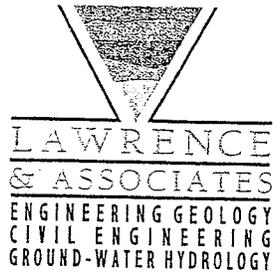


APPENDIX J



C98.04.07

WELL INSTALLATION
AQUIFER TESTING
AND
GROUND-WATER MODELING
FOR
FLYING J KNIGHTON ROAD TRAVEL PLAZA
SHASTA COUNTY, CALIFORNIA

August 20, 1998
Revised November 2, 1998
Revised January 14, 1999

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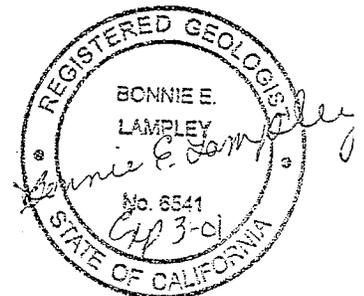




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EXECUTIVE SUMMARY

This report presents the results of an investigation into the effects of pumping ground water to supply the Flying J Travel Plaza proposed for the intersection of Churn Creek and Knighton Roads, Shasta County, California (**Figures 1 and 2**).

To evaluate potential effects of pumping ground water, the following work was conducted:

- Determination of project water demand
- Determination of site geology and hydrogeology through drilling, installation, and test pumping of a production well and three observation wells
- Development of a computerized ground-water model to predict impacts

Project Water Use and Supply System

Table 1 shows the results of calculations of water use (water demand) for the project. Water demand for any given project can be defined in various ways, such as average or peak demands. **Table 1** shows average daily demand, maximum daily demand, and peak demand for the Flying J Travel Plaza.

Average daily demand is the total amount of water used in a year divided by 365 days/year. The average daily demand averages out high and low water usage rates throughout the year. Average daily demand reflects the long-term, total yearly water usage for a project. For the Travel Plaza, average daily demand is 31 gallons per minute (gpm).

Maximum daily demand is the average amount of water used in a day during the highest usage. For the Flying J Travel Plaza, high usage will occur in the summer when landscaping irrigation is necessary and there are many travelers. Maximum daily demand is the average of the highest 24 hours of water usage, including high and low demands. For the Travel Plaza, maximum daily demand will be 108,000 gallons per day (gpd) or 75 gpm (108,000 gallons ÷ 1,440 minutes/day). This calculation was based on information from other Flying J facilities and the City of Redding.

Peak demand reflects the more or less instantaneous demand for water during a maximum-use day. For example, peak demand at the Travel Plaza probably will occur during a summer weekend morning when the hotel and restaurants are full and guests are showering and eating, and there are many vehicles and passengers at the facility. The peak demand will occur only for a short period of time (one to two hours). The peak demand for the Travel Plaza will be 270 gpm. Peak demand values are important because the water supply system must be sized to supply water at or above the peak demand usage.

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To supply project water demands, ground water will be pumped from a well (Well #1) located in the western part of the site (see **Figure 2** for location). The water will be pumped to a 145,000-gallon, aboveground, water-storage tank using a 500 gpm pump (sufficient to cover the 270-gpm peak demand). Booster pump stations will charge a pressure system to deliver domestic and fire-flow demands separately.

Based on the peak daily demand, the well probably will pump for about two hours in the morning and two hours in the evening on maximum-demand days (remember, maximum-demand day covers peak-demand periods). This pumping schedule will cover the maximum-daily demand (up to 4 hours total pumping \times 60 minutes/hour \times 500 gallons/minute = 120,000 gallons).

This amount (120,000 gallons per day) equates to about 135 acre-feet per year. Total pumpage from the Redding ground-water basin is about 37,300 acre-feet per year. Thus, the Flying J pumpage represents less than one-half of one percent (about 0.36%) of total basin pumpage per year.

For modeling of long-term project water use, it was impractical to “run” the model using an actual daily operating scenario of pumping for 2 hours, off for 10 hours, pumping for 2 hours, off for 10 hours, etc., day after day for a long period, such as a year. Instead, the ground-water model was set to “pump” at the maximum daily demand rate of 75 gpm. Although this is not exactly how the system will operate, it reflects the effects of long-term withdrawal of the amount of ground water needed for the project. The maximum daily demand was used instead of the lower average daily demand so that the analysis would be conservative; thus, the model reflects a long-term pumping rate more than two times what is anticipated on average.

Site Conditions and Well Testing

Geology and Hydrogeology

To determine the geologic conditions beneath the site, three wells were drilled; the deepest holes were about 325 feet deep. Logging of the holes (by visual observation and by electric-logging methods) showed several different layers (stratigraphy) beneath the site. **Plate 2** in the main report shows the layers and how the wells were constructed.

Seven layers were defined beneath the site. Three of these layers are classified as “aquifer zones”; an “*aquifer*” or aquifer zone is a unit that can readily transmit economic quantities of water. Between the aquifer zones are layers that don’t transmit water as readily; these types of units are called “*aquitards*”. Aquifers are the zones from which ground water is pumped.

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The aquifer zones beneath the site are found from about 108 to 125 feet (upper), 158 to 209 feet (intermediate), and 240 to 330 feet (lower). The upper and intermediate zones are separated from the lower zone by a distinct clay layer (aquitard) from 209 to 240 feet below ground surface.

Because the aquifer zones are separated from the surface and each other by aquitards, they are “*confined*” aquifers. A *confined aquifer* is one in which the water is under pressure. Most, if not all, of the deeper ground-water zones in the Redding basin are confined.

Conversely, an “*unconfined*”, or “*water-table*”, *aquifer* is one in which the water is at atmospheric pressure (not pressurized). **Figure ES-1** illustrates the difference between confined and unconfined aquifers.

On **Figure ES-1**, note where the water levels are in the water-table vs. confined-aquifer wells. The wells in the confined aquifer (middle and right-most wells) have water levels higher than the top of the aquifer, while the well in the water-table aquifer (left-most well) has a water level within the aquifer itself.

The Flying J production well and observation wells are all analogous to the confined-aquifer well (middle well) shown in **Figure ES-1**. The water levels in the Flying J wells (from 20 to 30 feet below ground surface) are well above the top of the aquifers (from 108 to 209 feet below ground surface).

It is important to understand the difference between confined and unconfined aquifers because there are very different results when pumping from confined vs. unconfined aquifers. In an unconfined aquifer, pumping actually lowers the water table; that is, the aquifer is dewatered. **Figure ES-2** illustrates this; note the area around the water-table well between the original water level and the pumping water level. There is no longer water in this area. (The area in which water levels are lowered is called the *cone of depression*, because the water table is “depressed” during pumping. The lateral extent of a cone of depression is called the *radius of influence*.)

When pumping stops in an unconfined aquifer, the water levels recover (return to normal) slowly. Usually, it takes an amount of time equal to the length of pumping (e.g., if pumping lasted for 4 hours, water level would take 4 hours to recover to pre-pumping level).

In a confined aquifer, pumping lowers the water pressure within the aquifer. The lower pressure is reflected in lower water levels in wells completed in the aquifer and within the radius of influence. As long as the pumping rate is such that the water level does not fall below the top of the aquifer, the aquifer will not dewater. **Figure ES-2** shows that there is no change in the thickness of the water-containing interval in a confined aquifer when it is pumped.

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After pumping from a confined aquifer stops, the water level recovers rapidly (compared to recovery in an unconfined aquifer). **Figure 3** (a graph of water level in the Flying J well during pumping) in the main body of this report illustrates the rapid recovery of water levels in a confined aquifer after pumping stops. Note the point at which pumping ends (1500 hours on 8-2-98), and how the water level rises back to near static level within minutes.

It should be noted, however, that rapid recovery of water levels in confined aquifers occurs only where the withdrawal is less than the *recharge* to the aquifer. *Recharge* is the water that enters a basin and deep percolates to the ground water aquifers. Recharge can consist of rainfall, applied water (irrigation, etc.), percolation of stream or river water, etc. A basin is in steady state or equilibrium when the amount of inflow equals the amount of outflow; if inflow is less than outflow, the basin is in overdraft (pumping more out than is going back in). The Redding basin (in which the project is located) is not in overdraft (*Shasta County Water Resources Master Plan, Phase I Report, Current and Future Water Needs*, Shasta County Water Agency/CH2M Hill/California Dept. of Water Resources, p. 101). Therefore, water levels recover rapidly after pumping from confined aquifers in the basin.

Well Testing

The Flying J production well (Well #1) is completed in the lower aquifer, and is sealed from ground surface to 235 feet. That is, the screen that collects water is within the lower aquifer and does not straddle any of the aquitards.

One observation well was completed similar in screened interval and seal depth as Well #1; one observation well was completed in the intermediate aquifer, and one in the upper aquifer. The purpose of the observation wells in the upper and intermediate aquifers was to determine if pumping from the lower aquifer would cause water to move through the aquitard and cause water levels to drop in the zones above. Essentially no *drawdown* was measured in these wells.

Drawdown is the drop in water level caused by pumping a well.

Well 1 was pumped at about 500 gpm for 24 hours, while water levels were continuously recorded in it and the three observation wells. The water-level data from the pumping well and the deep observation well were then used to determine hydraulic characteristics of the lower aquifer, principally its ability to transmit water. Calculated values were typical of those seen in units in the Redding basin (see **Table 3**, page 13 in the main body of this report). The observation well in the lower aquifer also was used to measure the drawdown in that aquifer at a distance from the pumping well; about 9.5 feet of drawdown was observed.

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The pumping well had a drawdown of about 33 feet. This is about the amount of drawdown that can be expected at the pumping well when it goes into production. Adding 33 feet of drawdown to the *static water level* (water level in a well before pumping begins) of about 50 feet below ground surface leads to a pumping level of about 83 feet below ground surface. The top of the aquifer is at about 240 feet below ground surface. Thus, drawdown from pumping the project well will not dewater the aquifer.

Project pumping will not cause subsidence. Subsidence can occur when an aquifer is dewatered and the sand grains or gravel that make up the aquifer no longer have the support of the water pressure, and they "collapse in" on themselves. Because the project will pump from a confined aquifer at a rate that will not cause the pumping level to fall below the top of the aquifer, the aquifer will not be dewatered, and there will be no cause for subsidence.

Ground-Water Modeling

Model Development

To predict impacts from long-term pumping of the Flying J well, a computer ground-water model was used. The model is a three-dimensional representation of the 4-square-mile area around the site (see **Figure 13**). It consists of seven layers that correspond to the layers determined from drilling at the site, with each layer gridded by rows and columns. The intersection of layers, rows, and columns defines 3-dimensional nodes. The model works by calculating flow into and out of each node.

The hydraulic characteristics of each layer, such as ability to transmit water, are input into the model. Model input is described on pages 13 through 16 in the main body of this report.

One of the inputs into the model can be recharge. Recharge could consist of rainfall, irrigation, or any other application of water. To make a conservative estimate of impacts, no recharge was specified for the model; this is conservative, because recharge would add water to the system, thereby decreasing pumping effects, such as drawdown. Thus, specification of impervious areas in the model (*e.g.*, paving) was not necessary.

The assumption was used in the model that most of the inflow to the model domain comes from subsurface inflow, rather than precipitation in the model domain. The subsurface inflow used in the model reflects the movement of ground water through the basin. Ultimately, ground water in the Redding basin is derived, in part, from percolation of precipitation. If there were a series of drought years, ground-water levels would decline throughout the basin, in all wells. This would not change the relative effects of pumping. Static water levels would be lower, but the amount of

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drawdown in the project well would still be about 30 to 35 feet. The cone of depression (radius of influence) would be of the same magnitude as during non-drought years because it is dependent on aquifer characteristics, not water levels.

All models must be calibrated to reflect real conditions. The Flying J model was calibrated using the actual pumping-test data from the site. Aquifer properties were adjusted until the model replicated the test data. **Figure 12** shows a comparison of test vs. model data; the fit is good, especially at the end of the test. This is the most important time, as long-term effects are of the most interest here.

The model also was adjusted to replicate recent (Spring 1998) regional ground-water levels measured by DWR (see **Figure 14**). All adjustments made to the model were checked by determining if the pump-test data could be replicated.

Prediction of Impacts

Interference

Once the model was calibrated, it was run using the long-term pumping rate of 75 gpm to predict impacts. The impact that pumping the Flying J well will have on neighboring wells is expressed as interference. *Interference* is the drop in water level in a well caused by the pumping of a neighboring well (in this case the Flying J well). The maximum radius of influence is the maximum distance over which interference will occur. Interference is higher closer to the pumping well, and decreases rapidly (in a confined aquifer) away from the pumping well; it is non-existent beyond the radius of influence. Interference will be considerably lower in aquifers above the aquifer in which the pumping well is screened because the aquitards restrict the vertical flow of ground water.

Most neighboring, domestic wells are completed in the upper and intermediate aquifers (most domestic wells in the area are shallower than about 200 feet), above the aquifer in which the pumping well is screened. The interference on neighboring wells completed in the upper and intermediate aquifers will be less than one inch (less than 0.05 feet). **Figures 15 and 16** in the main body of this report show the number of wells (as recorded at DWR) in the project vicinity that are about 200 feet deep or shallower; altogether there are 152 of these wells within about one mile of the project site. The radius of influence is about one mile.

There are seven wells of record deeper than 200 feet (therefore, at least partially screened within the same aquifer as the Flying J well) within one mile of the project site; **Figure 18** in the main body of this report shows these wells located by section. These wells will experience from one to nine inches (0.1 to 0.75 feet) of interference.

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In addition to interference from the Flying J well, other factors can influence water levels in vicinity wells. These other factors include seasonal or natural variation in water levels, interference from wells other than the Flying J well, barometric-pressure variations, or an inefficient or poorly maintained well.

The range of seasonal variation of water levels in the project vicinity is about 7 to 20 feet. The amount of interference that may be experienced by neighboring wells (less than one inch above 200 feet, up to nine inches below 200 feet) is far less than the seasonal variation. That is, natural seasonal variation in water levels would mask interference effects.

In addition to seasonal variations, long-term natural variations in water levels are caused by overall increases or decreases in rainfall. If there were a series of drought years, water levels could decline as much as 25 feet in the project vicinity (for example, water level declined about 25 feet in a nearby well during the late-1970's drought as shown in **Figure 19**, a graph of water level in a nearby well monitored by DWR). Adding a decline in water level of 25 feet to the current static water level of about 50 feet below ground surface gives a drought water level of 75 feet below ground surface; adding the anticipated 33 feet of drawdown to the 75-foot drought water level gives a drought period pumping level of 108 feet below ground surface. This is still well above the top of the aquifer (at 240 feet below ground surface), indicating that the aquifer will remain full of water. Thus, a series of drought years will not reduce the amount of water available for the project.

Note that the potential decline of water level during a drought (about 25 feet) is far greater than the magnitude of potential interference (less than one inch) on neighboring wells that are completed above 200 feet. Any change in water level in these wells caused by Flying J would be masked by the overall decline in water level. While it is possible that shallow wells in the vicinity of the Flying J site could go dry during a drought, their going dry would be attributable to drought conditions, not Flying J pumping.

Interference from other neighboring wells or an inefficient/poorly maintained well can both lead to higher-than-expected drawdown, on the order of feet (not inches). A poorly maintained well (with a clogged screen, for example) loses its ability to efficiently pump water; if it is inefficient, drawdown will be greater. Neighboring-well interference and well inefficiencies can be calculated only on a well-by-well basis. Thus, they will not be considered here, although they could be large enough to mask potential interference from project pumping.

Daily variations in barometric pressure lead to water-level fluctuations in confined aquifers; in the Redding basin, barometric-pressure effects range from inches to up to about one foot. Thus,

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barometric-pressure effects also could be greater than, and mask, project interference in neighboring wells.

Because seasonal variation can be quantified on a project-area scale (whereas well inefficiencies and neighboring interference cannot), seasonal variation should be considered the *level of significance* for interference. Because water levels in wells in the project vicinity may vary naturally by about 7 to 20 feet between winter and summer, interference of 7 feet (using the lower end of seasonal variations) or less caused by project pumping would be within the natural variation, and would not be considered significant. Because project interference will be from one to nine inches in neighboring wells, it is not considered significant.

Water Budget

Most of the ground water to supply the project will come from the lower aquifer. This was illustrated during the on-site testing by the lack of drawdown in the upper and intermediate aquifers when the lower aquifer was pumped (lack of drawdown indicates that no water was being withdrawn from those units). Modeling of long-term pumping shows withdrawal of a small amount of water from the upper and intermediate aquifers (indicated by the less than one inch drawdown in those units).

Modeling shows essentially no difference in the inflow to or outflow from the Sacramento River because of project pumping. The small amount of downward leakage from overlying layers (as discussed in the preceding paragraph) is not enough to cause a direct effect on the river.

Introduction

Scope of Work

This report presents the results of an investigation into the effects of pumping ground water to supply the proposed Flying J Travel Plaza to be located at the intersection of Churn Creek and Knighton Roads, Shasta County, California (**Figures 1 and 2**). The work included (1) the installation of one water-supply well and two ground-water observation wells, (2) an aquifer test, and (3) ground-water modeling.

Description of Travel Plaza Project

The site is located in the southeast $\frac{1}{4}$ of the southeast $\frac{1}{4}$ of Section 29, T31N, R4W, MDB&M. It is immediately adjacent to the northbound I-5 onramp from Knighton Road, and is approximately 1.5 miles east of the Sacramento River.

The proposed Flying J Travel Plaza will include the following facilities (see **Figure 2**, general site plan):

- 17,500 square-foot building encompassing a convenience store, an approximately 185-seat restaurant, a fast-food court, and shower and laundry facilities
- Fuel-dispensing islands for up to 12 passenger cars, 3 recreational vehicles, and 12 diesel trucks at one time
- Stand-alone fast-food restaurant
- Stand-alone economy hotel or motel
- Possibly 1 or 2 office buildings (future phase)

The site covers approximately 26 acres. About 13 acres will be used by the Travel Plaza, 1.5 acres for the fast-food restaurant, and 3.2 acres for the motel. The remaining acreage will be divided between future development and the wastewater disposal area. The wastewater disposal area will be located at least 200 feet from the supply well.

The water-supply well and treatment system will be located in the western part of the site, as shown on **Figure 2**. A single well (Well 1) with capacity to provide maximum-day demand will deliver water to a ground-level water-storage tank. The well will be equipped with a 500 gpm pump. Separate booster pump stations will charge a pressure system to deliver all domestic and fire-flow demands. The storage tank will provide for all demands beyond maximum-day demand.

Table 1 shows the calculation of average and peak demand based on information supplied by Flying J, Inc. and the City of Redding.

Table 1: Calculation of Average and Peak Water Demand

Parcel No.	Facility	Avg. Daily Demand ^a	Maximum Daily Demand ^b		Peak Demand
		(gpm)	(gpm)	(gpd)	(gpm)
1	Travel Plaza, excluding irrigation; includes showers, restaurant, laundry, etc. (values from similar Flying J, site in New Jersey)	12	28	40,200	165
2	Fast-food restaurant (based on monthly-totals data from City of Redding)	3.5	7	10,000	20
3	Economy motel (based on monthly-totals data from City of Redding)	5	20	28,800	75
4 & 5	Boat/RV/Auto sales; lube and tire sales (estimated)	2	3.5	5,000	10
All	Irrigation (assume 7 gpm/acre for 7.2 acres for 8 hours)	8	50	24,000	N/A
	Totals	31	75 (108,000 gpd+ 1,440 min/day)	108,000	270

Notes: a. Average daily demand for entire year.
b. Maximum daily demand will occur in summer when irrigating.

Based on the estimated maximum-day demand, the well's operating cycle will be for about two hours in the morning and two hours in the evening at 500 gpm. The well will pump for at least two hours for minimum fire-fighting demand at 500 gpm (the additional fire flow of 1,000 gpm will be made up by the storage tank). Maximum daily demand will be about 75 gpm.

Findings and Conclusions

1. Average daily demand for the project will be approximately 30 gpm. Maximum daily demand will be approximately 75 gpm. Peak demand will be approximately 270 gpm.
2. Three aquifer zones were delineated for the project – from 108 to 125 feet (upper), 158 to 209 feet (intermediate), and 240 to 330 feet (lower). The upper two zones are separated from the lower zone by a clay layer from 209 to 240 feet below ground surface.
3. The project supply well (Well 1) was completed below the clay layer. The 81-foot screened interval extends from 244.5 to 325.5 feet below ground surface.
4. Static water levels in the upper and intermediate aquifers are about 30 feet below ground surface; water level in the lower aquifer is about 52 feet below ground surface.
5. During the aquifer test, maximum drawdown in Well 1 (pumping well) was approximately 33 feet after 24 hours of pumping at 500 gpm. Maximum drawdown for long-term project pumping will not exceed this amount.
6. The calculated aquifer coefficients of transmissivity are similar to those observed for similar deposits in the Redding ground-water basin. Transmissivities calculated using the modified Theis equation and curve-matching ranged from approximately 37,500 to 49,500 gpd/foot.
7. Calculated storage coefficients also are similar to those observed for similar deposits in the Redding ground-water basin. The calculated storage coefficient for the lower aquifer ranged from approximately 2.5 to 4.9×10^{-4} , indicating that the lower aquifer is confined.
8. Hydraulic conductivity (derived from transmissivities and taking into account aquifer thickness) in the lower aquifer ranged from approximately 60 to 80 feet/day.
9. Vertical permeability in the clay zone between the intermediate and lower aquifers was calculated to be 0.093 gpd/square foot. This is equivalent to approximately 0.125 feet/day.

***Conclusion:** All aquifers monitored for the project are confined.*

***Conclusion:** Because the all aquifers are confined, and the maximum drawdown will not be below the top of any aquifer, project pumping will not cause dewatering of the aquifers.*

10. Maximum drawdown in OB-1D (observation wells completed in same aquifer as Well 1) was 9.4 feet. No drawdown was observed in OB-2S_I and OB-2S_U (observation wells completed in intermediate and upper aquifers, respectively).
11. Modeling showed drawdown (interference) in the upper and intermediate aquifers from long-term project pumping of less than 1 inch.
12. During project pumping, the maximum radius of influence is about 1 mile for all aquifers. At this distance, the interference is less than 2 inches in the lower aquifer and less than 1 inch in the upper and intermediate aquifers (Figures 15, 16, and 18).
13. Maximum seasonal variation in ground water levels in the project vicinity is about 20 feet; recent seasonal variation is about 7 feet (Figure 19).

Conclusion: There will be some leakage from the upper and intermediate aquifers into the lower aquifer with long-term pumping.

Conclusion: Maximum drawdown (interference) in the aquifers above the pumped aquifer will not cause dewatering of those aquifers.

Conclusion: Interference in the aquifers above the pumped aquifer will not exceed maximum or recent seasonal variation in ground-water levels.

14. Project pumping increases subsurface inflow to the model domain (about 4 square miles) by 16 acre feet per year and decreases subsurface by 105 acre feet, for a total of 121 acre feet per year (yearly project pumpage assuming maximum daily demand). There are negligible differences in the inflow to and outflow from the Sacramento River.

15. Project pumping may increase the ground-water gradient to the north of the site, as a consequence of increased inflow.

Conclusion: Water for the project will be derived from increased subsurface inflow and decreased subsurface outflow of ground water from the lower aquifer.

Conclusion: There will be no detectable change in Sacramento River flows from the proposed pumping.

Regional and Local Hydrogeologic Setting

Regional Hydrogeology

The site is located in the Redding ground-water basin. **Plate 1** shows the site in relation to the Redding basin. The geologic sequence in the Redding basin can be divided into 2 main parts. The youngest formations consist of Quaternary and Tertiary-age continental (nonmarine) deposits derived from rivers or streams (fluvial deposits), alluvial fans, or volcanic events (*Ground Water in the Redding Basin, Shasta and Tehama Counties, California*, Pierce, M. J., 1983, U.S.G.S. Water Resources Investigations Report 83-4052). The older formations consist of pre-Tertiary-age marine deposits and metamorphic rocks.

The Quaternary deposits consist of Alluvium, Terrace deposits, and the Red Bluff Formation. Alluvium is composed of unconsolidated gravel, sand, silt, and clay found in stream channels and flood plains; dredged gravels also are classified as Alluvium. Terrace deposits are of similar composition and genesis, but are slightly older; Terrace deposits are found along Cow and Cottonwood Creeks. The Red Bluff Formation is Pleistocene in age and consists of coarse gravels, cobbles, and boulders in a red-colored, sandy-clay matrix. The Pleistocene deposits are generally of poor to moderate permeability, although the Terrace deposits can be highly permeable.

The Tertiary deposits, all Pliocene in age, consist of the Tehama and Tuscan Formations and the Nomlaki Tuff member of these formations. The Tehama Formation consists of interbedded clay, silt, sand, and gravel derived from rivers and streams flowing from the Klamath Mountains and Coast Ranges. The Tuscan Formation consists of volcanic gravel, sandstone, and conglomerate, coarse- to fine-grained tuff and tuffaceous silt and clay of predominantly andesite and basalt. The Tuscan Formation is, in part, age-equivalent to the Tehama Formation. Underlying both these formations is the Nomlaki tuff, poorly consolidated dacite pumice in a matrix of glass and crystal fragments. The Tehama and Tuscan formations are the principal water-bearing formations in the Redding ground-water basin. They generally are moderately to highly permeable, with moderate to high (100 to 1,000 gpm) ground-water yields (*ibid.*).

Underlying the Quaternary and Tertiary sediments is either the Chico Formation or a basement complex of igneous, metamorphic, and sedimentary rocks. The Chico Formation is Cretaceous in age and consists of well-consolidated or cemented shale or sandstone. It was deposited in a marine environment. The Chico Formation is generally of low permeability and contains saline water of very poor quality.

The basement complex consists generally of rocks of Paleozoic to Mesozoic age. These are the rocks that make up the Coast Ranges and Klamath Mountains to the north and west of the Redding basin. Basement complex rocks are generally of low permeability and yield water from fractures, joints, or weathered zones.

The geologic structure of the Redding ground-water basin is that of a southerly plunging syncline (trough). The axis of the trough generally is along the axis of the valley, with the sides of the trough sloping up to the east, west, and north. The southern edge of the trough is "truncated" by the Red Bluff arch, an east-west trending anticline (arched up structure) located just north of Red Bluff. The Quaternary/Tertiary water-bearing sediments range in thickness from 0 feet at the edges of the basin to over 2,500 feet in the central part of the basin east of Cottonwood.

Ground-water flow in the Redding basin generally is towards the axis of the valley. Recharge to the Redding basin is from infiltration of precipitation and applied water, subsurface inflow of ground water, and percolation from streams. Ground-water leaves the Redding basin through pumping, discharge into streams, and ultimately, discharge into the Sacramento River.

Because of the nature of the sediments filling the Redding basin (low permeability clays and silts interbedded with higher permeability sands and gravels), deeper ground water often occurs under confined conditions. Shallower ground water can occur in a water-table condition or as perched ground water. A well drilled into a confined aquifer will have a water level higher than the top of the aquifer, while wells drilled into water-table or perched aquifers will have water levels within the aquifer itself.

There are different results when pumping from water table vs. confined aquifers. In a water-table aquifer, pumping actually lowers the water table; that is, the aquifer is dewatered within the cone of depression. The cone of depression is the zone around a well in which water or pressure levels are lowered by pumping. In a confined aquifer, pumping lowers the pressure within the aquifer; that is, the aquifer is not dewatered. The lower pressure is reflected by lower water levels in wells within the cone of depression while pumping is in progress; after pumping ceases, water levels recover as pressure is restored.

Local Hydrogeology

Lithology in the project vicinity consists of interbedded clay, silt, sand, and gravel, or mixtures thereof, interpreted to represent the Tehama Formation. At the project site, the overall stratigraphic section is coarse-grained. Cobbles and gravel were encountered for most of the depth of each hole,

with only minor fine-grained beds. This is consistent with lithologies noted in Department of Water Resources drillers logs in the project vicinity, especially within about 1 mile of the site.

Based on the E-log of OB-1D, there is only one significant zone of clay (almost 30 feet thick) in the section drilled, from about 209 to 240 feet below ground surface. This clay separates what are termed the "lower" and "intermediate" aquifers for this report. An additional aquifer zone, "upper," above the intermediate zone also was identified. The deposits that separate the upper from the intermediate zone, however, are not as distinctly clayey as those between the intermediate and lower zones. **Plate 2** shows these zones, and their relation to the screened intervals of the project wells.

Observation well OB-1D also is screened in the lower aquifer, in the same interval as the production well. Observation wells OB-2S_I and OB-2S_U are screened in the intermediate and upper zones, respectively. These wells were completed in this manner so that potential interference on non-pumped zones could be observed during the aquifer test.

Although three aquifers zones were delineated for the project, similar water levels in the upper two zones suggest that these zones could be considered as one. Static water levels in OB-2S_I and OB-2S_U were 30.3 and 30.0 feet, respectively (measured from the same reference point). Static water levels in OB-1D and Well 1 were 51.5 and 52.0 feet, respectively (the difference reflects the different reference points at which measurements were taken). Thus, the lower aquifer is distinct from the intermediate and upper zones.

Because most of the domestic wells in the vicinity are screened in the upper aquifer or above, with a few in the intermediate zone, the project production well was screened in the lower aquifer to reduce the potential for interference with neighboring domestic wells.

Methods

Drilling and Well Installation

Drilling and well installation were conducted between June 16 and July 31, 1998. Well OB-1D was electric-logged by Geo-Hydro-Data of Bakersfield, California, on June 29, 1998 (E-log in pocket).

Drilling was conducted by Don's Drilling of Shingletown, California, by the direct mud-rotary method. Drilling fluid consisted of bentonite mixed with water. **Plate 2** shows the well-construction details for the wells.

For OB-1D, cuttings were logged under the direct supervision of a California Registered Geologist. Cuttings from the other holes were not logged.

After drilling to the total depth of each hole, the drill stem was pulled from the hole. The casing was lowered into each hole using the drill rig. The filter pack then was tremied into the holes, and the bentonite-grout barrier installed in each hole while the casing was held in tension by the rig. The cement-bentonite surface seal was tremied into the holes; the bottom of the tremie pipe was raised as grouting proceeded.

Each observation well is constructed with Schedule 40 PVC pipe; the screens are 0.040-slot Schedule 40 PVC. Well OB-1D and OB-2S₁ are constructed of 4½ inch pipe; OB-2SU is constructed of 2 inch pipe. Wells OB-2S₁ and OB-2S_U are installed in the same borehole, as nested probes.

The production well is constructed with 10-3/4-inch-OD steel pipe. The screen is 10-inch pipe size, continuous slot, wire-wrapped stainless steel, “extra strong” as defined by UOP Johnson, with 0.050 inch slots. Casing joints were welded; screen ends were fitted with collars for welding.

The filter pack for all wells was ¼-inch washed pea gravel; the filter pack extends about 10 feet above the screen in each hole. A minimum of 5 feet of bentonite pellets was placed over each filter pack; the bentonite was hydrated with ground water in the hole.

Protective steel risers were placed around the PVC well casings for both observation wells, and 6-inch-thick concrete pads were poured around them.

Each well was developed by air lifting until the water appeared clean.

Aquifer Test

Aquifer-Test Theory

Information determined from an aquifer test is used to predict drawdown in a pumping well and interference on adjacent wells caused by the pumping well. To make these predictions requires determination of two aquifer characteristics—transmissivity (T) and storage coefficient (S).

Transmissivity (in units of gpd per foot) indicates the capacity of an aquifer as a whole to transmit water (it is defined as the rate of flow of water through a vertical strip of the aquifer 1 foot wide and extending the full saturated thickness under a hydraulic gradient of 1 foot per foot). Transmissivity can be calculated by multiplying the permeability of an aquifer (k) by the saturated thickness (b).

Storage coefficient (dimensionless) is defined as the volume of water the aquifer releases or takes into storage per unit surface area of the aquifer per unit change in the component of head normal to that surface. During pumping, water is released from storage in different ways, depending upon the

type of aquifer. In a confined or artesian aquifer (in which the aquifer is overlain by a low-permeability bed which does not readily transmit water), water is derived from storage as the pressure decreases in the aquifer; the pore spaces remain fully saturated (analogous to water discharging from a full pipe). In a water-table aquifer (in which the aquifer is not overlain by low-permeability beds), water is derived from storage as the water level drops and the pore spaces drain by gravity.

Theis Nonequilibrium Equation

Values of transmissivity and storage are determined from the basic Theis nonequilibrium equation. The equation takes into account the effect of duration of pumping on well yield. Using this equation, transmissivity and storage coefficient can be determined in wells, and long-term predictions of drawdown can be made from short-term tests. In its simplest form, the Theis equation is as follows:

where:

$$s = (114.6 \times Q \times W[u]) \div T$$

s = drawdown at any point in the vicinity of a well discharging at a constant rate, in feet

Q = pumping rate, in gpm

T = coefficient of transmissivity, in gpd/ft of aquifer thickness

W[u] = "well function of u"; W[u] is shorthand for the exponential function $(-0.5772) - (\ln(u)) + (u) - (u^2/2 \times 2!) + (u^3/3 \times 3!) - (u^4/4 \times 4!) \dots$

where:

$$u = (1.87 \times r^2 \times S) \div T \times t$$

where:

r = distance from center of pumped well to point where drawdown is measured (if drawdown is measured in the pumping well, r equals the casing radius, or if no head losses are felt to occur in the gravel pack, r equals the radius of the well bore), in feet

S = coefficient of storage, dimensionless

T = coefficient of transmissivity, in gpd/ft of aquifer thickness

t = time since pumping began, in days

Derivation of the nonequilibrium equation and its applicability to "real" situations is based on the following assumptions:

1. The water-bearing formation is uniform in character and permeability in both horizontal and vertical directions.
2. The formation has uniform thickness.
3. The formation has infinite areal extent.
4. The formation receives no recharge from any source (all water comes from storage).
5. The pumped well penetrates and receives water from the full thickness of the water-bearing formation.
6. The water removed from storage is discharged instantaneously with lowering of the pressure head.

Most of the above criteria cannot strictly be met—especially the criteria for equal permeabilities in the horizontal and vertical directions. Nonetheless, duplication of observed data using derived coefficients is exceptionally good in most aquifer tests.

Transmissivity and Storage Coefficient

Values of transmissivity (in pumping or observation wells) and storage coefficient (in observation wells only) are solved using one method by plotting drawdown measurements on semi-logarithmic paper. Solutions are graphical. Transmissivity is determined by the "modified" Theis equation. It has been found that when the value of "u" is sufficiently small (less than 0.05), the nonequilibrium formula can be modified to the following form without significant error:

$$T = (264 \times Q) \div \Delta s$$

where:

T	=	coefficient of transmissivity, in gpd/ft of aquifer thickness
Q	=	pumping rate, in gpm
Δs	=	drawdown (or recovery), in feet per log cycle

Storage coefficient is determined using the following formula:

$$S = (0.3 \times T \times t_0) \div r^2$$

where:

S	=	coefficient of storage, dimensionless
T	=	coefficient of transmissivity, in gpd/ft of aquifer thickness
t_0	=	time at 0 feet of drawdown, in days
r	=	distance to center of pumping well, in feet

Figures 7 and 8 show the semi-log plots of drawdown and residual drawdown (recovery) for Well 1; Figures 9 and 10 shows the semi-log plot and analysis for OB-1D.

Another method for determining transmissivity, storage coefficient, and/or the coefficient of vertical permeability (P') for confining layers is by plotting drawdown versus time on a log-log plot and conducting a nonequilibrium type-curve analysis. For a type-curve analysis, the log-log plot of observed data are overlain on a set of "leaky" type curves. Once the best fit is determined, the "match point" is noted; the coordinates of the match point are then used to determine T , S , and/or P' .

Figure 11 shows the type-curve analysis plot for OB-1D. The type-curve equations for T and S are similar to those described above, and are shown on the figures. The equation for coefficient of vertical permeability (P') of confining beds is as follows:

$$P' = (T \times m' \times (r/B)^2) \div r^2$$

where:

T	=	coefficient of transmissivity, in gpd/ft of aquifer thickness
Q	=	thickness of confining bed(s), in feet
(r/B)	=	leakage coefficient, from curve matching
r	=	distance to center of pumping well, in feet

The coefficient of vertical permeability was calculated for OB-1D even though no drawdown was observed in OB-2S₁ because past observations show that there usually is some leakage from overlying deposits into a pumped aquifer in the Redding basin.

Interference

Interference is the drop in water level in a well caused by the pumping of a neighboring well. The maximum radius of influence is the maximum distance over which interference will occur. The radius of influence is time dependent and not discharge dependent. That is, no matter what the pumping rate, the maximum radius of influence will be the same for any given time period.

Conversely, the drawdown within the radius of influence is directly proportional to the discharge and is not time dependent. That is, within the radius of influence, drawdown (interference) will be greater with higher pumping rates and lower with lower pumping rates.

Estimates of interference requires both transmissivity and storage coefficient values. Interference from pumping of the project well was estimated using a ground-water modeling program, so that potential interference in wells screened in different zones could be evaluated.

Project Test

The 24-hour constant-discharge drawdown test and 12-hour recovery test were conducted on August 1 and 2, 1998.

Well 1 (production well) was pumped for 24 hours at a constant discharge of 498 gpm using a 40-hp pump with a capacity of about 700 gpm. Discharge was through a 6-inch pipe to the Anderson Cottonwood Irrigation District (ACID) canal (with permission). Discharge was regulated with a butterfly valve and was measured with a totalizer meter.

Water levels were measured in the pumping (Well 1) and observation (OB-1D and OB-2S) wells using 2-wire electric sounders and transducers connected to a continuous-recording data logger. Correlation curves and correlation-equation coefficients are shown in **Appendix A**. The correlation equations were used to convert the data logger readings to water level in feet below ground surface. Because the changes in water levels were so small in OB-2S, the correlation curves were not good, and the transducer readings were not converted to water levels.

Figures 3 through 6 show transducer-recorded measurements in all wells during the period of observation. **Appendices B and C** show all data (hand and data-logger measurements) gathered before, during, and after the aquifer test.

Table 2 summarizes the drawdown observed in each well at the end of the 24-hour test.

Table 2: Summary of Observed Drawdown

Well	Screened Zone	Distance from Well-1 (FEET)	Discharge (GPM)	Observed Drawdown (FEET)
Well-1 (pumping well)	Lower	NA	498	33.34
OB-2SU	Upper	30	0	0
OB-2S _i	Intermediate	30	0	0
OB-1D	Lower	60	0	9.40

Table 3 shows a summary of aquifer characteristics as determined from the aquifer test.

Calculations are shown on the figures, and were derived as described in the Methods section of this report. Hydraulic conductivity, as derived from transmissivity and aquifer thickness, is shown, as it is one of the properties required by the ground-water model.

Aquifer coefficients were not determined for OB-2S, as both casings in that well are screened above the pumped aquifer. Its purpose was to evaluate the effects of leakage from the upper aquifer into

the intermediate aquifer, and from the intermediate aquifer into the lower aquifer. However, no drawdown was observed in OB-2S during the test.

Table 3: Summary of Aquifer Characteristics

Well	Zone	Zone Thickness ^a (FEET) b	Transmissivity ^b (GPD/FT) T	Storage Coefficient S	Hydraulic Conductivity (GPD/FT ²) k = T/b	Hydraulic Conductivity (FT/DAY) k = (T/b) × 0.1337
From modified Theis method:						
Well 1	Lower	81	37,563 36,520	N/A	469 466	63 61
OB-1D	Lower	80	42,410 37,563	4.9 × 10 ⁻⁴	530 470	71 63
From curve-matching method:						
OB-1	Lower	80	49,627	2.5 × 10 ⁻⁴	620	83
OB-1	Clay between Int. & Lower Aquifers	30	Vertical permeability = 0.093 gpd/ft ²			

Notes: a. Zone thickness = screened interval.
 b. Where 2 transmissivity values are shown, the upper one was derived from the drawdown curve and the lower one from the residual drawdown curve.

The values of transmissivity calculated from the current work are typical of the coarser-grained water-bearing zones in the Redding basin. The values of the storage coefficients calculated from the current work indicate that the lower aquifer is confined. Thus, if the water level does not go below the top of the aquifer during pumping, the aquifer will not “dewater” or “go dry,” it will remain fully saturated.

This is an important concept to remember when observing the drawdown caused by pumping a well screened in a confined aquifer (such as Well 1). Drawdown in a well screened in a confined aquifer reflects changes in pressure in the aquifer, which is reflected in a lowering of the piezometric surface (pressure) of the aquifer.

Ground-Water Model

Introduction

The commercial ground-water model Visual Modflow, version 2.7.1 (1997), developed by Waterloo Hydrogeologic Software, was used for modeling the proposed project pumping. Visual Modflow is an add-on “shell” to the U.S. Geological Survey’s Modflow ground-water model developed for the public domain.

Ground-water models in Modflow are three dimensional. That is, the model can have multiple layers in which the program will compute ground-water flow in both horizontal (x and y) and vertical (z) directions. A model is set up with a grid coordinate system defining rows and columns that can be moved or resized to enhance the accuracy of the model at a given location. The intersection of the rows, columns, and layers defines nodes which are the basic units used by the model; Modflow mathematically calculates ground-water flow into and out of each node, from all directions. The total number of nodes in a model is defined as (# of columns, x direction) \times (# of rows, y direction) \times (# of layers, z direction). The model used for the current study has 7 layers, 41 rows, and 46 columns.

Model Area

The model area covers about four square miles around the site. The western boundary is the Sacramento River. The northern, southern, and eastern boundaries are section lines. **Figure 13** shows the model area with hydrographic features, roads, etc.

Layers

The seven layers for the model were established based on the stratigraphy in the vicinity of the site, as shown by the E-log from OB-1D (see **Plate 2**). The section, as defined for the model, consists of three high-permeability aquifers separated by lower permeability sediments. The reference point for the base of each layer is its position below ground surface in OB-1D. The layers in the model are generally flat lying.

The uppermost two layers were defined as variably confined layers of moderate permeability (a mixture of gravel, sand and clay, with gravel and sand predominating). Their surfaces follow the land surface (which was digitized from the USGS Enterprise quadrangle and imported into the model). Their lower surfaces are about 31 and 108 feet below ground surface, respectively, in OB-1D.

The third layer was defined as the upper aquifer, a variably confined layer of higher permeability (mainly sand and/or gravel). Its lower surface is 125 feet below ground surface in OB-1D.

The fourth layer was defined as a variably confined layer of moderate permeability (a mixture of gravel, sand, and clay), overlying the intermediate aquifer. Its lower surface is 158 feet below ground surface in OB-1D.

The fifth layer was defined as the intermediate aquifer (mainly cobbles, gravel, and sand), a variably confined layer of high permeability. Its lower surface is 209 feet below ground surface in OB-1D.

The sixth layer was defined as a confining bed of low permeability (mainly clay), overlying the lower aquifer. Its lower surface is 240 feet below ground surface in OB-1D.

The seventh layer was defined as the lower aquifer, a variably confined layer of high permeability (mainly cobbles, gravel, and sand). Its lower surface is about 330 feet below ground surface in CC-1.

Properties

Two sets of aquifer properties are required to be defined for Modflow—hydraulic conductivity and storage properties. Hydraulic conductivity can be defined for the 3 principal axes (x, y, and z of the model). By default, conductivities in the x and y directions are assumed to be the same, and conductivity in the z direction (vertically) is assumed to be 1/10th that of the x direction. These default assumptions were used for the current modeling.

Storage properties include specific storage (which equals the storage coefficient, from the aquifer test, divided by aquifer thickness) and specific yield. Specific yield is required only for unconfined layers. Table 4 summarizes the aquifer properties used in the model. These properties reflect “averages” from aquifer test and typical values for the types of sediments inferred for each layer.

Table 4: Summary of Aquifer Properties Used for Model

Property	Layer 1	Layer 2	Layer 3	Layer 4	Layer 5	Layer 6	Layer 7
K_x , feet/day	22	14	22 to 130	14	22 to 130	0.125	22 to 130
Specific storage, S_s , 1/foot	1.3×10^{-2}	3.1×10^{-3}	1.6×10^{-3}	7.5×10^{-4}	5.0×10^{-4}	8.3×10^{-5}	3.1×10^{-6}
Specific yield, S_y , percent	0.3	0.3	NA	NA	NA	NA	NA

Boundaries

Two types of boundaries were defined for the model—river and general-head boundaries. The Sacramento River was modeled as a river boundary. Its location was digitized from the USGS Enterprise quadrangle, and imported into the model. The river boundary then was defined using the map location of the creek. River stage and bottom elevations were estimated from the USGS

Enterprise quadrangle. A hydraulic conductivity of between 60 and 70 feet/day, similar to that for the high-permeability aquifer zones, was assumed for the bottom of the river.

General-head boundaries were set for each edge of the model and each layer. A general-head boundary allows inflow and outflow past its location, and also allows for changing water levels. This would be the situation at the model boundaries where subsurface water levels naturally fluctuate over time. General-head boundaries are defined by 2 characteristics, head and conductance. Head in this case is the water level at some distance from the edge of the model. Conductance is defined through the following equation:

$$C = (A \div D) \times K$$

where:

C	=	conductance, in feet ² /day
A	=	cross-sectional area of node, in feet ²
D	=	distance to head, in feet
K	=	hydraulic conductivity of node, in feet/day

The values for head (ground-water elevations) and conductance were adjusted until the model generally replicated recently measured ground-water levels in the model area (data from Department of Water Resources, Spring 1998). **Figure 12** shows the modeled steady-state ground-water levels (as head equipotentials) for the lower aquifer.

No recharge boundaries were set, as it was assumed that most of the inflow to the model would come from subsurface inflow rather than surface infiltration of precipitation or applied water—that is, that recharge inflow within the model domain would be insignificant compared to subsurface ground-water inflow. This is a conservative approach, and would not lead to underestimation of interference.

Calibration

Model calibration consisted of having the model approximately duplicate ground-water levels observed during the 24-hour aquifer test. **Figure 13** shows modeled and observed water levels for OB-1D for the period of the test. The model calibration was good, with modeled drawdown in the observation well very close to those observed in the field; at the end of 24 hours the modeled head in OB-1D was extremely close to the observed head (modeled head = 379.6 feet, observed head = 380.1 feet). **Figure 14** shows the drawdown in the lower aquifer at the end of the test.

Predictions

Interference

To evaluate the long-term potential interference from project pumping, the model was run in a steady-state mode at a discharge of 75 gpm (the maximum daily demand) from the project well. That is, the model simulated the project well pumping at 75 gpm until equilibrium was reached (inflow to the model domain equaled outflow from the model domain). This reflects the long-term withdrawal of water from the lower aquifer by the project. Note that the maximum daily demand, rather than the average daily demand, was used. Thus, the interference calculated by the model is conservative.

Figures 15, 16, and 18 show the drawdown in each aquifer at the end of the steady-state run at 75 gpm. **Figure 17** shows the corresponding water level (head equipotential) in the lower aquifer. **Figure 18** shows calculated interference in the lower aquifer of 0.5 feet at a radius of approximately 0.3 miles and 0.1 feet at a radius of approximately 0.8 miles.

Figures 15 and 16 show calculated interference in the upper and intermediate aquifers of 0.03 feet (1/3 inch) at a radius of approximately 0.5 miles and 0.01 feet at a radius of approximately 0.8 miles.

The magnitude of calculated interference in all aquifers is less than both the maximum and recent seasonal variations in ground-water levels in the site vicinity. **Figure 19** shows a hydrograph of historical water levels in a nearby well (in Section 27, T31N, R4W) measured by the Department of Water Resources. The hydrograph shows a maximum seasonal variation of about 20 feet, and recent seasonal variation of about 7 feet.

The radius of influence of project pumping will extend laterally for about 1.25 miles in the lower aquifer, and about 1 mile in the intermediate and upper aquifers. Within the radius of influence, interference will be as described above.

Model runs using the probable operating and fire-fighting scenarios (as opposed to steady state) of 2 to 4 hours of pumping at 500 gpm twice per day, showed no interference on the upper or intermediate aquifers. This probably reflects the short duration of each pumping period – the periods were not long enough to extend past the time at which withdrawal of water from storage in the confining layer is overcome by leakage from the higher aquifers.

During project pumping, the maximum drawdown at the pumping well and the maximum interference will be no greater than that observed during the aquifer test when Well 1 was pumped

at about 500 gpm for 24 hours. The maximum drawdown will be no more than about 30 to 35 feet at the pumping well.

Effects on Water Budget

The water budget was evaluated using the zone-budget package of the Modflow model. The zone-budget package calculates inflows and outflows to the model domain on a cubic-feet-per-day basis. The zone-budget values for the steady-state run (no project wells) and the project- pumping run were converted to total volume to evaluate the effects on the water budget. Table 5 shows a summary of the zone-budget output converted to acre feet per year.

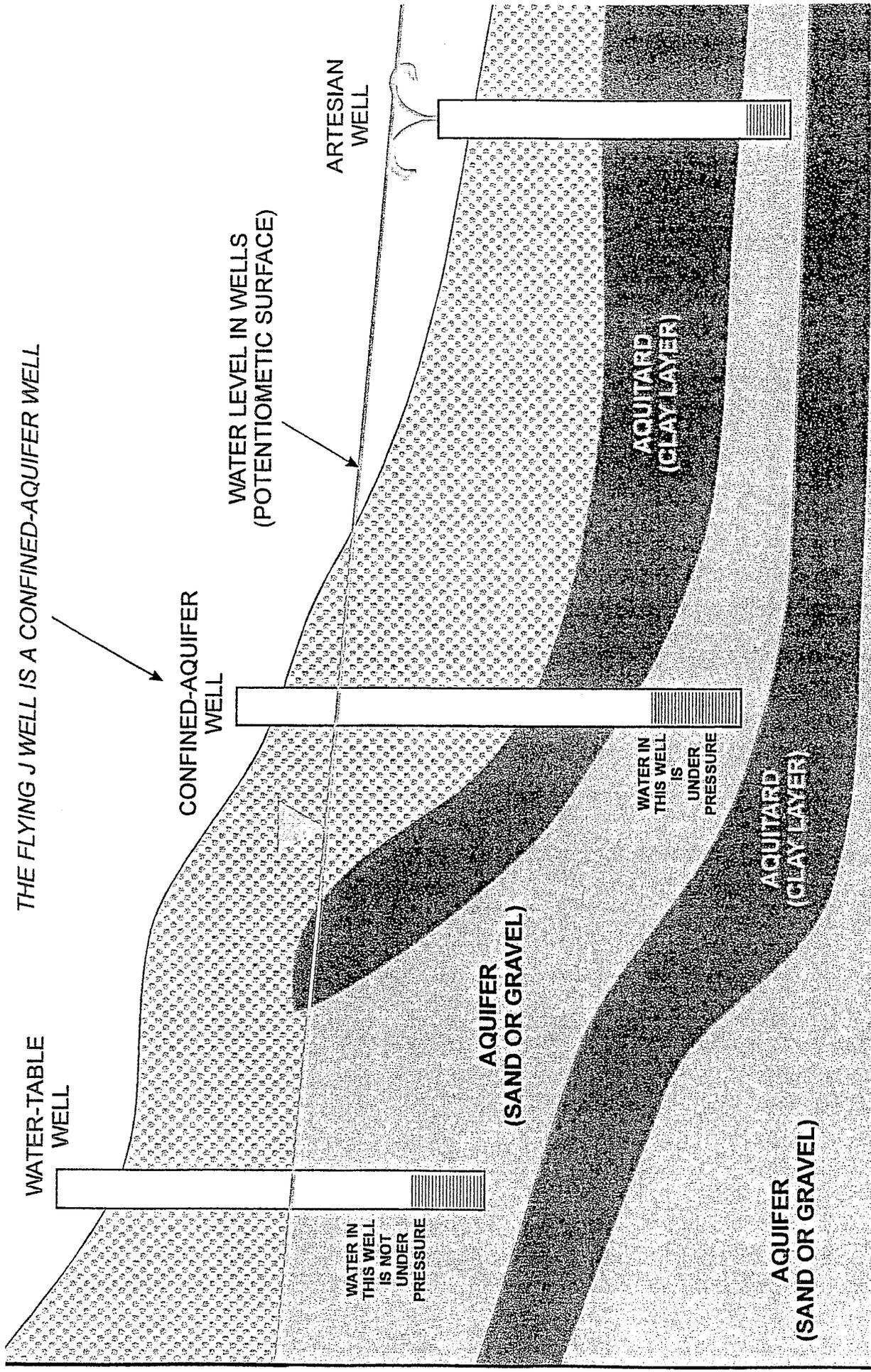
Table 5 shows that pumpage from the proposed well will come from changes in subsurface flows. That is, the amount of ground water that flows into or out of the model domain will increase or decrease to accommodate project withdrawals. These changes will be attendant to a steepened ground-water gradient.

No leakage from the Sacramento River was noted. Surface recharge (from precipitation) was not modeled.

Table 5: Summary of Zone-Budget Output

ITEM	INFLOW TO MODEL DOMAIN (acre-feet/year)					OUTFLOW FROM MODEL DOMAIN (acre-feet/year)				
	Storage	Recharge	River Leakage	Sub- surface	Total	Storage	Wells	River Leakage	Sub- surface	Total
Project pumping	0	NA	292.27	2,294	2,586	0	121	1.85	2,463	2,586
Steady state	0	NA	291.76	2,278	2,570	0	0	1.88	2,568	2,570
Difference	0	0	0.51	16	16	0	121	(0.02)	(105)	16

In Table 6, the differences between steady state and project pumping show that inflow will increase by 75 acre feet and outflow will decrease by 46 acre feet, for a total of 121 acre feet per year. Changes in inflow and outflow will have the effect of slightly increasing the ground-water gradient to the north of the pumping wells and slightly decreasing the gradient to the south.



THE FLYING J WELL IS A CONFINED-AQUIFER WELL

WATER-TABLE WELL

CONFINED-AQUIFER WELL

ARTESIAN WELL

WATER LEVEL IN WELLS (POTENTIOMETRIC SURFACE)

WATER IN THIS WELL IS NOT UNDER PRESSURE

WATER IN THIS WELL IS UNDER PRESSURE

AQUIFER (SAND OR GRAVEL)

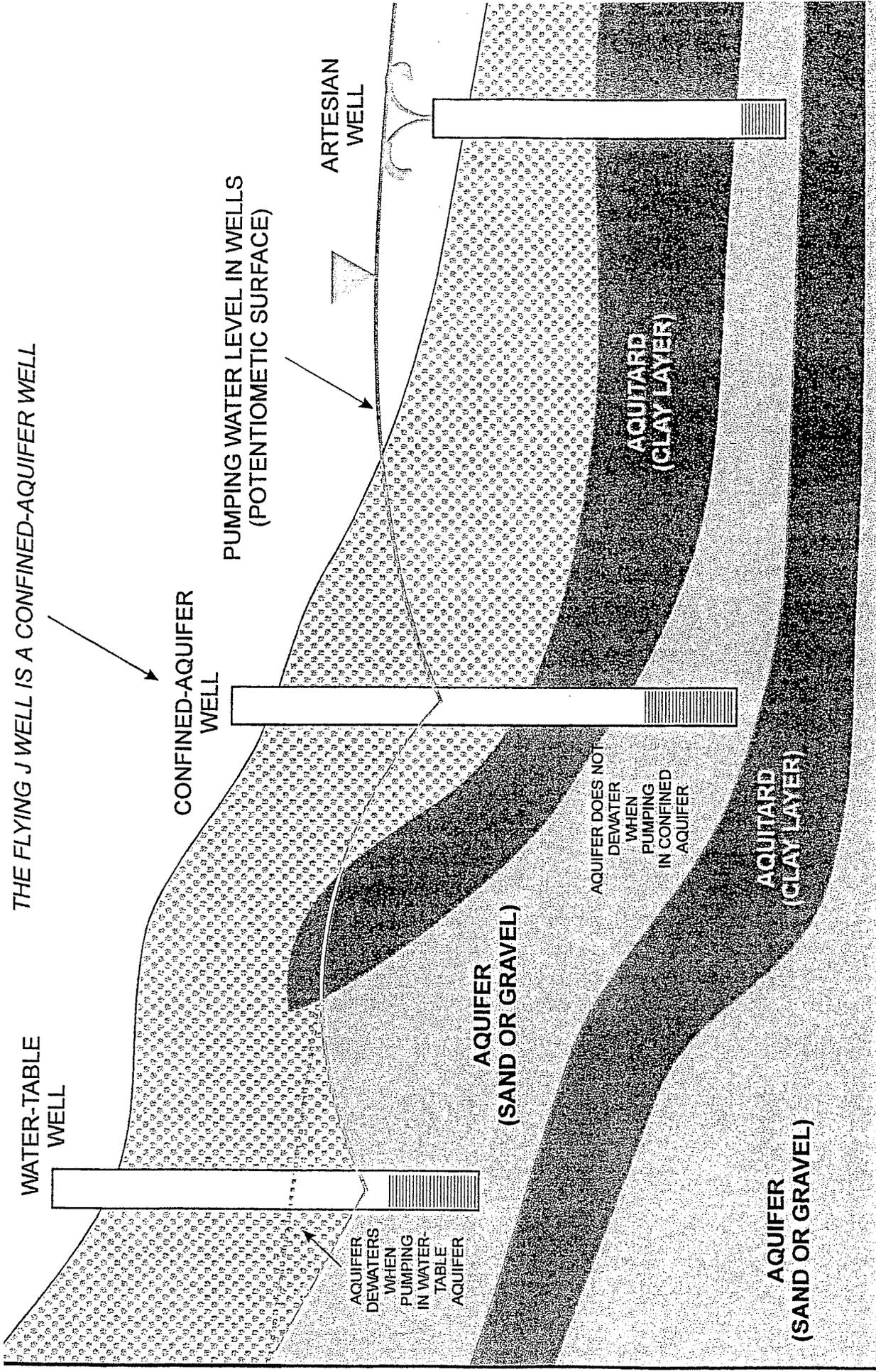
AQUIFER (SAND OR GRAVEL)

AQUITARD (CLAY LAYER)

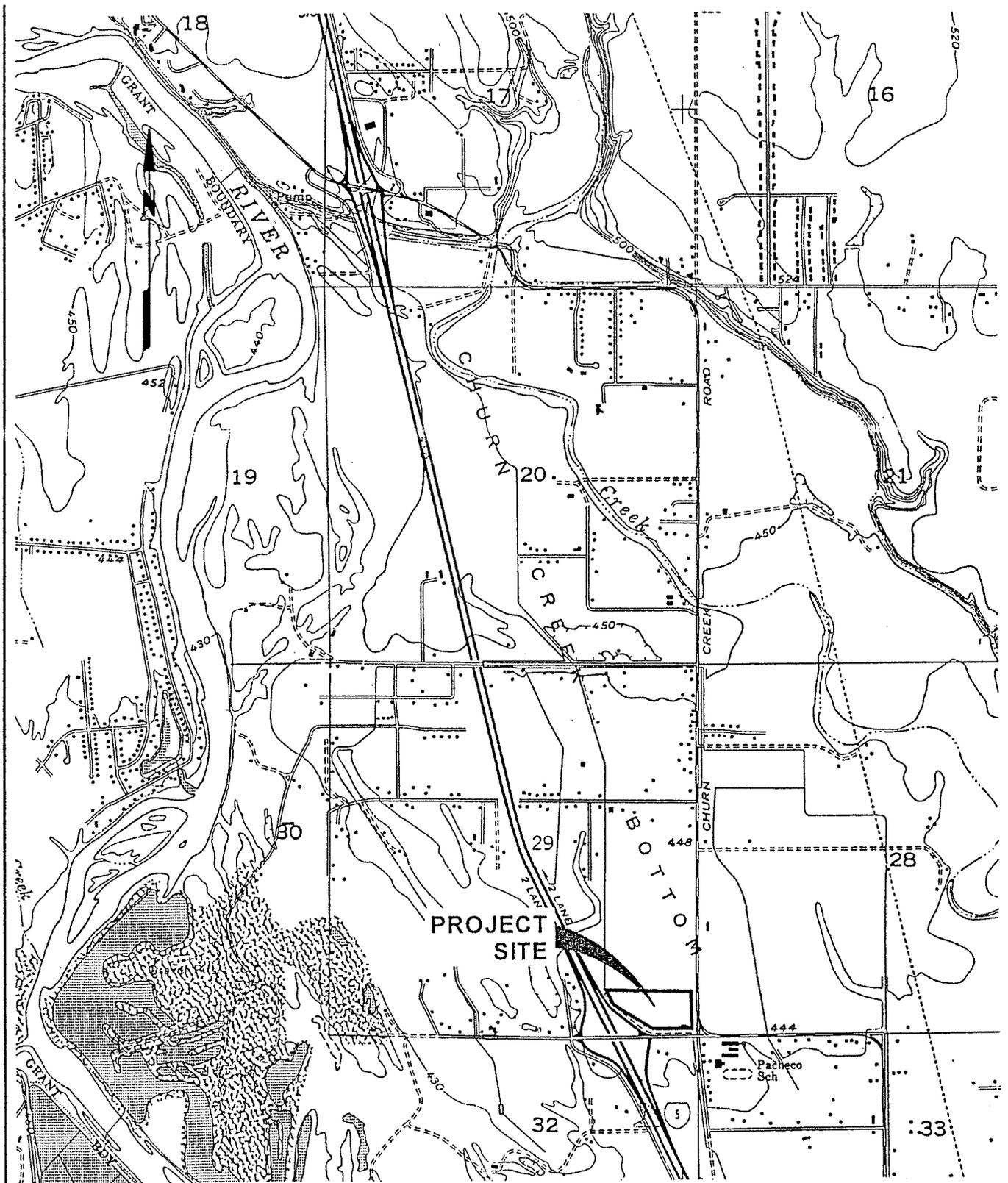
AQUITARD (CLAY LAYER)

SCALE	LAWRENCE & ASSOCIATES 2001 MARKET STREET, ROOM 523 REDDING, CALIFORNIA 96001	SCHEMATIC DIAGRAM OF UNCONFINED VS. CONFINED AQUIFERS
DATE	PHONE: (916) 244-9703	CLIENT: FLYING J, INC.
JOB NO.	FAX: (916) 244-5021	PROJECT: PUMPING EVALUATION
NOT TO SCALE	DRAWN BY: B. LAMPLEY	FIGURE ES-1





<p>SCHEMATIC DIAGRAM OF PUMPING EFFECTS UNCONFINED VS. CONFINED AQUIFERS</p>		<p>LAWRENCE & ASSOCIATES 2001 MARKET STREET, ROOM 523 REDDING, CALIFORNIA 96001 PHONE: (916) 244-9703 FAX: (916) 244-5021</p>	
CLIENT:	PROJECT:	SCALE:	NOT TO SCALE
FLYING J, INC.	PUMPING EVALUATION	DATE:	JANUARY 5, 1999
		JOB NO.:	C98.07.04
		DRAWN BY:	B. LAMPLEY
			FIGURE ES-2

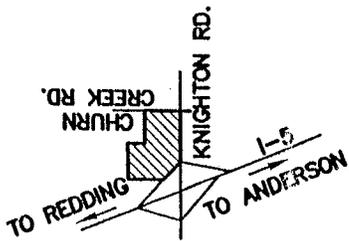


ADAPTED FROM USGS 7.5-MINUTE TOPOGRAPHIC QUADRANGLE, ENTERPRISE, CALIF., 1957.

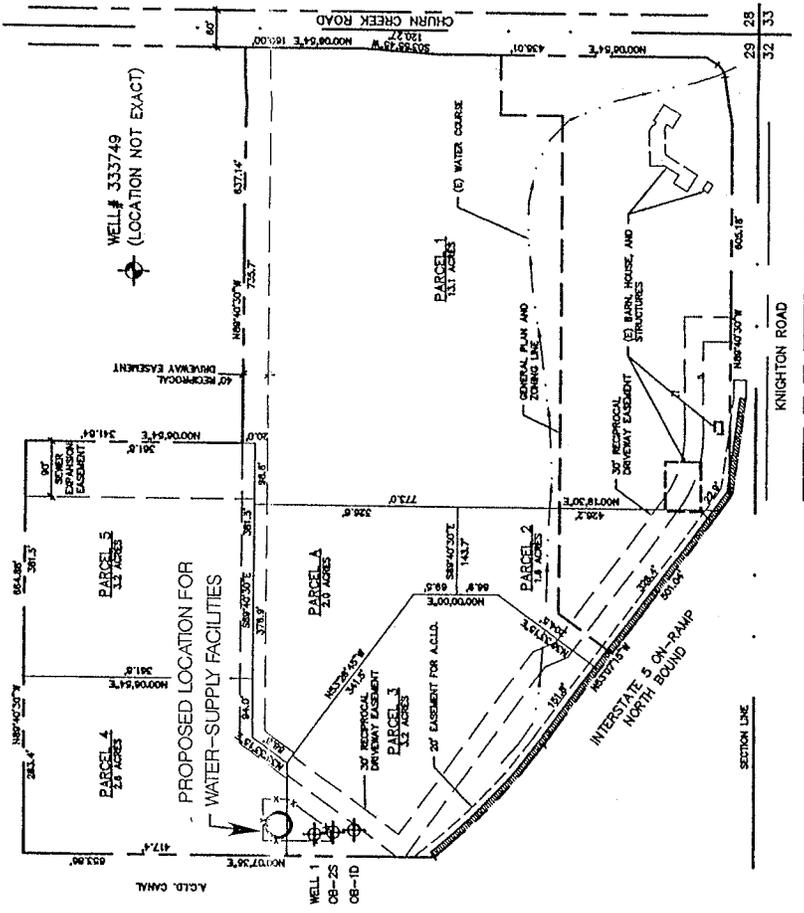
E:\ADCADD\PIFLYINGJ6VICINITY.CDR 8/19/98 dz

<p>SITE-LOCATION MAP</p>	<p>LAWRENCE & ASSOCIATES 2001 Market Street, Room 523 Redding, CA 96001</p>	<p>SCALE: 1 INCH = 2000 FEET</p>
	<p>Phone (530) 244-9703 Fax (530) 244-5021</p>	<p>DATE: AUGUST 19, 1998</p>
		<p>JOB NO.: C97.04.08</p>
<p>CLIENT: FLYING J, INC.</p>	<p>PROJECT: KNIGHTON RD. TRAVEL STOP</p>	<p>DRAWN BY: D. ZAITZ</p>
		<p>FIGURE 1</p>





VICINITY MAP
N.T.S.



LEGEND

- ⊕ WELLS TO BE CONSTRUCTED
- ⊙ EXISTING WELL - LOG SHOWN IN SPECIFICATIONS

- WELL 1 N 7968.5
E 6248.0
- OB-2S N 7939.1
E 6251.3
- OB-1D N 7905.5
E 6255.3



D:\adocadd\p\flyngj6\Wellste2.dwg D.B.Z. 8/19/998

SCALE	1"=200'
DATE	5/27/98
JOB NO.	C98.04.07

LAWRENCE & ASSOCIATES
2001 MARKET STREET, RM. 523
REDDING, CA 96001
PHONE (916) 244-9703
FAX (916) 244-5021

CHECKED BY: D. LAWRENCE

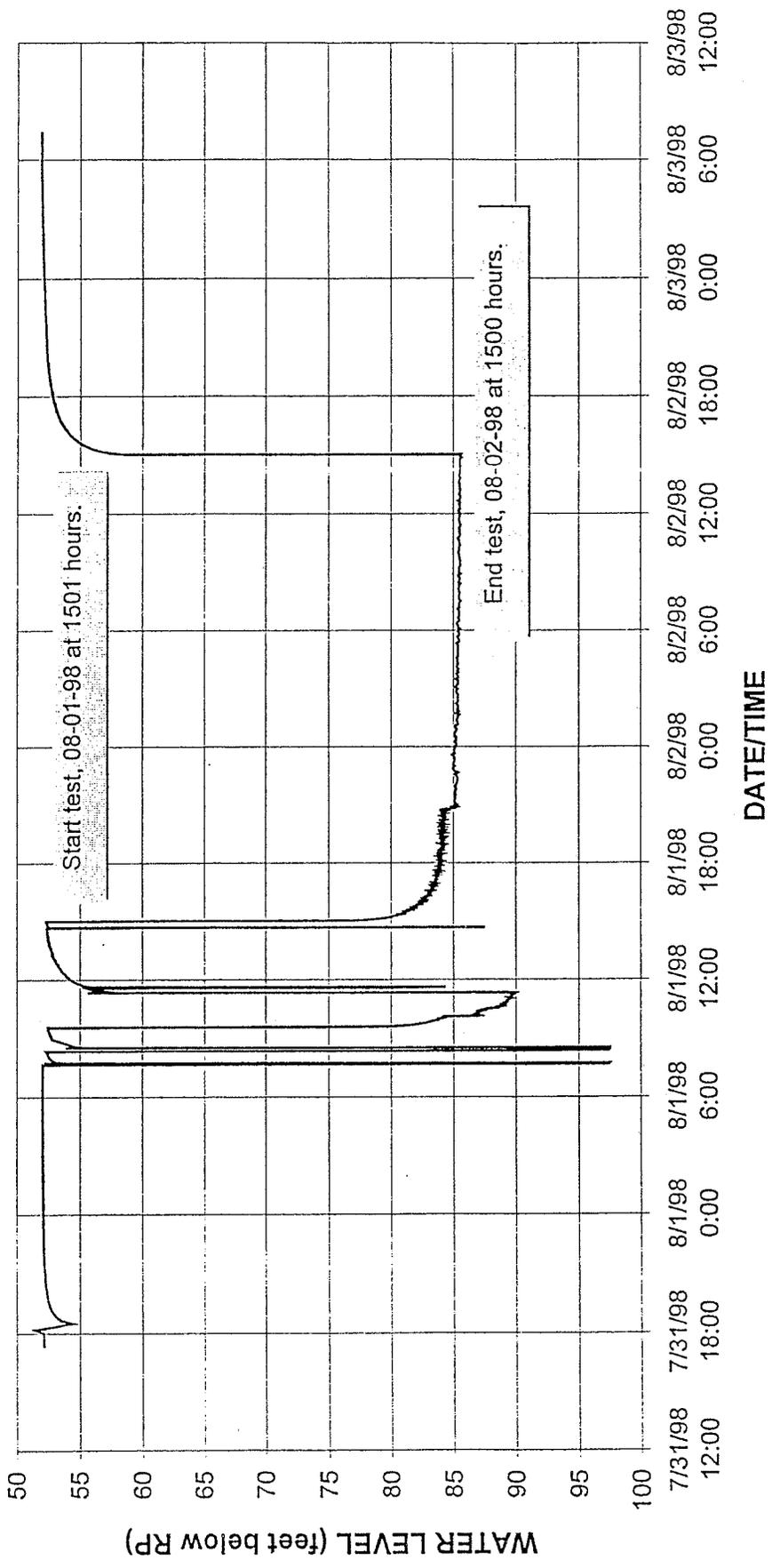
DRAWN BY: P. TAITT

PROJECT: WATER SUPPLY

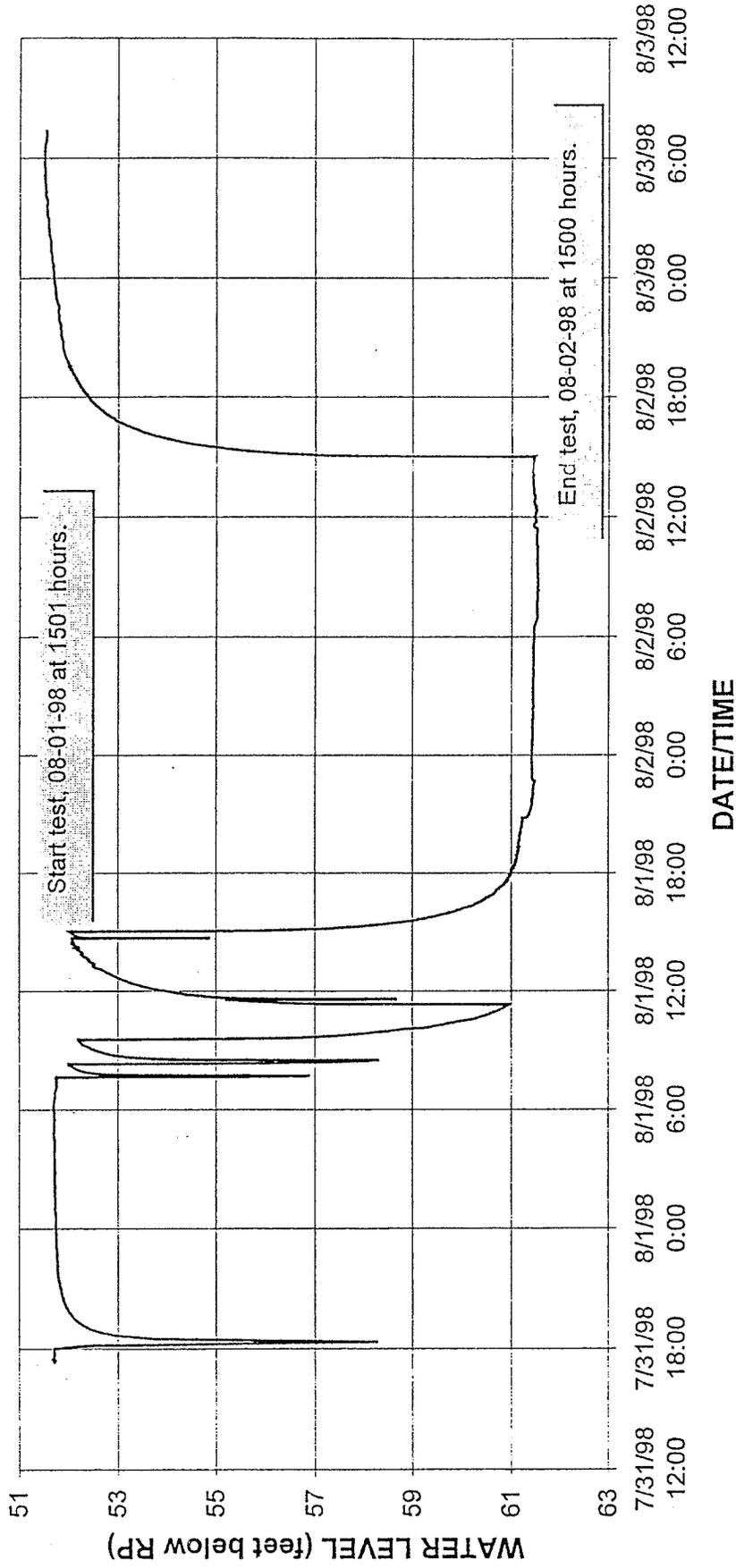
SITE MAP
FLYING J KNIGHTON ROAD
TRAVEL STOP

LEDT: FLYING J INC

WATER LEVEL FOR PERIOD OF RECORD FOR PUMPING WELL FLYING J KNIGHTON ROAD TRAVEL STOP



WATER LEVEL FOR PERIOD OF RECORD FOR OB-1D FLYING J KNIGHTON ROAD TRAVEL STOP



FIGURE

**UNCORRECTED DATA LOGGER READINGS
FOR PERIOD OF RECORD FOR OB-25,
FLYING J KNIGHTON ROAD TRAVEL STOP**

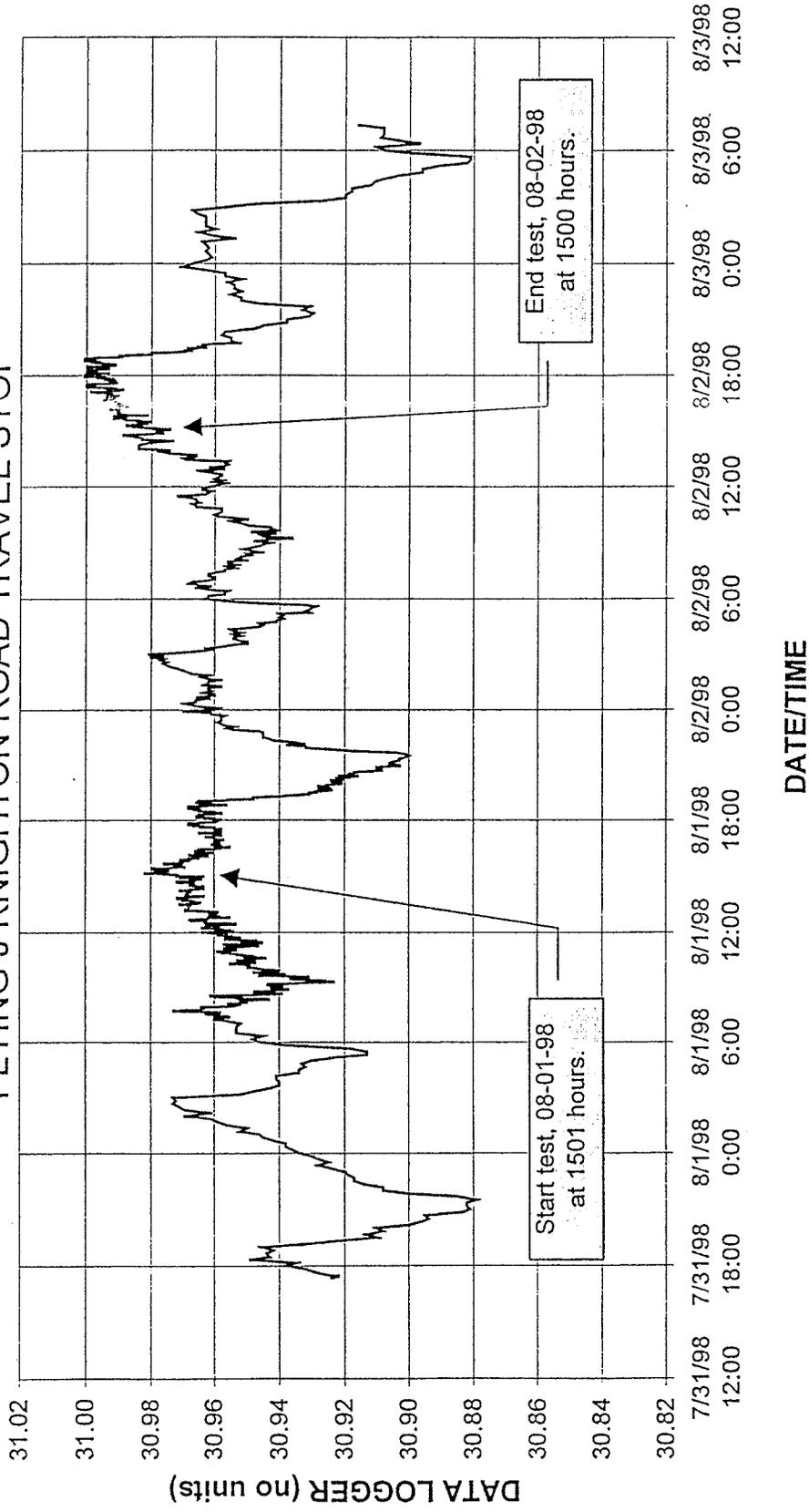


FIGURE 1



**UNCORRECTED DATA LOGGER READINGS
FOR PERIOD OF RECORD FOR OB-2S_u
FLYING J KNIGHTON ROAD TRAVEL STOP**

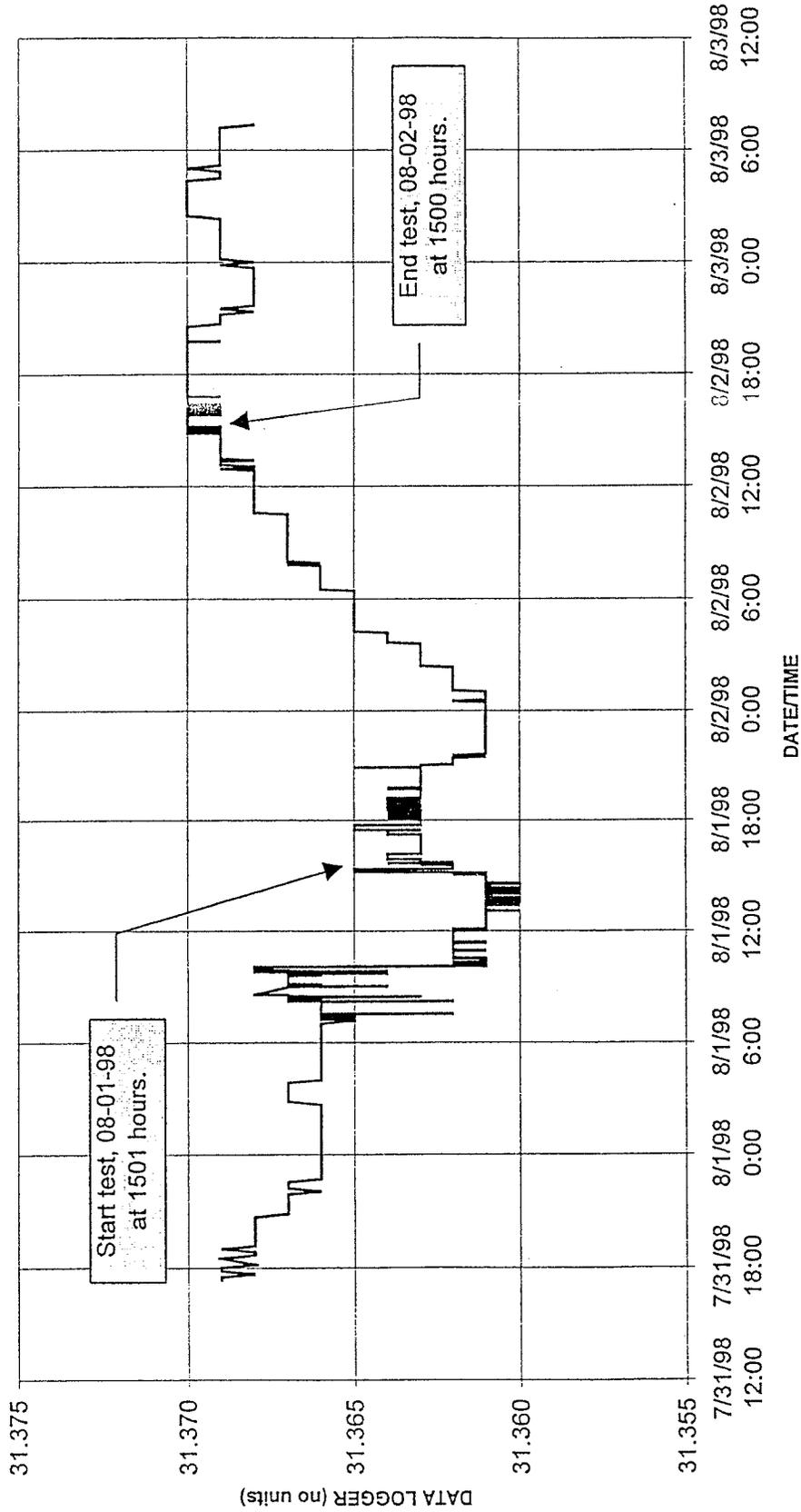
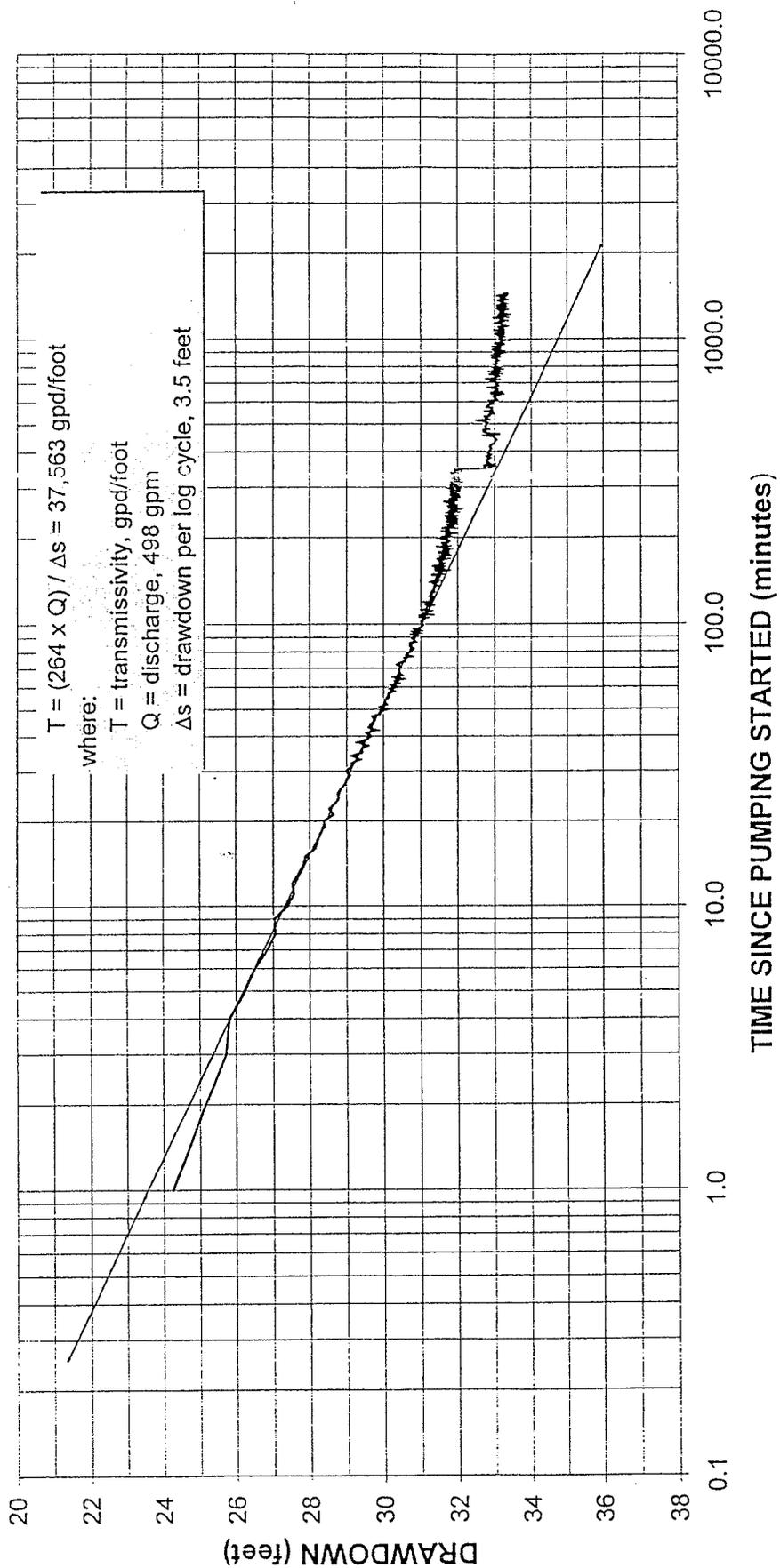


FIGURE 6

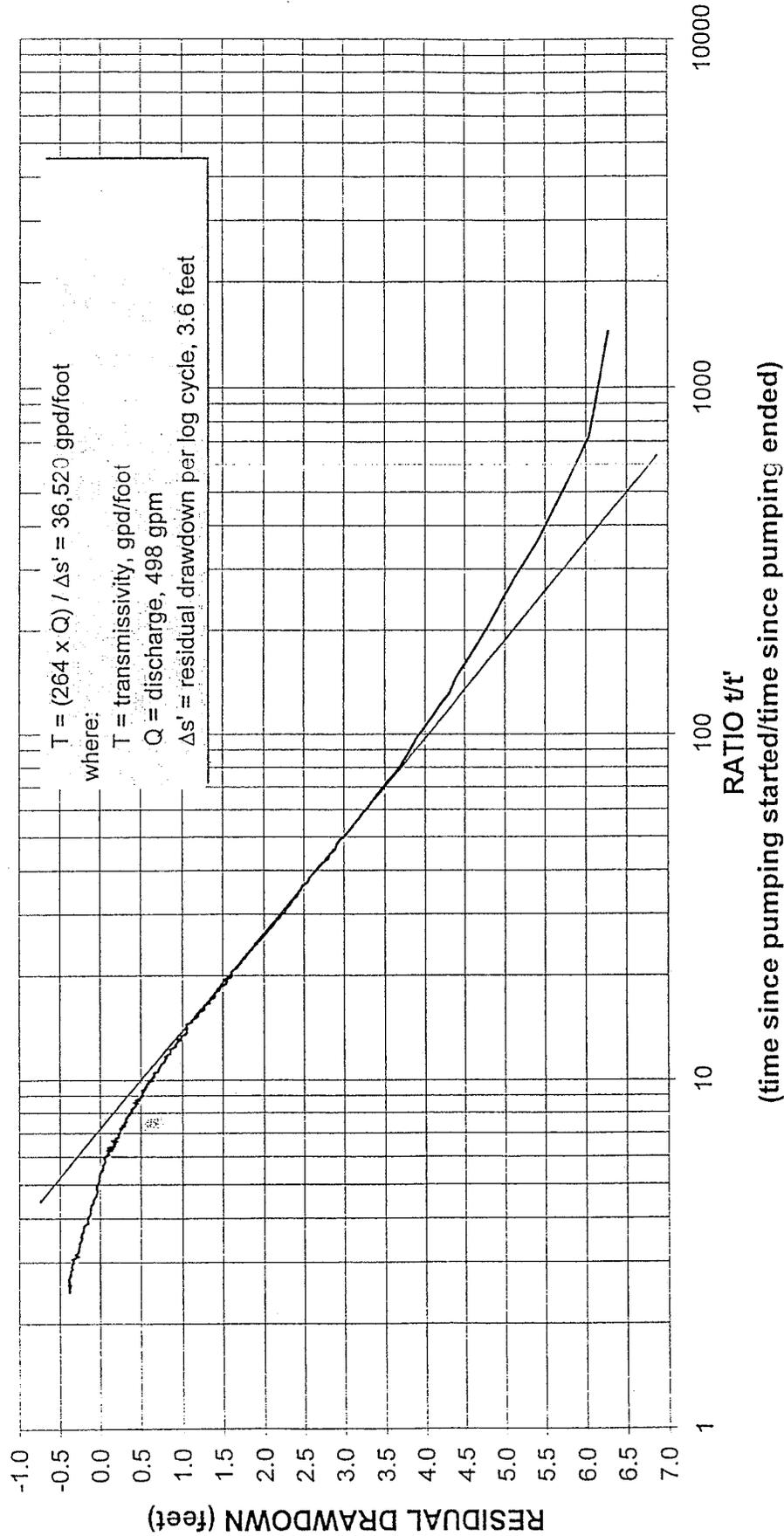


DRAWDOWN IN PUMPING WELL FLYING J KNIGHTON ROAD TRAVEL STOP



FIGURE

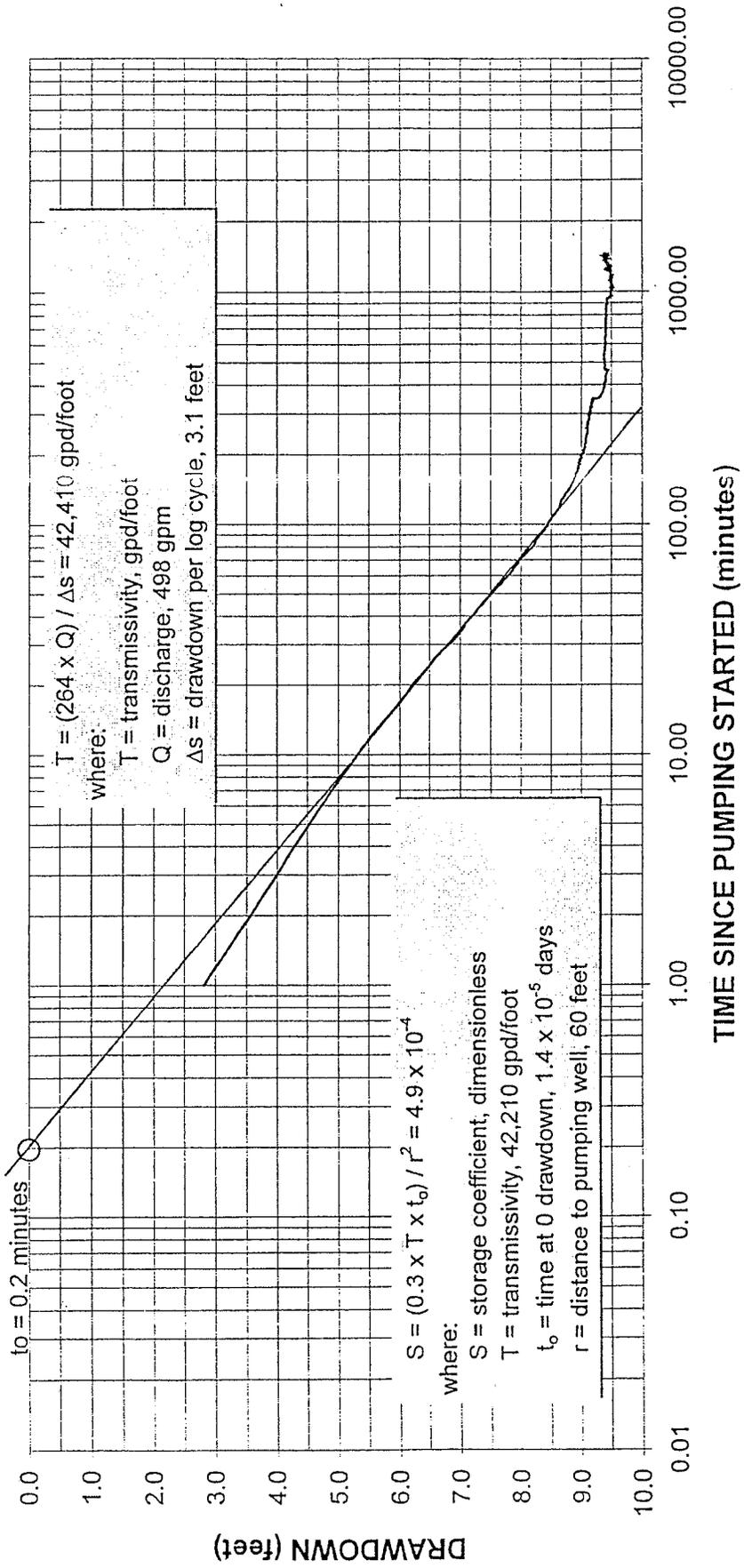
RESIDUAL DRAWDOWN IN PUMPING WELL FLYING J KNIGHTON ROAD TRAVEL STOP



FIGURE

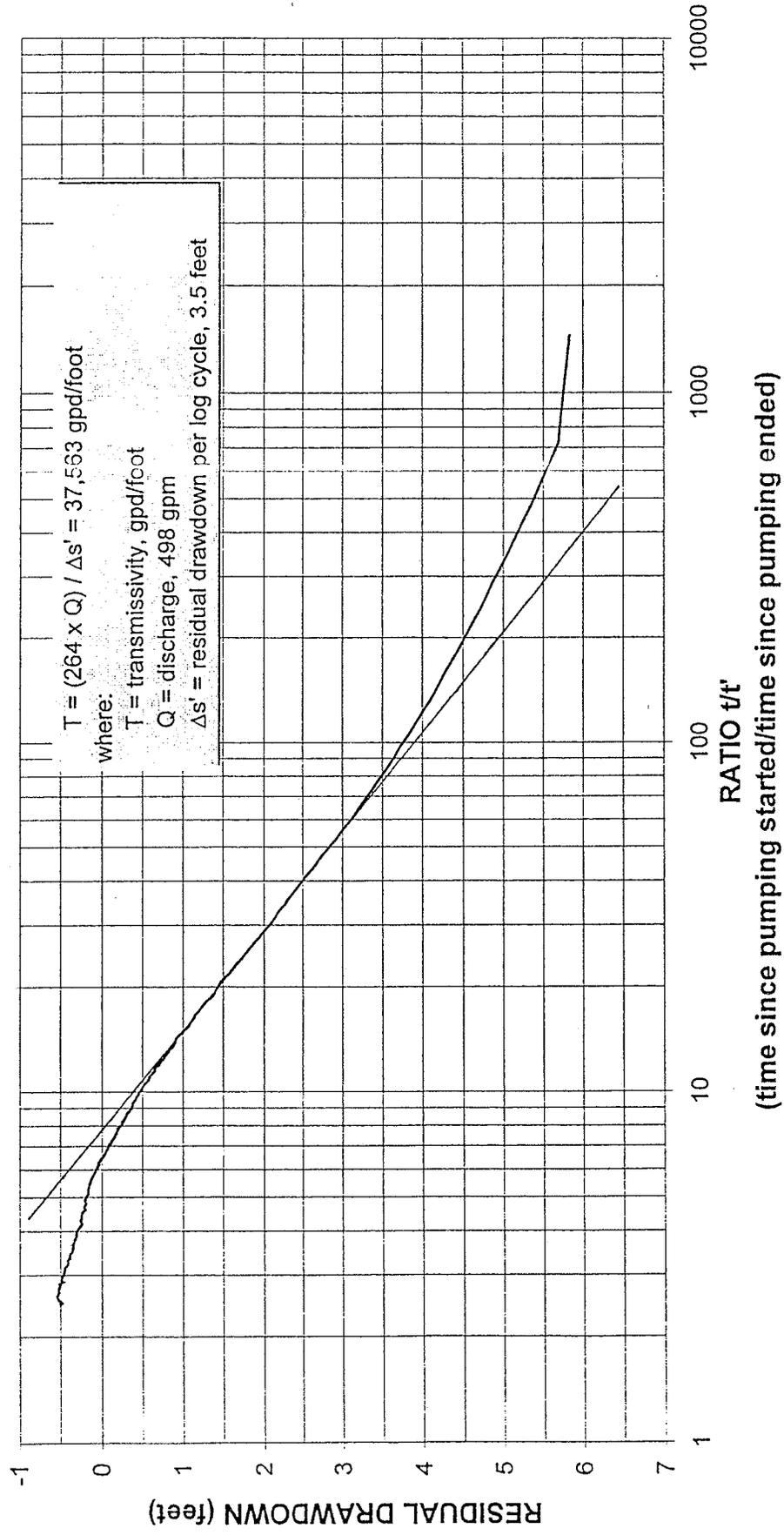


DRAWDOWN IN OB-1D FLYING J KNIGHTON ROAD TRAVEL STOP

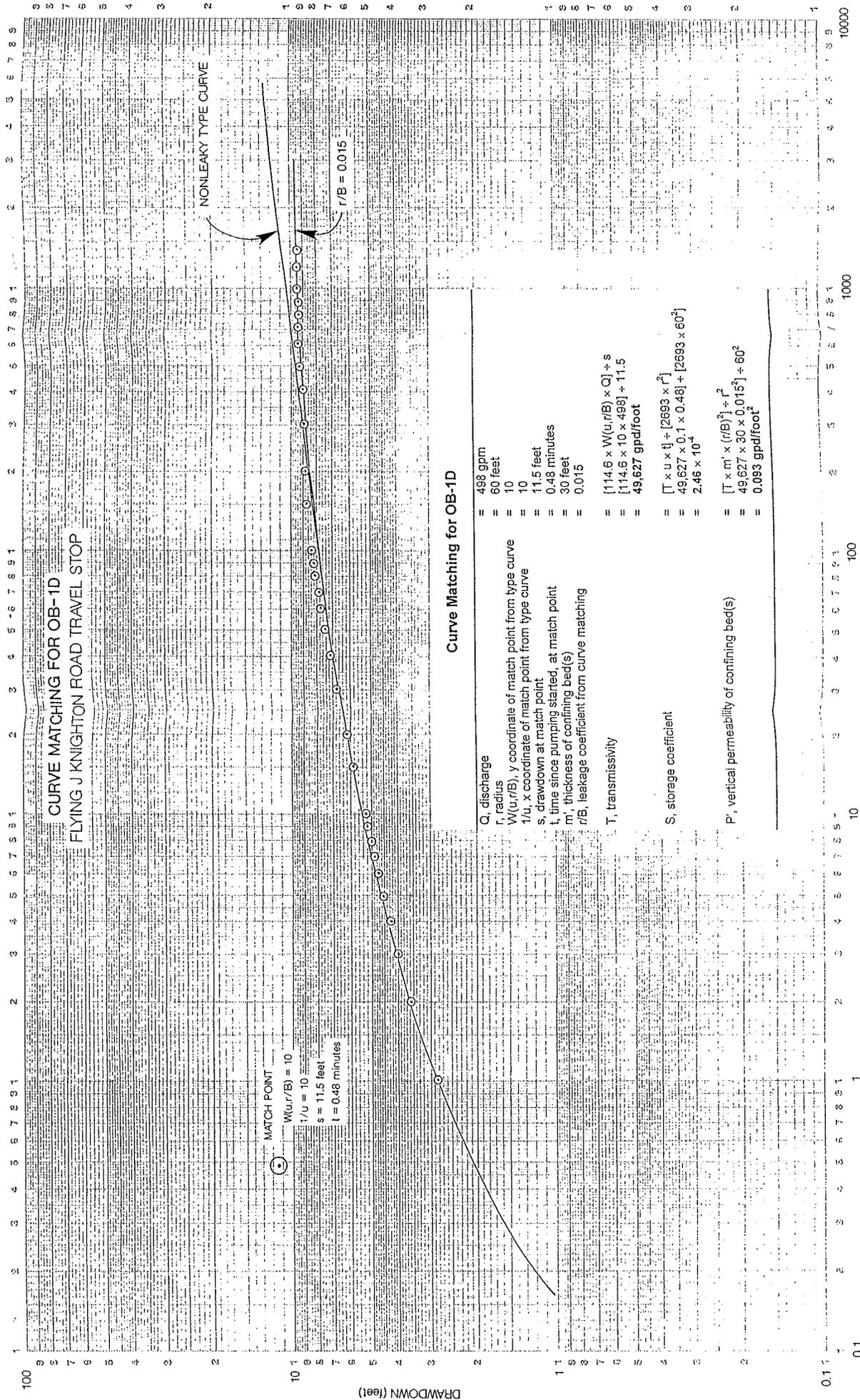


FIGURE

RESIDUAL DRAWDOWN IN OB-1D FLYING J KNIGHTON ROAD TRAVEL STOP



FIGURE



CURVE MATCHING FOR OB-1D
FLYING J KNIGHTON ROAD TRAVEL STOP

NONLEAKY TYPE CURVE

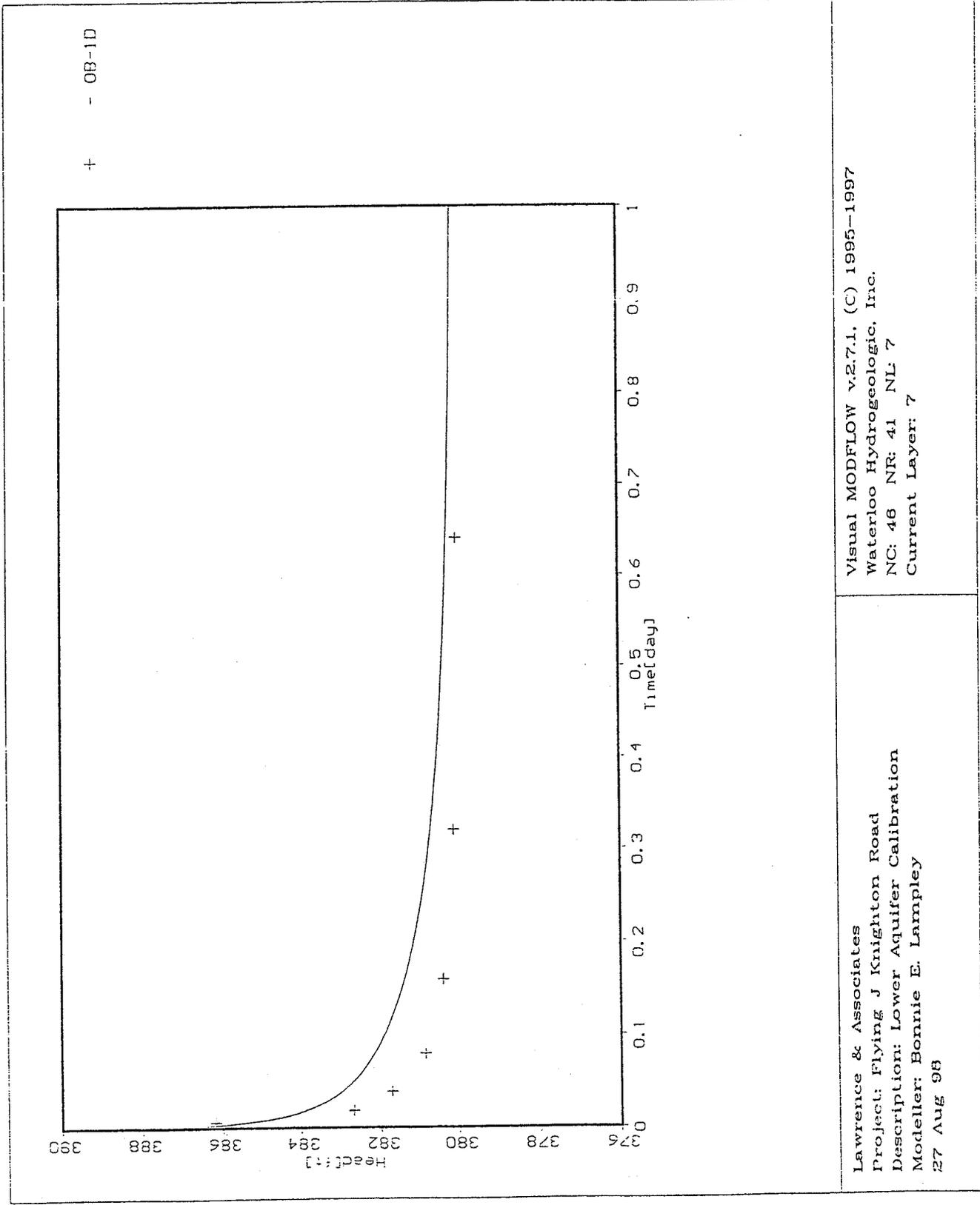
$1/B = 0.015$

MATCH POINT
 $W(u,r/B) = 10$
 $1/u = 10$
 $s = 11.5$ feet
 $t = 0.48$ minutes

Curve Matching for OB-1D

- C, discharge = 498 gpm
 - r, radius = 60 feet
 - $W(u,r/B)$, y coordinate of match point from type curve = 10
 - $1/u$, x coordinate of match point from type curve = 10
 - s, drawdown at match point = 11.5 feet
 - t, time since pumping started, at match point = 0.48 minutes
 - m', thickness of confining bed(s) = 30 feet
 - r/B, leakage coefficient from curve matching = 0.015
- T, transmissivity = $[114.6 \times W(u,r/B) \times Q] / s$
= $[114.6 \times 10 \times 498] / 11.5$
= 49,627 gpd/foot
- S, storage coefficient = $[T \times u \times t] / [2693 \times r^2]$
= $49,627 \times 0.1 \times 0.48 / [2693 \times 60^2]$
= 2.46×10^{-4}
- P', vertical permeability of confining bed(s) = $[T \times m' \times (r/B)^2] / r^2$
= $49,627 \times 30 \times 0.015^2 / 60^2$
= 0.093 gpd/foot

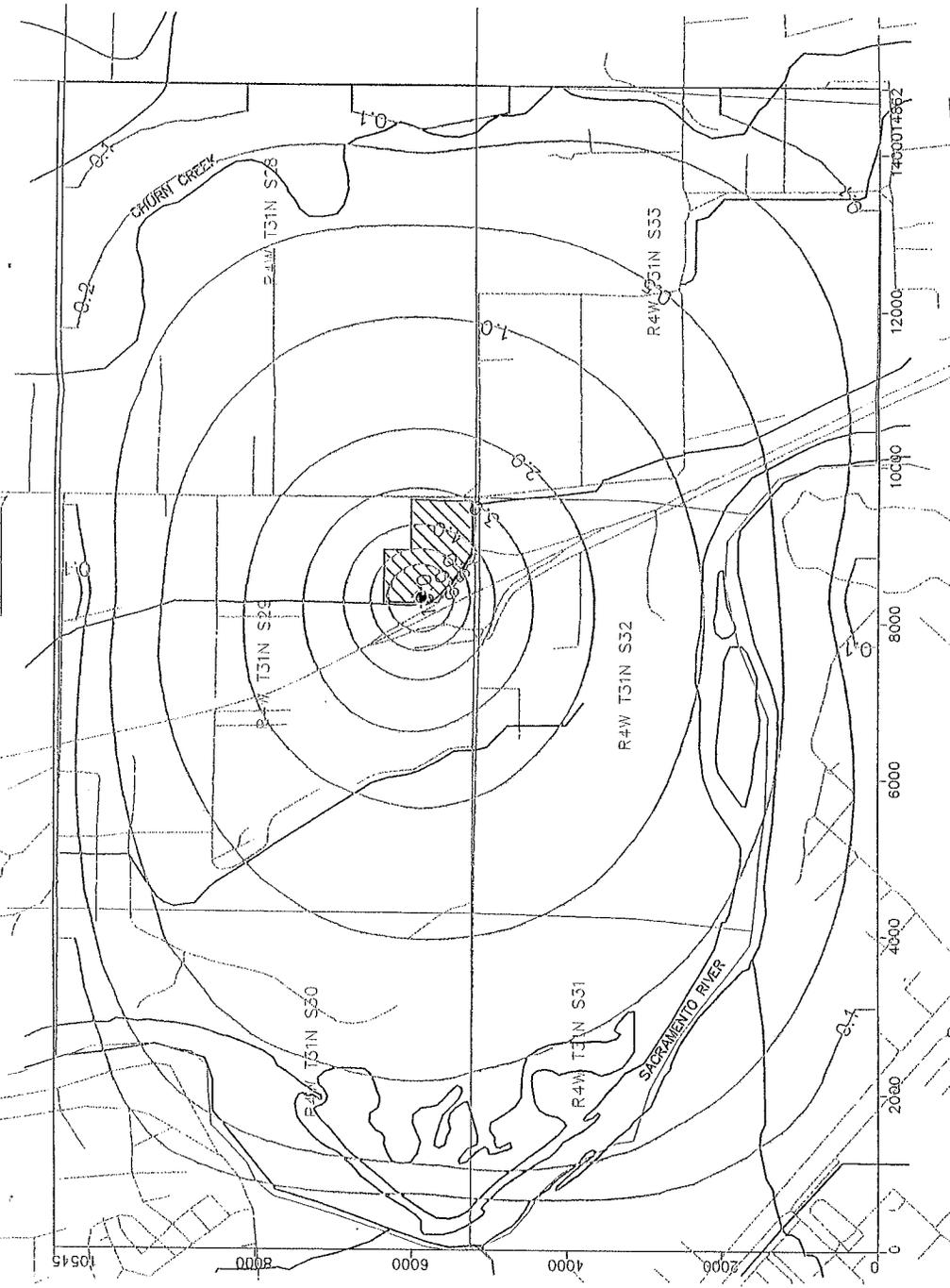




Lawrence & Associates
 Project: Flying J Knighton Road
 Description: Lower Aquifer Calibration
 Modeller: Bonnie E. Lampley
 27 Aug 98

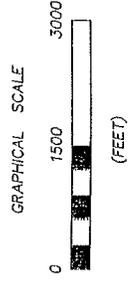
Visual MODFLOW v.2.7.1, (C) 1995-1997
 Waterloo Hydrogeologic, Inc.
 NC: 46 NR: 41 NL: 7
 Current Layer: 7

FIGURE 12



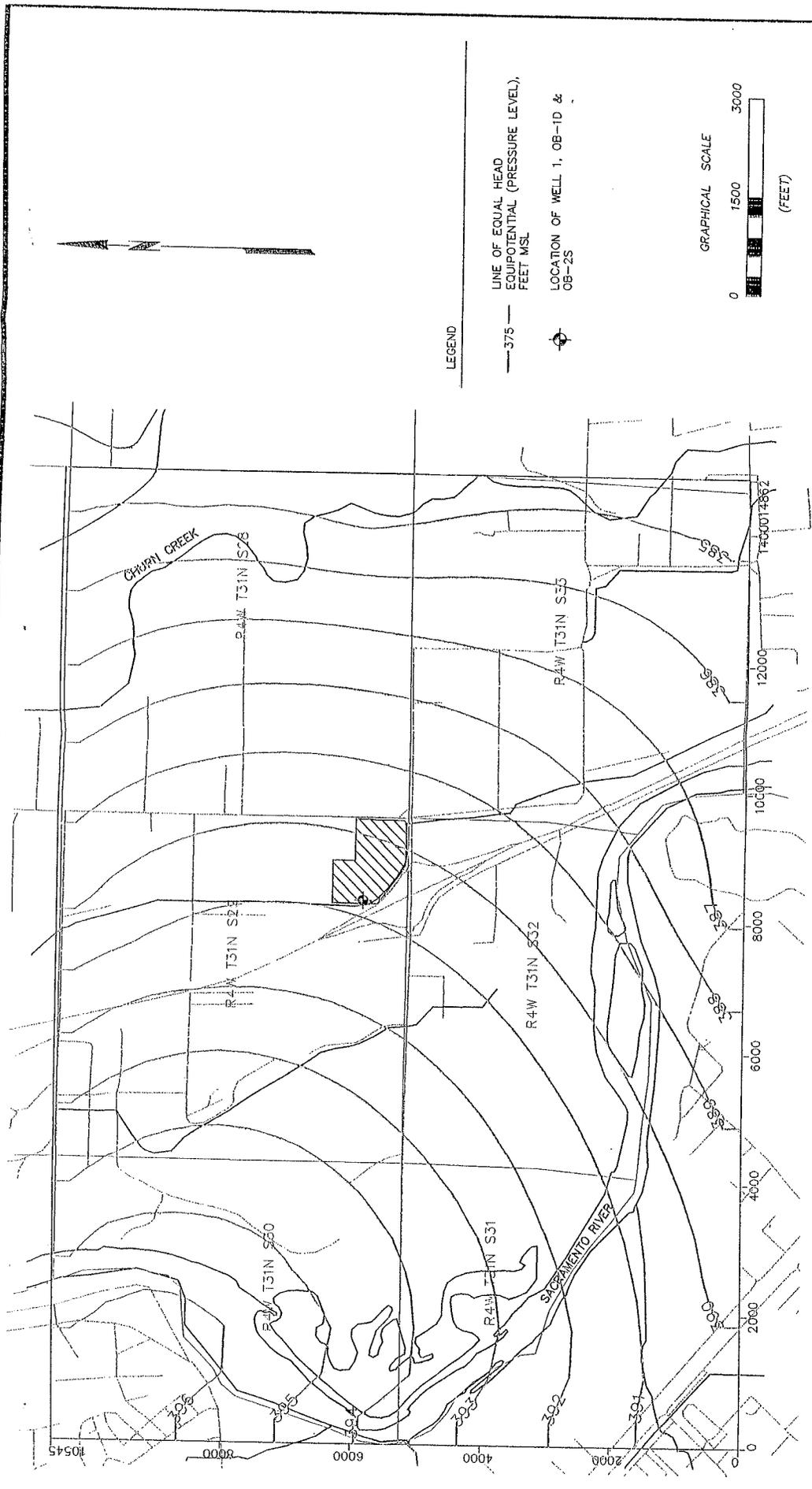
LEGEND

- 2.00 — LINE OF EQUAL DRAWDOWN, FEET
- ⊗ LOCATION OF WELL 1, OB-1D & OB-2S



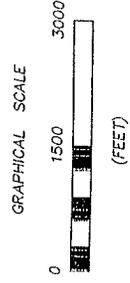
D:\odcadd\p\flyng\j6\FJ-CAL-7-DD.dwg D.B.Z. 6/27/1998

<p>CLIENT: FLYING J, INC.</p>	<p>PROJECT: KNIGHTON ROAD TRAVEL STOP</p>	<p>DRAWN BY: D. ZAITZ</p>	<p>CHECKED BY: B. LAMPLEY</p>	<p>SCALE: 1"=1500'</p>
				<p>LAWRENCE & ASSOCIATES 2001 MARKET STREET, RM. 523 REDDING, CA 96001 PHONE (530) 244-9703 FAX (530) 244-5021</p>
<p>DRAWDOWN AT END OF 24-HOURS PUMPING @ 500 GPM LOWER AQUIFER</p>				<p>DATE: 8/18/98</p>
<p>FIGURE 13</p>				<p>JOB NO.: C98.07.04</p>



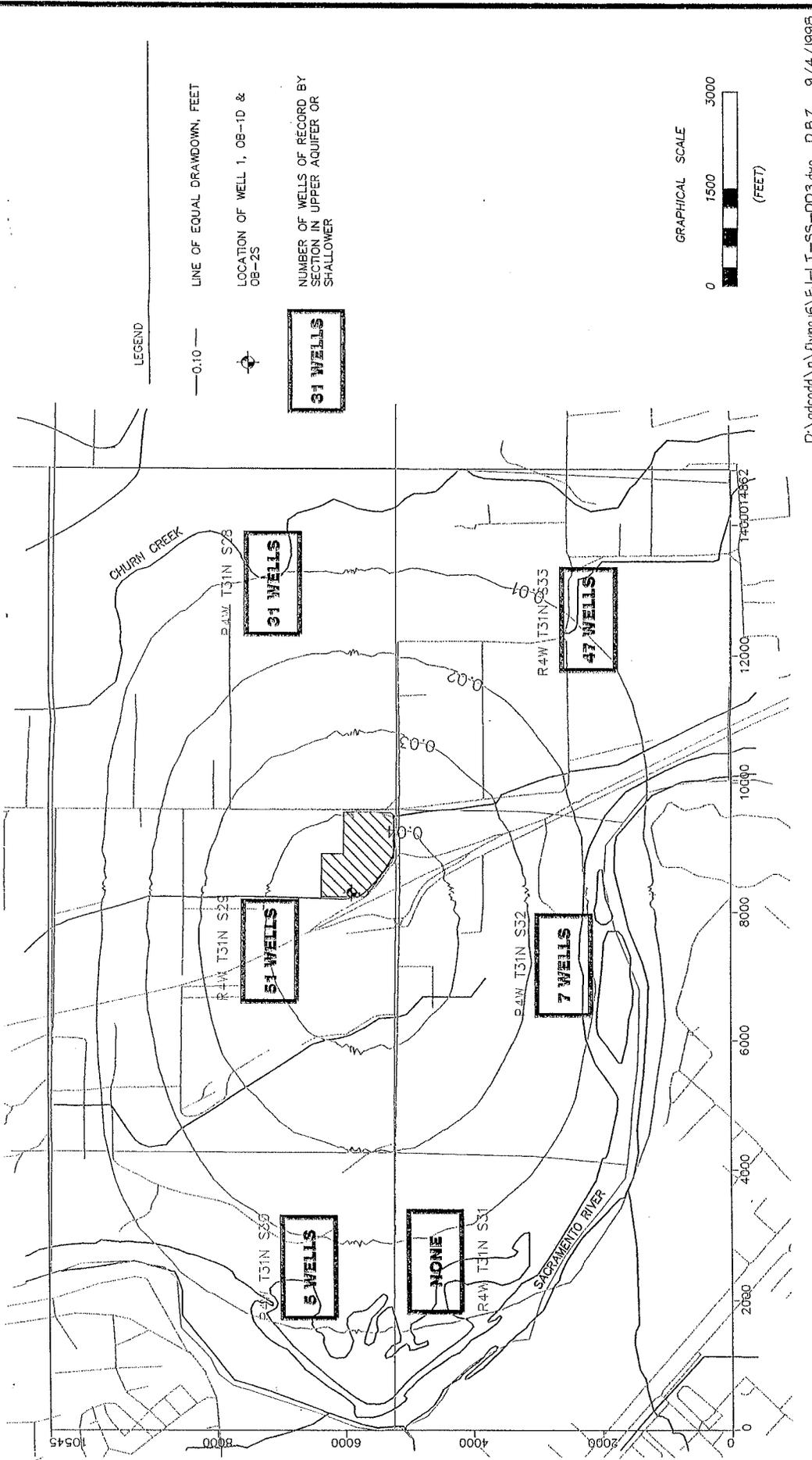
LEGEND

- 375— LINE OF EQUAL HEAD EQUIPOTENTIAL (PRESSURE LEVEL), FEET MSL
- ⊕ LOCATION OF WELL 1, OB-1D & OB-2S



D:\accadd\p\flyng\6\FJ-SS-7-HD.dwg D.B.Z. 8/27/1998

CLIENT: FLYING J, INC.	PROJECT: KNIGHTON ROAD TRAVEL STOP	DRAWN BY: D. ZAITZ	CHECKED BY: B. LAMPLEY	SCALE: 1" = 1500'
				LAWRENCE & ASSOCIATES 2001 MARKET STREET, RM. 523 REDDING, CA 96001 PHONE (530) 244-9703 FAX (530) 244-5021
				DATE: 8/18/98
				JOB NO.: C98.07.04
				FIGURE 14



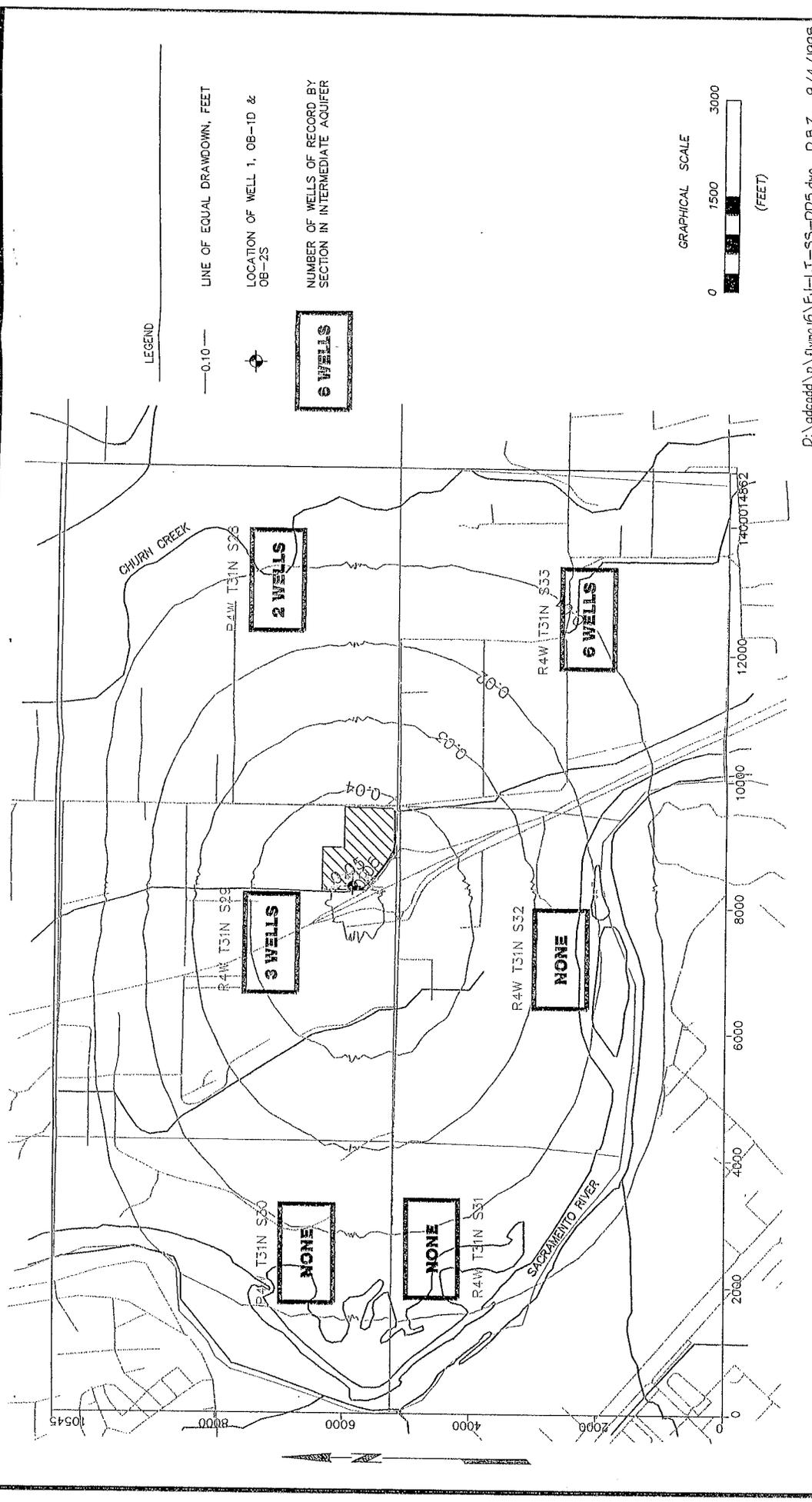
LEGEND

- 0.10 — LINE OF EQUAL DRAWDOWN, FEET
- ⊕ LOCATION OF WELL 1, 08-1D & 08-2S
- 31 WELLS NUMBER OF WELLS OF RECORD BY SECTION IN UPPER AQUIFER OR SHALLOWER



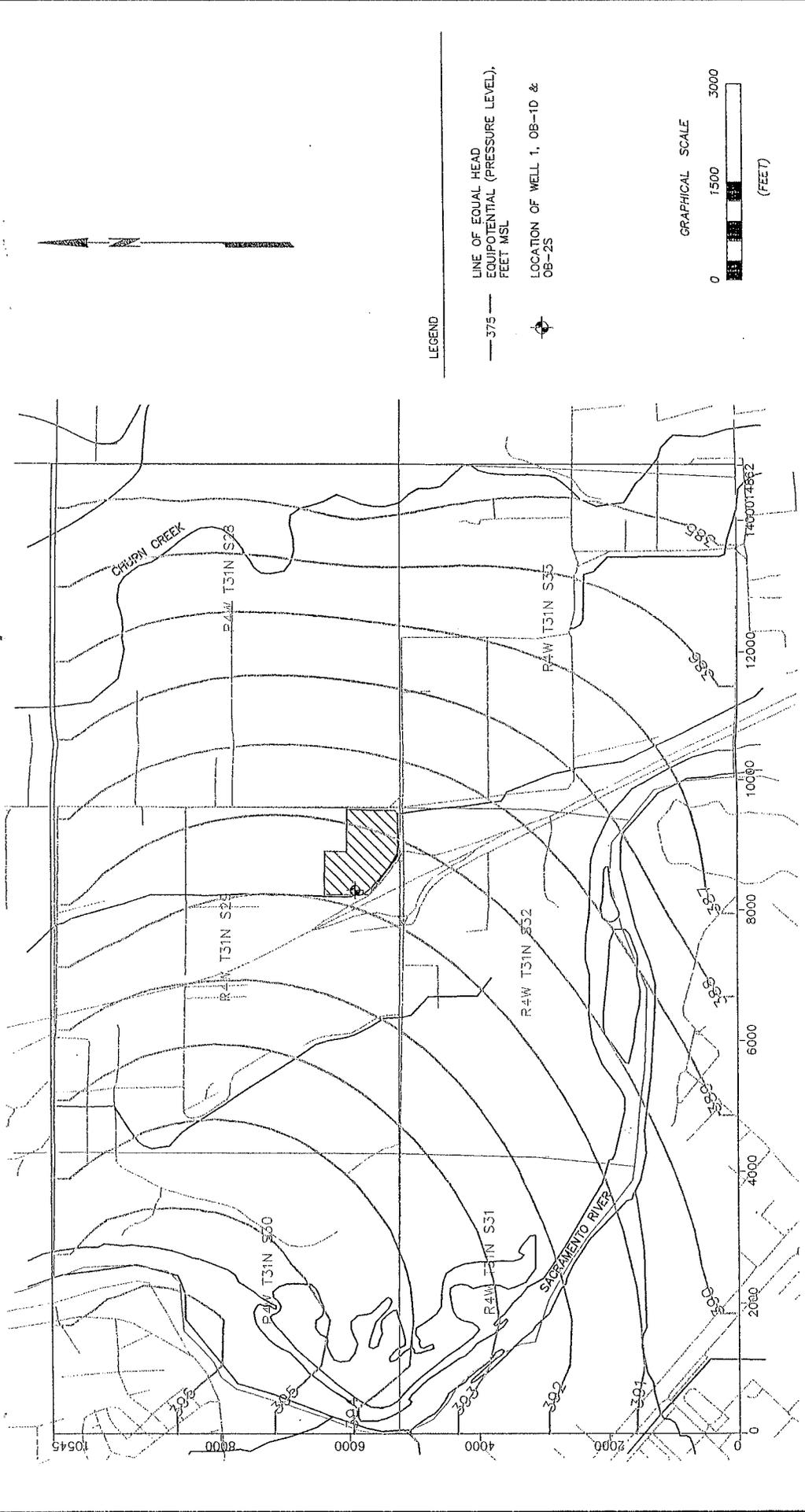
D:\adocadd\p\flyngj6\Flyng\6\FJ-LT-SS-DD3.dwg D.B.Z. 9/4/1998

<p>CLIENT: FLYING J. INC.</p> <p>PROJECT: KNIGHTON ROAD TRAVEL STOP</p> <p>DRAWN BY: D. ZAITZ</p> <p>CHECKED BY: B. LAMPLEY</p>	<p>LAWRENCE & ASSOCIATES</p> <p>2001 MARKET STREET, RM. 523</p> <p>REDDING, CA 96001</p> <p>PHONE (530) 244-9703</p> <p>FAX (530) 244-5021</p>	<p>SCALE: 1"=1500'</p> <p>DATE: 8/18/98</p> <p>JOB NO.: C98.07.04</p>
	<p>LONG-TERM STEADY-STATE DRAWDOWN</p> <p>PROJECT WELL PUMPING @ 75 GPM</p> <p>UPPER AQUIFER</p>	
	<p>FIGURE 15</p>	



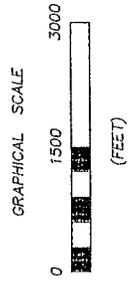
D:\adccadd\p\flym\6\FJ-LT-SS-DD5.dwg D.B.Z. 9/4/1998

CLIENT: FLYING J, INC. PROJECT: KNIGHTON ROAD TRAVEL STOP	DRAWN BY: N 7AIT7 CHECKED BY:	LAWRENCE & ASSOCIATES 2001 MARKET STREET, RM. 523 REDDING, CA 96001 PHONE (530) 244-9703 FAX (530) 244-5021	SCALE: 1" = 1500' DATE: 8/18/98 JOB NO.: C98.07.04
		PROJECT: KNIGHTON ROAD TRAVEL STOP	



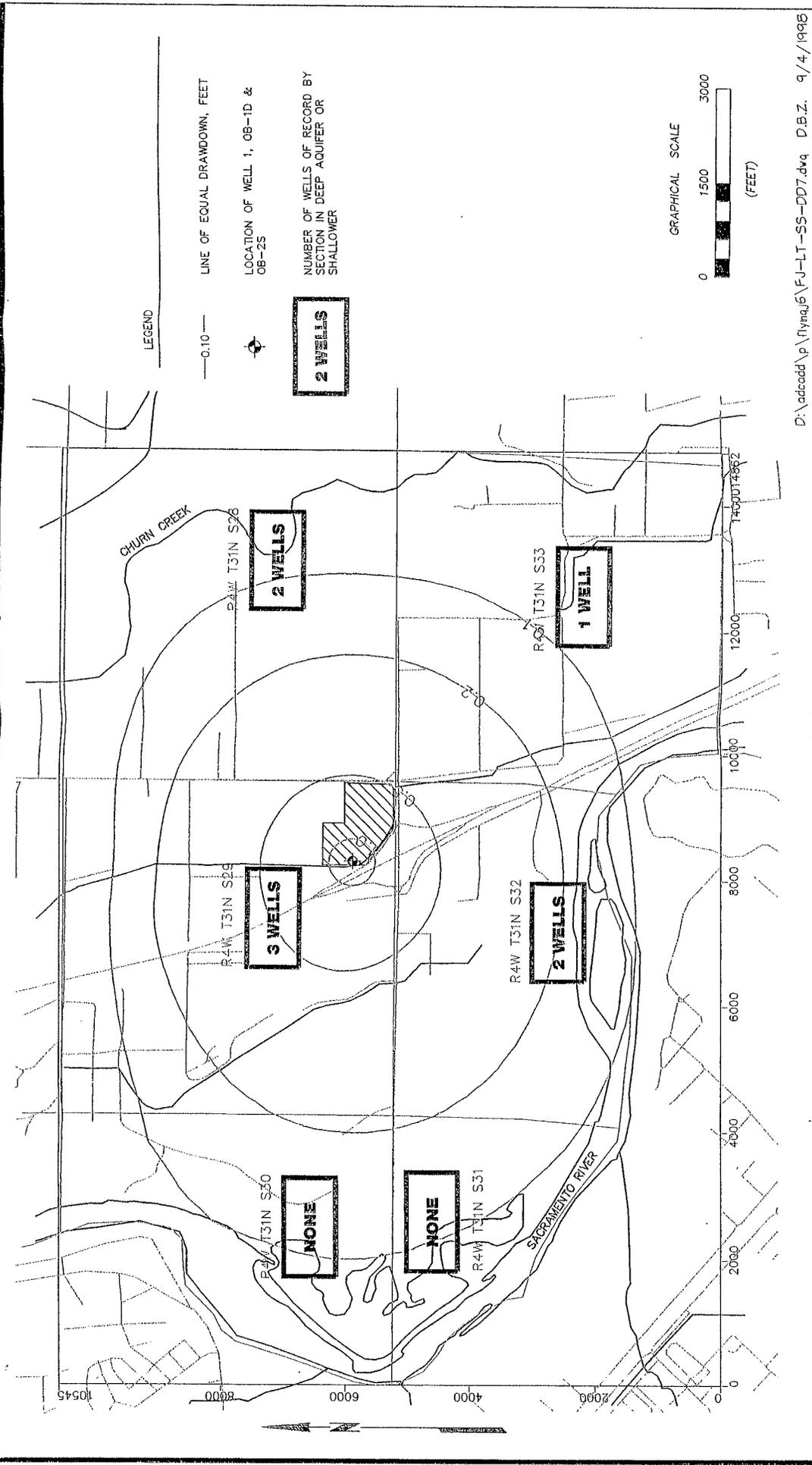
LEGEND

- 375 — LINE OF EQUAL HEAD EQUIPOTENTIAL (PRESSURE LEVEL), FEET MSL
- ⊕ LOCATION OF WELL 1, OB-1D & OB-2S



D:\odcadd\p\flypno\6\FJ-LT-SS-HD7.dwg D.B.Z. 8/27/1998

<p>SCALE: 1" = 1500'</p> <p>DATE: 8/15/98</p> <p>JOB NO.: C98.07.04</p>		<p>FIGURE 17</p>	
<p>LAWRENCE & ASSOCIATES 2001 MARKET STREET, RM. 523 REDDING, CA 96001 PHONE (530) 244-9703 FAX (530) 244-5021</p>		<p>CHECKED BY: R LAMPIFY</p>	
<p>LONG-TERM STEADY-STATE EQUIPOTENTIALS PROJECT WELL PUMPING @ 75 GPM LOWER AQUIFER</p>		<p>PROJECT: VALICULTON SOUTH TRACT/ETI STAD</p>	
<p>CLIENT: ETI VALICULTON</p>		<p>DRAWN BY: N 7A117</p>	



D:\adccdd\p\flyraq\6\FJ-LT-SS-DD7.dwg D.B.Z. 9/4/99B

<p>CLIENT: PROJECT: DRAWN BY:</p>	<p>SCALE: 1" = 1500'</p>
	<p>DATE: 8/18/98</p> <p>JOB NO.: C98.07.04</p>
<p>LAWRENCE & ASSOCIATES 2001 MARKET STREET, RM. 523 REDDING, CA 96001 PHONE (530) 244-9703 FAX (530) 244-5021</p>	
<p>LONG-TERM STEADY-STATE DRAWDOWN PROJECT WELL PUMPING @ 75 GPM LOWER AQUIFER</p>	

Water Level in Nearby Well Measured by DWR State Well No. 31N/04W-27P01M

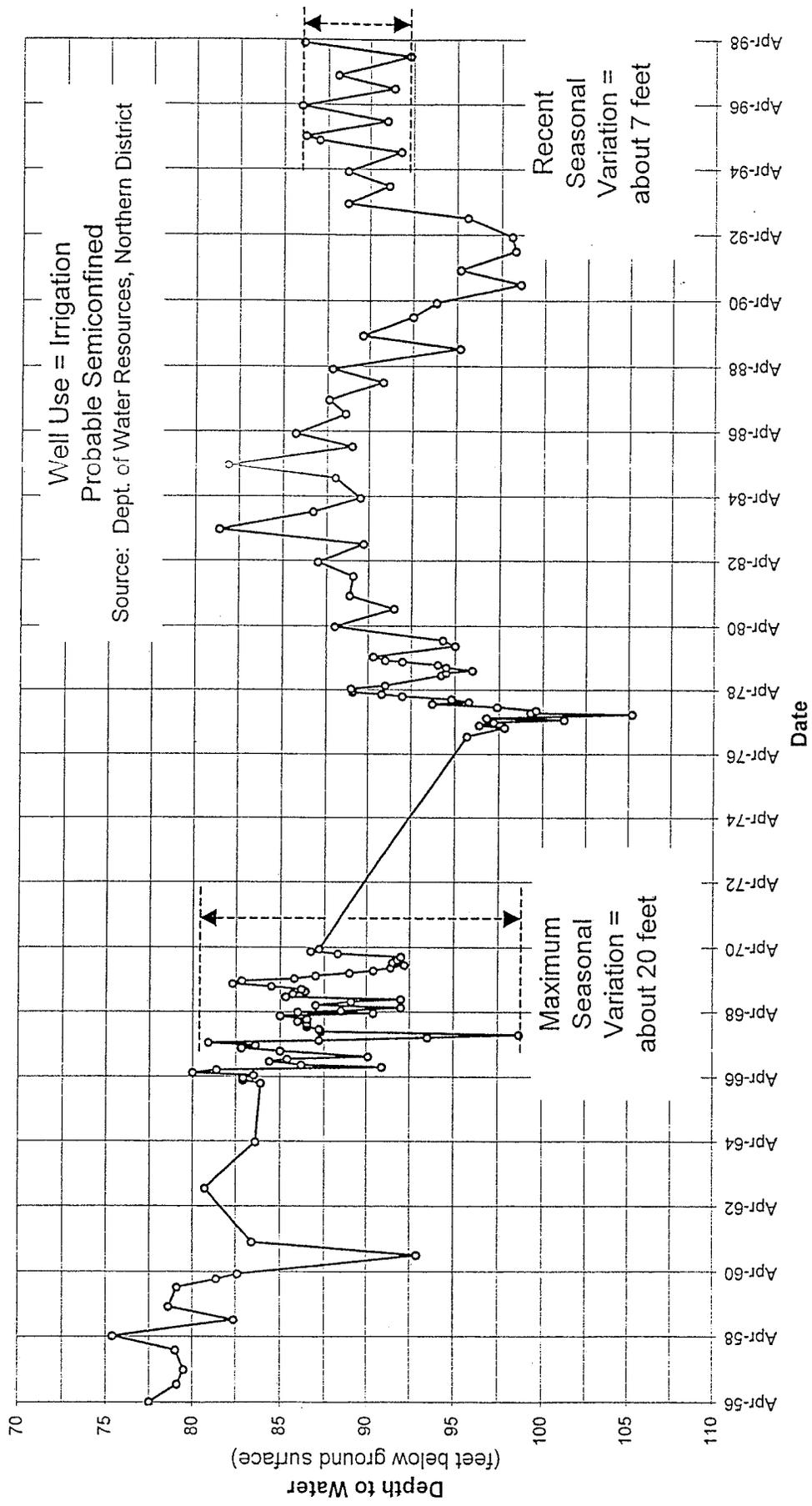
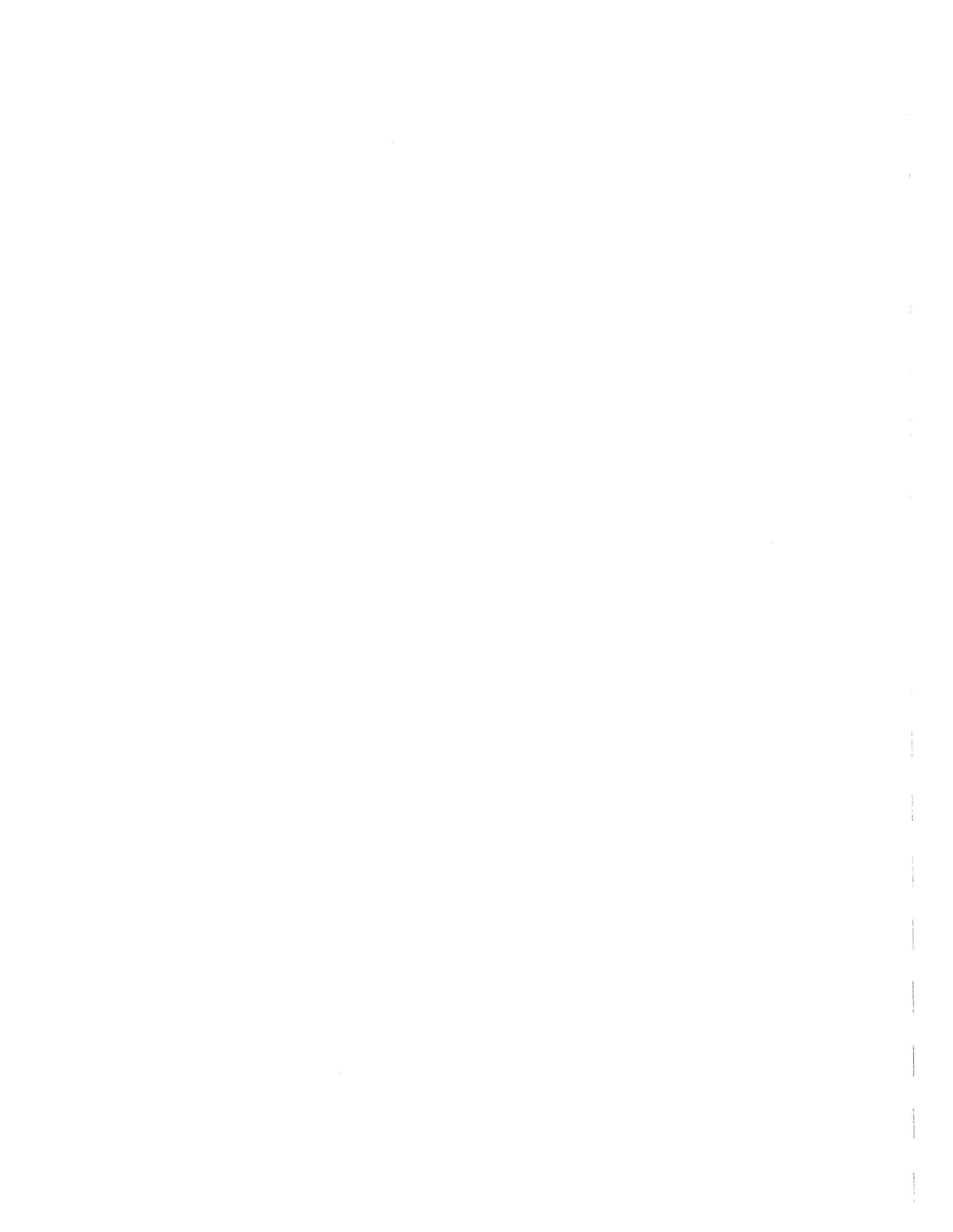


FIGURE 19



APPENDIX A
Calibration and Field Data

TRANSDUCER CALIBRATION

PUMPING WELL

Water Level (feet below RP)	Data Logger (no units)
1st calibration:	
52.02	54.307
52.02	54.388
52.32	53.972
94.98	4.425
96.15	-0.561
96.15	-0.613
96.91	-0.635
97.84	-0.688
98.63	-0.710

SUMMARY OUTPUT: 1ST CALIBRATION OF PUMPING WELL TRANSDUCER

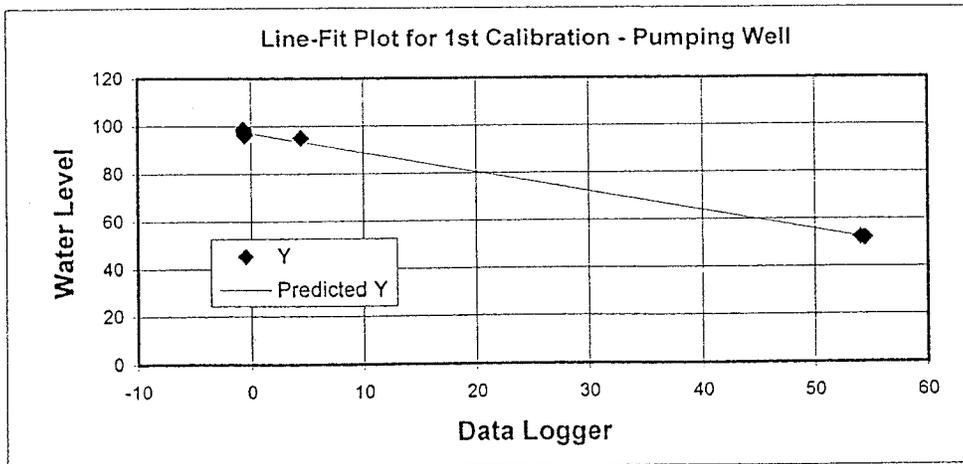
Regression Statistics	
Multiple R	0.9990
R Square	0.9981
Adjusted R Squar	0.9978
Standard Error	1.0530
Observations	9

ANOVA					
	df	SS	MS	F	Sig. F
Regression	1	3989.331	3989.331	3597.882	9.397E-11
Residual	7	7.762	1.109		
Total	8	3997.092			

	Coefficients	Std. Err	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	96.9185	0.4312	224.7453	9.11E-15	95.8988	97.9382	95.8988	97.9382
Data Logger	-0.8253	0.0138	-59.9823	9.40E-11	-0.8578	-0.7927	-0.8578	-0.7927

RESIDUAL OUTPUT

Observation	Predicted Y	Residuals
1	52.101	-0.081
2	52.035	-0.015
3	52.378	-0.058
4	93.267	1.713
5	97.381	-1.231
6	97.424	-1.274
7	97.443	-0.533
8	97.486	0.354
9	97.504	1.126



TRANSDUCER CALIBRATION

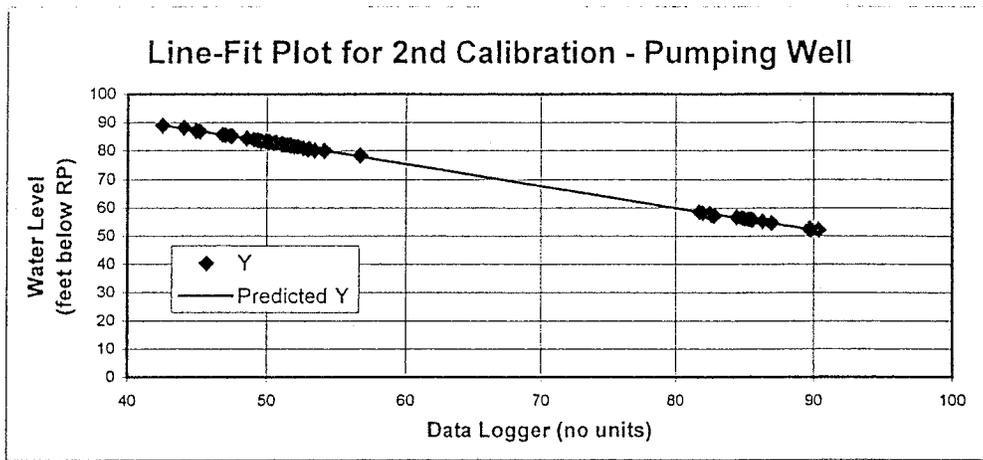
SUMMARY OUTPUT: 2ND CALIBRATION OF PUMPING WELL TRANSDUCER

Regression Statistics	
Multiple R	0.9999
R Square	0.9998
Adjusted R Squar	0.9998
Standard Error	0.1830
Observations	53

ANOVA

	df	SS	MS	F	Sig. F
Regression	1	9133.53	9133.53	272792.05	9.4043E-97
Residual	51	1.71	0.03		
Total	52	9135.24			

	Coefficients	tandard Erro	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	121.8793	0.0943	1292.0266	8.201E-117	121.6900	122.0687	121.6900	122.0687
X Variable 1	-0.7748	0.0015	-522.2950	9.4043E-97	-0.7778	-0.7718	-0.7778	-0.7718



TRANSDUCER CALIBRATION

PUMPING WELL 2ND CALIBRATION

<i>Observation</i>	<i>Data Logger</i>	<i>Measured</i>	<i>Predicted</i>	<i>Residuals</i>
1	89.629	52.49	52.44	0.05
2	52.887	80.54	80.90	-0.36
3	52.554	80.94	81.16	-0.22
4	52.178	81.54	81.45	0.09
5	51.732	81.80	81.80	0.00
6	51.599	82.00	81.90	0.10
7	51.199	82.20	82.21	-0.01
8	51.023	82.23	82.35	-0.12
9	51.000	82.51	82.37	0.14
10	50.045	83.04	83.11	-0.07
11	49.889	83.25	83.23	0.02
12	49.334	83.69	83.66	0.03
13	44.888	87.09	87.10	0.01
14	45.156	86.81	86.89	-0.08
15	44.888	87.04	87.10	-0.06
16	44.036	88.17	87.76	0.41
17	42.507	88.89	88.95	-0.06
18	82.635	57.26	57.86	-0.60
19	89.759	52.24	52.34	-0.10
20	56.614	78.34	78.02	0.32
21	54.087	80.02	79.97	0.05
22	53.394	80.20	80.51	-0.31
23	52.989	80.77	80.82	-0.05
24	51.929	81.54	81.65	-0.11
25	51.684	81.91	81.84	0.07
26	51.411	82.10	82.05	0.05
27	51.032	82.38	82.34	0.04
28	50.433	82.67	82.80	-0.13
29	50.610	82.84	82.67	0.17
30	50.165	83.03	83.01	0.02
31	49.579	83.40	83.47	-0.07
32	49.358	83.61	83.64	-0.03
33	49.293	83.77	83.69	0.08
34	49.022	83.89	83.90	-0.01
35	48.535	84.30	84.28	0.02
36	47.350	85.19	85.19	0.00
37	47.491	85.19	85.08	0.11
38	47.006	85.52	85.46	0.06
39	46.774	85.66	85.64	0.02
40	81.717	58.48	58.57	-0.09
41	82.030	58.10	58.32	-0.22
42	82.493	57.91	57.97	-0.06
43	82.823	57.14	57.71	-0.57
44	84.423	56.64	56.47	0.17
45	84.798	56.38	56.18	0.20
46	84.972	56.13	56.04	0.09
47	85.253	55.93	55.83	0.10
48	85.430	55.80	55.69	0.11
49	85.564	55.68	55.59	0.09
50	86.294	55.15	55.02	0.13
51	86.968	54.65	54.50	0.15
52	89.703	52.60	52.38	0.22
53	90.318	52.09	51.90	0.19

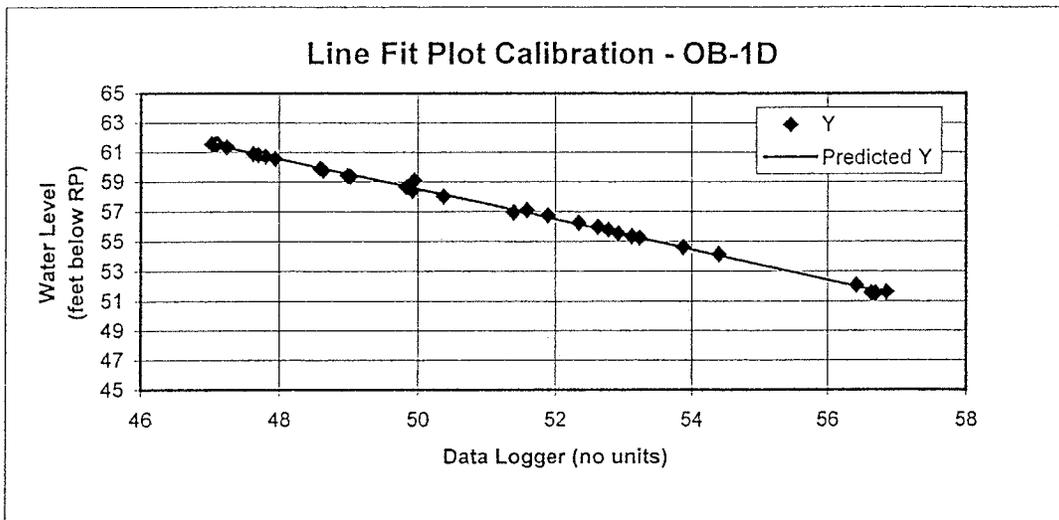
TRANSDUCER CALIBRATION

SUMMARY OUTPUT: CALIBRATION OF OB-1D TRANSDUCER

Regression Statistics	
Multiple R	0.9990
R ²	0.9980
Adj. R ²	0.9979
Std. Error	0.1475
Observation	32

ANOVA					
	df	SS	MS	F	Sig. F
Regression	1	320.836	320.836	14737.983	5.987E-42
Residual	30	0.653	0.022		
Total	31	321.489			

	Coefficients	tandard Erro	t Stat	P-value	Lower 95%	pper 95%	Lower 95.0%	Upper 95.0%
Intercept	109.344	0.427	256.122	1.149E-51	108.472	110.216	108.472	110.216
X Variable 1	-1.017	0.008	-121.400	5.987E-42	-1.034	-1.000	-1.034	-1.000



TRANSDUCER CALIBRATION

OB-1D CALIBRATION

<i>Observation</i>	<i>Measured</i>	<i>Data Logger</i>	<i>Predicted</i>	<i>Residuals</i>
1	51.53	56.688	51.71	-0.18
2	51.56	56.630	51.77	-0.21
3	58.40	49.910	58.60	-0.20
4	59.40	48.983	59.55	-0.15
5	59.76	48.627	59.91	-0.15
6	56.93	51.380	57.11	-0.18
7	58.02	50.360	58.15	-0.13
8	58.63	49.821	58.69	-0.06
9	59.11	49.939	58.58	0.53
10	59.36	49.023	59.51	-0.15
11	59.90	48.581	59.96	-0.06
12	60.57	47.930	60.62	-0.05
13	60.73	47.788	60.76	-0.03
14	60.82	47.685	60.87	-0.05
15	60.90	47.615	60.94	-0.04
16	61.34	47.230	61.33	0.01
17	61.55	47.059	61.50	0.05
18	61.56	47.013	61.55	0.01
19	61.57	47.097	61.46	0.11
20	61.55	47.088	61.47	0.08
21	57.09	51.565	56.92	0.17
22	56.75	51.878	56.60	0.15
23	56.25	52.330	56.14	0.11
24	55.96	52.613	55.86	0.10
25	55.78	52.762	55.71	0.07
26	55.53	52.909	55.56	-0.03
27	55.35	53.105	55.36	-0.01
28	55.24	53.222	55.24	0.00
29	54.62	53.868	54.58	0.04
30	54.13	54.395	54.04	0.09
31	52.08	56.408	52.00	0.08
32	51.63	56.843	51.56	0.07

TRANSDUCER CALIBRATION

SUMMARY OUTPUT: CALIBRATION OF OB-2Si TRANSDUCER

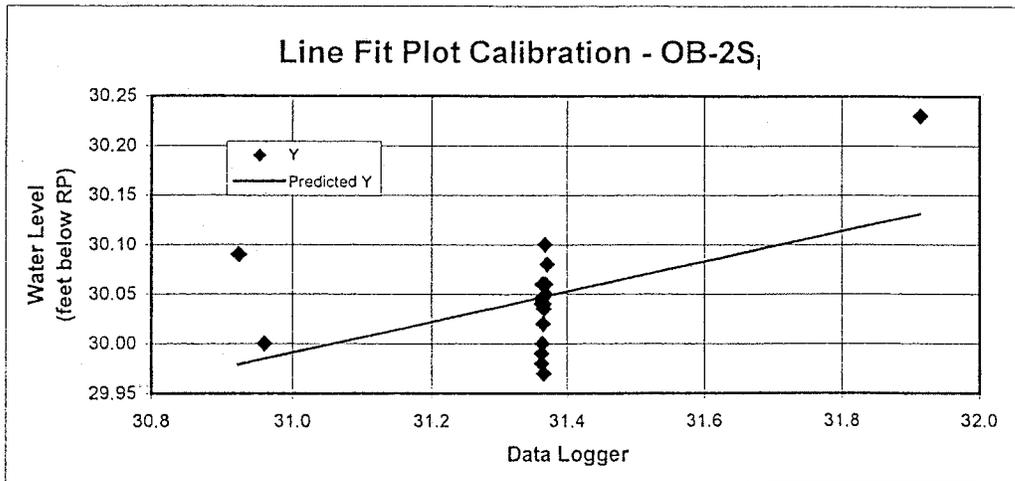
Regression Statistics	
Multiple R	0.5036
R ²	0.2536
Adj. R ²	0.2121
Std. Error	0.0503
Observation	20

ANOVA					
	df	SS	MS	F	Sig. F
Regression	1	0.0155	0.0155	6.1160	0.0236
Residual	18	0.0455	0.0025		
Total	19	0.0609			

	Coefficients	tandard Error	t Stat	P-value	Lower 95%	pper 95%	Lower 95.0%	Upper 95.0%
Intercept	25.2370	1.9441	12.9813	1.409E-10	21.1526	29.3214	21.1526	29.3214
X Variable 1	0.1534	0.0620	2.4731	0.0236	0.0231	0.2836	0.0231	0.2836

OB-2Si CALIBRATION

Observation	Measured	Data Logger	Predicted Y	Residuals
1	30.09	30.923	29.98	0.11
2	30.00	30.959	29.98	0.02
3	30.06	31.368	30.05	0.01
4	30.04	31.365	30.05	-0.01
5	30.04	31.362	30.05	-0.01
6	30.05	31.361	30.05	0.00
7	29.98	31.362	30.05	-0.07
8	29.97	31.365	30.05	-0.08
9	29.99	31.362	30.05	-0.06
10	30.00	31.363	30.05	-0.05
11	30.00	31.363	30.05	-0.05
12	30.02	31.364	30.05	-0.03
13	30.05	31.363	30.05	0.00
14	30.06	31.363	30.05	0.01
15	30.06	31.364	30.05	0.01
16	30.04	31.365	30.05	-0.01
17	30.10	31.367	30.05	0.05
18	30.05	31.368	30.05	0.00
19	30.08	31.370	30.05	0.03
20	30.23	31.914	30.13	0.10



TRANSDUCER CALIBRATION

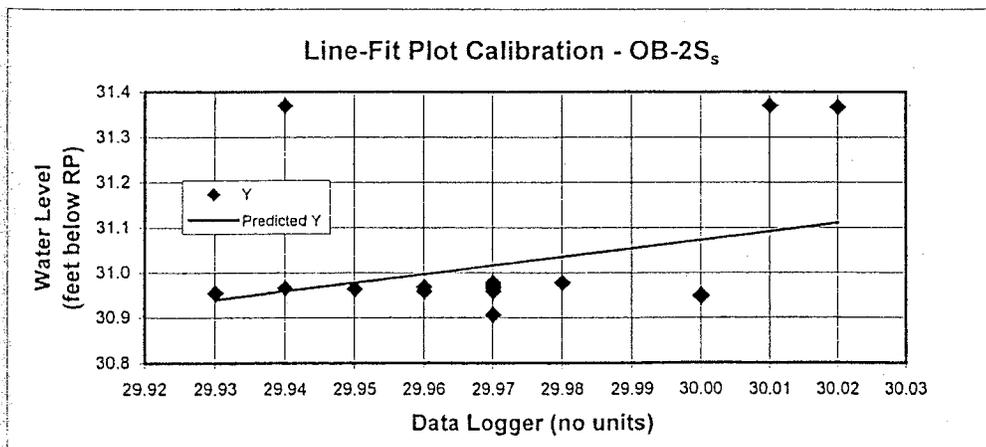
SUMMARY OUTPUT: CALIBRATION OF OB-2Ss TRANSDUCER

Regression Statistics	
Multiple R	0.3008
R Square	0.0905
Adjusted R Sq.	0.0399
Standard Error	0.1476
Observations	20

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0.0390	0.0390	1.7900	0.1976
Residual	18	0.3922	0.0218		
Total	19	0.4312			

	Coefficients	Std. Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-26.0040	42.6217	-0.6101	0.5494	-115.5489	63.5408	-115.5489	63.5408
X Variable 1	1.9026	1.4220	1.3379	0.1976	-1.0850	4.8901	-1.0850	4.8901

Observation	Measured	Data Logger	Predicted Y	Residuals
1	30.01	31.369	31.09	0.28
2	30.02	31.366	31.11	0.26
3	30.00	30.949	31.07	-0.12
4	30.00	30.947	31.07	-0.13
5	30.00	30.950	31.07	-0.12
6	29.98	30.977	31.03	-0.06
7	29.97	30.977	31.02	-0.04
8	29.97	30.969	31.02	-0.05
9	29.97	30.971	31.02	-0.04
10	29.96	30.968	31.00	-0.03
11	29.97	30.965	31.02	-0.05
12	29.97	30.958	31.02	-0.06
13	29.96	30.958	31.00	-0.04
14	29.97	30.958	31.02	-0.06
15	29.97	30.965	31.02	-0.05
16	29.97	30.906	31.02	-0.11
17	29.94	30.965	30.96	0.01
18	29.95	30.963	30.98	-0.01
19	29.93	30.954	30.94	0.01
20	29.94	31.369	30.96	0.41



PROJECT: Aquifer test, Flying J Knighton Road

DATE: August 1, 1998

Well: Production Well
pumping well

STAFF: Bonnie Lampley, Lawrence & Associates
Bryan Gartner, Lawrence & Associates

PUMP INFO:

OTHER: Datalogger 544B; Loc. 1; R.P. = N edge of cap on 6" tee.
Adjust discharge = 0.740; ran for ~ 5 min Pump on @ 08:20:10 Pump off @ 08:30

DATE	TIME	WATER LEVEL	DATA-LOGGER*	gpm DISCHARGE	COMMENTS
7/31/98	1737	52.02	54.307	0	
8-1-98	0733	52.02	54.388	0	
	0815	52.32	53.972	0	
	0821	94.48	4.425	600	
	0822	96.15	-0.561	↓	
	0823	96.15	-0.613	↓	
	0824	96.91	-0.635	↓	
	0827	97.84	-0.688	↓	
	0830	98.63	-0.710	↓	OFF; deeper transducer
start over	0934	52.49	61.507-81.629	0	
	0938	80.54	52.857	500	on @ 0935 @ 500 gpm
	0940	80.94	52.554	↓	meter @ 102
	0940	81.2754	52.178	↓	
	0941	81.80	51.732		
	0942	82.00	51.599		
	0943	82.20	51.199		
	0944	82.23	51.023		
	0945	82.51	51.000		
	0950	83.04	50.045		
	0951	83.25	49.889		
	0956	83.69	49.334		
	1007	87.09			adjust g sl. →
	1008	87.09	44.888		
	1013				Q = 500 gpm by stopwatch + totalizer
	1014	86.81	45.156		
	1020	87.04	44.888		
	1030	88.17	44.036		flow meter not working
	1040	88.89	42.507		
	1100				OFF
	1121	57.26	82.635		remove debris from flowmeter
	1142				flush @ full Q (~700 gpm)
	1140				for 30 seconds to remove poss. debris from casing.

al. 1

al. 2

DATE	TIME	WATER LEVEL	DATA-LOGGER	DISCHARGE	COMMENTS
8-1-98	1457	52.24	87.759	0	
	1501	82.34		525	start test again meter =
	1504	78.34	56.614	525	on @ 525 gpm 3510 gal
	1514	80.02	54.087	525	
	1518	80.20	53.394	"	
	1523	80.77	52.989	"	
	1534	81.54	51.929	"	
	1536			"	checked Q w/stopwatch; 525 gpm
	1542	81.91	51.684	525	
	1547	82.10	51.411	"	
	1555	82.38	51.032	"	
	1605	82.67	50.433	"	
	1613	82.84	50.610	"	
	1625	83.03	50.165	"	
	1651	83.40	49.579	"	
	1709	8		525	chkd. w/stopwatch
	1710	83.61	49.358	"	
	1724	83.77	49.293	"	
	1739	83.89	49.022	"	
	2044	84.30	48.535	~ 500	
	2049	85.74	47.610	525	adjust Q up to 525
	2100	85.19	47.350	"	
	2115	85.19	47.491	"	
8-2-98	0637	85.54	—	525	chkd w/stopwatch
	0900	85.52	47.006	"	
	1132	85.55	—	"	
	1453	85.66	46.774		
	1500		81.717		PUMP OFF @ 1500
	1501	58.48	82.030	0	meter = 752300
	1502	58.10	82.030	↓	
	1503	57.91	82.493	↓	
	1508	57.14	82.823		
	1512	56.64	84.423		
	1515	56.38	84.798		
	1517	56.13	84.972		
	1520	55.93	85.253		
	1522	55.80	85.430		
	1524	55.68	85.564		
	1535	55.14	86.294		
	1550	54.65	86.968		
	1943	52.60	89.703		
8-3-98	0710	52.09	90.318		

PROJECT: Aquifer test, Flying J Knighton Road

DATE: August 1, 1998

Well: OB-1D

STAFF: Bonnie Lampley, Lawrence & Associates

obs well

Bryan Gartner, Lawrence & Associates

PUMP INFO:

OTHER: Data logger 1916; Loc. 1; R.P. = top edge of riser next to stake

DATE	TIME	WATER LEVEL	DATA-LOGGER*	DISCHARGE	COMMENTS
7-31-98	1732	51.53	56.688	0	
		30.09	30.923		
8-1-98	0723	51.54	56.630	0	
	0819	51.78			
	0820	—			Pump on
	0821	55.11			
	0822	56.01			
	0823	56.52			
	0824	56.86			
	0825	57.14			
	0830	58.03			
	0831	58.17			Turned off pump
	0832	54.33			
	0858	52.37			
	0935	54.50			Pump on (500 gpm?)
	0936	55.44			
	0937	55.87			
	0938	56.17			
	0939	56.39			
	0940	56.59			
	0943	57.04			
	0945	57.27			
	0947	57.49			
	0950	57.76			
	0955	58.13			from top of mark
↓	1000	58.40	49.910		from middle of mark
cal	1016	59.40	48.983		
data	1026	59.76	48.627		

0N

52.10
~ 930

DATE	TIME	WATER LEVEL	DATA-LOGGER	DISCHARGE	COMMENTS
8-1-98	1509	56.93	51.380	525	
	1519	58.02	50.360		
	1528	58.63	49.821		
	1538	59.11	49.393		
	1549	59.36	49.023		
	1607	59.90	48.581		
	1652	60.57	47.930		
	1712	60.73	47.788		
	1725	60.82	47.685		
	1741	60.90	47.615		
	2050	61.34	47.230		
8-2-98	0640	61.55	47.059		
	0905	61.56	47.013		
	1134	61.57	47.097		↓
	1454	61.55	47.088	525	
	1505	57.09	51.565	φ	
	1507	56.75	51.878		
	1511	56.25	52.330		
	1514	55.96	52.613		
	1516	55.78	52.762		
	1518	55.53	52.909		
	1521	55.35	53.105		
	1523	55.24	53.222		
	1536	54.62	53.868		
	1552	54.13	54.395		
	1945	52.08	56.408		
8-3-98	0717	51.63	37.369 56.843		

PROJECT: Aquifer test, Flying J Knighton Road

DATE: August 1, 1998

Well:

OB-25; (2")
obs. well

STAFF: Bonnie Lampley, Lawrence & Associates

Bryan Gartner, Lawrence & Associates

PUMP INFO:

OTHER:

Data logger 544B; Loc. 2; R.P. = top, Sedge of riser

DATE	TIME	WATER LEVEL	DATA-LOGGER*	DISCHARGE	COMMENTS
7-31-98	1735	30.01	31.369		
8-1-98	0726	30.00	30.959		
8-1-98	0730	30.02	31.366		
	0827	29.99			
	0900	29.99			
	0942	29.99			
	0949	29.99			from top of mark
↓ cal	1005	30.00	30.949		from middle "
	1019	30.00	30.947		
	1029	30.00	30.950		
	1511	29.98	30.977		
	1521	29.97	30.977		
	1531	29.97	30.969		
	1540	29.97	30.971		
	1552	29.96	30.968		
	1610	29.97	30.965		
	1655	29.97	30.958		
	1714	29.96	30.958		
	1727	29.97	30.958		
	1743	29.97	30.965		
	2055	29.97	30.906		
8-2-98	0644	29.94	30.965		
	0907	29.95	—		
	0936	29.95	30.963		
	1947	29.93	30.954		
8-3-98	0715	29.94	31.369		

APPENDIX B

Data-logger data for OB-1D and OB-2S_I

DATA FOR OB-1D AND OB-2S₁

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	OB-1D (data logger) (no units)	OB-1D (water level) (feet below RP)	OB-1D (draw-down) (feet)	OB-2S ₁ (data logger) (no units)	OB-2S ₁ (water level) (feet below RP)
7/31/98 17:22			56.674	51.71		30.924	29.98
7/31/98 17:23			56.672	51.71		30.923	29.98
7/31/98 17:24			56.671	51.71		30.923	29.98
7/31/98 17:25			56.667	51.71		30.923	29.98
7/31/98 17:26			56.667	51.71		30.922	29.98
7/31/98 17:27			56.661	51.72		30.922	29.98
7/31/98 17:28			56.679	51.70		30.922	29.98
7/31/98 17:29			56.694	51.69		30.924	29.98
7/31/98 17:30			56.693	51.69		30.925	29.98
7/31/98 17:30			56.682	51.70		30.925	29.98
7/31/98 17:40			56.674	51.71		30.929	29.98
7/31/98 17:50			56.675	51.71		30.932	29.98
7/31/98 18:00			56.672	51.71		30.938	29.98
7/31/98 18:10			55.981	52.41		30.935	29.98
7/31/98 18:20			50.205	58.29		30.949	29.98
7/31/98 18:30			54.672	53.74		30.943	29.98
7/31/98 18:40			55.473	52.93		30.944	29.98
7/31/98 18:50			55.786	52.61		30.942	29.98
7/31/98 19:00			55.971	52.42		30.945	29.98
7/31/98 19:10			56.093	52.30		30.931	29.98
7/31/98 19:20			56.197	52.19		30.922	29.98
7/31/98 19:30			56.282	52.11		30.910	29.98
7/31/98 19:40			56.333	52.05		30.913	29.98
7/31/98 19:50			56.376	52.01		30.908	29.98
7/31/98 20:00			56.417	51.97		30.910	29.98
7/31/98 20:10			56.451	51.93		30.900	29.98
7/31/98 20:20			56.481	51.90		30.896	29.98
7/31/98 20:30			56.498	51.89		30.894	29.98
7/31/98 20:40			56.522	51.86		30.895	29.98
7/31/98 20:50			56.538	51.84		30.883	29.97
7/31/98 21:00			56.543	51.84		30.881	29.97
7/31/98 21:10			56.564	51.82		30.882	29.97
7/31/98 21:20			56.569	51.81		30.882	29.97
7/31/98 21:30			56.596	51.79		30.879	29.97
7/31/98 21:40			56.601	51.78		30.885	29.97
7/31/98 21:50			56.604	51.78		30.900	29.98
7/31/98 22:00			56.613	51.77		30.908	29.98
7/31/98 22:10			56.607	51.77		30.908	29.98
7/31/98 22:20			56.612	51.77		30.914	29.98
7/31/98 22:30			56.620	51.76		30.917	29.98
7/31/98 22:40			56.621	51.76		30.917	29.98
7/31/98 22:50			56.617	51.76		30.919	29.98
7/31/98 23:00			56.626	51.76		30.920	29.98
7/31/98 23:10			56.633	51.75		30.924	29.98
7/31/98 23:20			56.633	51.75		30.928	29.98
7/31/98 23:30			56.636	51.75		30.925	29.98
7/31/98 23:40			56.640	51.74		30.928	29.98
7/31/98 23:50			56.639	51.74		30.930	29.98
8/1/98 0:00			56.639	51.74		30.934	29.98
8/1/98 0:10			56.652	51.73		30.936	29.98
8/1/98 0:20			56.637	51.74		30.938	29.98
8/1/98 0:30			56.638	51.74		30.938	29.98
8/1/98 0:40			56.643	51.74		30.942	29.98
8/1/98 0:50			56.649	51.73		30.945	29.98
8/1/98 1:00			56.661	51.72		30.946	29.98
8/1/98 1:10			56.653	51.73		30.952	29.99
8/1/98 1:20			56.655	51.73		30.950	29.98
8/1/98 1:30			56.655	51.73		30.956	29.99
8/1/98 1:40			56.660	51.72		30.959	29.99
8/1/98 1:50			56.661	51.72		30.961	29.99
8/1/98 2:00			56.662	51.72		30.969	29.99

DATA FOR OB-1D AND OB-2Si

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	OB-1D (data logger) (no units) (feet below RP)	OB-1D (water level) (feet)	OB-1D (draw-down) (feet)	OB-2Si (data logger) (no units)	OB-2Si (water level) (feet below RP)
8/1/98 2:10			56.659	51.72		30.961	29.99
8/1/98 2:20			56.668	51.71		30.969	29.99
8/1/98 2:30			56.669	51.71		30.971	29.99
8/1/98 2:40			56.669	51.71		30.973	29.99
8/1/98 2:50			56.654	51.73		30.972	29.99
8/1/98 3:00			56.669	51.71		30.973	29.99
8/1/98 3:10			56.668	51.71		30.952	29.99
8/1/98 3:20			56.665	51.72		30.948	29.98
8/1/98 3:30			56.671	51.71		30.943	29.98
8/1/98 3:40			56.676	51.70		30.940	29.98
8/1/98 3:50			56.672	51.71		30.940	29.98
8/1/98 4:00			56.664	51.72		30.941	29.98
8/1/98 4:10			56.669	51.71		30.941	29.98
8/1/98 4:20			56.669	51.71		30.934	29.98
8/1/98 4:30			56.675	51.71		30.934	29.98
8/1/98 4:40			56.682	51.70		30.932	29.98
8/1/98 4:50			56.690	51.69		30.933	29.98
8/1/98 5:00			56.674	51.71		30.930	29.98
8/1/98 5:10			56.678	51.70		30.923	29.98
8/1/98 5:20			56.679	51.70		30.913	29.98
8/1/98 5:30			56.676	51.70		30.913	29.98
8/1/98 5:40			56.679	51.70		30.918	29.98
8/1/98 5:50			56.672	51.71		30.938	29.98
8/1/98 6:00			56.688	51.69		30.946	29.98
8/1/98 6:10			56.689	51.69		30.948	29.98
8/1/98 6:20			56.684	51.70		30.945	29.98
8/1/98 6:30			56.672	51.71		30.953	29.99
8/1/98 6:40			56.657	51.72		30.953	29.99
8/1/98 6:50			56.665	51.72		30.953	29.99
8/1/98 7:00			56.642	51.74		30.952	29.99
8/1/98 7:10			56.629	51.75		30.957	29.99
8/1/98 7:13			56.626	51.76		30.960	29.99
8/1/98 7:14			56.629	51.75		30.960	29.99
8/1/98 7:15			56.630	51.75		30.960	29.99
8/1/98 7:16			56.626	51.76		30.960	29.99
8/1/98 7:17			56.629	51.75		30.960	29.99
8/1/98 7:18			56.631	51.75		30.959	29.99
8/1/98 7:19			56.630	51.75		30.960	29.99
8/1/98 7:20			56.626	51.76		30.958	29.99
8/1/98 7:21			56.630	51.75		30.957	29.99
8/1/98 7:22			56.631	51.75		30.955	29.99
8/1/98 7:23			56.631	51.75		30.956	29.99
8/1/98 7:24			56.629	51.75		30.956	29.99
8/1/98 7:25			56.634	51.75		30.960	29.99
8/1/98 7:26			56.628	51.75		30.960	29.99
8/1/98 7:27			56.628	51.75		30.958	29.99
8/1/98 7:28			56.630	51.75		30.959	29.99
8/1/98 7:29			56.632	51.75		30.959	29.99
8/1/98 7:30			56.636	51.75		30.962	29.99
8/1/98 7:31			56.631	51.75		30.962	29.99
8/1/98 7:32			56.632	51.75		30.960	29.99
8/1/98 7:33			56.637	51.74		30.963	29.99
8/1/98 7:34			56.637	51.74		30.961	29.99
8/1/98 7:35			56.636	51.75		30.961	29.99
8/1/98 7:36			56.637	51.74		30.960	29.99
8/1/98 7:37			56.634	51.75		30.958	29.99
8/1/98 7:38			56.637	51.74		30.961	29.99
8/1/98 7:39			56.638	51.74		30.959	29.99
8/1/98 7:40			52.922	55.52		30.967	29.99
8/1/98 7:41			52.200	56.26		30.971	29.99
8/1/98 7:42			51.806	56.66		30.973	29.99

DATA FOR OB-1D AND OB-2Si

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t ⁰ (time since start/time since end) (no units)	OB-1D (data logger) (no units)	OB-1D (water level) (feet below RP)	OB-1D (draw-down) (feet)	OB-2Si (data logger) (no units)	OB-2Si (water level) (feet below RP)
8/1/98 7:43			51.578	56.89		30.970	29.99
8/1/98 7:44			54.729	53.68		30.969	29.99
8/1/98 7:45			55.083	53.32		30.964	29.99
8/1/98 7:46			55.375	53.03		30.964	29.99
8/1/98 7:47			55.551	52.85		30.964	29.99
8/1/98 7:48			55.674	52.72		30.964	29.99
8/1/98 7:49			55.775	52.62		30.964	29.99
8/1/98 7:50			55.848	52.55		30.963	29.99
8/1/98 7:51			55.905	52.49		30.963	29.99
8/1/98 7:52			55.964	52.43		30.964	29.99
8/1/98 7:53			56.004	52.39		30.964	29.99
8/1/98 7:54			56.036	52.36		30.963	29.99
8/1/98 7:55			56.075	52.32		30.964	29.99
8/1/98 7:56			56.099	52.29		30.956	29.99
8/1/98 7:57			56.122	52.27		30.954	29.99
8/1/98 7:58			56.145	52.24		30.953	29.99
8/1/98 7:59			56.162	52.23		30.953	29.99
8/1/98 8:00			56.187	52.20		30.953	29.99
8/1/98 8:01			56.203	52.19		30.952	29.99
8/1/98 8:02			56.208	52.18		30.952	29.99
8/1/98 8:03			56.225	52.16		30.953	29.99
8/1/98 8:04			56.238	52.15		30.956	29.99
8/1/98 8:05			56.249	52.14		30.952	29.99
8/1/98 8:06			56.265	52.12		30.952	29.99
8/1/98 8:07			56.277	52.11		30.952	29.99
8/1/98 8:08			56.283	52.10		30.952	29.99
8/1/98 8:09			56.299	52.09		30.950	29.98
8/1/98 8:10			56.311	52.08		30.950	29.98
8/1/98 8:11			56.323	52.06		30.950	29.98
8/1/98 8:12			56.329	52.06		30.952	29.99
8/1/98 8:13			56.340	52.05		30.952	29.99
8/1/98 8:14			56.350	52.04		30.952	29.99
8/1/98 8:15			56.360	52.03		30.948	29.98
8/1/98 8:16			56.376	52.01		30.952	29.99
8/1/98 8:17			56.369	52.02		30.946	29.98
8/1/98 8:18			56.375	52.01		30.943	29.98
8/1/98 8:19			56.387	52.00		30.944	29.98
8/1/98 8:20			56.387	52.00		30.944	29.98
8/1/98 8:21			53.413	55.02		30.953	29.99
8/1/98 8:22			52.387	56.07		30.951	29.98
8/1/98 8:23			51.860	56.60		30.953	29.99
8/1/98 8:24			51.498	56.97		30.953	29.99
8/1/98 8:25			51.213	57.26		30.953	29.99
8/1/98 8:26			50.979	57.50		30.958	29.99
8/1/98 8:27			50.783	57.70		30.960	29.99
8/1/98 8:28			50.619	57.86		30.958	29.99
8/1/98 8:29			50.451	58.04		30.960	29.99
8/1/98 8:30			50.306	58.18		30.961	29.99
8/1/98 8:31			50.180	58.31		30.961	29.99
8/1/98 8:32			53.574	54.86		30.952	29.99
8/1/98 8:33			53.989	54.44		30.947	29.98
8/1/98 8:34			54.340	54.08		30.944	29.98
8/1/98 8:35			54.565	53.85		30.941	29.98
8/1/98 8:36			54.721	53.69		30.942	29.98
8/1/98 8:37			54.856	53.56		30.939	29.98
8/1/98 8:38			54.962	53.45		30.942	29.98
8/1/98 8:39			55.053	53.36		30.942	29.98
8/1/98 8:40			55.133	53.27		30.943	29.98
8/1/98 8:41			55.206	53.20		30.945	29.98
8/1/98 8:42			55.267	53.14		30.947	29.98
8/1/98 8:43			55.318	53.09		30.947	29.98

DATA FOR OB-1D AND OB-2Si

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	OB-1D (data logger) (no units)	OB-1D (water level) (feet below RP)	OB-1D (draw-down) (feet)	OB-2Si (data logger) (no units)	OB-2Si (water level) (feet below RP)
8/1/98 8:44			55.375	53.03		30.948	29.98
8/1/98 8:45			55.420	52.98		30.947	29.98
8/1/98 8:46			55.468	52.93		30.943	29.98
8/1/98 8:47			55.512	52.89		30.943	29.98
8/1/98 8:48			55.542	52.86		30.941	29.98
8/1/98 8:49			55.577	52.82		30.941	29.98
8/1/98 8:50			55.602	52.80		30.940	29.98
8/1/98 8:51			55.637	52.76		30.937	29.98
8/1/98 8:52			55.664	52.73		30.939	29.98
8/1/98 8:53			55.677	52.72		30.939	29.98
8/1/98 8:54			55.708	52.69		30.939	29.98
8/1/98 8:55			55.725	52.67		30.939	29.98
8/1/98 8:56			55.752	52.64		30.941	29.98
8/1/98 8:57			55.782	52.61		30.943	29.98
8/1/98 8:58			55.806	52.59		30.942	29.98
8/1/98 8:59			55.822	52.57		30.941	29.98
8/1/98 9:00			55.841	52.55		30.939	29.98
8/1/98 9:01			55.854	52.54		30.939	29.98
8/1/98 9:02			55.871	52.52		30.940	29.98
8/1/98 9:03			55.890	52.50		30.940	29.98
8/1/98 9:04			55.897	52.50		30.942	29.98
8/1/98 9:05			55.919	52.47		30.943	29.98
8/1/98 9:06			55.938	52.46		30.944	29.98
8/1/98 9:07			55.953	52.44		30.943	29.98
8/1/98 9:08			55.964	52.43		30.943	29.98
8/1/98 9:09			55.968	52.42		30.942	29.98
8/1/98 9:10			55.983	52.41		30.936	29.98
8/1/98 9:11			55.998	52.39		30.935	29.98
8/1/98 9:12			56.010	52.38		30.932	29.98
8/1/98 9:13			56.014	52.38		30.931	29.98
8/1/98 9:14			56.035	52.36		30.926	29.98
8/1/98 9:15			56.056	52.34		30.927	29.98
8/1/98 9:16			56.070	52.32		30.923	29.98
8/1/98 9:17			56.083	52.31		30.931	29.98
8/1/98 9:18			56.096	52.29		30.926	29.98
8/1/98 9:19			56.108	52.28		30.926	29.98
8/1/98 9:20			56.111	52.28		30.926	29.98
8/1/98 9:21			56.115	52.28		30.931	29.98
8/1/98 9:22			56.129	52.26		30.931	29.98
8/1/98 9:23			56.135	52.25		30.934	29.98
8/1/98 9:24			56.146	52.24		30.936	29.98
8/1/98 9:25			56.157	52.23		30.936	29.98
8/1/98 9:26			56.161	52.23		30.936	29.98
8/1/98 9:27			56.166	52.22		30.937	29.98
8/1/98 9:28			56.173	52.22		30.934	29.98
8/1/98 9:29			56.181	52.21		30.933	29.98
8/1/98 9:30			56.189	52.20		30.931	29.98
8/1/98 9:31			56.188	52.20		30.931	29.98
8/1/98 9:32			56.187	52.20		30.931	29.98
8/1/98 9:33			56.199	52.19		30.935	29.98
8/1/98 9:34			56.203	52.19		30.936	29.98
8/1/98 9:35			53.990	54.44		30.938	29.98
8/1/98 9:36			52.944	55.50		30.946	29.98
8/1/98 9:37			52.494	55.96		30.946	29.98
8/1/98 9:38			52.177	56.28		30.946	29.98
8/1/98 9:39			51.933	56.53		30.943	29.98
8/1/98 9:40			51.723	56.74		30.942	29.98
8/1/98 9:41			51.556	56.91		30.938	29.98
8/1/98 9:42			51.399	57.07		30.943	29.98
8/1/98 9:43			51.267	57.21		30.940	29.98
8/1/98 9:44			51.145	57.33		30.945	29.98

DATA FOR OB-1D AND OB-2S_i

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	OB-1D (data logger) (no units)	OB-1D (water level) (feet below RP)	OB-1D (draw-down) (feet)	OB-2S _i (data logger) (no units)	OB-2S _i (water level) (feet below RP)
8/1/98 9:45			51.042	57.43		30.946	29.98
8/1/98 9:46			50.945	57.53		30.946	29.98
8/1/98 9:47			50.858	57.62		30.948	29.98
8/1/98 9:48			50.751	57.73		30.945	29.98
8/1/98 9:49			50.673	57.81		30.944	29.98
8/1/98 9:50			50.585	57.90		30.944	29.98
8/1/98 9:51			50.502	57.98		30.940	29.98
8/1/98 9:52			50.436	58.05		30.942	29.98
8/1/98 9:53			50.368	58.12		30.940	29.98
8/1/98 9:54			50.295	58.19		30.940	29.98
8/1/98 9:55			50.230	58.26		30.942	29.98
8/1/98 9:56			50.172	58.32		30.945	29.98
8/1/98 9:57			50.107	58.39		30.945	29.98
8/1/98 9:58			50.035	58.46		30.945	29.98
8/1/98 9:59			49.967	58.53		30.946	29.98
8/1/98 10:00			49.910	58.59		30.947	29.98
8/1/98 10:01			49.855	58.64		30.947	29.98
8/1/98 10:02			49.806	58.69		30.947	29.98
8/1/98 10:03			49.763	58.74		30.950	29.98
8/1/98 10:04			49.710	58.79		30.949	29.98
8/1/98 10:05			49.664	58.84		30.949	29.98
8/1/98 10:06			49.616	58.88		30.949	29.98
8/1/98 10:07			49.317	59.19		30.949	29.98
8/1/98 10:08			49.288	59.22		30.949	29.98
8/1/98 10:09			49.227	59.28		30.950	29.98
8/1/98 10:10			49.167	59.34		30.950	29.98
8/1/98 10:11			49.165	59.34		30.949	29.98
8/1/98 10:12			49.139	59.37		30.951	29.98
8/1/98 10:13			49.094	59.42		30.950	29.98
8/1/98 10:14			49.058	59.45		30.952	29.99
8/1/98 10:15			49.024	59.49		30.955	29.99
8/1/98 10:16			48.983	59.53		30.955	29.99
8/1/98 10:17			48.949	59.56		30.953	29.99
8/1/98 10:18			48.913	59.60		30.951	29.98
8/1/98 10:19			48.872	59.64		30.947	29.98
8/1/98 10:20			48.842	59.67		30.949	29.98
8/1/98 10:21			48.813	59.70		30.949	29.98
8/1/98 10:22			48.787	59.73		30.947	29.98
8/1/98 10:23			48.762	59.75		30.950	29.98
8/1/98 10:24			48.716	59.80		30.947	29.98
8/1/98 10:25			48.669	59.85		30.950	29.98
8/1/98 10:26			48.627	59.89		30.950	29.98
8/1/98 10:27			48.608	59.91		30.953	29.99
8/1/98 10:28			48.578	59.94		30.950	29.98
8/1/98 10:29			48.548	59.97		30.950	29.98
8/1/98 10:30			48.528	59.99		30.948	29.98
8/1/98 10:31			48.467	60.05		30.948	29.98
8/1/98 10:32			48.412	60.11		30.948	29.98
8/1/98 10:33			48.364	60.16		30.945	29.98
8/1/98 10:34			48.321	60.20		30.944	29.98
8/1/98 10:35			48.291	60.23		30.945	29.98
8/1/98 10:36			48.257	60.27		30.945	29.98
8/1/98 10:37			48.231	60.29		30.948	29.98
8/1/98 10:38			48.213	60.31		30.951	29.98
8/1/98 10:39			48.198	60.33		30.948	29.98
8/1/98 10:40			48.167	60.36		30.949	29.98
8/1/98 10:41			48.144	60.38		30.948	29.98
8/1/98 10:42			48.125	60.40		30.948	29.98
8/1/98 10:43			48.109	60.42		30.949	29.98
8/1/98 10:44			48.085	60.44		30.952	29.99
8/1/98 10:45			48.062	60.46		30.951	29.98

DATA FOR OB-1D AND OB-2Si

Date/Time	Time Since Pumping Started (minutes)	Ratio l/t' (time since start/time since end) (no units)	OB-1D (data logger) (no units)	OB-1D (water level) (feet below RP)	OB-1D (draw-down) (feet)	OB-2Si (data logger) (no units)	OB-2Si (water level) (feet below RP)
8/1/98 10:46			48.039	60.49		30.953	29.99
8/1/98 10:47			48.021	60.51		30.953	29.99
8/1/98 10:48			48.005	60.52		30.953	29.99
8/1/98 10:49			47.989	60.54		30.955	29.99
8/1/98 10:50			47.968	60.56		30.955	29.99
8/1/98 10:51			47.955	60.57		30.958	29.99
8/1/98 10:52			47.942	60.59		30.955	29.99
8/1/98 10:53			47.932	60.60		30.958	29.99
8/1/98 10:54			47.920	60.61		30.957	29.99
8/1/98 10:55			47.905	60.62		30.957	29.99
8/1/98 10:56			47.884	60.65		30.959	29.99
8/1/98 10:57			47.867	60.66		30.959	29.99
8/1/98 10:58			47.833	60.70		30.955	29.99
8/1/98 10:59			47.817	60.71		30.956	29.99
8/1/98 11:00			47.805	60.73		30.953	29.99
8/1/98 11:01			47.786	60.75		30.956	29.99
8/1/98 11:02			47.775	60.76		30.955	29.99
8/1/98 11:03			47.767	60.76		30.953	29.99
8/1/98 11:04			47.755	60.78		30.953	29.99
8/1/98 11:05			47.739	60.79		30.953	29.99
8/1/98 11:06			47.717	60.82		30.957	29.99
8/1/98 11:07			47.706	60.83		30.957	29.99
8/1/98 11:08			47.702	60.83		30.957	29.99
8/1/98 11:09			47.693	60.84		30.956	29.99
8/1/98 11:10			47.671	60.86		30.956	29.99
8/1/98 11:11			47.673	60.86		30.954	29.99
8/1/98 11:12			47.662	60.87		30.951	29.98
8/1/98 11:13			47.661	60.87		30.949	29.98
8/1/98 11:14			47.658	60.88		30.949	29.98
8/1/98 11:15			47.646	60.89		30.946	29.98
8/1/98 11:16			47.621	60.91		30.949	29.98
8/1/98 11:17			47.600	60.93		30.954	29.99
8/1/98 11:18			47.581	60.95		30.954	29.99
8/1/98 11:19			47.573	60.96		30.957	29.99
8/1/98 11:20			50.716	57.77		30.957	29.99
8/1/98 11:21			51.185	57.29		30.947	29.98
8/1/98 11:22			51.582	56.89		30.949	29.98
8/1/98 11:23			51.860	56.60		30.948	29.98
8/1/98 11:24			52.084	56.37		30.948	29.98
8/1/98 11:25			52.275	56.18		30.945	29.98
8/1/98 11:26			52.446	56.01		30.947	29.98
8/1/98 11:27			52.584	55.87		30.945	29.98
8/1/98 11:28			52.697	55.75		30.948	29.98
8/1/98 11:29			52.804	55.64		30.952	29.99
8/1/98 11:30			52.905	55.54		30.947	29.98
8/1/98 11:31			52.998	55.45		30.950	29.98
8/1/98 11:32			53.094	55.35		30.947	29.98
8/1/98 11:33			53.180	55.26		30.947	29.98
8/1/98 11:34			53.261	55.18		30.951	29.98
8/1/98 11:35			50.562	57.92		30.955	29.99
8/1/98 11:36			49.823	58.67		30.957	29.99
8/1/98 11:37			53.024	55.42		30.953	29.99
8/1/98 11:38			53.032	55.41		30.954	29.99
8/1/98 11:39			53.196	55.24		30.952	29.99
8/1/98 11:40			53.325	55.11		30.952	29.99
8/1/98 11:41			53.428	55.01		30.952	29.99
8/1/98 11:42			53.516	54.92		30.954	29.99
8/1/98 11:43			53.589	54.84		30.952	29.99
8/1/98 11:44			53.658	54.77		30.955	29.99
8/1/98 11:45			53.722	54.71		30.954	29.99
8/1/98 11:46			53.798	54.63		30.957	29.99

DATA FOR OB-1D AND OB-2Si

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	OB-1D (data logger) (no units)	OB-1D (water level) (feet below RP)	OB-1D (draw-down) (feet)	OB-2Si (data logger) (no units)	OB-2Si (water level) (feet below RP)
8/1/98 11:47			53.859	54.57		30.954	29.99
8/1/98 11:48			53.926	54.50		30.957	29.99
8/1/98 11:49			53.996	54.43		30.957	29.99
8/1/98 11:50			54.048	54.38		30.959	29.99
8/1/98 11:51			54.105	54.32		30.959	29.99
8/1/98 11:52			54.148	54.28		30.956	29.99
8/1/98 11:53			54.190	54.23		30.956	29.99
8/1/98 11:54			54.228	54.19		30.958	29.99
8/1/98 11:55			54.255	54.17		30.958	29.99
8/1/98 11:56			54.289	54.13		30.961	29.99
8/1/98 11:57			54.335	54.09		30.961	29.99
8/1/98 11:58			54.369	54.05		30.962	29.99
8/1/98 11:59			54.416	54.00		30.962	29.99
8/1/98 12:00			54.457	53.96		30.964	29.99
8/1/98 12:01			54.487	53.93		30.960	29.99
8/1/98 12:02			54.532	53.88		30.954	29.99
8/1/98 12:03			54.567	53.85		30.954	29.99
8/1/98 12:04			54.601	53.81		30.955	29.99
8/1/98 12:05			54.624	53.79		30.955	29.99
8/1/98 12:06			54.662	53.75		30.955	29.99
8/1/98 12:07			54.692	53.72		30.955	29.99
8/1/98 12:08			54.724	53.69		30.958	29.99
8/1/98 12:09			54.753	53.66		30.957	29.99
8/1/98 12:10			54.784	53.63		30.960	29.99
8/1/98 12:11			54.814	53.60		30.957	29.99
8/1/98 12:12			54.846	53.57		30.962	29.99
8/1/98 12:13			54.860	53.55		30.963	29.99
8/1/98 12:14			54.876	53.54		30.964	29.99
8/1/98 12:15			54.890	53.52		30.962	29.99
8/1/98 12:16			54.921	53.49		30.963	29.99
8/1/98 12:17			54.951	53.46		30.962	29.99
8/1/98 12:18			54.978	53.43		30.963	29.99
8/1/98 12:19			55.001	53.41		30.962	29.99
8/1/98 12:20			55.028	53.38		30.962	29.99
8/1/98 12:21			55.054	53.35		30.963	29.99
8/1/98 12:22			55.077	53.33		30.958	29.99
8/1/98 12:23			55.103	53.30		30.961	29.99
8/1/98 12:24			55.126	53.28		30.958	29.99
8/1/98 12:25			55.133	53.27		30.956	29.99
8/1/98 12:26			55.168	53.24		30.953	29.99
8/1/98 12:27			55.193	53.21		30.955	29.99
8/1/98 12:28			55.201	53.20		30.955	29.99
8/1/98 12:29			55.211	53.19		30.955	29.99
8/1/98 12:30			55.229	53.18		30.961	29.99
8/1/98 12:31			55.234	53.17		30.963	29.99
8/1/98 12:32			55.249	53.16		30.963	29.99
8/1/98 12:33			55.270	53.13		30.962	29.99
8/1/98 12:34			55.290	53.11		30.963	29.99
8/1/98 12:35			55.315	53.09		30.962	29.99
8/1/98 12:36			55.334	53.07		30.963	29.99
8/1/98 12:37			55.350	53.05		30.967	29.99
8/1/98 12:38			55.362	53.04		30.967	29.99
8/1/98 12:39			55.373	53.03		30.967	29.99
8/1/98 12:40			55.395	53.01		30.968	29.99
8/1/98 12:41			55.403	53.00		30.967	29.99
8/1/98 12:42			55.421	52.98		30.965	29.99
8/1/98 12:43			55.436	52.97		30.962	29.99
8/1/98 12:44			55.452	52.95		30.962	29.99
8/1/98 12:45			55.462	52.94		30.962	29.99
8/1/98 12:46			55.475	52.93		30.962	29.99
8/1/98 12:47			55.488	52.91		30.960	29.99

DATA FOR OB-1D AND OB-2Si

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	OB-1D (data logger) (no units)	OB-1D (water level) (feet below RP)	OB-1D (draw-down) (feet)	OB-2Si (data logger) (no units)	OB-2Si (water level) (feet below RP)
8/1/98 12:48			55.502	52.90		30.955	29.99
8/1/98 12:49			55.521	52.88		30.959	29.99
8/1/98 12:50			55.543	52.86		30.960	29.99
8/1/98 12:51			55.552	52.85		30.959	29.99
8/1/98 12:52			55.562	52.84		30.958	29.99
8/1/98 12:53			55.571	52.83		30.962	29.99
8/1/98 12:54			55.593	52.81		30.961	29.99
8/1/98 12:55			55.613	52.79		30.962	29.99
8/1/98 12:56			55.627	52.77		30.961	29.99
8/1/98 12:57			55.642	52.76		30.961	29.99
8/1/98 12:58			55.646	52.75		30.961	29.99
8/1/98 12:59			55.658	52.74		30.960	29.99
8/1/98 13:00			55.672	52.73		30.961	29.99
8/1/98 13:01			55.680	52.72		30.962	29.99
8/1/98 13:02			55.691	52.71		30.960	29.99
8/1/98 13:03			55.705	52.69		30.960	29.99
8/1/98 13:04			55.724	52.67		30.959	29.99
8/1/98 13:05			55.747	52.65		30.959	29.99
8/1/98 13:06			55.763	52.63		30.960	29.99
8/1/98 13:07			55.778	52.62		30.961	29.99
8/1/98 13:08			55.793	52.60		30.963	29.99
8/1/98 13:09			55.807	52.59		30.964	29.99
8/1/98 13:10			55.835	52.56		30.965	29.99
8/1/98 13:11			55.853	52.54		30.969	29.99
8/1/98 13:12			55.865	52.53		30.969	29.99
8/1/98 13:13			55.880	52.51		30.969	29.99
8/1/98 13:14			55.887	52.51		30.969	29.99
8/1/98 13:15			55.900	52.49		30.968	29.99
8/1/98 13:16			55.902	52.49		30.968	29.99
8/1/98 13:17			55.906	52.49		30.968	29.99
8/1/98 13:18			55.897	52.50		30.968	29.99
8/1/98 13:19			55.899	52.49		30.968	29.99
8/1/98 13:20			55.891	52.50		30.968	29.99
8/1/98 13:21			55.888	52.51		30.968	29.99
8/1/98 13:22			55.892	52.50		30.968	29.99
8/1/98 13:23			55.888	52.51		30.968	29.99
8/1/98 13:24			55.891	52.50		30.968	29.99
8/1/98 13:25			55.906	52.49		30.968	29.99
8/1/98 13:26			55.922	52.47		30.968	29.99
8/1/98 13:27			55.928	52.47		30.968	29.99
8/1/98 13:28			55.952	52.44		30.967	29.99
8/1/98 13:29			55.965	52.43		30.968	29.99
8/1/98 13:30			55.971	52.42		30.970	29.99
8/1/98 13:31			55.983	52.41		30.971	29.99
8/1/98 13:32			55.988	52.40		30.968	29.99
8/1/98 13:33			55.985	52.41		30.965	29.99
8/1/98 13:34			55.981	52.41		30.965	29.99
8/1/98 13:35			55.983	52.41		30.964	29.99
8/1/98 13:36			55.988	52.40		30.965	29.99
8/1/98 13:37			55.998	52.39		30.966	29.99
8/1/98 13:38			56.006	52.39		30.967	29.99
8/1/98 13:39			56.014	52.38		30.967	29.99
8/1/98 13:40			56.025	52.37		30.966	29.99
8/1/98 13:41			56.030	52.36		30.967	29.99
8/1/98 13:42			56.053	52.34		30.967	29.99
8/1/98 13:43			56.056	52.34		30.970	29.99
8/1/98 13:44			56.073	52.32		30.970	29.99
8/1/98 13:45			56.089	52.30		30.970	29.99
8/1/98 13:46			56.097	52.29		30.970	29.99
8/1/98 13:47			56.109	52.28		30.969	29.99
8/1/98 13:48			56.115	52.28		30.970	29.99

DATA FOR OB-1D AND OB-2Si

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	OB-1D (data logger) (no units)	OB-1D (water level) (feet below RP)	OB-1D (draw-down) (feet)	OB-2Si (data logger) (no units)	OB-2Si (water level) (feet below RP)
8/1/98 13:49			56.112	52.28		30.972	29.99
8/1/98 13:50			56.116	52.27		30.968	29.99
8/1/98 13:51			56.124	52.27		30.972	29.99
8/1/98 13:52			56.114	52.28		30.971	29.99
8/1/98 13:53			56.108	52.28		30.967	29.99
8/1/98 13:54			56.111	52.28		30.968	29.99
8/1/98 13:55			56.113	52.28		30.965	29.99
8/1/98 13:56			56.123	52.27		30.963	29.99
8/1/98 13:57			56.126	52.26		30.965	29.99
8/1/98 13:58			56.138	52.25		30.968	29.99
8/1/98 13:59			56.153	52.24		30.968	29.99
8/1/98 14:00			56.164	52.23		30.969	29.99
8/1/98 14:01			56.168	52.22		30.969	29.99
8/1/98 14:02			56.172	52.22		30.968	29.99
8/1/98 14:03			56.190	52.20		30.968	29.99
8/1/98 14:04			56.207	52.18		30.968	29.99
8/1/98 14:05			56.216	52.17		30.968	29.99
8/1/98 14:06			56.225	52.16		30.968	29.99
8/1/98 14:07			56.228	52.16		30.969	29.99
8/1/98 14:08			56.228	52.16		30.968	29.99
8/1/98 14:09			56.229	52.16		30.968	29.99
8/1/98 14:10			56.246	52.14		30.968	29.99
8/1/98 14:11			56.225	52.16		30.967	29.99
8/1/98 14:12			56.236	52.15		30.968	29.99
8/1/98 14:13			56.233	52.16		30.968	29.99
8/1/98 14:14			56.225	52.16		30.968	29.99
8/1/98 14:15			56.240	52.15		30.968	29.99
8/1/98 14:16			56.247	52.14		30.971	29.99
8/1/98 14:17			56.251	52.14		30.967	29.99
8/1/98 14:18			56.267	52.12		30.967	29.99
8/1/98 14:19			56.274	52.11		30.968	29.99
8/1/98 14:20			56.286	52.10		30.965	29.99
8/1/98 14:21			56.298	52.09		30.963	29.99
8/1/98 14:22			56.292	52.10		30.964	29.99
8/1/98 14:23			56.303	52.08		30.965	29.99
8/1/98 14:24			56.318	52.07		30.964	29.99
8/1/98 14:25			56.317	52.07		30.963	29.99
8/1/98 14:26			56.313	52.07		30.964	29.99
8/1/98 14:27			56.309	52.08		30.963	29.99
8/1/98 14:28			56.318	52.07		30.966	29.99
8/1/98 14:29			56.315	52.07		30.963	29.99
8/1/98 14:30			56.315	52.07		30.967	29.99
8/1/98 14:31			56.317	52.07		30.966	29.99
8/1/98 14:32			56.313	52.07		30.966	29.99
8/1/98 14:33			56.312	52.07		30.968	29.99
8/1/98 14:34			56.317	52.07		30.966	29.99
8/1/98 14:35			56.324	52.06		30.967	29.99
8/1/98 14:36			56.323	52.06		30.966	29.99
8/1/98 14:37			56.328	52.06		30.967	29.99
8/1/98 14:38			56.331	52.06		30.966	29.99
8/1/98 14:39			56.332	52.05		30.967	29.99
8/1/98 14:40			56.332	52.05		30.966	29.99
8/1/98 14:41			53.552	54.88		30.971	29.99
8/1/98 14:42			56.009	52.38		30.971	29.99
8/1/98 14:43			56.072	52.32		30.972	29.99
8/1/98 14:44			56.149	52.24		30.971	29.99
8/1/98 14:45			56.193	52.20		30.971	29.99
8/1/98 14:46			56.223	52.17		30.966	29.99
8/1/98 14:47			56.246	52.14		30.968	29.99
8/1/98 14:48			56.254	52.13		30.966	29.99
8/1/98 14:49			56.268	52.12		30.966	29.99

DATA FOR OB-1D AND OB-2Si

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	OB-1D (data logger) (no units)	OB-1D (water level) (feet below RP)	OB-1D (draw-down) (feet)	OB-2Si (data logger) (no units)	OB-2Si (water level) (feet below RP)
8/1/98 14:50			56.281	52.11		30.967	29.99
8/1/98 14:51			56.284	52.10		30.964	29.99
8/1/98 14:52			56.300	52.09		30.966	29.99
8/1/98 14:53			56.312	52.07		30.964	29.99
8/1/98 14:54			56.323	52.06		30.964	29.99
8/1/98 14:55			56.326	52.06		30.966	29.99
8/1/98 14:56			56.337	52.05		30.967	29.99
8/1/98 14:57			56.337	52.05		30.971	29.99
8/1/98 14:58			56.345	52.04		30.969	29.99
8/1/98 14:59			56.361	52.02		30.967	29.99
8/1/98 14:59			56.349	52.04		30.964	29.99
8/1/98 15:00			56.355	52.03		30.965	29.99
8/1/98 15:01	0		56.355	52.03	0.00	30.963	29.99
8/1/98 15:02	1		53.587	54.85	2.82	30.969	29.99
8/1/98 15:03	2		52.847	55.60	3.57	30.972	29.99
8/1/98 15:04	3		52.424	56.03	4.00	30.972	29.99
8/1/98 15:05	4		52.135	56.32	4.29	30.971	29.99
8/1/98 15:06	5		51.899	56.56	4.53	30.972	29.99
8/1/98 15:07	6		51.708	56.76	4.73	30.972	29.99
8/1/98 15:08	7		51.540	56.93	4.90	30.974	29.99
8/1/98 15:09	8		51.380	57.09	5.06	30.976	29.99
8/1/98 15:10	9		51.245	57.23	5.20	30.977	29.99
8/1/98 15:11	10		51.123	57.35	5.32	30.977	29.99
8/1/98 15:12	11		51.011	57.47	5.43	30.982	29.99
8/1/98 15:13	12		50.904	57.57	5.54	30.979	29.99
8/1/98 15:14	13		50.797	57.68	5.65	30.977	29.99
8/1/98 15:15	14		50.690	57.79	5.76	30.977	29.99
8/1/98 15:16	15		50.590	57.89	5.86	30.977	29.99
8/1/98 15:17	16		50.513	57.97	5.94	30.977	29.99
8/1/98 15:18	17		50.446	58.04	6.01	30.974	29.99
8/1/98 15:19	18		50.360	58.13	6.10	30.977	29.99
8/1/98 15:20	19		50.302	58.19	6.16	30.977	29.99
8/1/98 15:21	20		50.242	58.25	6.22	30.977	29.99
8/1/98 15:22	21		50.178	58.31	6.28	30.977	29.99
8/1/98 15:23	22		50.107	58.39	6.35	30.977	29.99
8/1/98 15:24	23		50.036	58.46	6.43	30.979	29.99
8/1/98 15:25	24		49.978	58.52	6.49	30.978	29.99
8/1/98 15:26	25		49.932	58.56	6.53	30.979	29.99
8/1/98 15:27	26		49.883	58.61	6.58	30.980	29.99
8/1/98 15:28	27		49.821	58.68	6.65	30.979	29.99
8/1/98 15:29	28		49.769	58.73	6.70	30.974	29.99
8/1/98 15:30	29		49.711	58.79	6.76	30.973	29.99
8/1/98 15:31	30		49.657	58.84	6.81	30.969	29.99
8/1/98 15:32	31		49.599	58.90	6.87	30.970	29.99
8/1/98 15:33	32		49.552	58.95	6.92	30.970	29.99
8/1/98 15:34	33		49.504	59.00	6.97	30.973	29.99
8/1/98 15:35	34		49.467	59.04	7.01	30.970	29.99
8/1/98 15:36	35		49.424	59.08	7.05	30.970	29.99
8/1/98 15:37	36		49.398	59.11	7.08	30.970	29.99
8/1/98 15:38	37		49.393	59.11	7.08	30.970	29.99
8/1/98 15:39	38		49.349	59.16	7.13	30.973	29.99
8/1/98 15:40	39		49.317	59.19	7.16	30.971	29.99
8/1/98 15:41	40		49.269	59.24	7.21	30.972	29.99
8/1/98 15:42	41		49.231	59.28	7.25	30.976	29.99
8/1/98 15:43	42		49.208	59.30	7.27	30.975	29.99
8/1/98 15:44	43		49.180	59.33	7.30	30.973	29.99
8/1/98 15:45	44		49.142	59.37	7.34	30.971	29.99
8/1/98 15:46	45		49.103	59.41	7.38	30.970	29.99
8/1/98 15:47	46		49.084	59.43	7.39	30.970	29.99
8/1/98 15:48	47		49.053	59.46	7.43	30.970	29.99
8/1/98 15:49	48		49.023	59.49	7.46	30.970	29.99

DATA FOR OB-1D AND OB-2Si

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	OB-1D (data logger) (no units)	OB-1D (water level) (feet below RP)	OB-1D (draw-down) (feet)	OB-2Si (data logger) (no units)	OB-2Si (water level) (feet below RP)
8/1/98 15:50	49		48.997	59.51	7.48	30.969	29.99
8/1/98 15:51	50		48.960	59.55	7.52	30.968	29.99
8/1/98 15:52	51		48.928	59.58	7.55	30.968	29.99
8/1/98 15:53	52		48.901	59.61	7.58	30.968	29.99
8/1/98 15:54	53		48.886	59.63	7.60	30.971	29.99
8/1/98 15:55	54		48.855	59.66	7.63	30.969	29.99
8/1/98 15:56	55		48.818	59.70	7.67	30.967	29.99
8/1/98 15:57	56		48.794	59.72	7.69	30.968	29.99
8/1/98 15:58	57		48.771	59.74	7.71	30.968	29.99
8/1/98 15:59	58		48.741	59.77	7.74	30.967	29.99
8/1/98 16:00	59		48.713	59.80	7.77	30.965	29.99
8/1/98 16:01	60		48.688	59.83	7.80	30.965	29.99
8/1/98 16:02	61		48.658	59.86	7.83	30.965	29.99
8/1/98 16:03	62		48.642	59.88	7.84	30.965	29.99
8/1/98 16:04	63		48.627	59.89	7.86	30.966	29.99
8/1/98 16:05	64		48.611	59.91	7.88	30.962	29.99
8/1/98 16:06	65		48.588	59.93	7.90	30.962	29.99
8/1/98 16:07	66		48.581	59.94	7.91	30.965	29.99
8/1/98 16:08	67		48.550	59.97	7.94	30.964	29.99
8/1/98 16:09	68		48.530	59.99	7.96	30.968	29.99
8/1/98 16:10	69		48.524	60.00	7.96	30.965	29.99
8/1/98 16:11	70		48.505	60.01	7.98	30.966	29.99
8/1/98 16:12	71		48.488	60.03	8.00	30.965	29.99
8/1/98 16:13	72		48.467	60.05	8.02	30.966	29.99
8/1/98 16:14	73		48.440	60.08	8.05	30.966	29.99
8/1/98 16:15	74		48.413	60.11	8.08	30.965	29.99
8/1/98 16:16	75		48.398	60.12	8.09	30.966	29.99
8/1/98 16:17	76		48.371	60.15	8.12	30.960	29.99
8/1/98 16:18	77		48.355	60.17	8.14	30.965	29.99
8/1/98 16:19	78		48.329	60.19	8.16	30.963	29.99
8/1/98 16:20	79		48.306	60.22	8.19	30.966	29.99
8/1/98 16:21	80		48.287	60.24	8.21	30.966	29.99
8/1/98 16:22	81		48.279	60.24	8.21	30.964	29.99
8/1/98 16:23	82		48.260	60.26	8.23	30.965	29.99
8/1/98 16:24	83		48.252	60.27	8.24	30.964	29.99
8/1/98 16:25	84		48.246	60.28	8.25	30.964	29.99
8/1/98 16:26	85		48.241	60.28	8.25	30.965	29.99
8/1/98 16:27	86		48.227	60.30	8.27	30.965	29.99
8/1/98 16:28	87		48.210	60.31	8.28	30.960	29.99
8/1/98 16:29	88		48.194	60.33	8.30	30.959	29.99
8/1/98 16:30	89		48.184	60.34	8.31	30.958	29.99
8/1/98 16:31	90		48.164	60.36	8.33	30.960	29.99
8/1/98 16:32	91		48.157	60.37	8.34	30.958	29.99
8/1/98 16:33	92		48.140	60.39	8.35	30.958	29.99
8/1/98 16:34	93		48.117	60.41	8.38	30.955	29.99
8/1/98 16:35	94		48.112	60.41	8.38	30.958	29.99
8/1/98 16:36	95		48.098	60.43	8.40	30.958	29.99
8/1/98 16:37	96		48.097	60.43	8.40	30.958	29.99
8/1/98 16:38	97		48.082	60.44	8.41	30.958	29.99
8/1/98 16:39	98		48.067	60.46	8.43	30.960	29.99
8/1/98 16:40	99		48.051	60.48	8.45	30.960	29.99
8/1/98 16:41	100		48.051	60.48	8.45	30.960	29.99
8/1/98 16:42	101		48.051	60.48	8.45	30.960	29.99
8/1/98 16:43	102		48.041	60.49	8.46	30.961	29.99
8/1/98 16:44	103		48.031	60.50	8.47	30.959	29.99
8/1/98 16:45	104		48.012	60.52	8.48	30.960	29.99
8/1/98 16:46	105		48.000	60.53	8.50	30.958	29.99
8/1/98 16:47	106		47.988	60.54	8.51	30.960	29.99
8/1/98 16:48	107		47.979	60.55	8.52	30.960	29.99
8/1/98 16:49	108		47.971	60.56	8.53	30.958	29.99
8/1/98 16:50	109		47.956	60.57	8.54	30.960	29.99

DATA FOR OB-1D AND OB-2Si

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	OB-1D (data logger) (no units)	OB-1D (water level) (feet below RP)	OB-1D (draw-down) (feet)	OB-2Si (data logger) (no units)	OB-2Si (water level) (feet below RP)
8/1/98 16:51	110		47.938	60.59	8.56	30.960	29.99
8/1/98 16:52	111		47.930	60.60	8.57	30.960	29.99
8/1/98 16:53	112		47.918	60.61	8.58	30.960	29.99
8/1/98 16:54	113		47.906	60.62	8.59	30.960	29.99
8/1/98 16:55	114		47.888	60.64	8.61	30.958	29.99
8/1/98 16:56	115		47.887	60.64	8.61	30.959	29.99
8/1/98 16:57	116		47.870	60.66	8.63	30.957	29.99
8/1/98 16:58	117		47.868	60.66	8.63	30.958	29.99
8/1/98 16:59	118		47.864	60.67	8.64	30.960	29.99
8/1/98 17:00	119		47.857	60.67	8.64	30.959	29.99
8/1/98 17:01	120		47.855	60.68	8.64	30.960	29.99
8/1/98 17:02	121		47.849	60.68	8.65	30.960	29.99
8/1/98 17:03	122		47.845	60.69	8.65	30.960	29.99
8/1/98 17:04	123		47.843	60.69	8.66	30.960	29.99
8/1/98 17:05	124		47.838	60.69	8.66	30.962	29.99
8/1/98 17:06	125		47.834	60.70	8.67	30.961	29.99
8/1/98 17:07	126		47.834	60.70	8.67	30.963	29.99
8/1/98 17:08	127		47.824	60.71	8.68	30.960	29.99
8/1/98 17:09	128		47.819	60.71	8.68	30.960	29.99
8/1/98 17:10	129		47.804	60.73	8.70	30.960	29.99
8/1/98 17:11	130		47.794	60.74	8.71	30.958	29.99
8/1/98 17:12	131		47.788	60.74	8.71	30.958	29.99
8/1/98 17:13	132		47.778	60.75	8.72	30.960	29.99
8/1/98 17:14	133		47.771	60.76	8.73	30.958	29.99
8/1/98 17:15	134		47.769	60.76	8.73	30.960	29.99
8/1/98 17:16	135		47.762	60.77	8.74	30.960	29.99
8/1/98 17:17	136		47.754	60.78	8.75	30.960	29.99
8/1/98 17:18	137		47.745	60.79	8.76	30.960	29.99
8/1/98 17:19	138		47.733	60.80	8.77	30.965	29.99
8/1/98 17:20	139		47.724	60.81	8.78	30.963	29.99
8/1/98 17:21	140		47.712	60.82	8.79	30.960	29.99
8/1/98 17:22	141		47.704	60.83	8.80	30.960	29.99
8/1/98 17:23	142		47.704	60.83	8.80	30.960	29.99
8/1/98 17:24	143		47.695	60.84	8.81	30.958	29.99
8/1/98 17:25	144		47.685	60.85	8.82	30.958	29.99
8/1/98 17:26	145		47.682	60.85	8.82	30.958	29.99
8/1/98 17:27	146		47.674	60.86	8.83	30.958	29.99
8/1/98 17:28	147		47.674	60.86	8.83	30.958	29.99
8/1/98 17:29	148		47.668	60.87	8.83	30.960	29.99
8/1/98 17:30	149		47.663	60.87	8.84	30.958	29.99
8/1/98 17:31	150		47.659	60.87	8.84	30.958	29.99
8/1/98 17:32	151		47.651	60.88	8.85	30.958	29.99
8/1/98 17:33	152		47.639	60.90	8.86	30.960	29.99
8/1/98 17:34	153		47.646	60.89	8.86	30.960	29.99
8/1/98 17:35	154		47.637	60.90	8.87	30.960	29.99
8/1/98 17:36	155		47.632	60.90	8.87	30.960	29.99
8/1/98 17:37	156		47.632	60.90	8.87	30.960	29.99
8/1/98 17:38	157		47.634	60.90	8.87	30.965	29.99
8/1/98 17:39	158		47.622	60.91	8.88	30.963	29.99
8/1/98 17:40	159		47.612	60.92	8.89	30.964	29.99
8/1/98 17:41	160		47.615	60.92	8.89	30.963	29.99
8/1/98 17:42	161		47.605	60.93	8.90	30.967	29.99
8/1/98 17:43	162		47.602	60.93	8.90	30.965	29.99
8/1/98 17:44	163		47.598	60.94	8.91	30.965	29.99
8/1/98 17:45	164		47.599	60.94	8.90	30.965	29.99
8/1/98 17:46	165		47.598	60.94	8.91	30.968	29.99
8/1/98 17:47	166		47.595	60.94	8.91	30.968	29.99
8/1/98 17:48	167		47.589	60.95	8.92	30.968	29.99
8/1/98 17:49	168		47.580	60.96	8.92	30.968	29.99
8/1/98 17:50	169		47.569	60.97	8.94	30.968	29.99
8/1/98 17:51	170		47.569	60.97	8.94	30.965	29.99

DATA FOR OB-1D AND OB-2Si

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	OB-1D (data logger) (no units)	OB-1D (water level) (feet below RP)	OB-1D (draw-down) (feet)	OB-2Si (data logger) (no units)	OB-2Si (water level) (feet below RP)
8/1/98 17:52	171		47.570	60.97	8.93	30.965	29.99
8/1/98 17:53	172		47.563	60.97	8.94	30.960	29.99
8/1/98 17:54	173		47.555	60.98	8.95	30.960	29.99
8/1/98 17:55	174		47.557	60.98	8.95	30.960	29.99
8/1/98 17:56	175		47.562	60.97	8.94	30.959	29.99
8/1/98 17:57	176		47.555	60.98	8.95	30.960	29.99
8/1/98 17:58	177		47.547	60.99	8.96	30.960	29.99
8/1/98 17:59	178		47.552	60.98	8.95	30.960	29.99
8/1/98 18:00	179		47.544	60.99	8.96	30.958	29.99
8/1/98 18:01	180		47.544	60.99	8.96	30.958	29.99
8/1/98 18:02	181		47.537	61.00	8.97	30.960	29.99
8/1/98 18:03	182		47.534	61.00	8.97	30.960	29.99
8/1/98 18:04	183		47.543	60.99	8.96	30.963	29.99
8/1/98 18:05	184		47.541	60.99	8.96	30.963	29.99
8/1/98 18:06	185		47.543	60.99	8.96	30.960	29.99
8/1/98 18:07	186		47.536	61.00	8.97	30.960	29.99
8/1/98 18:08	187		47.528	61.01	8.98	30.966	29.99
8/1/98 18:09	188		47.530	61.01	8.98	30.963	29.99
8/1/98 18:10	189		47.527	61.01	8.98	30.965	29.99
8/1/98 18:11	190		47.529	61.01	8.98	30.966	29.99
8/1/98 18:12	191		47.519	61.02	8.99	30.965	29.99
8/1/98 18:13	192		47.516	61.02	8.99	30.965	29.99
8/1/98 18:14	193		47.504	61.03	9.00	30.965	29.99
8/1/98 18:15	194		47.507	61.03	9.00	30.963	29.99
8/1/98 18:16	195		47.501	61.04	9.00	30.965	29.99
8/1/98 18:17	196		47.511	61.03	8.99	30.965	29.99
8/1/98 18:18	197		47.517	61.02	8.99	30.960	29.99
8/1/98 18:19	198		47.515	61.02	8.99	30.960	29.99
8/1/98 18:20	199		47.505	61.03	9.00	30.958	29.99
8/1/98 18:21	200		47.493	61.04	9.01	30.958	29.99
8/1/98 18:22	201		47.484	61.05	9.02	30.958	29.99
8/1/98 18:23	202		47.478	61.06	9.03	30.958	29.99
8/1/98 18:24	203		47.466	61.07	9.04	30.960	29.99
8/1/98 18:25	204		47.464	61.07	9.04	30.960	29.99
8/1/98 18:26	205		47.463	61.07	9.04	30.960	29.99
8/1/98 18:27	206		47.465	61.07	9.04	30.961	29.99
8/1/98 18:28	207		47.465	61.07	9.04	30.963	29.99
8/1/98 18:29	208		47.465	61.07	9.04	30.965	29.99
8/1/98 18:30	209		47.463	61.07	9.04	30.965	29.99
8/1/98 18:31	210		47.464	61.07	9.04	30.965	29.99
8/1/98 18:32	211		47.458	61.08	9.05	30.965	29.99
8/1/98 18:33	212		47.457	61.08	9.05	30.966	29.99
8/1/98 18:34	213		47.447	61.09	9.06	30.965	29.99
8/1/98 18:35	214		47.444	61.09	9.06	30.964	29.99
8/1/98 18:36	215		47.449	61.09	9.06	30.968	29.99
8/1/98 18:37	216		47.446	61.09	9.06	30.967	29.99
8/1/98 18:38	217		47.443	61.09	9.06	30.968	29.99
8/1/98 18:39	218		47.443	61.09	9.06	30.968	29.99
8/1/98 18:40	219		47.447	61.09	9.06	30.968	29.99
8/1/98 18:41	220		47.449	61.09	9.06	30.968	29.99
8/1/98 18:42	221		47.444	61.09	9.06	30.968	29.99
8/1/98 18:43	222		47.441	61.10	9.07	30.968	29.99
8/1/98 18:44	223		47.439	61.10	9.07	30.968	29.99
8/1/98 18:45	224		47.436	61.10	9.07	30.965	29.99
8/1/98 18:46	225		47.431	61.11	9.08	30.963	29.99
8/1/98 18:47	226		47.433	61.10	9.07	30.963	29.99
8/1/98 18:48	227		47.430	61.11	9.08	30.958	29.99
8/1/98 18:49	228		47.429	61.11	9.08	30.957	29.99
8/1/98 18:50	229		47.429	61.11	9.08	30.956	29.99
8/1/98 18:51	230		47.428	61.11	9.08	30.961	29.99
8/1/98 18:52	231		47.428	61.11	9.08	30.961	29.99

DATA FOR OB-1D AND OB-2Si

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	OB-1D (data logger) (no units)	OB-1D (water level) (feet below RP)	OB-1D (draw-down) (feet)	OB-2Si (data logger) (no units)	OB-2Si (water level) (feet below RP)
8/1/98 18:53	232		47.428	61.11	9.08	30.962	29.99
8/1/98 18:54	233		47.430	61.11	9.08	30.965	29.99
8/1/98 18:55	234		47.430	61.11	9.08	30.963	29.99
8/1/98 18:56	235		47.432	61.11	9.07	30.965	29.99
8/1/98 18:57	236		47.429	61.11	9.08	30.966	29.99
8/1/98 18:58	237		47.424	61.11	9.08	30.965	29.99
8/1/98 18:59	238		47.423	61.11	9.08	30.965	29.99
8/1/98 19:00	239		47.416	61.12	9.09	30.965	29.99
8/1/98 19:01	240		47.416	61.12	9.09	30.963	29.99
8/1/98 19:02	241		47.415	61.12	9.09	30.965	29.99
8/1/98 19:03	242		47.419	61.12	9.09	30.959	29.99
8/1/98 19:04	243		47.419	61.12	9.09	30.957	29.99
8/1/98 19:05	244		47.412	61.13	9.10	30.956	29.99
8/1/98 19:06	245		47.414	61.12	9.09	30.955	29.99
8/1/98 19:07	246		47.410	61.13	9.10	30.948	29.98
8/1/98 19:08	247		47.402	61.14	9.11	30.948	29.98
8/1/98 19:09	248		47.401	61.14	9.11	30.948	29.98
8/1/98 19:10	249		47.401	61.14	9.11	30.948	29.98
8/1/98 19:11	250		47.401	61.14	9.11	30.948	29.98
8/1/98 19:12	251		47.402	61.14	9.11	30.948	29.98
8/1/98 19:13	252		47.402	61.14	9.11	30.947	29.98
8/1/98 19:14	253		47.402	61.14	9.11	30.944	29.98
8/1/98 19:15	254		47.402	61.14	9.11	30.944	29.98
8/1/98 19:16	255		47.401	61.14	9.11	30.939	29.98
8/1/98 19:17	256		47.401	61.14	9.11	30.938	29.98
8/1/98 19:18	257		47.404	61.13	9.10	30.939	29.98
8/1/98 19:19	258		47.404	61.13	9.10	30.937	29.98
8/1/98 19:20	259		47.411	61.13	9.10	30.935	29.98
8/1/98 19:21	260		47.401	61.14	9.11	30.934	29.98
8/1/98 19:22	261		47.402	61.14	9.11	30.933	29.98
8/1/98 19:23	262		47.407	61.13	9.10	30.931	29.98
8/1/98 19:24	263		47.407	61.13	9.10	30.931	29.98
8/1/98 19:25	264		47.404	61.13	9.10	30.931	29.98
8/1/98 19:26	265		47.403	61.14	9.10	30.930	29.98
8/1/98 19:27	266		47.402	61.14	9.11	30.931	29.98
8/1/98 19:28	267		47.406	61.13	9.10	30.928	29.98
8/1/98 19:29	268		47.402	61.14	9.11	30.930	29.98
8/1/98 19:30	269		47.398	61.14	9.11	30.929	29.98
8/1/98 19:31	270		47.397	61.14	9.11	30.929	29.98
8/1/98 19:32	271		47.402	61.14	9.11	30.927	29.98
8/1/98 19:33	272		47.403	61.14	9.10	30.929	29.98
8/1/98 19:34	273		47.405	61.13	9.10	30.925	29.98
8/1/98 19:35	274		47.397	61.14	9.11	30.925	29.98
8/1/98 19:36	275		47.397	61.14	9.11	30.924	29.98
8/1/98 19:37	276		47.394	61.14	9.11	30.924	29.98
8/1/98 19:38	277		47.393	61.15	9.11	30.928	29.98
8/1/98 19:39	278		47.390	61.15	9.12	30.928	29.98
8/1/98 19:40	279		47.390	61.15	9.12	30.925	29.98
8/1/98 19:41	280		47.390	61.15	9.12	30.925	29.98
8/1/98 19:42	281		47.383	61.16	9.12	30.928	29.98
8/1/98 19:43	282		47.382	61.16	9.13	30.924	29.98
8/1/98 19:44	283		47.383	61.16	9.12	30.928	29.98
8/1/98 19:45	284		47.379	61.16	9.13	30.928	29.98
8/1/98 19:46	285		47.379	61.16	9.13	30.928	29.98
8/1/98 19:47	286		47.375	61.16	9.13	30.928	29.98
8/1/98 19:48	287		47.374	61.16	9.13	30.928	29.98
8/1/98 19:49	288		47.375	61.16	9.13	30.928	29.98
8/1/98 19:50	289		47.378	61.16	9.13	30.928	29.98
8/1/98 19:51	290		47.380	61.16	9.13	30.925	29.98
8/1/98 19:52	291		47.375	61.16	9.13	30.925	29.98
8/1/98 19:53	292		47.375	61.16	9.13	30.926	29.98

DATA FOR OB-1D AND OB-2S_i

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t _i (time since start/time since end) (no units)	OB-1D (data logger) (no units)	OB-1D (water level) (feet below RP)	OB-1D (draw-down) (feet)	OB-2S _i (data logger) (no units)	OB-2S _i (water level) (feet below RP)
8/1/98 19:54	293		47.375	61.16	9.13	30.925	29.98
8/1/98 19:55	294		47.375	61.16	9.13	30.924	29.98
8/1/98 19:56	295		47.381	61.16	9.13	30.923	29.98
8/1/98 19:57	296		47.373	61.17	9.13	30.922	29.98
8/1/98 19:58	297		47.375	61.16	9.13	30.921	29.98
8/1/98 19:59	298		47.377	61.16	9.13	30.921	29.98
8/1/98 20:00	299		47.374	61.16	9.13	30.921	29.98
8/1/98 20:01	300		47.369	61.17	9.14	30.921	29.98
8/1/98 20:02	301		47.371	61.17	9.14	30.921	29.98
8/1/98 20:03	302		47.365	61.17	9.14	30.922	29.98
8/1/98 20:04	303		47.369	61.17	9.14	30.924	29.98
8/1/98 20:05	304		47.364	61.17	9.14	30.923	29.98
8/1/98 20:06	305		47.361	61.18	9.15	30.924	29.98
8/1/98 20:07	306		47.360	61.18	9.15	30.924	29.98
8/1/98 20:08	307		47.362	61.18	9.15	30.924	29.98
8/1/98 20:09	308		47.360	61.18	9.15	30.924	29.98
8/1/98 20:10	309		47.358	61.18	9.15	30.921	29.98
8/1/98 20:11	310		47.358	61.18	9.15	30.921	29.98
8/1/98 20:12	311		47.360	61.18	9.15	30.920	29.98
8/1/98 20:13	312		47.357	61.18	9.15	30.922	29.98
8/1/98 20:14	313		47.358	61.18	9.15	30.921	29.98
8/1/98 20:15	314		47.358	61.18	9.15	30.921	29.98
8/1/98 20:16	315		47.355	61.18	9.15	30.923	29.98
8/1/98 20:17	316		47.354	61.18	9.15	30.918	29.98
8/1/98 20:18	317		47.352	61.19	9.16	30.921	29.98
8/1/98 20:19	318		47.349	61.19	9.16	30.921	29.98
8/1/98 20:20	319		47.341	61.20	9.17	30.921	29.98
8/1/98 20:21	320		47.347	61.19	9.16	30.916	29.98
8/1/98 20:22	321		47.345	61.19	9.16	30.916	29.98
8/1/98 20:23	322		47.345	61.19	9.16	30.916	29.98
8/1/98 20:24	323		47.342	61.20	9.17	30.922	29.98
8/1/98 20:25	324		47.338	61.20	9.17	30.919	29.98
8/1/98 20:26	325		47.338	61.20	9.17	30.917	29.98
8/1/98 20:27	326		47.336	61.20	9.17	30.917	29.98
8/1/98 20:28	327		47.336	61.20	9.17	30.918	29.98
8/1/98 20:29	328		47.334	61.21	9.17	30.917	29.98
8/1/98 20:30	329		47.335	61.20	9.17	30.917	29.98
8/1/98 20:31	330		47.337	61.20	9.17	30.918	29.98
8/1/98 20:32	331		47.332	61.21	9.18	30.917	29.98
8/1/98 20:33	332		47.331	61.21	9.18	30.917	29.98
8/1/98 20:34	333		47.333	61.21	9.18	30.917	29.98
8/1/98 20:35	334		47.331	61.21	9.18	30.917	29.98
8/1/98 20:36	335		47.325	61.21	9.18	30.916	29.98
8/1/98 20:37	336		47.325	61.21	9.18	30.915	29.98
8/1/98 20:38	337		47.322	61.22	9.19	30.911	29.98
8/1/98 20:39	338		47.324	61.22	9.18	30.913	29.98
8/1/98 20:40	339		47.321	61.22	9.19	30.910	29.98
8/1/98 20:41	340		47.321	61.22	9.19	30.910	29.98
8/1/98 20:42	341		47.319	61.22	9.19	30.908	29.98
8/1/98 20:43	342		47.324	61.22	9.18	30.910	29.98
8/1/98 20:44	343		47.320	61.22	9.19	30.908	29.98
8/1/98 20:45	344		47.322	61.22	9.19	30.910	29.98
8/1/98 20:46	345		47.321	61.22	9.19	30.909	29.98
8/1/98 20:47	346		47.317	61.22	9.19	30.910	29.98
8/1/98 20:48	347		47.317	61.22	9.19	30.910	29.98
8/1/98 20:49	348		47.253	61.29	9.26	30.910	29.98
8/1/98 20:50	349		47.230	61.31	9.28	30.908	29.98
8/1/98 20:51	350		47.226	61.32	9.28	30.910	29.98
8/1/98 20:52	351		47.218	61.32	9.29	30.910	29.98
8/1/98 20:53	352		47.212	61.33	9.30	30.908	29.98
8/1/98 20:54	353		47.209	61.33	9.30	30.909	29.98

DATA FOR OB-1D AND OB-2Si

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	OB-1D (data logger) (no units)	OB-1D (water level) (feet below RP)	OB-1D (draw-down) (feet)	OB-2Si (data logger) (no units)	OB-2Si (water level) (feet below RP)
8/1/98 20:55	354		47.203	61.34	9.31	30.906	29.98
8/1/98 20:56	355		47.197	61.34	9.31	30.903	29.98
8/1/98 20:57	356		47.191	61.35	9.32	30.903	29.98
8/1/98 20:58	357		47.191	61.35	9.32	30.903	29.98
8/1/98 20:59	358		47.183	61.36	9.33	30.904	29.98
8/1/98 21:00	359		47.187	61.35	9.32	30.903	29.98
8/1/98 21:01	360		47.183	61.36	9.33	30.904	29.98
8/1/98 21:02	361		47.180	61.36	9.33	30.906	29.98
8/1/98 21:05	364		47.172	61.37	9.34	30.906	29.98
8/1/98 21:10	369		47.158	61.38	9.35	30.905	29.98
8/1/98 21:15	374		47.150	61.39	9.36	30.903	29.98
8/1/98 21:20	379		47.144	61.40	9.37	30.903	29.98
8/1/98 21:25	384		47.139	61.40	9.37	30.901	29.98
8/1/98 21:30	389		47.128	61.41	9.38	30.900	29.98
8/1/98 21:35	394		47.124	61.42	9.39	30.901	29.98
8/1/98 21:40	399		47.125	61.42	9.39	30.904	29.98
8/1/98 21:45	404		47.137	61.41	9.37	30.917	29.98
8/1/98 21:50	409		47.109	61.43	9.40	30.923	29.98
8/1/98 21:55	414		47.115	61.43	9.40	30.932	29.98
8/1/98 22:00	419		47.098	61.45	9.41	30.932	29.98
8/1/98 22:05	424		47.108	61.44	9.40	30.938	29.98
8/1/98 22:10	429		47.105	61.44	9.41	30.933	29.98
8/1/98 22:15	434		47.107	61.44	9.41	30.936	29.98
8/1/98 22:20	439		47.101	61.44	9.41	30.942	29.98
8/1/98 22:25	444		47.096	61.45	9.42	30.943	29.98
8/1/98 22:30	449		47.085	61.46	9.43	30.945	29.98
8/1/98 22:35	454		47.082	61.46	9.43	30.945	29.98
8/1/98 22:40	459		47.067	61.48	9.45	30.945	29.98
8/1/98 22:45	464		47.113	61.43	9.40	30.945	29.98
8/1/98 22:50	469		47.126	61.42	9.39	30.946	29.98
8/1/98 22:55	474		47.126	61.42	9.39	30.954	29.99
8/1/98 23:00	479		47.119	61.42	9.39	30.956	29.99
8/1/98 23:05	484		47.114	61.43	9.40	30.954	29.99
8/1/98 23:10	489		47.122	61.42	9.39	30.957	29.99
8/1/98 23:15	494		47.132	61.41	9.38	30.958	29.99
8/1/98 23:20	499		47.120	61.42	9.39	30.959	29.99
8/1/98 23:25	504		47.123	61.42	9.39	30.958	29.99
8/1/98 23:30	509		47.131	61.41	9.38	30.958	29.99
8/1/98 23:35	514		47.133	61.41	9.38	30.958	29.99
8/1/98 23:40	519		47.129	61.41	9.38	30.957	29.99
8/1/98 23:45	524		47.135	61.41	9.38	30.961	29.99
8/1/98 23:50	529		47.132	61.41	9.38	30.961	29.99
8/1/98 23:55	534		47.136	61.41	9.38	30.970	29.99
8/2/98 0:00	539		47.133	61.41	9.38	30.960	29.99
8/2/98 0:05	544		47.126	61.42	9.39	30.959	29.99
8/2/98 0:10	549		47.130	61.41	9.38	30.965	29.99
8/2/98 0:15	554		47.129	61.41	9.38	30.967	29.99
8/2/98 0:20	559		47.121	61.42	9.39	30.969	29.99
8/2/98 0:25	564		47.124	61.42	9.39	30.966	29.99
8/2/98 0:30	569		47.115	61.43	9.40	30.966	29.99
8/2/98 0:35	574		47.126	61.42	9.39	30.962	29.99
8/2/98 0:40	579		47.127	61.42	9.38	30.965	29.99
8/2/98 0:45	584		47.112	61.43	9.40	30.960	29.99
8/2/98 0:50	589		47.113	61.43	9.40	30.960	29.99
8/2/98 0:55	594		47.107	61.44	9.41	30.963	29.99
8/2/98 1:00	599		47.114	61.43	9.40	30.961	29.99
8/2/98 1:05	604		47.115	61.43	9.40	30.962	29.99
8/2/98 1:10	609		47.107	61.44	9.41	30.962	29.99
8/2/98 1:15	614		47.112	61.43	9.40	30.958	29.99
8/2/98 1:20	619		47.116	61.43	9.40	30.963	29.99
8/2/98 1:25	624		47.118	61.42	9.39	30.962	29.99

DATA FOR OB-1D AND OB-2S₁

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t ₀ (time since start/time since end) (no units)	OB-1D (data logger) (no units)	OB-1D (water level) (feet below RP)	OB-1D (draw-down) (feet)	OB-2S ₁ (data logger) (no units)	OB-2S ₁ (water level) (feet below RP)
8/2/98 1:30	629		47.112	61.43	9.40	30.962	29.99
8/2/98 1:35	634		47.115	61.43	9.40	30.959	29.99
8/2/98 1:40	639		47.113	61.43	9.40	30.962	29.99
8/2/98 1:45	644		47.119	61.42	9.39	30.964	29.99
8/2/98 1:50	649		47.100	61.44	9.41	30.962	29.99
8/2/98 1:55	654		47.103	61.44	9.41	30.967	29.99
8/2/98 2:00	659		47.109	61.43	9.40	30.968	29.99
8/2/98 2:05	664		47.107	61.44	9.41	30.969	29.99
8/2/98 2:10	669		47.103	61.44	9.41	30.971	29.99
8/2/98 2:15	674		47.110	61.43	9.40	30.972	29.99
8/2/98 2:20	679		47.112	61.43	9.40	30.974	29.99
8/2/98 2:25	684		47.107	61.44	9.41	30.975	29.99
8/2/98 2:30	689		47.099	61.44	9.41	30.976	29.99
8/2/98 2:35	694		47.102	61.44	9.41	30.975	29.99
8/2/98 2:40	699		47.106	61.44	9.41	30.977	29.99
8/2/98 2:45	704		47.104	61.44	9.41	30.976	29.99
8/2/98 2:50	709		47.107	61.44	9.41	30.980	29.99
8/2/98 2:55	714		47.107	61.44	9.41	30.976	29.99
8/2/98 3:00	719		47.107	61.44	9.41	30.981	29.99
8/2/98 3:05	724		47.109	61.43	9.40	30.972	29.99
8/2/98 3:10	729		47.107	61.44	9.41	30.966	29.99
8/2/98 3:15	734		47.108	61.44	9.40	30.961	29.99
8/2/98 3:20	739		47.104	61.44	9.41	30.962	29.99
8/2/98 3:25	744		47.113	61.43	9.40	30.958	29.99
8/2/98 3:30	749		47.109	61.43	9.40	30.955	29.99
8/2/98 3:35	754		47.103	61.44	9.41	30.950	29.98
8/2/98 3:40	759		47.106	61.44	9.41	30.950	29.98
8/2/98 3:45	764		47.100	61.44	9.41	30.952	29.99
8/2/98 3:50	769		47.106	61.44	9.41	30.954	29.99
8/2/98 3:55	774		47.102	61.44	9.41	30.954	29.99
8/2/98 4:00	779		47.101	61.44	9.41	30.952	29.99
8/2/98 4:05	784		47.101	61.44	9.41	30.954	29.99
8/2/98 4:10	789		47.092	61.45	9.42	30.952	29.99
8/2/98 4:15	794		47.098	61.45	9.41	30.954	29.99
8/2/98 4:20	799		47.100	61.44	9.41	30.955	29.99
8/2/98 4:25	804		47.108	61.44	9.40	30.950	29.98
8/2/98 4:30	809		47.104	61.44	9.41	30.946	29.98
8/2/98 4:35	814		47.098	61.45	9.41	30.945	29.98
8/2/98 4:40	819		47.100	61.44	9.41	30.946	29.98
8/2/98 4:45	824		47.099	61.44	9.41	30.941	29.98
8/2/98 4:50	829		47.099	61.44	9.41	30.941	29.98
8/2/98 4:55	834		47.100	61.44	9.41	30.939	29.98
8/2/98 5:00	839		47.101	61.44	9.41	30.940	29.98
8/2/98 5:05	844		47.104	61.44	9.41	30.939	29.98
8/2/98 5:10	849		47.101	61.44	9.41	30.940	29.98
8/2/98 5:15	854		47.101	61.44	9.41	30.931	29.98
8/2/98 5:20	859		47.101	61.44	9.41	30.932	29.98
8/2/98 5:25	864		47.100	61.44	9.41	30.931	29.98
8/2/98 5:30	869		47.104	61.44	9.41	30.930	29.98
8/2/98 5:35	874		47.096	61.45	9.42	30.929	29.98
8/2/98 5:40	879		47.100	61.44	9.41	30.932	29.98
8/2/98 5:45	884		47.086	61.46	9.43	30.945	29.98
8/2/98 5:50	889		47.090	61.45	9.42	30.953	29.99
8/2/98 5:55	894		47.086	61.46	9.43	30.958	29.99
8/2/98 6:00	899		47.087	61.46	9.43	30.963	29.99
8/2/98 6:05	904		47.082	61.46	9.43	30.962	29.99
8/2/98 6:10	909		47.086	61.46	9.43	30.962	29.99
8/2/98 6:15	914		47.090	61.45	9.42	30.957	29.99
8/2/98 6:20	919		47.086	61.46	9.43	30.957	29.99
8/2/98 6:25	924		47.084	61.46	9.43	30.956	29.99
8/2/98 6:30	929		47.084	61.46	9.43	30.962	29.99

DATA FOR OB-1D AND OB-2S_i

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t (time since start/time since end) (no units)	OB-1D (data logger) (no units)	OB-1D (water level) (feet below RP)	OB-1D (draw-down) (feet)	OB-2S _i (data logger) (no units)	OB-2S _i (water level) (feet below RP)
8/2/98 6:35	934		47.073	61.47	9.44	30.966	29.99
8/2/98 6:40	939		47.059	61.48	9.45	30.961	29.99
8/2/98 6:45	944		47.049	61.50	9.46	30.965	29.99
8/2/98 6:50	949		47.033	61.51	9.48	30.968	29.99
8/2/98 6:55	954		47.030	61.51	9.48	30.967	29.99
8/2/98 7:00	959		47.014	61.53	9.50	30.962	29.99
8/2/98 7:05	964		47.024	61.52	9.49	30.960	29.99
8/2/98 7:10	969		47.021	61.52	9.49	30.960	29.99
8/2/98 7:15	974		47.025	61.52	9.49	30.962	29.99
8/2/98 7:20	979		47.028	61.52	9.49	30.962	29.99
8/2/98 7:25	984		47.017	61.53	9.50	30.960	29.99
8/2/98 7:30	989		47.025	61.52	9.49	30.957	29.99
8/2/98 7:35	994		47.028	61.52	9.49	30.957	29.99
8/2/98 7:40	999		47.031	61.51	9.48	30.954	29.99
8/2/98 7:45	1004		47.027	61.52	9.49	30.956	29.99
8/2/98 7:50	1009		47.018	61.53	9.50	30.953	29.99
8/2/98 7:55	1014		47.018	61.53	9.50	30.956	29.99
8/2/98 8:00	1019		47.010	61.53	9.50	30.956	29.99
8/2/98 8:05	1024		47.019	61.53	9.49	30.951	29.98
8/2/98 8:10	1029		47.019	61.53	9.49	30.953	29.99
8/2/98 8:15	1034		47.022	61.52	9.49	30.952	29.99
8/2/98 8:20	1039		47.000	61.55	9.51	30.949	29.98
8/2/98 8:25	1044		47.015	61.53	9.50	30.950	29.98
8/2/98 8:30	1049		47.018	61.53	9.50	30.946	29.98
8/2/98 8:35	1054		47.002	61.54	9.51	30.949	29.98
8/2/98 8:40	1059		47.008	61.54	9.51	30.951	29.98
8/2/98 8:45	1064		47.010	61.53	9.50	30.949	29.98
8/2/98 8:50	1069		47.005	61.54	9.51	30.946	29.98
8/2/98 8:55	1074		47.006	61.54	9.51	30.945	29.98
8/2/98 9:00	1079		47.016	61.53	9.50	30.943	29.98
8/2/98 9:05	1084		47.013	61.53	9.50	30.947	29.98
8/2/98 9:10	1089		47.011	61.53	9.50	30.944	29.98
8/2/98 9:15	1094		47.021	61.52	9.49	30.936	29.98
8/2/98 9:20	1099		47.020	61.52	9.49	30.945	29.98
8/2/98 9:25	1104		47.016	61.53	9.50	30.946	29.98
8/2/98 9:30	1109		47.015	61.53	9.50	30.941	29.98
8/2/98 9:35	1114		47.014	61.53	9.50	30.949	29.98
8/2/98 9:40	1119		47.029	61.52	9.48	30.941	29.98
8/2/98 9:45	1124		47.016	61.53	9.50	30.943	29.98
8/2/98 9:50	1129		47.022	61.52	9.49	30.943	29.98
8/2/98 9:55	1134		47.021	61.52	9.49	30.950	29.98
8/2/98 10:00	1139		47.011	61.53	9.50	30.951	29.98
8/2/98 10:05	1144		47.025	61.52	9.49	30.953	29.99
8/2/98 10:10	1149		47.018	61.53	9.50	30.955	29.99
8/2/98 10:15	1154		47.020	61.52	9.49	30.950	29.98
8/2/98 10:20	1159		47.018	61.53	9.50	30.954	29.99
8/2/98 10:25	1164		47.022	61.52	9.49	30.959	29.99
8/2/98 10:30	1169		47.008	61.54	9.51	30.960	29.99
8/2/98 10:35	1174		47.030	61.51	9.48	30.959	29.99
8/2/98 10:40	1179		47.030	61.51	9.48	30.958	29.99
8/2/98 10:45	1184		47.031	61.51	9.48	30.958	29.99
8/2/98 10:50	1189		47.033	61.51	9.48	30.958	29.99
8/2/98 10:55	1194		47.032	61.51	9.48	30.966	29.99
8/2/98 11:00	1199		47.034	61.51	9.48	30.966	29.99
8/2/98 11:05	1204		47.032	61.51	9.48	30.967	29.99
8/2/98 11:10	1209		47.028	61.52	9.49	30.965	29.99
8/2/98 11:15	1214		47.023	61.52	9.49	30.966	29.99
8/2/98 11:20	1219		47.020	61.52	9.49	30.966	29.99
8/2/98 11:25	1224		47.022	61.52	9.49	30.968	29.99
8/2/98 11:30	1229		47.087	61.46	9.43	30.972	29.99
8/2/98 11:35	1234		47.097	61.45	9.42	30.963	29.99

DATA FOR OB-1D AND OB-2S₁

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t ₀ (time since start/time since end) (no units)	OB-1D (data logger) (no units) (feet below RP)	OB-1D (water level) (feet below RP)	OB-1D (draw-down) (feet)	OB-2S ₁ (data logger) (no units)	OB-2S ₁ (water level) (feet below RP)
8/2/98 11:40	1239		47.086	61.46	9.43	30.962	29.99
8/2/98 11:45	1244		47.048	61.50	9.47	30.961	29.99
8/2/98 11:50	1249		47.043	61.50	9.47	30.964	29.99
8/2/98 11:55	1254		47.064	61.48	9.45	30.964	29.99
8/2/98 12:00	1259		47.078	61.47	9.43	30.961	29.99
8/2/98 12:05	1264		47.065	61.48	9.45	30.959	29.99
8/2/98 12:10	1269		47.058	61.49	9.46	30.957	29.99
8/2/98 12:15	1274		47.039	61.51	9.47	30.960	29.99
8/2/98 12:20	1279		47.029	61.52	9.48	30.958	29.99
8/2/98 12:25	1284		47.052	61.49	9.46	30.960	29.99
8/2/98 12:30	1289		47.038	61.51	9.48	30.959	29.99
8/2/98 12:35	1294		47.055	61.49	9.46	30.958	29.99
8/2/98 12:40	1299		47.081	61.46	9.43	30.958	29.99
8/2/98 12:45	1304		47.085	61.46	9.43	30.963	29.99
8/2/98 12:50	1309		47.080	61.46	9.43	30.965	29.99
8/2/98 12:55	1314		47.063	61.48	9.45	30.957	29.99
8/2/98 13:00	1319		47.063	61.48	9.45	30.962	29.99
8/2/98 13:05	1324		47.077	61.47	9.44	30.957	29.99
8/2/98 13:10	1329		47.093	61.45	9.42	30.956	29.99
8/2/98 13:15	1334		47.089	61.45	9.42	30.957	29.99
8/2/98 13:20	1339		47.088	61.46	9.42	30.956	29.99
8/2/98 13:25	1344		47.092	61.45	9.42	30.969	29.99
8/2/98 13:30	1349		47.103	61.44	9.41	30.970	29.99
8/2/98 13:35	1354		47.098	61.45	9.41	30.966	29.99
8/2/98 13:40	1359		47.116	61.43	9.40	30.966	29.99
8/2/98 13:45	1364		47.106	61.44	9.41	30.974	29.99
8/2/98 13:50	1369		47.105	61.44	9.41	30.977	29.99
8/2/98 13:55	1374		47.116	61.43	9.40	30.974	29.99
8/2/98 14:00	1379		47.120	61.42	9.39	30.984	29.99
8/2/98 14:05	1384		47.089	61.45	9.42	30.984	29.99
8/2/98 14:10	1389		47.116	61.43	9.40	30.984	29.99
8/2/98 14:15	1394		47.123	61.42	9.39	30.983	29.99
8/2/98 14:20	1399		47.114	61.43	9.40	30.980	29.99
8/2/98 14:25	1404		47.111	61.43	9.40	30.973	29.99
8/2/98 14:30	1409		47.104	61.44	9.41	30.983	29.99
8/2/98 14:35	1414		47.101	61.44	9.41	30.983	29.99
8/2/98 14:40	1419		47.115	61.43	9.40	30.986	29.99
8/2/98 14:45	1424		47.087	61.46	9.43	30.989	29.99
8/2/98 14:50	1429		47.100	61.44	9.41	30.977	29.99
8/2/98 14:51	1430		47.097	61.45	9.42	30.976	29.99
8/2/98 14:52	1431		47.094	61.45	9.42	30.977	29.99
8/2/98 14:53	1432		47.093	61.45	9.42	30.976	29.99
8/2/98 14:54	1433		47.092	61.45	9.42	30.978	29.99
8/2/98 14:55	1434		47.088	61.46	9.42	30.979	29.99
8/2/98 14:56	1435		47.102	61.44	9.41	30.977	29.99
8/2/98 14:57	1436		47.107	61.44	9.41	30.977	29.99
8/2/98 14:58	1437		47.122	61.42	9.39	30.977	29.99
8/2/98 14:59	1438		47.124	61.42	9.39	30.979	29.99
8/2/98 15:00	1439		47.114	61.43	9.40	30.978	29.99
8/2/98 15:01	1440	1440.00	50.622	57.86	5.83	30.975	29.99
8/2/98 15:02	1441	720.50	50.763	57.72	5.69	30.975	29.99
8/2/98 15:03	1442	480.67	51.097	57.38	5.35	30.975	29.99
8/2/98 15:04	1443	360.75	51.353	57.12	5.09	30.974	29.99
8/2/98 15:05	1444	288.80	51.565	56.90	4.87	30.976	29.99
8/2/98 15:06	1445	240.83	51.722	56.74	4.71	30.980	29.99
8/2/98 15:07	1446	206.57	51.878	56.58	4.55	30.978	29.99
8/2/98 15:08	1447	180.87	52.010	56.45	4.42	30.981	29.99
8/2/98 15:09	1448	160.89	52.129	56.33	4.30	30.981	29.99
8/2/98 15:10	1449	144.90	52.234	56.22	4.19	30.983	29.99
8/2/98 15:11	1450	131.82	52.330	56.12	4.09	30.984	29.99
8/2/98 15:12	1451	120.92	52.432	56.02	3.99	30.986	29.99

DATA FOR OB-1D AND OB-2Si

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t ₀ (time since start/time since end) (no units)	OB-1D (data logger) (no units)	OB-1D (water level) (feet below RP)	OB-1D (draw-down) (feet)	OB-2Si (data logger) (no units)	OB-2Si (water level) (feet below RP)
8/2/98 15:13	1452	111.69	52.528	55.92	3.89	30.985	29.99
8/2/98 15:14	1453	103.79	52.613	55.84	3.81	30.983	29.99
8/2/98 15:15	1454	96.93	52.699	55.75	3.72	30.988	29.99
8/2/98 15:16	1455	90.94	52.762	55.69	3.65	30.985	29.99
8/2/98 15:17	1456	85.65	52.836	55.61	3.58	30.988	29.99
8/2/98 15:18	1457	80.94	52.909	55.54	3.50	30.986	29.99
8/2/98 15:19	1458	76.74	52.982	55.46	3.43	30.986	29.99
8/2/98 15:20	1459	72.95	53.040	55.40	3.37	30.983	29.99
8/2/98 15:21	1460	69.52	53.105	55.34	3.31	30.981	29.99
8/2/98 15:22	1461	66.41	53.167	55.27	3.24	30.983	29.99
8/2/98 15:23	1462	63.57	53.222	55.22	3.19	30.984	29.99
8/2/98 15:24	1463	60.96	53.271	55.17	3.14	30.984	29.99
8/2/98 15:25	1464	58.56	53.330	55.11	3.08	30.984	29.99
8/2/98 15:26	1465	56.35	53.390	55.05	3.02	30.983	29.99
8/2/98 15:27	1466	54.30	53.442	54.99	2.96	30.984	29.99
8/2/98 15:28	1467	52.39	53.487	54.95	2.92	30.983	29.99
8/2/98 15:29	1468	50.62	53.547	54.89	2.86	30.980	29.99
8/2/98 15:30	1469	48.97	53.596	54.84	2.81	30.985	29.99
8/2/98 15:31	1470	47.42	53.650	54.78	2.75	30.983	29.99
8/2/98 15:32	1471	45.97	53.692	54.74	2.71	30.984	29.99
8/2/98 15:33	1472	44.61	53.733	54.70	2.67	30.984	29.99
8/2/98 15:34	1473	43.32	53.771	54.66	2.63	30.988	29.99
8/2/98 15:35	1474	42.11	53.818	54.61	2.58	30.988	29.99
8/2/98 15:36	1475	40.97	53.868	54.56	2.53	30.988	29.99
8/2/98 15:37	1476	39.89	53.903	54.52	2.49	30.989	29.99
8/2/98 15:38	1477	38.87	53.944	54.48	2.45	30.988	29.99
8/2/98 15:39	1478	37.90	53.982	54.44	2.41	30.989	29.99
8/2/98 15:40	1479	36.97	54.016	54.41	2.38	30.992	29.99
8/2/98 15:41	1480	36.10	54.053	54.37	2.34	30.991	29.99
8/2/98 15:42	1481	35.26	54.090	54.33	2.30	30.989	29.99
8/2/98 15:43	1482	34.47	54.113	54.31	2.28	30.988	29.99
8/2/98 15:44	1483	33.70	54.151	54.27	2.24	30.989	29.99
8/2/98 15:45	1484	32.98	54.185	54.24	2.21	30.988	29.99
8/2/98 15:46	1485	32.28	54.212	54.21	2.18	30.988	29.99
8/2/98 15:47	1486	31.62	54.237	54.18	2.15	30.992	29.99
8/2/98 15:48	1487	30.98	54.265	54.16	2.13	30.989	29.99
8/2/98 15:49	1488	30.37	54.297	54.12	2.09	30.988	29.99
8/2/98 15:50	1489	29.78	54.326	54.09	2.06	30.981	29.99
8/2/98 15:51	1490	29.22	54.362	54.06	2.03	30.985	29.99
8/2/98 15:52	1491	28.67	54.395	54.02	1.99	30.988	29.99
8/2/98 15:53	1492	28.15	54.424	53.99	1.96	30.988	29.99
8/2/98 15:54	1493	27.65	54.444	53.97	1.94	30.988	29.99
8/2/98 15:55	1494	27.16	54.481	53.94	1.91	30.991	29.99
8/2/98 15:56	1495	26.70	54.508	53.91	1.88	30.989	29.99
8/2/98 15:57	1496	26.25	54.528	53.89	1.86	30.990	29.99
8/2/98 15:58	1497	25.81	54.555	53.86	1.83	30.991	29.99
8/2/98 15:59	1498	25.39	54.581	53.84	1.80	30.990	29.99
8/2/98 16:00	1499	24.98	54.605	53.81	1.78	30.990	29.99
8/2/98 16:01	1500	24.59	54.634	53.78	1.75	30.990	29.99
8/2/98 16:02	1501	24.21	54.654	53.76	1.73	30.990	29.99
8/2/98 16:03	1502	23.84	54.680	53.73	1.70	30.990	29.99
8/2/98 16:04	1503	23.48	54.704	53.71	1.68	30.990	29.99
8/2/98 16:05	1504	23.14	54.730	53.68	1.65	30.990	29.99
8/2/98 16:06	1505	22.80	54.750	53.66	1.63	30.990	29.99
8/2/98 16:07	1506	22.48	54.764	53.65	1.62	30.990	29.99
8/2/98 16:08	1507	22.16	54.788	53.62	1.59	30.993	29.99
8/2/98 16:09	1508	21.86	54.802	53.61	1.58	30.990	29.99
8/2/98 16:10	1509	21.56	54.825	53.59	1.56	30.990	29.99
8/2/98 16:11	1510	21.27	54.852	53.56	1.53	30.990	29.99
8/2/98 16:12	1511	20.99	54.882	53.53	1.50	30.990	29.99
8/2/98 16:13	1512	20.71	54.909	53.50	1.47	30.990	29.99

DATA FOR OB-1D AND OB-2Si

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t (time since start/time since end) (no units)	OB-1D (data logger) (no units)	OB-1D (water level) (feet below RP)	OB-1D (draw-down) (feet)	OB-2Si (data logger) (no units)	OB-2Si (water level) (feet below RP)
8/2/98 16:14	1513	20.45	54.923	53.49	1.46	30.990	29.99
8/2/98 16:15	1514	20.19	54.930	53.48	1.45	30.990	29.99
8/2/98 16:16	1515	19.93	54.943	53.47	1.44	30.990	29.99
8/2/98 16:17	1516	19.69	54.961	53.45	1.42	30.988	29.99
8/2/98 16:18	1517	19.45	54.976	53.43	1.40	30.987	29.99
8/2/98 16:19	1518	19.22	54.980	53.43	1.40	30.988	29.99
8/2/98 16:20	1519	18.99	54.993	53.42	1.39	30.990	29.99
8/2/98 16:21	1520	18.77	55.007	53.40	1.37	30.991	29.99
8/2/98 16:22	1521	18.55	55.031	53.38	1.35	30.988	29.99
8/2/98 16:23	1522	18.34	55.056	53.35	1.32	30.991	29.99
8/2/98 16:24	1523	18.13	55.083	53.32	1.29	30.990	29.99
8/2/98 16:25	1524	17.93	55.098	53.31	1.28	30.990	29.99
8/2/98 16:26	1525	17.73	55.112	53.30	1.26	30.989	29.99
8/2/98 16:27	1526	17.54	55.127	53.28	1.25	30.990	29.99
8/2/98 16:28	1527	17.35	55.145	53.26	1.23	30.990	29.99
8/2/98 16:29	1528	17.17	55.158	53.25	1.22	30.992	29.99
8/2/98 16:30	1529	16.99	55.173	53.23	1.20	30.989	29.99
8/2/98 16:31	1530	16.81	55.194	53.21	1.18	30.990	29.99
8/2/98 16:32	1531	16.64	55.214	53.19	1.16	30.992	29.99
8/2/98 16:33	1532	16.47	55.229	53.18	1.15	30.990	29.99
8/2/98 16:34	1533	16.31	55.230	53.18	1.14	30.991	29.99
8/2/98 16:35	1534	16.15	55.242	53.16	1.13	30.991	29.99
8/2/98 16:36	1535	15.99	55.259	53.15	1.11	30.991	29.99
8/2/98 16:37	1536	15.84	55.278	53.13	1.10	30.992	29.99
8/2/98 16:38	1537	15.68	55.286	53.12	1.09	30.993	29.99
8/2/98 16:39	1538	15.54	55.293	53.11	1.08	30.995	29.99
8/2/98 16:40	1539	15.39	55.304	53.10	1.07	30.992	29.99
8/2/98 16:41	1540	15.25	55.320	53.08	1.05	30.993	29.99
8/2/98 16:42	1541	15.11	55.339	53.06	1.03	30.994	29.99
8/2/98 16:43	1542	14.97	55.361	53.04	1.01	30.993	29.99
8/2/98 16:44	1543	14.84	55.374	53.03	1.00	30.994	29.99
8/2/98 16:45	1544	14.70	55.385	53.02	0.99	30.992	29.99
8/2/98 16:46	1545	14.58	55.403	53.00	0.97	30.992	29.99
8/2/98 16:47	1546	14.45	55.423	52.98	0.95	30.991	29.99
8/2/98 16:48	1547	14.32	55.441	52.96	0.93	30.994	29.99
8/2/98 16:49	1548	14.20	55.453	52.95	0.92	30.994	29.99
8/2/98 16:50	1549	14.08	55.457	52.94	0.91	30.993	29.99
8/2/98 16:51	1550	13.96	55.457	52.94	0.91	30.994	29.99
8/2/98 16:52	1551	13.85	55.461	52.94	0.91	30.994	29.99
8/2/98 16:53	1552	13.73	55.472	52.93	0.90	30.993	29.99
8/2/98 16:54	1553	13.62	55.475	52.93	0.89	30.990	29.99
8/2/98 16:55	1554	13.51	55.483	52.92	0.89	30.993	29.99
8/2/98 16:56	1555	13.41	55.494	52.91	0.88	30.992	29.99
8/2/98 16:57	1556	13.30	55.510	52.89	0.86	30.992	29.99
8/2/98 16:58	1557	13.19	55.540	52.86	0.83	30.994	29.99
8/2/98 16:59	1558	13.09	55.547	52.85	0.82	30.992	29.99
8/2/98 17:00	1559	12.99	55.543	52.86	0.83	30.994	29.99
8/2/98 17:01	1560	12.89	55.559	52.84	0.81	30.993	29.99
8/2/98 17:02	1561	12.80	55.567	52.83	0.80	30.994	29.99
8/2/98 17:03	1562	12.70	55.582	52.82	0.79	30.994	29.99
8/2/98 17:04	1563	12.60	55.587	52.81	0.78	30.997	29.99
8/2/98 17:05	1564	12.51	55.598	52.80	0.77	30.993	29.99
8/2/98 17:06	1565	12.42	55.606	52.79	0.76	30.994	29.99
8/2/98 17:07	1566	12.33	55.620	52.78	0.75	30.999	29.99
8/2/98 17:08	1567	12.24	55.632	52.77	0.74	30.995	29.99
8/2/98 17:09	1568	12.16	55.636	52.76	0.73	30.993	29.99
8/2/98 17:10	1569	12.07	55.648	52.75	0.72	30.990	29.99
8/2/98 17:11	1570	11.98	55.665	52.73	0.70	30.990	29.99
8/2/98 17:12	1571	11.90	55.662	52.74	0.70	30.989	29.99
8/2/98 17:13	1572	11.82	55.684	52.71	0.68	30.989	29.99
8/2/98 17:14	1573	11.74	55.697	52.70	0.67	30.989	29.99

DATA FOR OB-1D AND OB-2Si

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	OB-1D (data logger) (no units)	OB-1D (water level) (feet below RP)	OB-1D (draw-down) (feet)	OB-2Si (data logger) (no units)	OB-2Si (water level) (feet below RP)
8/2/98 17:15	1574	11.66	55.710	52.69	0.66	30.992	29.99
8/2/98 17:16	1575	11.58	55.711	52.69	0.65	30.994	29.99
8/2/98 17:17	1576	11.50	55.708	52.69	0.66	30.991	29.99
8/2/98 17:18	1577	11.43	55.711	52.69	0.65	30.992	29.99
8/2/98 17:19	1578	11.35	55.726	52.67	0.64	30.995	29.99
8/2/98 17:20	1579	11.28	55.740	52.66	0.63	30.992	29.99
8/2/98 17:21	1580	11.21	55.744	52.65	0.62	31.000	29.99
8/2/98 17:22	1581	11.13	55.759	52.64	0.61	30.997	29.99
8/2/98 17:23	1582	11.06	55.770	52.63	0.59	31.000	29.99
8/2/98 17:24	1583	10.99	55.775	52.62	0.59	31.000	29.99
8/2/98 17:25	1584	10.92	55.775	52.62	0.59	30.999	29.99
8/2/98 17:26	1585	10.86	55.786	52.61	0.58	31.000	29.99
8/2/98 17:27	1586	10.79	55.787	52.61	0.58	31.000	29.99
8/2/98 17:28	1587	10.72	55.803	52.59	0.56	30.999	29.99
8/2/98 17:29	1588	10.66	55.805	52.59	0.56	31.000	29.99
8/2/98 17:30	1589	10.59	55.817	52.58	0.55	30.999	29.99
8/2/98 17:31	1590	10.53	55.832	52.56	0.53	31.000	29.99
8/2/98 17:32	1591	10.47	55.836	52.56	0.53	30.998	29.99
8/2/98 17:33	1592	10.41	55.847	52.55	0.52	30.994	29.99
8/2/98 17:34	1593	10.34	55.857	52.54	0.51	30.992	29.99
8/2/98 17:35	1594	10.28	55.861	52.53	0.50	30.991	29.99
8/2/98 17:36	1595	10.22	55.865	52.53	0.50	30.991	29.99
8/2/98 17:37	1596	10.17	55.876	52.52	0.49	30.993	29.99
8/2/98 17:38	1597	10.11	55.881	52.51	0.48	30.991	29.99
8/2/98 17:39	1598	10.05	55.882	52.51	0.48	30.992	29.99
8/2/98 17:40	1599	9.99	55.889	52.50	0.47	30.993	29.99
8/2/98 17:41	1600	9.94	55.902	52.49	0.46	30.992	29.99
8/2/98 17:42	1601	9.88	55.907	52.49	0.46	30.992	29.99
8/2/98 17:43	1602	9.83	55.908	52.49	0.45	30.991	29.99
8/2/98 17:44	1603	9.77	55.915	52.48	0.45	30.994	29.99
8/2/98 17:45	1604	9.72	55.922	52.47	0.44	30.992	29.99
8/2/98 17:46	1605	9.67	55.933	52.46	0.43	30.995	29.99
8/2/98 17:47	1606	9.62	55.933	52.46	0.43	30.992	29.99
8/2/98 17:48	1607	9.57	55.940	52.45	0.42	30.992	29.99
8/2/98 17:49	1608	9.51	55.948	52.44	0.41	30.994	29.99
8/2/98 17:50	1609	9.46	55.952	52.44	0.41	30.993	29.99
8/2/98 17:51	1610	9.42	55.968	52.42	0.39	30.997	29.99
8/2/98 17:52	1611	9.37	55.967	52.43	0.39	30.995	29.99
8/2/98 17:53	1612	9.32	55.970	52.42	0.39	30.995	29.99
8/2/98 17:54	1613	9.27	55.979	52.41	0.38	30.994	29.99
8/2/98 17:55	1614	9.22	55.983	52.41	0.38	30.995	29.99
8/2/98 17:56	1615	9.18	55.979	52.41	0.38	31.001	29.99
8/2/98 17:57	1616	9.13	55.979	52.41	0.38	31.000	29.99
8/2/98 17:58	1617	9.08	55.989	52.40	0.37	30.999	29.99
8/2/98 17:59	1618	9.04	55.995	52.40	0.37	30.999	29.99
8/2/98 18:00	1619	8.99	55.994	52.40	0.37	31.000	29.99
8/2/98 18:01	1620	8.95	55.995	52.40	0.37	31.001	29.99
8/2/98 18:02	1621	8.91	56.006	52.39	0.35	31.000	29.99
8/2/98 18:03	1622	8.86	56.012	52.38	0.35	31.000	29.99
8/2/98 18:04	1623	8.82	56.021	52.37	0.34	31.000	29.99
8/2/98 18:05	1624	8.78	56.024	52.37	0.34	30.997	29.99
8/2/98 18:06	1625	8.74	56.032	52.36	0.33	30.996	29.99
8/2/98 18:07	1626	8.70	56.044	52.35	0.32	30.993	29.99
8/2/98 18:08	1627	8.65	56.043	52.35	0.32	30.996	29.99
8/2/98 18:09	1628	8.61	56.055	52.34	0.31	30.998	29.99
8/2/98 18:10	1629	8.57	56.055	52.34	0.31	31.000	29.99
8/2/98 18:11	1630	8.53	56.059	52.33	0.30	31.000	29.99
8/2/98 18:12	1631	8.49	56.065	52.33	0.29	31.000	29.99
8/2/98 18:13	1632	8.46	56.074	52.32	0.29	31.000	29.99
8/2/98 18:14	1633	8.42	56.074	52.32	0.29	30.999	29.99
8/2/98 18:15	1634	8.38	56.074	52.32	0.29	31.000	29.99

DATA FOR OB-1D AND OB-2S_i

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	OB-1D (data logger) (no units)	OB-1D (water level) (feet below RP)	OB-1D (draw-down) (feet)	OB-2S _i (data logger) (no units)	OB-2S _i (water level) (feet below RP)
8/2/98 18:16	1635	8.34	56.087	52.30	0.27	30.999	29.99
8/2/98 18:17	1636	8.30	56.090	52.30	0.27	31.000	29.99
8/2/98 18:18	1637	8.27	56.090	52.30	0.27	30.997	29.99
8/2/98 18:19	1638	8.23	56.105	52.29	0.25	30.994	29.99
8/2/98 18:20	1639	8.19	56.098	52.29	0.26	30.996	29.99
8/2/98 18:21	1640	8.16	56.101	52.29	0.26	30.993	29.99
8/2/98 18:22	1641	8.12	56.116	52.27	0.24	30.997	29.99
8/2/98 18:23	1642	8.09	56.116	52.27	0.24	31.000	29.99
8/2/98 18:24	1643	8.05	56.117	52.27	0.24	30.996	29.99
8/2/98 18:25	1644	8.02	56.117	52.27	0.24	30.999	29.99
8/2/98 18:26	1645	7.99	56.132	52.26	0.23	31.000	29.99
8/2/98 18:27	1646	7.95	56.132	52.26	0.23	31.000	29.99
8/2/98 18:28	1647	7.92	56.148	52.24	0.21	30.999	29.99
8/2/98 18:29	1648	7.89	56.149	52.24	0.21	31.000	29.99
8/2/98 18:30	1649	7.85	56.165	52.22	0.19	30.994	29.99
8/2/98 18:31	1650	7.82	56.165	52.22	0.19	30.992	29.99
8/2/98 18:32	1651	7.79	56.159	52.23	0.20	30.991	29.99
8/2/98 18:33	1652	7.76	56.162	52.23	0.20	30.993	29.99
8/2/98 18:34	1653	7.72	56.173	52.22	0.19	30.991	29.99
8/2/98 18:35	1654	7.69	56.180	52.21	0.18	30.992	29.99
8/2/98 18:36	1655	7.66	56.180	52.21	0.18	30.993	29.99
8/2/98 18:37	1656	7.63	56.181	52.21	0.18	30.993	29.99
8/2/98 18:38	1657	7.60	56.181	52.21	0.18	30.994	29.99
8/2/98 18:39	1658	7.57	56.192	52.20	0.17	30.995	29.99
8/2/98 18:40	1659	7.54	56.193	52.20	0.16	30.997	29.99
8/2/98 18:41	1660	7.51	56.197	52.19	0.16	30.998	29.99
8/2/98 18:42	1661	7.48	56.204	52.18	0.15	30.999	29.99
8/2/98 18:43	1662	7.45	56.204	52.18	0.15	30.997	29.99
8/2/98 18:44	1663	7.42	56.208	52.18	0.15	30.996	29.99
8/2/98 18:45	1664	7.40	56.212	52.18	0.15	30.996	29.99
8/2/98 18:46	1665	7.37	56.213	52.18	0.14	30.999	29.99
8/2/98 18:47	1666	7.34	56.219	52.17	0.14	31.000	29.99
8/2/98 18:48	1667	7.31	56.223	52.17	0.13	31.001	29.99
8/2/98 18:49	1668	7.28	56.227	52.16	0.13	30.997	29.99
8/2/98 18:50	1669	7.26	56.238	52.15	0.12	31.000	29.99
8/2/98 18:51	1670	7.23	56.236	52.15	0.12	31.000	29.99
8/2/98 18:52	1671	7.20	56.235	52.15	0.12	31.001	29.99
8/2/98 18:53	1672	7.18	56.242	52.15	0.11	31.000	29.99
8/2/98 18:54	1673	7.15	56.242	52.15	0.11	31.000	29.99
8/2/98 18:55	1674	7.12	56.246	52.14	0.11	30.999	29.99
8/2/98 18:56	1675	7.10	56.250	52.14	0.11	30.998	29.99
8/2/98 18:57	1676	7.07	56.265	52.12	0.09	30.997	29.99
8/2/98 18:58	1677	7.05	56.261	52.13	0.10	30.991	29.99
8/2/98 18:59	1678	7.02	56.265	52.12	0.09	30.989	29.99
8/2/98 19:00	1679	7.00	56.269	52.12	0.09	30.990	29.99
8/2/98 19:01	1680	6.97	56.277	52.11	0.08	30.990	29.99
8/2/98 19:02	1681	6.95	56.276	52.11	0.08	30.990	29.99
8/2/98 19:03	1682	6.92	56.280	52.11	0.08	30.990	29.99
8/2/98 19:04	1683	6.90	56.283	52.10	0.07	30.987	29.99
8/2/98 19:05	1684	6.87	56.283	52.10	0.07	30.988	29.99
8/2/98 19:06	1685	6.85	56.287	52.10	0.07	30.988	29.99
8/2/98 19:07	1686	6.83	56.291	52.10	0.07	30.980	29.99
8/2/98 19:08	1687	6.80	56.302	52.08	0.05	30.980	29.99
8/2/98 19:09	1688	6.78	56.305	52.08	0.05	30.980	29.99
8/2/98 19:10	1689	6.76	56.306	52.08	0.05	30.980	29.99
8/2/98 19:11	1690	6.73	56.309	52.08	0.05	30.980	29.99
8/2/98 19:12	1691	6.71	56.313	52.07	0.04	30.980	29.99
8/2/98 19:13	1692	6.69	56.318	52.07	0.04	30.980	29.99
8/2/98 19:14	1693	6.67	56.318	52.07	0.04	30.975	29.99
8/2/98 19:15	1694	6.64	56.322	52.06	0.03	30.972	29.99
8/2/98 19:16	1695	6.62	56.325	52.06	0.03	30.970	29.99

DATA FOR OB-1D AND OB-2S_i

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	OB-1D (data logger) (no units)	OB-1D (water level) (feet below RP)	OB-1D (draw-down) (feet)	OB-2S _i (data logger) (no units)	OB-2S _i (water level) (feet below RP)
8/2/98 19:17	1696	6.60	56.329	52.06	0.03	30.969	29.99
8/2/98 19:18	1697	6.58	56.334	52.05	0.02	30.970	29.99
8/2/98 19:19	1698	6.56	56.337	52.05	0.02	30.967	29.99
8/2/98 19:20	1699	6.53	56.340	52.05	0.02	30.970	29.99
8/2/98 19:21	1700	6.51	56.344	52.04	0.01	30.968	29.99
8/2/98 19:22	1701	6.49	56.348	52.04	0.01	30.968	29.99
8/2/98 19:23	1702	6.47	56.352	52.03	0.00	30.968	29.99
8/2/98 19:24	1703	6.45	56.363	52.02	-0.01	30.967	29.99
8/2/98 19:25	1704	6.43	56.360	52.03	-0.01	30.968	29.99
8/2/98 19:26	1705	6.41	56.370	52.02	-0.02	30.966	29.99
8/2/98 19:27	1706	6.39	56.370	52.02	-0.02	30.969	29.99
8/2/98 19:28	1707	6.37	56.374	52.01	-0.02	30.965	29.99
8/2/98 19:29	1708	6.35	56.382	52.00	-0.03	30.963	29.99
8/2/98 19:30	1709	6.33	56.382	52.00	-0.03	30.963	29.99
8/2/98 19:31	1710	6.31	56.382	52.00	-0.03	30.963	29.99
8/2/98 19:32	1711	6.29	56.393	51.99	-0.04	30.966	29.99
8/2/98 19:33	1712	6.27	56.397	51.99	-0.04	30.963	29.99
8/2/98 19:34	1713	6.25	56.397	51.99	-0.04	30.964	29.99
8/2/98 19:35	1714	6.23	56.397	51.99	-0.04	30.963	29.99
8/2/98 19:36	1715	6.21	56.391	51.99	-0.04	30.964	29.99
8/2/98 19:37	1716	6.19	56.397	51.99	-0.04	30.964	29.99
8/2/98 19:38	1717	6.18	56.397	51.99	-0.04	30.964	29.99
8/2/98 19:39	1718	6.16	56.394	51.99	-0.04	30.963	29.99
8/2/98 19:40	1719	6.14	56.401	51.98	-0.05	30.962	29.99
8/2/98 19:41	1720	6.12	56.401	51.98	-0.05	30.961	29.99
8/2/98 19:42	1721	6.10	56.408	51.98	-0.05	30.957	29.99
8/2/98 19:43	1722	6.08	56.405	51.98	-0.05	30.956	29.99
8/2/98 19:44	1723	6.07	56.408	51.98	-0.05	30.953	29.99
8/2/98 19:50	1729	5.96	56.425	51.96	-0.07	30.955	29.99
8/2/98 20:00	1739	5.80	56.456	51.93	-0.10	30.955	29.99
8/2/98 20:10	1749	5.64	56.478	51.91	-0.13	30.958	29.99
8/2/98 20:20	1759	5.50	56.496	51.89	-0.14	30.957	29.99
8/2/98 20:30	1769	5.36	56.506	51.88	-0.15	30.948	29.98
8/2/98 20:40	1779	5.23	56.520	51.86	-0.17	30.945	29.98
8/2/98 20:50	1789	5.11	56.515	51.87	-0.16	30.938	29.98
8/2/98 21:00	1799	5.00	56.542	51.84	-0.19	30.938	29.98
8/2/98 21:10	1809	4.89	56.556	51.83	-0.20	30.931	29.98
8/2/98 21:20	1819	4.79	56.541	51.84	-0.19	30.930	29.98
8/2/98 21:30	1829	4.69	56.564	51.82	-0.21	30.933	29.98
8/2/98 21:40	1839	4.60	56.551	51.83	-0.20	30.931	29.98
8/2/98 21:50	1849	4.51	56.589	51.79	-0.24	30.946	29.98
8/2/98 22:00	1859	4.43	56.594	51.79	-0.24	30.952	29.99
8/2/98 22:10	1869	4.35	56.596	51.79	-0.25	30.952	29.99
8/2/98 22:20	1879	4.27	56.608	51.77	-0.26	30.955	29.99
8/2/98 22:30	1889	4.20	56.591	51.79	-0.24	30.952	29.99
8/2/98 22:40	1899	4.13	56.606	51.78	-0.26	30.954	29.99
8/2/98 22:50	1909	4.06	56.632	51.75	-0.28	30.954	29.99
8/2/98 23:00	1919	4.00	56.649	51.73	-0.30	30.956	29.99
8/2/98 23:10	1929	3.94	56.659	51.72	-0.31	30.952	29.99
8/2/98 23:20	1939	3.88	56.656	51.72	-0.31	30.957	29.99
8/2/98 23:30	1949	3.82	56.664	51.72	-0.31	30.957	29.99
8/2/98 23:40	1959	3.77	56.678	51.70	-0.33	30.963	29.99
8/2/98 23:50	1969	3.72	56.686	51.69	-0.34	30.970	29.99
8/3/98 0:00	1979	3.66	56.698	51.68	-0.35	30.967	29.99
8/3/98 0:10	1989	3.62	56.696	51.68	-0.35	30.963	29.99
8/3/98 0:20	1999	3.57	56.699	51.68	-0.35	30.961	29.99
8/3/98 0:30	2009	3.52	56.706	51.67	-0.36	30.962	29.99
8/3/98 0:40	2019	3.48	56.710	51.67	-0.36	30.963	29.99
8/3/98 0:50	2029	3.44	56.732	51.65	-0.38	30.962	29.99
8/3/98 1:00	2039	3.40	56.734	51.65	-0.39	30.963	29.99
8/3/98 1:10	2049	3.36	56.735	51.64	-0.39	30.964	29.99

DATA FOR OB-1D AND OB-2Si

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t ₀ (time since start/time since end) (no units)	OB-1D (data logger) (no units)	OB-1D (water level) (feet below RP)	OB-1D (draw-down) (feet)	OB-2Si (data logger) (no units)	OB-2Si (water level) (feet below RP)
8/3/98 1:20	2059	3.32	56.754	51.63	-0.41	30.954	29.99
8/3/98 1:30	2069	3.28	56.760	51.62	-0.41	30.961	29.99
8/3/98 1:40	2079	3.25	56.757	51.62	-0.41	30.965	29.99
8/3/98 1:50	2089	3.21	56.759	51.62	-0.41	30.960	29.99
8/3/98 2:00	2099	3.18	56.773	51.61	-0.43	30.963	29.99
8/3/98 2:10	2109	3.15	56.789	51.59	-0.44	30.963	29.99
8/3/98 2:20	2119	3.12	56.795	51.58	-0.45	30.963	29.99
8/3/98 2:30	2129	3.09	56.797	51.58	-0.45	30.963	29.99
8/3/98 2:40	2139	3.06	56.801	51.58	-0.45	30.966	29.99
8/3/98 2:50	2149	3.03	56.801	51.58	-0.45	30.967	29.99
8/3/98 3:00	2159	3.00	56.805	51.57	-0.46	30.957	29.99
8/3/98 3:10	2169	2.97	56.825	51.55	-0.48	30.948	29.98
8/3/98 3:20	2179	2.94	56.827	51.55	-0.48	30.927	29.98
8/3/98 3:30	2189	2.92	56.832	51.55	-0.49	30.920	29.98
8/3/98 3:40	2199	2.89	56.835	51.54	-0.49	30.920	29.98
8/3/98 3:50	2209	2.87	56.813	51.57	-0.47	30.918	29.98
8/3/98 4:00	2219	2.84	56.833	51.54	-0.49	30.918	29.98
8/3/98 4:10	2229	2.82	56.856	51.52	-0.51	30.912	29.98
8/3/98 4:20	2239	2.80	56.848	51.53	-0.50	30.911	29.98
8/3/98 4:30	2249	2.78	56.853	51.52	-0.51	30.908	29.98
8/3/98 4:40	2259	2.75	56.862	51.52	-0.52	30.903	29.98
8/3/98 4:50	2269	2.73	56.866	51.51	-0.52	30.896	29.98
8/3/98 5:00	2279	2.71	56.871	51.51	-0.52	30.896	29.98
8/3/98 5:10	2289	2.69	56.875	51.50	-0.53	30.891	29.98
8/3/98 5:20	2299	2.67	56.867	51.51	-0.52	30.882	29.97
8/3/98 5:30	2309	2.65	56.871	51.51	-0.52	30.881	29.97
8/3/98 5:40	2319	2.64	56.876	51.50	-0.53	30.881	29.97
8/3/98 5:50	2329	2.62	56.878	51.50	-0.53	30.899	29.98
8/3/98 6:00	2339	2.60	56.887	51.49	-0.54	30.908	29.98
8/3/98 6:10	2349	2.58	56.880	51.50	-0.53	30.910	29.98
8/3/98 6:20	2359	2.56	56.878	51.50	-0.53	30.897	29.98
8/3/98 6:30	2369	2.55	56.870	51.51	-0.52	30.903	29.98
8/3/98 6:40	2379	2.53	56.867	51.51	-0.52	30.909	29.98
8/3/98 6:50	2389	2.51	56.844	51.53	-0.50	30.908	29.98
8/3/98 7:00	2399	2.50	56.844	51.53	-0.50	30.908	29.98
8/3/98 7:10	2409	2.48	56.831	51.55	-0.48	30.908	29.98
8/3/98 7:20	2419	2.47	56.845	51.53	-0.50	30.916	29.98

APPENDIX C

Data-logger data for Well 1 and OB-2S_s

DATA FOR PUMPING WELL AND OB-2s

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	P.W. (data logger) (no units)	P.W. (water level) (feet below RP)	P.W. (draw-down) (feet)	OB-2Ss (data logger) (no units)	OB-2Ss (water level) (feet below RP)
7/31/98 17:22			54.282	52.12		31.369	33.68
7/31/98 17:23			54.284	52.12		31.369	33.68
7/31/98 17:24			54.279	52.12		31.369	33.68
7/31/98 17:25			54.277	52.12		31.369	33.68
7/31/98 17:26			54.284	52.12		31.369	33.68
7/31/98 17:27			54.286	52.12		31.369	33.68
7/31/98 17:28			54.301	52.10		31.369	33.68
7/31/98 17:29			54.305	52.10		31.369	33.68
7/31/98 17:30			54.308	52.10		31.369	33.68
7/31/98 17:30			54.304	52.10		31.369	33.68
7/31/98 17:40			54.290	52.11		31.368	33.68
7/31/98 17:50			54.295	52.11		31.369	33.68
7/31/98 18:00			54.299	52.11		31.369	33.68
7/31/98 18:10			55.059	51.48		31.368	33.68
7/31/98 18:30			51.524	54.40		31.369	33.68
7/31/98 18:40			52.670	53.45		31.368	33.68
7/31/98 18:50			53.107	53.09		31.368	33.68
7/31/98 19:00			53.368	52.87		31.369	33.68
7/31/98 19:10			53.526	52.74		31.368	33.68
7/31/98 19:20			53.676	52.62		31.368	33.68
7/31/98 19:30			53.787	52.53		31.368	33.68
7/31/98 19:40			53.860	52.47		31.368	33.68
7/31/98 19:50			53.923	52.42		31.368	33.68
7/31/98 20:00			53.977	52.37		31.368	33.68
7/31/98 20:10			54.009	52.34		31.368	33.68
7/31/98 20:20			54.080	52.29		31.368	33.68
7/31/98 20:30			54.117	52.26		31.368	33.68
7/31/98 20:40			54.149	52.23		31.368	33.68
7/31/98 20:50			54.168	52.21		31.367	33.67
7/31/98 21:00			54.179	52.20		31.367	33.67
7/31/98 21:10			54.205	52.18		31.367	33.67
7/31/98 21:20			54.227	52.16		31.367	33.67
7/31/98 21:30			54.241	52.15		31.367	33.67
7/31/98 21:40			54.260	52.14		31.367	33.67
7/31/98 21:50			54.264	52.13		31.367	33.67
7/31/98 22:00			54.270	52.13		31.366	33.67
7/31/98 22:10			54.276	52.12		31.367	33.67
7/31/98 22:20			54.277	52.12		31.367	33.67
7/31/98 22:30			54.292	52.11		31.367	33.67
7/31/98 22:40			54.293	52.11		31.366	33.67
7/31/98 22:50			54.301	52.10		31.366	33.67
7/31/98 23:00			54.308	52.10		31.366	33.67
7/31/98 23:10			54.309	52.10		31.366	33.67
7/31/98 23:20			54.324	52.08		31.366	33.67
7/31/98 23:30			54.326	52.08		31.366	33.67
7/31/98 23:40			54.327	52.08		31.366	33.67
7/31/98 23:50			54.329	52.08		31.366	33.67
8/1/98 0:00			54.337	52.07		31.366	33.67
8/1/98 0:10			54.354	52.06		31.366	33.67
8/1/98 0:20			54.334	52.08		31.366	33.67
8/1/98 0:30			54.340	52.07		31.366	33.67
8/1/98 0:40			54.346	52.07		31.366	33.67
8/1/98 0:50			54.341	52.07		31.366	33.67
8/1/98 1:00			54.359	52.06		31.366	33.67
8/1/98 1:10			54.352	52.06		31.366	33.67
8/1/98 1:20			54.358	52.06		31.366	33.67
8/1/98 1:30			54.360	52.06		31.366	33.67
8/1/98 1:40			54.366	52.05		31.366	33.67
8/1/98 1:50			54.360	52.06		31.366	33.67
8/1/98 2:00			54.363	52.05		31.366	33.67
8/1/98 2:10			54.367	52.05		31.366	33.67

DATA FOR PUMPING WELL AND OB-2s

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	P.W. (data logger) (no units)	P.W. (water level) (feet below RP)	P.W. (draw-down) (feet)	OB-2Ss (data logger) (no units)	OB-2Ss (water level) (feet below RP)
8/1/98 2:20			54.376	52.04		31.366	33.67
8/1/98 2:30			54.374	52.04		31.366	33.67
8/1/98 2:40			54.373	52.04		31.366	33.67
8/1/98 2:50			54.377	52.04		31.367	33.67
8/1/98 3:00			54.386	52.03		31.367	33.67
8/1/98 3:10			54.379	52.04		31.367	33.67
8/1/98 3:20			54.378	52.04		31.367	33.67
8/1/98 3:30			54.387	52.03		31.367	33.67
8/1/98 3:40			54.395	52.03		31.367	33.67
8/1/98 3:50			54.393	52.03		31.367	33.67
8/1/98 4:00			54.386	52.03		31.366	33.67
8/1/98 4:10			54.389	52.03		31.366	33.67
8/1/98 4:20			54.395	52.03		31.366	33.67
8/1/98 4:30			54.401	52.02		31.366	33.67
8/1/98 4:40			54.405	52.02		31.366	33.67
8/1/98 4:50			54.409	52.01		31.366	33.67
8/1/98 5:00			54.396	52.03		31.366	33.67
8/1/98 5:10			54.400	52.02		31.366	33.67
8/1/98 5:20			54.405	52.02		31.366	33.67
8/1/98 5:30			54.402	52.02		31.366	33.67
8/1/98 5:40			54.407	52.02		31.366	33.67
8/1/98 5:50			54.411	52.01		31.366	33.67
8/1/98 6:00			54.417	52.01		31.366	33.67
8/1/98 6:10			54.415	52.01		31.366	33.67
8/1/98 6:20			54.412	52.01		31.366	33.67
8/1/98 6:30			54.406	52.02		31.366	33.67
8/1/98 6:40			54.390	52.03		31.366	33.67
8/1/98 6:50			54.408	52.02		31.366	33.67
8/1/98 7:00			54.392	52.03		31.366	33.67
8/1/98 7:10			54.394	52.03		31.365	33.67
8/1/98 7:13			54.387	52.03		31.365	33.67
8/1/98 7:14			54.380	52.04		31.366	33.67
8/1/98 7:15			54.392	52.03		31.366	33.67
8/1/98 7:16			54.396	52.03		31.365	33.67
8/1/98 7:17			54.396	52.03		31.366	33.67
8/1/98 7:18			54.394	52.03		31.366	33.67
8/1/98 7:19			54.394	52.03		31.365	33.67
8/1/98 7:20			54.390	52.03		31.366	33.67
8/1/98 7:21			54.397	52.02		31.366	33.67
8/1/98 7:22			54.392	52.03		31.365	33.67
8/1/98 7:23			54.385	52.03		31.365	33.67
8/1/98 7:24			54.387	52.03		31.366	33.67
8/1/98 7:25			54.394	52.03		31.366	33.67
8/1/98 7:26			54.388	52.03		31.366	33.67
8/1/98 7:27			54.388	52.03		31.366	33.67
8/1/98 7:28			54.377	52.04		31.366	33.67
8/1/98 7:29			54.383	52.04		31.366	33.67
8/1/98 7:30			54.386	52.03		31.366	33.67
8/1/98 7:31			54.386	52.03		31.366	33.67
8/1/98 7:32			54.388	52.03		31.362	33.67
8/1/98 7:33			54.384	52.04		31.366	33.67
8/1/98 7:34			54.388	52.03		31.366	33.67
8/1/98 7:35			54.386	52.03		31.366	33.67
8/1/98 7:36			54.386	52.03		31.366	33.67
8/1/98 7:37			54.382	52.04		31.366	33.67
8/1/98 7:38			54.382	52.04		31.366	33.67
8/1/98 7:39			45.542	59.33		31.366	33.67
8/1/98 7:40			-0.487	97.32		31.366	33.67
8/1/98 7:41			-0.576	97.39		31.366	33.67
8/1/98 7:42			-0.618	97.43		31.366	33.67
8/1/98 7:43			-0.635	97.44		31.366	33.67

DATA FOR PUMPING WELL AND OB-2s

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t ¹ (time since start/time since end) (no units)	P.W. (data logger) (no units)	P.W. (water level) (feet) below RP	P.W. (draw-down) (feet)	OB-2Ss (data logger) (no units)	OB-2Ss (water level) (feet) below RP
8/1/98 7:44			54.268	52.13		31.366	33.67
8/1/98 7:45			52.161	53.87		31.366	33.67
8/1/98 7:46			52.598	53.51		31.366	33.67
8/1/98 7:47			52.857	53.30		31.366	33.67
8/1/98 7:48			53.039	53.15		31.366	33.67
8/1/98 7:49			53.172	53.04		31.366	33.67
8/1/98 7:50			53.279	52.95		31.366	33.67
8/1/98 7:51			53.362	52.88		31.366	33.67
8/1/98 7:52			53.430	52.82		31.366	33.67
8/1/98 7:53			53.493	52.77		31.366	33.67
8/1/98 7:54			53.539	52.73		31.366	33.67
8/1/98 7:55			53.587	52.69		31.366	33.67
8/1/98 7:56			53.622	52.66		31.366	33.67
8/1/98 7:57			53.659	52.63		31.366	33.67
8/1/98 7:58			53.687	52.61		31.366	33.67
8/1/98 7:59			53.718	52.59		31.366	33.67
8/1/98 8:00			53.740	52.57		31.366	33.67
8/1/98 8:01			53.764	52.55		31.366	33.67
8/1/98 8:02			53.781	52.53		31.366	33.67
8/1/98 8:03			53.808	52.51		31.366	33.67
8/1/98 8:04			53.821	52.50		31.366	33.67
8/1/98 8:05			53.840	52.48		31.366	33.67
8/1/98 8:06			53.860	52.47		31.366	33.67
8/1/98 8:07			53.869	52.46		31.366	33.67
8/1/98 8:08			53.886	52.45		31.366	33.67
8/1/98 8:09			53.893	52.44		31.366	33.67
8/1/98 8:10			53.910	52.43		31.366	33.67
8/1/98 8:11			53.919	52.42		31.366	33.67
8/1/98 8:12			53.932	52.41		31.362	33.67
8/1/98 8:13			53.948	52.40		31.367	33.67
8/1/98 8:14			53.965	52.38		31.367	33.67
8/1/98 8:15			53.972	52.38		31.367	33.67
8/1/98 8:16			53.987	52.36		31.367	33.67
8/1/98 8:17			53.991	52.36		31.367	33.67
8/1/98 8:18			54.003	52.35		31.367	33.67
8/1/98 8:19			54.014	52.34		31.367	33.67
8/1/98 8:20			54.020	52.34		31.367	33.67
8/1/98 8:21			4.425	93.27		31.367	33.67
8/1/98 8:22			-0.561	97.38		31.367	33.67
8/1/98 8:23			-0.613	97.42		31.366	33.67
8/1/98 8:24			-0.635	97.44		31.366	33.67
8/1/98 8:25			-0.661	97.46		31.366	33.67
8/1/98 8:26			-0.670	97.47		31.366	33.67
8/1/98 8:27			-0.688	97.49		31.363	33.67
8/1/98 8:28			-0.701	97.50		31.366	33.67
8/1/98 8:29			-0.696	97.49		31.367	33.67
8/1/98 8:30			-0.710	97.50		31.367	33.67
8/1/98 8:31			-0.714	97.51		31.367	33.67
8/1/98 8:32			52.198	53.84		31.367	33.67
8/1/98 8:33			50.639	55.13		31.367	33.67
8/1/98 8:34			51.163	54.69		31.368	33.68
8/1/98 8:58			89.147	52.81		31.367	33.67
8/1/98 8:59			89.166	52.79		31.367	33.67
8/1/98 9:00			89.188	52.78		31.364	33.67
8/1/98 9:01			89.234	52.74		31.367	33.67
8/1/98 9:02			89.231	52.74		31.367	33.67
8/1/98 9:03			89.250	52.73		31.367	33.67
8/1/98 9:04			89.287	52.70		31.366	33.67
8/1/98 9:05			89.302	52.69		31.366	33.67
8/1/98 9:06			89.309	52.68		31.366	33.67
8/1/98 9:07			89.309	52.68		31.366	33.67

DATA FOR PUMPING WELL AND OB-2s

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	P.W. (data logger) (no units)	P.W. (water level) (feet below RP)	P.W. (draw-down) (feet)	OB-2Ss (data logger) (no units)	OB-2Ss (water level) (feet below RP)
8/1/98 9:08			89.312	52.68		31.367	33.67
8/1/98 9:09			89.339	52.66		31.367	33.67
8/1/98 9:10			89.387	52.62		31.367	33.67
8/1/98 9:11			89.390	52.62		31.367	33.67
8/1/98 9:12			89.415	52.60		31.367	33.67
8/1/98 9:13			89.412	52.60		31.367	33.67
8/1/98 9:14			89.415	52.60		31.367	33.67
8/1/98 9:15			89.436	52.58		31.367	33.67
8/1/98 9:16			89.458	52.57		31.367	33.67
8/1/98 9:17			89.502	52.53		31.367	33.67
8/1/98 9:18			89.502	52.53		31.367	33.67
8/1/98 9:19			89.513	52.52		31.367	33.67
8/1/98 9:20			89.513	52.52		31.367	33.67
8/1/98 9:21			89.508	52.53		31.367	33.67
8/1/98 9:22			89.541	52.50		31.367	33.67
8/1/98 9:23			89.564	52.49		31.367	33.67
8/1/98 9:24			89.564	52.49		31.367	33.67
8/1/98 9:25			89.589	52.47		31.367	33.67
8/1/98 9:26			89.611	52.45		31.367	33.67
8/1/98 9:27			89.611	52.45		31.367	33.67
8/1/98 9:28			89.606	52.45		31.367	33.67
8/1/98 9:29			89.596	52.46		31.367	33.67
8/1/98 9:30			89.599	52.46		31.367	33.67
8/1/98 9:31			89.606	52.45		31.367	33.67
8/1/98 9:32			89.636	52.43		31.367	33.67
8/1/98 9:33			89.629	52.43		31.367	33.67
8/1/98 9:34			89.629	52.43		31.367	33.67
8/1/98 9:35			61.507	74.22		31.366	33.67
8/1/98 9:36			54.525	79.63		31.367	33.67
8/1/98 9:37			53.510	80.42		31.366	33.67
8/1/98 9:38			52.887	80.90		31.366	33.67
8/1/98 9:39			52.554	81.16		31.367	33.67
8/1/98 9:40			52.178	81.45		31.367	33.67
8/1/98 9:41			51.732	81.80		31.367	33.67
8/1/98 9:42			51.599	81.90		31.364	33.67
8/1/98 9:43			51.199	82.21		31.367	33.67
8/1/98 9:44			51.023	82.35		31.367	33.67
8/1/98 9:45			51.000	82.36		31.367	33.67
8/1/98 9:46			50.711	82.59		31.367	33.67
8/1/98 9:47			50.423	82.81		31.368	33.68
8/1/98 9:48			50.356	82.86		31.368	33.68
8/1/98 9:49			50.178	83.00		31.364	33.67
8/1/98 9:50			50.045	83.10		31.367	33.67
8/1/98 9:51			49.889	83.23		31.367	33.67
8/1/98 9:52			49.778	83.31		31.367	33.67
8/1/98 9:53			49.623	83.43		31.367	33.67
8/1/98 9:54			49.556	83.48		31.368	33.68
8/1/98 9:55			49.289	83.69		31.368	33.68
8/1/98 9:56			49.334	83.66		31.368	33.68
8/1/98 9:57			49.223	83.74		31.368	33.68
8/1/98 9:58			49.223	83.74		31.368	33.68
8/1/98 9:59			48.978	83.93		31.368	33.68
8/1/98 10:00			48.845	84.03		31.368	33.68
8/1/98 10:01			48.689	84.16		31.368	33.68
8/1/98 10:02			48.734	84.12		31.368	33.68
8/1/98 10:03			48.645	84.19		31.368	33.68
8/1/98 10:04			48.534	84.28		31.365	33.67
8/1/98 10:05			48.600	84.22		31.361	33.66
8/1/98 10:06			48.423	84.36		31.361	33.66
8/1/98 10:07			44.934	87.06		31.361	33.66
8/1/98 10:08			45.130	86.91		31.361	33.66

DATA FOR PUMPING WELL AND OB-2s

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	P.W.	P.W.	P.W.	OB-2Ss	OB-2Ss
			(data logger) (no units)	(water level) (feet below RP)	(draw-down) (feet)	(data logger) (no units)	(water level) (feet below RP)
8/1/98 10:09			44.888	87.10		31.362	33.67
8/1/98 10:10			44.978	87.03		31.361	33.66
8/1/98 10:11			45.510	86.62		31.361	33.66
8/1/98 10:12			45.423	86.69		31.362	33.67
8/1/98 10:13			45.289	86.79		31.362	33.67
8/1/98 10:14			45.245	86.82		31.361	33.66
8/1/98 10:15			45.156	86.89		31.361	33.66
8/1/98 10:16			45.130	86.91		31.361	33.66
8/1/98 10:17			45.039	86.98		31.362	33.67
8/1/98 10:18			45.065	86.96		31.362	33.67
8/1/98 10:19			45.062	86.97		31.361	33.66
8/1/98 10:20			44.888	87.10		31.361	33.66
8/1/98 10:21			44.952	87.05		31.361	33.66
8/1/98 10:22			44.795	87.17		31.361	33.66
8/1/98 10:23			44.841	87.14		31.361	33.66
8/1/98 10:24			44.549	87.36		31.361	33.66
8/1/98 10:25			44.308	87.55		31.361	33.66
8/1/98 10:26			44.193	87.64		31.361	33.66
8/1/98 10:27			44.375	87.50		31.361	33.66
8/1/98 10:28			44.242	87.60		31.361	33.66
8/1/98 10:29			44.243	87.60		31.361	33.66
8/1/98 10:30			44.036	87.76		31.362	33.67
8/1/98 10:31			43.574	88.12		31.362	33.67
8/1/98 10:32			42.929	88.62		31.361	33.66
8/1/98 10:33			42.886	88.65		31.362	33.67
8/1/98 10:34			42.929	88.62		31.362	33.67
8/1/98 10:35			42.751	88.76		31.362	33.67
8/1/98 10:36			42.818	88.70		31.362	33.67
8/1/98 10:37			42.596	88.88		31.362	33.67
8/1/98 10:38			42.707	88.79		31.362	33.67
8/1/98 10:39			42.572	88.89		31.362	33.67
8/1/98 10:40			42.507	88.94		31.362	33.67
8/1/98 10:41			42.418	89.01		31.362	33.67
8/1/98 10:42			42.440	89.00		31.362	33.67
8/1/98 10:43			42.506	88.95		31.362	33.67
8/1/98 10:44			42.328	89.08		31.362	33.67
8/1/98 10:45			42.351	89.07		31.362	33.67
8/1/98 10:46			42.283	89.12		31.362	33.67
8/1/98 10:47			42.350	89.07		31.362	33.67
8/1/98 10:48			42.306	89.10		31.362	33.67
8/1/98 10:49			42.191	89.19		31.362	33.67
8/1/98 10:50			42.150	89.22		31.362	33.67
8/1/98 10:51			42.124	89.24		31.362	33.67
8/1/98 10:52			42.012	89.33		31.362	33.67
8/1/98 10:53			42.012	89.33		31.362	33.67
8/1/98 10:54			42.012	89.33		31.362	33.67
8/1/98 10:55			41.990	89.35		31.361	33.66
8/1/98 10:56			42.038	89.31		31.362	33.67
8/1/98 10:57			41.949	89.38		31.361	33.66
8/1/98 10:58			41.882	89.43		31.362	33.67
8/1/98 10:59			41.858	89.45		31.362	33.67
8/1/98 11:00			41.816	89.48		31.362	33.67
8/1/98 11:01			41.655	89.61		31.362	33.67
8/1/98 11:02			41.563	89.68		31.362	33.67
8/1/98 11:03			41.613	89.64		31.362	33.67
8/1/98 11:04			41.722	89.55		31.362	33.67
8/1/98 11:05			41.855	89.45		31.362	33.67
8/1/98 11:06			41.744	89.54		31.362	33.67
8/1/98 11:07			41.633	89.62		31.362	33.67
8/1/98 11:08			41.567	89.67		31.362	33.67
8/1/98 11:09			41.633	89.62		31.362	33.67

DATA FOR PUMPING WELL AND OB-2s

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	P.W. (data logger) (no units)	P.W. (water level) (feet below RP)	P.W. (draw-down) (feet)	OB-2Ss (data logger) (no units)	OB-2Ss (water level) (feet below RP)
8/1/98 11:10			41.589	89.66		31.362	33.67
8/1/98 11:11			41.456	89.76		31.362	33.67
8/1/98 11:12			41.433	89.78		31.362	33.67
8/1/98 11:13			41.456	89.76		31.362	33.67
8/1/98 11:14			41.522	89.71		31.362	33.67
8/1/98 11:15			41.388	89.81		31.362	33.67
8/1/98 11:16			41.406	89.80		31.362	33.67
8/1/98 11:17			41.388	89.81		31.362	33.67
8/1/98 11:18			41.317	89.87		31.362	33.67
8/1/98 11:19			41.495	89.73		31.362	33.67
8/1/98 11:20			85.609	55.55		31.361	33.66
8/1/98 11:21			82.635	57.85		31.362	33.67
8/1/98 11:22			83.203	57.41		31.362	33.67
8/1/98 11:23			83.651	57.07		31.361	33.66
8/1/98 11:24			83.984	56.81		31.362	33.67
8/1/98 11:25			84.270	56.59		31.362	33.67
8/1/98 11:26			84.525	56.39		31.362	33.67
8/1/98 11:27			84.702	56.25		31.362	33.67
8/1/98 11:28			84.887	56.11		31.362	33.67
8/1/98 11:29			85.033	56.00		31.362	33.67
8/1/98 11:30			85.188	55.88		31.362	33.67
8/1/98 11:31			85.322	55.77		31.362	33.67
8/1/98 11:32			85.455	55.67		31.362	33.67
8/1/98 11:33			85.588	55.57		31.362	33.67
8/1/98 11:34			85.674	55.50		31.362	33.67
8/1/98 11:35			50.689	82.61		31.362	33.67
8/1/98 11:36			48.425	84.36		31.362	33.67
8/1/98 11:37			85.008	56.02		31.362	33.67
8/1/98 11:38			85.311	55.78		31.362	33.67
8/1/98 11:39			85.550	55.60		31.362	33.67
8/1/98 11:40			85.764	55.43		31.362	33.67
8/1/98 11:41			85.862	55.35		31.362	33.67
8/1/98 11:42			86.015	55.23		31.362	33.67
8/1/98 11:43			86.101	55.17		31.362	33.67
8/1/98 11:44			86.212	55.08		31.362	33.67
8/1/98 11:45			86.280	55.03		31.362	33.67
8/1/98 11:46			86.391	54.94		31.362	33.67
8/1/98 11:47			86.472	54.88		31.362	33.67
8/1/98 11:48			86.583	54.79		31.362	33.67
8/1/98 11:49			86.647	54.75		31.362	33.67
8/1/98 11:50			86.717	54.69		31.362	33.67
8/1/98 11:51			86.802	54.63		31.362	33.67
8/1/98 11:52			86.869	54.57		31.362	33.67
8/1/98 11:53			86.913	54.54		31.362	33.67
8/1/98 11:54			86.958	54.50		31.362	33.67
8/1/98 11:55			87.005	54.47		31.362	33.67
8/1/98 11:56			87.044	54.44		31.362	33.67
8/1/98 11:57			87.091	54.40		31.362	33.67
8/1/98 11:58			87.155	54.35		31.362	33.67
8/1/98 11:59			87.221	54.30		31.362	33.67
8/1/98 12:00			87.266	54.27		31.361	33.66
8/1/98 12:01			87.332	54.21		31.361	33.66
8/1/98 12:02			87.399	54.16		31.362	33.67
8/1/98 12:03			87.418	54.15		31.361	33.66
8/1/98 12:04			87.440	54.13		31.362	33.67
8/1/98 12:05			87.500	54.08		31.362	33.67
8/1/98 12:06			87.554	54.04		31.362	33.67
8/1/98 12:07			87.614	54.00		31.361	33.66
8/1/98 12:08			87.618	53.99		31.361	33.66
8/1/98 12:09			87.685	53.94		31.361	33.66
8/1/98 12:10			87.699	53.93		31.361	33.66

DATA FOR PUMPING WELL AND OB-2s

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t ₀ (time since start/time since end) (no units)	P.W. (data logger) (no units)	P.W. (water level) (feet) below RP)	P.W. (draw-down) (feet)	OB-2Ss (data logger) (no units)	OB-2Ss (water level) (feet) below RP)
8/1/98 12:11			87.754	53.89		31.361	33.66
8/1/98 12:12			87.799	53.85		31.361	33.66
8/1/98 12:13			87.799	53.85		31.361	33.66
8/1/98 12:14			87.813	53.84		31.361	33.66
8/1/98 12:15			87.855	53.81		31.361	33.66
8/1/98 12:16			87.880	53.79		31.361	33.66
8/1/98 12:17			87.902	53.77		31.361	33.66
8/1/98 12:18			87.976	53.72		31.361	33.66
8/1/98 12:19			87.991	53.70		31.361	33.66
8/1/98 12:20			88.035	53.67		31.361	33.66
8/1/98 12:21			88.092	53.63		31.361	33.66
8/1/98 12:22			88.107	53.61		31.361	33.66
8/1/98 12:23			88.146	53.58		31.361	33.66
8/1/98 12:24			88.151	53.58		31.361	33.66
8/1/98 12:25			88.195	53.55		31.361	33.66
8/1/98 12:26			88.240	53.51		31.361	33.66
8/1/98 12:27			88.243	53.51		31.361	33.66
8/1/98 12:28			88.262	53.49		31.361	33.66
8/1/98 12:29			88.262	53.49		31.361	33.66
8/1/98 12:30			88.287	53.47		31.361	33.66
8/1/98 12:31			88.306	53.46		31.361	33.66
8/1/98 12:32			88.329	53.44		31.361	33.66
8/1/98 12:33			88.329	53.44		31.361	33.66
8/1/98 12:34			88.373	53.41		31.361	33.66
8/1/98 12:35			88.417	53.37		31.361	33.66
8/1/98 12:36			88.440	53.36		31.361	33.66
8/1/98 12:37			88.462	53.34		31.361	33.66
8/1/98 12:38			88.484	53.32		31.361	33.66
8/1/98 12:39			88.506	53.30		31.361	33.66
8/1/98 12:40			88.506	53.30		31.361	33.66
8/1/98 12:41			88.551	53.27		31.361	33.66
8/1/98 12:42			88.570	53.26		31.361	33.66
8/1/98 12:43			88.595	53.24		31.361	33.66
8/1/98 12:44			88.595	53.24		31.361	33.66
8/1/98 12:45			88.617	53.22		31.361	33.66
8/1/98 12:46			88.662	53.18		31.361	33.66
8/1/98 12:47			88.636	53.20		31.361	33.66
8/1/98 12:48			88.681	53.17		31.361	33.66
8/1/98 12:49			88.711	53.15		31.361	33.66
8/1/98 12:50			88.752	53.11		31.361	33.66
8/1/98 12:51			88.777	53.09		31.361	33.66
8/1/98 12:52			88.767	53.10		31.361	33.66
8/1/98 12:53			88.789	53.09		31.361	33.66
8/1/98 12:54			88.803	53.07		31.361	33.66
8/1/98 12:55			88.826	53.06		31.361	33.66
8/1/98 12:56			88.855	53.03		31.361	33.66
8/1/98 12:57			88.870	53.02		31.361	33.66
8/1/98 12:58			88.867	53.03		31.361	33.66
8/1/98 12:59			88.875	53.02		31.361	33.66
8/1/98 13:00			88.911	52.99		31.361	33.66
8/1/98 13:01			88.919	52.98		31.361	33.66
8/1/98 13:02			88.946	52.96		31.361	33.66
8/1/98 13:03			88.960	52.95		31.361	33.66
8/1/98 13:04			88.953	52.96		31.361	33.66
8/1/98 13:05			89.005	52.92		31.360	33.66
8/1/98 13:06			89.049	52.88		31.361	33.66
8/1/98 13:07			89.049	52.88		31.361	33.66
8/1/98 13:08			89.094	52.85		31.361	33.66
8/1/98 13:09			89.094	52.85		31.361	33.66
8/1/98 13:10			89.138	52.82		31.361	33.66
8/1/98 13:11			89.135	52.82		31.361	33.66

DATA FOR PUMPING WELL AND OB-2s

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	P.W.	P.W.	P.W.	OB-2Ss	OB-2Ss
			(data logger) (no units)	(water level) (feet below RP)	(draw-down) (feet)	(data logger) (no units)	(water level) (feet below RP)
8/1/98 13:12			89.132	52.82		31.361	33.66
8/1/98 13:13			89.132	52.82		31.361	33.66
8/1/98 13:14			89.176	52.79		31.361	33.66
8/1/98 13:15			89.206	52.76		31.361	33.66
8/1/98 13:16			89.176	52.79		31.361	33.66
8/1/98 13:17			89.181	52.78		31.361	33.66
8/1/98 13:18			89.169	52.79		31.361	33.66
8/1/98 13:19			89.154	52.80		31.361	33.66
8/1/98 13:20			89.136	52.82		31.361	33.66
8/1/98 13:21			89.139	52.81		31.361	33.66
8/1/98 13:22			89.129	52.82		31.361	33.66
8/1/98 13:23			89.151	52.81		31.360	33.66
8/1/98 13:24			89.173	52.79		31.361	33.66
8/1/98 13:25			89.195	52.77		31.361	33.66
8/1/98 13:26			89.215	52.76		31.361	33.66
8/1/98 13:27			89.240	52.74		31.361	33.66
8/1/98 13:28			89.281	52.70		31.361	33.66
8/1/98 13:29			89.274	52.71		31.361	33.66
8/1/98 13:30			89.296	52.69		31.361	33.66
8/1/98 13:31			89.303	52.69		31.360	33.66
8/1/98 13:32			89.296	52.69		31.361	33.66
8/1/98 13:33			89.311	52.68		31.360	33.66
8/1/98 13:34			89.296	52.69		31.360	33.66
8/1/98 13:35			89.296	52.69		31.361	33.66
8/1/98 13:36			89.303	52.69		31.361	33.66
8/1/98 13:37			89.323	52.67		31.360	33.66
8/1/98 13:38			89.348	52.65		31.361	33.66
8/1/98 13:39			89.392	52.62		31.360	33.66
8/1/98 13:40			89.367	52.64		31.361	33.66
8/1/98 13:41			89.386	52.62		31.360	33.66
8/1/98 13:42			89.433	52.59		31.360	33.66
8/1/98 13:43			89.411	52.60		31.361	33.66
8/1/98 13:44			89.430	52.59		31.360	33.66
8/1/98 13:45			89.475	52.55		31.360	33.66
8/1/98 13:46			89.475	52.55		31.360	33.66
8/1/98 13:47			89.469	52.56		31.361	33.66
8/1/98 13:48			89.482	52.55		31.360	33.66
8/1/98 13:49			89.479	52.55		31.361	33.66
8/1/98 13:50			89.499	52.54		31.361	33.66
8/1/98 13:51			89.476	52.55		31.361	33.66
8/1/98 13:52			89.469	52.56		31.361	33.66
8/1/98 13:53			89.469	52.56		31.361	33.66
8/1/98 13:54			89.469	52.56		31.361	33.66
8/1/98 13:55			89.491	52.54		31.361	33.66
8/1/98 13:56			89.491	52.54		31.361	33.66
8/1/98 13:57			89.513	52.52		31.361	33.66
8/1/98 13:58			89.535	52.51		31.361	33.66
8/1/98 13:59			89.558	52.49		31.361	33.66
8/1/98 14:00			89.558	52.49		31.360	33.66
8/1/98 14:01			89.550	52.50		31.360	33.66
8/1/98 14:02			89.558	52.49		31.361	33.66
8/1/98 14:03			89.594	52.46		31.360	33.66
8/1/98 14:04			89.616	52.44		31.360	33.66
8/1/98 14:05			89.610	52.45		31.361	33.66
8/1/98 14:06			89.621	52.44		31.360	33.66
8/1/98 14:07			89.637	52.43		31.361	33.66
8/1/98 14:08			89.640	52.43		31.361	33.66
8/1/98 14:09			89.640	52.43		31.361	33.66
8/1/98 14:10			89.640	52.43		31.361	33.66
8/1/98 14:11			89.640	52.43		31.361	33.66
8/1/98 14:12			89.637	52.43		31.361	33.66

DATA FOR PUMPING WELL AND OB-2s

Date/Time	Time Since Pumping Started (minutes)	Ratio U/V (time since start/time since end) (no units)	P.W. (data logger) (no units)	P.W. (water level) (feet below RP)	P.W. (draw-down) (feet)	OB-2Ss (data logger) (no units)	OB-2Ss (water level) (feet below RP)
8/1/98 14:13			89.634	52.43		31.360	33.66
8/1/98 14:14			89.637	52.43		31.361	33.66
8/1/98 14:15			89.648	52.42		31.360	33.66
8/1/98 14:16			89.656	52.41		31.360	33.66
8/1/98 14:17			89.664	52.41		31.361	33.66
8/1/98 14:18			89.664	52.41		31.360	33.66
8/1/98 14:19			89.686	52.39		31.360	33.66
8/1/98 14:20			89.708	52.37		31.360	33.66
8/1/98 14:21			89.708	52.37		31.361	33.66
8/1/98 14:22			89.730	52.36		31.361	33.66
8/1/98 14:23			89.730	52.36		31.361	33.66
8/1/98 14:24			89.723	52.36		31.361	33.66
8/1/98 14:25			89.753	52.34		31.361	33.66
8/1/98 14:26			89.730	52.36		31.361	33.66
8/1/98 14:27			89.717	52.37		31.361	33.66
8/1/98 14:28			89.742	52.35		31.361	33.66
8/1/98 14:29			89.742	52.35		31.361	33.66
8/1/98 14:30			89.737	52.35		31.361	33.66
8/1/98 14:31			89.739	52.35		31.361	33.66
8/1/98 14:32			89.717	52.37		31.360	33.66
8/1/98 14:33			89.717	52.37		31.360	33.66
8/1/98 14:34			89.717	52.37		31.361	33.66
8/1/98 14:35			89.731	52.36		31.360	33.66
8/1/98 14:36			89.736	52.35		31.361	33.66
8/1/98 14:37			89.736	52.35		31.361	33.66
8/1/98 14:38			89.733	52.35		31.361	33.66
8/1/98 14:39			89.755	52.34		31.361	33.66
8/1/98 14:40			89.758	52.33		31.361	33.66
8/1/98 14:41			44.356	87.51		31.361	33.66
8/1/98 14:42			89.333	52.66		31.361	33.66
8/1/98 14:43			89.489	52.54		31.361	33.66
8/1/98 14:44			89.585	52.47		31.361	33.66
8/1/98 14:45			89.622	52.44		31.361	33.66
8/1/98 14:46			89.652	52.42		31.361	33.66
8/1/98 14:47			89.644	52.42		31.361	33.66
8/1/98 14:48			89.652	52.42		31.361	33.66
8/1/98 14:49			89.666	52.41		31.361	33.66
8/1/98 14:50			89.693	52.39		31.361	33.66
8/1/98 14:51			89.718	52.37		31.361	33.66
8/1/98 14:52			89.740	52.35		31.361	33.66
8/1/98 14:53			89.737	52.35		31.361	33.66
8/1/98 14:54			89.763	52.33		31.361	33.66
8/1/98 14:55			89.759	52.33		31.361	33.66
8/1/98 14:56			89.752	52.34		31.361	33.66
8/1/98 14:57			89.759	52.33		31.361	33.66
8/1/98 14:58			89.804	52.30		31.361	33.66
8/1/98 14:59			89.823	52.28		31.361	33.66
8/1/98 14:59			89.815	52.29		31.361	33.66
8/1/98 15:00			89.823	52.28		31.361	33.66
8/1/98 15:01	0		89.815	52.29	0.006	31.361	33.66
8/1/98 15:02	1		58.508	76.55	24.263	31.362	33.67
8/1/98 15:03	2		57.348	77.45	25.162	31.361	33.66
8/1/98 15:04	3		56.614	78.01	25.730	31.361	33.66
8/1/98 15:05	4		56.484	78.12	25.831	31.361	33.66
8/1/98 15:06	5		55.954	78.53	26.242	31.361	33.66
8/1/98 15:07	6		55.599	78.80	26.517	31.361	33.66
8/1/98 15:08	7		55.177	79.13	26.844	31.361	33.66
8/1/98 15:09	8		54.889	79.35	27.067	31.362	33.67
8/1/98 15:10	9		54.933	79.32	27.033	31.362	33.67
8/1/98 15:11	10		54.467	79.68	27.394	31.364	33.67
8/1/98 15:12	11		54.244	79.85	27.567	31.365	33.67

DATA FOR PUMPING WELL AND OB-2s

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	P.W. (data logger) (no units)	P.W. (water level) (feet below RP)	P.W. (draw-down) (feet)	OB-2Ss (data logger) (no units)	OB-2Ss (water level) (feet below RP)
8/1/98 15:13	12		54.310	79.80	27.515	31.365	33.67
8/1/98 15:14	13		54.087	79.97	27.688	31.365	33.67
8/1/98 15:15	14		53.906	80.11	27.828	31.365	33.67
8/1/98 15:16	15		53.840	80.16	27.880	31.365	33.67
8/1/98 15:17	16		53.488	80.44	28.152	31.365	33.67
8/1/98 15:18	17		53.394	80.51	28.225	31.365	33.67
8/1/98 15:19	18		53.306	80.58	28.293	31.365	33.67
8/1/98 15:20	19		53.168	80.68	28.400	31.365	33.67
8/1/98 15:21	20		53.166	80.69	28.402	31.362	33.67
8/1/98 15:22	21		52.860	80.92	28.639	31.362	33.67
8/1/98 15:23	22		52.989	80.82	28.539	31.362	33.67
8/1/98 15:24	23		52.811	80.96	28.677	31.362	33.67
8/1/98 15:25	24		52.681	81.06	28.778	31.362	33.67
8/1/98 15:26	25		52.709	81.04	28.756	31.362	33.67
8/1/98 15:27	26		52.594	81.13	28.845	31.362	33.67
8/1/98 15:28	27		52.434	81.25	28.969	31.362	33.67
8/1/98 15:29	28		52.397	81.28	28.998	31.362	33.67
8/1/98 15:30	29		52.284	81.37	29.085	31.362	33.67
8/1/98 15:31	30		52.419	81.27	28.981	31.362	33.67
8/1/98 15:32	31		52.242	81.40	29.118	31.362	33.67
8/1/98 15:33	32		52.220	81.42	29.135	31.363	33.67
8/1/98 15:34	33		51.929	81.64	29.360	31.362	33.67
8/1/98 15:35	34		52.196	81.44	29.153	31.362	33.67
8/1/98 15:36	35		51.841	81.71	29.428	31.363	33.67
8/1/98 15:37	36		51.863	81.70	29.411	31.363	33.67
8/1/98 15:38	37		51.661	81.85	29.568	31.362	33.67
8/1/98 15:39	38		51.974	81.61	29.325	31.363	33.67
8/1/98 15:40	39		51.679	81.84	29.554	31.364	33.67
8/1/98 15:41	40		51.527	81.96	29.672	31.363	33.67
8/1/98 15:42	41		51.684	81.83	29.550	31.362	33.67
8/1/98 15:43	42		51.349	82.09	29.810	31.363	33.67
8/1/98 15:44	43		51.617	81.89	29.602	31.363	33.67
8/1/98 15:45	44		51.567	81.93	29.641	31.363	33.67
8/1/98 15:46	45		51.456	82.01	29.727	31.363	33.67
8/1/98 15:47	46		51.411	82.05	29.762	31.363	33.67
8/1/98 15:48	47		51.478	81.99	29.710	31.363	33.67
8/1/98 15:49	48		51.210	82.20	29.917	31.363	33.67
8/1/98 15:50	49		51.163	82.24	29.954	31.363	33.67
8/1/98 15:51	50		50.962	82.39	30.110	31.363	33.67
8/1/98 15:52	51		51.206	82.20	29.920	31.363	33.67
8/1/98 15:53	52		51.006	82.36	30.075	31.364	33.67
8/1/98 15:54	53		51.077	82.30	30.020	31.364	33.67
8/1/98 15:55	54		51.032	82.34	30.055	31.364	33.67
8/1/98 15:56	55		50.922	82.42	30.140	31.364	33.67
8/1/98 15:57	56		50.946	82.41	30.122	31.364	33.67
8/1/98 15:58	57		50.922	82.42	30.140	31.364	33.67
8/1/98 15:59	58		50.725	82.58	30.293	31.364	33.67
8/1/98 16:00	59		50.853	82.48	30.194	31.364	33.67
8/1/98 16:01	60		50.614	82.66	30.379	31.364	33.67
8/1/98 16:02	61		50.791	82.53	30.242	31.364	33.67
8/1/98 16:03	62		50.563	82.70	30.419	31.364	33.67
8/1/98 16:04	63		50.674	82.62	30.333	31.364	33.67
8/1/98 16:05	64		50.433	82.80	30.519	31.364	33.67
8/1/98 16:06	65		50.677	82.61	30.330	31.364	33.67
8/1/98 16:07	66		50.455	82.79	30.502	31.364	33.67
8/1/98 16:08	67		50.523	82.73	30.450	31.364	33.67
8/1/98 16:09	68		50.522	82.73	30.450	31.364	33.67
8/1/98 16:10	69		50.568	82.70	30.415	31.363	33.67
8/1/98 16:11	70		50.499	82.75	30.468	31.363	33.67
8/1/98 16:12	71		50.499	82.75	30.468	31.363	33.67
8/1/98 16:13	72		50.610	82.67	30.382	31.363	33.67

DATA FOR PUMPING WELL AND OB-2s

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	P.W. (data logger) (no units)	P.W. (water level) (feet below RP)	P.W. (draw-down) (feet)	OB-2Ss (data logger) (no units)	OB-2Ss (water level) (feet below RP)
8/1/98 16:14	73		50.522	82.73	30.450	31.363	33.67
8/1/98 16:15	74		50.344	82.87	30.588	31.363	33.67
8/1/98 16:16	75		50.322	82.89	30.605	31.363	33.67
8/1/98 16:17	76		50.366	82.86	30.571	31.363	33.67
8/1/98 16:18	77		50.144	83.03	30.743	31.363	33.67
8/1/98 16:19	78		50.300	82.91	30.622	31.363	33.67
8/1/98 16:20	79		50.255	82.94	30.657	31.363	33.67
8/1/98 16:21	80		50.144	83.03	30.743	31.363	33.67
8/1/98 16:22	81		50.100	83.06	30.777	31.363	33.67
8/1/98 16:23	82		50.054	83.10	30.813	31.363	33.67
8/1/98 16:24	83		50.144	83.03	30.743	31.363	33.67
8/1/98 16:25	84		50.165	83.01	30.727	31.363	33.67
8/1/98 16:26	85		50.187	82.99	30.710	31.363	33.67
8/1/98 16:27	86		50.165	83.01	30.727	31.363	33.67
8/1/98 16:28	87		49.988	83.15	30.864	31.363	33.67
8/1/98 16:29	88		50.028	83.12	30.832	31.363	33.67
8/1/98 16:30	89		50.098	83.06	30.779	31.363	33.67
8/1/98 16:31	90		50.054	83.10	30.813	31.363	33.67
8/1/98 16:32	91		49.939	83.19	30.902	31.363	33.67
8/1/98 16:33	92		50.052	83.10	30.815	31.363	33.67
8/1/98 16:34	93		49.877	83.23	30.950	31.363	33.67
8/1/98 16:35	94		50.022	83.12	30.838	31.363	33.67
8/1/98 16:36	95		49.849	83.26	30.972	31.363	33.67
8/1/98 16:37	96		49.982	83.15	30.869	31.363	33.67
8/1/98 16:38	97		49.849	83.26	30.972	31.363	33.67
8/1/98 16:39	98		49.782	83.31	31.024	31.363	33.67
8/1/98 16:40	99		49.738	83.34	31.058	31.363	33.67
8/1/98 16:41	100		49.800	83.29	31.010	31.363	33.67
8/1/98 16:42	101		49.778	83.31	31.027	31.363	33.67
8/1/98 16:43	102		49.804	83.29	31.007	31.363	33.67
8/1/98 16:44	103		49.780	83.31	31.025	31.363	33.67
8/1/98 16:45	104		49.710	83.36	31.080	31.363	33.67
8/1/98 16:46	105		49.623	83.43	31.147	31.363	33.67
8/1/98 16:47	106		49.847	83.26	30.973	31.363	33.67
8/1/98 16:48	107		49.845	83.26	30.975	31.363	33.67
8/1/98 16:49	108		49.532	83.50	31.217	31.363	33.67
8/1/98 16:50	109		49.668	83.40	31.112	31.363	33.67
8/1/98 16:51	110		49.579	83.47	31.181	31.363	33.67
8/1/98 16:52	111		49.486	83.54	31.253	31.363	33.67
8/1/98 16:53	112		49.690	83.38	31.095	31.363	33.67
8/1/98 16:54	113		49.601	83.45	31.164	31.363	33.67
8/1/98 16:55	114		49.611	83.44	31.156	31.363	33.67
8/1/98 16:56	115		49.565	83.48	31.192	31.363	33.67
8/1/98 16:57	116		49.450	83.57	31.281	31.363	33.67
8/1/98 16:58	117		49.601	83.45	31.164	31.363	33.67
8/1/98 16:59	118		49.517	83.51	31.229	31.363	33.67
8/1/98 17:00	119		49.628	83.43	31.143	31.363	33.67
8/1/98 17:01	120		49.449	83.57	31.282	31.363	33.67
8/1/98 17:02	121		49.404	83.60	31.317	31.363	33.67
8/1/98 17:03	122		49.449	83.57	31.282	31.363	33.67
8/1/98 17:04	123		49.360	83.64	31.351	31.363	33.67
8/1/98 17:05	124		49.338	83.65	31.368	31.363	33.67
8/1/98 17:06	125		49.471	83.55	31.265	31.363	33.67
8/1/98 17:07	126		49.426	83.58	31.300	31.363	33.67
8/1/98 17:08	127		49.449	83.57	31.282	31.363	33.67
8/1/98 17:09	128		49.426	83.58	31.300	31.363	33.67
8/1/98 17:10	129		49.358	83.64	31.352	31.363	33.67
8/1/98 17:11	130		49.404	83.60	31.317	31.363	33.67
8/1/98 17:12	131		49.360	83.64	31.351	31.363	33.67
8/1/98 17:13	132		49.358	83.64	31.352	31.363	33.67
8/1/98 17:14	133		49.336	83.65	31.369	31.364	33.67

DATA FOR PUMPING WELL AND OB-2s

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	P.W. (data logger) (no units)	P.W. (water level) (feet below RP)	P.W. (draw-down) (feet)	OB-2Ss (data logger) (no units)	OB-2Ss (water level) (feet below RP)
8/1/98 17:15	134		49.336	83.65	31.369	31.364	33.67
8/1/98 17:16	135		49.338	83.65	31.368	31.364	33.67
8/1/98 17:17	136		49.249	83.72	31.437	31.364	33.67
8/1/98 17:18	137		49.314	83.67	31.386	31.364	33.67
8/1/98 17:19	138		49.358	83.64	31.352	31.364	33.67
8/1/98 17:20	139		49.292	83.69	31.403	31.364	33.67
8/1/98 17:21	140		49.425	83.58	31.300	31.364	33.67
8/1/98 17:22	141		49.380	83.62	31.335	31.364	33.67
8/1/98 17:23	142		49.203	83.76	31.472	31.364	33.67
8/1/98 17:24	143		49.293	83.69	31.403	31.364	33.67
8/1/98 17:25	144		49.292	83.69	31.403	31.364	33.67
8/1/98 17:26	145		49.181	83.77	31.489	31.364	33.67
8/1/98 17:27	146		49.157	83.79	31.508	31.364	33.67
8/1/98 17:28	147		49.136	83.81	31.524	31.363	33.67
8/1/98 17:29	148		49.358	83.64	31.352	31.365	33.67
8/1/98 17:30	149		49.092	83.84	31.558	31.365	33.67
8/1/98 17:31	150		49.159	83.79	31.506	31.365	33.67
8/1/98 17:32	151		49.136	83.81	31.524	31.365	33.67
8/1/98 17:33	152		49.068	83.86	31.577	31.365	33.67
8/1/98 17:34	153		49.246	83.72	31.439	31.365	33.67
8/1/98 17:35	154		48.933	83.97	31.682	31.365	33.67
8/1/98 17:36	155		49.044	83.88	31.596	31.365	33.67
8/1/98 17:37	156		49.218	83.75	31.461	31.365	33.67
8/1/98 17:38	157		49.064	83.86	31.580	31.365	33.67
8/1/98 17:39	158		49.022	83.90	31.613	31.365	33.67
8/1/98 17:40	159		49.262	83.71	31.427	31.365	33.67
8/1/98 17:41	160		49.173	83.78	31.496	31.365	33.67
8/1/98 17:42	161		49.018	83.90	31.616	31.365	33.67
8/1/98 17:43	162		48.998	83.92	31.631	31.365	33.67
8/1/98 17:44	163		49.147	83.80	31.516	31.365	33.67
8/1/98 17:45	164		49.151	83.80	31.513	31.363	33.67
8/1/98 17:46	165		49.173	83.78	31.496	31.363	33.67
8/1/98 17:47	166		49.062	83.87	31.582	31.363	33.67
8/1/98 17:48	167		49.040	83.88	31.599	31.363	33.67
8/1/98 17:49	168		48.952	83.95	31.667	31.363	33.67
8/1/98 17:50	169		49.107	83.83	31.547	31.363	33.67
8/1/98 17:51	170		49.018	83.90	31.616	31.363	33.67
8/1/98 17:52	171		49.052	83.87	31.582	31.363	33.67
8/1/98 17:53	172		48.929	83.97	31.685	31.363	33.67
8/1/98 17:54	173		49.062	83.87	31.582	31.363	33.67
8/1/98 17:55	174		48.992	83.92	31.636	31.363	33.67
8/1/98 17:56	175		48.881	84.01	31.722	31.363	33.67
8/1/98 17:57	176		48.952	83.95	31.667	31.363	33.67
8/1/98 17:58	177		49.191	83.77	31.482	31.363	33.67
8/1/98 17:59	178		48.796	84.07	31.788	31.363	33.67
8/1/98 18:00	179		48.996	83.92	31.633	31.363	33.67
8/1/98 18:01	180		49.018	83.90	31.616	31.363	33.67
8/1/98 18:02	181		48.974	83.93	31.650	31.364	33.67
8/1/98 18:03	182		48.863	84.02	31.736	31.363	33.67
8/1/98 18:04	183		49.018	83.90	31.616	31.364	33.67
8/1/98 18:05	184		49.018	83.90	31.616	31.363	33.67
8/1/98 18:06	185		49.089	83.85	31.561	31.363	33.67
8/1/98 18:07	186		48.843	84.04	31.751	31.363	33.67
8/1/98 18:08	187		48.978	83.93	31.647	31.363	33.67
8/1/98 18:09	188		48.992	83.92	31.636	31.363	33.67
8/1/98 18:10	189		49.021	83.90	31.613	31.363	33.67
8/1/98 18:11	190		48.950	83.95	31.668	31.363	33.67
8/1/98 18:12	191		48.994	83.92	31.634	31.364	33.67
8/1/98 18:13	192		48.861	84.02	31.737	31.363	33.67
8/1/98 18:14	193		48.865	84.02	31.734	31.363	33.67
8/1/98 18:15	194		48.823	84.05	31.767	31.363	33.67

DATA FOR PUMPING WELL AND OB-2s

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	P.W. (data logger) (no units)	P.W. (water level) (feet) below RP	P.W. (draw-down) (feet)	OB-2Ss (data logger) (no units)	OB-2Ss (water level) (feet) below RP
8/1/98 18:16	195		48.843	84.04	31.751	31.364	33.67
8/1/98 18:17	196		48.928	83.97	31.685	31.363	33.67
8/1/98 18:18	197		48.976	83.93	31.648	31.364	33.67
8/1/98 18:19	198		49.087	83.85	31.562	31.363	33.67
8/1/98 18:20	199		48.883	84.00	31.720	31.363	33.67
8/1/98 18:21	200		48.865	84.02	31.734	31.363	33.67
8/1/98 18:22	201		48.821	84.05	31.768	31.363	33.67
8/1/98 18:23	202		48.958	83.95	31.662	31.363	33.67
8/1/98 18:24	203		48.892	84.00	31.713	31.363	33.67
8/1/98 18:25	204		48.821	84.05	31.768	31.363	33.67
8/1/98 18:26	205		48.795	84.07	31.788	31.364	33.67
8/1/98 18:27	206		48.706	84.14	31.857	31.363	33.67
8/1/98 18:28	207		48.972	83.94	31.651	31.363	33.67
8/1/98 18:29	208		48.817	84.06	31.771	31.363	33.67
8/1/98 18:30	209		48.843	84.04	31.751	31.364	33.67
8/1/98 18:31	210		48.932	83.97	31.682	31.363	33.67
8/1/98 18:32	211		48.821	84.05	31.768	31.363	33.67
8/1/98 18:33	212		48.835	84.04	31.758	31.364	33.67
8/1/98 18:34	213		48.839	84.04	31.754	31.363	33.67
8/1/98 18:35	214		48.839	84.04	31.754	31.364	33.67
8/1/98 18:36	215		48.928	83.97	31.685	31.364	33.67
8/1/98 18:37	216		48.750	84.11	31.823	31.363	33.67
8/1/98 18:38	217		48.817	84.06	31.771	31.364	33.67
8/1/98 18:39	218		48.680	84.16	31.878	31.363	33.67
8/1/98 18:40	219		48.706	84.14	31.857	31.364	33.67
8/1/98 18:41	220		48.839	84.04	31.754	31.364	33.67
8/1/98 18:42	221		48.861	84.02	31.737	31.364	33.67
8/1/98 18:43	222		48.702	84.14	31.861	31.364	33.67
8/1/98 18:44	223		48.575	84.24	31.959	31.364	33.67
8/1/98 18:45	224		48.569	84.25	31.964	31.364	33.67
8/1/98 18:46	225		48.728	84.12	31.840	31.363	33.67
8/1/98 18:47	226		48.754	84.10	31.820	31.363	33.67
8/1/98 18:48	227		48.839	84.04	31.754	31.364	33.67
8/1/98 18:49	228		48.819	84.05	31.770	31.364	33.67
8/1/98 18:50	229		48.706	84.14	31.857	31.364	33.67
8/1/98 18:51	230		48.551	84.26	31.978	31.363	33.67
8/1/98 18:52	231		48.551	84.26	31.978	31.364	33.67
8/1/98 18:53	232		48.906	83.99	31.702	31.364	33.67
8/1/98 18:54	233		48.684	84.16	31.874	31.364	33.67
8/1/98 18:55	234		48.750	84.11	31.823	31.364	33.67
8/1/98 18:56	235		48.595	84.23	31.943	31.364	33.67
8/1/98 18:57	236		48.706	84.14	31.857	31.364	33.67
8/1/98 18:58	237		48.795	84.07	31.788	31.364	33.67
8/1/98 18:59	238		48.911	83.98	31.699	31.364	33.67
8/1/98 19:00	239		48.663	84.18	31.891	31.363	33.67
8/1/98 19:01	240		48.728	84.12	31.840	31.364	33.67
8/1/98 19:02	241		48.684	84.16	31.874	31.363	33.67
8/1/98 19:03	242		48.663	84.18	31.891	31.364	33.67
8/1/98 19:04	243		48.685	84.16	31.874	31.363	33.67
8/1/98 19:05	244		48.773	84.09	31.806	31.364	33.67
8/1/98 19:06	245		48.684	84.16	31.874	31.363	33.67
8/1/98 19:07	246		48.621	84.21	31.923	31.364	33.67
8/1/98 19:08	247		48.708	84.14	31.856	31.364	33.67
8/1/98 19:09	248		48.774	84.09	31.805	31.363	33.67
8/1/98 19:10	249		48.734	84.12	31.836	31.364	33.67
8/1/98 19:11	250		48.623	84.21	31.922	31.364	33.67
8/1/98 19:12	251		48.534	84.28	31.991	31.363	33.67
8/1/98 19:13	252		48.623	84.21	31.922	31.364	33.67
8/1/98 19:14	253		48.597	84.23	31.942	31.363	33.67
8/1/98 19:15	254		48.756	84.10	31.819	31.363	33.67
8/1/98 19:16	255		48.712	84.14	31.853	31.363	33.67

DATA FOR PUMPING WELL AND OB-2s

Date/Time	Time Since Pumping Started (minutes)	Ratio ft' (time since start/time since end) (no units)	P.W.	P.W.	P.W.	OB-2Ss	OB-2Ss
			(data logger) (no units)	(water level) (feet below RP)	(draw-down) (feet)	(data logger) (no units)	(water level) (feet below RP)
8/1/98 19:17	256		48.734	84.12	31.836	31.363	33.67
8/1/98 19:18	257		48.534	84.28	31.991	31.363	33.67
8/1/98 19:19	258		48.734	84.12	31.836	31.363	33.67
8/1/98 19:20	259		48.647	84.19	31.903	31.363	33.67
8/1/98 19:21	260		48.845	84.03	31.750	31.363	33.67
8/1/98 19:22	261		48.603	84.22	31.937	31.363	33.67
8/1/98 19:23	262		48.712	84.14	31.853	31.363	33.67
8/1/98 19:24	263		48.671	84.17	31.885	31.363	33.67
8/1/98 19:25	264		48.671	84.17	31.885	31.363	33.67
8/1/98 19:26	265		48.780	84.08	31.800	31.363	33.67
8/1/98 19:27	266		48.693	84.15	31.868	31.363	33.67
8/1/98 19:28	267		48.649	84.19	31.902	31.363	33.67
8/1/98 19:29	268		48.848	84.03	31.747	31.363	33.67
8/1/98 19:30	269		48.782	84.08	31.799	31.363	33.67
8/1/98 19:31	270		48.780	84.08	31.800	31.363	33.67
8/1/98 19:32	271		48.739	84.12	31.832	31.363	33.67
8/1/98 19:33	272		48.516	84.29	32.005	31.363	33.67
8/1/98 19:34	273		48.733	84.12	31.837	31.363	33.67
8/1/98 19:35	274		48.644	84.19	31.905	31.363	33.67
8/1/98 19:36	275		48.733	84.12	31.837	31.363	33.67
8/1/98 19:37	276		48.689	84.16	31.871	31.363	33.67
8/1/98 19:38	277		48.423	84.36	32.077	31.363	33.67
8/1/98 19:39	278		48.711	84.14	31.854	31.363	33.67
8/1/98 19:40	279		48.600	84.22	31.940	31.363	33.67
8/1/98 19:41	280		48.689	84.16	31.871	31.363	33.67
8/1/98 19:42	281		48.487	84.31	32.027	31.363	33.67
8/1/98 19:43	282		48.713	84.14	31.852	31.364	33.67
8/1/98 19:44	283		48.624	84.21	31.921	31.363	33.67
8/1/98 19:45	284		48.690	84.15	31.870	31.363	33.67
8/1/98 19:46	285		48.686	84.16	31.873	31.363	33.67
8/1/98 19:47	286		48.646	84.19	31.904	31.363	33.67
8/1/98 19:48	287		48.624	84.21	31.921	31.364	33.67
8/1/98 19:49	288		48.735	84.12	31.835	31.363	33.67
8/1/98 19:50	289		48.602	84.22	31.938	31.363	33.67
8/1/98 19:51	290		48.695	84.15	31.866	31.363	33.67
8/1/98 19:52	291		48.424	84.36	32.076	31.363	33.67
8/1/98 19:53	292		48.717	84.13	31.849	31.363	33.67
8/1/98 19:54	293		48.696	84.15	31.865	31.363	33.67
8/1/98 19:55	294		48.718	84.13	31.848	31.363	33.67
8/1/98 19:56	295		48.759	84.10	31.816	31.363	33.67
8/1/98 19:57	296		48.584	84.24	31.952	31.363	33.67
8/1/98 19:58	297		48.475	84.32	32.036	31.363	33.67
8/1/98 19:59	298		48.630	84.20	31.916	31.363	33.67
8/1/98 20:00	299		48.543	84.27	31.984	31.363	33.67
8/1/98 20:01	300		48.519	84.29	32.002	31.363	33.67
8/1/98 20:02	301		48.654	84.18	31.898	31.363	33.67
8/1/98 20:03	302		48.764	84.10	31.813	31.363	33.67
8/1/98 20:04	303		48.565	84.25	31.967	31.363	33.67
8/1/98 20:05	304		48.565	84.25	31.967	31.363	33.67
8/1/98 20:06	305		48.540	84.27	31.986	31.363	33.67
8/1/98 20:07	306		48.629	84.20	31.917	31.363	33.67
8/1/98 20:08	307		48.565	84.25	31.967	31.363	33.67
8/1/98 20:09	308		48.564	84.25	31.967	31.363	33.67
8/1/98 20:10	309		48.649	84.19	31.902	31.363	33.67
8/1/98 20:11	310		48.496	84.30	32.020	31.363	33.67
8/1/98 20:12	311		48.453	84.34	32.053	31.363	33.67
8/1/98 20:13	312		48.608	84.22	31.933	31.363	33.67
8/1/98 20:14	313		48.431	84.35	32.071	31.363	33.67
8/1/98 20:15	314		48.614	84.21	31.929	31.363	33.67
8/1/98 20:16	315		48.568	84.25	31.964	31.363	33.67
8/1/98 20:17	316		48.592	84.23	31.946	31.363	33.67

DATA FOR PUMPING WELL AND OB-2s

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	P.W. (data logger) (no units)	P.W. (water level) (feet below RP)	P.W. (draw-down) (feet)	OB-2Ss (data logger) (no units)	OB-2Ss (water level) (feet below RP)
8/1/98 20:18	317		48.548	84.26	31.980	31.363	33.67
8/1/98 20:19	318		48.548	84.26	31.980	31.363	33.67
8/1/98 20:20	319		48.525	84.28	31.998	31.363	33.67
8/1/98 20:21	320		48.592	84.23	31.946	31.363	33.67
8/1/98 20:22	321		48.503	84.30	32.015	31.363	33.67
8/1/98 20:23	322		48.660	84.18	31.893	31.363	33.67
8/1/98 20:24	323		48.573	84.24	31.961	31.363	33.67
8/1/98 20:25	324		48.501	84.30	32.016	31.363	33.67
8/1/98 20:26	325		48.503	84.30	32.015	31.363	33.67
8/1/98 20:27	326		48.677	84.16	31.880	31.363	33.67
8/1/98 20:28	327		48.567	84.25	31.965	31.363	33.67
8/1/98 20:29	328		48.635	84.20	31.912	31.363	33.67
8/1/98 20:30	329		48.550	84.26	31.978	31.363	33.67
8/1/98 20:31	330		48.576	84.24	31.958	31.363	33.67
8/1/98 20:32	331		48.466	84.33	32.043	31.363	33.67
8/1/98 20:33	332		48.778	84.09	31.802	31.363	33.67
8/1/98 20:34	333		48.534	84.28	31.991	31.363	33.67
8/1/98 20:35	334		48.645	84.19	31.905	31.363	33.67
8/1/98 20:36	335		48.602	84.22	31.938	31.363	33.67
8/1/98 20:37	336		48.580	84.24	31.955	31.363	33.67
8/1/98 20:38	337		48.626	84.20	31.919	31.363	33.67
8/1/98 20:39	338		48.513	84.29	32.007	31.363	33.67
8/1/98 20:40	339		48.400	84.38	32.095	31.363	33.67
8/1/98 20:41	340		48.644	84.19	31.905	31.363	33.67
8/1/98 20:42	341		48.508	84.30	32.011	31.363	33.67
8/1/98 20:43	342		48.557	84.26	31.973	31.363	33.67
8/1/98 20:44	343		48.535	84.27	31.990	31.363	33.67
8/1/98 20:45	344		48.623	84.21	31.922	31.363	33.67
8/1/98 20:46	345		48.518	84.29	32.003	31.363	33.67
8/1/98 20:47	346		48.475	84.32	32.036	31.363	33.67
8/1/98 20:48	347		47.766	84.87	32.586	31.363	33.67
8/1/98 20:49	348		47.610	84.99	32.707	31.363	33.67
8/1/98 20:50	349		47.411	85.15	32.861	31.363	33.67
8/1/98 20:51	350		47.411	85.15	32.861	31.363	33.67
8/1/98 20:52	351		47.297	85.23	32.949	31.363	33.67
8/1/98 20:53	352		47.475	85.10	32.811	31.363	33.67
8/1/98 20:54	353		47.430	85.13	32.846	31.363	33.67
8/1/98 20:55	354		47.537	85.05	32.763	31.365	33.67
8/1/98 20:56	355		47.428	85.13	32.848	31.363	33.67
8/1/98 20:57	356		47.250	85.27	32.986	31.363	33.67
8/1/98 20:58	357		47.296	85.23	32.950	31.363	33.67
8/1/98 20:59	358		47.300	85.23	32.947	31.363	33.67
8/1/98 21:00	359		47.350	85.19	32.908	31.363	33.67
8/1/98 21:01	360		47.304	85.23	32.944	31.363	33.67
8/1/98 21:02	361		47.461	85.11	32.822	31.363	33.67
8/1/98 21:05	364		47.394	85.16	32.874	31.362	33.67
8/1/98 21:10	369		47.510	85.07	32.784	31.362	33.67
8/1/98 21:15	374		47.491	85.08	32.799	31.362	33.67
8/1/98 21:20	379		47.383	85.17	32.883	31.362	33.67
8/1/98 21:25	384		47.475	85.10	32.811	31.362	33.67
8/1/98 21:30	389		47.364	85.18	32.897	31.361	33.66
8/1/98 21:35	394		47.458	85.11	32.824	31.362	33.67
8/1/98 21:40	399		47.419	85.14	32.855	31.361	33.66
8/1/98 21:45	404		47.374	85.17	32.889	31.361	33.66
8/1/98 21:50	409		47.333	85.21	32.921	31.361	33.66
8/1/98 21:55	414		47.399	85.15	32.870	31.361	33.66
8/1/98 22:00	419		47.379	85.17	32.886	31.361	33.66
8/1/98 22:05	424		47.292	85.24	32.953	31.361	33.66
8/1/98 22:10	429		47.224	85.29	33.006	31.361	33.66
8/1/98 22:15	434		47.208	85.30	33.018	31.361	33.66
8/1/98 22:20	439		47.161	85.34	33.055	31.361	33.66

DATA FOR PUMPING WELL AND OB-2s

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	P.W. (data logger) (no units)	P.W. (water level) (feet below RP)	P.W. (draw-down) (feet)	OB-2Ss (data logger) (no units)	OB-2Ss (water level) (feet below RP)
8/1/98 22:25	444		47.190	85.32	33.032	31.361	33.66
8/1/98 22:30	449		47.253	85.27	32.983	31.361	33.66
8/1/98 22:35	454		47.460	85.11	32.823	31.361	33.66
8/1/98 22:40	459		47.130	85.36	33.079	31.361	33.66
8/1/98 22:45	464		47.485	85.09	32.803	31.361	33.66
8/1/98 22:50	469		47.616	84.99	32.702	31.361	33.66
8/1/98 22:55	474		47.620	84.98	32.699	31.361	33.66
8/1/98 23:00	479		47.466	85.10	32.818	31.361	33.66
8/1/98 23:05	484		47.559	85.03	32.746	31.361	33.66
8/1/98 23:10	489		47.560	85.03	32.745	31.361	33.66
8/1/98 23:15	494		47.519	85.06	32.777	31.361	33.66
8/1/98 23:20	499		47.519	85.06	32.777	31.361	33.66
8/1/98 23:25	504		47.472	85.10	32.814	31.361	33.66
8/1/98 23:30	509		47.540	85.05	32.761	31.361	33.66
8/1/98 23:35	514		47.718	84.91	32.623	31.361	33.66
8/1/98 23:40	519		47.457	85.11	32.825	31.361	33.66
8/1/98 23:45	524		47.505	85.07	32.788	31.361	33.66
8/1/98 23:50	529		47.545	85.04	32.757	31.361	33.66
8/1/98 23:55	534		47.391	85.16	32.876	31.361	33.66
8/2/98 0:00	539		47.414	85.14	32.858	31.361	33.66
8/2/98 0:05	544		47.261	85.26	32.977	31.361	33.66
8/2/98 0:10	549		47.280	85.25	32.962	31.361	33.66
8/2/98 0:15	554		47.445	85.12	32.834	31.361	33.66
8/2/98 0:20	559		47.307	85.23	32.941	31.361	33.66
8/2/98 0:25	564		47.331	85.21	32.923	31.361	33.66
8/2/98 0:30	569		47.312	85.22	32.938	31.362	33.67
8/2/98 0:35	574		47.490	85.08	32.800	31.361	33.66
8/2/98 0:40	579		47.451	85.11	32.830	31.361	33.66
8/2/98 0:45	584		47.429	85.13	32.847	31.361	33.66
8/2/98 0:50	589		47.275	85.25	32.966	31.361	33.66
8/2/98 0:55	594		47.274	85.25	32.967	31.361	33.66
8/2/98 1:00	599		47.385	85.17	32.881	31.361	33.66
8/2/98 1:05	604		47.409	85.15	32.862	31.362	33.67
8/2/98 1:10	609		47.124	85.37	33.083	31.362	33.67
8/2/98 1:15	614		47.147	85.35	33.065	31.362	33.67
8/2/98 1:20	619		47.237	85.28	32.996	31.362	33.67
8/2/98 1:25	624		47.261	85.26	32.977	31.362	33.67
8/2/98 1:30	629		47.125	85.37	33.082	31.362	33.67
8/2/98 1:35	634		47.193	85.31	33.030	31.362	33.67
8/2/98 1:40	639		46.993	85.47	33.185	31.362	33.67
8/2/98 1:45	644		47.309	85.22	32.940	31.362	33.67
8/2/98 1:50	649		47.039	85.43	33.149	31.362	33.67
8/2/98 1:55	654		47.221	85.29	33.008	31.362	33.67
8/2/98 2:00	659		47.154	85.34	33.060	31.362	33.67
8/2/98 2:05	664		47.111	85.38	33.093	31.362	33.67
8/2/98 2:10	669		47.133	85.36	33.076	31.362	33.67
8/2/98 2:15	674		47.313	85.22	32.937	31.362	33.67
8/2/98 2:20	679		47.161	85.34	33.055	31.362	33.67
8/2/98 2:25	684		47.094	85.39	33.106	31.363	33.67
8/2/98 2:30	689		47.138	85.36	33.072	31.363	33.67
8/2/98 2:35	694		47.158	85.34	33.057	31.363	33.67
8/2/98 2:40	699		47.094	85.39	33.106	31.363	33.67
8/2/98 2:45	704		47.162	85.34	33.054	31.363	33.67
8/2/98 2:50	709		47.319	85.22	32.932	31.363	33.67
8/2/98 2:55	714		47.254	85.27	32.982	31.363	33.67
8/2/98 3:00	719		47.169	85.33	33.048	31.363	33.67
8/2/98 3:05	724		47.393	85.16	32.875	31.363	33.67
8/2/98 3:10	729		47.239	85.28	32.994	31.363	33.67
8/2/98 3:15	734		47.146	85.35	33.066	31.363	33.67
8/2/98 3:20	739		47.075	85.41	33.121	31.363	33.67
8/2/98 3:25	744		47.102	85.38	33.100	31.363	33.67

DATA FOR PUMPING WELL AND OB-2s

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	P.W. (data logger) (no units)	P.W. (water level) (feet below RP)	P.W. (draw-down) (feet)	OB-2Ss (data logger) (no units)	OB-2Ss (water level) (feet below RP)
8/2/98 3:30	749		47.298	85.23	32.948	31.363	33.67
8/2/98 3:35	754		47.081	85.40	33.117	31.363	33.67
8/2/98 3:40	759		47.148	85.35	33.065	31.364	33.67
8/2/98 3:45	764		47.287	85.24	32.957	31.364	33.67
8/2/98 3:50	769		47.112	85.38	33.092	31.364	33.67
8/2/98 3:55	774		47.201	85.31	33.024	31.364	33.67
8/2/98 4:00	779		47.064	85.41	33.130	31.364	33.67
8/2/98 4:05	784		47.223	85.29	33.006	31.364	33.67
8/2/98 4:10	789		47.242	85.28	32.992	31.364	33.67
8/2/98 4:15	794		47.108	85.38	33.096	31.365	33.67
8/2/98 4:20	799		47.196	85.31	33.027	31.365	33.67
8/2/98 4:25	804		47.176	85.33	33.043	31.365	33.67
8/2/98 4:30	809		47.180	85.32	33.040	31.365	33.67
8/2/98 4:35	814		47.224	85.29	33.006	31.365	33.67
8/2/98 4:40	819		47.135	85.36	33.075	31.365	33.67
8/2/98 4:45	824		47.141	85.35	33.070	31.365	33.67
8/2/98 4:50	829		47.141	85.35	33.070	31.365	33.67
8/2/98 4:55	834		47.165	85.34	33.051	31.365	33.67
8/2/98 5:00	839		47.098	85.39	33.103	31.365	33.67
8/2/98 5:05	844		47.138	85.36	33.072	31.365	33.67
8/2/98 5:10	849		47.136	85.36	33.074	31.365	33.67
8/2/98 5:15	854		47.114	85.38	33.091	31.365	33.67
8/2/98 5:20	859		47.293	85.24	32.952	31.365	33.67
8/2/98 5:25	864		47.032	85.44	33.154	31.365	33.67
8/2/98 5:30	869		47.030	85.44	33.156	31.365	33.67
8/2/98 5:35	874		47.081	85.40	33.117	31.365	33.67
8/2/98 5:40	879		47.170	85.33	33.048	31.365	33.67
8/2/98 5:45	884		47.032	85.44	33.154	31.365	33.67
8/2/98 5:50	889		46.967	85.49	33.205	31.365	33.67
8/2/98 5:55	894		47.146	85.35	33.066	31.365	33.67
8/2/98 6:00	899		47.077	85.40	33.120	31.365	33.67
8/2/98 6:05	904		46.903	85.54	33.254	31.365	33.67
8/2/98 6:10	909		47.148	85.35	33.065	31.365	33.67
8/2/98 6:15	914		47.104	85.38	33.099	31.365	33.67
8/2/98 6:20	919		47.239	85.28	32.994	31.365	33.67
8/2/98 6:25	924		47.194	85.31	33.029	31.365	33.67
8/2/98 6:30	929		46.994	85.47	33.184	31.366	33.67
8/2/98 6:35	934		46.994	85.47	33.184	31.366	33.67
8/2/98 6:40	939		47.127	85.37	33.081	31.366	33.67
8/2/98 6:45	944		46.996	85.47	33.182	31.366	33.67
8/2/98 6:50	949		46.996	85.47	33.182	31.366	33.67
8/2/98 6:55	954		46.951	85.50	33.217	31.366	33.67
8/2/98 7:00	959		47.018	85.45	33.165	31.366	33.67
8/2/98 7:05	964		47.174	85.33	33.044	31.366	33.67
8/2/98 7:10	969		46.973	85.48	33.200	31.366	33.67
8/2/98 7:15	974		47.021	85.45	33.163	31.366	33.67
8/2/98 7:20	979		46.953	85.50	33.216	31.366	33.67
8/2/98 7:25	984		46.975	85.48	33.199	31.366	33.67
8/2/98 7:30	989		46.840	85.59	33.303	31.366	33.67
8/2/98 7:35	994		46.930	85.52	33.233	31.366	33.67
8/2/98 7:40	999		47.040	85.43	33.148	31.366	33.67
8/2/98 7:45	1004		47.036	85.44	33.151	31.366	33.67
8/2/98 7:50	1009		46.972	85.49	33.201	31.367	33.67
8/2/98 7:55	1014		46.927	85.52	33.236	31.366	33.67
8/2/98 8:00	1019		47.015	85.45	33.168	31.367	33.67
8/2/98 8:05	1024		47.085	85.40	33.113	31.367	33.67
8/2/98 8:10	1029		47.104	85.38	33.099	31.367	33.67
8/2/98 8:15	1034		46.992	85.47	33.185	31.367	33.67
8/2/98 8:20	1039		47.033	85.44	33.154	31.367	33.67
8/2/98 8:25	1044		46.852	85.58	33.294	31.367	33.67
8/2/98 8:30	1049		47.054	85.42	33.137	31.367	33.67

DATA FOR PUMPING WELL AND OB-2s

Date/Time	Time Since Pumping Started (minutes)	Ratio l/t' (time since start/time since end) (no units)	P.W. (data logger) (no units)	P.W. (water level) (feet below RP)	P.W. (draw-down) (feet)	OB-2Ss (data logger) (no units)	OB-2Ss (water level) (feet below RP)
8/2/98 8:35	1054		46.969	85.49	33.203	31.367	33.67
8/2/98 8:40	1059		46.941	85.51	33.225	31.367	33.67
8/2/98 8:45	1064		47.025	85.44	33.160	31.367	33.67
8/2/98 8:50	1069		47.094	85.39	33.106	31.367	33.67
8/2/98 8:55	1074		46.849	85.58	33.296	31.367	33.67
8/2/98 9:00	1079		47.006	85.46	33.175	31.367	33.67
8/2/98 9:05	1084		47.024	85.45	33.161	31.367	33.67
8/2/98 9:10	1089		46.978	85.48	33.196	31.367	33.67
8/2/98 9:15	1094		47.021	85.45	33.163	31.367	33.67
8/2/98 9:20	1099		46.912	85.53	33.247	31.367	33.67
8/2/98 9:25	1104		46.862	85.57	33.286	31.367	33.67
8/2/98 9:30	1109		46.944	85.51	33.223	31.367	33.67
8/2/98 9:35	1114		46.881	85.56	33.271	31.367	33.67
8/2/98 9:40	1119		46.926	85.52	33.237	31.367	33.67
8/2/98 9:45	1124		46.962	85.49	33.209	31.367	33.67
8/2/98 9:50	1129		46.982	85.48	33.193	31.367	33.67
8/2/98 9:55	1134		46.991	85.47	33.186	31.367	33.67
8/2/98 10:00	1139		47.105	85.38	33.098	31.367	33.67
8/2/98 10:05	1144		47.057	85.42	33.135	31.367	33.67
8/2/98 10:10	1149		46.971	85.49	33.202	31.367	33.67
8/2/98 10:15	1154		47.015	85.45	33.168	31.367	33.67
8/2/98 10:20	1159		46.972	85.49	33.201	31.367	33.67
8/2/98 10:25	1164		46.884	85.55	33.269	31.367	33.67
8/2/98 10:30	1169		46.950	85.50	33.218	31.367	33.67
8/2/98 10:35	1174		47.015	85.45	33.168	31.368	33.68
8/2/98 10:40	1179		47.019	85.45	33.165	31.368	33.68
8/2/98 10:45	1184		47.129	85.36	33.079	31.368	33.68
8/2/98 10:50	1189		46.994	85.47	33.184	31.368	33.68
8/2/98 10:55	1194		46.883	85.55	33.270	31.368	33.68
8/2/98 11:00	1199		46.944	85.51	33.223	31.368	33.68
8/2/98 11:05	1204		47.007	85.46	33.174	31.368	33.68
8/2/98 11:10	1209		46.922	85.52	33.240	31.368	33.68
8/2/98 11:15	1214		47.050	85.42	33.141	31.368	33.68
8/2/98 11:20	1219		46.943	85.51	33.223	31.368	33.68
8/2/98 11:25	1224		46.829	85.60	33.312	31.368	33.68
8/2/98 11:30	1229		46.912	85.53	33.247	31.368	33.68
8/2/98 11:35	1234		47.001	85.46	33.178	31.368	33.68
8/2/98 11:40	1239		47.016	85.45	33.167	31.368	33.68
8/2/98 11:45	1244		46.989	85.47	33.188	31.368	33.68
8/2/98 11:50	1249		46.993	85.47	33.185	31.368	33.68
8/2/98 11:55	1254		46.945	85.51	33.222	31.368	33.68
8/2/98 12:00	1259		46.882	85.56	33.271	31.368	33.68
8/2/98 12:05	1264		47.082	85.40	33.116	31.368	33.68
8/2/98 12:10	1269		47.108	85.38	33.096	31.368	33.68
8/2/98 12:15	1274		46.906	85.54	33.252	31.368	33.68
8/2/98 12:20	1279		46.967	85.49	33.205	31.368	33.68
8/2/98 12:25	1284		46.923	85.52	33.239	31.368	33.68
8/2/98 12:30	1289		47.012	85.45	33.170	31.368	33.68
8/2/98 12:35	1294		46.905	85.54	33.253	31.368	33.68
8/2/98 12:40	1299		47.123	85.37	33.084	31.368	33.68
8/2/98 12:45	1304		46.900	85.54	33.257	31.368	33.68
8/2/98 12:50	1309		46.858	85.57	33.289	31.368	33.68
8/2/98 12:55	1314		46.898	85.54	33.258	31.369	33.68
8/2/98 13:00	1319		47.027	85.44	33.158	31.368	33.68
8/2/98 13:05	1324		46.985	85.48	33.191	31.368	33.68
8/2/98 13:10	1329		46.893	85.55	33.262	31.369	33.68
8/2/98 13:15	1334		46.940	85.51	33.226	31.369	33.68
8/2/98 13:20	1339		46.918	85.53	33.243	31.369	33.68
8/2/98 13:25	1344		46.981	85.48	33.194	31.368	33.68
8/2/98 13:30	1349		46.973	85.48	33.200	31.369	33.68
8/2/98 13:35	1354		47.020	85.45	33.164	31.369	33.68

DATA FOR PUMPING WELL AND OB-2s

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t (time since start/time since end) (no units)	P.W. (data logger) (no units)	P.W. (water level) (feet below RP)	P.W. (draw-down) (feet)	OB-2Ss (data logger) (no units)	OB-2Ss (water level) (feet below RP)
8/2/98 13:40	1359		47.041	85.43	33.147	31.369	33.68
8/2/98 13:45	1364		46.950	85.50	33.218	31.369	33.68
8/2/98 13:50	1369		46.882	85.56	33.271	31.369	33.68
8/2/98 13:55	1374		47.014	85.45	33.168	31.369	33.68
8/2/98 14:00	1379		46.990	85.47	33.187	31.369	33.68
8/2/98 14:05	1384		46.881	85.56	33.271	31.369	33.68
8/2/98 14:10	1389		46.926	85.52	33.237	31.369	33.68
8/2/98 14:15	1394		46.945	85.51	33.222	31.369	33.68
8/2/98 14:20	1399		46.895	85.55	33.261	31.369	33.68
8/2/98 14:25	1404		46.877	85.56	33.275	31.369	33.68
8/2/98 14:30	1409		46.982	85.48	33.193	31.369	33.68
8/2/98 14:35	1414		46.919	85.53	33.242	31.369	33.68
8/2/98 14:40	1419		46.914	85.53	33.246	31.369	33.68
8/2/98 14:45	1424		46.955	85.50	33.214	31.369	33.68
8/2/98 14:50	1429		46.848	85.58	33.297	31.369	33.68
8/2/98 14:51	1430		46.776	85.64	33.353	31.370	33.68
8/2/98 14:52	1431		46.727	85.68	33.391	31.370	33.68
8/2/98 14:53	1432		46.774	85.64	33.354	31.370	33.68
8/2/98 14:54	1433		46.885	85.55	33.268	31.370	33.68
8/2/98 14:55	1434		46.889	85.55	33.265	31.370	33.68
8/2/98 14:56	1435		46.889	85.55	33.265	31.370	33.68
8/2/98 14:57	1436		46.864	85.57	33.285	31.369	33.68
8/2/98 14:58	1437		46.819	85.60	33.319	31.369	33.68
8/2/98 14:59	1438		46.818	85.60	33.320	31.369	33.68
8/2/98 15:00	1439		46.796	85.62	33.337	31.370	33.68
8/2/98 15:01	1440	1440.00	81.717	58.56	6.281	31.369	33.68
8/2/98 15:02	1441	720.50	82.030	58.32	6.038	31.369	33.68
8/2/98 15:03	1442	480.67	82.493	57.96	5.679	31.370	33.68
8/2/98 15:04	1443	360.75	82.841	57.69	5.410	31.370	33.68
8/2/98 15:05	1444	288.80	83.180	57.43	5.147	31.370	33.68
8/2/98 15:06	1445	240.83	83.428	57.24	4.955	31.369	33.68
8/2/98 15:07	1446	206.57	83.621	57.09	4.805	31.369	33.68
8/2/98 15:08	1447	180.87	83.823	56.93	4.649	31.369	33.68
8/2/98 15:09	1448	160.89	83.998	56.80	4.513	31.369	33.68
8/2/98 15:10	1449	144.90	84.163	56.67	4.385	31.369	33.68
8/2/98 15:11	1450	131.82	84.265	56.59	4.306	31.369	33.68
8/2/98 15:12	1451	120.92	84.423	56.47	4.184	31.369	33.68
8/2/98 15:13	1452	111.69	84.557	56.36	4.080	31.369	33.68
8/2/98 15:14	1453	103.79	84.687	56.26	3.979	31.370	33.68
8/2/98 15:15	1454	96.93	84.798	56.18	3.893	31.370	33.68
8/2/98 15:16	1455	90.94	84.886	56.11	3.825	31.370	33.68
8/2/98 15:17	1456	85.65	84.972	56.04	3.759	31.370	33.68
8/2/98 15:18	1457	80.94	85.061	55.97	3.690	31.370	33.68
8/2/98 15:19	1458	76.74	85.142	55.91	3.627	31.370	33.68
8/2/98 15:20	1459	72.95	85.253	55.83	3.541	31.370	33.68
8/2/98 15:21	1460	69.52	85.342	55.76	3.472	31.370	33.68
8/2/98 15:22	1461	66.41	85.430	55.69	3.404	31.370	33.68
8/2/98 15:23	1462	63.57	85.497	55.64	3.352	31.370	33.68
8/2/98 15:24	1463	60.96	85.564	55.58	3.300	31.370	33.68
8/2/98 15:25	1464	58.56	85.649	55.52	3.234	31.370	33.68
8/2/98 15:26	1465	56.35	85.711	55.47	3.186	31.370	33.68
8/2/98 15:27	1466	54.30	85.790	55.41	3.125	31.370	33.68
8/2/98 15:28	1467	52.39	85.852	55.36	3.077	31.370	33.68
8/2/98 15:29	1468	50.62	85.923	55.31	3.022	31.370	33.68
8/2/98 15:30	1469	48.97	86.019	55.23	2.947	31.370	33.68
8/2/98 15:31	1470	47.42	86.072	55.19	2.906	31.370	33.68
8/2/98 15:32	1471	45.97	86.097	55.17	2.887	31.370	33.68
8/2/98 15:33	1472	44.61	86.186	55.10	2.818	31.370	33.68
8/2/98 15:34	1473	43.32	86.205	55.09	2.803	31.370	33.68
8/2/98 15:35	1474	42.11	86.294	55.02	2.734	31.370	33.68
8/2/98 15:36	1475	40.97	86.360	54.97	2.683	31.370	33.68

DATA FOR PUMPING WELL AND OB-2s

Date/Time	Time Since Pumping Started (minutes)	Ratio l/t' (time since start/time since end) (no units)	P.W. (data logger) (no units)	P.W. (water level) (feet below RP)	P.W. (draw-down) (feet)	OB-2Ss (data logger) (no units)	OB-2Ss (water level) (feet below RP)
8/2/98 15:37	1476	39.89	86.405	54.93	2.648	31.370	33.68
8/2/98 15:38	1477	38.87	86.471	54.88	2.597	31.370	33.68
8/2/98 15:39	1478	37.90	86.515	54.85	2.563	31.370	33.68
8/2/98 15:40	1479	36.97	86.538	54.83	2.545	31.370	33.68
8/2/98 15:41	1480	36.10	86.626	54.76	2.477	31.370	33.68
8/2/98 15:42	1481	35.26	86.645	54.75	2.462	31.370	33.68
8/2/98 15:43	1482	34.47	86.690	54.71	2.427	31.370	33.68
8/2/98 15:44	1483	33.70	86.705	54.70	2.416	31.370	33.68
8/2/98 15:45	1484	32.98	86.771	54.65	2.365	31.370	33.68
8/2/98 15:46	1485	32.28	86.801	54.63	2.341	31.370	33.68
8/2/98 15:47	1486	31.62	86.835	54.60	2.315	31.370	33.68
8/2/98 15:48	1487	30.98	86.882	54.56	2.279	31.370	33.68
8/2/98 15:49	1488	30.37	86.901	54.55	2.264	31.369	33.68
8/2/98 15:50	1489	29.78	86.968	54.50	2.212	31.369	33.68
8/2/98 15:51	1490	29.22	86.990	54.48	2.195	31.369	33.68
8/2/98 15:52	1491	28.67	87.056	54.43	2.144	31.369	33.68
8/2/98 15:53	1492	28.15	87.079	54.41	2.126	31.369	33.68
8/2/98 15:54	1493	27.65	87.113	54.38	2.100	31.369	33.68
8/2/98 15:55	1494	27.16	87.157	54.35	2.066	31.370	33.68
8/2/98 15:56	1495	26.70	87.186	54.33	2.043	31.369	33.68
8/2/98 15:57	1496	26.25	87.220	54.30	2.017	31.369	33.68
8/2/98 15:58	1497	25.81	87.257	54.27	1.988	31.369	33.68
8/2/98 15:59	1498	25.39	87.294	54.24	1.959	31.370	33.68
8/2/98 16:00	1499	24.98	87.342	54.21	1.922	31.370	33.68
8/2/98 16:01	1500	24.59	87.361	54.19	1.908	31.369	33.68
8/2/98 16:02	1501	24.21	87.413	54.15	1.867	31.369	33.68
8/2/98 16:03	1502	23.84	87.432	54.14	1.853	31.370	33.68
8/2/98 16:04	1503	23.48	87.469	54.11	1.824	31.370	33.68
8/2/98 16:05	1504	23.14	87.498	54.09	1.801	31.370	33.68
8/2/98 16:06	1505	22.80	87.520	54.07	1.784	31.369	33.68
8/2/98 16:07	1506	22.48	87.540	54.05	1.769	31.370	33.68
8/2/98 16:08	1507	22.16	87.587	54.02	1.732	31.370	33.68
8/2/98 16:09	1508	21.86	87.594	54.01	1.727	31.369	33.68
8/2/98 16:10	1509	21.56	87.631	53.98	1.698	31.370	33.68
8/2/98 16:11	1510	21.27	87.653	53.97	1.681	31.370	33.68
8/2/98 16:12	1511	20.99	87.673	53.95	1.666	31.370	33.68
8/2/98 16:13	1512	20.71	87.739	53.90	1.615	31.369	33.68
8/2/98 16:14	1513	20.45	87.761	53.88	1.598	31.369	33.68
8/2/98 16:15	1514	20.19	87.754	53.89	1.603	31.370	33.68
8/2/98 16:16	1515	19.93	87.754	53.89	1.603	31.369	33.68
8/2/98 16:17	1516	19.69	87.776	53.87	1.586	31.370	33.68
8/2/98 16:18	1517	19.45	87.850	53.81	1.529	31.369	33.68
8/2/98 16:19	1518	19.22	87.825	53.83	1.548	31.370	33.68
8/2/98 16:20	1519	18.99	87.839	53.82	1.537	31.369	33.68
8/2/98 16:21	1520	18.77	87.872	53.80	1.512	31.369	33.68
8/2/98 16:22	1521	18.55	87.931	53.75	1.466	31.369	33.68
8/2/98 16:23	1522	18.34	87.928	53.75	1.468	31.369	33.68
8/2/98 16:24	1523	18.13	87.947	53.74	1.454	31.370	33.68
8/2/98 16:25	1524	17.93	87.992	53.70	1.419	31.369	33.68
8/2/98 16:26	1525	17.73	88.024	53.68	1.394	31.370	33.68
8/2/98 16:27	1526	17.54	88.014	53.69	1.402	31.369	33.68
8/2/98 16:28	1527	17.35	88.014	53.69	1.402	31.370	33.68
8/2/98 16:29	1528	17.17	88.058	53.65	1.368	31.370	33.68
8/2/98 16:30	1529	16.99	88.102	53.62	1.333	31.370	33.68
8/2/98 16:31	1530	16.81	88.102	53.62	1.333	31.370	33.68
8/2/98 16:32	1531	16.64	88.099	53.62	1.336	31.370	33.68
8/2/98 16:33	1532	16.47	88.176	53.56	1.276	31.370	33.68
8/2/98 16:34	1533	16.31	88.191	53.55	1.264	31.370	33.68
8/2/98 16:35	1534	16.15	88.188	53.55	1.267	31.370	33.68
8/2/98 16:36	1535	15.99	88.188	53.55	1.267	31.370	33.68
8/2/98 16:37	1536	15.84	88.210	53.53	1.250	31.370	33.68

DATA FOR PUMPING WELL AND OB-2s

Date/Time	Time Since Pumping Started (minutes)	Ratio ft (time since start/time since end) (no units)	P.W. (data logger) (no units)	P.W. (water level) (feet below RP)	P.W. (draw-down) (feet)	OB-2Ss (data logger) (no units)	OB-2Ss (water level) (feet below RP)
8/2/98 16:38	1537	15.68	88.262	53.49	1.209	31.370	33.68
8/2/98 16:39	1538	15.54	88.270	53.49	1.203	31.370	33.68
8/2/98 16:40	1539	15.39	88.284	53.48	1.192	31.370	33.68
8/2/98 16:41	1540	15.25	88.277	53.48	1.198	31.370	33.68
8/2/98 16:42	1541	15.11	88.306	53.46	1.175	31.370	33.68
8/2/98 16:43	1542	14.97	88.358	53.42	1.135	31.370	33.68
8/2/98 16:44	1543	14.84	88.377	53.40	1.120	31.370	33.68
8/2/98 16:45	1544	14.70	88.380	53.40	1.118	31.370	33.68
8/2/98 16:46	1545	14.58	88.422	53.37	1.085	31.370	33.68
8/2/98 16:47	1546	14.45	88.466	53.34	1.051	31.370	33.68
8/2/98 16:48	1547	14.32	88.466	53.34	1.051	31.370	33.68
8/2/98 16:49	1548	14.20	88.459	53.34	1.057	31.369	33.68
8/2/98 16:50	1549	14.08	88.456	53.34	1.059	31.370	33.68
8/2/98 16:51	1550	13.96	88.466	53.34	1.051	31.370	33.68
8/2/98 16:52	1551	13.85	88.459	53.34	1.057	31.370	33.68
8/2/98 16:53	1552	13.73	88.459	53.34	1.057	31.370	33.68
8/2/98 16:54	1553	13.62	88.478	53.33	1.042	31.370	33.68
8/2/98 16:55	1554	13.51	88.485	53.32	1.037	31.370	33.68
8/2/98 16:56	1555	13.41	88.544	53.28	0.991	31.370	33.68
8/2/98 16:57	1556	13.30	88.544	53.28	0.991	31.370	33.68
8/2/98 16:58	1557	13.19	88.547	53.27	0.989	31.370	33.68
8/2/98 16:59	1558	13.09	88.589	53.24	0.956	31.370	33.68
8/2/98 17:00	1559	12.99	88.566	53.26	0.974	31.370	33.68
8/2/98 17:01	1560	12.89	88.611	53.22	0.939	31.370	33.68
8/2/98 17:02	1561	12.80	88.611	53.22	0.939	31.370	33.68
8/2/98 17:03	1562	12.70	88.630	53.21	0.924	31.370	33.68
8/2/98 17:04	1563	12.60	88.630	53.21	0.924	31.370	33.68
8/2/98 17:05	1564	12.51	88.633	53.21	0.922	31.370	33.68
8/2/98 17:06	1565	12.42	88.652	53.19	0.907	31.370	33.68
8/2/98 17:07	1566	12.33	88.699	53.16	0.871	31.370	33.68
8/2/98 17:08	1567	12.24	88.718	53.14	0.856	31.370	33.68
8/2/98 17:09	1568	12.16	88.708	53.15	0.864	31.370	33.68
8/2/98 17:10	1569	12.07	88.711	53.15	0.862	31.370	33.68
8/2/98 17:11	1570	11.98	88.718	53.14	0.856	31.370	33.68
8/2/98 17:12	1571	11.90	88.718	53.14	0.856	31.370	33.68
8/2/98 17:13	1572	11.82	88.755	53.11	0.827	31.370	33.68
8/2/98 17:14	1573	11.74	88.774	53.10	0.813	31.370	33.68
8/2/98 17:15	1574	11.66	88.797	53.08	0.795	31.370	33.68
8/2/98 17:16	1575	11.58	88.777	53.09	0.810	31.370	33.68
8/2/98 17:17	1576	11.50	88.797	53.08	0.795	31.370	33.68
8/2/98 17:18	1577	11.43	88.797	53.08	0.795	31.370	33.68
8/2/98 17:19	1578	11.35	88.800	53.08	0.793	31.370	33.68
8/2/98 17:20	1579	11.28	88.819	53.06	0.778	31.370	33.68
8/2/98 17:21	1580	11.21	88.826	53.06	0.772	31.370	33.68
8/2/98 17:22	1581	11.13	88.848	53.04	0.755	31.370	33.68
8/2/98 17:23	1582	11.06	88.871	53.02	0.738	31.370	33.68
8/2/98 17:24	1583	10.99	88.871	53.02	0.738	31.370	33.68
8/2/98 17:25	1584	10.92	88.885	53.01	0.727	31.370	33.68
8/2/98 17:26	1585	10.86	88.885	53.01	0.727	31.370	33.68
8/2/98 17:27	1586	10.79	88.893	53.01	0.721	31.370	33.68
8/2/98 17:28	1587	10.72	88.907	52.99	0.710	31.370	33.68
8/2/98 17:29	1588	10.66	88.907	52.99	0.710	31.370	33.68
8/2/98 17:30	1589	10.59	88.907	52.99	0.710	31.370	33.68
8/2/98 17:31	1590	10.53	88.930	52.98	0.692	31.370	33.68
8/2/98 17:32	1591	10.47	88.974	52.94	0.658	31.370	33.68
8/2/98 17:33	1592	10.41	88.974	52.94	0.658	31.370	33.68
8/2/98 17:34	1593	10.34	88.974	52.94	0.658	31.370	33.68
8/2/98 17:35	1594	10.28	88.971	52.94	0.660	31.370	33.68
8/2/98 17:36	1595	10.22	88.974	52.94	0.658	31.370	33.68
8/2/98 17:37	1596	10.17	88.996	52.93	0.641	31.370	33.68
8/2/98 17:38	1597	10.11	88.993	52.93	0.643	31.370	33.68

DATA FOR PUMPING WELL AND OB-2s

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	P.W. (data logger) (no units)	P.W. (water level) (feet below RP)	P.W. (draw-down) (feet)	OB-2Ss (data logger) (no units)	OB-2Ss (water level) (feet below RP)
8/2/98 17:39	1598	10.05	89.018	52.91	0.624	31.370	33.68
8/2/98 17:40	1599	9.99	89.040	52.89	0.607	31.370	33.68
8/2/98 17:41	1600	9.94	89.015	52.91	0.626	31.370	33.68
8/2/98 17:42	1601	9.88	89.059	52.88	0.592	31.370	33.68
8/2/98 17:43	1602	9.83	89.059	52.88	0.592	31.370	33.68
8/2/98 17:44	1603	9.77	89.059	52.88	0.592	31.370	33.68
8/2/98 17:45	1604	9.72	89.082	52.86	0.574	31.370	33.68
8/2/98 17:46	1605	9.67	89.082	52.86	0.574	31.370	33.68
8/2/98 17:47	1606	9.62	89.082	52.86	0.574	31.370	33.68
8/2/98 17:48	1607	9.57	89.082	52.86	0.574	31.370	33.68
8/2/98 17:49	1608	9.51	89.104	52.84	0.557	31.370	33.68
8/2/98 17:50	1609	9.46	89.104	52.84	0.557	31.370	33.68
8/2/98 17:51	1610	9.42	89.104	52.84	0.557	31.370	33.68
8/2/98 17:52	1611	9.37	89.126	52.82	0.540	31.370	33.68
8/2/98 17:53	1612	9.32	89.148	52.81	0.523	31.370	33.68
8/2/98 17:54	1613	9.27	89.133	52.82	0.535	31.370	33.68
8/2/98 17:55	1614	9.22	89.148	52.81	0.523	31.370	33.68
8/2/98 17:56	1615	9.18	89.148	52.81	0.523	31.370	33.68
8/2/98 17:57	1616	9.13	89.148	52.81	0.523	31.370	33.68
8/2/98 17:58	1617	9.08	89.148	52.81	0.523	31.370	33.68
8/2/98 17:59	1618	9.04	89.151	52.81	0.521	31.370	33.68
8/2/98 18:00	1619	8.99	89.148	52.81	0.523	31.370	33.68
8/2/98 18:01	1620	8.95	89.170	52.79	0.506	31.370	33.68
8/2/98 18:02	1621	8.91	89.167	52.79	0.508	31.370	33.68
8/2/98 18:03	1622	8.86	89.192	52.77	0.489	31.370	33.68
8/2/98 18:04	1623	8.82	89.192	52.77	0.489	31.370	33.68
8/2/98 18:05	1624	8.78	89.215	52.76	0.471	31.370	33.68
8/2/98 18:06	1625	8.74	89.237	52.74	0.454	31.370	33.68
8/2/98 18:07	1626	8.70	89.212	52.76	0.473	31.370	33.68
8/2/98 18:08	1627	8.65	89.234	52.74	0.456	31.370	33.68
8/2/98 18:09	1628	8.61	89.237	52.74	0.454	31.370	33.68
8/2/98 18:10	1629	8.57	89.266	52.72	0.432	31.370	33.68
8/2/98 18:11	1630	8.53	89.240	52.74	0.452	31.370	33.68
8/2/98 18:12	1631	8.49	89.259	52.72	0.437	31.370	33.68
8/2/98 18:13	1632	8.46	89.259	52.72	0.437	31.370	33.68
8/2/98 18:14	1633	8.42	89.256	52.72	0.439	31.370	33.68
8/2/98 18:15	1634	8.38	89.259	52.72	0.437	31.370	33.68
8/2/98 18:16	1635	8.34	89.278	52.71	0.422	31.370	33.68
8/2/98 18:17	1636	8.30	89.281	52.70	0.420	31.370	33.68
8/2/98 18:18	1637	8.27	89.303	52.69	0.403	31.370	33.68
8/2/98 18:19	1638	8.23	89.308	52.68	0.399	31.370	33.68
8/2/98 18:20	1639	8.19	89.325	52.67	0.386	31.370	33.68
8/2/98 18:21	1640	8.16	89.325	52.67	0.386	31.370	33.68
8/2/98 18:22	1641	8.12	89.325	52.67	0.386	31.370	33.68
8/2/98 18:23	1642	8.09	89.322	52.67	0.388	31.370	33.68
8/2/98 18:24	1643	8.05	89.325	52.67	0.386	31.370	33.68
8/2/98 18:25	1644	8.02	89.325	52.67	0.386	31.370	33.68
8/2/98 18:26	1645	7.99	89.348	52.65	0.368	31.370	33.68
8/2/98 18:27	1646	7.95	89.348	52.65	0.368	31.370	33.68
8/2/98 18:28	1647	7.92	89.348	52.65	0.368	31.370	33.68
8/2/98 18:29	1648	7.89	89.370	52.64	0.351	31.370	33.68
8/2/98 18:30	1649	7.85	89.370	52.64	0.351	31.370	33.68
8/2/98 18:31	1650	7.82	89.392	52.62	0.334	31.370	33.68
8/2/98 18:32	1651	7.79	89.389	52.62	0.336	31.370	33.68
8/2/98 18:33	1652	7.76	89.392	52.62	0.334	31.370	33.68
8/2/98 18:34	1653	7.72	89.414	52.60	0.317	31.370	33.68
8/2/98 18:35	1654	7.69	89.414	52.60	0.317	31.370	33.68
8/2/98 18:36	1655	7.66	89.414	52.60	0.317	31.370	33.68
8/2/98 18:37	1656	7.63	89.414	52.60	0.317	31.370	33.68
8/2/98 18:38	1657	7.60	89.414	52.60	0.317	31.370	33.68
8/2/98 18:39	1658	7.57	89.414	52.60	0.317	31.370	33.68

DATA FOR PUMPING WELL AND OB-2s

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t	P.W. (data logger) (no units)	P.W. (water level) (feet below RP)	P.W. (draw-down) (feet)	OB-2Ss (data logger) (no units)	OB-2Ss (water level) (feet below RP)
		(time since start/time since end) (no units)					
8/2/98 18:40	1659	7.54	89.414	52.60	0.317	31.370	33.68
8/2/98 18:41	1660	7.51	89.436	52.58	0.300	31.370	33.68
8/2/98 18:42	1661	7.48	89.433	52.59	0.302	31.370	33.68
8/2/98 18:43	1662	7.45	89.436	52.58	0.300	31.370	33.68
8/2/98 18:44	1663	7.42	89.436	52.58	0.300	31.370	33.68
8/2/98 18:45	1664	7.40	89.458	52.57	0.283	31.370	33.68
8/2/98 18:46	1665	7.37	89.436	52.58	0.300	31.370	33.68
8/2/98 18:47	1666	7.34	89.436	52.58	0.300	31.370	33.68
8/2/98 18:48	1667	7.31	89.458	52.57	0.283	31.370	33.68
8/2/98 18:49	1668	7.28	89.477	52.55	0.268	31.370	33.68
8/2/98 18:50	1669	7.26	89.480	52.55	0.266	31.370	33.68
8/2/98 18:51	1670	7.23	89.480	52.55	0.266	31.370	33.68
8/2/98 18:52	1671	7.20	89.503	52.53	0.248	31.370	33.68
8/2/98 18:53	1672	7.18	89.503	52.53	0.248	31.370	33.68
8/2/98 18:54	1673	7.15	89.503	52.53	0.248	31.370	33.68
8/2/98 18:55	1674	7.12	89.503	52.53	0.248	31.370	33.68
8/2/98 18:56	1675	7.10	89.503	52.53	0.248	31.370	33.68
8/2/98 18:57	1676	7.07	89.503	52.53	0.248	31.370	33.68
8/2/98 18:58	1677	7.05	89.503	52.53	0.248	31.370	33.68
8/2/98 18:59	1678	7.02	89.510	52.53	0.243	31.370	33.68
8/2/98 19:00	1679	7.00	89.513	52.52	0.240	31.370	33.68
8/2/98 19:01	1680	6.97	89.532	52.51	0.225	31.370	33.68
8/2/98 19:02	1681	6.95	89.528	52.51	0.229	31.370	33.68
8/2/98 19:03	1682	6.92	89.535	52.51	0.223	31.370	33.68
8/2/98 19:04	1683	6.90	89.528	52.51	0.229	31.370	33.68
8/2/98 19:05	1684	6.87	89.528	52.51	0.229	31.370	33.68
8/2/98 19:06	1685	6.85	89.528	52.51	0.229	31.370	33.68
8/2/98 19:07	1686	6.83	89.535	52.51	0.223	31.370	33.68
8/2/98 19:08	1687	6.80	89.558	52.49	0.205	31.370	33.68
8/2/98 19:09	1688	6.78	89.555	52.49	0.208	31.370	33.68
8/2/98 19:10	1689	6.76	89.580	52.47	0.188	31.370	33.68
8/2/98 19:11	1690	6.73	89.580	52.47	0.188	31.370	33.68
8/2/98 19:12	1691	6.71	89.587	52.47	0.183	31.370	33.68
8/2/98 19:13	1692	6.69	89.580	52.47	0.188	31.370	33.68
8/2/98 19:14	1693	6.67	89.602	52.46	0.171	31.370	33.68
8/2/98 19:15	1694	6.64	89.580	52.47	0.188	31.370	33.68
8/2/98 19:16	1695	6.62	89.605	52.45	0.169	31.370	33.68
8/2/98 19:17	1696	6.60	89.587	52.47	0.183	31.370	33.68
8/2/98 19:18	1697	6.58	89.602	52.46	0.171	31.370	33.68
8/2/98 19:19	1698	6.56	89.610	52.45	0.165	31.370	33.68
8/2/98 19:20	1699	6.53	89.613	52.45	0.163	31.370	33.68
8/2/98 19:21	1700	6.51	89.594	52.46	0.177	31.370	33.68
8/2/98 19:22	1701	6.49	89.602	52.46	0.171	31.370	33.68
8/2/98 19:23	1702	6.47	89.605	52.45	0.169	31.370	33.68
8/2/98 19:24	1703	6.45	89.605	52.45	0.169	31.370	33.68
8/2/98 19:25	1704	6.43	89.635	52.43	0.146	31.370	33.68
8/2/98 19:26	1705	6.41	89.654	52.42	0.131	31.370	33.68
8/2/98 19:27	1706	6.39	89.627	52.44	0.152	31.370	33.68
8/2/98 19:28	1707	6.37	89.649	52.42	0.135	31.370	33.68
8/2/98 19:29	1708	6.35	89.645	52.42	0.138	31.370	33.68
8/2/98 19:30	1709	6.33	89.664	52.41	0.123	31.370	33.68
8/2/98 19:31	1710	6.31	89.642	52.42	0.140	31.370	33.68
8/2/98 19:32	1711	6.29	89.664	52.41	0.123	31.370	33.68
8/2/98 19:33	1712	6.27	89.667	52.41	0.121	31.370	33.68
8/2/98 19:34	1713	6.25	89.689	52.39	0.104	31.370	33.68
8/2/98 19:35	1714	6.23	89.670	52.40	0.119	31.370	33.68
8/2/98 19:36	1715	6.21	89.689	52.39	0.104	31.370	33.68
8/2/98 19:37	1716	6.19	89.689	52.39	0.104	31.370	33.68
8/2/98 19:38	1717	6.18	89.692	52.39	0.101	31.370	33.68
8/2/98 19:39	1718	6.16	89.692	52.39	0.101	31.370	33.68
8/2/98 19:40	1719	6.14	89.703	52.38	0.093	31.370	33.68

DATA FOR PUMPING WELL AND OB-2s

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	P.W. (data logger) (no units)	P.W. (water level) (feet below RP)	P.W. (draw-down) (feet)	OB-2Ss (data logger) (no units)	OB-2Ss (water level) (feet below RP)
8/2/98 19:41	1720	6.12	89.700	52.38	0.095	31.370	33.68
8/2/98 19:42	1721	6.10	89.700	52.38	0.095	31.370	33.68
8/2/98 19:43	1722	6.08	89.692	52.39	0.101	31.369	33.68
8/2/98 19:44	1723	6.07	89.703	52.38	0.093	31.370	33.68
8/2/98 19:50	1729	5.96	89.758	52.33	0.050	31.370	33.68
8/2/98 20:00	1739	5.80	89.743	52.35	0.062	31.370	33.68
8/2/98 20:10	1749	5.64	89.778	52.32	0.035	31.370	33.68
8/2/98 20:20	1759	5.50	89.784	52.31	0.030	31.370	33.68
8/2/98 20:30	1769	5.36	89.830	52.28	-0.005	31.370	33.68
8/2/98 20:40	1779	5.23	89.831	52.28	-0.006	31.369	33.68
8/2/98 20:50	1789	5.11	89.837	52.27	-0.011	31.369	33.68
8/2/98 21:00	1799	5.00	89.864	52.25	-0.032	31.369	33.68
8/2/98 21:10	1809	4.89	89.883	52.24	-0.046	31.369	33.68
8/2/98 21:20	1819	4.79	89.866	52.25	-0.033	31.368	33.68
8/2/98 21:30	1829	4.69	89.878	52.24	-0.043	31.369	33.68
8/2/98 21:40	1839	4.60	89.890	52.23	-0.052	31.368	33.68
8/2/98 21:50	1849	4.51	89.930	52.20	-0.083	31.368	33.68
8/2/98 22:00	1859	4.43	89.928	52.20	-0.081	31.368	33.68
8/2/98 22:10	1869	4.35	89.967	52.17	-0.112	31.368	33.68
8/2/98 22:20	1879	4.27	89.969	52.17	-0.113	31.368	33.68
8/2/98 22:30	1889	4.20	89.978	52.16	-0.120	31.368	33.68
8/2/98 22:40	1899	4.13	89.976	52.17	-0.119	31.368	33.68
8/2/98 22:50	1909	4.06	89.993	52.15	-0.132	31.368	33.68
8/2/98 23:00	1919	4.00	90.022	52.13	-0.154	31.368	33.68
8/2/98 23:10	1929	3.94	90.020	52.13	-0.153	31.368	33.68
8/2/98 23:20	1939	3.88	90.012	52.14	-0.146	31.368	33.68
8/2/98 23:30	1949	3.82	90.062	52.10	-0.185	31.368	33.68
8/2/98 23:40	1959	3.77	90.080	52.09	-0.199	31.368	33.68
8/2/98 23:50	1969	3.72	90.086	52.08	-0.204	31.369	33.68
8/3/98 0:00	1979	3.66	90.092	52.08	-0.208	31.368	33.68
8/3/98 0:10	1989	3.62	90.106	52.07	-0.219	31.369	33.68
8/3/98 0:20	1999	3.57	90.117	52.06	-0.228	31.369	33.68
8/3/98 0:30	2009	3.52	90.112	52.06	-0.224	31.369	33.68
8/3/98 0:40	2019	3.48	90.111	52.06	-0.223	31.369	33.68
8/3/98 0:50	2029	3.44	90.125	52.05	-0.234	31.369	33.68
8/3/98 1:00	2039	3.40	90.150	52.03	-0.253	31.369	33.68
8/3/98 1:10	2049	3.36	90.148	52.03	-0.252	31.369	33.68
8/3/98 1:20	2059	3.32	90.151	52.03	-0.254	31.369	33.68
8/3/98 1:30	2069	3.28	90.159	52.02	-0.260	31.369	33.68
8/3/98 1:40	2079	3.25	90.162	52.02	-0.263	31.369	33.68
8/3/98 1:50	2089	3.21	90.164	52.02	-0.264	31.369	33.68
8/3/98 2:00	2099	3.18	90.186	52.00	-0.281	31.369	33.68
8/3/98 2:10	2109	3.15	90.208	51.99	-0.298	31.369	33.68
8/3/98 2:20	2119	3.12	90.173	52.01	-0.271	31.369	33.68
8/3/98 2:30	2129	3.09	90.210	51.98	-0.300	31.370	33.68
8/3/98 2:40	2139	3.06	90.262	51.94	-0.340	31.370	33.68
8/3/98 2:50	2149	3.03	90.246	51.96	-0.328	31.370	33.68
8/3/98 3:00	2159	3.00	90.246	51.96	-0.328	31.370	33.68
8/3/98 3:10	2169	2.97	90.260	51.95	-0.339	31.370	33.68
8/3/98 3:20	2179	2.94	90.274	51.94	-0.349	31.370	33.68
8/3/98 3:30	2189	2.92	90.277	51.93	-0.352	31.370	33.68
8/3/98 3:40	2199	2.89	90.277	51.93	-0.352	31.370	33.68
8/3/98 3:50	2209	2.87	90.264	51.94	-0.342	31.370	33.68
8/3/98 4:00	2219	2.84	90.287	51.92	-0.360	31.370	33.68
8/3/98 4:10	2229	2.82	90.294	51.92	-0.365	31.370	33.68
8/3/98 4:20	2239	2.80	90.294	51.92	-0.365	31.370	33.68
8/3/98 4:30	2249	2.78	90.290	51.92	-0.362	31.369	33.68
8/3/98 4:40	2259	2.75	90.290	51.92	-0.362	31.369	33.68
8/3/98 4:50	2269	2.73	90.304	51.91	-0.373	31.369	33.68
8/3/98 5:00	2279	2.71	90.318	51.90	-0.384	31.370	33.68
8/3/98 5:10	2289	2.69	90.321	51.90	-0.386	31.369	33.68

DATA FOR PUMPING WELL AND OB-2s

Date/Time	Time Since Pumping Started (minutes)	Ratio t/t' (time since start/time since end) (no units)	P.W. (data logger) (no units)	P.W. (water level) (feet below RP)	P.W. (draw-down) (feet)	OB-2Ss (data logger) (no units)	OB-2Ss (water level) (feet below RP)
8/3/98 5:20	2299	2.67	90.329	51.89	-0.392	31.369	33.68
8/3/98 5:30	2309	2.65	90.329	51.89	-0.392	31.369	33.68
8/3/98 5:40	2319	2.64	90.310	51.91	-0.377	31.369	33.68
8/3/98 5:50	2329	2.62	90.324	51.90	-0.388	31.369	33.68
8/3/98 6:00	2339	2.60	90.324	51.90	-0.388	31.369	33.68
8/3/98 6:10	2349	2.58	90.302	51.91	-0.371	31.369	33.68
8/3/98 6:20	2359	2.56	90.326	51.89	-0.390	31.369	33.68
8/3/98 6:30	2369	2.55	90.304	51.91	-0.373	31.369	33.68
8/3/98 6:40	2379	2.53	90.311	51.91	-0.378	31.369	33.68
8/3/98 6:50	2389	2.51	90.319	51.90	-0.384	31.369	33.68
8/3/98 7:00	2399	2.50	90.311	51.91	-0.378	31.369	33.68
8/3/98 7:10	2409	2.48	90.318	51.90	-0.384	31.369	33.68
8/3/98 7:20	2419	2.47	90.318	51.90	-0.384	31.368	33.68

