.590	0.588	0.586
	0.586	0.585	0.583	0.579	0.573	0.570	0.568	0.567	0.564	0.557	0.549
	0.545	0.543	0.541	0.537	0.530	0.522	0.519	0.517	0.515	0.511	0.505
	0.499	0.496	0.494	0.493	0.490	0.485	0.480	0.478	0.476	0.475	0.472
	0.467	0.462	0.459	0.457	0.455	0.452	0.446	0.439	0.435	0.433	0.431
	0.427	0.419	0.410	0.406	0.404	0.401	0.397	0.389	0.379	0.367	0.351
	0.330	0.300									

DRAWDOWN IN LAYER 3 AT END OF TIME STEP 1 IN STRESS PERIOD 10

	1 12 23 34 45 56 67 78	2 13 24 35 46 57 68 79	3 14 25 36 47 58 69	4 15 26 37 48 59 70	5 16 27 38 49 60 71	6 17 28 39 50 61 72	7 18 29 40 51 62 73	8 19 30 41 52 63 74	9 20 31 42 53 64 75	10 21 32 43 54 65 76	11 22 33 44 55 66 77
1	12.6	13.8	14.6	15.2	15.7	16.0	16.2	16.3	16.4	16.4	16.5
	16.5	16.6	16.8	16.8	16.9	16.9	16.9	17.0	17.0	17.0	17.0
	17.0	17.0	16.9	16.8	16.7	16.6	16.5	16.5	16.4	16.1	15.9
	15.7	15.6	15.5	15.4	15.1	14.7	14.6	14.5	14.4	14.2	13.8
	13.4	13.3	13.2	13.1	12.9	12.5	12.1	12.0	11.9	11.8	11.6
	11.2	10.9	10.7	10.6	10.5	10.3	9.99	9.66	9.50	9.41	9.32
	9.17	8.85	8.55	8.41	8.33	8.25	8.11	7.86	7.57	7.24	6.83
	6.28	5.59									
2	13.8	15.9	17.4	18.5	19.4	20.0	20.4	20.6	20.7	20.9	21.0
	21.1	21.3	21.5	21.7	21.6	21.8	21.9	21.9	22.1	22.1	22.0
	22.0	22.0	21.9	21.8	21.5	21.3	21.2	21.1	20.9	20.5	20.0
	19.8	19.6	19.5	19.2	18.7	18.1	17.8	17.7	17.5	17.3	16.7
	16.2	16.0	15.8	15.7	15.4	14.9	14.4	14.2	14.1	13.9	13.7
	13.2	12.8	12.6	12.5	12.3	12.1	11.7	11.3	11.1	10.9	10.8
	10.6	10.2	9.84	9.65	9.55	9.44	9.26	8.94	8.56	8.12	7.57
	6.87	5.97									
3	14.6	17.4	19.7	21.4	22.7	23.7	24.2	24.6	24.8	25.0	25.2
	25.4	25.6	26.0	26.2	26.3	26.4	26.4	26.6	26.8	26.8	26.8
	26.6	26.7	26.6	26.4	26.0	25.7	25.6	25.4	25.1	24.4	23.6
	23.3	23.0	22.8	22.4	21.6	20.9	20.5	20.3	20.1	19.8	19.1
	18.4	18.1	18.0	17.8	17.5	16.9	16.3	16.1	15.9	15.8	15.5
	15.0	14.4	14.2	14.0	13.9	13.6	13.1	12.6	12.4	12.3	12.1
	11.9	11.4	10.9	10.7	10.6	10.4	10.2	9.82	9.35	8.82	8.15
	7.30	6.25									
4	15.2	18.6	21.4	23.6	25.5	26.9	27.7	28.2	28.5	28.7	29.0
	29.2	29.5	29.8	30.1	30.2	30.3	30.4	30.6	30.8	31.0	31.0
	31.0	31.0	30.9	30.6	30.0	29.7	29.4	29.2	28.8	27.8	26.7
	26.1	25.8	25.5	25.0	24.0	23.1	22.6	22.4	22.2	21.8	21.0
	20.2	19.9	19.7	19.5	19.2	18.5	17.9	17.6	17.4	17.2	17.0
	16.4	15.8	15.5	15.4	15.2	14.9	14.4	13.8	13.5	13.4	13.2
	12.9	12.4	11.8	11.6	11.4	11.3	11.0	10.5	9.98	9.37	8.59
	7.62	6.44									
5	15.6	19.3	22.7	25.4	28.0	29.8	31.0	31.6	32.0	32.3	32.5
	32.7	32.9	33.2	33.4	33.5	33.6	33.7	33.9	34.3	34.8	34.9
	34.9	34.9	34.8	34.4	33.7	33.3	33.0	32.7	32.1	30.6	29.1
	28.5	28.1	27.7	27.1	25.8	24.8	24.3	24.0	23.7	23.3	22.4
	21.6	21.3	21.1	20.9	20.5	19.8	19.1	18.8	18.6	18.5	18.2
	17.5	16.9	16.6	16.5	16.3	16.0	15.4	14.8	14.5	14.3	14.1
	13.8	13.2	12.6	12.3	12.1	11.9	11.6	11.1	10.5	9.80	8.94
	7.87	6.58									
6	15.9	20.0	23.7	27.0	30.1	32.7	34.4	35.3	35.8	36.0	36.2
	36.3	36.3	36.2	36.3	36.4	36.5	36.6	36.8	37.5	38.5	38.8
	38.9	38.8	38.7	38.0	37.5	37.1	36.7	36.3	35.4	33.2	31.3
	30.4	30.0	29.5	28.8	27.4	26.2	25.7	25.4	25.1	24.7	23.7
	22.9	22.5	22.3	22.1	21.7	21.0	20.3	19.9	19.8	19.6	19.3
	18.6	18.0	17.7	17.5	17.3	17.0	16.3	15.7	15.3	15.2	15.0
	14.6	13.9	13.2	12.9	12.7	12.5	12.2	11.6	10.9	10.2	9.23
	8.07	6.70									
7	16.1	20.4	24.5	28.2	31.9	35.3	38.0	39.9	40.7	40.7	40.3
	39.9	39.4	38.8	38.6	38.6	38.7	38.8	39.0	40.0	42.2	43.4
	43.7	43.5	42.6	41.0	41.3	41.6	41.4	40.7	38.9	35.3	32.9
	31.9	31.4	30.9	30.1	28.6	27.4	26.9	26.6	26.3	25.8	24.9
	24.0	23.6	23.4	23.2	22.8	22.0	21.3	20.9	20.8	20.6	20.2
	19.6	18.9	18.6	18.4	18.2	17.9	17.2	16.5	16.2	16.0	15.7
	15.4	14.6	13.9	13.5	13.3	13.1	12.7	12.1	11.3	10.5	9.47
	8.23	6.79									
8	16.2	20.7	24.9	28.7	32.7	36.5	40.0	43.4	46.0	44.5	42.9
	41.9	40.9	40.0	39.7	39.7	39.7	39.8	40.1	41.1	44.2	47.1
	48.9	47.3	44.6	42.2	43.2	45.3	46.5	44.4	40.7	36.2	33.7
	32.6	32.1	31.6	30.8	29.3	28.0	27.5	27.2	26.9	26.4	25.5
	24.6	24.2	24.0	23.8	23.4	22.6	21.9	21.5	21.3	21.1	20.8
	20.1	19.5	19.1	19.0	18.8	18.4	17.7	17.0	16.6	16.4	16.2
	15.8	15.0	14.2	13.8	13.6	13.4	13.0	12.3	11.5	10.7	9.60
	8.32	6.84									
9	16.2	20.8	25.1	29.1	33.1	37.1	40.8	45.4	53.0	46.6	44.0
	42.7	41.6	40.6	40.3	40.3	40.3	40.4	40.6	41.7	45.0	49.3
	55.7	49.4	45.3	42.7	43.9	47.4	53.2	46.5	41.4	36.7	34.0
	33.0	32.5	32.0	31.1	29.6	28.4	27.9	27.6	27.3	26.8	25.9
	25.0	24.6	24.3	24.1	23.7	22.9	22.2	21.8	21.6	21.5	21.1
	20.4	19.8	19.5	19.3	19.1	18.8	18.1	17.3	16.9	16.7	16.5
	16.1	15.2	14.4	14.0	13.8	13.5	13.2	12.5	11.6	10.8	9.67
	8.37	6.87									
10	16.3	20.9	25.3	29.4	33.6	37.6	41.2	44.7	47.3	45.8	44.2
	43.2	42.2	41.2	40.9	40.8	40.9	40.9	41.1	42.1	45.1	48.1
	49.8	48.2	45.4	43.1	44.0	46.1	47.3	45.2	41.5	37.0	34.4
	33.4	32.8	32.3	31.5	30.0	28.8	28.3	28.0	27.7	27.2	26.2
	25.4	24.9	24.7	24.5	24.1	23.3	22.5	22.2	22.0	21.8	21.5
	20.8	20.1	19.8	19.6	19.4	19.1	18.4	17.6	17.2	17.0	16.7
	16.3	15.5	14.6	14.2	14.0	13.7	13.3	12.6	11.8	10.9	9.74
	8.41	6.89									

11	16.4	21.1	25.6	29.9	34.2	38.2	41.4	43.4	44.3	44.4	44.0
	43.6	42.9	42.1	41.8	41.7	41.7	41.7	41.9	42.7	44.8	45.9
	46.2	46.0	45.0	43.3	43.5	43.8	43.6	42.9	41.0	37.4	34.9
	33.9	33.4	32.9	32.1	30.6	29.4	28.9	28.6	28.3	27.8	26.9
	26.0	25.6	25.4	25.1	24.7	23.9	23.1	22.8	22.6	22.4	22.0
	21.4	20.7	20.4	20.2	20.0	19.7	18.9	18.1	17.7	17.5	17.2
	16.8	15.9	15.0	14.6	14.3	14.0	13.6	12.9	12.0	11.0	9.87
	8.50	6.94									
12	16.5	21.4	26.2	30.8	35.4	39.3	41.9	43.4	44.0	44.3	44.5
	44.4	44.3	43.7	43.4	43.3	43.2	43.1	43.1	43.3	43.9	44.1
	44.1	44.1	43.8	43.0	42.3	41.8	41.4	41.0	40.0	37.8	35.8
	34.9	34.4	34.0	33.2	31.9	30.8	30.3	30.0	29.7	29.3	28.3
	27.4	27.0	26.8	26.5	26.1	25.2	24.4	24.1	23.9	23.7	23.3
	22.7	22.0	21.7	21.5	21.3	21.0	20.2	19.4	18.9	18.6	18.4
	17.9	16.9	15.8	15.3	15.0	14.7	14.3	13.4	12.4	11.4	10.1
	8.65	7.03									
13	16.6	21.6	26.6	31.3	36.3	40.8	44.3	46.6	47.6	47.8	47.5
	47.1	46.4	45.5	44.9	44.6	44.4	44.3	44.1	43.9	44.0	43.9
	43.9	43.8	43.6	42.9	42.0	41.5	41.1	40.7	39.9	38.1	36.5
	35.7	35.3	34.9	34.3	33.1	32.2	31.7	31.5	31.3	30.8	30.0
	29.1	28.6	28.4	28.1	27.6	26.7	25.8	25.4	25.2	25.0	24.7
	24.1	23.5	23.2	23.1	22.9	22.6	21.8	20.8	20.3	20.0	19.7
	19.2	17.9	16.7	16.1	15.8	15.4	14.9	13.9	12.8	11.7	10.3
	8.80	7.11									
14	16.7	21.7	26.7	31.5	36.6	41.4	45.6	49.5	52.3	51.0	49.5
	48.5	47.5	46.2	45.5	45.2	45.0	44.8	44.5	44.2	44.1	44.0
	44.0	43.9	43.7	43.0	42.1	41.5	41.2	40.8	40.1	38.4	36.8
	36.1	35.7	35.3	34.7	33.7	32.9	32.5	32.3	32.1	31.7	30.8
	29.9	29.5	29.2	28.9	28.4	27.4	26.5	26.1	25.9	25.7	25.4
	24.8	24.3	24.1	23.9	23.7	23.4	22.6	21.6	21.1	20.8	20.4
	19.8	18.5	17.1	16.5	16.1	15.8	15.2	14.1	13.0	11.8	10.4
	8.87	7.15									
15	16.7	21.7	26.7	31.6	36.7	41.6	46.1	51.1	59.0	52.8	50.3
	49.2	48.0	46.7	45.9	45.5	45.3	45.0	44.7	44.3	44.2	44.2
	44.1	44.0	43.8	43.1	42.2	41.6	41.3	40.9	40.2	38.5	37.0
	36.3	35.9	35.6	35.0	34.0	33.3	33.0	32.7	32.5	32.2	31.3
	30.4	30.0	29.7	29.4	28.9	27.8	26.9	26.5	26.3	26.1	25.8
	25.2	24.8	24.5	24.4	24.2	23.9	23.1	22.1	21.6	21.2	20.9
	20.3	18.8	17.4	16.7	16.4	16.0	15.4	14.3	13.1	11.9	10.5
	8.90	7.17									
16	16.7	21.7	26.8	31.6	36.8	41.7	46.1	50.1	53.0	51.8	50.4
	49.5	48.5	47.1	46.2	45.8	45.5	45.3	44.9	44.5	44.4	44.3
	44.2	44.1	43.9	43.3	42.3	41.8	41.4	41.0	40.3	38.7	37.2
	36.5	36.1	35.8	35.3	34.4	33.7	33.4	33.2	33.0	32.7	31.8
	31.0	30.5	30.2	29.9	29.4	28.2	27.3	26.9	26.7	26.5	26.2
	25.7	25.3	25.1	24.9	24.7	24.4	23.6	22.6	22.1	21.7	21.4
	20.7	19.2	17.7	17.0	16.6	16.2	15.5	14.4	13.2	12.0	10.5
	8.93	7.18									
17	16.7	21.8	26.8	31.6	36.8	41.8	45.8	48.6	50.0	50.3	50.1
	49.7	49.0	47.6	46.6	46.2	45.9	45.6	45.2	44.7	44.7	44.6
	44.5	44.4	44.2	43.5	42.6	42.1	41.7	41.3	40.6	38.9	37.4
	36.8	36.4	36.1	35.6	34.9	34.4	34.1	33.9	33.8	33.4	32.6
	31.7	31.3	31.0	30.7	30.1	28.8	27.8	27.4	27.2	27.0	26.7
	26.2	26.0	25.8	25.7	25.5	25.2	24.4	23.4	22.8	22.4	22.1
	21.3	19.7	18.0	17.3	16.8	16.4	15.8	14.6	13.4	12.1	10.6
	8.98	7.21									
18	16.7	21.7	26.7	31.6	36.7	41.5	45.1	47.5	48.8	49.7	50.3
	50.5	50.1	48.5	47.3	46.8	46.4	46.0	45.6	45.1	45.2	45.2
	45.1	45.0	44.8	44.0	43.2	42.7	42.4	42.0	41.2	39.3	37.8
	37.2	36.9	36.6	36.2	35.6	35.5	35.4	35.3	35.1	34.7	33.8
	33.1	32.7	32.4	32.0	31.4	29.8	28.6	28.2	28.0	27.8	27.5
	27.2	27.3	27.2	27.1	27.0	26.6	25.7	24.8	24.2	23.8	23.4
	22.5	20.5	18.6	17.8	17.3	16.8	16.1	14.8	13.5	12.2	10.7
	9.04	7.25									
19	16.7	21.7	26.6	31.3	36.3	41.0	44.7	47.4	49.3	51.1	53.0
	54.2	52.7	49.4	47.7	47.1	46.6	46.2	45.7	45.3	46.0	46.3
	46.3	46.2	45.8	44.7	44.3	43.9	43.6	43.2	42.2	39.8	38.1
	37.5	37.2	37.0	36.6	36.4	37.0	37.1	37.1	37.0	36.5	35.3
	34.9	34.6	34.3	33.9	33.0	30.8	29.4	28.9	28.7	28.5	28.3
	28.3	28.9	29.1	29.1	29.0	28.5	27.2	26.6	26.1	25.8	25.2
	24.1	21.4	19.2	18.2	17.7	17.2	16.4	15.1	13.7	12.3	10.8
	9.10	7.28									
20	16.6	21.6	26.4	31.1	35.9	40.6	44.3	47.3	49.6	52.1	56.2
	63.9	54.8	49.7	47.7	46.9	46.4	46.0	45.5	45.4	46.7	47.4
	47.6	47.4	46.6	45.0	45.1	45.2	45.0	44.4	43.0	40.0	38.2
	37.6	37.3	37.1	36.8	36.8	38.0	38.7	38.8	38.6	37.7	36.1
	36.2	36.3	36.1	35.6	34.2	31.3	29.7	29.2	29.0	28.8	28.7
	28.8	30.1	30.8	30.9	30.7	29.8	28.0	27.9	27.8	27.5	26.9
	25.3	21.9	19.4	18.4	17.9	17.4	16.5	15.2	13.8	12.4	10.8
	9.13	7.30									
21	16.6	21.5	26.3	30.9	35.6	40.2	43.9	47.0	49.4	51.9	55.1
	57.5	54.4	49.5	47.5	46.7	46.2	45.8	45.4	45.3	47.2	48.5
	48.9	48.4	47.1	45.2	45.7	46.3	46.4	45.5	43.5	40.0	38.2
	37.6	37.3	37.1	36.8	37.0	38.8	40.0	40.4	39.9	38.5	36.5
	37.0	37.7	37.7	36.9	35.0	31.6	29.9	29.4	29.2	29.0	28.9
	29.1	31.0	32.2	32.6	32.1	30.7	28.5	28.7	29.2	29.2	28.3
	26.1	22.1	19.6	18.5	18.0	17.5	16.6	15.2	13.8	12.4	10.9
	9.14	7.31									

22	16.6	21.4	26.1	30.6	35.3	39.7	43.3	46.4	48.8	51.3	54.5
	56.9	53.8	49.1	47.1	46.3	45.8	45.5	45.0	45.1	47.5	50.2
	51.6	50.1	47.6	45.2	46.2	48.1	49.2	47.3	44.0	40.0	38.1
	37.5	37.2	37.0	36.8	37.1	39.5	42.0	43.5	41.9	39.3	36.9
	37.8	39.7	40.8	39.0	35.8	31.8	30.1	29.5	29.3	29.1	29.0
	29.3	31.8	34.3	35.7	34.2	31.5	28.9	29.6	31.3	32.3	30.3
	26.9	22.4	19.7	10.6	18.1	17.5	16.7	15.3	13.9	12.4	10.9
	9.16	7.33									
23	16.6	21.4	26.0	30.3	34.9	39.1	42.7	45.5	47.8	50.3	54.4
	61.9	53.2	48.3	46.5	45.8	45.3	45.0	44.6	44.8	47.6	51.7
	58.1	51.7	47.6	45.0	46.2	49.7	55.7	48.9	44.1	39.8	37.9
	37.4	37.1	36.9	36.7	37.0	39.7	43.8	50.2	43.8	39.6	36.9
	38.1	41.6	47.6	40.9	36.1	31.9	30.1	29.6	29.3	29.2	29.0
	29.4	32.1	36.2	42.5	36.1	31.9	29.0	29.9	33.2	39.1	32.2
	27.2	22.4	19.7	18.7	18.1	17.6	16.7	15.3	13.9	12.5	10.9
	9.17	7.33									
24	16.5	21.2	25.8	30.0	34.4	38.5	41.7	44.4	46.3	48.3	50.8
	52.6	50.6	47.2	45.6	45.1	44.7	44.4	44.1	44.3	46.8	49.2
	50.5	49.2	46.8	44.5	45.5	47.3	48.2	46.5	43.4	39.5	37.7
	37.1	36.9	36.7	36.5	36.8	39.2	41.6	42.9	41.6	39.1	36.7
	37.7	39.4	40.4	38.7	35.6	31.8	30.0	29.5	29.3	29.1	29.0
	29.3	31.7	34.1	35.3	34.0	31.5	28.9	29.5	31.1	31.9	30.1
	26.8	22.4	19.7	18.7	18.1	17.6	16.7	15.3	13.9	12.5	10.9
	9.18	7.34									
25	16.5	21.1	25.5	29.5	33.6	37.3	40.2	42.3	43.7	44.9	46.1
	46.7	46.6	45.1	44.1	43.7	43.4	43.2	43.0	43.2	44.8	45.7
	46.0	45.7	44.9	43.4	43.7	43.9	43.8	43.2	41.7	38.8	37.2
	36.6	36.4	36.2	36.0	36.2	37.8	38.6	38.8	38.5	37.6	36.0
	36.2	36.5	36.4	35.8	34.3	31.4	29.8	29.3	29.1	28.9	28.7
	28.9	30.4	31.2	31.4	31.1	30.1	28.3	28.2	28.3	28.0	27.3
	25.6	22.0	19.6	18.5	18.0	17.5	16.6	15.3	13.9	12.5	10.9
	9.19	7.36									
26	16.3	20.8	24.9	28.7	32.3	35.4	37.6	39.1	40.0	40.8	41.4
	41.8	42.2	41.9	41.6	41.4	41.3	41.2	41.1	41.2	42.0	42.2
	42.2	42.2	41.9	41.2	40.8	40.6	40.3	40.0	39.2	37.3	36.1
	35.6	35.4	35.3	35.0	35.0	35.6	35.7	35.7	35.6	35.3	34.4
	34.0	33.7	33.4	33.0	32.2	30.4	29.1	28.6	28.4	28.3	28.1
	28.0	28.5	28.6	28.5	28.4	28.0	26.8	26.1	25.6	25.2	24.7
	23.7	21.2	19.1	18.2	17.7	17.2	16.4	15.1	13.8	12.4	10.9
	9.19	7.37									
27	16.1	20.3	24.0	27.2	30.2	32.6	34.1	35.1	35.7	36.2	36.6
	35.9	37.3	37.7	37.8	37.8	37.8	37.9	37.9	38.0	38.2	38.3
	38.3	38.2	38.1	37.7	37.2	36.9	36.7	36.5	36.0	35.0	34.1
	33.7	33.6	33.4	33.2	32.9	32.8	32.7	32.6	32.6	32.3	31.8
	31.1	30.7	30.5	30.2	29.7	28.6	27.7	27.3	27.1	26.9	26.7
	26.3	26.1	25.9	25.8	25.7	25.4	24.5	23.6	23.0	22.6	22.3
	21.5	19.9	18.2	17.5	17.1	16.7	16.0	14.8	13.6	12.3	10.8
	9.16	7.37									
28	15.8	19.5	22.7	25.3	27.6	29.2	30.3	30.9	31.3	31.7	32.0
	32.3	32.6	33.1	33.4	33.5	33.6	33.7	33.8	33.9	34.0	34.0
	34.0	34.0	33.9	33.7	33.3	33.0	32.9	32.7	32.5	31.8	31.2
	31.0	30.8	30.7	30.5	30.1	29.8	29.6	29.5	29.4	29.1	28.7
	28.0	27.7	27.5	27.3	27.0	26.2	25.5	25.2	25.0	24.8	24.6
	24.0	23.5	23.3	23.1	23.0	22.6	21.9	21.0	20.5	20.2	19.9
	19.4	18.2	17.6	16.4	16.1	15.7	15.2	14.2	13.1	12.0	10.6
	9.08	7.36									
29	15.3	18.5	21.0	23.0	24.6	25.8	26.5	26.9	27.2	27.5	27.7
	27.9	28.2	28.7	29.0	29.1	29.2	29.3	29.4	29.6	29.7	29.7
	29.7	29.7	29.6	29.5	29.2	29.1	29.0	28.9	28.7	28.3	27.9
	27.7	27.6	27.5	27.3	26.9	26.5	26.4	26.2	26.1	25.9	25.5
	25.0	24.7	24.5	24.4	24.1	23.5	22.9	22.7	22.5	22.4	22.1
	21.5	21.0	20.7	20.5	20.3	20.0	19.4	18.6	18.2	18.0	17.7
	17.3	16.4	15.5	15.1	14.8	14.6	14.1	13.3	12.5	11.5	10.3
	8.92	7.32									
30	14.6	17.0	18.8	20.1	21.2	21.9	22.4	22.7	22.9	23.0	23.2
	23.4	23.6	23.9	24.1	24.2	24.3	24.4	24.5	24.7	24.8	24.8
	24.8	24.8	24.8	24.8	24.7	24.6	24.5	24.5	24.4	24.1	23.9
	23.7	23.7	23.6	23.4	23.1	22.8	22.6	22.5	22.4	22.2	21.8
	21.4	21.2	21.1	21.0	20.8	20.3	19.8	19.6	19.4	19.3	19.1
	18.6	18.0	17.8	17.6	17.5	17.2	16.6	16.0	15.7	15.5	15.4
	15.1	14.4	13.7	13.4	13.2	13.1	12.7	12.2	11.5	10.7	9.80
	8.62	7.21									
31	13.5	15.0	16.0	16.7	17.3	17.7	18.0	18.1	18.2	18.3	18.4
	18.5	18.6	18.8	19.0	19.0	19.1	19.2	19.2	19.4	19.5	19.5
	19.5	19.5	19.5	19.6	19.5	19.5	19.5	19.4	19.4	19.3	19.1
	19.0	19.0	18.9	18.8	18.6	18.4	18.2	18.2	18.1	18.0	17.7
	17.4	17.2	17.1	17.0	16.9	16.5	16.1	16.0	15.9	15.7	15.6
	15.2	14.6	14.5	14.4	14.3	14.1	13.7	13.2	13.0	12.9	12.8
	12.6	12.1	11.7	11.5	11.3	11.2	11.0	10.6	10.2	9.65	8.98
	8.11	6.99									

```
DRAWDOWN WILL BE SAVED ON UNIT 90 AT END OF TIME STEP  1, STRESS PERIOD 10


VOLUMETRIC BUDGET FOR ENTIRE MODEL AT END OF TIME STEP  1 IN STRESS PERIOD 10
------------------------------------------------------------------------------
    CUMULATIVE VOLUMES         L**3        RATES FOR THIS TIME STEP      L**3/T
    ------------------                     ------------------------

  IN:                                       IN:
  ---                                       ---
     STORAGE          =   0.12509E+09          STORAGE          =   0.12204E+07
     CONSTANT HEAD    =   0.00000E+00          CONSTANT HEAD    =   0.00000E+00
     WELLS            =   0.00000E+00          WELLS            =   0.00000E+00
     RIVER LEAKAGE    =   0.20886E+08          RIVER LEAKAGE    =   0.39057E+06
            TOTAL IN  =    0.14598E+09                 TOTAL IN =    0.16110E+07
  OUT:                                      OUT:
  ----                                      ----
     STORAGE          =   0.62313E+06          STORAGE          =    10207.
     CONSTANT HEAD    =   0.00000E+00          CONSTANT HEAD    =   0.00000E+00
     WELLS            =   0.14493E+09          WELLS            =   0.16007E+07
     RIVER LEAKAGE    =   0.42098E+06          RIVER LEAKAGE    =   0.00000E+00
           TOTAL OUT  =    0.14598E+09                TOTAL OUT =    0.16110E+07
            IN - OUT  =    0.00000E+00                 IN - OUT =     1.6250
  PERCENT DISCREPANCY =       0.00         PERCENT DISCREPANCY =       0.00
  INPUT/OUTPUT RATIO  =       1.00          INPUT/OUTPUT RATIO  =      1.00


TIME SUMMARY AT END OF TIME STEP  1 IN STRESS PERIOD 10
                       SECONDS     MINUTES     HOURS      DAYS        YEARS
                       -----------------------------------------------------
     TIME STEP LENGTH  0.7776E+06  0.1296E+05  216.0      9.000       0.2464E-01
   STRESS PERIOD TIME  0.7776E+06  0.1296E+05  216.0      9.000       0.2464E-01
TOTAL SIMULATION TIME  0.7776E+07  0.1296E+06  2160.      90.00       0.2464
```

TABLE A-1. PROPOSED 1997 WITHDRAWAL RATE FROM GREENMEADOWS WELLFIELD

REGIONAL MODEL

The table below shows the well package record of withdrawals from the Greenmeadows wellfield used in the SFWMD Lee County model.

MODEL LAYER	AQUIFER	MODEL ROW	MODEL COLUMN	WITHDRAWA RATE(MGD)	TOTAL
1	WT	23	32	0.054	
1	WT	23	33	0.216	
1	WT	23	34	0.162	
1	WT	24	32	0.108	
1	WT	24	33	0.648	
1	WT	24	34	0.439	
1	WT	24	35	0.551	
1	WT	24	36	0.662	
1	WT	24	37	0.551	
1	WT	24	38	0.054	3.445
3	SS	23	32	0.180	
3	SS	23	33	0.900	
3	SS	23	34	0.720	
3	SS	24	32	0.360	
3	SS	24	33	2.520	
3	SS	24	34	0.900	
3	SS	24	35	1.080	
3	SS	24	36	0.900	
3	SS	24	37	0.900	
3	SS	24	38	0.180	8.640
		TOTAL			12.085