

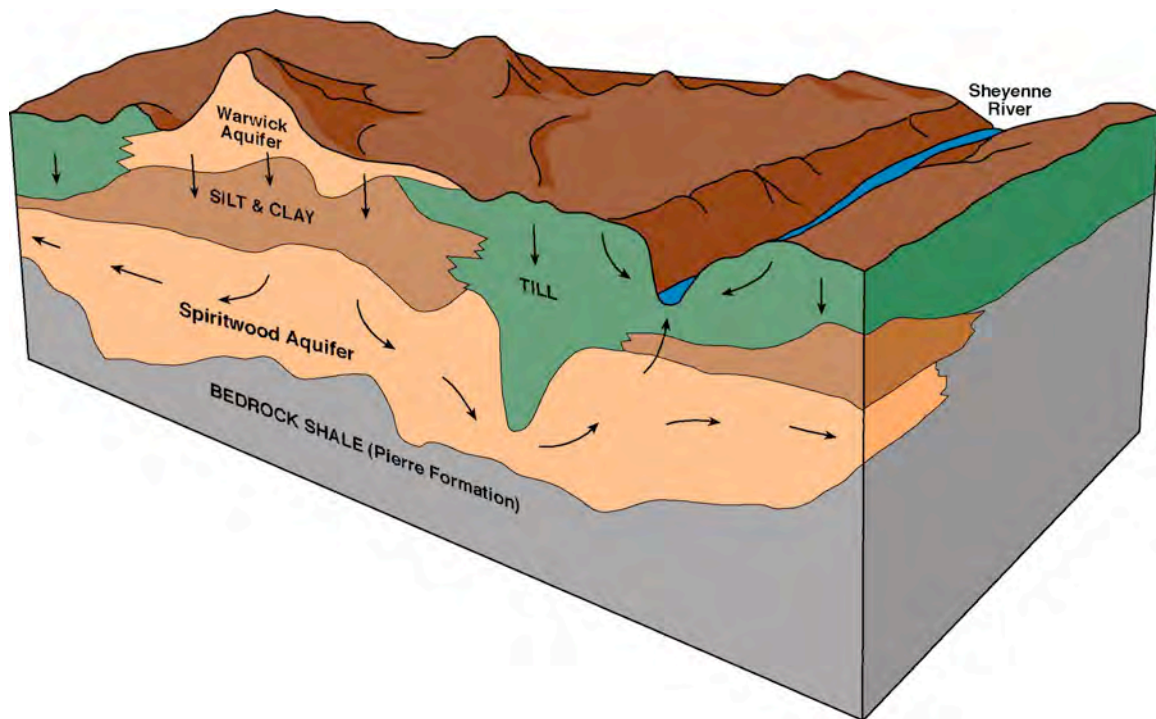
**Water Supply Investigation for the City of Devils Lake
Spiritwood Aquifer near Warwick and the Sheyenne River
Ramsey, Benson, Eddy and Nelson Counties, North Dakota**

By

Jon C. Patch, P.E.

And

Rex Honeyman



**North Dakota Ground-Water Studies
Number 113
North Dakota State Water Commission**



**Prepared by the North Dakota State Water Commission
In cooperation with the City of Devils Lake and Ramsey County Rural Utilities**

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**Published by the
North Dakota State Water Commission
900 East Boulevard Avenue
Bismarck, North Dakota 58505**

2005

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Water Supply Investigation for the City of Devils Lake Spiritwood Aquifer near Warwick and the Sheyenne River Ramsey, Benson, Eddy and Nelson Counties, North Dakota

Introduction

The City of Devils Lake currently obtains its municipal water supply from the Warwick aquifer. Two major issues have caused the City to begin investigating the possibility of relocating their primary water supply to a new source. First, several miles of pipeline which connect the well field with the City have become submerged due to the rising water level of Devils Lake. This situation poses a threat to the City in the event that the pipeline would break leaving the City without a water supply while the break is found and repaired. Underwater repair will be difficult and costly, hence, the City is exploring alternatives to the existing pipeline which would not be subject to inundation at the current or future potential lake levels. Second, recent regulatory mandates on maximum contaminant levels (MCL) of dissolved arsenic in public water supplies will put the City of Devils Lake out of compliance. These regulations require a reduction in the current Arsenic concentration of about 40 $\mu\text{g}/\text{l}$ to less than 10 $\mu\text{g}/\text{l}$ which is not possible without a more sophisticated and expensive water treatment methodology.

Because of cost considerations to route a new pipeline from the existing well field around the east bay of Devils Lake and back to the City, several areas have been considered to potentially replace the existing water supply from the Warwick aquifer. Alternative areas assessed included several segments of the Spiritwood aquifer from Towner County to the Sheyenne River. The area identified as the Spiritwood aquifer near Warwick and the Sheyenne River (Figure 1) appears to have the best potential in terms of both quantity and quality to meet the current and future needs of the City.

The City of Devils Lake initially entered into a cooperative agreement (Phase I) with the North Dakota State Water Commission (SWC) to determine if the Spiritwood aquifer near Warwick and the Sheyenne River was capable of providing a municipal supply for the City of Devils Lake. The Phase I investigation was primarily a data gathering and desktop assessment of the Spiritwood aquifer near Warwick and the Sheyenne River. A computer ground-water flow-model was developed during this phase of the investigation. The City of Devils Lake and the State Water Commission shared the

cost of the project equally. It was concluded from the Phase I investigation that additional field work in the form of test drilling, observation well construction, water sampling for chemical analysis, water-level monitoring, aquifer testing, and ground-water modeling would be required.

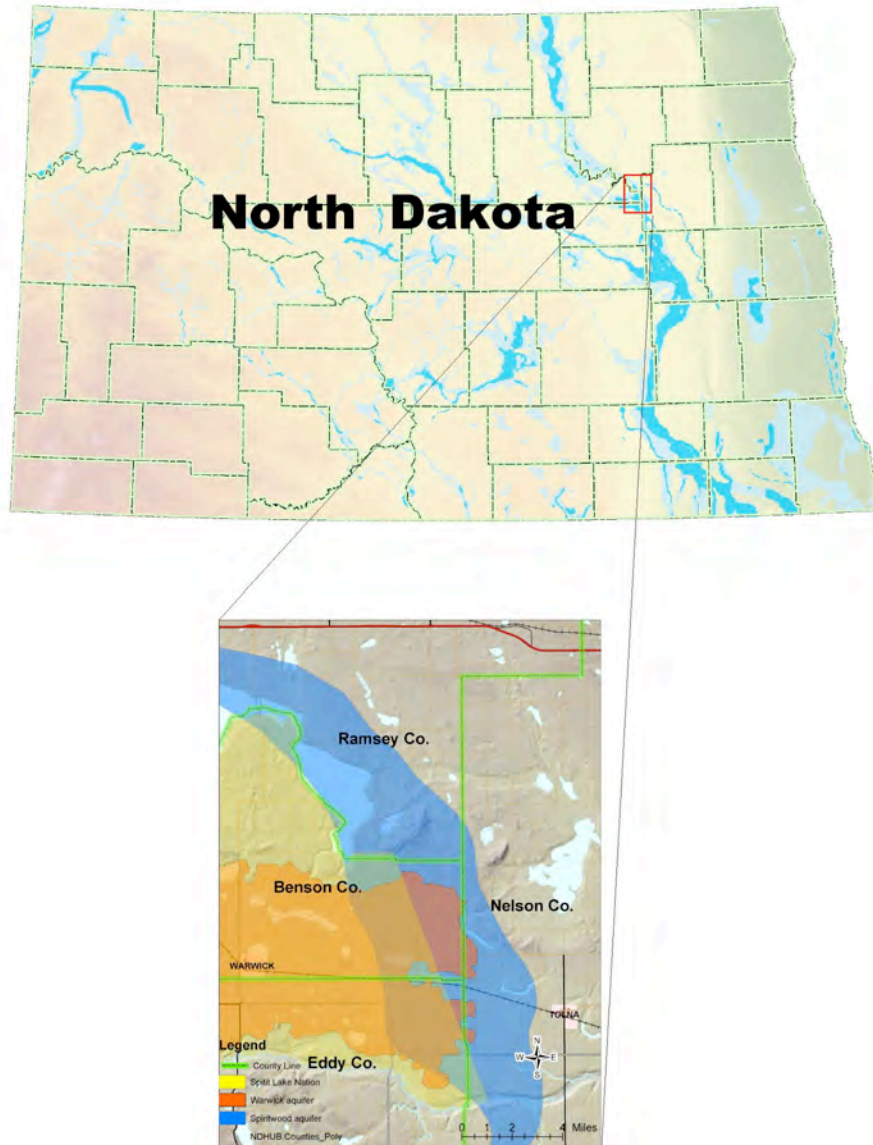


Figure 1. Location of the Study area.

Phase II of the City of Devils Lake municipal water-supply study was initiated in June, 2003. Ramsey County Rural Utilities, a rural-water supply entity in this region, has their well field located in this portion of the Spiritwood aquifer and requested and participated in the investigation. Costs for Phase II of the investigation were shared as follows: State Water Commission – 50%, City of Devils Lake – 40%, and Ramsey County Rural Utilities – 10%.

Purpose

The purpose of this study is to determine if the Spiritwood aquifer near Warwick will be able to support the water supply needs of the City of Devils Lake. The city has identified the need for 2000 acre-feet of water per year (1.79 MGal/day). In addition, water-quality parameters such as total dissolved solids (TDS), arsenic (As), and hardness are important considerations for the city to assess treatment methods and costs.

Objectives

The specific objectives of this investigation are:

- 1). Further define the geometry of the Spiritwood aquifer near Warwick and the Sheyenne River.
- 2). Develop a steady-state ground water flow model of the aquifer to assess the impacts of selected levels of ground-water withdrawals by the City of Devils Lake.
- 3). Evaluate the overall recharge-discharge relationships of the aquifer.
- 4). Evaluate the spatial distribution of major ions, dissolved solids concentrations, hardness, and arsenic in the ground water.
- 5). Perform aquifer tests at selected locations to determine aquifer hydraulic properties.

- 6) Determine the additional withdrawals that the aquifer can support and their potential effects on water quality.

Acknowledgements

Appreciation is expressed to Robert Shaver for his critical review of this report. Recognition of jobs well done is given to Gary Calheim and Jim Leuwer for their skill in test drilling and observation well installation; Kelvin Kunz for his acumen in all aspects of hydrologic data collection including stream gaging and water-level monitoring; Merlyn Skaley for his proficiency in water sample collection; and Albert Lachenmeier for excellent work on the installation of the protective well casings, water-level monitoring, and general upkeep on the wells. Also to Kelvin and Albert for their work during the aquifer tests.

Location-Numbering System

Locations in this report are numbered according to a system based on the location in the public land classification of the United States Bureau of Land Management (Figure 2). The first numeral denotes the township north of a base line, the second numeral denotes a range west of the fifth principal meridian, and the third numeral denotes the section. Letters A, B, C, D designate, respectively, the northeast, northwest, southwest, and southeast quarter section, quarter-quarter section, and quarter-quarter-quarter section (10 acre-tract). For example, well 155-056-04ADD is located in the SE1/4 SE1/4 NE1/4 Section 4, Township 155 North, Range 56 West. Consecutive terminal numerals are added if more than one well is located in a 10-acre tract.

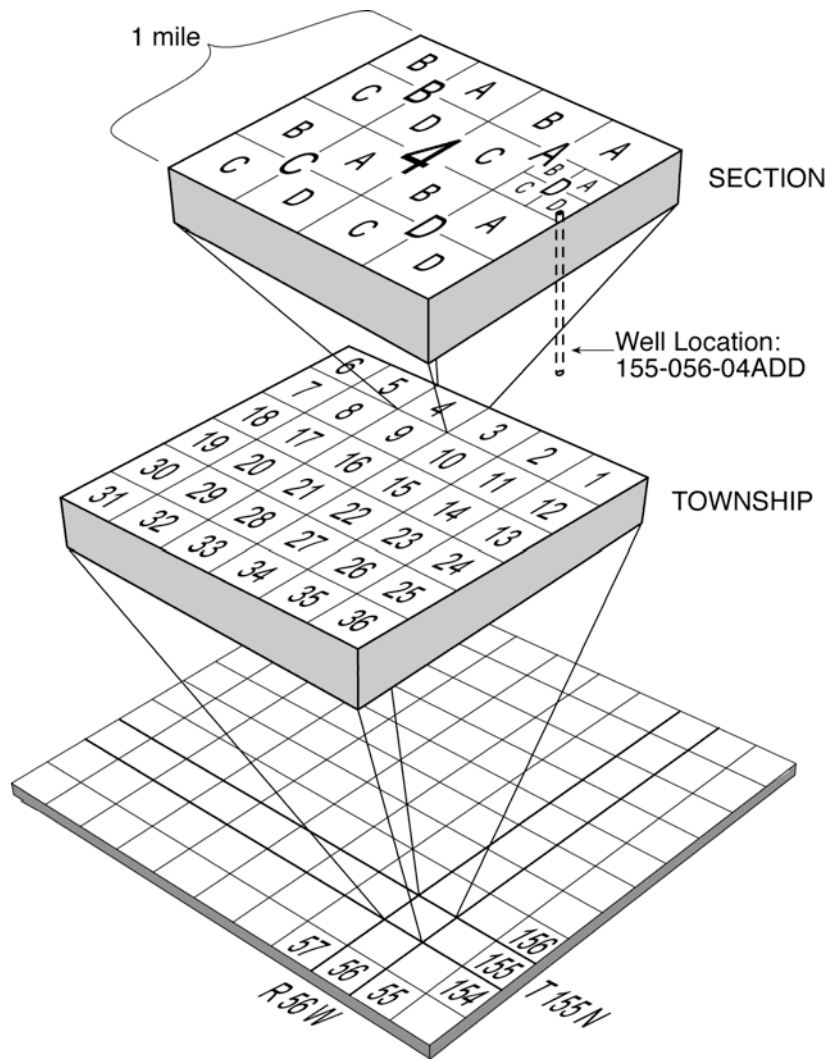


Figure 2. Location numbering system

Previous Work

The North Dakota State Water Commission (NDSWC), in cooperation with the United States Geological Survey (USGS), the North Dakota Geological Survey (NDGS) and various County Water Management Districts conducted ground-water surveys of Benson and Pierce Counties, Ramsey County, Eddy and Foster Counties, and Nelson and Walsh Counties. The Part I's, Geology, are comprehensive investigations of the surficial geology and general discussions of the subsurface geology (Bluemle, 1965, Bluemle, 1973, Carlson, 1975 and Hobbs, 1987). The Part II's, Basic Data, includes inventories of

test holes, well logs, water-level measurements and chemical analyses (Downey, 1971, Hutchinson. 1977, Randich, 1971 and Trapp, 1966). The Part III's, Ground-Water Resources, present general evaluations of the water yielding potential and chemical quality of major bedrock, glacial drift and alluvial aquifers in the various counties (Downey. 1973, Hutchinson. 1980, Randich, 1977 and Trapp, 1968).

A water budget investigation of Devils Lake, conducted by the NDSWC and the USGS, describe the hydrogeology of a large portion of the Devils Lake Basin (Pusc, 1992). A water-supply investigation for Ramsey Rural Water (Pusc, 1992) compiled much of the data and provides interpretation used as the basis for this investigation. The interaction between ground water and Devils Lake as well as the hydrogeology of the Devils Lake region was investigated by Pusc (1993).

Methods of Study and Summary of Work

This hydrogeologic investigation was accomplished by the following tasks:

- Existing Data Assemblage

Data collected from previous investigations such as the County Ground-water Studies, other water supply investigations, and private drillers logs was assembled and digitized for use in the geographical information system (GIS) and modeling applications.

- GIS

A geographical information system (GIS) project was developed to organize, display, and present the available data. ARCGIS software by ESRI, Inc. was the GIS application used for this project.

- Test Drilling and Monitoring Well Installation

A total of 9,229 feet of test drilling at 46 sites and the installation of 34 new monitoring wells were completed for this project. The lithologic information collected at these test holes provides the basis on which hydrologic interpretation were made. The

monitoring wells allowed for the collection of water level and water-quality information on which concepts of flow are based.

- Field Data Collection

Field data collection activities beyond test drilling and monitoring well installation include water-level monitoring, ground-water chemical sampling, horizontal and vertical global positioning (surveying), and stream gaging.

Water levels were monitored on a monthly basis during the project at about 75 sites throughout the study area. Water samples for chemical analysis were collected from all observation wells approximately twice during the study. General chemical analysis (major ions), trace element analysis, and stable isotope analysis were performed on water samples collected during the study.

The establishment of horizontal and vertical global position of observation well measuring points (M.P.) were made by the NDSWC survey crew. Accuracy of vertical measurements is equivalent to third-order accuracy using traditional leveling techniques.

Stream gaging was done along the reach of the Sheyenne River where it crosses the Spiritwood aquifer. This was done to assess the hydraulic connection, if any, between the Spiritwood aquifer and the Sheyenne River.

- Aquifer Testing

An aquifer test involves test pumping a high capacity well in a monitored setting. Two aquifer tests were run to determine hydraulic properties of the media through which the ground water is moving. The data collected from the aquifer tests was used in formulating both the conceptual and computer ground-water flow models.

- Conceptual Model Development

A conceptual model of the aquifer is a qualitative description of the ground-water flow system. It is the thoughts and ideas (concepts) that go into building the digital ground-water flow-model. The conceptual model is built by the assimilation of all of the hydrogeologic data which has been collected. The concepts providing the basis for the

qualitative description can then be “modeled” by reducing them to mathematical equations which are solved using digital computer models.

- **Steady-State Model Development**

The conceptual model provided the basis for developing a steady-state groundwater flow-model. After the steady-state model was calibrated to achieve an acceptable goodness-of-fit between simulated and measured water levels, the model was used as a predictive tool to evaluate impacts on water levels due to increased pumping by the City of Devils Lake. Ongoing work in the area of transient model development will continue in the future.

Description of the Study Area

The study area is located in a 150 sq. mi. area in northeast North Dakota. Parts of four counties are included in the study area: Benson, Eddy, Nelson, and Ramsey Counties. In addition a portion of the Spirit Lake Nation falls within the study area.

Geologic Setting

The study area is located in the Drift Plains District of the Central Lowland Physiographic Province. Glacial drift of various thickness unconformably overlies shale of the Cretaceous Pierre Formation. The pre-glacial and glacial history has resulted in a complex geologic landscape. Ancient rivers carved deep valleys into the Pierre shale. Sand and gravel deposited within these drainage networks as well as outwash from glacial processes now form major aquifers in the area.

The Warwick aquifer is a surficial unconfined aquifer that consists of unconsolidated sand and gravel. Saturated thicknesses range from 10 to 200 feet and averages 74 feet (Randich, 1977). A large portion of the Warwick aquifer overlies the Spiritwood aquifer system.

The Spiritwood aquifer system is an extensive buried valley aquifer complex that extends from the Canadian border in Towner County southeastward to the South Dakota border in Sargent County (NDSWC, 1986). The Spiritwood aquifer has been subdivided

into discrete flow segments primarily based on the occurrence of restricted and/or no-flow boundaries. The segment of concern for this study is the Spiritwood aquifer near Warwick. In this area, the surficial Warwick aquifer overlies the Spiritwood aquifer. The two aquifers are separated by an aquitard consisting of glacio-lacustrine clays and silts and glacial till.

Hydrogeology of the Spiritwood aquifer System near the Warwick aquifer

A series of 14 geologic cross-sections (Figures 4 through 18) were developed to map the geometry of the aquifer systems. Surface traces of these cross-sections are shown on Figure 3.

Spiritwood Aquifer Geometry and Composition

The Spiritwood aquifer near Warwick varies from 3 to 8 miles wide and is about 13 miles long and covers about 60 sq. miles (Figure 3). The aquifer is 150 to 200 feet thick along its axis in this segment. The aquifer pinches out on its lateral flanks but is 50 to 150 feet thick through much of this segment.

The aquifer is composed of sand and gravel ranging from fine sand to very coarse gravel and cobbles. Most test holes which encountered the aquifer revealed a substantial amount of coarse sand to fine gravel. Typically, the sand and gravel is comprised of detrital shale, silicate minerals, igneous and metamorphic rock fragments, and carbonate rock fragments.

Warwick Aquifer Geometry and Composition

The Warwick aquifer is a surficial outwash deposit which covers about 50 to 60 square miles of Benson and Eddy counties (Figure 3). The aquifer thickness ranges from 20 to 200 feet and is for the most part unconfined.

The aquifer is composed primarily of sand and gravel ranging from very fine sand to coarse gravel. Typically, the sand and gravel is comprised of detrital shale, silicate minerals, igneous and metamorphic rock fragments, and carbonate rock fragments.

Spiritwood aquifer near Warwick and Sheyenne River

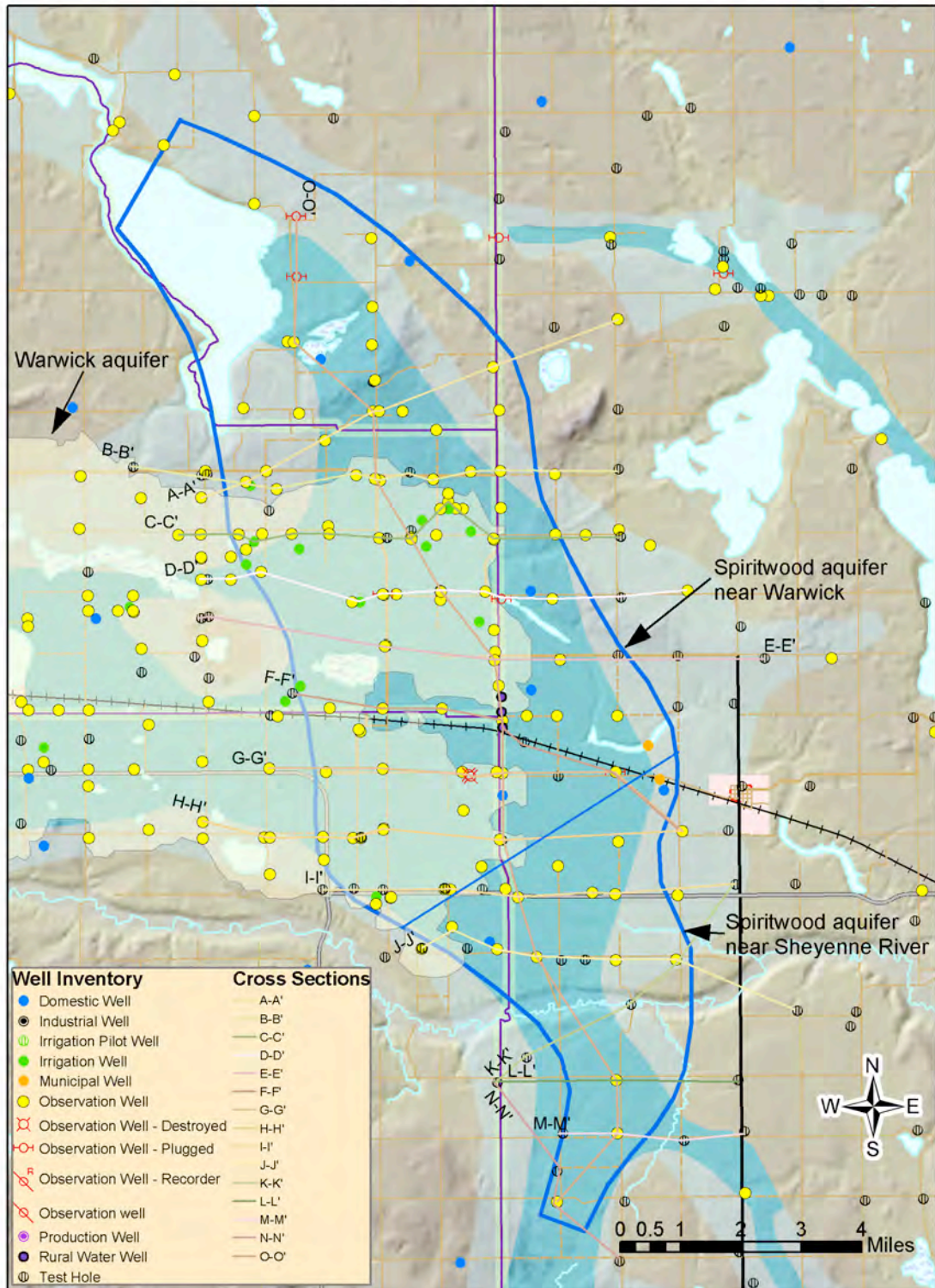


Figure 3. Map of the study area showing the segments of the Spiritwood aquifer, Warwick aquifer, geologic cross-section traces, and well inventory locations.

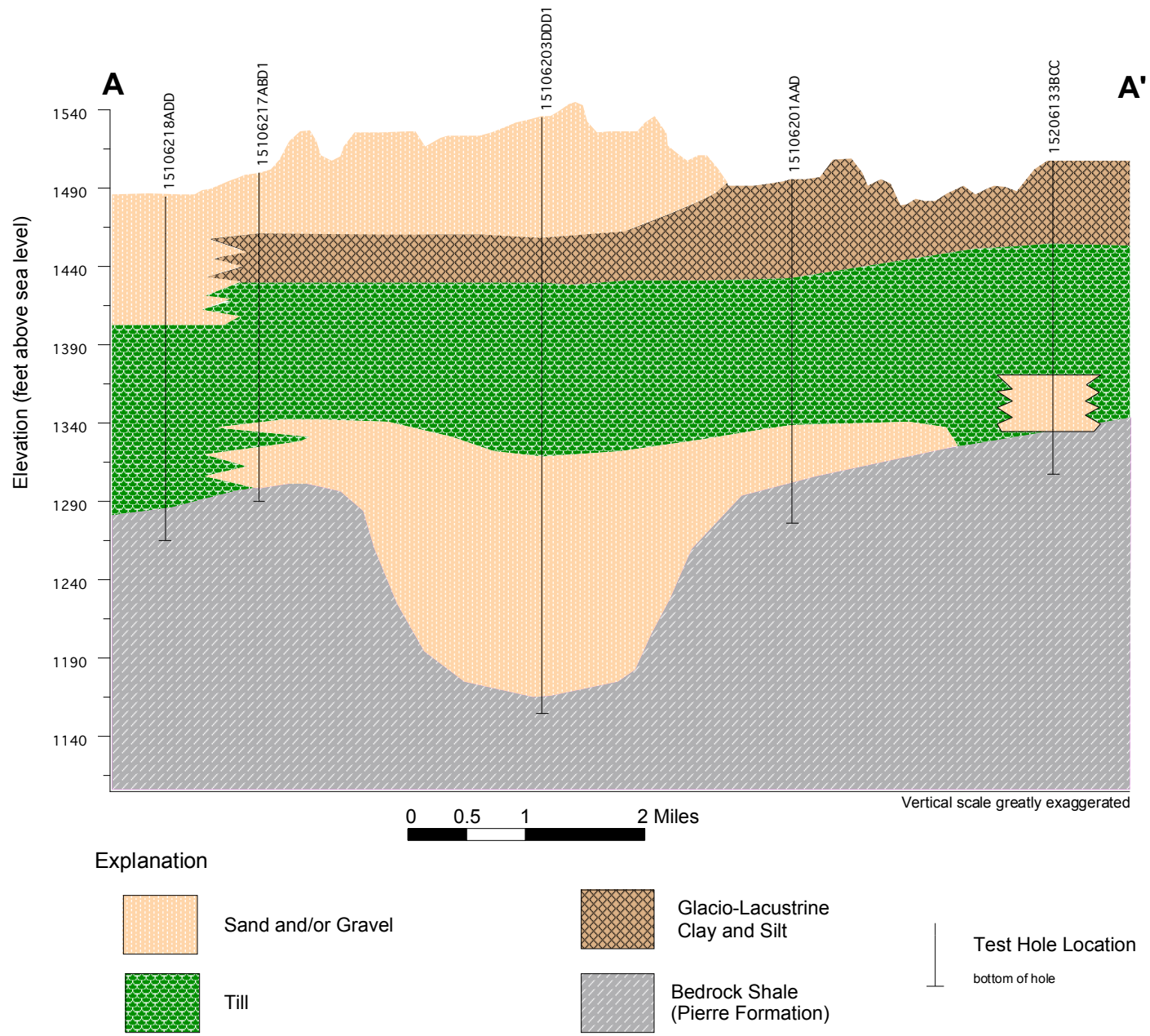


Figure 4. Geologic section A-A'.

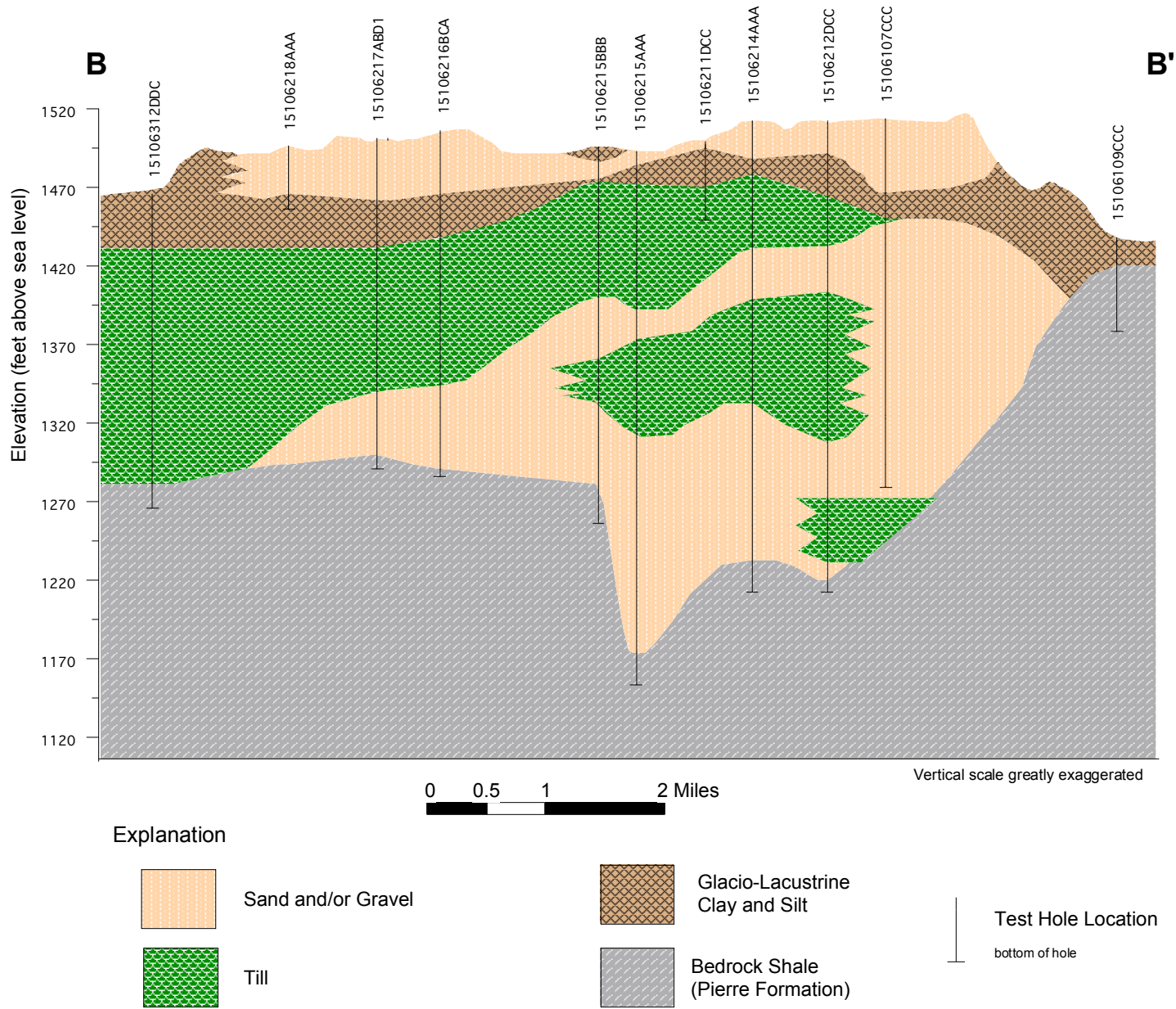


Figure 5. Geologic section B-B'.

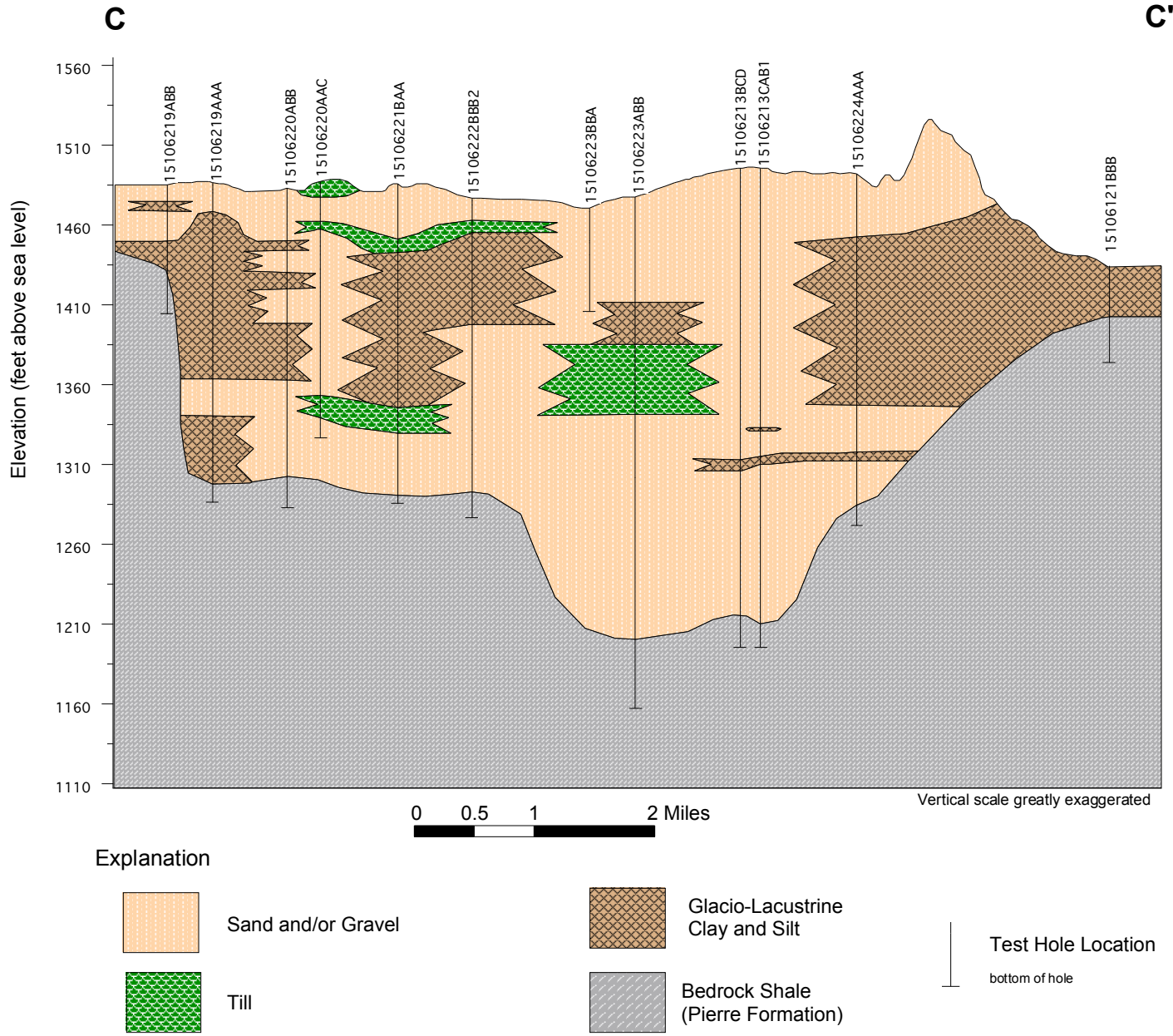


Figure 6. Geologic section C-C'.

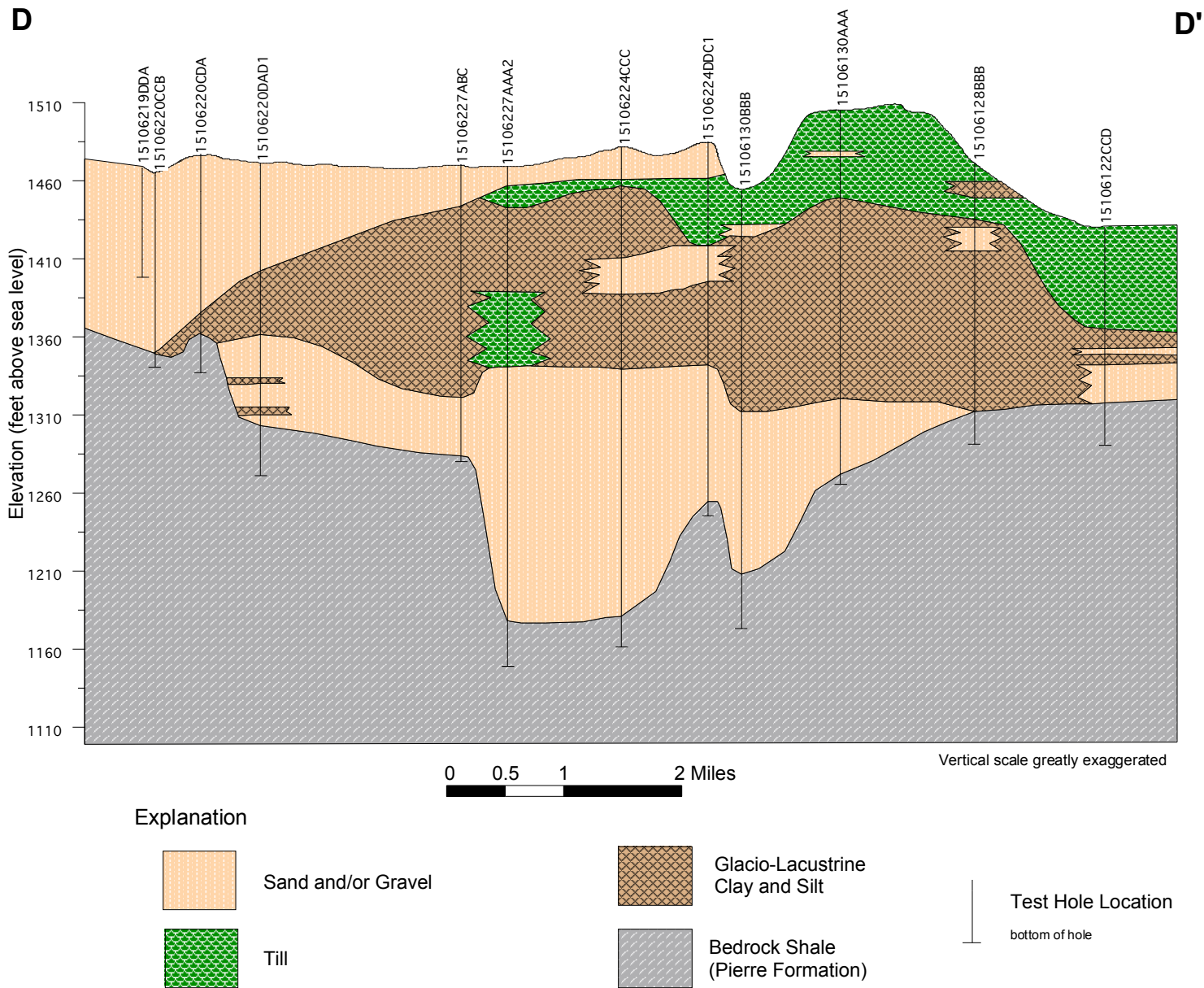


Figure 7. Geologic section D-D'.

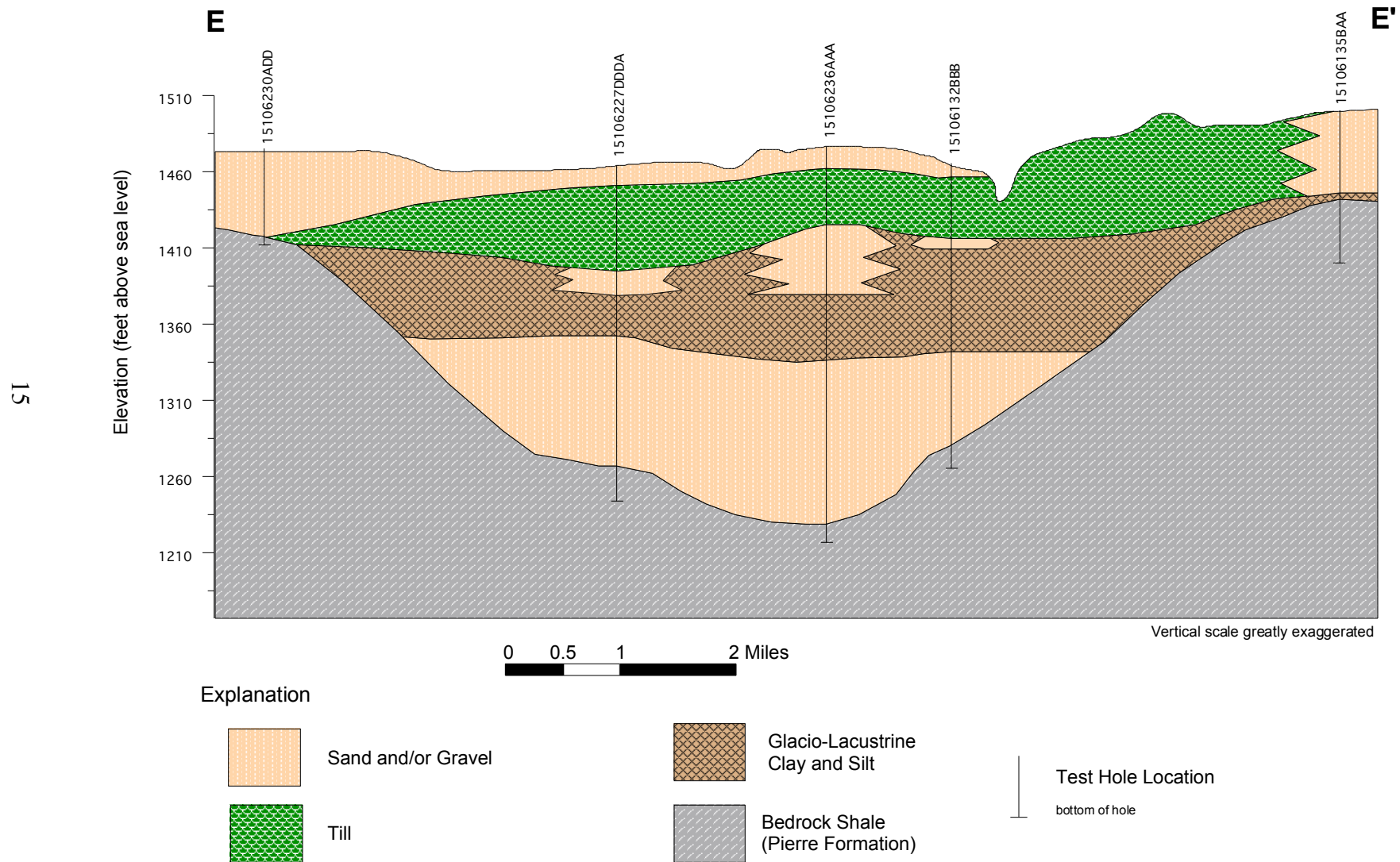


Figure 8. Geologic section E-E'.

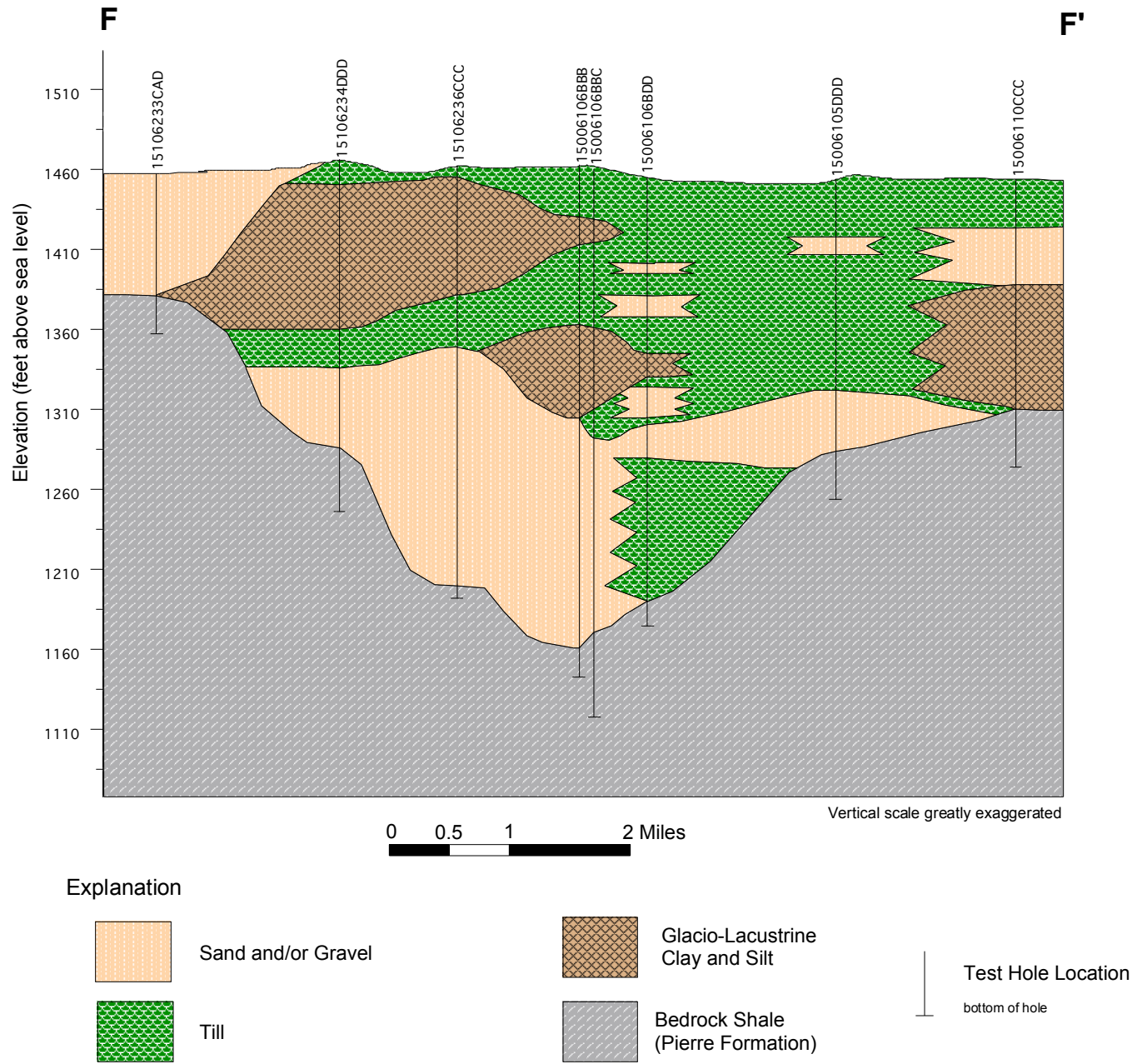


Figure 9. Geologic section F-F'.

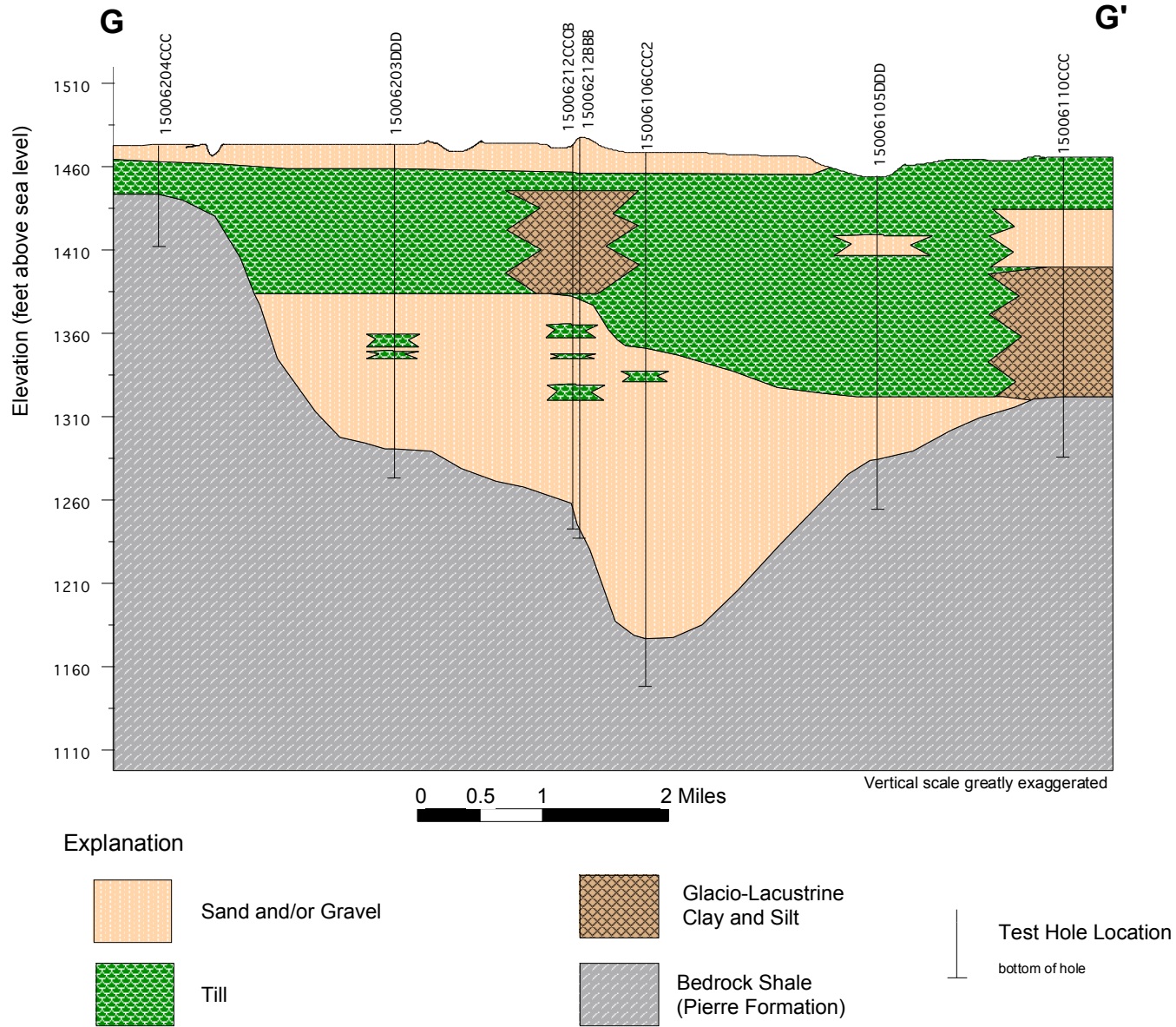


Figure 10. Geologic section G-G'.

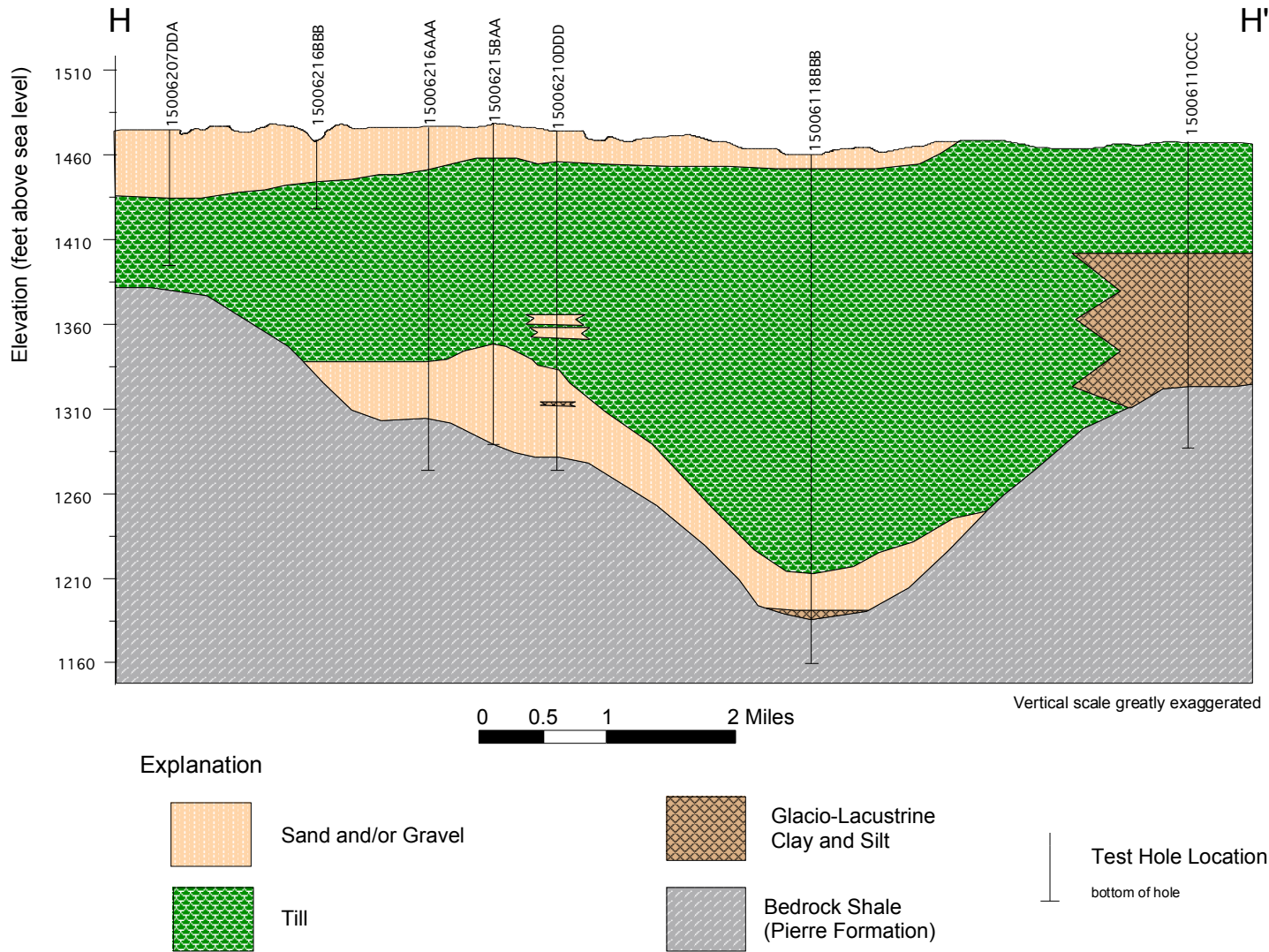


Figure 11. Geologic section H-H'.

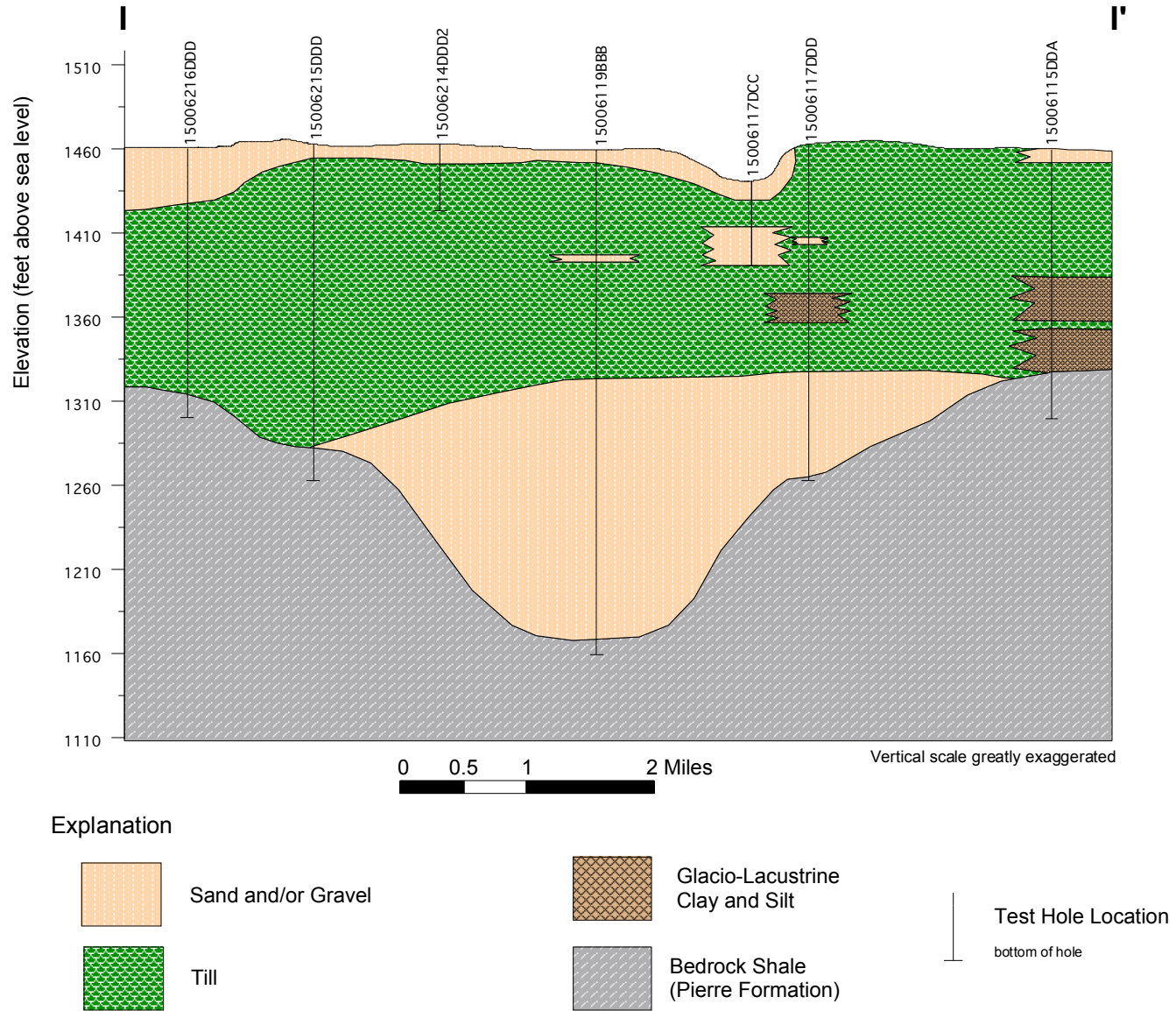


Figure 12. Geologic section I-I'.

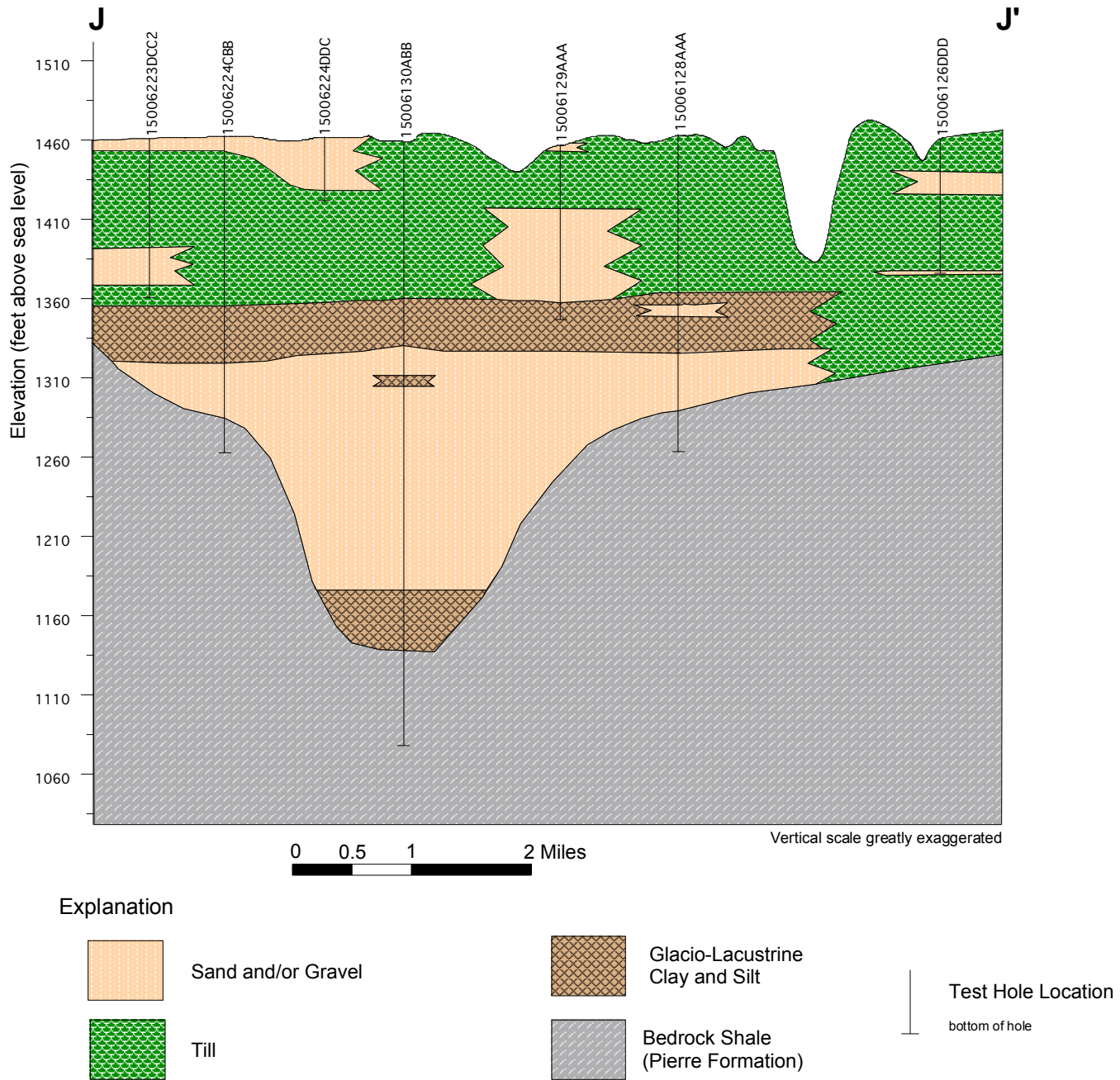


Figure 13. Geologic section J-J'.

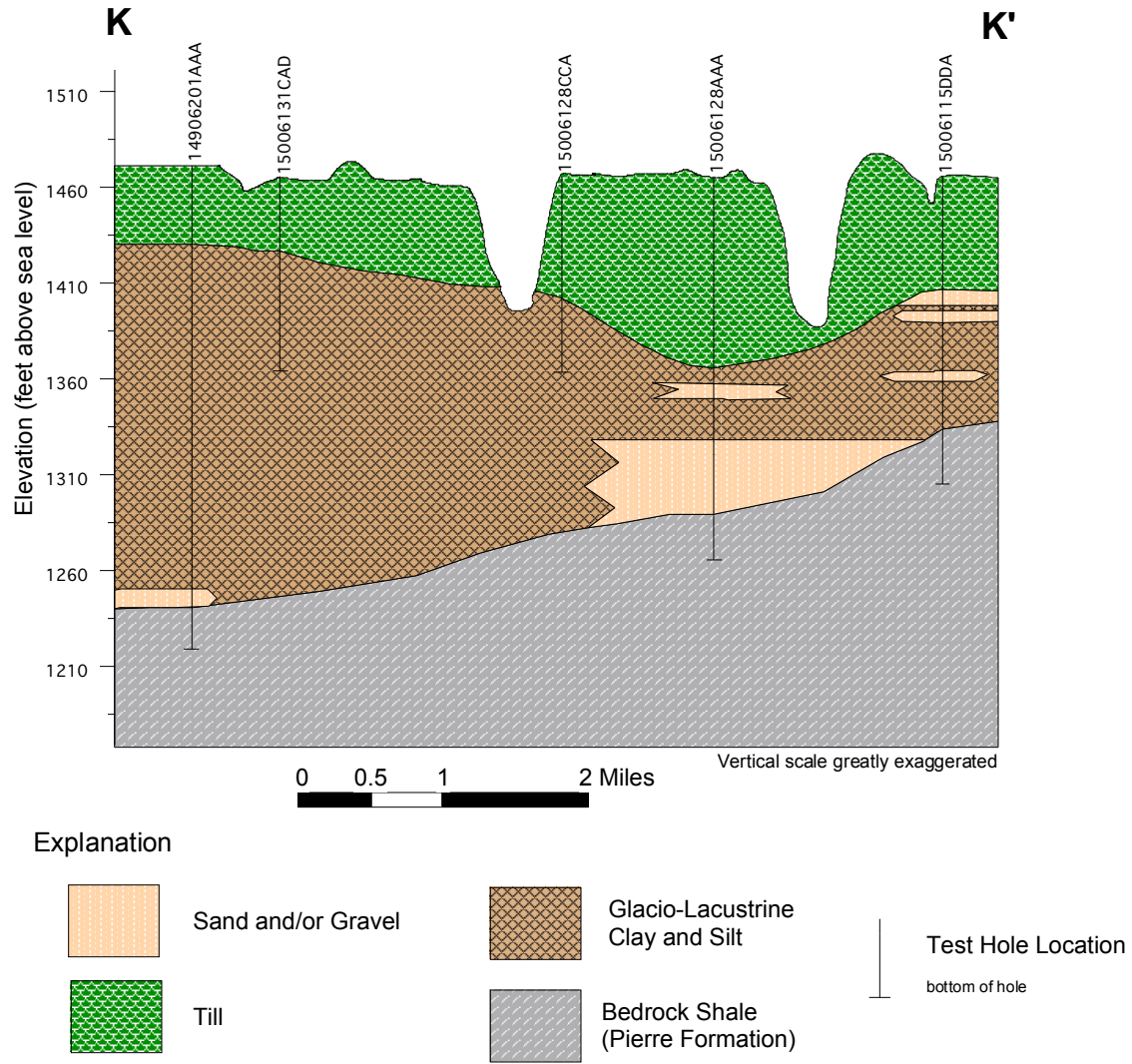


Figure 14. Geologic section K-K'.

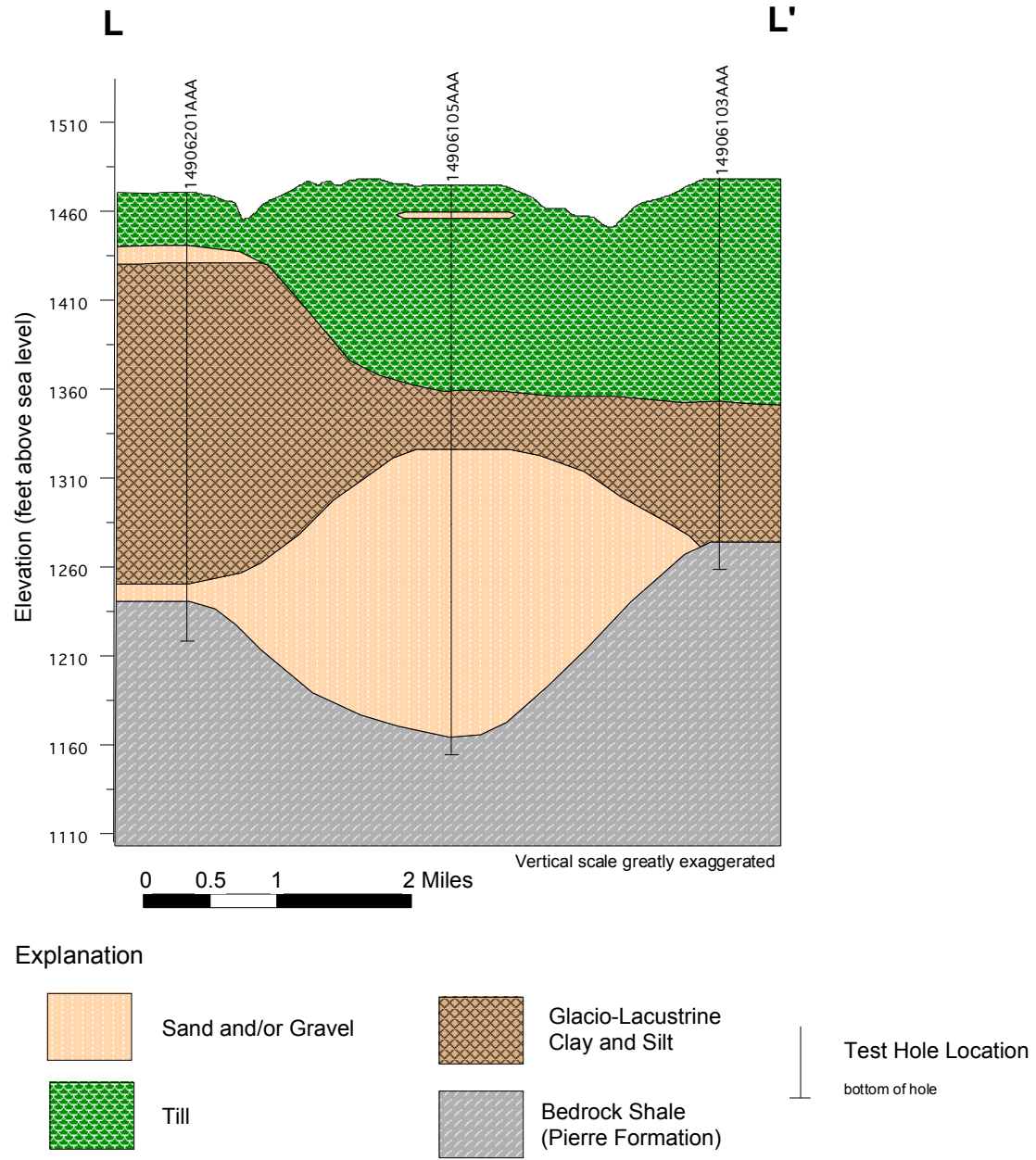


Figure 15. Geologic section L-L'.

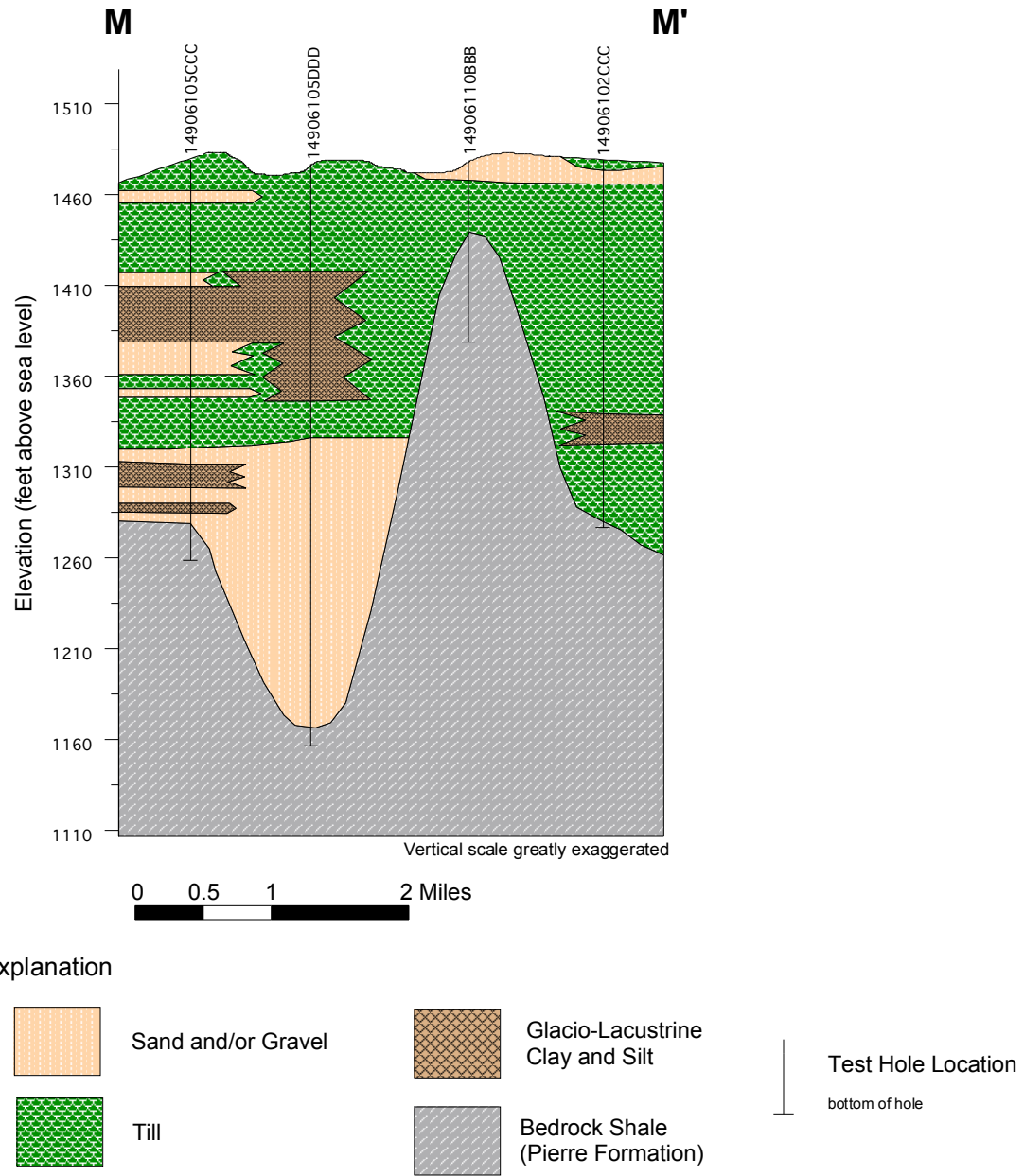


Figure 16. Geologic section M-M'.

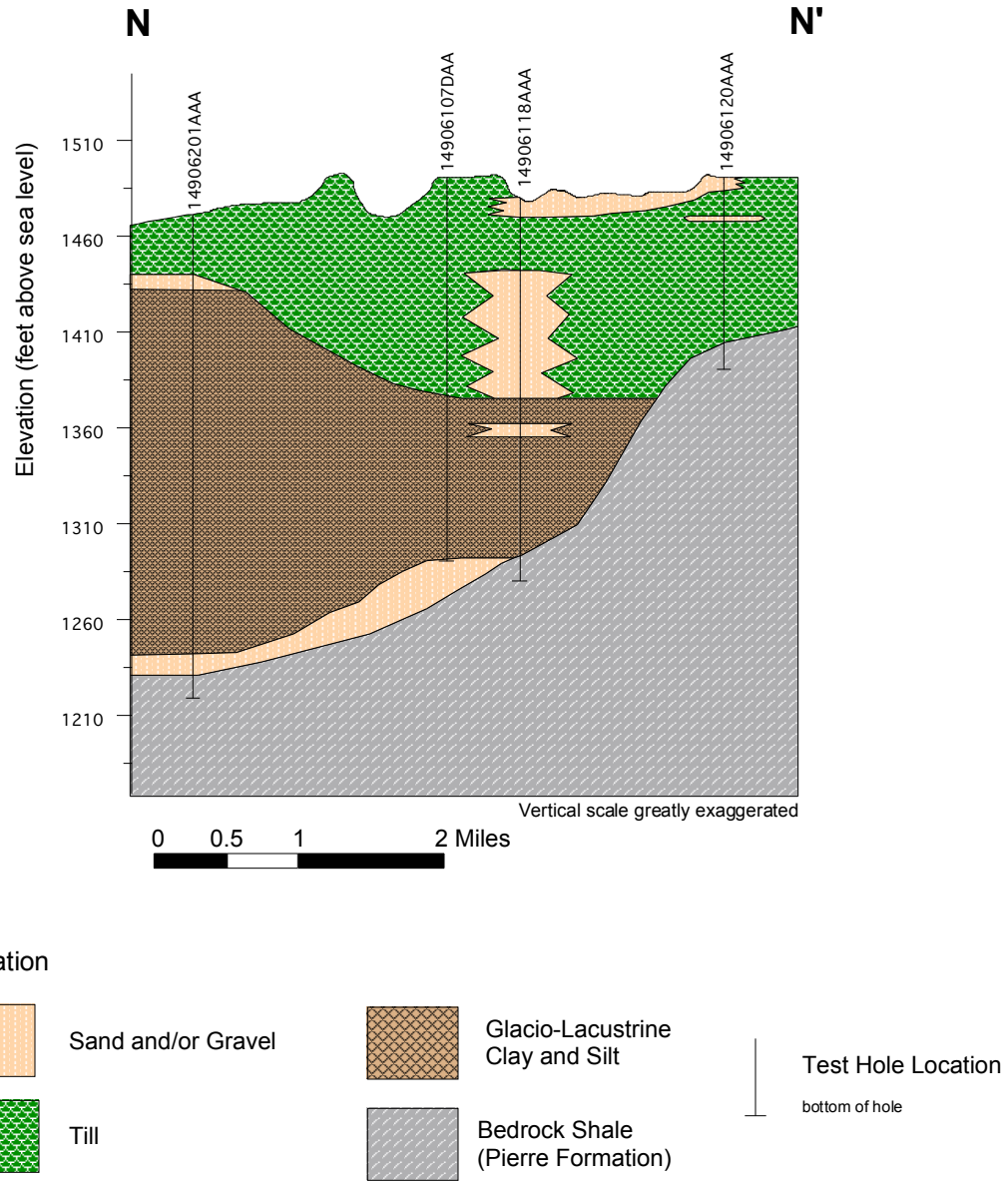
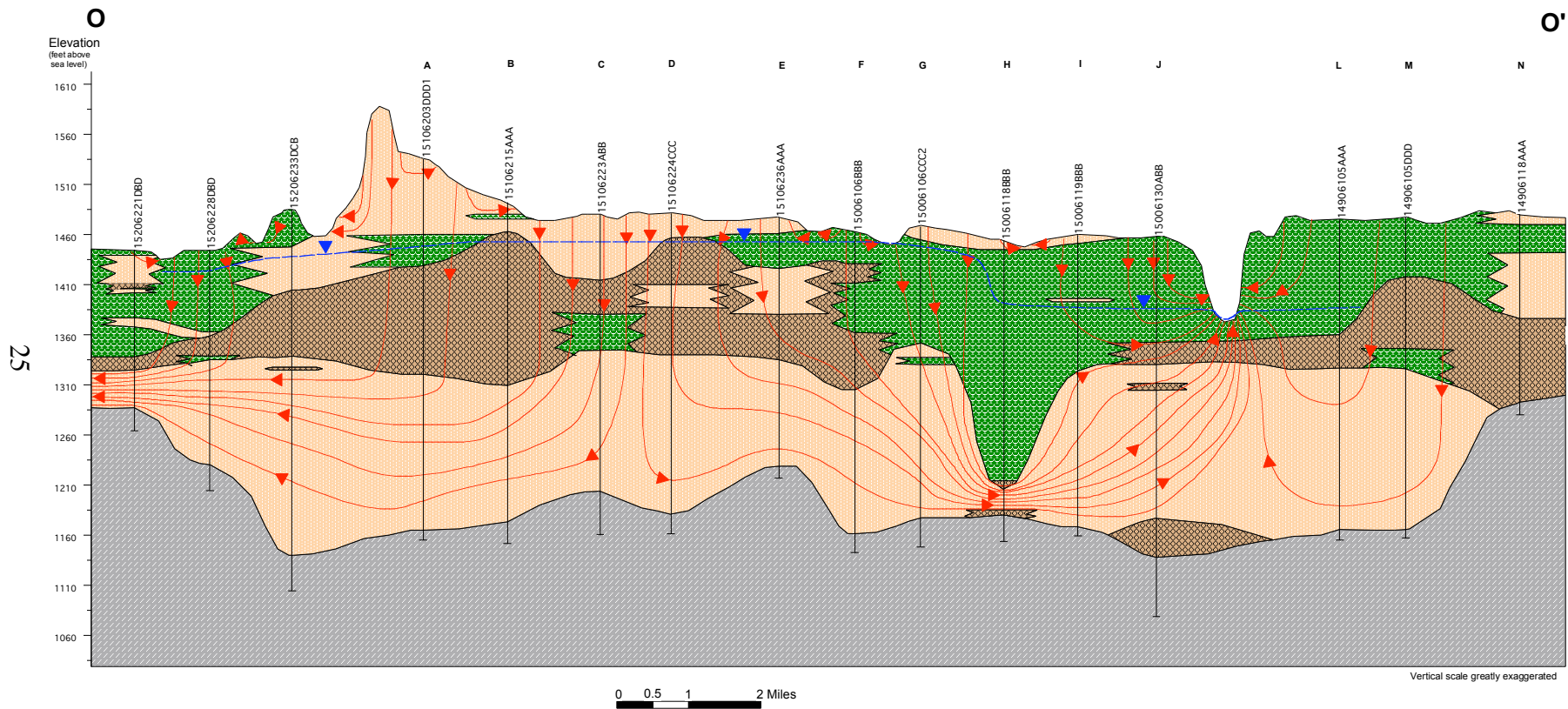


Figure 17. Geologic section N-N'.



Explanation

Sand and/or Gravel

Till

Glacio-Lacustrine
Clay and Silt

Bedrock Shale
(Pierre Formation)

Test Hole Location
bottom of hole

Flow-path

Piezometric surface

Figure 18. Geologic section O-O'.

Occurrence and Movement of Groundwater

Water levels in the surficial Warwick aquifer are unconfined and range from near land surface to about 60 feet below land surface. Soils overlying the aquifer are sandy and provide excellent recharge capabilities through the infiltration of snowmelt and rainfall.

Water levels in the Spiritwood aquifer near Warwick are under artesian pressure and range from over 150 feet below land surface under Devils Lake Mountain (151-062-03) to above land surface in topographic low areas such as Tolna Coulee. Generally, the water level is typically 10 to 80 feet below land surface. Water levels in the Warwick aquifer are above the Spiritwood aquifer water levels indicating the potential for downward movement of water from the surficial unconfined Warwick aquifer through lower hydraulic conductivity sediments and to the Spiritwood aquifer.

Water levels in the Spiritwood aquifer near Warwick fluctuate in response to changing climate patterns and seasonal irrigation pumping. During the irrigation season, water levels decline as a result of irrigation withdrawals. Recovery occurs after pumping ceases with little or no noticeable residual drawdown. Maximum drawdown during the irrigation season is typically about 25 feet.

Hydrographs of three representative observation wells in the Spiritwood aquifer segment near Warwick are shown in Figure 19. The overall trend of piezometric head in aquifer has been an approximate 12-foot rise in the last twenty-five years. A slight decline occurred in the period 1988 through 1992 which coincides with a regional drought period. Period of record water level highs occurred in 2002 following a decade long wet cycle from 1992 through 2001.

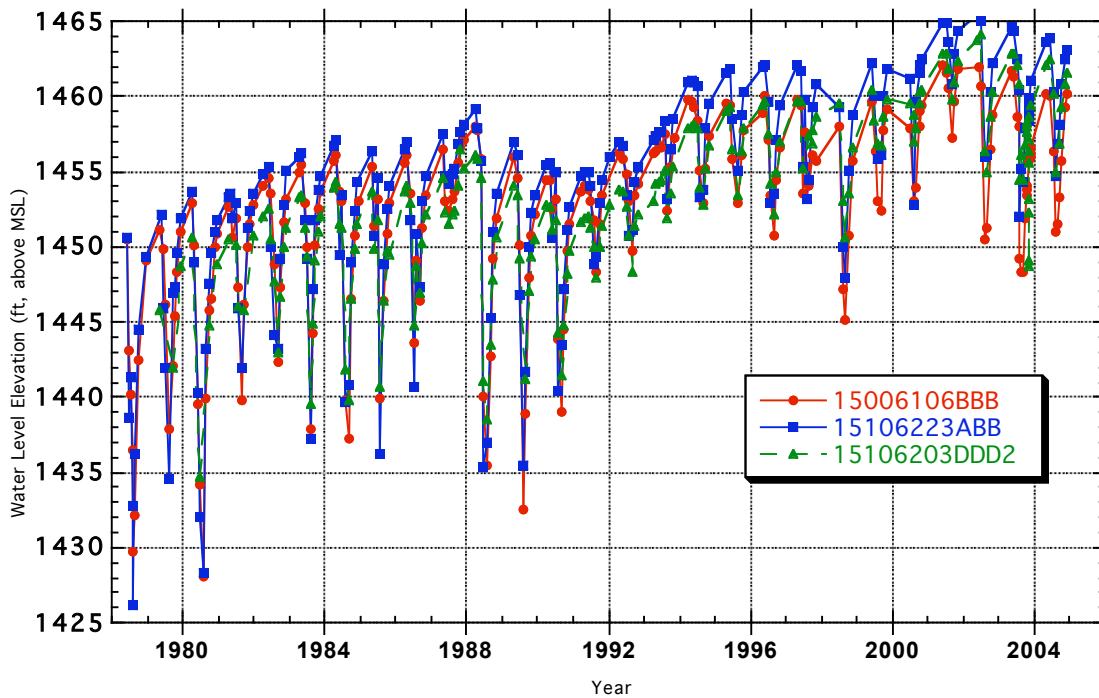


Figure 19. Hydrograph of three representative observation wells in the Spiritwood aquifer segment near Warwick.

Under natural conditions, a ground-water divide occurs near the center of the study as ground-water flows area to the north and to the south of this divide (Figure 20). Water levels gradually decline to a point about 1 to 2 miles north of a transverse line trending E-NE to W-SW near the southern end of the study area where a steep gradient occurs. A large hydraulic head (water level) discontinuity occurs just to the south of this line. This large head discontinuity marks the division between the Spiritwood aquifer near Warwick and the Spiritwood aquifer near the Sheyenne River. Another hydraulic head (water level) discontinuity occurs at the northern end of this aquifer segment. This discontinuity marks the division between the Spiritwood aquifer near Warwick and the Spiritwood aquifer near Devils Lake.

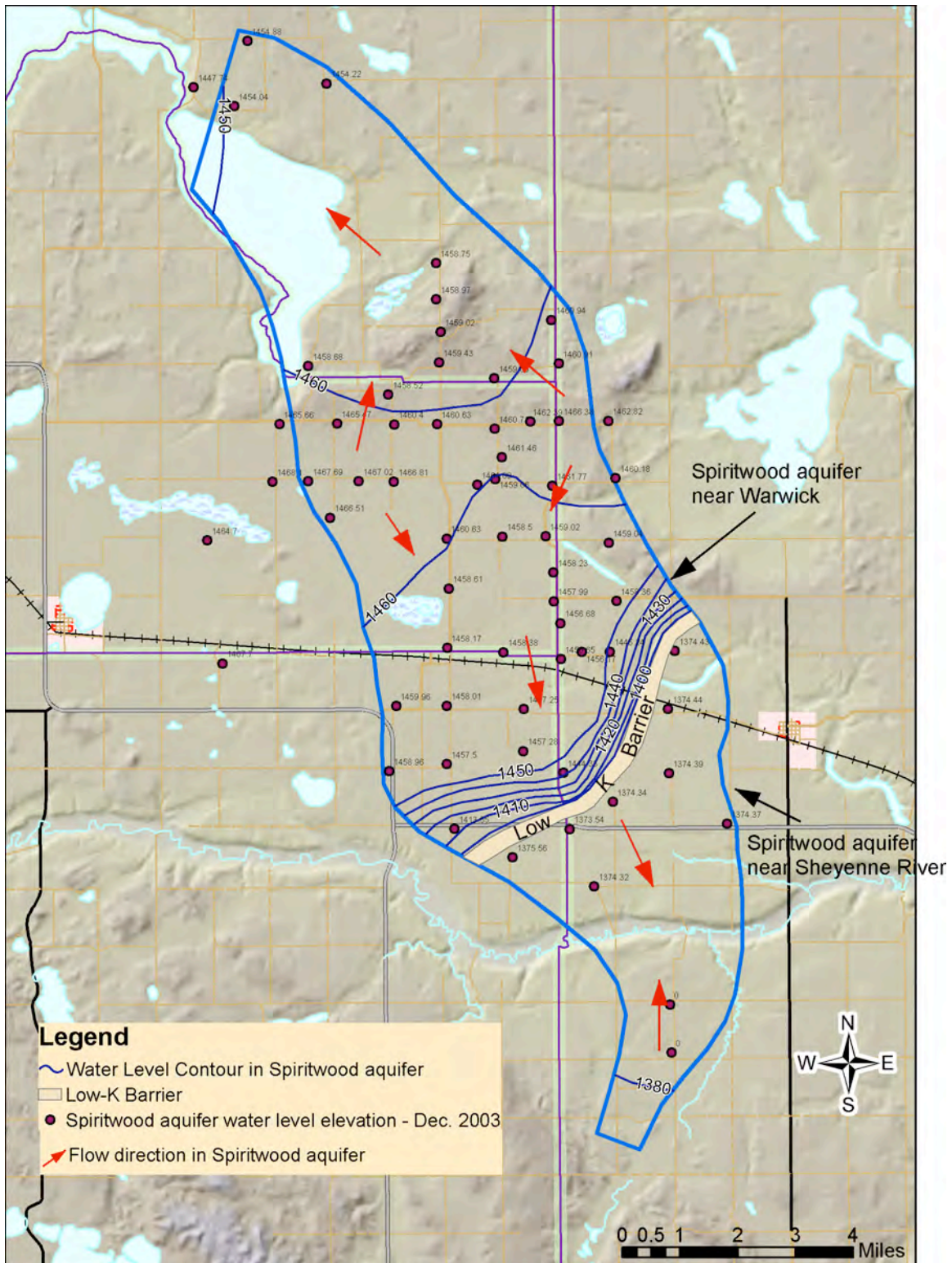


Figure 20. Water level contour map of the Spiritwood aquifer as of December, 2003.

Recharge

Recharge to the Spiritwood aquifer near Warwick occurs as a result of direct infiltration from the surface through the overlying sediments as well as leakage from the adjacent and underlying sediments. Where the Warwick aquifer overlies the Spiritwood aquifer, soils have relatively large permeabilities and small water holding capacities which facilitates rapid deep infiltration of precipitation and snowmelt. Typical soil types over the Warwick aquifer are Hamar and Arvilla loamy sands. Permeabilities for these soil types range from 4 to 12.5 ft/day and water holding capacities are 0.08 to 0.12 ft/ft. Soils in the remainder of the study area are derived primarily from glacial-till and have lower permeabilities and higher available water-holding capacities, resulting in lower recharge rates to the aquifer. Typical soil types overlying glacial till areas are Barnes, Svea, and Hamerly clay loams which have permeabilities in the range of 0.12 to 4 ft/day and water holding capacities of 0.16 to 0.18 ft/ft.

At all locations where nested piezometers have been installed, water levels in the Warwick aquifer are higher than those in the Spiritwood aquifer indicating the potential for downward water movement. Recharge rates are estimated at 0.2 inches per year in areas with soils derived from glacial-till and 3.77 inches per year in areas with coarse textured soils such as those overlying the Warwick aquifer.

Discharge

Natural discharge from the Spiritwood aquifer near Warwick occurs as groundwater moves as underflow both the north and south ends to adjacent segments of the Spiritwood aquifer. Stream gaging was done on the Sheyenne River where it crosses the river. The river gains of about 0.2 cubic feet per second in this reach indicate the aquifer may be discharging into the Sheyenne River valley through springs and seeps. Discharge from this segment of the aquifer also occurs from pumping large-capacity rural-water and irrigation wells.

Ground-Water Quality

General Chemical Properties

Ground water in the Spiritwood aquifer near Warwick aquifer is predominantly a calcium-sodium-bicarbonate type (Figure 21). Total dissolved-solids (TDS) concentrations ranged from 222 to 1770 mg/l and averaged 556 mg/l (Table 10, Appendix). The exceptions are the 5 samples which have chloride as the dominant anion. These samples probably reflect the influence of leakage from adjacent bedrock formations. TDS of these 5 samples are between 1000 to 1500 mg/l. Typically, the fresher (lower TDS) water is predominantly a bicarbonate type and becomes more sulfatic as TDS increases. The range and mean values of calcium, magnesium, sodium, chloride, sulfate, and bicarbonate is shown in Figure 22.

Water analyzed from the Spiritwood aquifer near Warwick has the lowest total dissolved-solids concentrations of any of the segments of Spiritwood aquifer in this region. Dissolved-solids concentrations are lowest near the central part of the buried valley, and in those areas where the Warwick aquifer overlies the Spiritwood aquifer (Figure 23). It appears that good quality, low total dissolved-solids water flows downward from the overlying Warwick aquifer providing recharge the Spiritwood aquifer in this area (Pusc, 1993).

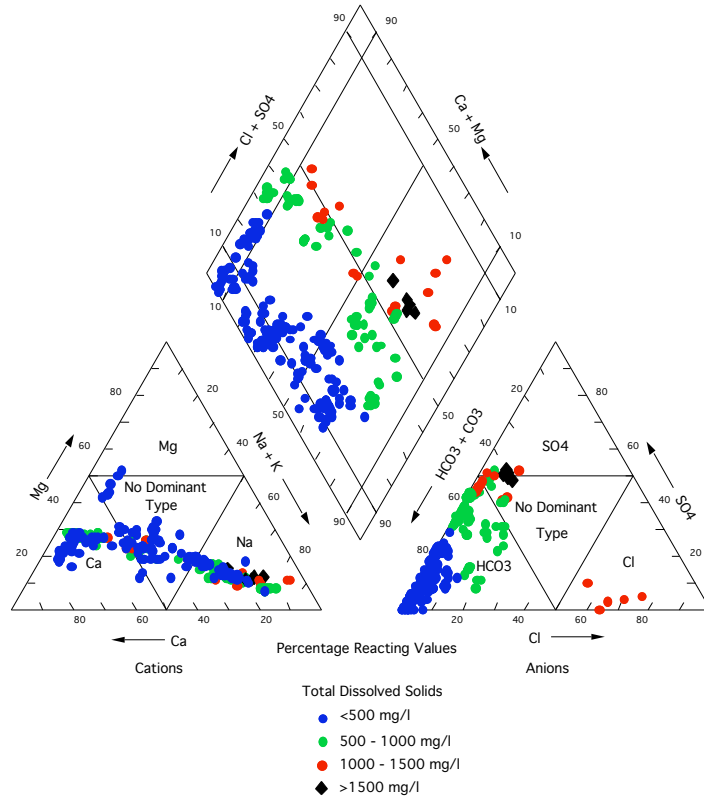


Figure 21. Relative distribution of the major cations and anions in samples collected from the Spiritwood and Warwick aquifers in the study area.

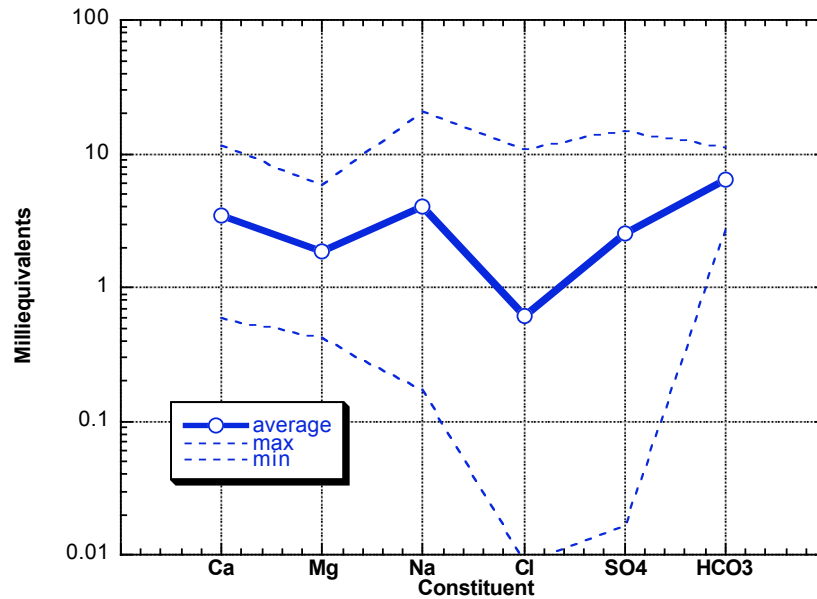


Figure 22. Mean, maximum, and minimum absolute concentrations of major ions in ground water from the Spiritwood aquifer near Warwick and the Sheyenne River.

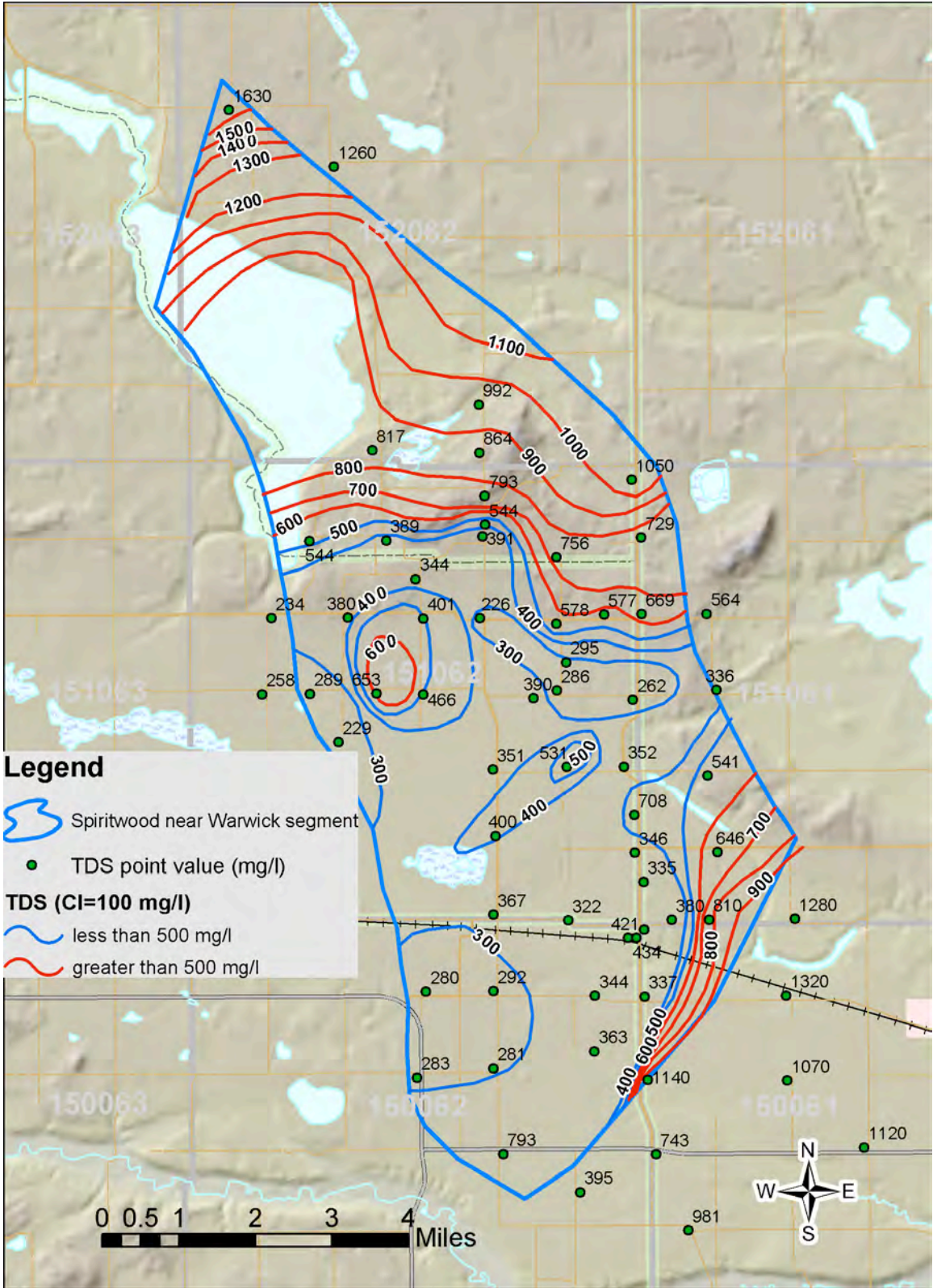


Figure 23. Spatial distribution of TDS in the Spiritwood aquifer near Warwick.

Low Hardness Zone

A zone of low-TDS, low-hardness water occurs in the southern portion of the Spiritwood aquifer where the Warwick aquifer overlies the Spiritwood aquifer (Figure 24). Water-level data indicates that groundwater moves downward by leakage from the surficial Warwick aquifer to the underlying Spiritwood aquifer. Twelve locations exist where a Spiritwood aquifer piezometer is near a Warwick aquifer piezometer. In all but one case, hardness in the Warwick aquifer water exceeds hardness in the Spiritwood aquifer (Table 1).

The decrease in hardness as groundwater moves downward from the Warwick aquifer to the Spiritwood aquifer could be due to cation exchange. Silty clay/clayey silts and till are the aquitard lithologies that separate the Warwick and Spiritwood aquifers. These aquitard lithologies are comprised of significant amounts of clay that preferentially exchange calcium for sodium on the clay lattice as ground water moves downward through the aquitard.

It is also possible that this zone of low-TDS, low-hardness water is “older” trapped Pleistocene groundwater that reflects the chemical composition of recharge water at the time of emplacement. Analysis of stable isotopes of oxygen (^{18}O) and hydrogen (^2H) is useful in determining the temperature of the recharge environment and can provide evidence that ground water has a “colder” or “warmer” signature as compared to the present recharge environment.

Stable isotopes of oxygen (^{18}O) and hydrogen (^2H) were analyzed in samples collected from 49 wells in the study area. Analyses are tabulated in the Table 11 (Appendix) and graphically displayed in Figure 25. Values of $\delta^{18}\text{O}$ and $\delta^2\text{H}$ which plot toward the lower left end of the meteoric water line are more depleted of these isotopes and reflect a colder recharge environment. Larger values of $\delta^{18}\text{O}$ and $\delta^2\text{H}$ which plot further up and to the right on the meteoric water line are not as depleted of $\delta^{18}\text{O}$ and $\delta^2\text{H}$ and reflect a warmer recharge environment.

Evaporation of surface and soil-water can cause a displacement to the right of the meteoric line. This phenomenon is referred to as the evaporative shift. The evaporative shift line will start at the meteoric line and have a slope of generally 3 to 6 (Fritz, 1983). The analyses show that there is an evaporative shift in the samples collected from both

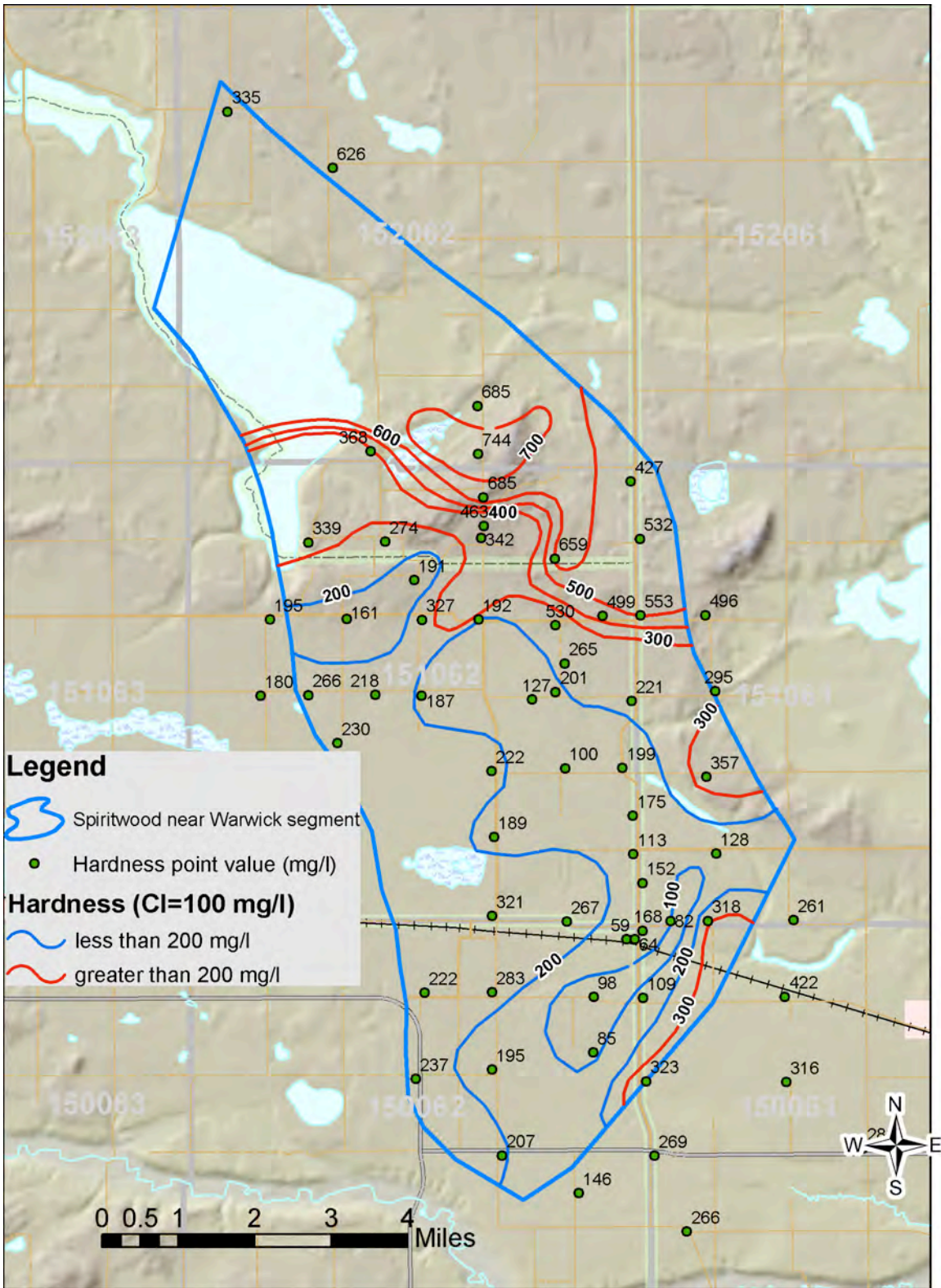


Figure 24. Spatial distribution of Hardness in the Spiritwood aquifer near Warwick.

Nest Location	Aquifer	Screened interval	TDS (mg/l)	Hardness (mg/l)
15006201DDD2	Warwick	5-15'	258	213
15006106CCC2	Spiritwood	198-203'	332	106
15006118BBB2	Warwick	0-15'	384	339
15006118BBB3	Spiritwood	292-302'	1140	323
15006203DDD2	Warwick	5-15'	293	290
15006203DDD	Spiritwood	168-173'	290	270
15006210DDD2	Warwick	0-10'	312	288
15006210DDD	Spiritwood	168-173'	280	195
15006213CCC	Warwick	0-10.4'	694	589
15006224CBB	Spiritwood	158-163'	395	146
15106203DDD1	Warwick	62-65'	321	275
15106203DDD4	Spiritwood	258-268'	352	305
15106220DAD2	Warwick	55-58'	264	227
15106220DAD1	Spiritwood	143-146'	227	216
15106223ABB3	Warwick	48-53'	454	385
15106223ABB2	Spiritwood	148-153'	276	167
15106223ABB	Spiritwood	228-231'	317	96
15106224CCC3	Warwick	18-23'	356	337
15106224CCC	Spiritwood	258-261'	531	100
15106224DDC3	Warwick	18-23'	644	508
15106224DDC2	Spiritwood	148-153'	431	186
15106224DDC1	Spiritwood	218-223'	347	186
15106225DAA3	Warwick	18-23'	572	452
15106225DAA2	Spiritwood	148-153'	452	165
15106225DAA1	Spiritwood	218-223'	708	130
15106227AAA3	Warwick	6-11'	608	523
15106227AAA2	Spiritwood	198-204'	351	222

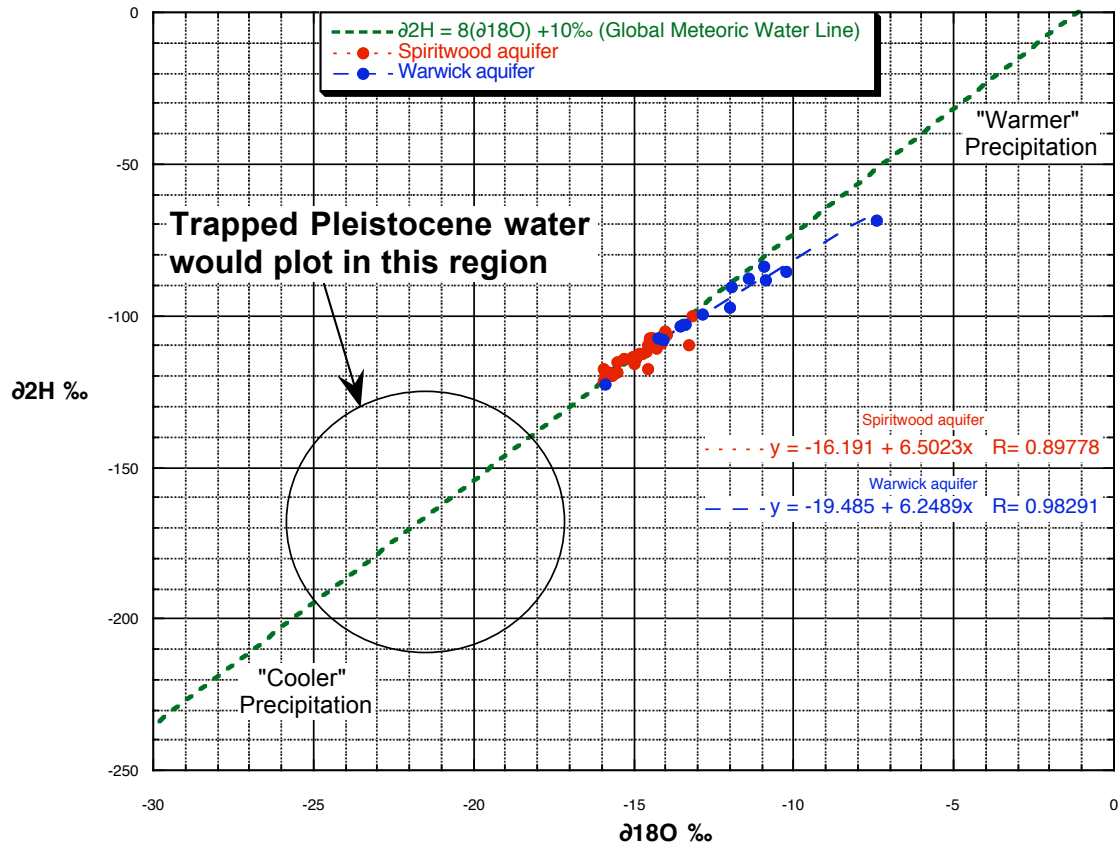


Figure 25. Stable isotope analysis of samples collected from the Spiritwood and Warwick aquifers within the study area.

the Warwick and Spiritwood aquifers in the study area. The slopes of the regression lines developed for the Warwick aquifer, Spiritwood aquifer, and combined regressions are 6.2, 6.5, and 6.3, respectively.

The stable isotope values of $\delta^{18}\text{O}$ and $\delta^2\text{H}$ from the Spiritwood aquifer fall within the range of those of the Warwick aquifer (Figure 25). Given the surficial, unconfined Warwick aquifer reflects a contemporary (meteoric) recharge signature, it is concluded that the low-hardness, low-TDS zone is not trapped Pleistocene water that was emplaced in a colder recharge environment.

Discussion of Trace Elements

Concentrations of trace elements were determined in wells in the Spiritwood aquifer near Warwick (Table 12, Appendix). Arsenic is a trace element of concern due to the recent lowering of the USEPA drinking water standard from $50\mu\text{g/l}$ to $10\mu\text{g/l}$. This rule takes effect in January, 2006.

Trace element analyses were done as part of the overall general chemical sampling of the observation wells for this study in 2003. Samples obtained during 2003 were primarily collected using the “air-lift” method which involves injection of air into the well by means of an air-compressor and hose. Water is air-lifted out of the well and is collected at the surface. The water is then processed using standard sampling protocols. Another round of sampling was done in 2004 as part of a stable isotope investigation. Water collected in 2004 was primarily by means of bailing or with a centrifugal suction pump. An interesting phenomenon was noticed upon inspection of the arsenic levels reported in the 2003 sampling compared with the 2004 sampling. The arsenic concentration in the 2004 samples seemed to be slightly higher than the 2003 samples. A comparison was made between the two sampling regimes (2003 and 2004) and the collection method used (Table 2). It is possible that the aeration of the water using the air-lift method may have oxidized some of the dissolved arsenic causing precipitation of arsenic during sample collection. This would result in lower concentrations of arsenic measured in the lab. The bailed method of collection greatly reduces the amount of aeration and the potential to cause oxidation and associated precipitation of arsenic.

The mean arsenic value from samples collected in 2004 from the Spiritwood aquifer was $6.03\mu\text{g/l}$. Spatial distribution of arsenic is shown in Figure 26. There appears to be no significant spatial trends in arsenic.

Table 2 Comparison of sampling method on Arsenic levels.

Location	2003		2004		Diff	%
	Arsenic ($\mu\text{g/l}$)	Method	Arsenic ($\mu\text{g/l}$)	Method		
15006106BBB	5.31	Air lift	6.06	Air lift	0.75	14%
15006119BBB	6	Air lift	7.55	Air lift	1.55	26%
15106203DDD1	1.49	Air lift	2.68	Air lift	1.19	80%
15106222BBB2	7.44	Air lift	7.2	Air lift	-0.24	-3%
15106223ABB	2.24	Air lift	2.85	Air lift	0.61	27%
15106227AAA2	7.16	Air lift	10.4	Air lift	3.24	45%
15106234DDD	4.27	Air lift	1.98	Air lift	-2.29	-54%
15106236AAA	3.73	Air lift	5.04	Air lift	1.31	35%
15106236CCC	7.52	Air lift	8.04	Air lift	0.52	7%
			air to air average=		0.74	20%
15006105DDD2	3.2	Air lift	5.54	Bailed	2.34	73%
15006106CCC2	6.77	Air lift	7.79	Bailed	1.02	15%
15006117AAA	3.27	Air lift	6.51	Bailed	3.24	99%
15006118BBB3	9.25	Air lift	11.2	Bailed	1.95	21%
15006201CDC	7.37	Air lift	8.55	Bailed	1.18	16%
15006203DDD	4.18	Air lift	5.63	Bailed	1.45	35%
15006210DDD	2.89	Air lift	4.44	Bailed	1.55	54%
15006212CAC	6.76	Air lift	8.19	Bailed	1.43	21%
15006223BBB	5.63	Air lift	8.16	Bailed	2.53	45%
15006224CBB	3.23	Air lift	6.03	Bailed	2.8	87%
15106131BCC	4.12	Air lift	5.43	Bailed	1.31	32%
15106131DDD	11.1	Air lift	12.5	Bailed	1.4	13%
15106133CCC	1.85	Air lift	3.78	Bailed	1.93	104%
15106216BBB	14.9	Air lift	16.3	Bailed	1.4	9%
15106220DAD1	0.9	Air lift	1.27	Bailed	0.37	41%
15106223ABB2	0.9	Air lift	2.83	Bailed	1.93	214%
15106224CCC	5.82	Air lift	8.8	Bailed	2.98	51%
15106224DDC1	4.19	Air lift	6.36	Bailed	2.17	52%
15106224DDC2	1.14	Air lift	4.05	Bailed	2.91	255%
15106225DAA1	4.71	Air lift	6.12	Bailed	1.41	30%
15106225DAA2	0.9	Air lift	2.05	Bailed	1.15	128%
15106227DDDA	6.93	Air lift	10.1	Bailed	3.17	46%
			air to bail average=		1.89	65%
15106131CDD	2.31	Air lift	3.26	Centrifugal	0.95	41%
15106132BBB	4.93	Air lift	6.37	Centrifugal	1.44	29%
15106215CCC3	1.1	Air lift	2.05	Centrifugal	0.95	86%
15106220DAD2	16.1	Air lift	16.9	Centrifugal	0.8	5%
15106223ABB3	3.33	Air lift	6.19	Centrifugal	2.86	86%
15106224CCC3	0.9	Air lift	2.99	Centrifugal	2.09	232%
15106225DAA3	2.58	Air lift	4.38	Centrifugal	1.8	70%
			air to suction pump average=		1.56	79%
15106224DDC3	2.01	Centrifugal	5.03	Centrifugal	3.02	150%
15106227AAA3	1.69	Centrifugal	1.97	Centrifugal	0.28	17%
			suction pump to suction pump average=		1.65	83%

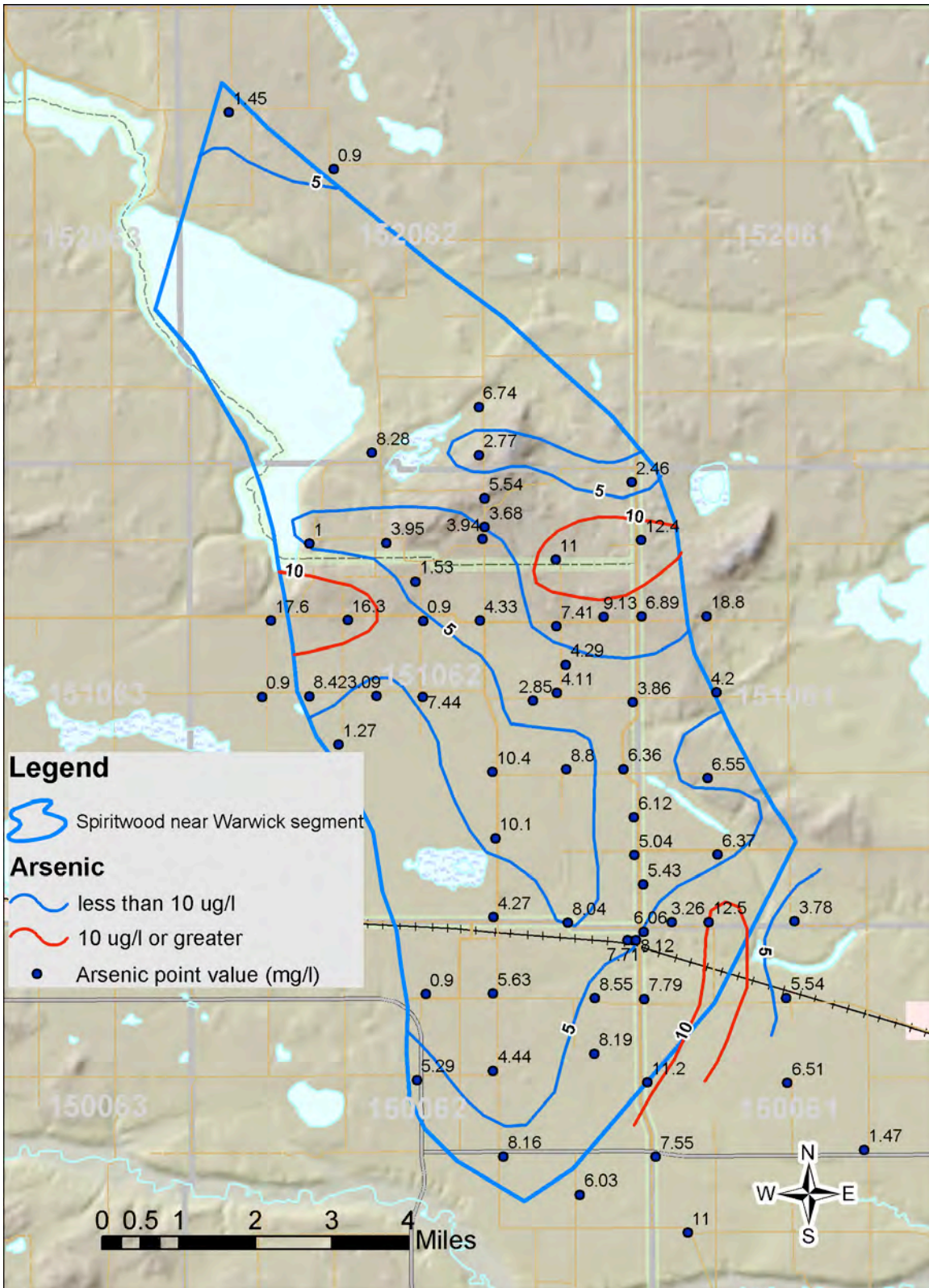


Figure 26. Spatial distribution of Arsenic in the Spiritwood aquifer near Warwick.

Aquifer Testing

Two aquifer tests were performed on the Spiritwood aquifer near Warwick as part of this investigation. The first test was conducted on a well located in the SE1/4 Section 3, T151N-R62W in Ramsey County on land owned by Robert Brown. This is referred to as the Brown Aquifer Test. The second was conducted on a well operated by the Ramsey County Rural Utilities (RCRU) in the NW1/4 Section 6, T150N, R61W in Nelson County. This is referred to as the Ramsey Aquifer Test.

The Brown Aquifer Test was conducted from October 27 to 31, 2003. A 275-ft deep 12-inch diameter well was designed and constructed for the purpose of testing this portion of the aquifer. The well was screened from 250 to 275 feet below land surface. Prior to the construction of the well a pilot hole (151-62-03DDD4) was drilled by the State Water Commission where sediment samples were collected. Sieve analysis was performed on the drilling samples for the purpose of determining the screen slot size for the proposed production well. Results of the sieve analysis are displayed in Figure 27. The screen vendor's (Johnson Well Screen) recommendation for filter pack design is for well-rounded, well-sorted material properly sized according to samples of the natural formation. A slot opening of 0.060 was chosen based on the sieve analysis and the filter pack which the contractor had readily available (Figure 28). A completion report for the production well is included in Appendix.

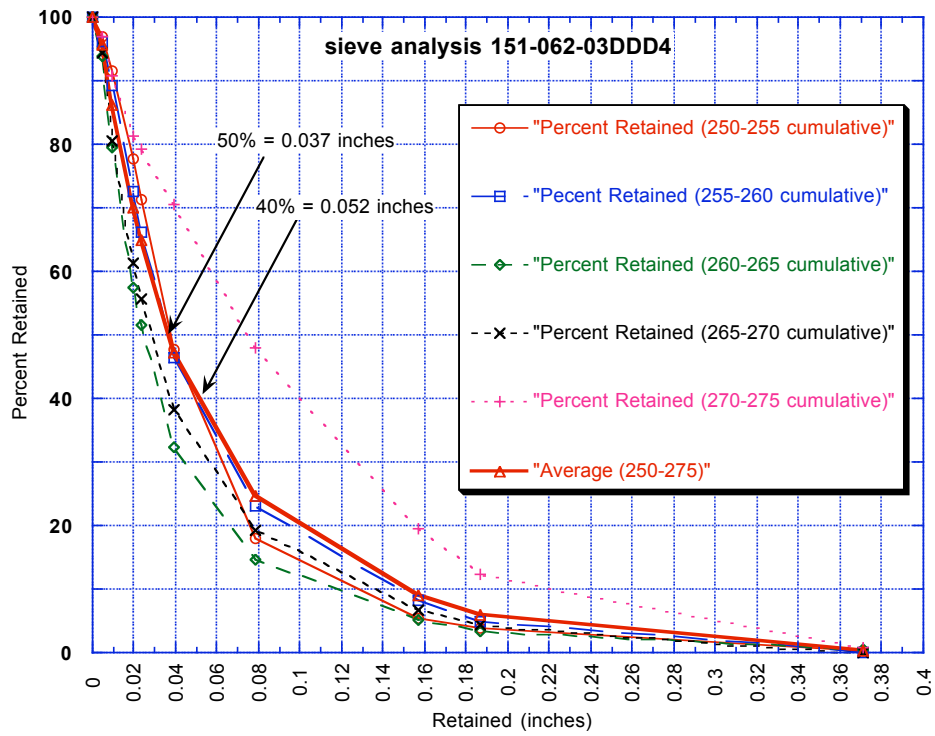


Figure 27. Sieve analysis of sample collected from pilot hole at 151-62-03DDD4.



Figure 28. Photo of filter pack used in the production well construction.

During the aquifer test the well was pumped continuously at a rate of 1245 gpm for 100 hours. Water levels in six observation wells located within 1000 feet from the production wells were continuously monitored during the pumping and recovery period. In addition, 36 wells within a 2 mile radius were periodically monitored. Various analytical methods were used to evaluate the aquifer-test data and determine aquifer hydraulic properties. The results of the aquifer-test analyses are summarized in Table 3. Average transmissivity, and storativity are 27,711 ft²/day, and 4.2X10⁻⁴, respectively. Saturated thickness of the Spiritwood aquifer in this vicinity as determined by test drilling was 79 to 155 feet. Based on these saturated thicknesses, the average hydraulic conductivity ranges from 180 to 350 feet/day.

Method of Analysis	Transmissivity (ft ² /day)	Storativity
t/r ²	26,483	4.63E-04
Distance drawdown (50 minutes)	26,824	4.14E-04
Time-drawdown Production well (pumping)	27,206	n/a
Time-drawdown Production well (recovery)	28,211	n/a
Time-drawdown r=10' (pumping)	27,071	n/a
Time-drawdown r=10' (recovery)	28,394	n/a
Time-drawdown r=100' (pumping)	26,905	n/a
Time-drawdown r=100' (recovery)	28,394	n/a
Time-drawdown r=215' (pumping)	26,742	n/a
Time-drawdown r=215' (recovery)	28,394	n/a
Time-drawdown r=454' (pumping)	27,687	3.72E-04
Time-drawdown r=454' (recovery)	28,394	n/a
Time-drawdown r=1000' (pumping)	28,852	4.10E-04
Time-drawdown r=1000' (recovery)	28,394	n/a
Average	27,711	4.15E-04

The Ramsey Aquifer Test was conducted on November 25, 2003. An existing supply well of RCRU was pumped continuously for 12 hours after not being pumped for about 3 days prior to the test. Water levels in five observation wells located within 1260 feet from the production well were continuously monitored during the test. As with the Brown aquifer test, various analytical methods were used to evaluate the aquifer-test data and determine aquifer hydraulic properties. The results of the aquifer-test analyses are summarized in Table 4. Average transmissivity, and storativity are 26,677 ft²/day, and 8.0X10⁻⁴, respectively. Saturated thickness of the Spiritwood aquifer in this vicinity as

determined by test drilling was 82 to 143 feet. Based on these saturated thicknesses, the average hydraulic conductivity ranges from 185 to 320 feet/day.

Method of Analysis	Transmissivity (ft ² /day)	Storativity
t/r ²	26,299	7.30E-04
Distance drawdown (400 minutes)	25,468	1.06E-03
Time-drawdown r=18'	26,394	n/a
Time-drawdown r=100'	26,833	5.44E-04
Time-drawdown r=316'	26,299	8.50E-04
Time-drawdown r=1000'-W	26,394	9.90E-04
Time-drawdown r=1260'-N	26,299	1.01E-03
Average	26,677	8.00E-04

Modeling Approach

Ground-water flow modeling involves representing the physical system in a digital form. The process begins by translating the "conceptual model" or idealized representation of the physical system into a numerical characterization of the ground water system. The numerical model should represent the physical ground-water system to an adequate level of confidence thereby providing a predictive scientific tool for determining aquifer response to changes in natural and anthropogenic inputs and outputs.

The US Geological Survey model, MODFLOW (McDonald and Harbaugh, 1988), was used to simulate ground-water flow in the Spiritwood aquifer near Warwick. MODFLOW is based on block-centered, finite-difference equations that simulate the flow of water through a porous medium.

Conceptual Model of Ground-water Flow in the Aquifer

A simplified schematic of the primary concepts of hydrogeologic flow are presented in Figure 29. The primary source of water in the Spiritwood aquifer is from the overlying Warwick aquifer. The Warwick aquifer receives recharge through the direct infiltration of precipitation and snowmelt. Evapotranspiration from the Warwick aquifer occurs where the water levels are near land surface and are "coupled" with the atmosphere through plant growth or direct evaporation. Water moves from the Warwick aquifer to the Spiritwood aquifer through an aquitard which consists primarily of clayey silts and silty clays. Sediments overlying the Spiritwood aquifer where the Warwick aquifer is not present are comprised mainly of glacial till and recharge to the Spiritwood aquifer occurs at a much smaller rate. Water moves out of the Spiritwood aquifer as underflow on both the northern and southern ends of the segment as the result of low-transmissivity (T) zones through which the water must pass. Abrupt changes in Spiritwood aquifer piezometric elevations occur at the low-T zones. These abrupt changes in piezometric elevations (head busts) provide a convenient location to truncate the aquifer for digital modeling purposes. General head boundaries simulate the passage of water through these zones.

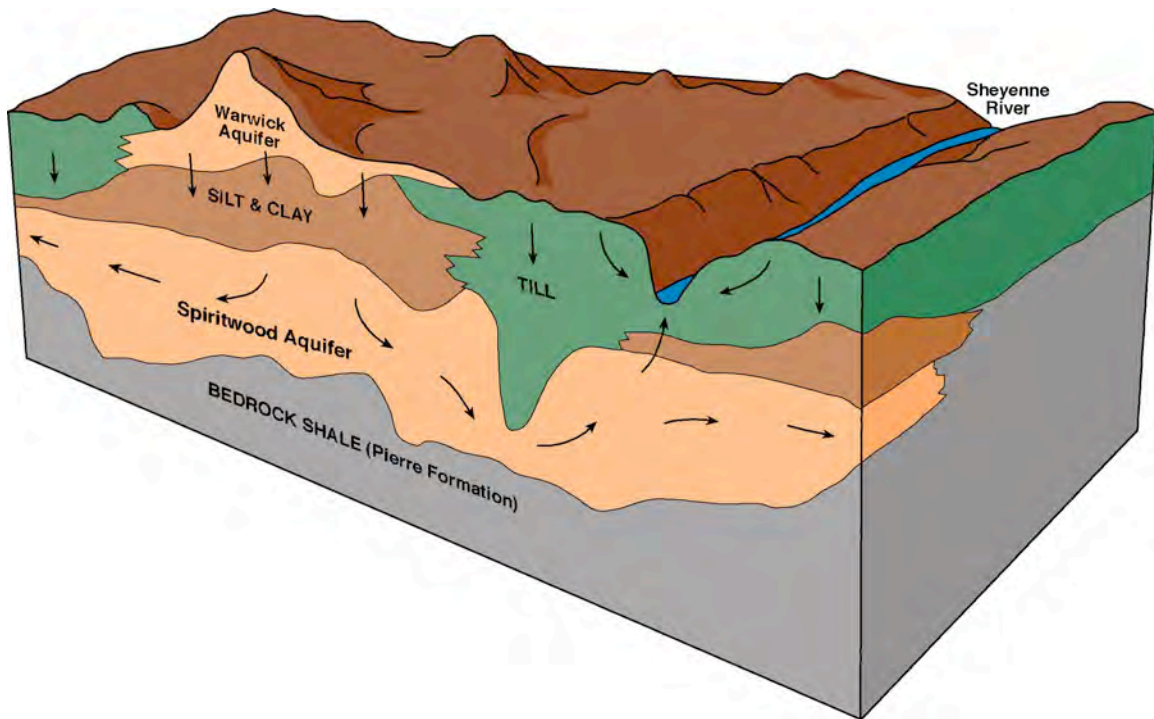


Figure 29. Schematic of the hydrostratigraphy of the study area.

Simulation of Groundwater flow

Layers and Grid

A rectangular, finite-difference grid was superimposed on the Spiritwood aquifer study area to discretize the hydrogeologic properties (Figure 30). The grid consists of 127 rows and 47 columns of uniform 600' X 600' nodes. The total number of cells in the model is 5,640, of which 3,746 are active. Three distinct geologic units were modeled: unit 1 is the uppermost layer which simulates the Warwick aquifer, unit 2 is the aquitard layer above the Spiritwood aquifer, and unit 3 is the Spiritwood aquifer. Hydraulic head is simulated in units 1 and 3 but not in unit 2. Water is routed through unit 2 based on its thickness and vertical hydraulic conductivity parameter. Land surface elevations for each cell were derived from digital-elevation-model (DEM) grid of the USGS 7.5 minute quadrangle maps of the region. Elevation of the top of unit 1, and the top of unit 2 where unit 1 is not present, is set to land surface. Bottom of unit 1 elevations are based on interpolation of lithologic data derived from the test drilling in the area. The top and bottom of unit 3 are also based on interpolation of test drilling data.

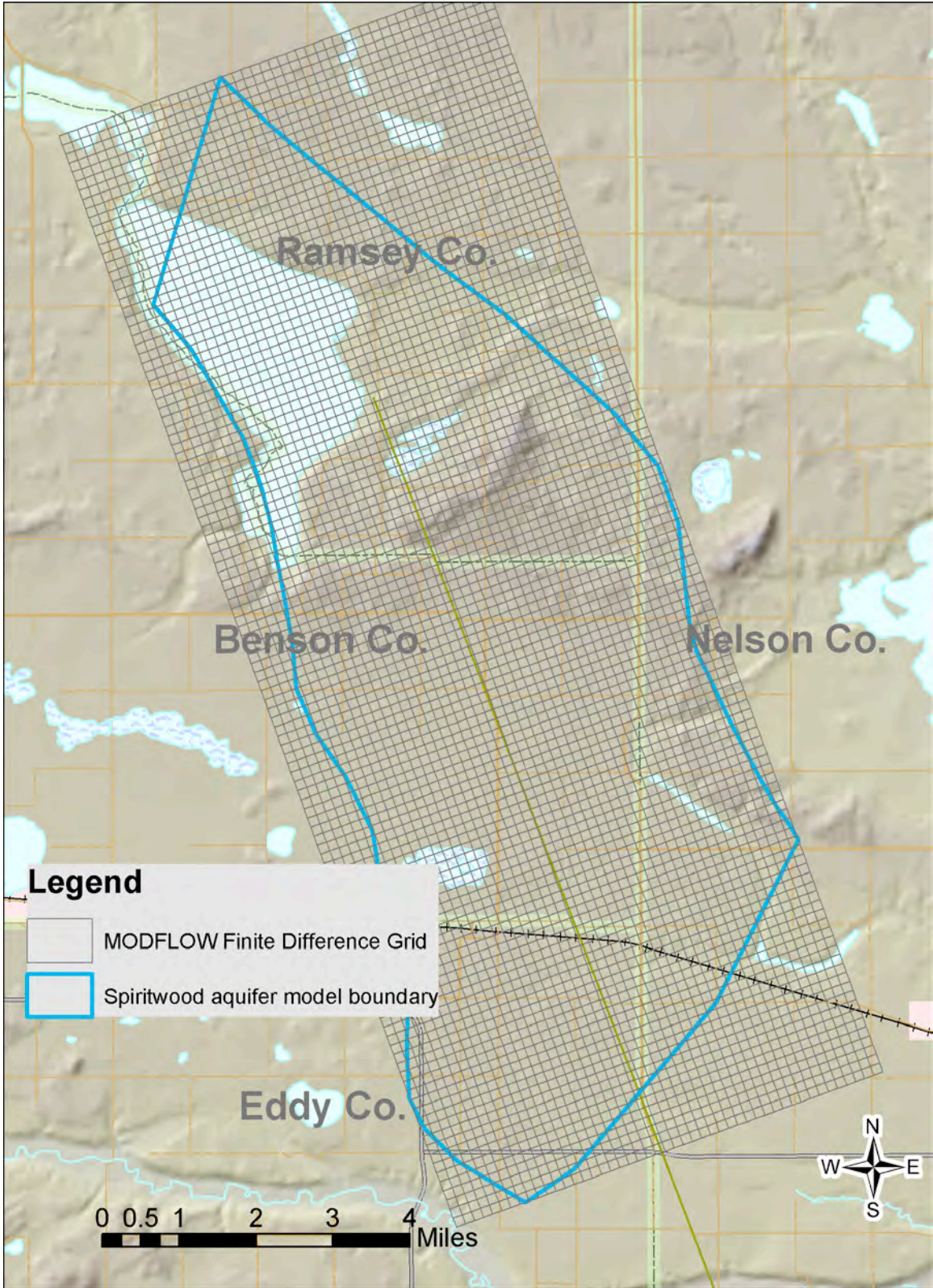


Figure 30. Model grid and aquifer boundary.

Model Parameters and Modules

The hydrogeologic system in the study area was simulated by MODFLOW using the following modules: recharge, evapotranspiration (ET), general head boundaries (GHB), and well packages.

Recharge Package

The recharge package simulates the primary source of water delivered to the model through the direct infiltration of precipitation. Recharge values used in the model ranged from 0.26 inches per year to 3.77 inches per year (Figure 31). The primary determination of the recharge value at each cell was the soil type and the presence of the Warwick aquifer. Where the surficial Warwick aquifer is present, the recharge rate was set at the higher rate (3.77 inches/year), where not present the lower rate (0.26 inches/year) was used.

ET Package

The ET package simulates water leaving the system through plant growth and evaporation in areas where the water level is at or near land surface. A constant ET rate of 13 inches per year was used with an ET surface of 2 feet below land surface and a straight line extinction depth of 6 feet.

GHB package

The general head boundary package was used to simulate underflow leaving the segment of the aquifer being modeled. The GHB package was employed primarily to simulate the amount of flow leaving the Spiritwood aquifer (model unit 3) along the northern and southern boundaries of this segment of the aquifer being modeled (Figure 32).

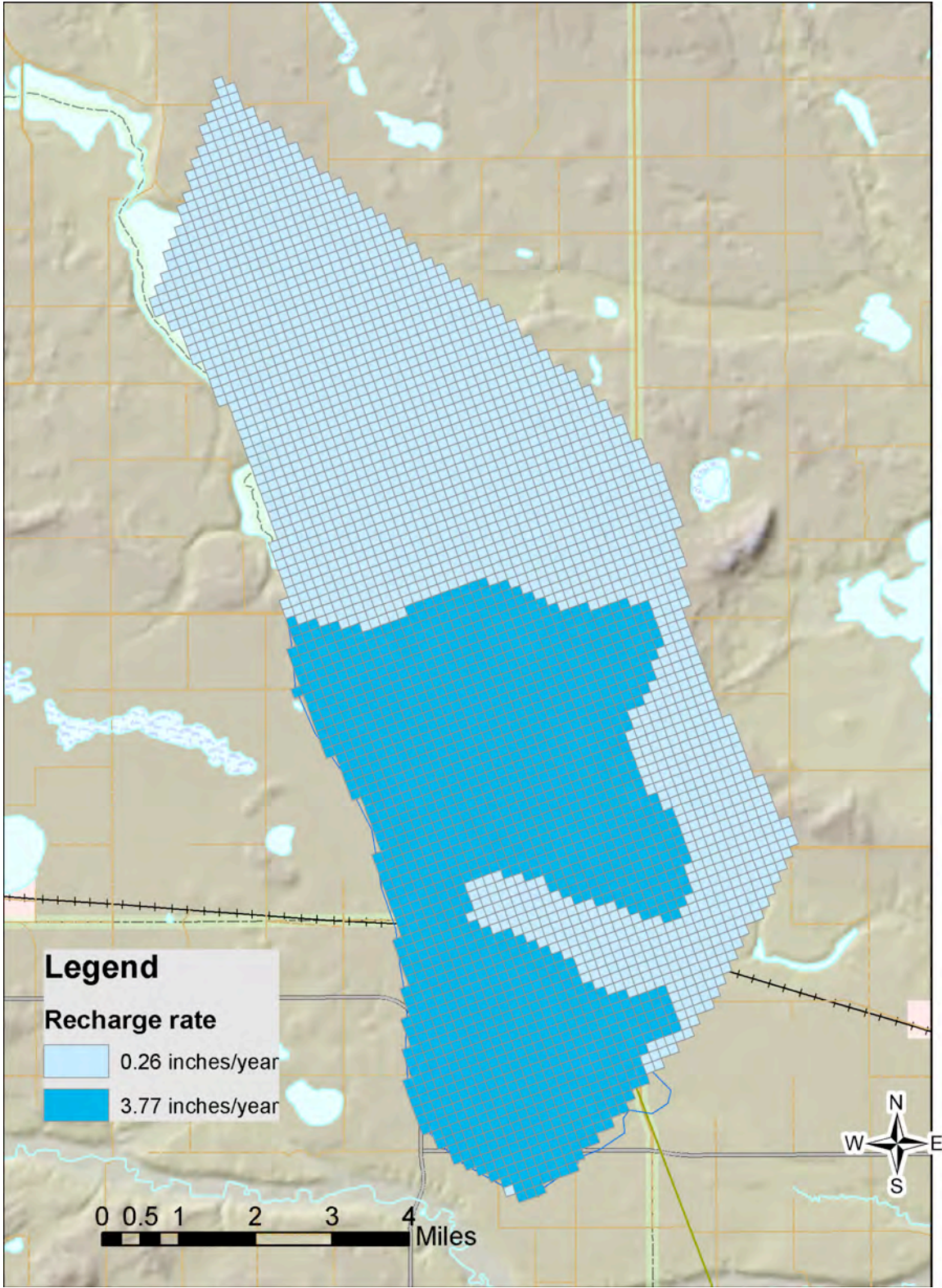


Figure 31. Recharge rate used in model simulations.

Well package

The well package simulates the pumpage from high capacity wells completed in the Spiritwood aquifer (model unit 3). There are 12 high capacity wells which are located in 12 cells of the model (Figure 32). Discharge rates of these wells were based on historical data reported to the State Engineer on annual water use forms prior to 1992. This time period was used because the water level dataset was the most complete for that snapshot in time when the steady-state model was originally constructed (2002).

Hydraulic Conductivity Parameter

Unit 1: Estimated horizontal hydraulic conductivity (K) was assigned to each active cell of unit 1 based on the sediment characteristics identified in lithologic logs of the test drilling. A uniform value of 225 feet/day was applied. Vertical K values were uniformly set to 50 feet/day.

Unit 2: Hydraulic head is not simulated in unit 2 but the vertical K is used in the model calculations as water is routed through it. A uniform value of 5.6×10^{-3} feet/day was used for the vertical K in unit 2.

Unit 3: Horizontal hydraulic conductivity (K) was assigned to each active cell of unit 3 the model based on calculated values from the aquifer tests, estimates from the lithologic data, and through trial and error during the calibration process. Horizontal (K) values of 275 to 300 ft/day were used throughout most of unit 3 (Figure 32). Along the southern edge and a portion of the northern edge of the modeled segment, the horizontal (K) was set to 25 ft/day. A low-transmissivity (T) zone was identified indirectly through a water-level discontinuity. A water-level “plateau” of sorts exists to the west of this low-T boundary. The horizontal K in band of cells was set to was set to 1 ft/day to simulate this low-T zone. Restricting flow by means of lowering the hydraulic conductivity in this band fairly represents the water-level discontinuity in this area. A uniform value of 50 feet/day was used for the vertical K in unit 3 with the exception of the low-T zone mentioned above which was set to 1 foot/day.

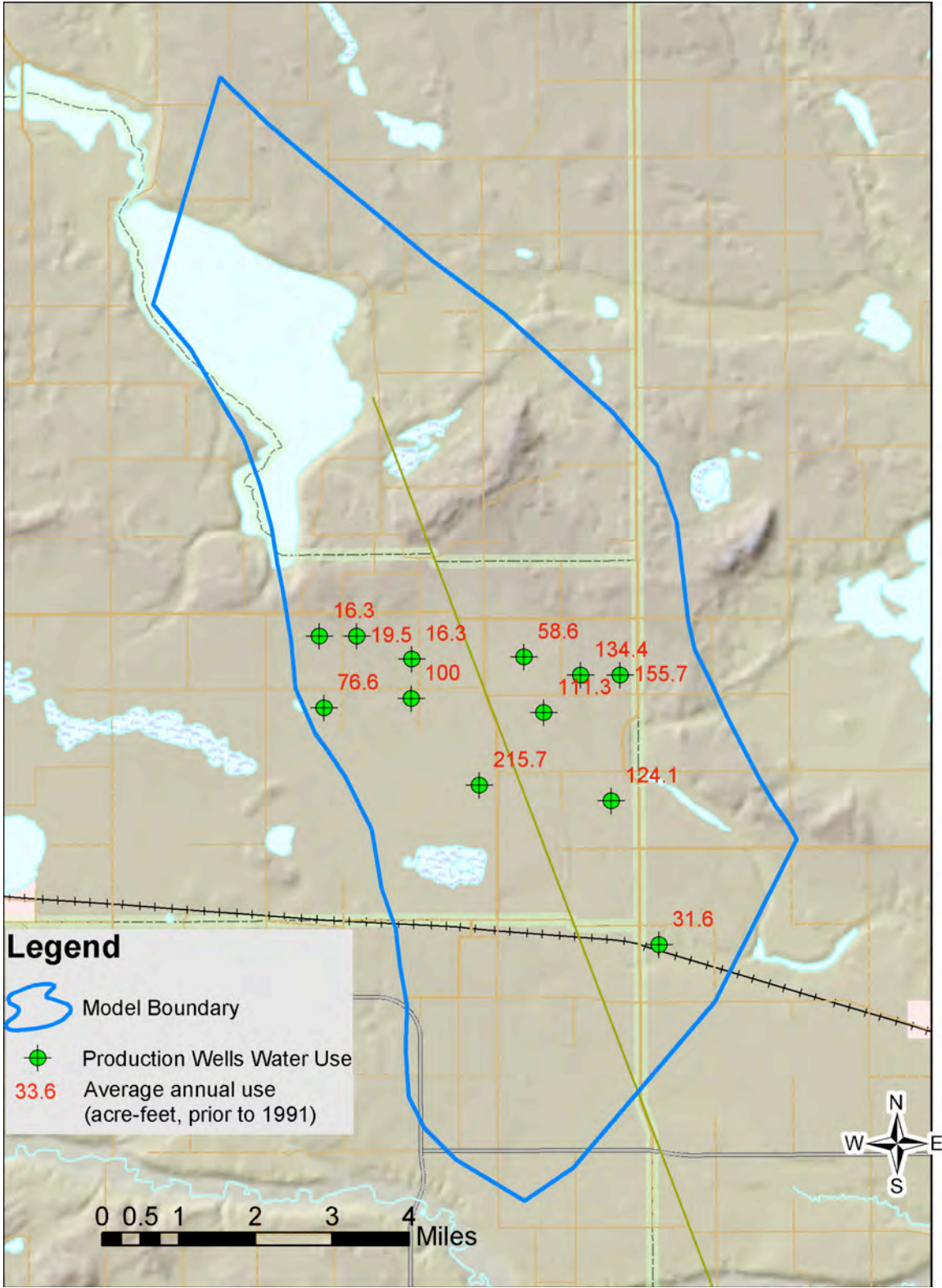


Figure 32. Pumping wells used in model simulations.

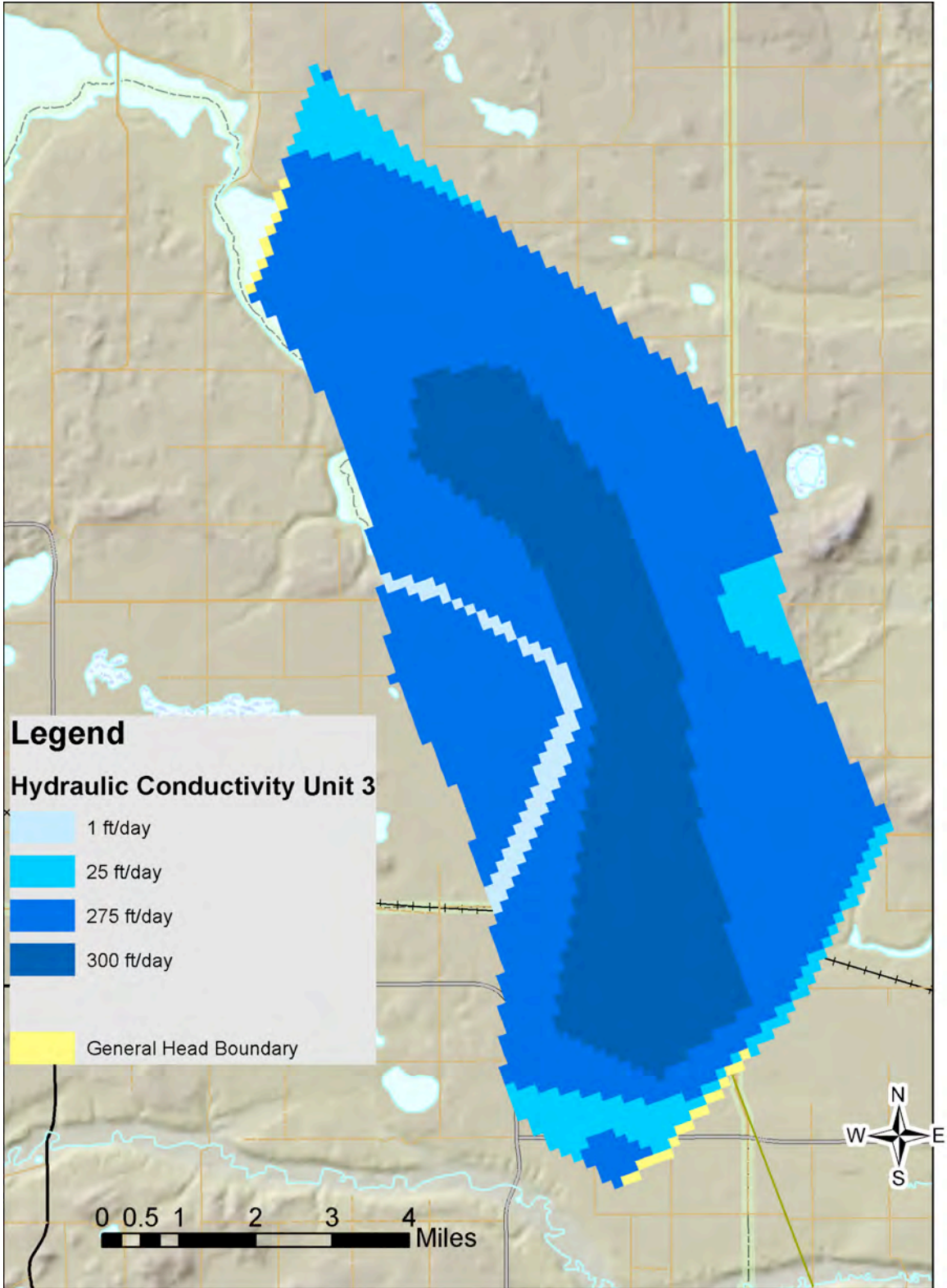


Figure 32. Hydraulic Conductivity (K) and General Head Boundary (GHB) locations used in model simulations.

Model Calibration

The model was calibrated through trial and error by making reasonable estimates of parameters, running the model, identifying significant differences between measured and simulated values, adjusting parameters and re-running the model until the simulated values matched measured values within a pre-established range. Acceptance of the model was made after the absolute mean difference between the measured and simulated water level values was less than 2 foot and the root mean squared (RMS) error of differences between the 48 observation wells and the simulated values was less than 5% of the total head difference in the modeled area (Anderson and Woessner, 1992). Total head difference in the model is about 90 feet, therefore, the RMS error acceptance is 4.5 feet or less. The accepted model resulted in an absolute mean difference between the measured and simulated water levels of 0.07 feet and an RMS error of 1.43 feet or about 2% of the total head difference in the model. Figure 33 shows the difference between the simulated water levels and the measured water levels (based on Fall, 1991 measurements) at the 48 observation wells. A regression analysis of simulated water levels verses measured water levels is shown in Figure 34. The correlation coefficient (R) is 98%.

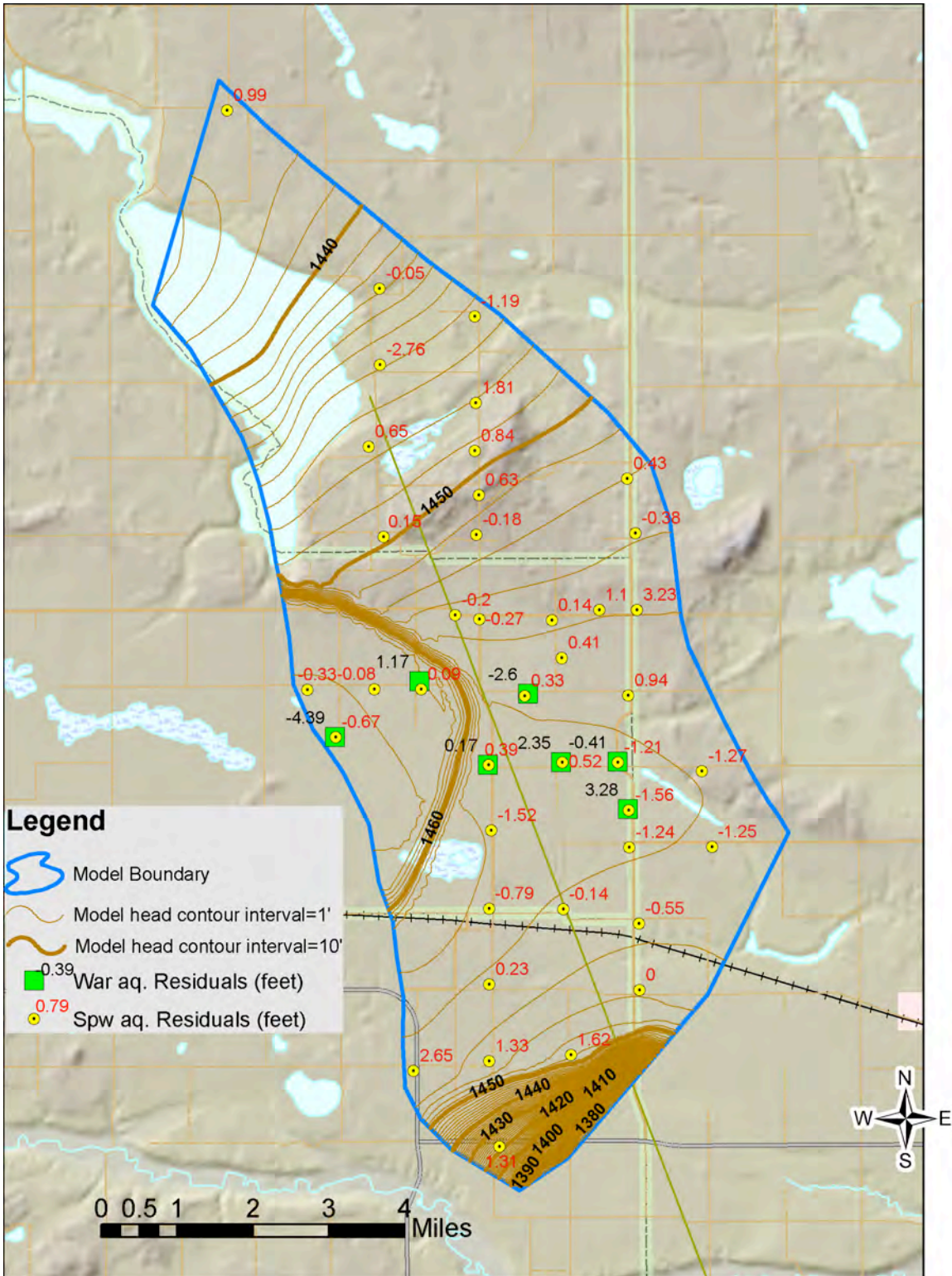


Figure 33. Resulting head and residuals of the accepted steady state model.

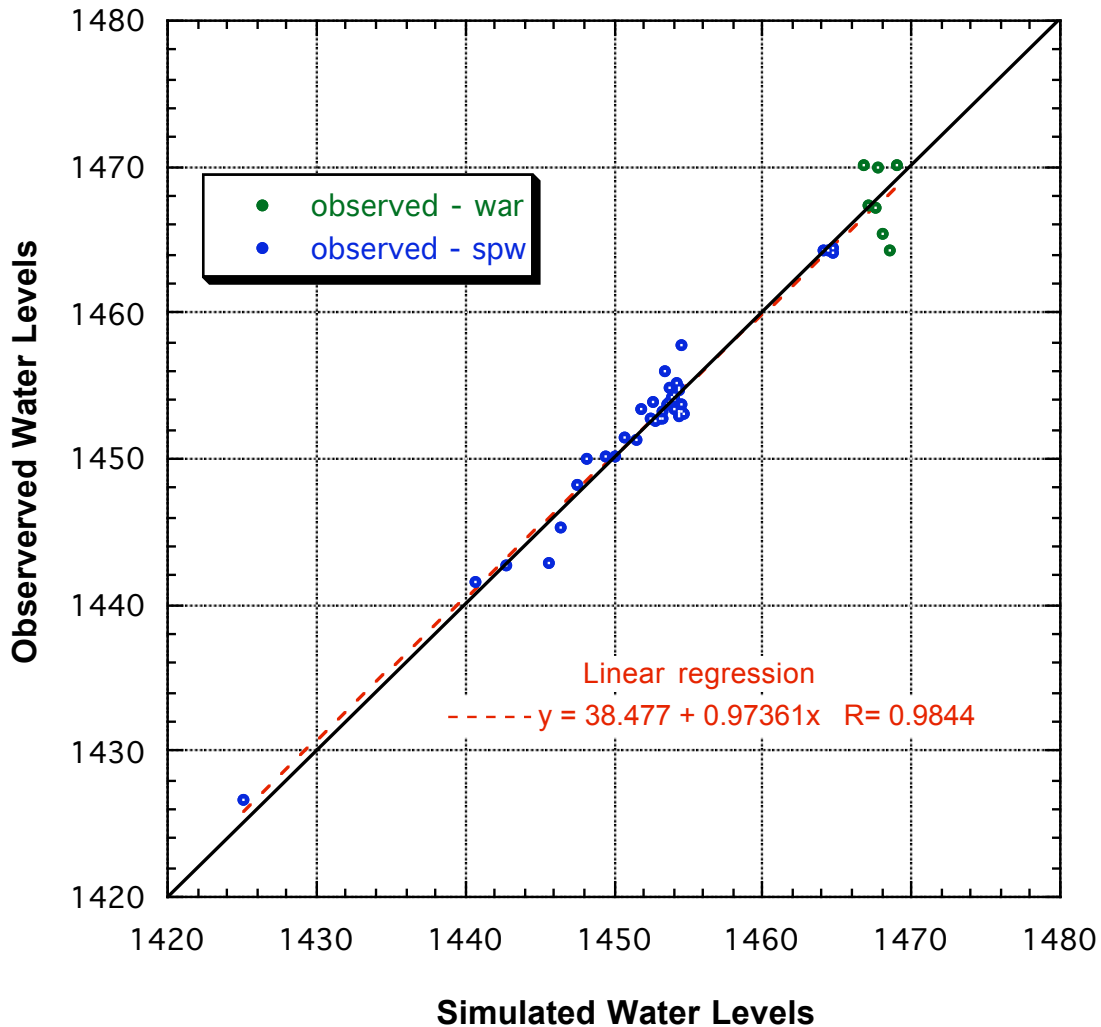


Figure 34. Comparison of the simulated water levels versus the measured water levels in the Warwick and Spiritwood aquifers at the 48 observation nodes in the final calibrated model.

Model Budget

The mass balance water budget for the accepted steady state model of the Spiritwood aquifer near Warwick is shown in Table 5. The components of the budget are recharge (inflow) through natural precipitation infiltrating to the aquifer and discharge (outflow) through evapotranspiration, pumping wells, and underflow out of the modeled segment of the aquifer at the general head boundaries (GHB). The accepted model achieved balance with a slight discrepancy (0.08%) due to precision error.

Table 5 Mass balance budget for the accepted steady state model of the hydrogeologic flow system of the Spiritwood aquifer near Warwick (units are acre-feet/year)

In:			
	Recharge (direct infiltration of precipitation)	7,120	
Total			7,120
Out:			
	Wells	971	
	ET	1,797	
	GHB (discharge from the modeled segment of the aquifer)	4,357	
Total			7,125
Percent error		0.08	

Model Sensitivity

Sensitivity analyses were conducted to determine how sensitive the model is to variation in the model parameters. Various parameters of the model were changed one at a time by a multiplication factor and the difference between the calculated and measured water levels was compiled at the 48 observation well locations. Figure 35 shows the sensitivity analysis for recharge rate, horizontal hydraulic conductivity, the conductance values for the general head boundary nodes, total well stress, and the ET stress rate. The final calibrated model resulted in root mean square of difference between the calculated and measured water levels of 1.43 feet (multiplication factor equal to 1 in Figure 35). All other multiplication factors resulted in RMS errors greater than 1.43 feet. Results of the sensitivity analysis indicate that recharge and hydraulic conductivity had relatively large effects on the simulated water levels, and general-head boundary conductances, well stress, and the ET stress rate had a smaller effect on simulated water levels.

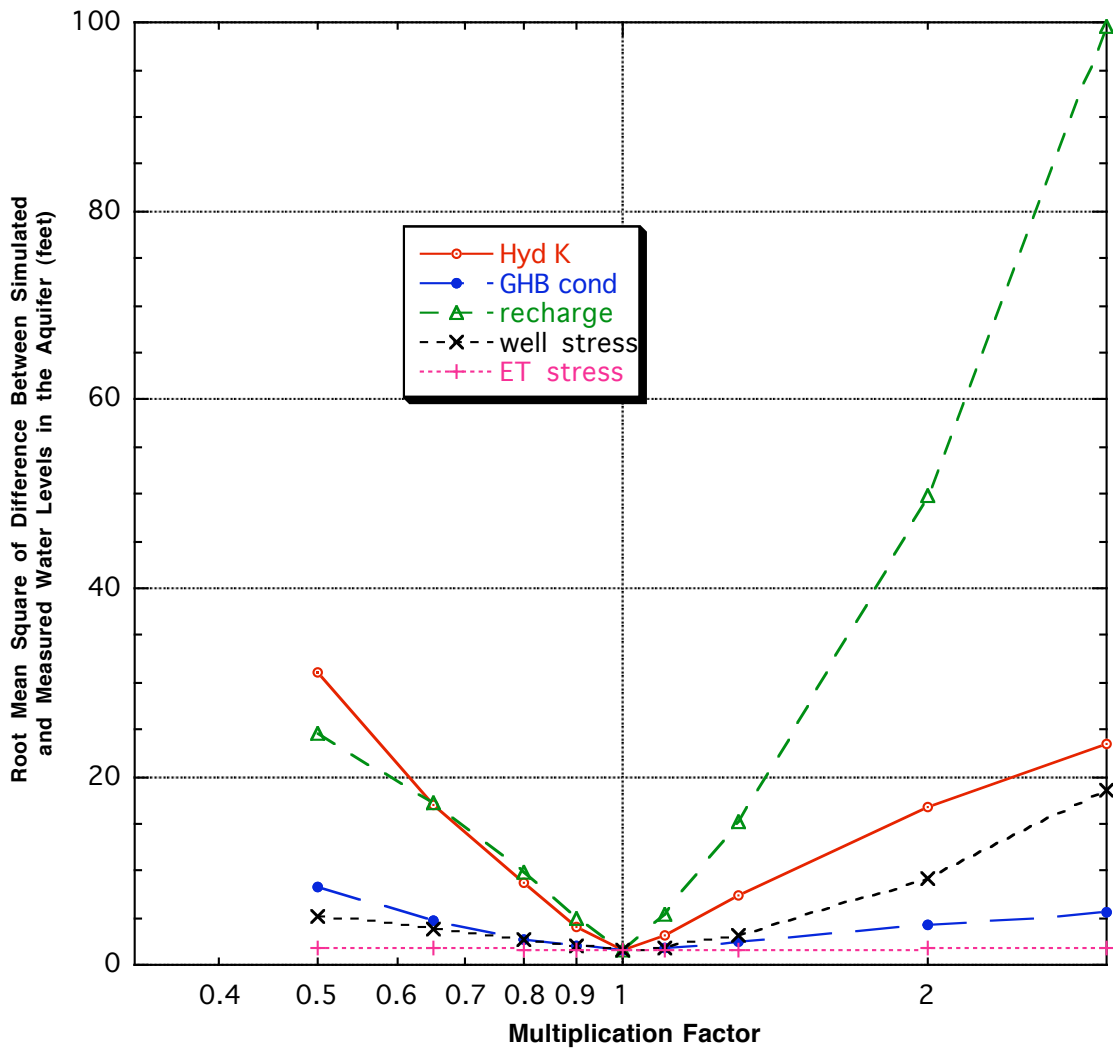


Figure 35. Results of the sensitivity analysis of the final calibrated model.

Model Results and Application

Additional Pumping Effect Assessment

To assess the potential effects of additional pumping from the aquifer, water-level output from the accepted model was used as the starting water levels in subsequent model runs which simulated increasing pumping by 2,000 acre-feet per year from two separate locations within the study area. Additional drawdown caused by these increases are

shown spatially in Figures 36 and 37. The mass balance budget for these two simulations are listed in Tables 6 and 7. Under the hypothetical north well scenario, 46% of the 2000 acre-feet/year comes from a reduction in ET and 54% comes from a reduction in GHB underflow. Under the hypothetical south well scenario, 61% of the 2000 acre-feet/year comes from a reduction in ET and 39% comes from a reduction in GHB underflow. Table 8 shows the potential effects of the additional pumping on rural water and irrigation points of diversion in the Spiritwood aquifer study area.

Table 6 Mass balance budget for the steady state model analysis of a hypothetical pumping scenario of an additional 2,000 feet from the **north** (Brown aquifer test) well site (units are acre-feet/year).

In:			
	Recharge (direct infiltration of precipitation)	7,120	
Total			7,120
Out:			
	Wells	2,971	
	ET	883	
	GHB (discharge from the modeled segment of the aquifer)	3,268	
Total			7,122
Percent error		0.03	

Table 7 Mass balance budget for the steady state model analysis of a hypothetical pumping scenario of an additional 2,000 feet from the **south** (RCRU) well site (units are acre-feet/year).

In:			
	Recharge (direct infiltration of precipitation)	7,120	
Total			7,120
Out:			
	Wells	2,971	
	ET	584	
	GHB (discharge from the modeled segment of the aquifer)	3,566	
Total			7,121
Percent error		0.02	

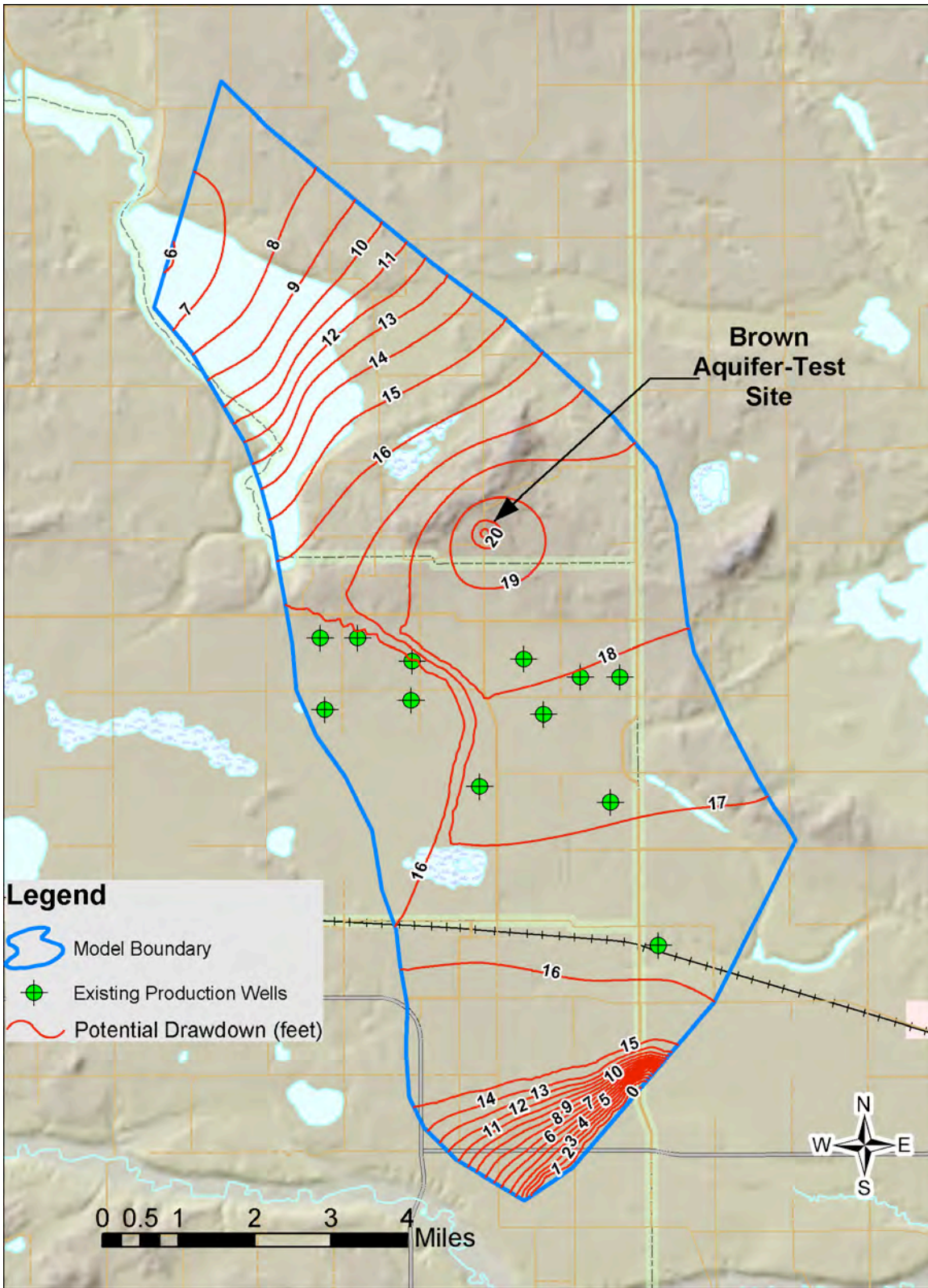


Figure 36. Potential drawdown from a 2,000 acre-feet per year appropriation from a location near the site of the Brown Aquifer Test site.

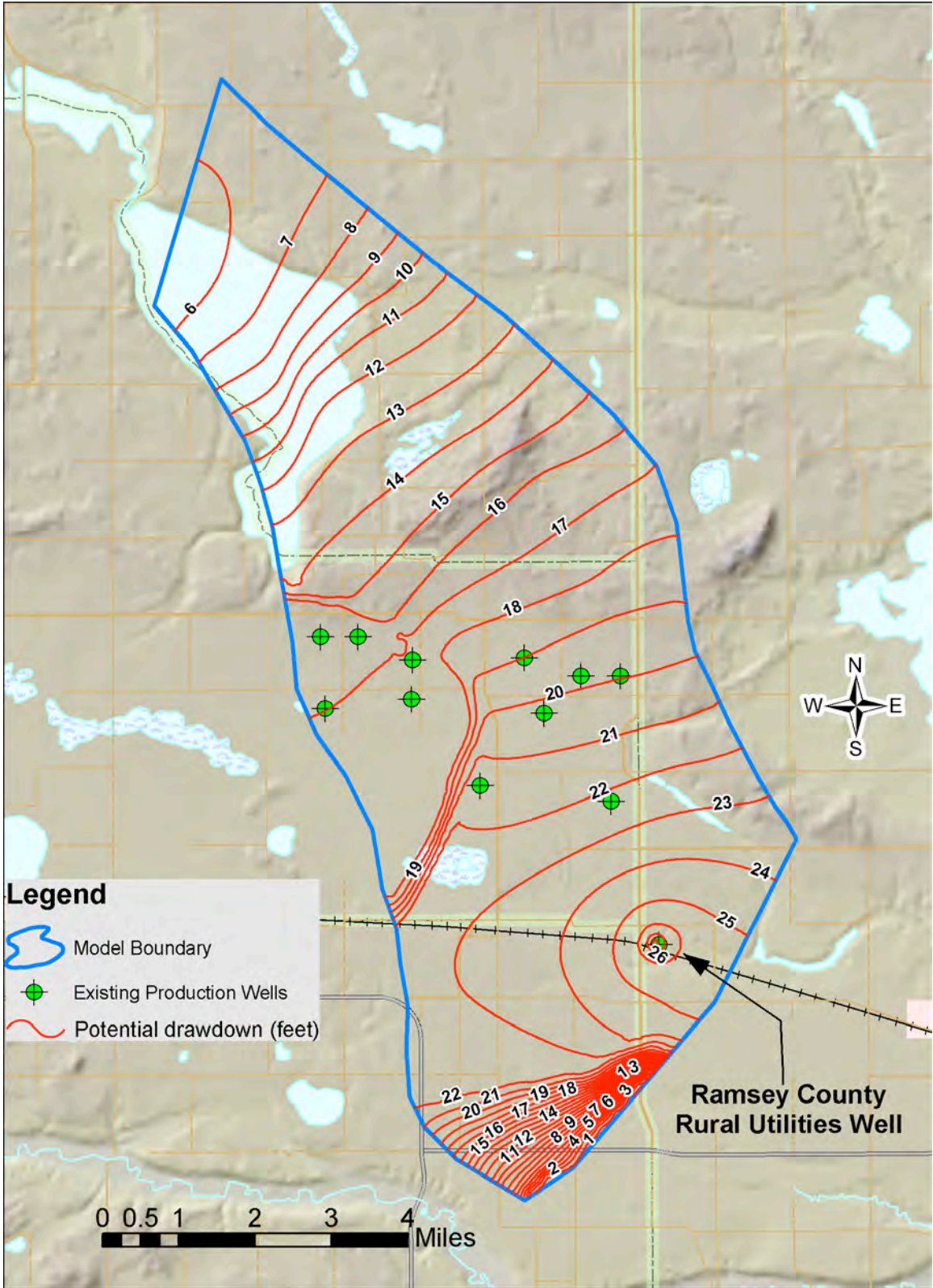


Figure 37. Potential drawdown from a 2,000 acre-feet per year appropriation from a location near the Ramsey County Rural Utilities well field.

Table 8 Potential long-term drawdown effect of hypothetical well pumping 2,000 acre-feet per year from either of two sites in the study area.

Name	Type Of Use	Approved Point of Diversion	Effect from Hypothetical North Well (ft.)	Effect from Hypothetical South Well (ft.)
Altendorf Farms	Irrigation	15106222	15.88	17.20
Altendorf Farms	Irrigation	15106227A	17.36	21.41
Altendorf Farms	Irrigation	15106227B	15.64	17.47
Beckstrand, John R.	Irrigation	15106221AA	15.89	17.12
H & H Farms	Irrigation	15106225AC	17.20	22.32
Hanson, Lester A.	Irrigation	15106223A	17.75	20.33
Hanson, Lester A.	Irrigation	15106224B	17.73	20.42
Heck, Bernice	Irrigation	15106225AC	17.20	22.32
Heck, Bernice	Irrigation	15106225DC	16.92	22.97
Johnson, Roger L.	Irrigation	15106213A	18.06	19.37
Johnson, Roger L.	Irrigation	15106213D	17.87	19.99
Pare, Howard L.	Irrigation	15106214E	18.91	19.12
Pare, Mike	Irrigation	15106213B	18.16	19.20
Pare, Mike	Irrigation	15106213C	17.92	19.71
Ramsey County Rural Utilities	Rural Water	15006106B	16.25	28.00
Ramsey County Rural Utilities	Rural Water	15106131B	16.71	23.94
Ramsey County Rural Utilities	Rural Water	15106131D	16.51	24.89
Spirit Lake Tribe	Irrigation	15106216AA	17.99	16.21
Spirit Lake Tribe	Irrigation	15106216BCA	15.99	16.91
Spirit Lake Tribe	Irrigation	15106216DA	15.95	17.05
Spirit Lake Tribe	Irrigation	15106217ACA	15.98	16.88
Tweed, Michael L.	Irrigation	15006222A	8.13	12.02
Tweed, Michael L.	Irrigation	15006223B	7.39	10.92

Maximum additional drawdown would be approximately 20 feet using hypothetical north site (151-62-3 DDD) and 28 feet at the hypothetical south site (150-61-6 BBB) and decreasing with distance away from the pumping well field. More drawdown occurs at the south site because of its proximity to barriers and the general-head boundaries.

An analysis was done of the outflow to the general head boundary locations at the north and south ends of the modeled segment of the aquifer. The zonebudget program uses MODFLOW output data to create subsets of the overall model budget. Two primary zones were delineated (Figure 38). The 2000 acre-ft/year of additional well pumping is “salvaged” from outflows to either ET or the two general head boundaries. Results of the analysis indicate that majority of the water salvaged from outflow by the hypothetical pumping from either the north or south potential well sites comes from the north (zone 2)

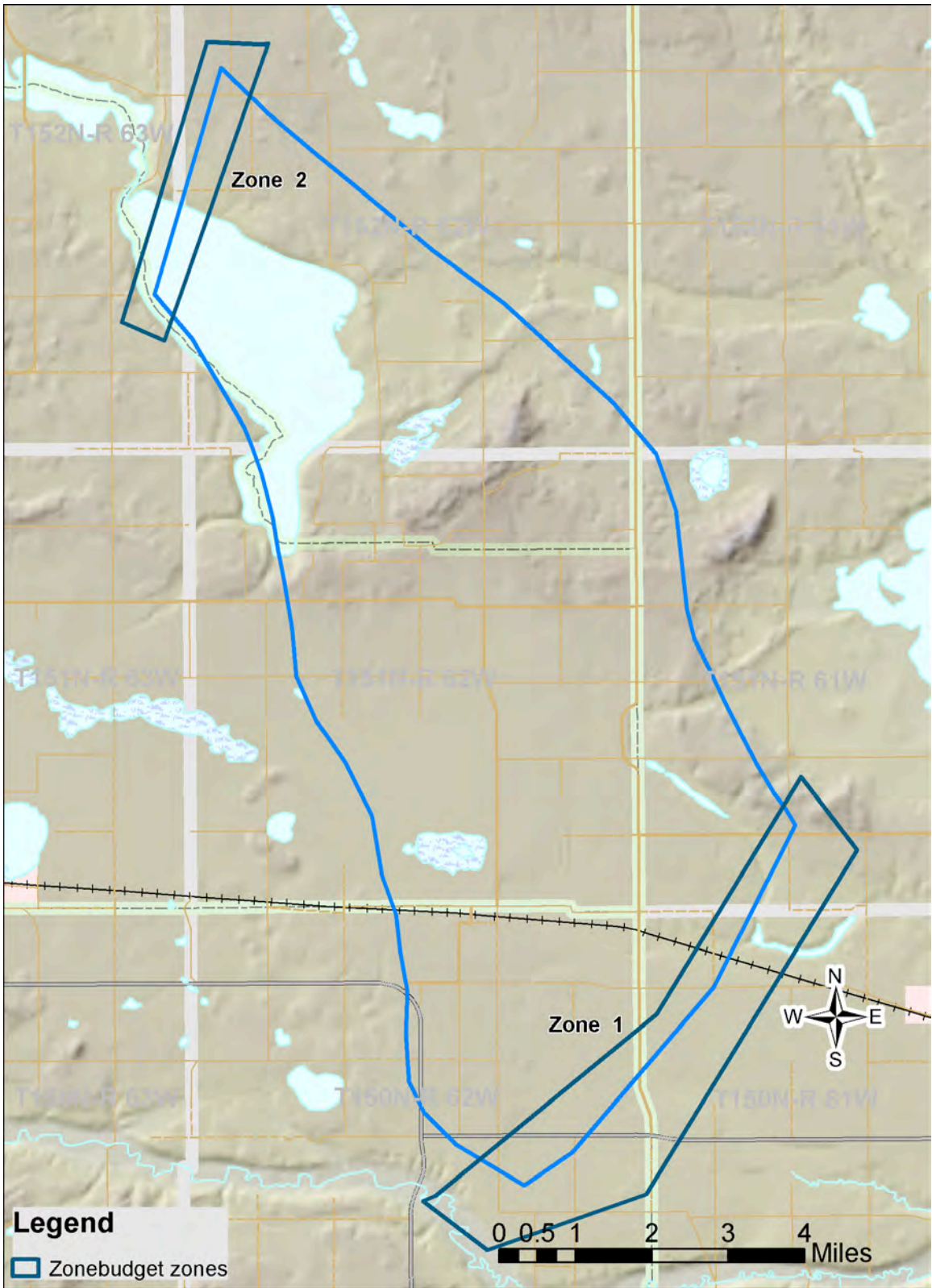


Figure 38. Zonebudget zones used to analyze outflows from the model through the general head boundaries (GHB).

general head boundary. Table 9 lists the volumes of outflow at the general head boundaries.

Table 9 Zonebudget analysis of outflows from the general head boundaries (GHB).

	Accepted model		Hypothetical pumping			
			South site		North Site	
Zone 1 (south)	2,184	50%	1,902	53%	2,047	63%
Zone 2 (north)	2,173	50%	1,664	47%	1,220	37%
Total GHB outflow	4,357	100%	3,566	100%	3,267	100%

Particle Tracking and Flowline Analysis

MODFLOW has the capability of tracking a particle (molecule) of water through the flow system to its discharge point. Time-of-travel from the point designated to the discharge point is also calculated. Figure 39 shows particle tracking and time of travel for selected points in the aquifer from the accepted steady-state model of the aquifer. The particle tracking shows that the source area for the Spiritwood aquifer is the Warwick aquifer. The flow-lines originate under the Warwick aquifer and end at the discharge points at either of the general head boundaries (north or south) or at a pumping well. An east-west ground water divide exists where water will flow either to the north or to the south on either side of the divide. Travel times of particles entering the system south of the divide are generally in the range of 100 to 700 years. Travel times north of the divide are typically in the range of 300 to 1500 years.

Capture Zone Analysis

Two modeling scenarios were run where a 2000 acre-ft/year hypothetical pumping well is located either at the north site (Brown) or the south site (RCRU). Figure 40 shows the flowline configuration, time-of-travel, and capture zone for a well located at the north site. The 50-year time of travel zone around the hypothetical north well is also defined on Figure 40. This area represents a 6.6 sq. mile area with a maximum distance from the well of about 2.5 miles. Figure 41 shows the flowline configuration, time-of-travel, and capture zone for a well located at the south site. The 50-year time-of-travel zone around the hypothetical south well is also defined on Figure 41. This represents a 6.5 sq. mile area with a maximum distance from the well of about 2.5 miles.

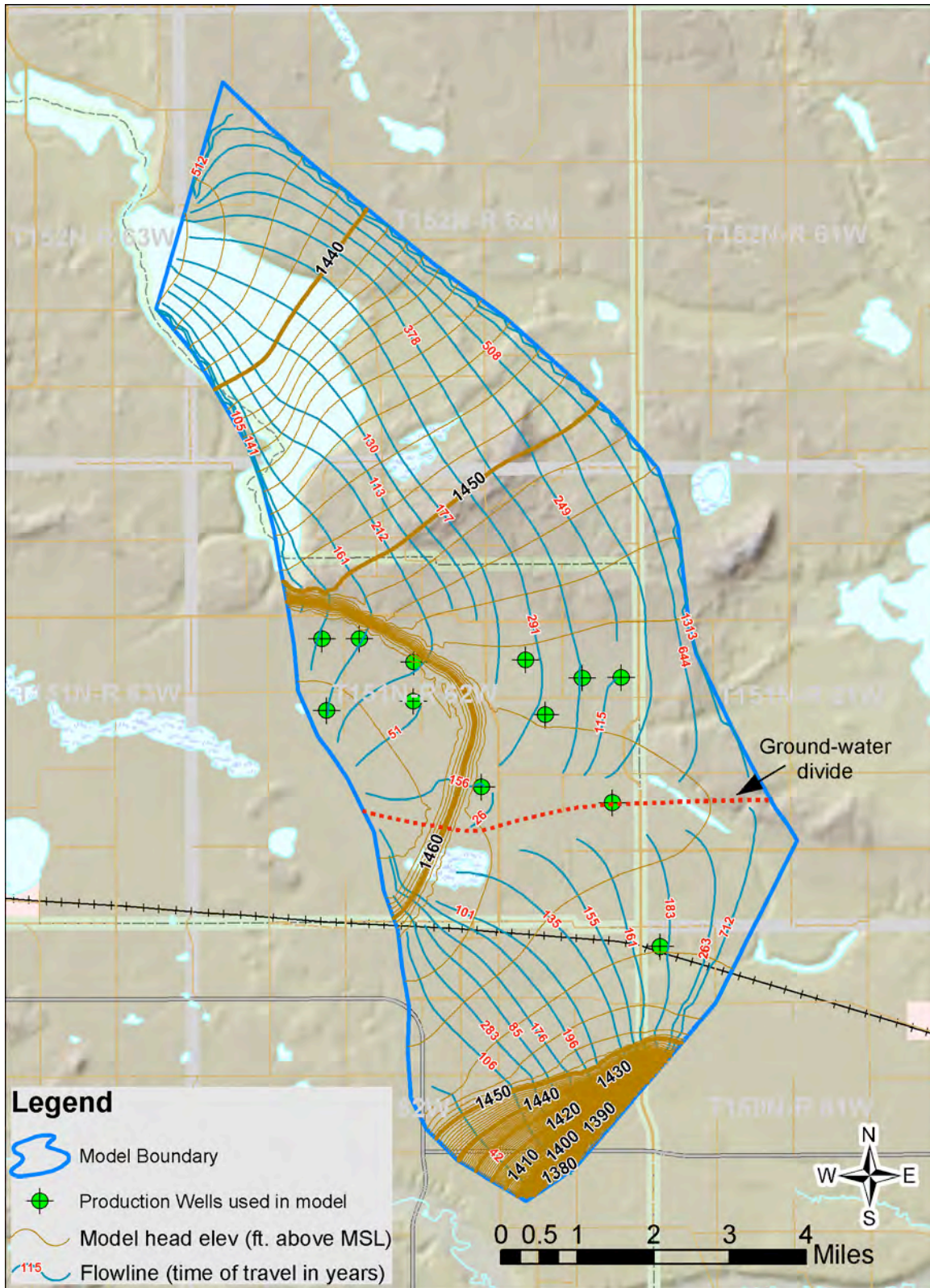


Figure 39. Resulting head of the final accepted model and flowlines with the time of travel of a molecule of water from the beginning of the flowline to the discharge point.

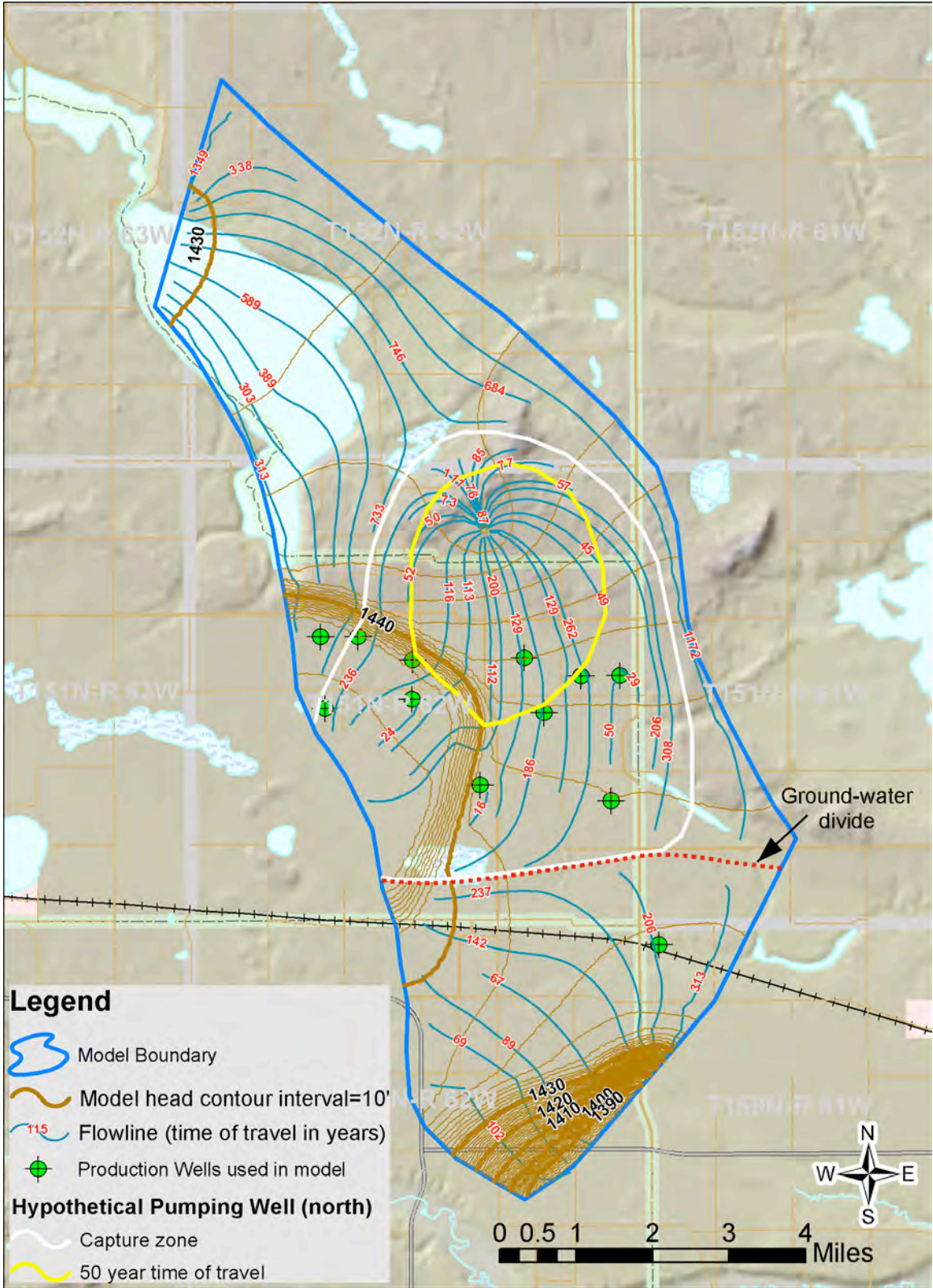


Figure 40. Resulting head, flowlines with particle travel times, and capture zones of a hypothetical well pumping 2,000 acre-feet per year from a location near the site of the Brown Aquifer Test site.

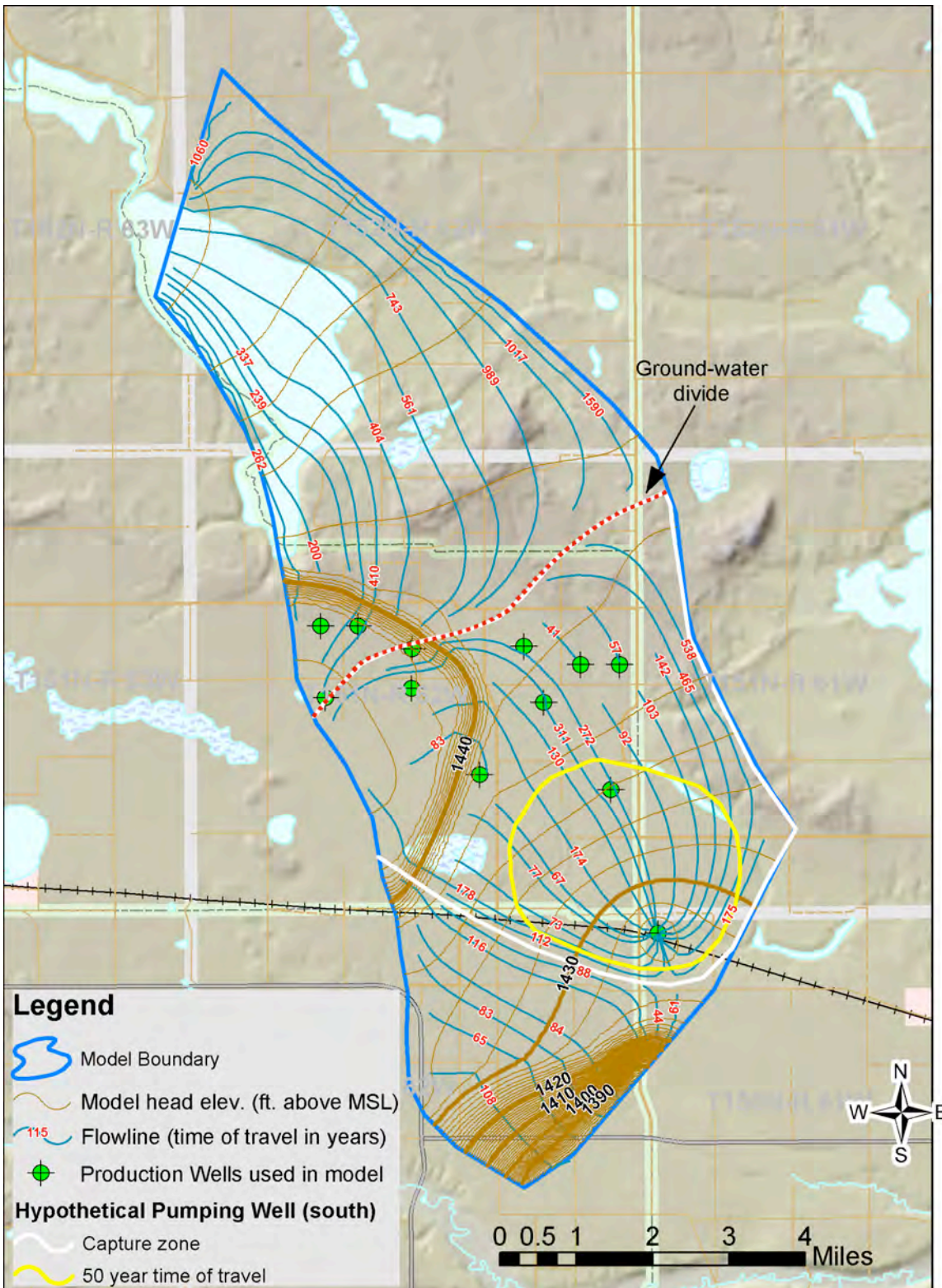


Figure 41. Resulting head, flowlines with particle travel times, and capture zones of a hypothetical well pumping 2,000 acre-feet per year from a location near the Ramsey County Rural Utilities well field.

Potential Change in Hardness and TDS Analysis

An analysis of the potential change in hardness and TDS caused by pumping either of the two hypothetical wells at a rate of 2,000 acre-ft/year was evaluated using the steady-state ground-water model. The resulting hardness and TDS was calculated by averaging the interpolated hardness and TDS concentration in the 50-year time-of-travel zone around each hypothetical well. The interpolation routine scaled hardness and TDS in each model cell in the 50-year time-of-travel zone based on the inverse distance of the nearest 5 wells where hardness and TDS have been determined. The results for the north site indicate an increase from 342 mg/l to 389 mg/l in hardness (Figure 42) and an increase from 391 mg/l to 497 mg/l in TDS (Figure 43). The results for the south site indicate an increase from 115 mg/l to 173 mg/l in hardness (Figure 44) and an increase from 373 mg/l to 468 mg/l in TDS (Figure 45).

Summary and Recommendations

The purpose of this investigation was to determine if the Spiritwood aquifer segment near the Warwick aquifer will be able to support a ground-water withdrawal of up to 2000 acre-feet per year by the City of Devils Lake. The investigation was conducted in two phases. Phase I was primarily a desktop analysis of existing data and preliminary computer model development. Phase II entailed a full-scale field investigation involving 9,300 feet of additional test drilling and the installation of an additional 31 observation wells. Two hundred and twenty water samples were collected and analyzed for general chemical parameters, trace elements, and stable isotope analysis. Water-level monitoring in 65 wells was done on a monthly basis over an approximately two-year period. Field surveying established measuring point elevations at all of the wells monitored.

The ground-water flow-model was refined and calibrated using the additional hydrogeologic information. The model was used to evaluate the effects of pumping at either of two areas selected as potential development areas for a 2,000 acre-feet/year supply.

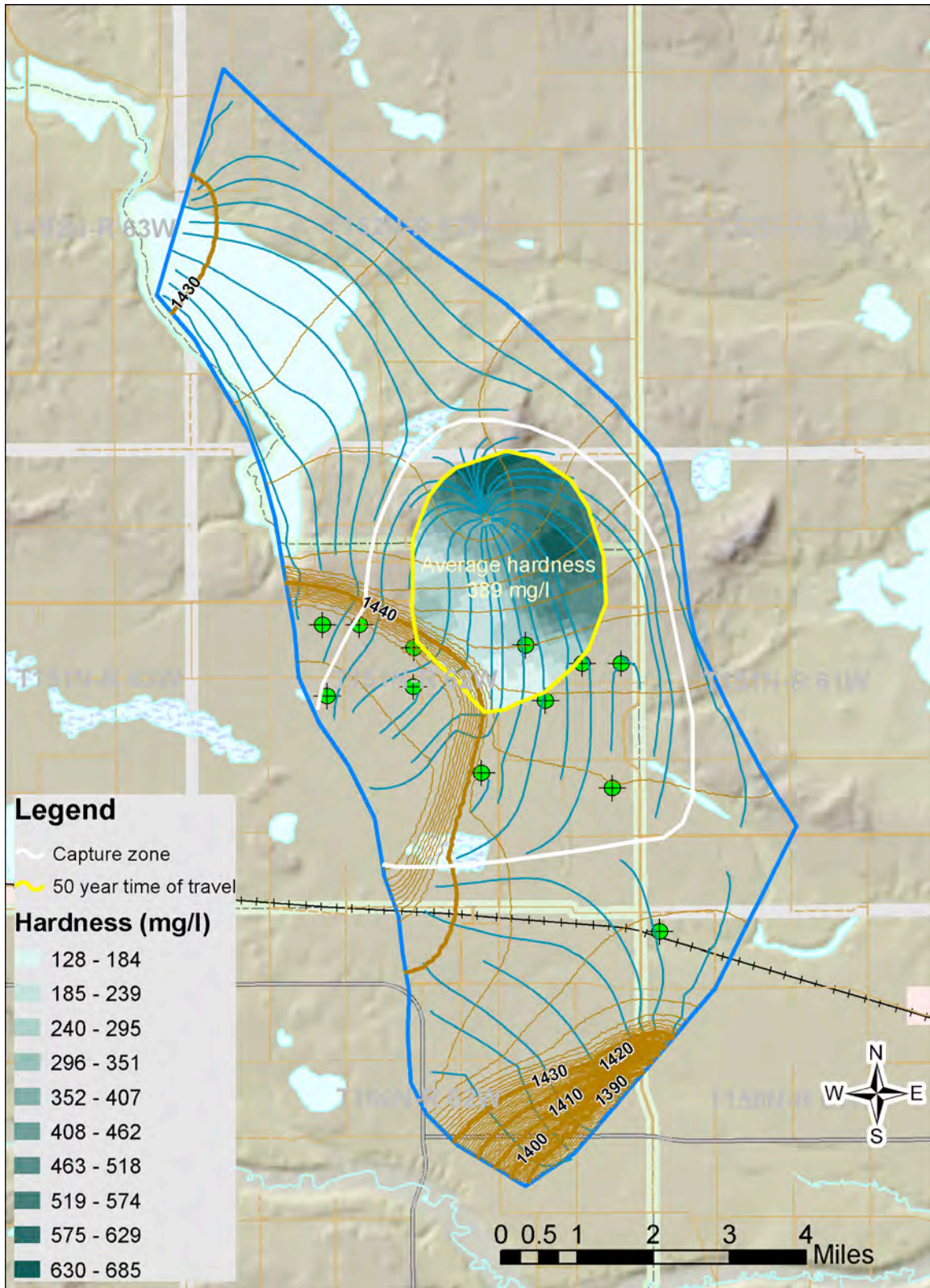


Figure 42. Capture zone analysis of potential water quality change with regard to *hardness*. Hypothetical well pumping 2,000 acre-feet per year from a location near the site of the Brown Aquifer Test site.

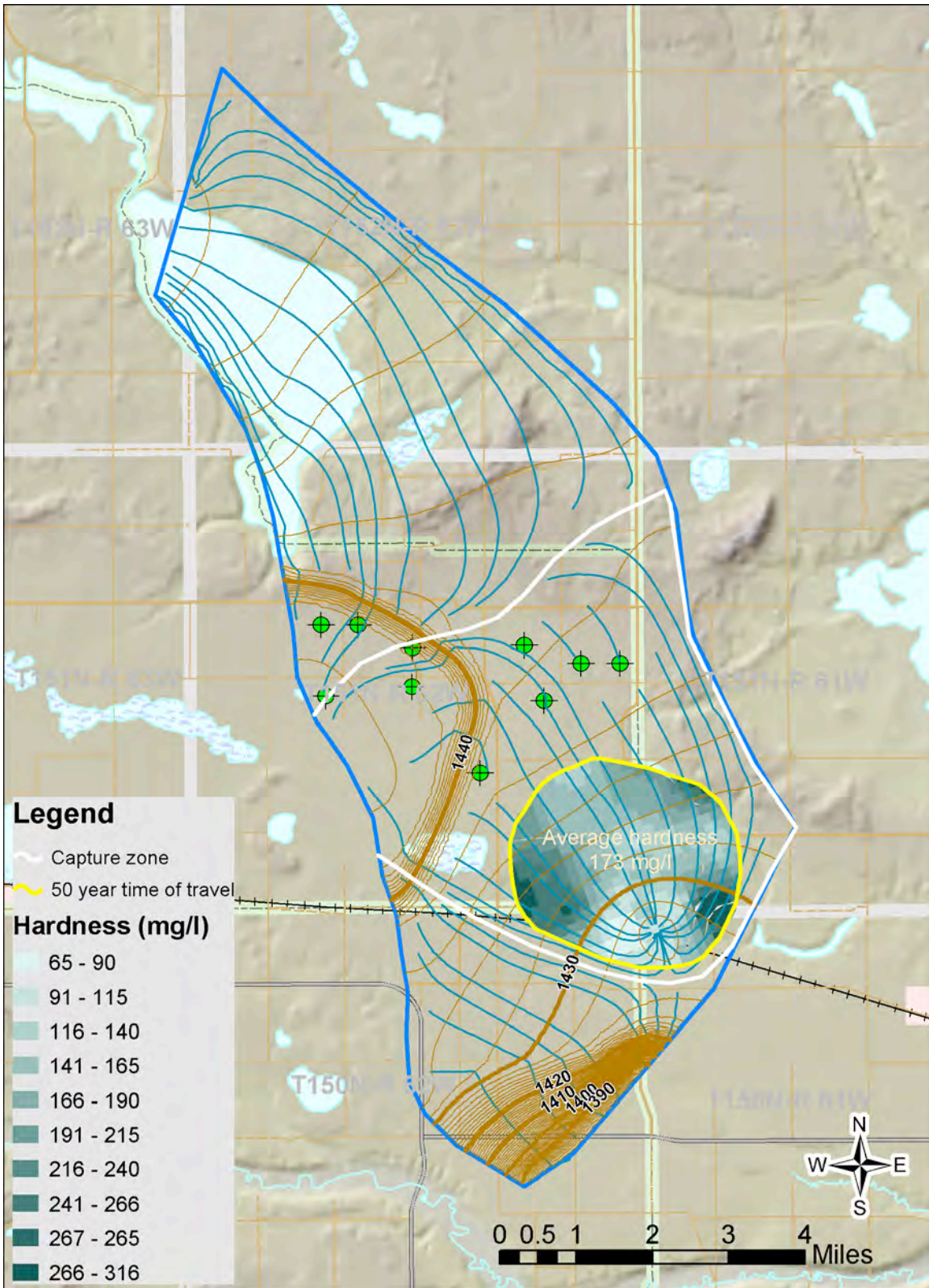


Figure 43. Capture zone analysis of potential water quality change with regard to *hardness*. Hypothetical well pumping 2,000 acre-feet per year from a location near the Ramsey County Rural Utilities well field.

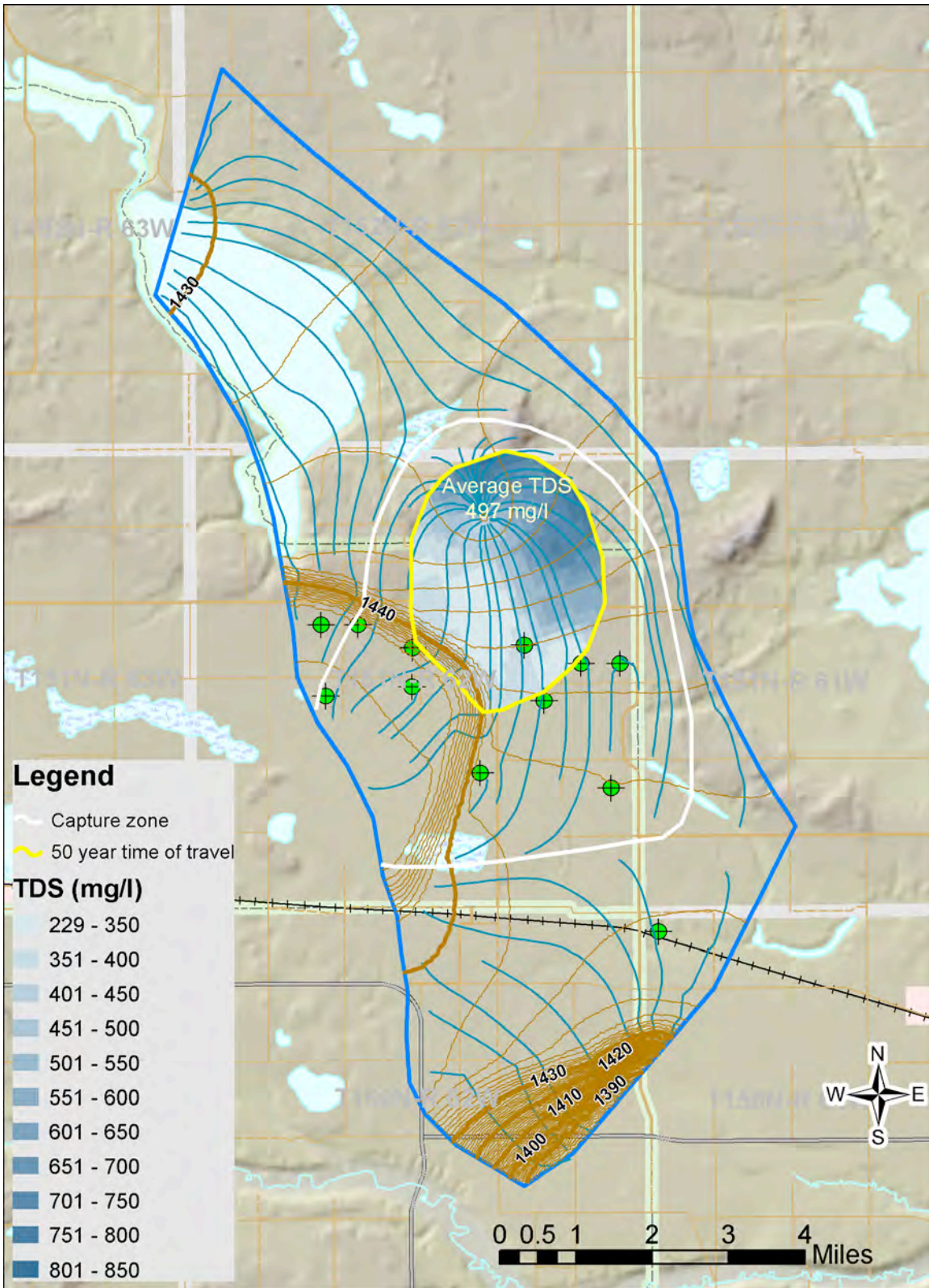


Figure 44. Capture zone analysis of potential water quality change with regard to total dissolved solids (TDS). Hypothetical well pumping 2,000 acre-feet per year from a location near the site of the Brown Aquifer Test site.

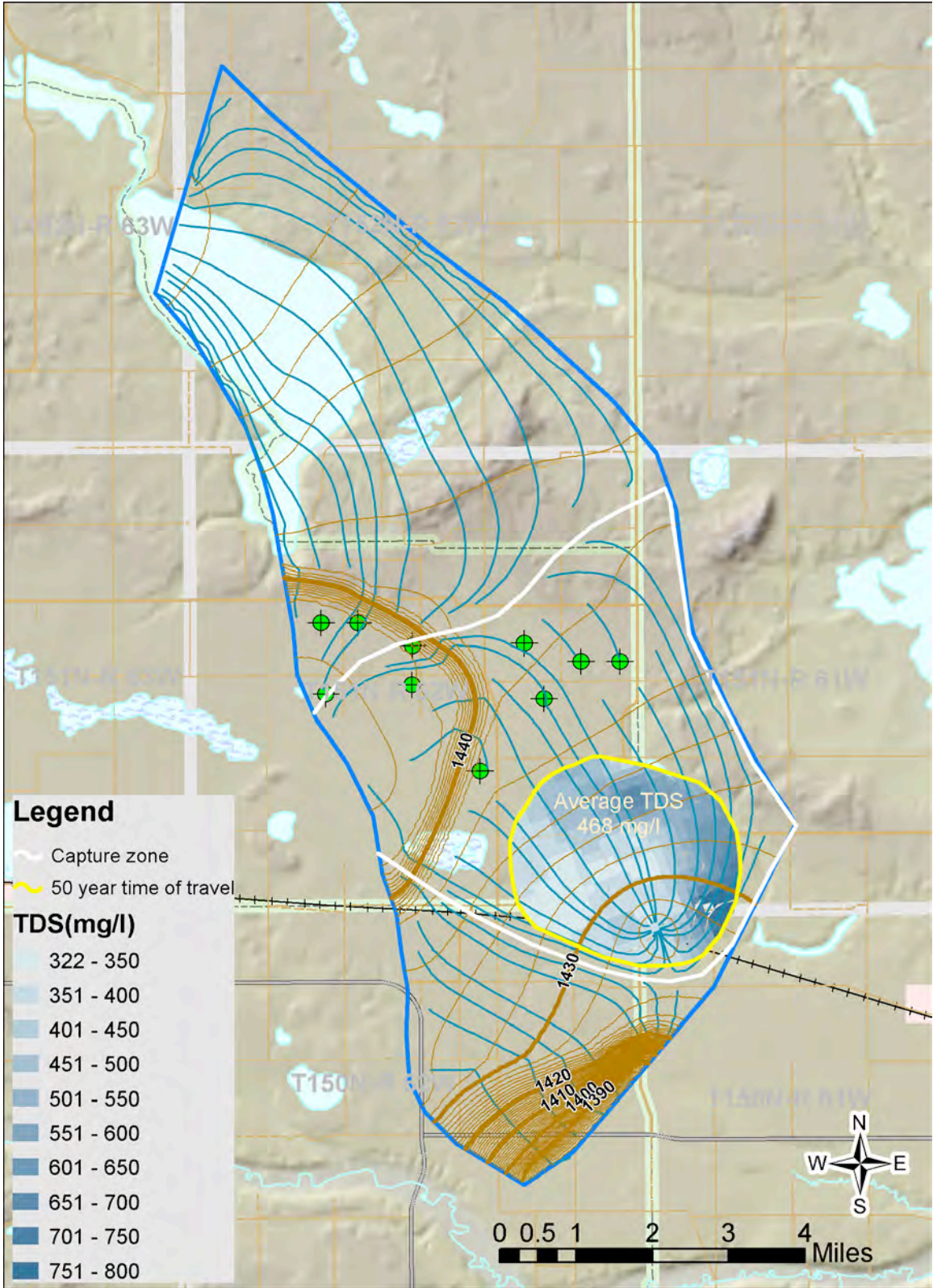


Figure 45. Capture zone analysis of potential water quality change with regard to total dissolved solids (TDS). Hypothetical well pumping 2,000 acre-feet per year from a location near the Ramsey County Rural Utilities well field.

The first area is referred to as the north site or Brown test well site and is in the vicinity of the SE1/4 section 3, T151N-R62W. An aquifer test was performed on a well constructed at this location. The well was pumped for 100 hours at a rate of 1240 gpm. The 100-hour specific capacity was about 40 gpm/ft. Model results indicate that the maximum regional water level decline as a result of a 2,000 acre-ft/year additional demand on this area would be about 20 feet. The test pumping and model results indicate that the aquifer could support the hypothetical 2,000 acre-ft/year demand. Using capture zone analysis, the current TDS of about 400 mg/l would increase to about 500 mg/l. The hardness would likely increase from about 340 mg/l to 390 mg/l.

The second potential development area, referred to as the south site, is located at the existing Ramsey County Rural Utilities well field. A second shorter-term aquifer test was performed on an existing production well owned by RCRU located in the NW1/4 Section 6, T150N-R61W. The production well was sealed and not capable of being monitored during the test, however, extrapolation of data collected from the nearby monitoring wells indicate that aquifer hydraulic properties are similar to those determined at the north-well site. Available drawdown at this site is also in excess of 150 feet. Model results indicate that a maximum additional regional water-level decline as a result of pumping 2,000 acre-ft/year at the south site would be about 28 feet. Test pumping and model results indicate the aquifer could support a 2,000 acre-ft/year withdrawal at the south site. Using capture zone analysis, the current TDS of 370 would probably increase to about 470 mg/l. The hardness may increase from the current 110 mg/l to about 180 mg/l.

Changes in the water chemistry with the degree of additional stress which this investigation has analyzed are difficult to predict to say the least. The indications of potential water quality changes that may occur are based on sound reasoning and science. However, they should not be used as hard and fast absolutes but rather as educated guesses.

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Appendix

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WELL DRILLER'S REPORT

State law requires that this report be filed with the State Board of Water Well Contractors within 30 days after completion or abandonment of the well.

<p>1. WELL OWNER Name <u>City of Devil's Lake</u> Address <u>PO Box 1048</u> <u>DEVILS LAKE - ND 58201</u></p>	<p>7. WATER LEVEL Static water level _____ feet below surface If flowing, closed-in pressure _____ psi GPM flow _____ through _____ inch pipe Controlled by: <input type="checkbox"/> Valve <input type="checkbox"/> Reducers <input type="checkbox"/> Other If other, specify _____</p>																																																											
<p>2. WELL LOCATION Sketch map location must agree with written location.</p> <div style="text-align: center;"> </div> <p>County <u>RAMSEY</u> _____ 1/4 SE 1/4 E 1/4 Sec. <u>3</u> Twp <u>151</u> N Rg. <u>2</u> W.</p>	<p>8. WELL TEST DATA PERFORMED BY ND STATE <input type="checkbox"/> Pump <input type="checkbox"/> Bailer <input type="checkbox"/> Other <u>WATER</u> Pumping level below land surface: <u>COMMISSION</u> _____ ft after _____ hrs pumping _____ gpm _____ ft after _____ hrs pumping _____ gpm _____ ft after _____ hrs pumping _____ gpm</p>																																																											
<p>3. PROPOSED USE <input type="checkbox"/> Geothermal <input type="checkbox"/> Monitoring <input type="checkbox"/> Domestic <input type="checkbox"/> Irrigation <input type="checkbox"/> Industrial <input type="checkbox"/> Stock <input checked="" type="checkbox"/> Municipal <input type="checkbox"/> Test Hole</p>	<p>9. WELL LOG</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Formation</th> <th colspan="2">Depth (ft.)</th> </tr> <tr> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr><td>Topsoil</td><td>0</td><td>1</td></tr> <tr><td>Sand med Fine Gravel</td><td>1</td><td>8</td></tr> <tr><td>Course cemented gravel</td><td>8</td><td>11</td></tr> <tr><td>Sand course med gravel</td><td>11</td><td>73</td></tr> <tr><td>olive grey sandy silt</td><td>73</td><td>80</td></tr> <tr><td>Rock</td><td>80</td><td>81</td></tr> <tr><td>olive grey sandy silt</td><td>81</td><td>84</td></tr> <tr><td>Rock</td><td>84</td><td>85</td></tr> <tr><td>olive grey Gravelly silt</td><td>85</td><td>107</td></tr> <tr><td>Sand med to coarse</td><td>107</td><td>110</td></tr> <tr><td>olive grey silt Gravelly</td><td>110</td><td>136</td></tr> <tr><td>olive grey silt Fine Dry</td><td>136</td><td>138</td></tr> <tr><td>Sand Fine</td><td>138</td><td>140</td></tr> <tr><td>olive grey clay sandy</td><td>140</td><td>145</td></tr> <tr><td>Sand med to Fine</td><td>145</td><td>159</td></tr> <tr><td>Fine sandy grey clay</td><td>159</td><td>180</td></tr> <tr><td>Sand olive grey silt</td><td>180</td><td>208</td></tr> <tr><td>olive grey clay F. rim</td><td>208</td><td>224</td></tr> </tbody> </table>	Formation	Depth (ft.)		From	To	Topsoil	0	1	Sand med Fine Gravel	1	8	Course cemented gravel	8	11	Sand course med gravel	11	73	olive grey sandy silt	73	80	Rock	80	81	olive grey sandy silt	81	84	Rock	84	85	olive grey Gravelly silt	85	107	Sand med to coarse	107	110	olive grey silt Gravelly	110	136	olive grey silt Fine Dry	136	138	Sand Fine	138	140	olive grey clay sandy	140	145	Sand med to Fine	145	159	Fine sandy grey clay	159	180	Sand olive grey silt	180	208	olive grey clay F. rim	208	224
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<p>4. METHOD DRILLED <input type="checkbox"/> Cable <input type="checkbox"/> Reverse Rotary <input type="checkbox"/> Bored <input checked="" type="checkbox"/> Forward Rotary <input type="checkbox"/> Jetted <input type="checkbox"/> Auger If other, specify _____</p>	<p>10. DATE COMPLETED <u>10-29-03</u></p>																																																											
<p>5. WATER QUALITY Was a water sample collected for: Chemical Analysis? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Bacteriological Analysis? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If so, to what laboratory was it sent? _____</p>	<p>11. WAS WELL PLUGGED OR ABANDONED? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If so, how _____</p>																																																											
<p>6. WELL CONSTRUCTION Diameter of hole <u>1 7/8</u> inches. Depth <u>280</u> feet. Casing: <input checked="" type="checkbox"/> Steel <input type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Threaded <input type="checkbox"/> Welded <input type="checkbox"/> Other If other, specify _____</p> <p>Pipe Weight: _____ Diameter: _____ From: _____ To: _____ _____ lb/ft _____ inches _____ feet _____ feet _____ lb/ft _____ inches _____ feet _____ feet</p> <p>Was perforated pipe used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Perforated pipe set from _____ ft. to _____ feet Was casing left open end? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Was a well screen installed? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Material <u>STAINLESS STEEL</u> Diameter <u>12</u> inches Slot Size <u>.070</u> set from <u>250</u> feet to <u>275</u> feet Slot Size _____ set from _____ feet to _____ feet Was packer or seal used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If so, what material _____ Depth _____ ft.</p> <p>Type of well: Straight screen <input type="checkbox"/> Gravel packed <input checked="" type="checkbox"/> Depth grouted: From <u>0</u> To <u>30</u> Grouting Material: Cement _____ Other <u>X</u> If other, explain: <u>Pure gold chips</u> Well head completion: Pileless unit _____ 12" above grade _____ Other _____ If other, specify _____</p>	<p>12. REMARKS:</p>																																																											
<p>13. DRILLER'S CERTIFICATION This well was drilled under my jurisdiction and this report is true to the best of my knowledge.</p> <p><u>AGRI Industries</u> <u>117</u> Driller's or Firm's Name Certificate No. <u>Box 1166 Williston ND 58801</u> Address <u>Daniel R. Conway</u> <u>11-5-03</u> Signed by Date</p>	<p>13. DRILLER'S CERTIFICATION This well was drilled under my jurisdiction and this report is true to the best of my knowledge.</p>																																																											

Well Owner *CITY OF DEVILS LAKE*
 Well Log Depth (ft.)

From	To	Formation
224	244	OLIVE GREY T. H. FIRM
244	250	GRAVEL FINE COARSE SAND
250	280	COARSE GRAVEL AND SAND w/ clay lenses



150-061-05DDD

NDSWC 2997

Date Completed: 06/25/1968 Purpose: Observation Well -
 Plugged
 L.S. Elevation (ft): 1454.2 Well Type: 1.25 in. - ABS
 Depth Drilled (ft): 200 Aquifer: Spiritwood
 Screen Int. (ft.): 167-170 Data Source: NDSWC

Remarks: Slow pumper, same in 2003

Depth (ft)	Unit	Description
1-12	CLAY	Silty, slightly (pebbly) sandy, moderate yellowish-brown, moderately cohesive, moderately plastic, oxidized, limestone, shale, and a few lignite fragments in clay matrix (till)
12-36	CLAY	Silty, pebbly, olive gray, moderately cohesive, moderately plastic, calcareous, shale, limestone and a few lignite fragments in clay matrix, occasional cobbles (till)
36-48	SAND	Very slightly gravelly, medium to very coarse-grained, angular to subrounded, moderately well sorted, mostly quartz and shale with some limestone, dolostone and granitic grains-bentonite
48-132	CLAY	Silty, sandy, pebbly, olive gray, slightly to moderately cohesive, moderately plastic, calcareous, limestone and shale fragments in clay matrix (till)
132-170	GRAVEL	Sandy, (approximately 25-35% medium to very coarse angular to subrounded sand), fine to coarse (predominantly fine to medium), angular to subrounded, fair sorting, predominantly shale, with some limestone dolostone, light-colored granite and quartz, small % of lignite and chalcedony, taking some water, not caving
170-200	SHALE	Siliceous, black to grayish-black, a few light-olive gray laminations, slightly fractured, moderately indurated, non-calcareous, (Pierre Formation)

150-061-05DDD2

NDSWC 15029

Date Completed: 08/20/2003 Purpose: Observation Well
 L.S. Elevation (ft): 1454 Well Type: 2 in. - PVC
 Depth Drilled (ft): 175 Aquifer: Spiritwood
 Screen Int. (ft.): 158-163 Data Source:

Completion Info: replacement well for 5DDD; Levels ran 10/1/2003 by NDSWC.

Depth (ft)	Unit	Description
0-175	*****	see log for 5DDD

150-061-06BBB

NDSWC 5363

Date Completed: 07/28/1969 Purpose: Observation Well
 L.S. Elevation (ft): 1462.7 Well Type: 1.25 in. - ABS
 Depth Drilled (ft): 320 Aquifer: Spiritwood
 Screen Int. (ft.): 197-203 Data Source:

Depth (ft)	Unit	Description
0-1	TOPSOIL	Silty, clayey, black
1-12	CLAY	Silty, slightly sandy, pebbly, a few cobbles and boulders, moderate yellowish-brown, moderately cohesive, moderately plastic, oxidized (till)
12-32	CLAY	Silty, slightly sandy, pebbly, olive gray, cohesive, slightly plastic, calcareous (till)

32-50	CLAY	Extremely silty, slightly sandy in places, olive gray with occasional light olive gray laminations, cohesive, plastic, very calcareous (Fluvial sediment)
50-100	CLAY	Silty, sandy, pebbly, olive gray (a few thin poorly sorted sand lenses), cohesive, slightly plastic, calcareous (till)
100-148	CLAY	Very silty, olive gray with a few light olive gray laminations, cohesive, plastic (occasional thin lenses of very fine to medium-grained sand (Fluvial sediment)
148-158	CLAY	Silty, slightly sandy, pebbly, occasional thin sandy gravel lenses, olive gray, cohesive, slightly plastic, calcareous (till)
158-301	GRAVEL	(Becomes more coarse lower 10' of section – cobble-sized material) slightly to moderately sandy, fine to coarse (mostly fine to medium), angular to rounded, moderately well-sorted, approximately 30-50% shale, 20-30% carbonates (limestone and dolostone), remainder granitics, siltstone, lignite and quartzite, taking water, mixed 2 bags bentonite, caving some, probably stratified, occasional thin clay layers
301-320	SHALE	Siliceous, moderately clayey, medium dark gray to grayish-black, non-calcareous, bedded, moderately indurated, bentonitic (Pierre Formation)

150-061-06BBC
NDSWC TOLNA

Date Completed:	09/10/1982	Purpose:	Rural Water Well
L.S. Elevation (ft):	1460	Well Type:	8 in. - Steel
Depth Drilled (ft):	342	Aquifer:	Spiritwood
Screen Int. (ft.):	227-0	Data Source:	

Remarks: Former CITY OF TOLNA WELL #3 SOUTH WELL

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-3	GRAVEL	
3-13	CLAY	yellow large rocks
13-19	CLAY	blue, large rocks
19-54	CLAY	blue, tight, slippery
54-126	CLAY	soft, drills easy
126-167	CLAY	soft with sand layers
167-220	SAND	fine, blue, clayey
220-290	SAND	fine to medium
290-307	SHALE	with gravel layers
307-342	SHALE	

150-061-06BBC2

NDSWC 15060

Date Completed: 09/29/2003 Purpose: Observation Well -
 Plugged
 L.S. Elevation (ft): 1458 Well Type: 2 in. - PVC
 Depth Drilled (ft): 290 Aquifer: Spiritwood
 Screen Int. (ft.): 265-270 Data Source:
 Completion Info: Levels ran 10/6/2003 by NDSWC.

Depth (ft)	Unit	Description
0-1	TOPSOIL	Black
1-36	TILL	Clayey, sandy, silty, pebbly w/inclusions, yellowish brown oxidized from 1-6 feet, oxidized coarse gravel from 6-11 feet, rock from 11-12 feet, sand and gravel from 19-20 feet, gray and unoxidized till from 12-36 feet,
36-69	CLAY	Silty, massive, gray, no inclusions (lacustrine)
69-85	TILL	Clayey, sandy, silty, pebbly w/inclusions, gray, unoxidized
85-109	CLAY	Silty, massive, gray, no inclusions
109-163	TILL	Clayey, sandy, silty, pebbly w/inclusions, gray, layers of detrital lignites and fine shale gravel from 149-163 feet
163-290	SAND & GRAVEL	Coarse sand to coarse gravel, consisting mostly of shales w/detrital lignites

150-061-06BBC3

Ramsey Rural Water

Date Completed: 00/00/00 Purpose: Observation Well
 L.S. Elevation (ft): 1462 Well Type: 1.25 in. - PVC
 Depth Drilled (ft): 0 Aquifer: Spiritwood
 Screen Int. (ft.): 287-290 Data Source:
 Completion Info: MP elevation determined by measurement dated 10/8/3 from 150-061-06bbc2.

Remarks: east well

150-061-06BDD

NDSWC 5547

Date Completed: 10/15/1969 Purpose: Test Hole
 L.S. Elevation (ft): 1455
 Depth Drilled (ft): 280
 Remarks: No obs. Downey, 1971

Depth (ft)	Unit	Description
0-1	TOPSOIL	Silty, clayey, grayish-black
1-5	SAND	Silty, clayey, fine- to very coarse-grained, subangular to rounded, fair sorting, oxidized
5-15	CLAY	Silty, pebbly, gravelly, moderate yellowish-brown, slightly plastic, moderately cohesive, oxidized (till)
15-53	CLAY	Silty, pebbly, slightly gravelly, occasional cobbles and boulders, olive gray, moderately cohesive, slightly plastic, calcareous (till)
53-60	GRAVEL	Slightly sandy, fine to coarse (mostly fine to medium), subangular to rounded, moderately well-sorted, approximately 60-70% shale, 10-20% carbonates (limestone and dolostone), remainder granitics and siliceous rock, not taking water, not caving in
60-74	CLAY	Silty, slightly sandy, pebbly, a few cobbles, olive gray, moderately cohesive, moderately plastic, calcareous (till)
74-87	SAND	Interbedded with thin lenses and layers of silty clay, very fine- to coarse-grained, subangular to rounded, moderately well-sorted,

		approximately 50-60% quartz, 20-30% shale, remainder lignite and carbonates – no water loss
87-110	CLAY	Silty, slightly sandy, pebbly, olive gray, moderately cohesive, slightly plastic, moderately calcareous, (till)
110-125	CLAY	Very silty, medium dark gray to dark gray, very cohesive, plastic, laminated, very calcareous (Fluvial sediment)
125-131	CLAY	Silty, slightly sandy, pebbly, olive gray, moderately cohesive, plastic, calcareous (till)
131-150	SAND	Very fine- to medium-grained, interbedded (throughout section) with thin lenses and layers of silty clay, subangular to rounded, moderately well-sorted, mostly quartz and shale, some carbonates – poor samples, no water loss
150-154	CLAY	Silty, slightly sandy, pebbly, olive gray, moderately cohesive, moderately plastic, calcareous (till)
154-163	SAND	Interbedded with thin lenses and layers of silty clay, very fine- to very coarse-grained, subangular to rounded, fair sorting, approximately 50-60% quartz, 20-30% shale and carbonates, some granitics and lignite – not taking water
163-175	GRAVEL	Slightly sandy, fine to coarse, (very clayey from 169' – 175' below land surface) fair sorting subangular to rounded, approximately 30-40% carbonates (limestone and dolostone), 20-30% shale, 20-30% granitics, lignite and siliceous rock, no water loss
175-222	CLAY	Silty, slightly sandy, pebbly, occasional cobbles and boulders, olive gray, moderately cohesive, moderately plastic, moderately calcareous (till)
222-265	CLAY	Silty, moderately sandy, pebbly, numerous layers and lenses of fine to coarse gravel, some cobble-sized material, olive gray, moderately cohesive, moderately plastic, calcareous (till)
265-280	SHALE	Siliceous, grayish-black to medium dark gray, bentonitic, moderately indurated, non-calcareous (Pierre Formation)

150-061-06CCC

NDSWC 11326

Date Completed: 09/07/1983 Purpose: Test Hole
L.S. Elevation (ft): 1470
Depth Drilled (ft): 28
Remarks: sheared off bit at 28 feet, moved ahead and drilled

Depth (ft)	Unit	Description
0-1	TOPSOIL	dark brown, sandy
1-9	SAND	yellowish brown, very fine to medium sand to fine gravel, oxidized
9-12	SAND	gray, very fine to medium, unoxidized, some fine gravel
12-20	CLAY	gray to olive gray, sandy, with pebbles, cohesive, crumbly, till
20-21	ROCK	
21-23	TILL	as above
23-24	GRAVEL	medium grained, shaly
24-28	TILL	as above, sheared off bit

150-061-06CCC2

NDSWC 11327

Date Completed: 09/07/1983 Purpose: Observation Well
 L.S. Elevation (ft): 1468.01 Well Type: 1.25 in. - PVC
 Depth Drilled (ft): 320 Aquifer: Spiritwood
 Screen Int. (ft.): 198-203 Data Source:

Depth (ft)	Unit	Description
0-1	TOPSOIL	dark brown, sandy
1-9	SAND & GRAVEL	yellowish brown, silty, fine sand to medium gravel, oxidized
9-12	SAND & GRAVEL	gray, medium sand to medium gravel, unoxidized
12-56	CLAY	olive gray, sandy, with pebbles, cohesive, crumbly, sandy till, rock at 20 to 21 feet, till becomes harder from 35 on down
56-64	CLAY	olive gray, silty, massive, sticky, plastic, cohesive
64-117	CLAY	olive gray, sandy, with pebbles, plastic, cohesive, interbedded with shaly gravel, till, rocky
117-131	SAND & GRAVEL	medium sand to medium gravel, 50% silicates, 20 % carbonates, 30% shale
131-138	TILL	as above
138-291	SAND & GRAVEL	medium sand to fine gravel, 60% silicates, 10% carbonates, 30% shale and lignite
291-320	SHALE	very dark gray to black, hard, few thin layers of dark gray clay, Pierre Shale, Bedrock

150-061-07BCB

VERN BEAUCHANE

Date Completed: 0/0 Purpose: Domestic Well
 L.S. Elevation (ft): N/A Well Type: 0 in. - Unknown
 Depth Drilled (ft): 10 Aquifer: Not Yet Entered
 Screen Int. (ft.): 0-0 Data Source:

150-061-08BBB

NDSWC 15011

Date Completed: 08/05/2003 Purpose: Test Hole
 L.S. Elevation (ft): N/A
 Depth Drilled (ft): 210

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-9	SAND & GRAVEL	Fine sand to very coarse gravel, predominately coarse sand and fine gravel, poorly sorted, oxidized, rusty color
9-94	TILL	Clay, silty, sandy, pebbly, inclusions, medium gray, moderately firm, sand from 23 to 24 feet and 28 to 29 feet and highly shaley, rocks at 35 to 36 feet and 50 to 51 feet
94-106	CLAY	Slightly silty, massive, moderately firm, no inclusions (lacustrine)
106-128	TILL	Clay, silty, sandy, pebbly, inclusions, medium gray, moderately firm,
128-188	TILL	Clay, silty, sandy, pebbly, inclusions, medium gray, moderately firm, highly interbedded with 1-2 foot layers of sand and gravel, rocks at 176 to 177 feet, silty clay layer at 140 to 146 feet
188-210	SHALE	Slightly clayey, soft to brittle, mainly, dark gray to black, some softer (bentonitic?) layers (Bedrock Pierre Formation)

150-061-09A

CITY OF TOLNA

Date Completed:	0/0	Purpose:	Domestic Well
L.S. Elevation (ft):	N/A	Well Type:	0 in. -
Depth Drilled (ft):	0	Aquifer:	Not Yet Entered
Screen Int. (ft.):	0-0	Data Source:	

150-061-09ABA

CITY OF TOLNA

Date Completed:	1/1959	Purpose:	Municipal Well
L.S. Elevation (ft):	1465	Well Type:	0 in. - Unknown
Depth Drilled (ft):	186	Aquifer:	Not Yet Entered
Screen Int. (ft.):	0-0	Data Source:	

150-061-09BCB

Date Completed:	00/00/00	Purpose:	Unknown
L.S. Elevation (ft):	1462	Well Type:	0 in. -
Depth Drilled (ft):	18.2	Aquifer:	Warwick
Screen Int. (ft.):	0-18.2	Data Source:	
Remarks:	USGS Import		

150-061-10CCC

NDSWC 5367

Date Completed:	08/05/1969	Purpose:	Observation Well
L.S. Elevation (ft):	N/A	Well Type:	1.25 in. - PVC
Depth Drilled (ft):	180	Aquifer:	Warwick
Screen Int. (ft.):	57-60	Data Source:	
see Downey, 1971			

Depth (ft)	Unit	Description
0-1	TOPSOIL	Silty, sandy, clayey, brownish-black
1-15	CLAY	Silty, slightly sandy, pebbly, occasional cobbles and gravelly lenses, dusky yellow to moderate yellowish-brown, cohesive, slightly plastic, oxidized (till)
15-30	CLAY	Silty, slightly sandy, pebbly, occasional cobbles and boulders, olive gray, cohesive, slightly plastic, calcareous (till) rough drilling
30-66	SAND	Very slightly gravelly fine- to very coarse-grained, (a few thin clay lenses) angular to subrounded, moderately well-sorted, predominantly quartz, some carbonates (slightly oxidized) shale, lignite and granitics, taking some water, not caving in
66-130	CLAY	Very silty, olive gray to medium dark gray, cohesive, slightly plastic, drills like it is slightly indurated, very calcareous, occasional light olive gray laminations (Fluvial sediment)
130-144	CLAY	Very silty, very sandy, olive gray to grayish-black to brownish-black, slightly cohesive, slightly plastic, carbonaceous (organic material), silty and sand fraction washing out in drilling mud (Fluvial sediment)
144-180	SHALE	Siliceous, moderately clayey, grayish-black, bentonitic, non-calcareous, fractured throughout section, bedded, moderately indurated (Pierre Formation)

150-061-10DDC

K. DAKKEN

Date Completed: 00/00/00 Purpose: Test Hole

L.S. Elevation (ft): N/A

Depth Drilled (ft): 0

Depth (ft) Unit Description

0-115 CLAY Silty

115-200 SHALE

150-061-11BBC

Pekin School Dist.

Date Completed: 00/00/00 Purpose: Test Hole

L.S. Elevation (ft): N/A

Depth Drilled (ft): 120

Depth (ft) Unit Description

0-20 SAND & GRAVEL

20-120 SHALE

150-061-12BBB

E. Luerhing

Date Completed: 00/00/00 Purpose: Test Hole

L.S. Elevation (ft): N/A

Depth Drilled (ft): 120

Depth (ft) Unit Description

0-20 SAND

20-30 CLAY Blue

30-120 SHALE

150-061-14BBB

Date Completed: 00/00/00 Purpose: Unknown

L.S. Elevation (ft): 1460 Well Type: 0 in. -

Depth Drilled (ft): 13.5 Aquifer: Warwick

Screen Int. (ft.): 0-13.5 Data Source:

Remarks: USGS Import

150-061-14DDA

NDSWC 5368

Date Completed: 08/05/1969 Purpose: Test Hole

L.S. Elevation (ft): 1460

Depth Drilled (ft): 40

Remarks: see Downey, 1971

150-061-14DDD

Date Completed: 00/00/00 Purpose: Unknown

L.S. Elevation (ft): 1455 Well Type: 0 in. -

Depth Drilled (ft): 20.5 Aquifer: Warwick

Screen Int. (ft.): 0-20.5 Data Source:

Remarks: USGS Import

150-061-15DDA

NDSWC 2974

Date Completed: 06/18/1968 Purpose: Test Hole

L.S. Elevation (ft): N/A

Depth Drilled (ft): 160

Remarks: SEE DOWNEY, 1971

Depth (ft)	Unit	Description
1-8	SAND	Gravelly (approximately 10-20% fine, angular to subrounded gravel), fine to very coarse, grained, angular to subrounded, fair sorting, predominantly quartz, limestone, granitics, with some shale (not oxidized)
8-60	CLAY	Silty, slightly sandy, pebbly, olive gray, moderately cohesive, slightly plastic, limestone, shale, granitic and quartz fragments in clay matrix, a few limestone and granite cobbles (till)
60-67	GRAVEL	Sandy (approximately 15-25% medium to very coarse-grained, angular to subrounded sand), fine to coarse, angular to subrounded, (mostly subangular), mostly shale and light-colored granite rock, with some limestone, sandstone, milky quartz and silicified wood, small amount of lignite and chalcedony, taking small amount of water
67-70	CLAY	Very silty, sandy, olive gray, cohesive, moderately plastic, calcareous, (Fluvial sediment) – poor samples
70-76	GRAVEL	As above only more sandy (approximately 30-40% medium to very coarse-grained sand), taking some water
76-102	CLAY	Very silty, very slightly sandy, olive gray with light olive gray laminations, cohesive, moderately plastic, very calcareous, (Fluvial sediment)
102-107	SAND	Very fine to medium-grained, angular to subangular, moderately well-sorted, mostly quartz, with some limestone, shale and lignite grains
107-132	CLAY	Very silty, occasional quartz grains, olive gray with light olive gray laminations and streaks, cohesive, plastic to moderately plastic, very calcareous, (Fluvial sediment)
132-160	SHALE	Black to grayish-black, indurated, very slightly fractured, non-calcareous, (Pierre Formation)

150-061-16DDD

NDSWC 15005

Date Completed: 07/31/2003 Purpose: Observation Well

L.S. Elevation (ft): 1463 Well Type: 2 in. - PVC

Depth Drilled (ft): 180 Aquifer: Spiritwood

Screen Int. (ft.): 148-153 Data Source:

Completion Info: Levels ran 10/1/2003 by NDSWC.

Depth (ft)	Unit	Description
0-1	TOPSOIL	Black
1-11	TILL	Clay, silty, sandy, pebbly, clay matrix, brown, soft to firm, plastic, oxidized
11-41	TILL	Clay, silty, sandy, pebbly, clay matrix, gray, soft to firm, plastic, unoxidized, pebbles consisted of carbonates, and igneous and metamorphic rock fragments
41-51	CLAY	Silty, gray, firm, plastic, no inclusions. high clay content (Lacustrine)
51-103	TILL	Clay, silty, sandy, pebbly, clay matrix, gray, firm to soft, plastic, pebbles consisted primarily of shales; in addition to carbonates and igneous and metamorphic rock fragments; softer till from 77 to 83 feet; sand 83 to 84 feet, no return; rock (granitic) 95 to 96 feet

103-109	CLAY	Silty, very firm, gray, no inclusions, high clay content, plastic (Lacustrine)
109-114	TILL	Clay, silty, sandy, pebbly, gray, firm, high clay content
114-122	CLAY	Clay same as from 103' to 109' (Lacustrine)
122-140	SAND & GRAVEL	Fine sand to fine gravel, primarily fine to medium silica sand, gravel consisted of shales, carbonates, detrital lignites and igneous and metamorphic rock fragments
140-165	SAND & GRAVEL	Fine sand to medium gravel, primarily coarse sand and fine gravels, moderately sorted, gravel was subrounded to rounded, primarily quartz and shales with some carbonates, shales were tablet form
165-180	SHALE	Clayey, black to brown indurated to soft, plastic to brittle with layers of bentonite

150-061-17AAA

NDSWC 15004

Date Completed:	07/30/2003	Purpose:	Observation Well
L.S. Elevation (ft):	1464	Well Type:	2 in. - PVC
Depth Drilled (ft):	200	Aquifer:	Spiritwood
Screen Int. (ft.):	158-163	Data Source:	
Completion Info:	Levels ran 10/1/2003 by NDSWC.		

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-9	SAND	Fine to medium, brn, siliceous, oxidized
9-13	SAND	fine to medium, moderately sorted, gray, unoxidized
13-15	SAND & GRAVEL	Fine sand to fine gravel, predominately coarse sand and fine gravel, poorly sorted, consisting of shales, carbonates, igneous and metamorphic rock fragments
15-150	TILL	Clay, silty, sandy, pebbly, gray to brown, very firm, plastic, with high clay content, rocks @ 36-37 feet and 143-144 feet, and sand @ 148 - 149 feet
150-188	SAND & GRAVEL	Fine sand to medium gravel, predominately coarse sand and fine gravel, moderately sorted, moderately to poorly sorted consisting mostly of shales along with silicates and carbonates with detrital lignites grains are subrounded to rounded with exception of shale which is more angular
188-200	SHALE	black to brown, soft to indurated brittle to plastic clay (Pierre Shale)

150-061-17DCC

NDSWC 9

Date Completed: 09/25/1985 Purpose: Observation Well
 L.S. Elevation (ft): 1441 Well Type: 2 in. - PVC
 Depth Drilled (ft): 50 Aquifer: Warwick
 Screen Int. (ft.): 30-35 Data Source:

USGS Import

Depth (ft)	Unit	Description
0-1	TOPSOIL	Sandy black
1-12	SAND	Fine medium coarse, yellowish brown oxidized
12-27	CLAY	Silty olive gray till
27-34	SAND	Fine medium coarse
34-50	GRAVEL	Fine medium coarse with 30% sand shale and quartz pebbles some reddish
50-0	CLAY	Silty olive gray till

150-061-17DDD

NDSWC 5365

Date Completed: 08/04/1969 Purpose: Observation Well
 L.S. Elevation (ft): N/A Well Type: 1.25 in. - PVC
 Depth Drilled (ft): 200 Aquifer: Spiritwood
 Screen Int. (ft.): 177-183 Data Source:

SEE DOWNEY, 1971, would not pump OR 91

Depth (ft)	Unit	Description
1-22	CLAY	Very sandy, silty, pebbly, slightly gravelly, dusky yellow to moderate yellowish-brown, slightly to moderately cohesive, slightly plastic, oxidized (till)
22-55	CLAY	(A few thin gravelly sand layers lower 5-6' of section) Silty, slightly sandy, pebbly, a few cobbles, olive gray, moderately cohesive, moderately plastic, calcareous (till)
55-60	GRAVEL	Sandy, fine to medium (mostly fine), angular to subrounded, fair sorting, predominantly carbonates (limestone and dolostone), some granitics and shale, not taking much water, caving slightly
60-69	CLAY	Very silty, interbedded with thin sand layers, pebbly, olive gray, cohesive, moderately plastic, calcareous (till)
69-89	CLAY	Very silty, olive gray to medium dark gray with occasional light olive gray laminations, cohesive, plastic, very calcareous (Fluvial sediment) lignitic
89-106	CLAY	Silty, slightly sandy, pebbly, olive gray to medium dark gray, cohesive, slightly plastic, moderately calcareous, lignitic (till)
106-135	CLAY	Very silty, olive gray to medium dark gray to grayish-black-a few light olive gray laminations, very cohesive, drills like it is slightly indurated, some reworked Pierre fragments, highly calcareous (till)
135-197	GRAVEL	Slightly sandy, silty, interbedded with thin clay layers, fine to coarse (mostly fine) angular to subrounded poor to fair sorting, some quartzite, siltstone and chalcedony approximately 40-60% carbonates (limestone and dolostone), remainder mostly shale and granitics, small amount of lignite, not taking much water, not caving in – some cobbles and boulders lower 2-3' of section
197-200	SHALE	Siliceous, clayey, grayish-black, non-calcareous, bedded, bentonitic, moderately indurated (Pierre Formation)

150-061-18BBB

NDSWC 5364

Date Completed: 07/29/1969 Purpose: Test Hole
 L.S. Elevation (ft): N/A
 Depth Drilled (ft): 300
 Remarks: SEE DOWNEY, 1971

Depth (ft)	Unit	Description
0-0.5	TOPSOIL	Sandy, silty, clayey, moderate brown
0.5-9	SAND	Silty, slightly clayey, very fine- to medium-grained, angular to subrounded, moderately well-sorted, mostly quartz and granitic grains, oxidized to approximately 5'
9-60	CLAY	Silty, moderately to slightly sandy, pebbly, occasional cobbles and boulders, olive gray, slightly to moderately cohesive, slightly to moderately plastic, calcareous (till), rough drilling
60-240	CLAY	Silty, very slightly sandy, pebbly, a few cobbles, olive gray, cohesive, plastic, calcareous (till)
240-247	CLAY	Very silty, slightly sandy, olive gray to medium gray, very plastic, cohesive, very calcareous (Fluvial sediment)
247-269	GRAVEL	Slightly sandy, slightly clayey, silty, fine to coarse (mostly fine) angular to subrounded, poorly sorted, mostly carbonates and shale, some granitics, poor samples, not taking water
269-274	CLAY	Very silty, occasional thin sand layers, olive gray to medium gray, cohesive, very plastic, calcareous (Fluvial sediment)
274-300	SHALE	Siliceous, moderately clayey, grayish-black to medium dark gray, moderately indurated, non-calcareous, bedded, bentonitic (Pierre Formation)

150-061-18BBB2

Date Completed: 00/00/00 Purpose: Unknown
 L.S. Elevation (ft): 1458 Well Type: 0 in. - Unknown
 Depth Drilled (ft): 15 Aquifer: Warwick
 Screen Int. (ft.): 0-15 Data Source:
 Remarks: USGS Import

150-061-18BBB3

NDSWC 15002

Date Completed: 07/29/2003 Purpose: Observation Well
 L.S. Elevation (ft): 1458 Well Type: 2 in. - PVC
 Depth Drilled (ft): 339 Aquifer: Spiritwood
 Screen Int. (ft.): 292-302 Data Source:
 Completion Info: Levels ran 10/6/2003 by NDSWC.

Depth (ft)	Unit	Description
0-1	TOPSOIL	Black
1-7	SAND	Fine to medium, brown (oxidized)
7-9	CLAY	Silty, gray, unoxidized (Lacustrine)
9-21	SAND & GRAVEL	Fine sand to medium gravel, consisting mostly of shales with carbonates, igneous and metamorphic rock fragments
21-31	TILL	Clay, silty, sandy, pebbly, gray (TILL)
31-36	CLAY	Silty, brown, no inclusions, plastic (Lacustrine)
36-46	TILL	Clay, silty, sandy, pebbly, gray (Till)
46-55	CLAY	Clay, silty, brown, no inclusions, plastic (Lacustrine)
55-135	TILL	Clay, silty, sandy, pebbly, gray w/rocks at 65 feet and 98 feet
135-137	GRAVEL	Fine to medium

137-211	TILL	Clay, silty, sandy, pebbly, gray
211-230	TILL	Clay, silty, sandy, pebbly, gray w/interbedded gravel (medium, primarily shale)
230-231	ROCK	
231-236	TILL	Clay, silty, sandy, pebbly, gray w/interbedded gravel (medium, primarily shale)
236-286	TILL	Clay, silty, sandy, pebbly, gray w/interbedded gravel @ 243'-244' and Rock @ 277'-278'
286-290	GRAVEL	medium to coarse, and rocks
290-291	TILL	Clay, silty, sandy, pebbly, gray
291-297	GRAVEL	Medium to coarse and rocks, very tough drilling tripped out to put rock bit on
297-339	GRAVEL	Medium to coarse gravel w/interbedded clay (silty, sandy, pebbly, Till), Drilling got very tough, got stuck on a granite boulder @ 340 feet and rock bit was worn out, did not make it to bedrock

150-061-18DAA
NDSWC 15003

Date Completed:	07/30/2003	Purpose:	Observation Well - Plugged
L.S. Elevation (ft):	1443	Well Type:	2 in. - PVC
Depth Drilled (ft):	265	Aquifer:	Spiritwood
Screen Int. (ft.):	168-173	Data Source:	
Completion Info:	Levels ran 10/1/2003 by NDSWC.		

Depth (ft)	Unit	Description
0-2	TOPSOIL	Black
2-13	SAND	Fine to medium, brown, (oxidized)
13-19	SAND	Fine to coarse, gray (unoxidized)
19-26	CLAY	Silty, brittle to plastic, brown to gray, no inclusions (Lacustrine)
26-36	SAND & GRAVEL	Fine sand to medium gravel, even mixture of shales, carbonates, and igneous and metamorphic rock fragments
36-103	TILL	Clay, silty, sandy, pebbly, gray, w/rocks @ 42-43 feet and 67-68 feet
103-106	CLAY	Silty, gray, firm to brittle, no inclusions (Lacustrine)
106-115	SAND	Fine to medium, predominately fine siliceous sand, medium sand consisting mostly of shales
115-129	TILL	Clay, silty, sandy, pebbly, gray
129-169	SAND & GRAVEL	Fine sand to medium gravel, predominately coarse sand and fine gravel, moderately sorted, subrounded to rounded
169-251	GRAVEL	Sandy, over 60% gravel, medium to coarse, moderately sorted, rounded to subrounded, mixture of shales, carbonates, and igneous and metamorphic rock fragments, shale in tablet form,
251-265	SHALE	Clayey, gray, firm and brittle (Bedrock Pierre Shale)

150-061-19BBB

NDSWC 5690

Date Completed: 06/06/1970 Purpose: Observation Well
 L.S. Elevation (ft): 1459.43 Well Type: 1.25 in. - ABS
 Depth Drilled (ft): 300 Aquifer: Spiritwood
 Screen Int. (ft.): 175-181 Data Source:
 SEE DOWNEY, 1971

Depth (ft)	Unit	Description
0-1	TOPSOIL	clay, sandy, silty, grayish-black
1-8	SAND	clayey, silty, gravelly, oxidized
8-63	TILL	clay, silty, sandy, pebbly, olive-gray, calcareous
63-67	GRAVEL	sandy, oxidized
67-95	CLAY	silty, olive-gray, very cohesive, plastic, highly calcareous
95-136	TILL	clay, silty, sandy, gravelly, olive-gray
136-291	GRAVEL	sandy, silty
291-300	SHALE	moderately calcareous, gray specks (Niobrara Formation)

150-061-25DDD

NDSWC 2976

Date Completed: 06/18/1968 Purpose: Test Hole
 L.S. Elevation (ft): N/A
 Depth Drilled (ft): 100
 Remarks: SEE DOWNEY, 1971

Depth (ft)	Unit	Description
1-20	CLAY	Silty, sandy, pebbly, moderate yellowish-brown, oxidized, slightly to moderately cohesive, slightly plastic, (till)
20-48	CLAY	Silty, slightly sandy, (a few limestone and granite cobbles present) olive gray to medium gray, cohesive, slightly plastic, limestone, shale and lignite fragments in clay matrix (till)
48-56	CLAY	Very silty, olive gray with a few light olive gray laminations, moderately cohesive, slightly plastic, calcareous (Fluvial sediment)
56-84	SHALE	Boulders and cobbles, with limestone, granitic and shale gravel, rough drilling not taking water – possibly fractured Pierre with fractures filled with detrital gravel, or reworked Pierre
84-100	SHALE	Black to grayish-black with an occasional bentonite layer, indurated, very slightly fractured, non-calcareous, (Pierre Formation)

150-061-26DDD

L. Burke

Date Completed: 00/00/00 Purpose: Test Hole
 L.S. Elevation (ft): N/A
 Depth Drilled (ft): 85

Depth (ft)	Unit	Description
0-20	CLAY	Yellow
20-35	GRAVEL	Gravel & rocks
35-65	CLAY	Blue
65-66	GRAVEL	
66-83	CLAY	Blue
83-85	SAND	with water

150-061-28AAA

NDSWC 5366

Date Completed: 08/04/1969 Purpose: Observation Well
L.S. Elevation (ft): N/A Well Type: 1.25 in. - PVC
Depth Drilled (ft): 200 Aquifer: Spiritwood
Screen Int. (ft): 157-160 Data Source:
SEE DOWNEY, 1971

Depth (ft)	Unit	Description
1-10	CLAY	Silty, sandy, pebbly, dusky yellow to moderate yellowish-brown, cohesive, slightly plastic, oxidized (till)
10-100	CLAY	Silty, slightly sandy, pebbly, (occasional cobbles and boulders) olive gray, cohesive, slightly plastic, calcareous (till) fine sand from 32' - 36', very clayey and silty, slightly oxidized
100-108	CLAY	Very silty, olive gray to medium dark gray with light olive gray laminations, cohesive, plastic, calcareous (Fluvial sediment)
108-116	SAND	Clayey, silty, very fine- to medium-grained, angular to subrounded, fair sorting, mostly quartz, some shale, lignite and granitics
116-138	CLAY	Silty, slightly sandy, pebbly, occasional cobbles, olive gray, cohesive, slightly plastic, calcareous (till)
138-145	SAND	Very fine- to very coarse-grained, slightly gravelly, angular to subrounded, moderately well-sorted, mostly quartz, some shale, lignite, granitics and carbonates, taking small amount of water
145-175	GRAVEL	Sandy, fine to medium, a few cobbles lower 2' -3' of section, angular to subrounded, fair sorting, mostly carbonates and shale, some granitics, lignite, siltstone and quartzite, taking small amount of water, not caving
175-200	SHALE	Siliceous, moderately clayey, grayish-black with light olive gray bentonitic laminations, non-calcareous, moderately indurated. bedded (Pierre Formation)

150-061-28CCA

R. Halvorson

Date Completed: 00/00/00 Purpose: Test Hole
L.S. Elevation (ft): N/A
Depth Drilled (ft): 102

Depth (ft)	Unit	Description
0-25	CLAY	Silty
25-37	CLAY	Blue
37-102	SHALE	

150-061-29AAA

NDSWC 8

Date Completed: 9/1985 Purpose: Observation Well
 L.S. Elevation (ft): 1457 Well Type: 2 in. - PVC
 Depth Drilled (ft): 110 Aquifer: Not Yet Entered
 Screen Int. (ft.): 65-70 Data Source:

Depth (ft)	Unit	Description
0-1	TOPSOIL	Sandy black
1-3	SAND	Fine medium coarse oxidized
3-12	CLAY	Sandy, yellowish brown till
12-40	CLAY	Olive gray till lignitic with rocks
40-99	SAND	Olive gray fine- medium lignitic about 10%
99-110	CLAY	Silt olive gray lacustrine

150-061-29BAA

NDSWC 7

Date Completed: 09/25/1985 Purpose: Test Hole
 L.S. Elevation (ft): N/A
 Depth Drilled (ft): 140

Depth (ft)	Unit	Description
0-1	TOPSOIL	Silty and sandy, black
1-9	CLAY	Silty yellowish brown oxidized till lots of rocks lignitics
9-18	CLAY	Silty olive brown till about 50% gravel sand and rocks
18-21	SAND	Fine, medium coarse
21-47	CLAY	Silty olive gray till
47-78	CLAY	Silty olive gray lacustrine
78-82	SAND	Fine medium coarse
82-118	CLAY	Silty olive gray lacustrine
118-140	SAND	Fine medium coarse

150-061-29BBB

NDSWC 6

Date Completed: 09/24/1985 Purpose: Test Hole
 L.S. Elevation (ft): N/A
 Depth Drilled (ft): 140

Depth (ft)	Unit	Description
0-1	TOPSOIL	Silty black
1-10	SAND	Fine medium coarse brown oxidized
10-12	CLAY	Silty pebbly yellowish brown oxidized rocky
12-49	CLAY	Silty olive gray till
49-133	CLAY	Silt olive gray
133-140	GRAVEL	Fine medium coarse 30% sand

150-061-30ABB

NDSWC 2973

Date Completed:	06/18/1968	Purpose:	Observation Well
L.S. Elevation (ft):	1458.5	Well Type:	1.25 in. - ABS
Depth Drilled (ft):	380	Aquifer:	Spiritwood
Screen Int. (ft.):	237-240	Data Source:	NDSWC

SEE DOWNEY, 1971

Depth (ft)	Unit	Description
1-10	CLAY	Silty, sandy, pebbly, moderate yellowish-brown, slightly to moderately cohesive, slightly plastic, limestone and shale grains in clay matrix oxidized (till)
10-54	CLAY	Silty, sandy, pebbly, olive gray, cohesive to moderately cohesive, slightly plastic, limestone, shale and granitic fragments in clay matrix, a few limestone and granite cobbles (till)
54-98	CLAY	Very silty, olive gray with a few light olive gray laminations, cohesive, slightly plastic, calcareous (Fluvial sediment)
98-106	CLAY	Silty, sandy, (a few limestone pebbles) dark gray, cohesive to moderately cohesive, slightly plastic, calcareous, numerous quartz and limestone fragments in clay matrix, (till)
106-128	CLAY	Very silty, (very sandy) olive-gray with a few light olive-gray laminations, cohesive, very slightly plastic, calcareous (Fluvial sediment)
128-147	SAND	Fine to coarse-grained, subangular to rounded, moderately well-sorted, predominantly quartz with some limestone and lignite
147-154	CLAY	Very silty, sandy, olive gray, a few light olive gray laminations, moderately cohesive, plastic, (Fluvial sediment)
154-158	SAND	Gravelly (approximately 25-35% fine to medium, subangular to subrounded gravel), fine to very coarse-grained, subangular to rounded, predominantly quartz with limestone and lignite and a few granitic grains (taking small amount of water)
158-212	GRAVEL	Sandy (approximately 20-30% medium to very coarse-grained, subangular to subrounded sand), fine to coarse, angular to rounded, moderately well sorted, mostly limestone, shale, lignite, and reddish granitics, with some quartz and chalcedony, taking some drilling water, but not caving
212-258	SAND	Slightly gravelly, fine to very coarse-grained, (predominantly medium to coarse-grained) angular to subrounded, predominantly quartz with some limestone, lignite and shale, taking some water
258-282	GRAVEL	Sandy (approximately 25-35% sand as above), fine to coarse, angular to subrounded, fair sorting, predominantly shale with some limestone, chalcedony, and limestone, also some lignite, taking some water, not caving
282-320	CLAY	Very silty, olive gray with light olive gray laminations, calcareous, cohesive, moderately plastic (Fluvial sediment)
320-380	SHALE	Medium dark gray to dark gray, with numerous brownish-gray concretions, very slightly calcareous, indurated, occasional thin carbonate layers (Niobrara Formation)?

150-061-31CAD

O. Hoveskeland

Date Completed: 00/00/00 Purpose: Test Hole
 L.S. Elevation (ft): N/A
 Depth Drilled (ft): 101
 Depth (ft) Unit Description

0-40	CLAY	Hard, blue
40-101	CLAY	Soft, blue

150-061-36AAC

U. S. Air Force

Date Completed: 00/00/00 Purpose: Test Hole
 L.S. Elevation (ft): N/A
 Depth Drilled (ft): 130
 Depth (ft) Unit Description

0-12	CLAY	Sandy
12-24	SAND	Fine, silty
24-35.5	CLAY	Silty
35.5-40.5	CLAY	Sandy, gravelly
40.5-79	CLAY	Silty
79-130	SHALE	

150-062-01AAC

NDSWC 15062

Date Completed: 09/30/2003 Purpose: Observation Well
 L.S. Elevation (ft): 1461 Well Type: 2 in. - PVC
 Depth Drilled (ft): 290 Aquifer: Spiritwood
 Screen Int. (ft.): 265-270 Data Source:
 Completion Info: MP elevation determined from measurement on 10/8/3 from 150-061-01AAD.

Depth (ft) Unit Description

0-1	TOPSOIL	Black
1-31	TILL	Clay, silty, sandy, pebbly inclusions, yellowish-brown, oxidized w/interbedded coarse sand and gravel, angular to subangular, mostly carbonates, till w/no interbedding from 9-12 feet, unoxidized gray till from 12-29 feet, rock from 30-31 feet
31-48	CLAY	Slightly silty, massive, gray, firm, no inclusions, very plastic (Lacustrine)
48-49	SAND	Fine
49-91	TILL	Clay, silty, sandy, pebbly inclusions, gray,
91-123	CLAY	Slightly silty, massive, gray, firm, no inclusions, very plastic (Lacustrine)
123-136	SAND	Fine to medium w/detrital lignites
136-143	CLAY	Slightly silty, massive, gray, firm, no inclusions, very plastic (Lacustrine)
143-287	SAND & GRAVEL	Fine sand to coarse gravel, predominately fine to medium gravel, coarser w/depth, poor to moderately sorted, subangular to rounded, 50% shale, 20% quartz, 30% igneous and metamorphic rock fragments w/detrital lignites, shales were in tablet form
287-290	SHALE	Clayey, very firm, slightly indurated, gray

150-062-01AAD

NDSWC 15061

Date Completed: 09/30/2003 Purpose: Observation Well
 L.S. Elevation (ft): 1461 Well Type: 2 in. - PVC
 Depth Drilled (ft): 290 Aquifer: Spiritwood
 Screen Int. (ft.): 265-270 Data Source:

Completion Info: Levels ran 10/6/2003 by NDSWC.

Depth (ft)	Unit	Description
0-1	TOPSOIL	Black
1-43	TILL	Clayey, sandy, silty, pebbly w/inclusions, oxidized and more sandy from 1 to 15 feet yellowish brown, rock at 15 to 16 feet, gray and unoxidized and more silty from 16 to 43 feet
43-58	CLAY	Slightly silty, massive, gray, no inclusions, firm, very plastic, tight
58-106	TILL	Clayey, silty, sandy, pebbly inclusions, gray, fine sand from 62-64 feet and 84-87 feet with detrital lignites
106-122	CLAY	Slightly silty, massive, gray, no inclusions, very firm, plastic, tight (Lacustrine)
122-135	SAND	Fine
135-152	CLAY	Slightly silty, massive, gray, no inclusions, very firm, plastic, tight, interbedded fine sand from 148-150 feet (Lacustrine)
152-157	SAND & GRAVEL	Fine sand to medium gravel, predominately coarse sand, moderate sorting, subangular to rounded, consisting of quartz, shale, igneous and metamorphic rock fragments
157-163	TILL	Clay, silty, and sandy, pebbly inclusion, gray
163-290	SAND & GRAVEL	Fine sand to coarse gravel, predominately fine to medium gravel, coarser with depth, poor to moderately sorted, subangular to rounded, 50% quartz, 20% shale, 30% igneous and metamorphic rock fragments, with detrital lignites

150-062-01CDC

NDSWC 15000

Date Completed: 07/28/2003 Purpose: Observation Well
 L.S. Elevation (ft): 1473 Well Type: 2 in. - PVC
 Depth Drilled (ft): 300 Aquifer: Spiritwood
 Screen Int. (ft.): 258-263 Data Source:

Completion Info: Levels ran 10/1/2003 by NDSWC.

Depth (ft)	Unit	Description
0-1	TOPSOIL	Black
1-10	SAND & GRAVEL	Oxidized
10-34	TILL	Medium gray, moderately firm, silty, sandy, pebbly, clay matrix
34-110	CLAY	Slightly silty, medium gray, tight, massive, mostly clayey, slightly indurated, moderately firm, no inclusions, silty zones (dark brown) 2 to 5 feet thick (Lacustrine)
110-137	TILL	Clay, very tight, clayey similar to above, but tighter w/inclusions
137-163	SAND	Sand, very fine to medium, smooth fast drilling, no chatter, poor sample recovery, one foot lenses of silty clay present throughout
163-279	SAND & GRAVEL	Fine sand to medium gravel, predominately coarse sand, poor to moderately sorted, angular to round, predominately subrounded, 25-30% shale, 40% quartz, remainder metamorphic and igneous rock fragments, significant lignite, becomes coarser below 196 feet,
279-300	SHALE	Clayey, plastic to slightly brittle, dark gray, white bentonitic laminations, firm, slow drilling (Bedrock Pierre Formation)

150-062-01DDD

USGS

Date Completed:	00/00/00	Purpose:	Observation Well
L.S. Elevation (ft):	1469	Well Type:	0 in. -
Depth Drilled (ft):	8.1	Aquifer:	Warwick
Screen Int. (ft.):	0-8.1	Data Source:	

USGS Import

150-062-01DDD2

Spirit Lake Nation

Date Completed:	00/00/00	Purpose:	Observation Well
L.S. Elevation (ft):	N/A	Well Type:	2 in. - PVC
Depth Drilled (ft):	0	Aquifer:	Warwick
Screen Int. (ft.):	0-0	Data Source:	

150-062-03ACB

USGS

Date Completed:	00/00/00	Purpose:	Observation Well
L.S. Elevation (ft):	1474	Well Type:	0 in. -
Depth Drilled (ft):	10	Aquifer:	Warwick
Screen Int. (ft.):	0-10	Data Source:	

USGS Import

150-062-03ACBB

USGS

Date Completed:	00/00/00	Purpose:	Observation Well
L.S. Elevation (ft):	1475.07	Well Type:	0 in. -
Depth Drilled (ft):	18	Aquifer:	Warwick
Screen Int. (ft.):	0-18	Data Source:	

USGS Import

150-062-03CCC

NDSWC 14999

Date Completed:	07/28/2003	Purpose:	Observation Well
L.S. Elevation (ft):	1476	Well Type:	2 in. - PVC
Depth Drilled (ft):	190	Aquifer:	Spiritwood
Screen Int. (ft.):	155-160	Data Source:	

Completion Info: Levels ran 10/1/2003 by NDSWC.

Depth (ft)	Unit	Description
0-1	TOPSOIL	Black
1-17	TILL	Clay, sandy, silty, pebbly, w/inclusions, yellowish brown, oxidized
17-36	SAND	Fine to coarse, predominately medium
36-41	TILL	Same as above, gray, unoxidized
41-71	CLAY	Silty, smooth, no inclusions, medium gray, drilled fairly slow (Lacustrine)
71-77	TILL	as above
77-82	SAND & GRAVEL	Fine sand to coarse gravel, predominately fine gravel, poor sample recovery
82-116	TILL	as above, sand & gravel 85-86 feet
116-121	SAND	Predominately medium, 30-35% consisted of shale
121-130	TILL	Same as above
130-169	SAND	Very fine to coarse, some gravelly zones, 1-2 foot zones of detrital lignites scattered throughout this section

169-190 SHALE Clayey to brittle, dark gray to black, evidence of bentonitic layers (grayish white cuttings), (Bedrock, Pierre Formation)

150-062-03DDD

NDSWC 11321

Date Completed: 08/31/1983 Purpose: Observation Well
 L.S. Elevation (ft): 1473.19 Well Type: 1.25 in. - PVC
 Depth Drilled (ft): 200 Aquifer: Spiritwood
 Screen Int. (ft.): 168-173 Data Source:

Depth (ft)	Unit	Description
0-1	TOPSOIL	dark brown, sandy
1-11	SAND	yellowish brown, fine to very coarse sand oxidized. largely medium sand, moderately well sorted
11-15	SAND & GRAVEL	medium sand to medium gravel, poorly sorted, angular to subrounded, 40% silicates, 30 % carbonates, 30 % shale, unoxidized fluvial sediments
15-90	TILL	olive gray, silty sandy with pebbles, soft crumbly, rocks at 31 to 32 feet and 33 to 34 feet, rock from 44 to 45 feet, sand and gravel from 68 to 69 feet
90-106	SAND & GRAVEL	moderately well sorted angular to subrounded, 40 % silicates, 30 % shale, and 30 % carbonates, clay from 104 to 106
106-111	SAND & GRAVEL	as above
111-114	CLAY	olive gray
114-122	SAND & GRAVEL	as above
122-124	CLAY	olive gray
124-127	SAND & GRAVEL	as above
127-129	CLAY	olive gray
129-160	SAND & GRAVEL	with angular lignite, shaly sand and gravel, poorly sorted chatters
160-182	SAND	coarse sand to fine gravel, shaly and lignitic layers, moderately well sorted, rounded to angular, 30 % silicates, 20 % carbonates, 30 % shale, 20 % lignite
182-200	SHALE	black, hard interbedded with dark gray clay and whitish gray bentonitic clay, Pierre Shale, bedrock

150-062-03DDD2

Spirit Lake Nation

Date Completed: 00/00/00 Purpose: Observation Well
 L.S. Elevation (ft): N/A Well Type: 2 in. - PVC
 Depth Drilled (ft): 0 Aquifer: Warwick
 Screen Int. (ft.): 0-0 Data Source:

150-062-04BBA

Gene Gleason

Date Completed: 07/22/1977 Purpose: Observation Well
 L.S. Elevation (ft): 1471.5 Well Type: 1.25 in. - PVC
 Depth Drilled (ft): 70 Aquifer: Warwick
 Screen Int. (ft.): 50-56 Data Source:

Remarks: Next to Irrigation well.
 Gleason, privot obs. well

Depth (ft)	Unit	Description
0-0.5	TOPSOIL	SILTY BLACK

0.5-21	SAND	FINE, MEDIUM TO COARSE
21-37	SAND	FINE, MEDIUM TO COARSE 10% GRAVEL
37-56	SAND	FINE MEDIUM TO COARSE 35% GRAVEL LOTS OF SHALE GRAVEL
56-70	CLAY	SANDY, SILTY, OLIVE GRAY

150-062-04BBA2

Gene Gleason

Date Completed:	00/00/00	Purpose:	Irrigation Well
L.S. Elevation (ft):	1472	Well Type:	0 in. - Unknown
Depth Drilled (ft):	0	Aquifer:	Warwick
Screen Int. (ft.):	0-45	Data Source:	

Depth (ft)	Unit	Description
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0-0	see 04BBA for log	
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150-062-04BBB

NDSWC 5298

Date Completed:	05/17/1978	Purpose:	Test Hole
L.S. Elevation (ft):	1472		
Depth Drilled (ft):	140		
Depth (ft)	Unit	Description	

0-39	SAND & GRAVEL	sand, fine to very coarse, mostly coarse, subangular to rounded, well sorted, 60 % quartz, 30 % carbonates, 10 % shale and granites, lignitic, gravel, fine to medium, moderately sorting, subrounded mostly shale some carbonates and lignites, oxidized to about 13 feet caving heavily, mixed 1 bag of mud
39-92	TILL	sandy, silty with pebbles, medium dark to olive gray clay, tight, cohesive, very plastic, with fine grained sand layers
92-111	CLAY	silty, light olive gray, tight cohesive, plastic

150-062-04CCC

NDSWC 11319

Date Completed:	08/31/1983	Purpose:	Test Hole
L.S. Elevation (ft):	1472		
Depth Drilled (ft):	60		
Depth (ft)	Unit	Description	

0-1	TOPSOIL	
1-9	SAND	medium sand to fine gravel oxidized
9-29	TILL	pebbly clay loam, crumbly, cohesive
29-60	SHALE	black with dark gray clay and whitish gray bentonitic clay, Pierre Shale, bedrock

150-062-04CCC2

USGS

Date Completed: 00/00/00 Purpose: Observation Well
 L.S. Elevation (ft): 1475 Well Type: 0 in. -
 Depth Drilled (ft): 13.1 Aquifer: Warwick
 Screen Int. (ft.): 0-13.1 Data Source:
 USGS Import

150-062-06BBC

NDSWC 5299

Date Completed: 05/17/1978 Purpose: Observation Well
 L.S. Elevation (ft): 1470.1 Well Type: 1.25 in. - ABS
 Depth Drilled (ft): 160 Aquifer: Spiritwood
 Screen Int. (ft.): 123-126 Data Source:
 Slow pumper

Depth (ft)	Unit	Description
0-57	SAND	fine to coarse, predominantly medium to coarse, subrounded to rounded, well sorted, 80 % quartz, 15 % carbonates, 5 % shale, 5 % lignite, taking water, mixed 1 bag of mud at 30 feet
57-96	CLAY	very silty, slightly sandy, medium to dark to brownish gray, very soft, smooth, poor sample return, some organics
96-129	GRAVEL	fine to medium with some coarse to very coarse sand, subangular to subrounded, well sorted, mostly shale with some carbonates, about 10 % quartz, mixed 1 mud at 120 feet coarse gravel after 100 feet
129-160	SHALE	black to grayish black, hard, tight, brittle, non-calcareous, Pierre Formation

150-062-06DDA

USGS

Date Completed: 00/00/00 Purpose: Observation Well
 L.S. Elevation (ft): 1473 Well Type: 2 in. - PVC
 Depth Drilled (ft): 23 Aquifer: Warwick
 Screen Int. (ft.): 10.15-16.05 Data Source:
 USGS Import

150-062-07CCC

NDSWC 20

Date Completed: 10/01/1985 Purpose: Observation Well
 L.S. Elevation (ft): 1465 Well Type: 2 in. - PVC
 Depth Drilled (ft): 40 Aquifer: Warwick
 Screen Int. (ft.): 27-33 Data Source:
 USGS Import

Depth (ft)	Unit	Description
0-1	TOPSOIL	silty, black
1-20	GRAVEL	fine to coarse, about 20% sand
20-33	SAND	fine to coarse, 10% gravel
33-38	CLAY	sandy, silty, olive gray
38-40	TILL	clay, silty, olive gray with a few rocks

150-062-07DDA

NDSWC 19

Date Completed: 10/01/1985 Purpose: Observation Well
 L.S. Elevation (ft): 1474.33 Well Type: 2 in. - PVC
 Depth Drilled (ft): 80 Aquifer: Warwick
 Screen Int. (ft.): 50-56 Data Source:

USGS Import

Depth (ft)	Unit	Description
0-1	TOPSOIL	silty, black
1-40	SAND	fine to coarse, about 20% gravel
40-62	CLAY	sandy, silty, olive gray
62-80	CLAY	silty, olive gray

150-062-10DDD

NDSWC 11320

Date Completed: 08/31/1983 Purpose: Observation Well
 L.S. Elevation (ft): 1473.74 Well Type: 1.25 in. - PVC
 Depth Drilled (ft): 200 Aquifer: Spiritwood
 Screen Int. (ft.): 168-173 Data Source:

Depth (ft)	Unit	Description
0-1	TOPSOIL	dark brown, sandy
1-8	SAND	yellowish brown, fine to medium, well sorted, oxidized windblown sand
8-18	SAND & GRAVEL	medium sand to granule gravel, 50 % silicates, rounded to subrounded, 30 % shale, angular to subrounded, 20 % carbonates, angular to rounded, moderately well sorted
18-62	CLAY	olive gray pebbly loam, cohesive, crumbly, nonplastic, till, lense of sand from 51 to 52 feet
62-92	CLAY	olive gray, slightly silty clay, cohesive, plastic, drills smooth
92-101	TILL	olive gray, pebbles, clay loam
101-108	CLAY	olive gray slightly silty clay
108-114	SAND & GRAVEL	well sorted, largely very coarse sand to granule gravel, 40 % shale, angular to subrounded, 40 % silicates, subrounded to rounded, 20 % carbonates, angular to rounded
114-116	CLAY	olive gray, slightly silty
116-122	SAND & GRAVEL	interbedded with olive gray silty clay
122-140	TILL	olive gray, interbedded with lignite and sand and gravel
140-160	SAND	fine to medium, well sorted, rounded to subrounded
160-162	CLAY	gray, silty
162-192	SAND & GRAVEL	moderately well sorted, 20 % lignite and shale, 20 % carbonates, and 60 % silicates,
192-200	SHALE	black, hard, with layers of gray greasy clay, bentonitic

150-062-10DDD2

USGS

Date Completed: 00/00/00 Purpose: Observation Well
 L.S. Elevation (ft): 1474 Well Type: 0 in. -
 Depth Drilled (ft): 10 Aquifer: Warwick
 Screen Int. (ft.): 0-10 Data Source:

USGS Import

150-062-12BBB

NDSWC 11322

Date Completed: 09/01/1983 Purpose: Observation Well -
 Destroyed
 L.S. Elevation (ft): 1477 Well Type: 1.25 in. - PVC
 Depth Drilled (ft): 240 Aquifer: Spiritwood
 Screen Int. (ft.): 218-223 Data Source:

Remarks: well destroyed 9/15/87

Depth (ft)	Unit	Description
0-1	TOPSOIL	dark brown, sandy
1-10	SAND	yellowish brown, fine to medium, oxidized, windblown
10-11	SAND	gray, fine to coarse, unoxidized
11-21	CLAY	olive gray, pebbly, clay loam, cohesive, crumbly
21-28	CLAY	olive gray, very sandy, pebbles, clay loam, soft to cohesive, crumbly, rock at 27 to 28 feet
28-32	CLAY	olive gray, pebbly clay loam, cohesive, plastic, very hard till
32-104	CLAY	olive gray, slightly silty, massive, hard, plastic, cohesive, sticky, lake clay
104-108	SAND	medium sand to fine gravel, shaly, fluvial
108-111	CLAY	dark gray, slightly silty, massive clay, hard, plastic, cohesive, sticky, lake clay
111-130	CLAY	dark gray, very pebbly clay loam, hard, plastic, cohesive, sticky, till
130-132	SAND	gray, silty, fine to medium,
132-136	CLAY	dark gray, pebbles, hard, plastic, cohesive, sticky, till
136-148	SAND	gray very fine to fine, silty
148-158	CLAY	dark gray, slightly silty
158-169	SAND	gray, very fine to medium, lots of lignite and wood fragments
169-184	SAND & GRAVEL	medium sand to medium gravel, moderately well sorted, 60 % silicates, rounded to subrounded, 30 % shale and lignite, subrounded to angular and 10 % carbonates, rounded to subrounded, average grain size is coarse sand
184-232	SAND & GRAVEL	coarse sand to medium gravel, moderately well sorted except for large coarse gravel sized shale fragments average grain size is granule gravel, 50 % silicates, rounded to subrounded, 30 % shale, angular and 10 % carbonates, subrounded
232-240	SHALE	black to dark gray, hard shale with layers of dark gray clay, Pierre Shale, bedrock

150-062-12CAC

NDSWC 15001

Date Completed: 07/29/2003 Purpose: Observation Well
 L.S. Elevation (ft): 1471 Well Type: 2 in. - PVC
 Depth Drilled (ft): 260 Aquifer: Spiritwood
 Screen Int. (ft.): 226-231 Data Source:

Completion Info: Levels ran 10/6/2003 by NDSWC.

Depth (ft)	Unit	Description
0-1	TOPSOIL	Black
1-7	SAND & GRAVEL	Fine sand to fine gravel (oxidized)
7-29	TILL	Silty, sandy, pebbly, gray, clay matrix, moderately firm
29-30	ROCK	
30-36	TILL	Same as above
36-103	TILL	Silty, sandy, pebbly, gray, clay matrix, very firm w/fine to medium sand lenses, sand consisted predominately of shales
103-110	SAND	Fine

110-123	TILL	Same as above (36'-103')
123-136	CLAY	Silty, gray, firm, mostly clayey, slightly indurated, no inclusions (Lacustrine)
136-174	SAND & GRAVEL	Fine sand to fine gravel, w/detrital limite
174-176	CLAY	Silty, gray, firm, mostly clayey, slightly indurated, no inclusions (Lacustrine)
176-185	SAND & GRAVEL	Fine sand to medium gravel, predominately gravel, alot of chatter when drilling, gravel consisted mostly of shales with quartz and igneous rock fragments
185-232	SAND & GRAVEL	Fine sand to coarse gravel, predominately medium to coarse gravel, more chattering
232-241	SAND & GRAVEL	Fine sand to coarse gravel, predominately medium to coarse gravel, w/interbedded layers of clay and detrital lignites
241-260	SHALE	Clayey, plastic to brittle, soft to firm, dark gray w/interbedded bentonitic layers (Bedrock Pierre Formation)

150-062-12CCCB

NDSWC 11323

Date Completed:	09/01/1983	Purpose:	Observation Well - Destroyed
L.S. Elevation (ft):	1472.66	Well Type:	1.25 in. - PVC
Depth Drilled (ft):	230	Aquifer:	Spiritwood
Screen Int. (ft.):	198-203	Data Source:	
Remarks:	1997 WENT TO SAMPLE CAN'T FIND WELL. LAST TIME MESURED WAS IN 1995. MJS		

Depth (ft)	Unit	Description
0-1	TOPSOIL	dark brown, sandy
1-11	SAND	yellowish brown, very fine to medium, oxidized
11-13	SAND	gray, fine to coarse, unoxidized
13-90	CLAY	olive gray, sandy with pebbles, cohesive, crumbly, at 45 feet till becomes dark gray and harder, coarse sand from 63 to 64 feet
90-102	SAND	fine to coarse, mostly medium sand, lignitic, shaly
102-108	SAND	interbedded with clay of till
108-116	CLAY	olive gray, till, hard, cohesive, drills tight
116-133	CLAY	dark gray, sandy, silty, cohesive, plastic, sticky, massive
133-150	SAND	gray, silty, very fine to medium
150-214	SAND & GRAVEL	medium sand to medium gravel, moderately well sorted rounded to subrounded except for angular shale and lignite fragments, 6 % silicates, 30 % shale and lignite, and 10 % carbonates, largely very coarse sand to fine gravel
214-230	SHALE	black to dark gray, interbedded with dark gray, greasy clay and bentonitic clay, Pierre Shale, Bedrock

150-062-13CCC

USGS

Date Completed:	00/00/00	Purpose:	Observation Well
L.S. Elevation (ft):	1461	Well Type:	0 in. -
Depth Drilled (ft):	10.4	Aquifer:	Warwick
Screen Int. (ft.):	0-10.4	Data Source:	
USGS Import			

150-062-13DCC

NDSWC 11

Date Completed: 09/25/1985 Purpose: Test Hole

L.S. Elevation (ft): N/A

Depth Drilled (ft): 140

Depth (ft)	Unit	Description
0-1	TOPSOIL	sandy, brown
1-9	SAND	fine, medium, coarse, brown, oxidized
9-10	GRAVEL	rocks
10-35	TILL	clay, silty, olive gray
35-37	GRAVEL	fine to coarse, warwick
37-115	TILL	clay, silty, olive gray
115-140	GRAVEL	fine to coarse, gray

150-062-13DDD

NDSWC 10

Date Completed: 09/25/1985 Purpose: Test Hole

L.S. Elevation (ft): N/A

Depth Drilled (ft): 140

Depth (ft)	Unit	Description
0-1	TOPSOIL	sandy, black
1-7	SAND	fine, medium, coarse, redish brown, oxidized, similar to warwick found in test hole #9
7-8	ROCK	
8-74	TILL	clay, silty, olive gray
74-93	CLAY	silty, olive gray, lacustrine
93-140	TILL	clay, silty, olive gray

150-062-14DDD1

NDSWC

Date Completed: 00/00/00 Purpose: Test Hole

L.S. Elevation (ft): 1563

Depth Drilled (ft): 40

Remarks: USGS Import Test Hole #12

150-062-14DDD2

NDSWC

Date Completed: 09/26/1985 Purpose: Observation Well

L.S. Elevation (ft): 1463 Well Type: 2 in. - PVC

Depth Drilled (ft): 10 Aquifer: Warwick

Screen Int. (ft.): 5-10 Data Source:

USGS Import Test Hole #12-A

Depth (ft)	Unit	Description
0-1	TOPSOIL	sandy, black
1-12	SAND	fine to coarse, med grey, upper 3' oxidized
12-30	TILL	clay, silty, olive gray
30-34	ROCK	
34-40	TILL	clay, silty, olive gray

150-062-15ABB1

NDSWC 2

Date Completed: 09/23/1985 Purpose: Test Hole

L.S. Elevation (ft): N/A

Depth Drilled (ft): 185

Depth (ft)	Unit	Description
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0-1	TOPSOIL	black, sandy
1-10	SAND	fine to medium, oxidized
10-15	SAND	fine to coarse, 10% gravel
15-16	GRAVEL	gravel and rocks
16-22	TILL	clay, silty, gravely, olive gray, detrital lignite & shales
22-29	SAND	fine to coarse, detrital lignite
29-62	TILL	clay, silty, olive gray, 20% coarse sand (quartz, shale)
62-133	CLAY	silty, olive gray
133-152	CLAY	20% silty and sandy, olive gray, lots of detrital coal
152-160	SAND	fine to coarse, with coal, silty clay
160-173	SAND	fine to coarse
173-180	GRAVEL	about 30% shale
180-185	CLAY	silty, black, Pierre Formation

150-062-15ABB2

NDSWC 2 -A

Date Completed: 09/23/1985 Purpose: Observation Well

L.S. Elevation (ft): 1474.34 Well Type: 2 in. - PVC

Depth Drilled (ft): 31 Aquifer: Warwick

Screen Int. (ft.): 25-31 Data Source:

USGS Import

150-062-15BAA

NDSWC 2279

Date Completed: 07/23/1964 Purpose: Observation Well

L.S. Elevation (ft): 1478 Well Type: 1.25 in. - PVC

Depth Drilled (ft): 189 Aquifer: Spiritwood

Screen Int. (ft.): 168-178 Data Source:

wouldn't pump, see Trapp, 1966 for log

Depth (ft)	Unit	Description
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0-1	TOPSOIL	Sandy, dark brown
1-10	SAND	Medium light brown, well-sorted, subrounded, rusty
10-20	SAND	As above, gray, saturated
20-30	CLAY	Silty to sandy with pebbles, cobbles and boulders, olive gray , moderately soft, cohesive, tight (till)
30-40	TILL	As above, rough and tight
40-50	CLAY	Silty, olive gray, soft, smooth, cohesive, plastic, tight, calcareous
50-60	CLAY	As above
60-70	CLAY	As above
70-80	CLAY	As above
80-90	CLAY	As above
90-100	CLAY	As above
100-110	CLAY	As above
110-120	CLAY	As above
120-130	CLAY	As above-to-gravel, fine to very coarse, mainly limestone, granitic rocks and shale
130-140	GRAVEL	As above

140-150	GRAVEL	As above
150-160	GRAVEL	As above
160-170	GRAVEL	As above-to-shale, olive black, hard, brittle, noncalcareous
170-189	SHALE	As above

150-062-15CDD

NDSWC 3

Date Completed: 09/23/1985 Purpose: Test Hole

L.S. Elevation (ft): N/A

Depth Drilled (ft): 180

Depth (ft)	Unit	Description
0-1	TOPSOIL	silty, sandy, black
1-8	SAND	fine to coarse, oxidized
8-10	GRAVEL	gravel and rocks
10-12	CLAY	silty with yellowish gravel
12-20	TILL	clay, silty, olive gray with rocks
20-21	ROCK	granite
21-72	TILL	clay, silty, olive gray
72-75	SAND	fine to coarse
75-87	TILL	clay, silty, olive gray
87-88	SAND	fine to coarse
88-98	CLAY	silty, olive gray
98-99	SAND	fine to coarse
99-115	CLAY	silty olive gray
115-124	SAND	fine to coarse mixed with clay
124-126	TILL	clay, silty, olive gray
126-140	SAND	fine to coarse with clay layers
140-160	GRAVEL	fine to coarse, about 20% sand, 10% shale gravel
160-180	CLAY	silty, blackish sandy, Bedrock Pierre Shale

150-062-15DDD

NDSWC 5296

Date Completed: 05/16/1978 Purpose: Test Hole

L.S. Elevation (ft): 1463

Depth Drilled (ft): 200

Depth (ft)	Unit	Description
0-9	SAND	fine to very coarse, mostly coarse to very coarse, subangular to subrounded, 50 % quartz, 30 % carbonates and 20 % shale, lignite and granitics, oxidized, taking a little water
9-181	CLAY	sandy, silty, pebbly, medium dark to olive gray, tight, cohesive with abundant shale, very sandy with small sand lenses after 80 feet, till
181-200	SHALE	black to grayish black, tight, brittle, non-calcareous, Pierre Formation, Bedrock

150-062-16AAA

NDSWC 5297

Date Completed:	05/16/1978	Purpose:	Observation Well
L.S. Elevation (ft):	1473.4	Well Type:	1.25 in. - ABS
Depth Drilled (ft):	200	Aquifer:	Spiritwood
Screen Int. (ft.):	152-155	Data Source:	

Depth (ft)	Unit	Description
0-22	SAND	fine to very coarse, mostly coarse to very coarse, subangular to rounded, 60% quartz, 30% carbonates, 10% shale and lignite, moderately to well sorted, with some fine carbonate gravel, oxidized to about 8 feet,
taking some water		
22-137	CLAY	sandy, silty, pebbles, gravelly, medium dark to olive gray, tight, cohesive, very slightly plastic, with some sand and gravel lenses, till, becomes very sandy after 80 feet
137-169	SAND	fine to very coarse, mostly coarse, gravel is fine to medium, cobbles, angular to subrounded, poor sorting, some clay layers, sand and gravel is mostly carbonates and quartz, taking water
169-200	SHALE	grayish black, hard, tight, brittle, non-calcareous, Pierre Formation, bedrock

150-062-16ADD

NDSWC 23

Date Completed:	10/01/1985	Purpose:	Observation Well
L.S. Elevation (ft):	1479.34	Well Type:	2 in. - PVC
Depth Drilled (ft):	40	Aquifer:	Warwick
Screen Int. (ft.):	15-20	Data Source:	

Depth (ft)	Unit	Description
0-1	TOPSOIL	silty, black
1-22	SAND	fine to coarse, about 25% gravel
22-40	TILL	clay,silty, olive gray

150-062-16BBB

NDSWC 21

Date Completed:	10/1985	Purpose:	Observation Well
L.S. Elevation (ft):	1468.09	Well Type:	2 in. - PVC
Depth Drilled (ft):	40	Aquifer:	Not Yet Entered
Screen Int. (ft.):	20-25	Data Source:	

Depth (ft)	Unit	Description
0-1	TOPSOIL	Silty, black
1-25	SAND	Fine, medium to coarse; about 15% gravel
25-34	CLAY	Sandy, olive gray; about 50% sand
34-40	CLAY	Silty, olive gray

150-062-16CBC

NDSWC 22

Date Completed: 10/1985 Purpose: Observation Well
 L.S. Elevation (ft): 1463.16 Well Type: 2 in. - PVC
 Depth Drilled (ft): 40 Aquifer: Warwick
 Screen Int. (ft.): 24-30 Data Source:

USGS Import

Depth (ft)	Unit	Description
0-1	TOPSOIL	silty, black
1-22	SAND	fine to coarse, about 20% gravel
22-34	GRAVEL	fine to medium, about 45% sand

150-062-16DDD

NDSWC 11318

Date Completed: 08/31/1983 Purpose: Test Hole
 L.S. Elevation (ft): 1460
 Depth Drilled (ft): 160

Depth (ft)	Unit	Description
0-1	TOPSOIL	dark brown, sandy
1-10	SAND	yellowish brown, silty, fine, oxidized
10-17	SAND & GRAVEL	very coarse sand to very coarse gravel and cobbles, angular to subangular carbonates and shale, subrounded to rounded silicates
17-20	TILL	interbedded with gravel
20-21	ROCKS	
21-24	SAND & GRAVEL	coarse sand to coarse gravel
24-33	TILL	clayey, sandy, nonplastic, crumbles
33-81	CLAY	olive gray, silty, hard drilling, some layers booting off, sticky, plastic, cohesive
81-86	TILL	clay, gray, pebbles, interbedded with sand and gravel
86-99	CLAY	gray, sandy, silty, with layers of shale and lignite gravel
99-100	ROCK	
100-123	CLAY	gray, sandy, silty
123-146	CLAY	gray, green, sandy, silty, interbedded with lignite and shale sand and gravel, rig chatters a lot
146-160	SHALE	dark gray shale and clay with lots of bentonite

150-062-17AAA

USGS

Date Completed: 00/00/00 Purpose: Observation Well
 L.S. Elevation (ft): 1468 Well Type: 0 in. -
 Depth Drilled (ft): 11.2 Aquifer: Warwick
 Screen Int. (ft.): 0-11.2 Data Source:
 USGS Import

150-062-18AAA

USGS

Date Completed:	00/00/00	Purpose:	Observation Well
L.S. Elevation (ft):	1474.13	Well Type:	0 in. -
Depth Drilled (ft):	17.5	Aquifer:	Warwick
Screen Int. (ft.):	0-17.5	Data Source:	
USGS Import			

150-062-22AAB

Mike Tweed

Date Completed:	0/0	Purpose:	Irrigation Well
L.S. Elevation (ft):	N/A	Well Type:	0 in. - Unknown
Depth Drilled (ft):	0	Aquifer:	Not Yet Entered
Screen Int. (ft.):	0-170	Data Source:	

150-062-22AAC

Mike Twed

Date Completed:	02/20/1979	Purpose:	Observation Well
L.S. Elevation (ft):	N/A	Well Type:	4 in. - PVC
Depth Drilled (ft):	0	Aquifer:	Spiritwood
Screen Int. (ft.):	145-160	Data Source:	
IRRIG. PILOT WELL 4"			

150-062-23BBB

Date Completed:	04/22/1979	Purpose:	Observation Well
L.S. Elevation (ft):	1462.2	Well Type:	4 in. - PVC
Depth Drilled (ft):	0	Aquifer:	Spiritwood
Screen Int. (ft.):	154-178	Data Source:	
IRRIG. PILOT WELL			

150-062-23BBB1

USGS

Date Completed:	00/00/00	Purpose:	Observation Well
L.S. Elevation (ft):	1462.2	Well Type:	0 in. -
Depth Drilled (ft):	178	Aquifer:	Undefined
Screen Int. (ft.):	0-178	Data Source:	
USGS Import			

150-062-23DCC1

NDSWC 1

Date Completed:	09/20/1985	Purpose:	Test Hole
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L.S. Elevation (ft):	1463	
Depth Drilled (ft):	197	
<u>Depth (ft)</u>	<u>Unit</u>	<u>Description</u>
0-1	TOPSOIL	silty, black
1-6	SAND	fine to medium, oxidized
6-8	GRAVEL	silty sand
8-43	TILL	clay, silty, dark gray
43-45	GRAVEL	fine to coarse
45-69	TILL	clay, silty, dark gray
69-98	SAND	fine to coarse, 10% gravel
98-113	TILL	clay, silty, dark gray
113-125	SAND	fine to coarse
125-128	TILL	clay, silty, dark gray
128-132	GRAVEL	fine to coarse

132-145	TILL	clay, silty, light gray
145-160	CLAY	silty, olive gray, calcareous
160-188	TILL	clay, silty, olive gray
188-200	CLAY	silty, black, Pierre Shale

150-062-23DCC2

USGS

Date Completed:	9/1985	Purpose:	Observation Well
L.S. Elevation (ft):	1461.04	Well Type:	2 in. - PVC
Depth Drilled (ft):	100	Aquifer:	Undefined
Screen Int. (ft.):	95-97	Data Source:	

USGS Import

Depth (ft)	Unit	Description
0-1	TOPSOIL	silty, black
1-6	SAND	fine to coarse, about 20% gravel
6-8	GRAVEL	fine to coarse
8-45	TILL	clay, silty, olive gray
45-69	TILL	clay, silty, olive gray with a few rocks
69-92	SAND	fine to coarse, about 40% gravel
92-94	TILL	clay, silty, olive gray
94-98	SAND	fine to coarse, about 40% gravel
98-100	TILL	clay, silty, light gray

150-062-24CBB

NDSWC 11317

Date Completed:	08/30/1983	Purpose:	Observation Well
L.S. Elevation (ft):	1462.78	Well Type:	1.25 in. - PVC
Depth Drilled (ft):	200	Aquifer:	Spiritwood
Screen Int. (ft.):	158-163	Data Source:	

Depth (ft)	Unit	Description
0-1	TOPSOIL	dark brown, sandy
1-8	SAND	yellowish brown, fine to coarse, moderately well sorted
8-9	SAND	gray fine to coarse sand, moderately well sorted
9-107	CLAY	olive gray, sandy, pebbly, cohesive crumbles rocks at 16 to 17, 19 to 20, 63 to 64, sand layer from 85 to 86
107-144	CLAY	gray, slightly silty, hard, cohesive, shiny appearance, whitish specks
144-148	SAND & GRAVEL	very coarse sand to fine gravel, interbedded with very thin gray clay lenses, moderately well sorted, angular to subrounded, 30% shale, 30% carbonates, 30% silicates, 10% lignite
148-177	SAND & GRAVEL	as above, fine sand to medium gravel
177-200	SHALE	dark gray to dark greenish gray shale, hard, laminated, sugary texture

150-062-24CDC

NDSWC 4

Date Completed: 09/24/1985 Purpose: Test Hole

L.S. Elevation (ft): N/A

Depth Drilled (ft): 220

Depth (ft)	Unit	Description
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0-1	TOPSOIL	silty, sandy, black
1-8	SAND	fine to coarse, brownish, oxidized
8-12	TILL	clay, silty, yellowish
12-63	TILL	clay, silty, olive gray, lots of rocks
63-78	GRAVEL	30% sand, some clay layers
78-168	TILL	clay, silty, olive gray
168-213	GRAVEL	20% sand (quartz & shale pebbles), fine to coarse
213-220	CLAY	silty, black, fissile, Pierre Shale

150-062-24DCA

A.B. DAHL

Date Completed: 01/01/1961 Purpose: Domestic Well

L.S. Elevation (ft): 1463 Well Type: 4 in. - Unknown

Depth Drilled (ft): 0 Aquifer: Not Yet Entered

Screen Int. (ft.): 0-161 Data Source:

Remarks: A.B. Dahl

150-062-24DDC

NDSWC 5

Date Completed: 09/24/1985 Purpose: Observation Well

L.S. Elevation (ft): 1462.13 Well Type: 2 in. - PVC

Depth Drilled (ft): 40 Aquifer: Not Yet Entered

Screen Int. (ft.): 29-34 Data Source:

Depth (ft)	Unit	Description
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0-1	TOPSOIL	Silty, black
1-6	SAND	Fine, medium to coarse
6-9	CLAY	Silty, yellowish brown, till
9-10	ROCK	Granite
10-34	GRAVEL	Fine, medium to coarse; about 30% sand
34-40	CLAY	Silty, olive gray, till

150-062-27AAA

NDSWC 12

Date Completed: 09/26/1985 Purpose: Test Hole

L.S. Elevation (ft): N/A

Depth Drilled (ft): 120

Depth (ft)	Unit	Description
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0-1	TOPSOIL	silty, black
1-10	SAND	fine to coarse, brown, oxidized
10-81	TILL	clay, silty, olive gray
81-105	GRAVEL	fine to coarse, about 20%, sand and clay
105-110	TILL	clay, silty, olive gray
110-120	SAND	fine to coarse, medium gray

150-062-27BCC

NDSWC 2304

Date Completed: 08/25/1964 Purpose: Test Hole

L.S. Elevation (ft): 1460

Depth Drilled (ft): 472.5

Remarks: See Trapp, 1966 for log

Depth (ft)	Unit	Description
0-1	GRAVEL	Sandy, (no topsoil), sand size predominantly 1/2 to 1 mm; pebbles average 4 mm, quartz, dolomite, limestone, pyrite, granite, shale; grains are angular to subangular
1-17	TILL	Moderately yellowish brown to dark yellowish orange (10YR 5.5/5); oxidized, quartz, shale, dolomite, limestone, lignite flakes; cohesive, soft; highly calcareous fragments; subangular to angular mainly silty, gravel starts after 9 ft.
17-21	TILL	Dark greenish gray (5GY 4/1); it is silty and exactly like the above, grains size varies but is mainly within 1/2 mm, although it may be as much as 4 to 5 mm
21-26	SAND	Very well-sorted; mm in size, subrounded to well rounded; mostly quartz, some shale, dolomite, limestone, lignite (?); sphericity is good; oxidized
26-37	SAND	Not as well-sorted as one above and coarser; grain size averages 1 mm; it is predominantly 1/2 mm, some grains reach 8 mm; quartz, dolomite, limestone, shale; subangular to subrounded, oxidized
37-43	SAND	Fine, and boulders, 1/4 to 1/2 mm, very well-sorted, rounded to subrounded; predominantly quartz, some shale, lignite, dolomite, limestone; oxidized
43-64	SAND	Unoxidized; 1 mm in size, well-sorted, rounded to subrounded, quartz mostly, with shale, dolomite, limestone, lignite, very similar to 21 to 26 ft.
64-66	SHALE	(Pierre), cohesive, very hard; olive gray (5Y 3.5/1), fractured; slightly calcareous
66-210	CLAY	Dark greenish gray, cohesive, soft, lignite flakes, highly calcareous; pockets of very fine white sand, These are only found rarely and mainly at the top. Downward, the clay becomes only slightly calcareous (at about 200 ft.). Biotite or phlogopite flakes are occasionally present; occasionally some sand-sized particles are found. They are about 1/2 mm in size and consist of quartz, dolomite, and shale. The fragments are angular to subangular and can sometimes be found in concentrations enough to make the clay a till. There is a great variation as to how calcareous the clay is per 5 ft. of drilling.
210-417	CLAY	Silty, dark greenish gray, cohesive, hard, brittle, slightly calcareous; few fine sand particles of limestone, dolomite, lignite; laminated; pieces of lignite associated with it; few cuttings are very sandy, the sand is very fine, bentonite may be present, some mica flakes, very calcareous, some pockets of oxidized material, laminations of till that contain angular to subangular grains of quartz and shale principally; grain size is approximately 1/2 mm principally; lignite and mica flakes are also present
417-430	SAND	Consisting predominantly of shale with some quartz, lignite, limestone and dolomite, sorting is poor; much silt and clay mixed with the sand, grains subrounded to subangular and angular; grain size is predominantly 1 to 1.5 mm; grain size gradually gets larger
430-472.5	SHALE	Greenish black (5GY 2/1), cohesive, hard, may have some pyrite, noncalcareous

150-062-28AAC

Orris Drem

Date Completed:	0/0	Purpose:	Domestic Well
L.S. Elevation (ft):	N/A	Well Type:	0 in. - Unknown
Depth Drilled (ft):	0	Aquifer:	Not Yet Entered
Screen Int. (ft.):	0-25	Data Source:	
Remarks:	Orris Drem		

150-062-28CDC2

LOWRENCE TWEED

Date Completed:	09/06/1963	Purpose:	Domestic Well
L.S. Elevation (ft):	1493	Well Type:	4 in. - Unknown
Depth Drilled (ft):	130	Aquifer:	Undefined
Screen Int. (ft.):	124-130	Data Source:	

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-20	CLAY	Yellow
20-115	CLAY	Blue
115-120	CLAY	Sandy, blue
120-130	SAND	Clay

150-062-29DCD

Anthony E. Kom

Date Completed:	1/1955	Purpose:	Domestic Well
L.S. Elevation (ft):	N/A	Well Type:	0 in. - Unknown
Depth Drilled (ft):	0	Aquifer:	Not Yet Entered
Screen Int. (ft.):	64-70	Data Source:	
Remarks:	Anthony Dom		

151-061-04CCC

NDSWC 5005

Date Completed:	06/26/1968	Purpose:	Test Hole
L.S. Elevation (ft):	1437		
Depth Drilled (ft):	80		

Depth (ft)	Unit	Description
1-22	CLAY	Silty, sandy, pebbly, moderate yellowish-brown, moderately cohesive, moderately plastic, oxidized (till)
22-37	CLAY	Silty, sandy, pebbly, olive gray, moderately cohesive, moderately plastic, calcareous, limestone and shale fragments in clay matrix, (till)
37-41	GRAVEL	Sandy, clayey, poorly sorted, fine to coarse, angular to subrounded, predominantly limestone with some shale and granite rock
41-65	CLAY	Silty, sandy, gravelly, olive gray, moderately cohesive, moderately plastic, calcareous, limestone, shale, and granite fragments in clay matrix (till)
65-80	SHALE	Fissile, black to grayish-black, indurated, slightly fractured, non-calcareous, (Pierre Formation)

151-061-06CCC

NDSWC 12805

Date Completed: 07/24/1991 Purpose: Observation Well
 L.S. Elevation (ft): 1515 Well Type: 2 in. - PVC
 Depth Drilled (ft): 250 Aquifer: Spiritwood
 Screen Int. (ft.): 223-228 Data Source:

Remarks: LAND SURFACE

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-27	CLAY	Yellowish brown, silty, sandy with pebbles, iron stained, oxidized till
27-68	CLAY	olive gray, silty, sandy with pebbles, till, shale gravel from 44-48 feet
68-169	CLAY	olive gray, stiff, drills smooth and slow
169-191	SAND & GRAVEL	fine sand to coarse gravel, drills fast, choppy, taking water, 30% shale, 10% lignites, remainder igneous
191-198	CLAY	olive gray, sandy
198-237	SAND & GRAVEL	sandy from 198-221 then coarser from 221-237, taking water, rocky at bottom, changed to rock bit
237-250	SHALE	black, greasy, some brittle fragments (Pierre shale)

151-061-07CCC

NDSWC 11330

Date Completed: 09/07/1983 Purpose: Observation Well
 L.S. Elevation (ft): 1512.68 Well Type: 1.25 in. - PVC
 Depth Drilled (ft): 235 Aquifer: Spiritwood
 Screen Int. (ft.): 178-183 Data Source:

Depth (ft)	Unit	Description
0-1	TOPSOIL	dark brown, silty
1-47	GRAVEL	yellowish brown, sandy, fine to coarse
47-63	CLAY	brownish, yellow, slightly sandy, silty, soft, sticky, massive, oxidized
63-76	SAND	yellowish brown, fine, oxidized
76-80	SAND	gray, silty, fine, interbedded with gray silty clay
80-91	SAND	gray, silty, fine
91-189	SAND & GRAVEL	coarse sand, 70% shale, fine to coarse gravel, 30% silicates, rounded, very coarse sand to fine gravel
189-191	ROCKS	
191-220	SAND & GRAVEL	interbedded with layers of gray silty clay
220-234	SAND & GRAVEL	very coarse sand to coarse gravel, moderately well sorted, 40% angular shale, 40% igneous and metamorphic rock fragments, subangular to subrounded, 20% carbonates, subangular to subrounded
234-235	ROCKS	

151-061-07DDD

NDSWC 15014

Date Completed: 08/06/2003 Purpose: Observation Well
 L.S. Elevation (ft): 1499 Well Type: 2 in. - PVC
 Depth Drilled (ft): 210 Aquifer: Spiritwood
 Screen Int. (ft.): 177-182 Data Source:

Completion Info: Levels ran 10/1/2003 by NDSWC.

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-37	TILL	Clay, sandy, silty, pebbly inclusions in clay matrix, rusty yellowish brown, highly weathered, drills fast and easy

37-66	TILL	Clay, sandy, silty, pebbly, inclusions in clay matrix, medium gray, unweathered, unoxidized, moderately firm
66-82	SAND & GRAVEL	Very fine to very coarse mainly medium, medium sorting, 40% shale, some lignites floating up, round to subangular
82-90	TILL	Clay, sandy, silty, pebbly, inclusions in clay matrix, medium gray, unweathered, unoxidized, moderately firm, highly interbedded with sand and gravel lenses and layers
90-103	TILL	Clay, sandy, silty, pebbly, inclusions in clay matrix, medium gray, unweathered, unoxidized, moderately firm, no interbedding
103-163	CLAY	Slightly silty, firm, massive, no inclusions (Lacustrine)
163-176	SILT	Clayey, drills fast-easy, smooth, poor sample return, no chatter
176-197	SAND & GRAVEL	Medium sand to medium gravel, mainly coarse to very coarse sand, medium sorting, 40% shale, 40% quartz, 20% rock fragments, round to subangular, mainly subrounded (Spiritwood Aquifer)
197-210	SHALE	Dark gray to black, brittle, very firm, (Bedrock Pierre Formation)

151-061-09CCC

NDSWC 5004

Date Completed: 06/26/1968 Purpose: Test Hole
 L.S. Elevation (ft): 1437
 Depth Drilled (ft): 60

Depth (ft)	Unit	Description
1-15	CLAY	Sandy, silty, pebbly, moderate yellowish-brown, slightly to moderately cohesive, moderately plastic, calcareous, oxidized (till)
15-19	CLAY	Silty, slightly sandy, pebbly, olive gray, moderately cohesive, moderately plastic, calcareous (till)
19-60	SHALE	Black to grayish-black, slightly fractured, non-calcareous, moderately indurated, (Pierre Formation)

151-061-12DDD

NDSWC 5003

Date Completed: 06/26/1968 Purpose: Test Hole
 L.S. Elevation (ft): 1475
 Depth Drilled (ft): 40

Depth (ft)	Unit	Description
1-15	CLAY	Sandy, silty, pebbly, moderate yellowish-brown, moderately cohesive, slightly plastic, oxidized (till)
15-40	SHALE	Fissile, moderate yellowish-brown to grayish-black, partially oxidized, slightly fractured, moderately indurated, non-calcareous, (Pierre Formation)

151-061-16CCC

NDSWC NDGS 21

Date Completed:	01/01/1969	Purpose:	Observation Well
L.S. Elevation (ft):	1434	Well Type:	4 in. - PVC
Depth Drilled (ft):	10	Aquifer:	NOT YET ENTERED
Screen Int. (ft.):	0-0	Data Source:	

Depth (ft)	Unit	Description
0-1	SILT	Clayey
1-9	TILL	
9-10	SAND	Fine to medium, red-brown

151-061-17CCC

NDSWC 15012

Date Completed:	08/06/2003	Purpose:	Observation Well
L.S. Elevation (ft):	1481	Well Type:	2 in. - PVC
Depth Drilled (ft):	240	Aquifer:	Spiritwood
Screen Int. (ft.):	186-191	Data Source:	

Completion Info: Levels ran 10/6/2003 by NDSWC.

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-29	TILL	Clay, silty, sandy, pebbly, inclusions, yellowish gray, highly oxidized and weathered in a clay matrix to 22 feet, then unoxidized gray
29-32	SAND & GRAVEL	Fine sand to medium gravel, appears that grains have oxidized staining
32-37	TILL	Clay, silty, sandy, pebbly, inclusions in clay matrix, unoxidized, medium gray, moderately firm
37-41	CLAY	With silt, clayey silt to silty clay, medium gray, moderately soft to medium firm, massive, no inclusions (Fluvial-Lacustrine)
41-49	SAND	Sand, fine to very coarse, predominately medium, moderate sorting, round to subangular, predominately subrounded, 25% shale, 50% quartz, 25% other rock fragments
49-152	CLAY	Silty, moderately gray, moderately firm, no inclusions (Fluvial-Lacustrine), 87-91 silty zone - faster drilling
152-230	SAND & GRAVEL	Fine sand to 6 mm gravel, poorly sorted, predominately medium sand from 152 to 163 feet, predominately coarse to very coarse sand 163 to 227 feet, round to subangular (except lignite which is angular and shale which is tabular) predominately round to subrounded, mostly quartz grains (50%) with 20% shale, 25% rock fragments, 5% lignite, rocks at 226-227 feet, reworked layers of bedrock clay (shale?) at 227-230 feet
230-240	SHALE	Dark gray to black slightly brittle, hard, firm, (Bedrock Pierre Formation)

151-061-18CBB

NDSWC NDGS N7

Date Completed: 01/01/1968 Purpose: Observation Well
 L.S. Elevation (ft): N/A Well Type: 4 in. - PVC
 Depth Drilled (ft): 36 Aquifer: NOT YET ENTERED
 Screen Int. (ft.): 0-0 Data Source:

Depth (ft)	Unit	Description
0-17	SAND	Gravelly, silty, shaly, silt "balls at 14 ft
17-30	SAND	Silty
30-34	TILL	Partially oxidized

151-061-19DCC

NDSWC Haas

Date Completed: 10/10/1932 Purpose: Domestic Well
 L.S. Elevation (ft): 1485 Well Type: 0 in. - Unknown
 Depth Drilled (ft): 175 Aquifer: NOT YET ENTERED
 Screen Int. (ft.): 0-0 Data Source:

151-061-20BAA

NDSWC 15013

Date Completed: 08/06/2003 Purpose: Observation Well -
 Plugged
 L.S. Elevation (ft): 1448 Well Type: 2 in. - PVC
 Depth Drilled (ft): 160 Aquifer: Pierre Shale
 Screen Int. (ft.): 147-157 Data Source:
 Completion Info: Levels ran 10/6/2003 by NDSWC.

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-6	CLAY	With silt, yellowish brown, soft, smooth, easy drilling
6-9	SAND & GRAVEL	Fine sand to medium gravel (oxidized)
9-14	CLAY	With Silt, yellowish brown, soft, oxidized to about 11 feet then turning slightly grayish, soft
14-16	SAND & GRAVEL	Mostly unoxidized, high shale content
16-22	CLAY	With silt, gray (unoxidized)
22-40	TILL	Clay, silty, sandy, pebbly, inclusions in clay matrix, medium gray, moderately soft, drilling fast and easy
40-44	SAND & GRAVEL	High shale and carbonate content (unoxidized)
44-127	CLAY	Silty, medium gray, moderately firm, no inclusions, massive, smooth
127-136	SAND & GRAVEL	Fine sand to medium gravel, mostly very coarse sand, moderately to poor sorting, 50% quartz, 30% shale, some lignite lenses
136-160	SHALE	Dark gray to black, brittle, firm slow drilling (Bedrock Pierre Formation)

151-061-21ABC

NDSWC NDGS 22

Date Completed:	01/01/1969	Purpose:	Observation Well
L.S. Elevation (ft):	1425	Well Type:	4 in. - PVC
Depth Drilled (ft):	25	Aquifer:	NOT YET ENTERED
Screen Int. (ft.):	0-0	Data Source:	

Depth (ft)	Unit	Description
0-18	SILT	Oxidized
18-20	SILT	Unoxidized
20-25	SILT	Sandy, gravelly

151-061-21BBB

NDSWC 5361

Date Completed:	07/28/1969	Purpose:	Test Hole
L.S. Elevation (ft):	1434		
Depth Drilled (ft):	60		

Depth (ft)	Unit	Description
0.5-10	CLAY	Silty, slightly sandy, a few pebbles, pale yellowish-brown, cohesive, plastic, slightly oxidized (till)
10-20	SAND	Fine- to very coarse-grained, angular to subrounded, fair sorting, mostly shale, some quartz, not taking water, not caving in
20-32	CLAY	Silty, slightly sandy, pebbly, olive gray, cohesive, slightly plastic, (till)
32-60	SHALE	Siliceous, clayey, grayish-black non-calcareous, slightly fractured (Pierre Formation)

151-061-22CCD

NDSWC 5362

Date Completed:	07/28/1969	Purpose:	Observation Well
L.S. Elevation (ft):	1430	Well Type:	1.25 in. - PVC
Depth Drilled (ft):	140	Aquifer:	Spiritwood
Screen Int. (ft.):	97-100	Data Source:	

Depth (ft)	Unit	Description
1-15	CLAY	Extremely silty, moderately sandy, dusky yellow to moderate yellowish-brown, slightly cohesive, oxidized (lacustrine sediment)
15-16	GRAVEL	Fine to coarse, angular, poor sorting, mostly carbonates, some granitics, oxidized
16-19	CLAY	Silty, slightly sandy, pebbly, moderate yellowish-brown, moderately cohesive, moderately plastic, oxidized (till)
19-66	CLAY	Very silty, slightly to moderately sandy, pebbly, gravelly from 27' – 34' below land surface, olive gray, cohesive, plastic, calcareous (till)
66-78	CLAY	Extremely silty, slightly sandy, olive gray with occasional light olive gray laminations, cohesive, very plastic, very calcareous (Fluvial sediment)
78-82	GRAVEL	Slightly sandy, fine to coarse, angular to subrounded, fair sorting, mostly carbonates (limestone and dolostone), some shale, and light-colored granitics, not taking much water, not caving in
82-88	CLAY	Very silty, slightly sandy, olive gray with occasional light-olive gray laminations, cohesive, plastic, very calcareous, (Fluvial sediment)

88-113	GRAVEL	Slightly sandy, interbedded with thin layers of silty clay, fine to coarse, angular to rounded, poor to fair sorting, grades to cobble-sized material lower 2' – 3' of section, mostly carbonates, and granitics, some shale, siltstone and quartzite, taking some water, caving
113-140	SHALE	Siliceous, moderately clayey, grayish-black, non-calcareous, slightly to moderately fractured, bedded (Pierre Formation)

151-061-26CBB

NDSWC 5000

Date Completed: 06/26/1968 Purpose: Test Hole
 L.S. Elevation (ft): 1450
 Depth Drilled (ft): 140

Depth (ft)	Unit	Description
1-12	CLAY	Silty, sandy, pebbly, moderate yellowish-brown, moderately cohesive, moderately plastic, limestone and shale fragments in clay matrix, oxidized (till)
12-46	CLAY	Silty, slightly sandy, pebbly, olive gray, moderately cohesive to cohesive, moderately plastic, calcareous, limestone and shale fragments in clay matrix, an occasional cobble (till)
46-62	CLAY	Very silty, olive-gray with a few light olive gray laminations, cohesive, plastic, calcareous, (Fluvial sediment)
62-107	CLAY	Silty, sandy, pebbly, olive gray, slightly to moderately cohesive, slightly plastic, calcareous, numerous limestone, shale and granitic pebbles in clay matrix, a few poorly sorted lenses of fine to medium gravel (till)
107-140	SHALE	Fissile, black to grayish-black, slightly fractured, indurated, non-calcareous (Pierre Formation)

151-061-28BBB

NDSWC 2999

Date Completed: 06/25/1968 Purpose: Test Hole
 L.S. Elevation (ft): 1471
 Depth Drilled (ft): 180

Depth (ft)	Unit	Description
1-12	CLAY	Silty, slightly sandy, pebbly, moderately yellowish-brown, slightly to moderately cohesive, moderately plastic, oxidized (till)
12-22	CLAY	Silty, pebbly, olive gray, moderately cohesive, moderately plastic, limestone, shale and a few lignite fragments (till)
22-36	CLAY	Silty, interbedded with lenses of fine to medium-grained slightly gravelly, sand, pebbly, olive gray, moderately cohesive, moderately plastic, calcareous (till)
36-41	GRAVEL	Sandy (approximately 25 - 35% medium to very coarse-grained sand), fine to medium, angular to subrounded, fair sorting, mostly limestone and quartz and shale with a few granitics, not taking water
41-56	SAND	Very fine- to medium-grained, angular to rounded, moderately well-sorted, predominantly quartz and shale with some limestone, granitic and lignite grains, not taking water
56-142	CLAY	Silty, olive gray with a few light olive gray laminations, cohesive, plastic, calcareous, (Fluvial sediment)
142-159	CLAY	Silty, interbedded with layers of shaley sand and detrital lignite, olive gray with light olive gray laminations, cohesive, moderately plastic, calcareous, (Fluvial sediment)

159-180 SHALE Siliceous, black to grayish-black, indurated, non-calcareous, slightly fractured, (Pierre Formation)

151-061-29DCA

NDSWC USBR

Date Completed:	0	Purpose:	Unknown
L.S. Elevation (ft):	1492	Well Type:	3 in. - PVC
Depth Drilled (ft):	53	Aquifer:	Not Yet Entered
Screen Int. (ft.):	0-30	Data Source:	

Depth (ft)	Unit	Description
0-5	SILT	Sandy
5-35	SAND	Clayey
35-42	TILL	Clay. sandy
42-53	SHALE	(Pierre Formation)

151-061-29DDD2

Date Completed:	00/00/00	Purpose:	Unknown
L.S. Elevation (ft):	1485	Well Type:	0 in. -
Depth Drilled (ft):	0	Aquifer:	Warwick
Screen Int. (ft.):	0-40	Data Source:	
Remarks:	USGS Import		

151-061-30AAA

NDSWC 11329

Date Completed:	09/07/1983	Purpose:	Observation Well
L.S. Elevation (ft):	1505.11	Well Type:	1.25 in. - PVC
Depth Drilled (ft):	240	Aquifer:	Spiritwood
Screen Int. (ft.):	218-223	Data Source:	

Depth (ft)	Unit	Description
0-1	TOPSOIL	brown, silty, clayey
1-27	CLAY	brownish yellow, sandy, pebbles, clay loam, moderately cohesive, crumbly, oxidized till
27-29	SAND & GRAVEL	brownish yellow, sandy, fine to coarse gravel, oxidized
29-40	CLAY	interbedded brownish yellow till and brownish yellow sandy gravel, oxidized
40-49	CLAY	brownish yellow sandy, silty
49-50	ROCKS	
50-56	CLAY	olive gray, pebbles, clay loam, cohesive, plastic, unoxidized till
56-163	CLAY	olive gray, slightly silty, massive, cohesive, plastic, sticky, from 100 feet on down massive clays change to laminated, very dark gray and gray clay, organic rich layers, lake clays
163-184	CLAY	gray, very sandy, silty, interbedded with lignite, sand and gravel, lots of rig chatter
184-186	CLAY	gray, silty
186-200	SAND	gray, silty, very fine to fine, interbedded with silty clay, and sandy silty clay
200-232	SAND & GRAVEL	coarse sandy gravel, gravel is fine to medium, 60% silicates, rounded to subrounded, 30% shale, angular, 10% carbonates, subrounded, moderately well sorted
232-233	ROCK	
233-240	SHALE	dark to black shale with dark gray clay

151-061-30BBA

Date Completed: 00/00/00 Purpose: Surface Water Sample Site
L.S. Elevation (ft): N/A Well Type: 0 in. -
Depth Drilled (ft): 0 Aquifer: Surface Water
Screen Int. (ft.): 0-0 Data Source:
Remarks: Slough N.W. of Tolna

151-061-30BBB

NDSWC 2998

Date Completed: 06/25/1968 Purpose: Observation Well - Plugged
L.S. Elevation (ft): 1453.2 Well Type: 1.25 in. - ABS
Depth Drilled (ft): 280 Aquifer: Spiritwood
Screen Int. (ft.): 197-200 Data Source:
Remarks: This well was plugged by drilling rig with cement sometime after 7/28/91

Depth (ft)	Unit	Description
2-22	CLAY	Silty, sandy, much decaying organic residue, brownish-black shading to light-brownish-gray and medium gray lower 5' of section, slightly cohesive to moderately cohesive, plastic, (Fluvial sediment)
22-29	SAND	Slightly clayey and silty, very fine to medium-grained, with a very small % of coarse grains, angular to subrounded, moderately well sorted, predominantly shale, quartz and lignite, with some limestone grains
29-106	CLAY	Very silty, olive gray to medium gray with light olive gray laminations, cohesive, plastic, calcareous (Fluvial sediment)
106-141	CLAY	Very silty, slightly sandy, medium gray to medium dark gray with light olive gray laminations, cohesive, plastic, calcareous, an occasional lense of detrital lignite and shale (Fluvial sediment)
141-164	SAND	Interbedded with clay and detrital lignite, very fine to medium-grained, angular to subrounded, fair sorting, mostly quartz and shale, with some limestone and lignite
164-175	SAND	Slightly gravelly (approximately 10-15% fine, angular to subrounded shale gravel), medium to very coarse-grained, angular to rounded (predominantly subangular to subrounded), well sorted, predominantly quartz with some shale, limestone, dolostone, granitic, and lignite, taking some water, not caving
175-208	GRAVEL	Sandy (approximately 20-30% medium to very coarse-grained, angular to subrounded sand), fine to coarse (predominantly fine to medium), angular to subrounded, moderately well sorted, mostly shale and limestone, with some quartz, granitics (light-colored), lignite, dolostone and chalcedony, taking some water, not caving
208-222	GRAVEL	Similar to above - only more coarse, interbedded with silty, sandy pebbly moderate brown with light brown concretion-like streaks, till, not taking water
222-245	CLAY	Silty, sandy, pebbly, moderate brown (5 yr. 3/4) to brownish-gray with moderate brown (5 yr. 4/4) laminations and concretion-like areas, moderately cohesive, slightly plastic, calcareous, partially oxidized (till) (buried oxidation zone)
245-280	SHALE	Siliceous, medium gray to medium dark gray, indurated, very slightly calcareous to non-calcareous, numerous brownish gray concretions and a few white specks (Niobrara Formation)

151-061-31BCC

NDSWC 15010

Date Completed: 08/05/2003 Purpose: Observation Well
 L.S. Elevation (ft): 1465 Well Type: 2 in. - PVC
 Depth Drilled (ft): 310 Aquifer: Spiritwood
 Screen Int. (ft.): 198-203 Data Source:
 Completion Info: Levels ran 10/1/2003 by NDSWC.

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-5	TILL	Clay, yellowish brown, highly oxidized
5-6	TILL	Clay, yellowish to grayish, slightly oxidized
6-63	TILL	Clay, silty, sandy, pebbly, inclusions, medium gray, moderately firm, sand from 6 to 8 feet and 49 to 50 feet
63-83	CLAY	Tight, moderately firm, medium gray, no inclusions (Lacustrine)
83-124	TILL	Clay, silty, sandy, pebbly, inclusions, medium gray, moderately firm
124-158	SAND	Very fine to coarse, predominately medium, moderate sorting, larger lignite fragments
158-183	SAND & GRAVEL	Fine sand to very coarse gravel, poorly sorted, predominately very coarse sand, drilling very fast with chatter, predominately quartz with igneous and metamorphic rock fragments, some carbonates and shale, also lignite present
183-241	SAND & GRAVEL	Medium sand to very coarse gravel, predominately fine gravel, predominately quartz and silicate minerals, round to subangular, predominately subrounded
241-303	SAND & GRAVEL	Medium sand to very coarse gravel, predominately fine gravel, predominately quartz and silicate minerals, round to subangular, predominately subrounded, highly interbedded with clay layers and/or detrital shale/lignite zone, still very coarse
303-310	SHALE	Dark gray to black, very brittle/hard (Bedrock Pierre Formation)

151-061-31CBC

Ramsey Rural Water

Date Completed: 00/00/00 Purpose: Rural Water Well
 L.S. Elevation (ft): N/A Well Type: 0 in. -
 Depth Drilled (ft): 0 Aquifer: Spiritwood
 Screen Int. (ft.): 0-0 Data Source:
 Remarks: #1 NORTH WELL

151-061-31CCC

Ramsey Rural Water

Date Completed: 00/00/00 Purpose: Rural Water Well
 L.S. Elevation (ft): N/A Well Type: 0 in. -
 Depth Drilled (ft): 0 Aquifer: Spiritwood
 Screen Int. (ft.): 0-0 Data Source:
 Remarks: #2 MIDDLE WELL

151-061-31CDD

NDSWC 15015

Date Completed: 08/07/2003 Purpose: Observation Well
 L.S. Elevation (ft): 1457 Well Type: 2 in. - PVC
 Depth Drilled (ft): 220 Aquifer: Spiritwood
 Screen Int. (ft.): 158-163 Data Source:
 Completion Info: Levels ran 10/6/2003 by NDSWC.

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-120	TILL	Clay, silty, sandy, pebbly inclusion, yellowish-brown, oxidized and weathered inclusions in weathered clay matrix, sand from 2 to 3 feet, unoxidized from 11 feet on, gray, layers of detrital shale 22 to 36 feet, rocks from 64 to 65 feet, sand and gravel from 82 to 83 feet
120-149	SAND	Very fine to coarse, predominately medium, moderate sorting, primarily silicate minerals (50%), shale (30%), round to subangular, predominately subrounded
149-182	SAND & GRAVEL	Medium sand to 10 mm gravel, poorly sorted, median size is very coarse sand, mostly silicate minerals 60%, shale 25 to 30%, some lignites floating up
182-202	SAND & GRAVEL	Coarse sand to 15 to 25 mm gravel, poorly sorted, median size 2 mm gravel, same minerology as above but coarser, lignites floating up
202-220	SHALE	Clayey to brittle, dark grayish to black, with layers of bentonite (grayish white cuttings) Bedrock Pierre Formation

151-061-31DBB

NDSWC Hass

Date Completed: 0/0 Purpose: Domestic Well
 L.S. Elevation (ft): 1475 Well Type: 36 in. - Unknown
 Depth Drilled (ft): 14 Aquifer: NOT YET ENTERED
 Screen Int. (ft.): 0-0 Data Source:

151-061-31DDD

NDSWC 15016

Date Completed: 08/07/2003 Purpose: Observation Well
 L.S. Elevation (ft): 1463 Well Type: 2 in. - PVC
 Depth Drilled (ft): 220 Aquifer: Spiritwood
 Screen Int. (ft.): 113-118 Data Source:
 Completion Info: Levels ran 10/6/2003 by NDSWC.

Depth (ft)	Unit	Description
0-1	TOPSOIL	Black
1-15	TILL	Clay, sandy, pebbly, yellowish brown, very sandy, oxidized, rock at 8 to 10 feet (granitic)
15-30	TILL	Clay, silty, sandy, pebbly, gray, unoxidized, firm, plastic
30-39	SAND	Fine to medium, moderately sorted, mostly fine silica type sand with detrital lignites
39-51	TILL	Clay, silty, sandy, pebbly, gray, clay matrix with inclusions, firm and plastic
51-63	CLAY	Silty, massive, very firm, no inclusions, plastic (Lacustrine)
63-83	TILL	Clay, silty, sandy, pebbly, clay matrix with inclusions, gray, firm from 63 to 71 feet, very firm from 71 to 83 feet
83-91	SHALE	Clayey, gray to black, plastic, firm, with bentonite layers (Bedrock Block)

91-103	TILL	Clay, silty, sandy, pebbly, gray, clay matrix with inclusions, firm and plastic
103-122	SAND	Fine to coarse, predominately fine to medium, poorly sorted, rounded to subrounded, consisting of carbonates, igneous and metamorphic rock fragments, shales with detrital lignites
122-143	TILL	Clay, silty, sandy, pebbly, with inclusions, clay matrix, gray
143-160	CLAY	Silty, massive, very firm, no inclusions, plastic, gray (Lacustrine)
160-204	TILL	Clay, silty, sandy, pebbly, with inclusions, clay matrix, gray, rock at 160 to 161 feet
204-220	SHALE	Clayey, gray to black, plastic to brittle, soft to firm, bentonite layers (Bedrock Pierre Formation)

151-061-32BBB

NDSWC 11328

Date Completed:	09/07/1983	Purpose:	Observation Well
L.S. Elevation (ft):	1465.26	Well Type:	1.25 in. - PVC
Depth Drilled (ft):	200	Aquifer:	Spiritwood
Screen Int. (ft.):	168-173	Data Source:	

Depth (ft)	Unit	Description
0-1	TOPSOIL	dark brown, sandy
1-8	SAND & GRAVEL	reddish brown medium sand to gravel, oxidized
8-12	CLAY	olive gray, sandy, with pebbles, clay loam, crumbly, cohesive
12-17	SHALE	interbedded hard black shale, whitish gray bentonitic clay and dark gray clay, Pierre shale block
17-49	CLAY	dark gray pebbly clay loam, hard, cohesive, sticky, plastic, till
49-50	SAND & GRAVEL	shale, sandy gravel
50-55	CLAY	dark gray with pebbles, clay loam, hard, cohesive, plastic, several blocks of shale
55-56	SAND & GRAVEL	gravelly, coarse sand, shale
56-62	CLAY	dark gray, pebbly clay loam, hard, cohesive, plastic
62-76	CLAY	olive gray, sandy, pebbly clay loam, softer than above till, moderately cohesive, plastic, sticky
76-117	CLAY	dark gray pebbly clay loam, hard, cohesive, plastic, till
117-123	CLAY	olive gray, silty clay, massive, cohesive, plastic, sticky
123-146	SAND	gray silty very fine to fine sand interbedded with layers of olive gray silty clay
146-166	SAND & GRAVEL	medium to very coarse sand, 10% fine gravel, 80% sand, 60% silicates, rounded, 30% shale and lignite, angular to subrounded, 10% carbonates, subrounded, moderately well sorted
166-184	SAND & GRAVEL	coarse sandy gravel, % mineral composition as above
184-185	ROCKS	
185-200	SHALE	black hard shale interbedded with dark gray hard clay, Pierre formation, Bedrock

151-061-33BBB

NDSWC 15007

Date Completed: 08/01/2003 Purpose: Test Hole

L.S. Elevation (ft): N/A

Depth Drilled (ft): 330

Depth (ft)	Unit	Description
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0-1	TOPSOIL	Black
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1-35	SAND & GRAVEL	Fine sand to medium gravel, consisting mostly of medium to coarse sand, poorly sorted, grains were subrounded to rounded, sand consisted of quartz, carbonates, igneous and metamorphic rock fragments, oxidized from 1 to 32 feet, unoxidized from 32 to 35 feet
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35-36	ROCK	
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36-314	TILL	Clay, silty, sandy, pebbly, gray, firm to soft, plastic, rock from 87 to 88 feet had to trip out, sand from 87 to 88 feet, 203 to 204 feet, 209 to 211 feet, and 221 to 222 feet all medium grained consisting primarily of shales, rock from 241 to 242 feet, 247 to 248 feet, and 313 to 314 feet
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314-330	SHALE	Clayey, silty, black to gray, very plastic, firm, bedrock (Pierre Formation)
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151-061-33CCC

NDSWC 15006

Date Completed: 07/31/2003 Purpose: Observation Well

L.S. Elevation (ft): 1458 Well Type: 2 in. - PVC

Depth Drilled (ft): 180 Aquifer: Spiritwood

Screen Int. (ft.): 158-163 Data Source:

Completion Info: Levels ran 10/1/2003 by NDSWC.

Depth (ft)	Unit	Description
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0-1	TOPSOIL	Black
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1-11	TILL	Clayey, silty, sandy, pebbly, clay matrix, brown, soft, plastic, (oxidized)
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11-16	SAND	Sand, fine to medium, gray, moderately sorted, (unoxidized)
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16-31	TILL	Clayey, silty, sandy, pebbly, clay matrix, gray, firm, brittle from 16 to 21 feet, more sandy from 21 to 31 feet
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31-34	CLAY	Silty, gray, high silt content, non plastic, no inclusions (Lacustrine)
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34-123	TILL	Clay, silty, sandy, pebbly, gray, firm, brittle to plastic, slow drilling, rock at 34 to 35 feet and 76 to 77 feet
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123-142	SAND & GRAVEL	Fine sand to fine gravel, primarily coarse sand, moderately sorted, grains were subrounded to rounded consisting of shales, carbonates, igneous and metamorphic rock fragments with detrital lignites
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142-171	SAND & GRAVEL	Fine sand to coarse gravel, primarily coarse sand and fine gravel, moderately sorted, subrounded to rounded, consisting primarily of shale in tablet form, along with carbonates, igneous and metamorphic rock fragments with detrital lignites
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171-180	SHALE	Black to brown, indurated to soft, plastic to brittle with layers of bentonite, bedrock (Pierre Formation)
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151-061-34BBB

NDSWC 15009

Date Completed: 08/04/2003 Purpose: Test Hole

L.S. Elevation (ft): N/A

Depth Drilled (ft): 200

Depth (ft)	Unit	Description
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0-1	TOPSOIL	
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1-22	TILL	Clay, silty, sandy, pebbly, yellowish brown, oxidized, rock fragment inclusions in fine matrix
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22-41	SAND & GRAVEL	Fine sand to very coarse gravel, poorly sorted, angular to round, predominately subangular, highly oxidized, larger diameter pieces coming up, drills surprisingly fast, except when the bit encountered a recalcitrant chunk of biotite-granodiorite at 40 feet
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41-62	TILL	Clay, silty, sandy, pebbly, yellowish brown, oxidized, rock fragment inclusions in fine matrix
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62-69	SAND & GRAVEL	Fine sand to very coarse gravel, grayish color, oxidized grains present, coarser (rocks) at 68 to 69 feet
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69-195	TILL	Clay, silty, sandy, pebbly, inclusions, shaley zone from 162 to 163 feet
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195-200	SHALE	Dark gray to black, brittle, very hard, firm, slow drilling (Bedrock Pierre Formation)
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151-061-34CCC

NDSWC 15008

Date Completed: 08/04/2003 Purpose: Test Hole

L.S. Elevation (ft): 1445

Depth Drilled (ft): 120

Depth (ft)	Unit	Description
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0-1	TOPSOIL	Brown, sandy
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1-16	TILL	Clay, silty, sandy, pebbly, cobbly, brown to yellowish, highly oxidized and weathered, rocks near surface to about 6 feet
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16-109	CLAY	Silty, yellowish gray, oxidized to 22 feet, then turns medium gray, massive with the exception of silty varves occasionally in cuttings, no inclusions but silty varves are highly oxidized (rust colored) above 72 feet (lacustrine)
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109-120	SHALE	Dark gray to black, brittle zones, some small bentonitic layers, bedrock (Pierre Formation)
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151-061-34DDA

NDSWC NDGS 23

Date Completed: 06/26/1968 Purpose: Test Hole

L.S. Elevation (ft): 1480

Depth Drilled (ft): 20

Depth (ft)	Unit	Description
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0-17	SAND	Silty
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17-20	GRAVEL	Sandy
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151-061-35BAA

NDSWC 5001

Date Completed: 06/26/1968 Purpose: Test Hole

L.S. Elevation (ft): 1500

Depth Drilled (ft): 100

Depth (ft) Unit Description

1-22	GRAVEL	Slightly sandy, fine to coarse, angular to subrounded, fair sorting, mostly shale and limestone with some granite rocks, caving and taking water, oxidized, mixed 1 bag bentonite
22-54	SAND	Very fine to medium-grained, angular to subrounded (predominantly subangular) well-sorted, predominantly quartz with some shale, limestone and granitic grains, taking some water, oxidized to dark yellowish-brown color
54-58	CLAY	Silty, sandy, brownish-black to grayish-black moderately cohesive, moderately plastic, a few cobbles (shale and limestone) (till)
58-100	SHALE	Fissile, black to grayish-black, slightly fractured, moderately indurated, non-calcareous, a few light olive gray bentonitic laminations, (Pierre Formation)

151-061-36ABB

NDSWC 5002

Date Completed: 06/26/1968 Purpose: Observation Well

L.S. Elevation (ft): 1505 Well Type: 1.25 in. - ABS

Depth Drilled (ft): 180 Aquifer: Spiritwood

Screen Int. (ft.): 97-100 Data Source:

Depth (ft) Unit Description

1-15	CLAY	Sandy, silty, pebbly, moderate yellowish-brown, moderately cohesive, moderately plastic, oxidized, limestone and shale fragments in clay matrix (till)
15-46	SAND	Fine to coarse-grained (interbedded with very silty, sandy clay) angular to subrounded, moderately well-sorted, predominantly quartz and shale with some granitic grains, taking some water, not caving, oxidized to dark yellowish-brown color
46-108	SAND	Gravelly (becomes more gravelly with depth) (approximately 25-35% fine to medium, angular to subrounded, shale gravel – gravel occurs as interbedded layers), medium to very coarse-grained, angular to subrounded, moderately well-sorted, predominantly quartz and shale (shale content increases with depth), some limestone, dolostone, few and lignite granitic grains, taking some water, not caving
108-142	GRAVEL	Sandy (some sand occurs as interbedded layers) approximately 25-35% medium to very coarse-grained, angular to subrounded sand) fine to coarse, angular to subrounded, moderately well sorted, predominantly shale, with some limestone, dolostone, and a few light-colored granite rock and lignite chips, taking some water, caving slightly
142-180	SHALE	Fissile, black to grayish-black with a few light-olive gray laminations, slightly fractured, moderately indurated, non-calcareous, (Pierre Formation)

151-062-01AAD

NDSWC 12808

Date Completed: 07/30/1991 Purpose: Observation Well
 L.S. Elevation (ft): 1496.16 Well Type: 2 in. - PVC
 Depth Drilled (ft): 220 Aquifer: Spiritwood
 Screen Int. (ft.): 178-183 Data Source:

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-18	CLAY	yellowish brown, silty, sandy with pebbles, oxidized till
18-63	CLAY	olive gray, silty sandy with pebbles, till
63-135	CLAY	olive gray, slightly silty, sticky, drills slow
135-157	CLAY	gray to black, harder than above
157-193	GRAVEL	sandy, 20-40% shale, medium sand to coarse gravel, well rounded to subrounded, drills fast to choppy, taking water
193-198	SHALE	black, greasy, clayey (Pierre shale)
198-220	SHALE	black, brittle, angular fragments

151-062-02CCC

NDSWC 15

Date Completed: 09/26/1985 Purpose: Observation Well
 L.S. Elevation (ft): 1534.6 Well Type: 2 in. - PVC
 Depth Drilled (ft): 80 Aquifer: Warwick
 Screen Int. (ft.): 70-75 Data Source:

Depth (ft)	Unit	Description
0-1	TOPSOIL	USGS Import silty, black
1-41	GRAVEL	fine to coarse, shaley, carbonates, igneous, 20% sand
41-45	SAND	fine to coarse, gravel fine to coarse
45-80	TILL	silty, olive gray

151-062-02CDD

NDSWC 14

Date Completed: 09/26/1985 Purpose: Observation Well
 L.S. Elevation (ft): 1550 Well Type: 2 in. - PVC
 Depth Drilled (ft): 100 Aquifer: Undefined
 Screen Int. (ft.): 50-55 Data Source:

Depth (ft)	Unit	Description
0-1	TOPSOIL	silty, black
1-26	TILL	clay, silty, olive brown, oxidized
26-38	GRAVEL	medium to coarse, brown, some reds, about 10% sand, oxidized, lots of rocks
38-82	SAND	fine to coarse, oxidized
82-100	TILL	silty, olive gray

151-062-03ADD

NDSWC 337

Date Completed: 01/01/1950 Purpose: Test Hole
 L.S. Elevation (ft): 1611
 Depth Drilled (ft): 140
 Depth (ft) Unit Description

0-1 TOPSOIL Black
 1-28 TILL Light brown; silt and clay, sandy and gravelly
 28-37 SILT AND CLAY Light brown
 37-59 SILT AND CLAY Gray
 59-65 SAND Coarse; gravel, fine, clayey, gray
 65-98 TILL Gray
 98-140 SHALE Gray (black)

151-062-03ADDA

NDSWC 12804

Date Completed: 07/23/1991 Purpose: Observation Well
 L.S. Elevation (ft): 1608.2 Well Type: 1.25 in. - PVC
 Depth Drilled (ft): 400 Aquifer: Spiritwood
 Screen Int. (ft.): 350-355 Data Source:
 Depth (ft) Unit Description

0-1 TOPSOIL
 1-16 CLAY yellowish brown, silty, oxidized clay
 16-26 CLAY yellowish brown, silty sandy with pebbles, oxidized till
 26-30 SAND & GRAVEL oxidized
 30-32 TILL oxidized
 32-52 GRAVEL oxidized
 52-54 TILL oxidized
 54-82 CLAY olive gray, silty sandy with pebbles, interbedded with sand and gravel, till
 82-182 CLAY olive gray, silty, sticky
 182-250 CLAY black, sticky, hole boots off, losing circulation
 250-292 CLAY black, with fragments of shale, Pierre?, some black greasy organics
 292-400 GRAVEL coarse with coarse to very coarse sand, some lignites fragments, 20-30% shale, ran out of drill stem

151-062-03BBB

M. CHRISTOPHERSON

Date Completed: 00/00/00 Purpose: Domestic Well
 L.S. Elevation (ft): 1475 Well Type: 0 in. - Unknown
 Depth Drilled (ft): 0 Aquifer: Till
 Screen Int. (ft.): 0-22 Data Source:
 Remarks: M. CHRISTOPHERSON

151-062-03DDAA

NDSWC 15059

Date Completed: 09/24/2003 Purpose: Observation Well
 L.S. Elevation (ft): 1544 Well Type: 2 in. - PVC
 Depth Drilled (ft): 280 Aquifer: Spiritwood
 Screen Int. (ft.): 258-263 Data Source:
 Completion Info: Levels ran 10/6/2003 by NDSWC. MP elevation from top of well.
 Remarks: r=1000', 900'north of DDD2

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-3	TILL	Oxidized, yellowish till
3-72	SAND & GRAVEL	Oxidized, coarse sand and gravel, 3 bags drilling mud at 20-60 feet
72-77	TILL	Oxidized yellowish till
77-81	GRAVEL	Coarse shale gravel
81-86	TILL	Sandy, gray
86-103	TILL	Gray, sand and gravel till
103-136	TILL	Gray

151-062-03DDAD

NDSWC 15058

Date Completed: 09/24/2003 Purpose: Observation Well
 L.S. Elevation (ft): 1538 Well Type: 2 in. - PVC
 Depth Drilled (ft): 270 Aquifer: Spiritwood
 Screen Int. (ft.): 258-263 Data Source:
 Completion Info: Levels ran 10/6/2003 by NDSWC. MP elevation from top of well.
 Remarks: r=454', 354' north of DDD2

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-73	SAND & GRAVEL	Oxidized coarse sand and gravel, 2 bags of drill mud at 40 feet
73-78	SAND & GRAVEL	Gray fine sand and layers of shale gravel
78-90	TILL	Gray, sand till
90-91	SAND	
91-98	TILL	Gray, sand till
98-99	SAND & GRAVEL	Shale gravel and sand
99-127	TILL	Gray sand till
127-206	CLAY	Silty, gray, 2 bags drilling mud at 140 feet and 1 at 180 feet
206-208	GRAVEL	Shaley
208-210	CLAY	Gray
210-211	GRAVEL	Shaley
211-221	CLAY	Gray
221-241	SAND & GRAVEL	Medium to coarse gravel and sand with layers of coal and shale
241-270	SAND & GRAVEL	Coarse sand and gravel and layers of shale and coal, 1 bag drilling mud at 200 feet

151-062-03DDD1

NDSWC 8858

Date Completed: 08/23/1973 Purpose: Observation Well
 L.S. Elevation (ft): 1535 Well Type: 1.25 in. - PVC
 Depth Drilled (ft): 380 Aquifer: Warwick
 Screen Int. (ft.): 62-65 Data Source:

Remarks: SOUTH WELL

Depth (ft)	Unit	Description
0-56	SAND	Fine to medium, and fine to very coarse gravel
56-76	GRAVEL	Fine to coarse, sandy, slightly clayey; consists of about 70% shale particles
76-106	CLAY	Slightly sandy, pebbly, olive gray (till)
106-132	SILT	Clayey, medium dark gray to medium gray (glaciofluvial sediment)
132-160	SILT	Clayey, sandy, medium dark gray, lignitic; laminated with light gray and brownish black organic matter (glaciofluvial sediment)
160-205	SILT	Very clayey, medium gray (glaciofluvial sediment)
205-215	CLAY	Silty, sandy, medium gray (glaciofluvial sediment)
215-270	SAND	Fine to very coarse, lignitic, and fine to medium lignitic gravel; contains a few thin clay layers
270-370	GRAVEL	Very sandy, lignitic; contains a few thin clay layers
370-380	SHALE	Medium light gray to light brownish gray, calcareous, speckled (Niobrara Formation)

151-062-03DDD2

NDSWC 5303

Date Completed: 05/18/1978 Purpose: Observation Well
 L.S. Elevation (ft): 1535.2 Well Type: 1.25 in. - PVC
 Depth Drilled (ft): 320 Aquifer: Spiritwood
 Screen Int. (ft.): 260-263 Data Source:

Remarks: NORTH WELL

Depth (ft)	Unit	Description
0-48	SAND	gravelly, fine to coarse sand, fine to medium gravel, mostly medium to coarse sand, well sorted, 20% gravel, medium to well rounded, 30% shale, 30% carbonates
48-74	GRAVEL	sandy, fine to coarse sand, fine to coarse gravel, mostly fine to medium gravel, moderately well sorted, 60% shale, subrounded to angular
74-109	CLAY	silty, sandy, with gravel, medium gray clay, moderately cohesive
109-130	CLAY	silty, sandy, dark gray, plastic, clay, 40% silt, 5 to 10% fine sand, medium to highly cohesive
130-139	CLAY	silty, dark gray, plastic and cohesive, 40 to 50% silt
139-145	SAND	silty, very fine to fine sand, well sorted
145-153	SAND	silty, fine to very coarse, mostly medium sand, lignite
153-209	CLAY	silty, moderately dark gray clay, 40 to 50% silt, plastic and cohesive
209-214	SAND	fine to medium, mostly fine sand, well sorted, mostly quartz, fairly well rounded
214-223	CLAY	silty, dark gray, 30% silt, cohesive and plastic
223-233	SAND	fine to medium, mostly medium, well sorted, mostly quartz, fairly well rounded
233-241	CLAY	silty, sandy, 40% silt, dark gray, very fine sand 10%
241-266	SAND	gravelly, very fine to coarse sand, fine gravel,
266-311	SAND	gravelly, fine to very coarse sand, well rounded to subangular well sorted
311-320	GRAVEL	sandy, clayey, fine to coarse sand with fine to medium gravel, fairly well rounded and well sorted

151-062-03DDD3

NDSWC 15057

Date Completed: 09/23/2003 Purpose: Observation Well
 L.S. Elevation (ft): 1535 Well Type: 2 in. - PVC
 Depth Drilled (ft): 270 Aquifer: Spiritwood
 Screen Int. (ft.): 258-263 Data Source:
 Completion Info: Levels ran 10/1/3 by NDSWC. MPE is from top of well created on 10/20/3.
 Remarks: r=215', 115' north of 3ddd2(north)

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-56	SAND & GRAVEL	Coarse, oxidized
56-72	GRAVEL	Coarse, oxidized
72-74	GRAVEL	Coarse, shale gravel
74-106	TILL	Gray sand till, 1 drill mud at 40 feet
106-116	CLAY	Gray brownish sandy, silty clay
116-124	TILL	Gray, sand
124-134	CLAY	Brownish black, sandy clay w/layers of coal
134-141	SAND	Fine with layers of coal and shale
141-156	SAND	Fine with layers of coal
156-164	CLAY	Gray, silty
164-217	CLAY	Gray, hard
217-222	SAND	fine
222-228	SAND	fine to coarse
228-234	SAND & GRAVEL	Coarse sand and fine to medium gravel w/layers coal
234-248	SAND & GRAVEL	Coarse sand and medium to coarse gravel and layers of coal
248-270	GRAVEL	Coarse with layers of coal

151-062-03DDD4

NDSWC 15063

Date Completed: 10/01/2003 Purpose: Observation Well
 L.S. Elevation (ft): 1534 Well Type: 2 in. - PVC
 Depth Drilled (ft): 280 Aquifer: Spiritwood
 Screen Int. (ft.): 258-268 Data Source:
 Completion Info: MPE determined from well measurement on 10/9/3 from well 151-062-03DDD3. MPE is from top of well.
 Remarks: r=10' from production well

Depth (ft)	Unit	Description
0-1	TOPSOIL	Black
1-52	SAND & GRAVEL	Fine sand to coarse gravel, predominately coarse sand and fine gravel, moderately sorted, angular to subrounded, consisting of 50% carbonate, 40% igneous and metamorphic rock fragments (oxidized)
52-76	SAND & GRAVEL	Fine sand to coarse gravel, predominately medium gravel, poorly sorted to moderately sorted, angular to subrounded, consisting of 50% shale, 30% carbonates, 20% igneous and metamorphic rock fragments, shale in tablet form (oxidized)
76-128	TILL	Clay, sandy, silty, pebbly inclusions, gray, thin interbedded layers of fine sand throughout
128-137	CLAY	Very silty to silty, gray, brittle, non plastic to plastic, soft to firm, slow drilling (Lacustrine)
137-143	TILL	Clay, sandy, silty, pebbly inclusions, gray, thin interbedded layers of fine sand throughout

143-166	CLAY	Silty, sandy, gray with layers of fine sand consisting mostly of detrital lignites and shales (Lacustrine)
166-177	SAND	Fine, consisting of mostly shales and detrital lignites
177-181	CLAY	Sandy, brown to gray with layers of detrital lignites and shale sand (Lacustrine)
181-209	CLAY	Very silty to silty, gray, brittle, non plastic to plastic, soft to firm, slow drilling (Lacustrine)
209-218	CLAY	Sandy, gray, with fine sand layers (Lacustrine)
218-221	SAND	Fine
221-226	SAND	Fine to coarse, predominately fine sand, well sorted, consisted of shales, quartz, silicate minerals and detrital lignites,
226-245	SAND & GRAVEL	Predominately fine sand, moderately sorted, consisted of shales, quartz, silicate minerals, detrital lignites,
245-250	SAND & GRAVEL	Fine sand to medium gravel, predominately fine to medium, subangular to subrounded, moderate sorting, gravel consists of 60% quartz, 20% shale, 20% silicate minerals with a lot of detrital lignites
250-270	SAND & GRAVEL	Fine sand to medium gravel, predominately fine to medium, subangular to subrounded, moderate sorting, gravel consists of 40% quartz, 30% shale, 30% silicate minerals with a lot of detrital lignites
270-280	SAND & GRAVEL	Fine sand to coarse gravel, predominately medium gravel, subangular to rounded, moderate sorting, consisting of 50% shale (tablets) 30% silicate minerals, 20% quartz, w/detrital lignites,

151-062-03DDD5

Devils Lake

Date Completed:	10/17/2003	Purpose:	Production Well
L.S. Elevation (ft):	1535	Well Type:	12 in. - Steel
Depth Drilled (ft):	280	Aquifer:	Spiritwood
Screen Int. (ft.):	250-275	Data Source:	
Completion Info:	MP elevation determined from water measurement on 10/29/03 @ 9:26 from well		

151-062-03DDD3.

Depth (ft)	Unit	Description
0-0		See log for 03DDD4

151-062-08ABB

NDSWC 15027

Date Completed:	08/19/2003	Purpose:	Observation Well
L.S. Elevation (ft):	1500	Well Type:	2 in. - PVC
Depth Drilled (ft):	0	Aquifer:	Spiritwood
Screen Int. (ft.):	170-175	Data Source:	
Completion Info:	Levels ran 10/1/2003 by NDSWC.		

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-21	TILL	Clay, yellowish-brown, oxidized, silty, sandy pebbly inclusions in a highly weathered clay matrix
21-41	SAND & GRAVEL	Fine sand to very coarse gravel, oxidized, rusty grains, shale, quartz, rock fragments, lignite, poorly sorted
41-91	TILL	Clay, yellowish-brown, oxidized, silty sandy pebbly inclusions in a highly weathered clay matrix, highly interbedded with sand and gravel

91-101	TILL	Medium gray, silty, sandy, pebbly inclusions in a clay matrix, moderately firm, unoxidized, interbedded with layers of sand and gravel some highly shaley, rock at 100 feet
101-122	TILL	Medium gray, silty, sandy, pebbly inclusions in a clay matrix, moderately firm, unoxidized, no interbedding
122-131	TILL	Medium gray, silty, sandy, pebbly inclusions in a clay matrix, moderately firm, unoxidized, interbedded with layers of sand and gravel some highly shaley
131-137	SAND & GRAVEL	Poor sample return, appears to be quite shaley
137-147	CLAY	Medium gray, moderately firm, massive, no inclusions (Lacustrine)
147-172	TILL	Medium gray, silty, sandy, pebbly inclusions in a clay matrix, moderately firm
172-180	SAND & GRAVEL	Poorly sorted, spiritwood like, layer of clay from 177-178 feet
180-192	TILL	Medium gray, silty, sandy, pebbly inclusions in a clay matrix, moderately firm
192-196	SAND	Poor sample returns, drills fast, probably shaley
196-210	TILL	Medium gray, silty, sandy, pebbly inclusions in a clay matrix, moderately firm, highly interbedded with layers of sand and gravel some highly shaley
210-224	SAND & GRAVEL	Interbedded with layers of till
224-240	SHALE	Dark gray to black, firm, slow drilling with chatter through brittle zones (Bedrock Pierre Formation)

151-062-08DBB

NDSWC 17

Date Completed:	09/30/1985	Purpose:	Observation Well
L.S. Elevation (ft):	1507	Well Type:	2 in. - PVC
Depth Drilled (ft):	60	Aquifer:	Undefined
Screen Int. (ft.):	49-55	Data Source:	

Depth (ft)	Unit	Description
0-1	TOPSOIL	silty, black
1-2	ROCK	rocks
2-15	TILL	clay, silty, yellowish brown
15-25	SAND	fine to coarse, about 25% gravel
25-60	GRAVEL	fine to coarse, about 25% sand, with lots of shale gravel

151-062-08DDD

NDSWC 16

Date Completed:	09/30/1985	Purpose:	Observation Well
L.S. Elevation (ft):	1525	Well Type:	2 in. - PVC
Depth Drilled (ft):	60	Aquifer:	Undefined
Screen Int. (ft.):	46-53	Data Source:	

Depth (ft)	Unit	Description
0-1	TOPSOIL	silty, black
1-4	TILL	clay, silty, yellowish brown
4-6	GRAVEL	gravel and rocks, changed to rock bit @ 4'
6-22	TILL	clay, silty, yellowish brown
22-30	SAND	fine to coarse
30-60	GRAVEL	fine to coarse, about 30% sand with a few rocks

151-062-09ABB

NDSWC 8857

Date Completed: 08/23/1973 Purpose: Observation Well
 L.S. Elevation (ft): 1494 Well Type: 1.25 in. - ABS
 Depth Drilled (ft): 240 Aquifer: Spiritwood
 Screen Int. (ft.): 197-203 Data Source:
 Completion Info: Levels ran 10/6/2003 by NDSWC.

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-23	CLAY	Silty, moderately sandy, pebbly, moderate yellowish brown, oxidized (till)
23-29	CLAY	Silty, slightly sandy, pebbly, olive-gray (till)
29-31	SAND	Fine to coarse, gravelly
31-73	CLAY	Slightly sandy, pebbly, gravelly, olive-gray, calcareous (till)
73-76	SAND	Fine to very coarse, gravelly
76-80	CLAY	Sandy, silty, olive-gray
80-90	GRAVEL	Fine to coarse, very sandy, very clayey; consists of about 60% shale particles
90-98	SILT	Clayey, medium gray, highly calcareous (glaciofluvial sediment)
98-106	CLAY	Very sandy, pebbly, brownish gray (till)
106-128	SAND	Fine to very coarse, clayey, lignitic
128-148	SILT	Sandy, clayey, medium gray, highly calcareous; mottled light olive-gray and light brownish gray (glaciofluvial sediment)
148-219	SAND	Fine to very coarse, gravelly, slightly clayey
219-240	SHALE	Silty, medium dark gray to grayish black, brittle (Pierre Formation)

151-062-09DAA

NDSWC 15020

Date Completed: 08/13/2003 Purpose: Observation Well
 L.S. Elevation (ft): 1518 Well Type: 2 in. - PVC
 Depth Drilled (ft): 320 Aquifer: Spiritwood
 Screen Int. (ft.): 198-208 Data Source:
 Completion Info: Levels ran 10/6/2003 by NDSWC.

Depth (ft)	Unit	Description
0-1	TOPSOIL	Black
1-17	TILL	Clay, silty, sandy, pebbly w/inclusions, soft and plastic, brown, oxidized (Till)
17-67	SAND & GRAVEL	Fine sand to coarse gravel consisting mostly of fine to medium gravel, moderately sorted, subangular to subrounded consisting of shales, carbonates, igneous and metamorphic rock fragments, from 46-67 feet more shales and coarser gravel
67-87	TILL	Clay, silty, sandy, pebbly w/inclusions, gray, soft and plastic, rocks @ 69-70 feet, (Till)
87-103	SAND	Fine to medium w/detrital lignites
103-111	SILT	Clayey, gray (Lacustrine)
111-124	CLAY	Silty, gray, very high silt content, soft and gritty (Lacustrine)
124-131	CLAY	Silty, gray, no inclusions, massive, plastic, very firm (Lacustrine)
131-142	CLAY	Silty, high silt content, soft and gritty (Lacustrine)
142-151	SAND	Very fine
151-158	SILT	Clayey, gray (Lacustrine)
158-183	CLAY	Silty, gray, no inclusions, massive, plastic, very firm (Lacustrine)
183-194	SAND	Fine to coarse w/detrital lignites
194-198	CLAY	Silty, high silt content, soft and gritty (Lacustrine)
198-202	SAND	Fine to coarse w/detrital lignites

202-292 SAND & GRAVEL Fine sand to coarse gravel, primarily fine to medium gravel, poorly sorted, subrounded to rounded, consisting of shales, carbonates, quartz, and igneous & metamorphic rock fragments, shales in tablet form, gravel became coarse w/depth, Rocks and gravel @ 287-292 feet

292-320 SHALE Grayish black, slightly indurated w/layers of bentonitic clay (Pierre Shale Bedrock)

151-062-11AAD
NDSWC 15019

Date Completed: 08/12/2003 Purpose: Observation Well
 L.S. Elevation (ft): 1522 Well Type: 2 in. - PVC
 Depth Drilled (ft): 260 Aquifer: Spiritwood
 Screen Int. (ft.): 218-223 Data Source:
 Completion Info: Levels ran 10/1/2003 by NDSWC.
 Remarks: Well is nearly at land surface.

Depth (ft)	Unit	Description
0-1	TOPSOIL	Black
1-35	TILL	Clay, silty, sandy, pebbly w/inclusions, brn, sandy, w/many shale pebbles, moderately plastic, oxidized, gravel from 26-29 feet angular consisting mostly of shales w/carbonates and silicates
35-71	TILL	Clay, silty, sandy, pebbly w/inclusions, gry, unoxidized, sand and gravel from 45-50 feet, primarily medium gravel consisting mostly of shales w/carbonates and Igneous and metamorphic rock fragmernts, sand and gravel from 57-60 consisting mostly of shales, w/carbonates, igneous and metamorphic rock fragmernts, and detrital lignites
71-80	SAND & GRAVEL	Fine sand to medium gravel, primarily fine to medium gravel, subangular to subrounded, poorly sorted, consisting mostly of shales w/carbonate and igneous and metamorphic rock fragments, rock @ 76-77 feet
80-96	CLAY	Silty, massive, gray, very plastic, no inclusions, soft to very firm (Lacustrine)
96-101	SAND	fine to medium
101-102	ROCK	
102-131	CLAY	Silty, massive, gray, very plastic, no inclusions, soft to firm from 80-96 feet, very firm from 111-131 feet (Lacustrine)
131-142	SAND	Fine to medium
142-182	CLAY	Silty, massive, gray, very plastic, no inclusions, soft to very firm, slow drilling, high clay content (Lacustrine)
182-203	SILT	Clayey, brown, few returns (Lacustrine)
203-240	SAND & GRAVEL	Fine sand to coarse gravel, primarily fine to medium gravel, subrounded to rounded, poorly sorted, consisting primarily of shales, w/carbonates, quartz, igneous and metamorphic rock fragments, and shales in tablet form
240-260	SHALE	Grayish black, slightly indurated w/layers of siltstone and sandstone and clay layers (Bedrock Pierre Formation)

151-062-11DCC

USBR

Date Completed: 01/01/1961 Purpose: Test Hole
 L.S. Elevation (ft): 1498
 Depth Drilled (ft): 0

Depth (ft)	Unit	Description
0-2	TOPSOIL	Black, organic, dry, silty sand, trace of clay
2-4	SAND	Silty, brown, dry, fine, silty, trace of clay to clayey, with occasional shale particles
4-25.3	CLAY	Silty, brown dries to tan, dry becoming moist at 15 ft., very silty, laminated in zones, stiff low to medium plasticity
25.3-28.7	SILT	Brown with gray zone at 28 ft., very fine sandy silt with laminated silty clay zone 28 to 28.7 ft.
28.7-50	SAND	Brown, becoming gray at 33.6 ft., wet becoming saturated at 29.4 ft., fine uniform, clean to trace of silty, cohesionless, occasional fine gravel and shale fragments, glacial till finger at 45.5 to 45.8 ft., medium density

151-062-12DCC

NDSWC 10309

Date Completed: 10/04/1978 Purpose: Observation Well
 L.S. Elevation (ft): 1511.1 Well Type: 1.25 in. - PVC
 Depth Drilled (ft): 300 Aquifer: Spiritwood
 Screen Int. (ft.): 235-238 Data Source:

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-21	SAND	gravelly, fine sand to medium gravel, yellowish brown, oxidized
21-49	CLAY	very silty, very sandy, poorly cohesive, easy drilling, yellowish brown, oxidized
49-80	CLAY	very silty, sandy, moderately cohesive, olive gray to gray
80-96	GRAVEL	sandy, 80% shale, poorly sorted, coarse sand to coarse gravel, mostly a medium gravel, 20% carbonates, subangular to angular
96-110	POOR RETURN	easy drilling, possibly fine sand and silt, taking water
110-183	CLAY	silty, sandy, poor cohesion, poor compaction, some fine sand to very fine sand, taking water and mixed 1 bag of mud
183-185	SAND	very fine to medium, mostly fine, well sorted
185-204	CLAY	silty, very sandy, moderately compact, poor cohesion, olive gray, some small sand layers, till
204-240	GRAVEL	sandy, coarse sand to medium gravel, mostly fine gravel, 20% shale, 80% silicates and carbonates, well rounded and well sorted
240-280	CLAY	olive gray to black, very silty, sandy, layers of shale gravel,
280-291	CLAY	black to dark gray, hard, well compacted, cohesive
291-300	SHAPE	hard, black mixed with clay, hard drilling, well compacted, very cohesive,

151-062-13BCA

NDSWC 10306

Date Completed: 10/04/1978 Purpose: Observation Well
 L.S. Elevation (ft): 1495 Well Type: 1.25 in. - PVC
 Depth Drilled (ft): 300 Aquifer: Spiritwood
 Screen Int. (ft.): 246-249 Data Source:

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-15	SAND	40% gravel, coarse sand to coarse gravel, poorly sorted, subangular to angular, yellowish brown, oxidized
15-19	CLAY	silty, sandy, pebbles, poor cohesion, poor compaction, brownish yellow, oxidized till
19-48	SAND	very fine to medium, well sorted
48-52	SAND	gravelly, fine sand to medium gravel, 50% silicates, 20% lignite, poorly sorted
52-78	SAND	very fine to medium, mostly very fine, olive gray to light gray, some small interbedded layer of lignite and clay, somewhat slightly silty
78-80	GRAVEL	shale, very coarse, well rounded to angular, poorly sorted
80-105	CLAY	slightly silty, very cohesive, compact, grades to a more silty clay, olive gray
105-122	SAND	very fine to medium, mostly fine, similar to sands from 52 to 78 feet
122-173	CLAY	silty, sandy, pebbles, very cohesive, moderately compact, dark gray to olive gray
173-281	SAND & GRAVEL	very coarse sand to medium gravel, mostly fine gravel, well rounded, 10% carbonates, 80% silicates, from 201 to 281 gravel becomes more coarse
281-300	SHALE	black, very cohesive, well compact hard drilling, Pierre formation

151-062-13BCD

NDSWC 10307

Date Completed: 10/04/1978 Purpose: Observation Well
 L.S. Elevation (ft): 1495 Well Type: 1.25 in. - PVC
 Depth Drilled (ft): 300 Aquifer: Spiritwood
 Screen Int. (ft.): 192-195 Data Source:

Spw and War connected in this area ?

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-22	SAND	fine to coarse, mostly medium, moderately sorted, brownish yellow, oxidized
22-86	SAND	fine sand to fine gravel, mostly coarse sand, well rounded, 20% gravel, shale, fair sorting
86-108	GRAVEL	shale gravel, ranges from coarse sand to medium gravel, mostly a medium gravel, poorly sorted, 60% shale, grades down to coarse gravel towards 106 feet
108-133	SAND	very fine to medium, mostly fine, well sorted
133-149	SAND	fine to medium, mostly medium, poorly sorted
149-157	SAND	fine to coarse gravel, mostly coarse sand, moderately poor sorting
157-163	GRAVEL	fine to coarse gravel, 90% shale, mostly medium gravel, well rounded, well to moderately sorted
163-182	SAND	gravelly (15%), fine sand to coarse gravel, mostly a coarse sand, poor sorting, gravel well rounded
182-189	CLAY	silty, cohesive, moderately compacted, olive gray
189-200	SAND	very fine, lignite, interbedded with olive gray clays

200-279	GRAVEL	coarse sand to coarse gravel, mostly a medium gravel, well rounded, moderately sorted, 90% shale, 10% carbonates and silicates
279-280	CLAY	very cohesive, very compact, olive gray to dark gray
280-300	CLAY	black, very cohesive, very compact, hard drilling , Pierre formation

151-062-13CAA
NDSWC 10304

Date Completed:	10/03/1978	Purpose:	Observation Well
L.S. Elevation (ft):	1495	Well Type:	1.25 in. - PVC
Depth Drilled (ft):	300	Aquifer:	Spiritwood
Screen Int. (ft.):	236-239	Data Source:	

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-13	SAND	fine to coarse, mostly a medium sand, poorly sorted, moderately rounded, brownish yellow, oxidized
13-19	CLAY	silty, sandy, moderately cohesive, poorly compact, brownish yellow, till?
19-82	SAND	very fine to medium, mostly a fine sand, well sorted, oxidized zone concluded about 34 feet, then into fine gray sand
82-108	GRAVEL	sandy, coarse sand to medium gravel, 60% gravel, 80% shale, 10% carbonate, well rounded to subrounded
108-115	GRAVEL	sandy, 80% coarse gravel, coarse sand to coarse gravel, moderate sorting, subrounded to angular
115-144	GRAVEL	medium to very coarse, mostly very coarse, very well rounded, good sorting, 90% shale
144-175	CLAY	very cohesive, moderately compact, grading down to a silty sandy clay, gray to olive gray
175-201	SAND	fine to coarse, mostly a medium sand, moderately sorted, some small interbedded lignite layers
201-238	GRAVEL	coarse sand to medium gravel, mostly a medium gravel (80%), well rounded to subangular, 50% shale, 5% carbonates, 40% silicates, moderately sorted
238-264	GRAVEL	fine to coarse gravel, mostly coarse, well sorted, well rounded, less % of lignite and shale, more silicates and carbonates
264-284	CLAY	silty, sandy with pebbles, poor cohesion, poor compaction, some small interbedded layers of lignite, poor recovery, till
284-300	CLAY	very hard drilling, poor to no recovery, clay very cohesive, well compacted, possibly Bedrock ?

151-062-13CAA2
NDSWC 10304B

Date Completed:	10/06/1978	Purpose:	Observation Well
L.S. Elevation (ft):	1495	Well Type:	1.25 in. - PVC
Depth Drilled (ft):	160	Aquifer:	Warwick
Screen Int. (ft.):	130-136	Data Source:	

well may be in Warwick AQ.

Depth (ft)	Unit	Description
0-0	see log for 13CAA1	

151-062-13CAB1

NDSWC 10303A

Date Completed: 10/03/1978 Purpose: Observation Well
 L.S. Elevation (ft): 1495 Well Type: 1.25 in. - PVC
 Depth Drilled (ft): 300 Aquifer: Spiritwood
 Screen Int. (ft.): 258-261 Data Source:

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-21	SAND	fine sand to fine gravel, mostly coarse sand, 5% gravel, well rounded, shale fragments along with carbonates, dark yellow to light brown, oxidized
21-76	SAND	fine to medium, mostly medium, well sorted, subangular to well rounded, gray, unoxidized began at 28 feet
76-82	SAND	fine sand to fine gravel, mostly coarse sand, moderately well sorted, small shale fragments, gray
82-96	GRAVEL	sandy, medium sand to coarse gravel, mostly gravel, 70% shale, gravel well sorted
96-151	GRAVEL	sandy, fine to coarse gravel, mostly gravel (70%), 90% shale, well rounded
151-162	GRAVEL	sandy, fine sand to coarse gravel poor sorting, 65% gravel, 50% lignite
162-164	CLAY	silty, cohesive, moderately well compact, olive gray
164-180	GRAVEL	sandy, coarse sand to coarse gravel, mostly medium gravel, moderately sorted, well rounded, 30% carbonates, 50% shale
180-185	CLAY	silty, poorly cohesive, poorly compact, olive gray
185-225	SAND	fine to coarse sand, well sorted, well rounded
225-260	GRAVEL	sandy, 60% gravel, medium to coarse gravel, mostly a medium gravel, well sorted, well rounded, 50% carbonates, 50% shale, igneous, and metamorphic, taking water, mix 1 bag of mud
260-281	GRAVEL	sandy, coarse sand to coarse gravel, 50% gravel, well rounded, moderately poor sorting
281-284	CLAY	cohesive, moderately compact, light gray to olive gray
284-300	CLAY	black, very cohesive, compact, Pierre formation

151-062-13CAB2

NDSWC 10305

Date Completed: 10/03/1978 Purpose: Observation Well
 L.S. Elevation (ft): 1495 Well Type: 1.25 in. - PVC
 Depth Drilled (ft): 320 Aquifer: Spiritwood
 Screen Int. (ft.): 195-198 Data Source:

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-13	CLAY	silty, sandy, with pebbles, yellowish brown, till, oxidized
13-73	SAND	very fine to medium, mostly fine, some 6 inch layers of lignite
73-85	GRAVEL	sandy, medium sand to coarse gravel (20% gravel), gravel is mostly fine, well rounded, good sorting 30% carbonates, 70% shale
85-109	GRAVEL	sandy, 60% gravel, coarse sand to coarse gravel, mostly fine gravel, 10% carbonates, 90% shale, well rounded, fair sorting
109-162	GRAVEL	medium to very coarse gravel, mostly very coarse gravel, poor sorting, well rounded, 90% shale, taking water, mixed 2 bags of mud
162-166	CLAY	very compact, dense, very cohesive, olive gray
166-220	SAND	with some gravel (10%), lignite fragments in sand
220-222	CLAY	silty, moderately cohesive, well to poor compaction, olive gray to light gray

222-274	SAND	fine to medium, mostly fine, moderately sorted
274-283	CLAY	moderately compacted to well compacted, very cohesive, olive gray
283-304	GRAVEL	sandy, coarse sand to coarse gravel, 70% gravel, mostly a medium gravel, 40% carbonates, 60% shale, some interbeds of clay (olive gray)
304-320	CLAY	very dense, black, very cohesive, hard drilling, Pierre formation

151-062-13CAB3

NDSWC 10303B

Date Completed:	10/03/1978	Purpose:	Observation Well
L.S. Elevation (ft):	1495	Well Type:	1.25 in. - PVC
Depth Drilled (ft):	160	Aquifer:	Spiritwood
Screen Int. (ft.):	155-158	Data Source:	

Depth (ft)	Unit	Description
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0-0 see log for 13CAB2

151-062-13CBA

M. PARE

Date Completed:	05/13/1977	Purpose:	Irrigation Well
L.S. Elevation (ft):	N/A	Well Type:	12 in. - Steel
Depth Drilled (ft):	260	Aquifer:	Spiritwood
Screen Int. (ft.):	180-205	Data Source:	

Remarks:

151-062-13CBB

NDSWC 10308

Date Completed:	10/05/1978	Purpose:	Observation Well
L.S. Elevation (ft):	1496.2	Well Type:	1.25 in. - PVC
Depth Drilled (ft):	360	Aquifer:	Spiritwood
Screen Int. (ft.):	238-241	Data Source:	

Depth (ft)	Unit	Description
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0-1	TOPSOIL	
1-10	SAND	fine sand to coarse gravel, mostly medium sand, poorly sorted, yellowish brown, oxidized
10-26	CLAY	silty, sandy, pebbles, poor cohesion, poorly compact, yellowish brown, till
26-94	SAND	very fine to medium, mostly a medium sand, well sorted, at 80 feet some lignite
94-122	GRAVEL	sandy, 60% gravel, gravel fine to coarse, mostly a medium sand, 50% shale, 10% carbonates, 40% igneous and metamorphic, moderately to poorly sorted, well rounded
122-176	CLAY	silty, sandy, moderately compact, good cohesion, olive gray, sand layer at 156 feet
176-191	SAND	very fine to medium, mostly fine, with lignite and shale gravel, interbedded with clay, poor recovery on clay layers
191-222	GRAVEL	sandy, 50% gravel ranges from coarse sand to medium gravel, mostly a fine gravel, well rounded, poorly sorted, gravel composed of 40 to 50% lignite
222-264	GRAVEL	sandy, 50% gravel, ranges from coarse sand to medium gravel, mostly a fine gravel, well sorted, 10% shale, 80% igneous and metamorphic, 10% carbonates and lignites

264-314	GRAVEL	as above, however small interbedes of clay towards bottom of section, poor recovery on clay
314-360	SHALE	black to dark gray, very hard, compact, tough drilling

151-062-13DCC
ROGER JOHNSON

Date Completed:	5/1977	Purpose:	Irrigation Well
L.S. Elevation (ft):	N/A	Well Type:	12 in. - Steel
Depth Drilled (ft):	245	Aquifer:	Undefined
Screen Int. (ft.):	215-240	Data Source:	
Remarks:			

151-062-14AAA
NDSWC 5466

Date Completed:	09/11/1969	Purpose:	Observation Well
L.S. Elevation (ft):	1511.5	Well Type:	1.25 in. - ABS
Depth Drilled (ft):	300	Aquifer:	Spiritwood
Screen Int. (ft.):	218-224	Data Source:	
Slow pumper			

Depth (ft)	Unit	Description
0-1	TOPSOIL	Yellowish brown, sandy
1-24	SAND	Fine to coarse, about 30% gravel, medium to coarse, silty, oxidized
24-34	CLAY	Medium gray, silty, cohesive (Fluvial)
34-43	SAND	Fine to medium, rounded to subrounded, mostly quartz, interbedded with silty clay
43-50	SAND	Medium to coarse, about 30% gravel, medium; subrounded to subangular, mostly quartz, carbonates, and igneous, some lignite
50-60	CLAY	Olive to medium gray, very silty to sandy, slightly cohesive, (till)
60-71	SAND	Fine to medium, interbedded with lenses of silty clay, olive gray
71-72	BOULDER	Cobbles, granite and dolomite
72-83	CLAY	Medium gray with streaks of light gray, very silty
83-102	SAND	Fine to medium, rounded to subrounded, about 40% granite remainder is shale, carbonates, igneous and lignite
102-114	SAND	Fine to medium, interbedded with lenses of silty clay, olive gray
114-180	CLAY	Medium gray with some light gray streaks, very silty to sandy in places, cohesive, moderately plastic, calcareous
180-200	SAND	Fine to coarse, well rounded to subrounded, about 30% lignite, 25% shale, others quartz, carbonates, very few igneous
200-258	GRAVEL	Fine to medium; about 30% sand, coarse; well rounded to subangular, about 40% quartz, the rest is shale, carbonates, igneous, some lignite
258-280	GRAVEL	Fine to coarse, about 10% sand, coarse, well rounded to subangular, some cobbles, fair sorting, some of the carbonates have oxidized surfaces
280-300	SHALE	Dark gray, siliceous, indurated, non-calcareous (Pierre Formation)

151-062-14BBB

USGS

Date Completed: 05/18/1970 Purpose: Observation Well
 L.S. Elevation (ft): 1490.99 Well Type: 0 in. -
 Depth Drilled (ft): 19.1 Aquifer: Warwick
 Screen Int. (ft.): 0-19.1 Data Source:
 USGS Import

151-062-14D

H. PARE

Date Completed: 8/1975 Purpose: Irrigation Well
 L.S. Elevation (ft): N/A Well Type: 12 in. - Steel
 Depth Drilled (ft): 300 Aquifer: Spiritwood
 Screen Int. (ft.): 268-298 Data Source:

151-062-14DCC

NDSWC 14467

Date Completed: 00/00/00 Purpose: Test Hole
 L.S. Elevation (ft): 1480
 Depth Drilled (ft): 40
 Remarks: Site investigation for UND Section 319 denitrification study

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-9	SAND	fine, oxidized
9-12	SAND	fine to coarse, fine shale
12-15	SAND	fine to coarse, fine shale layers and coal
15-40	SAND	fine and coarse, gray, layers of coal and shale

151-062-14DDD

NDSWC 15018

Date Completed: 08/11/2003 Purpose: Observation Well
 L.S. Elevation (ft): 1484 Well Type: 2 in. - PVC
 Depth Drilled (ft): 340 Aquifer: Spiritwood
 Screen Int. (ft.): 218-223 Data Source:
 Completion Info: Levels ran 10/1/2003 by NDSWC.

Depth (ft)	Unit	Description
0-1	TOPSOIL	Black
1-21	SAND & GRAVEL	Brown, fine sand to medium gravel, primarily fine to medium sand, moderately sorted, sand was subangular to subrounded, consisting mostly of shales, carbonates, igneous and metamorphic rock fragments, quartz (oxidized)
21-26	SILT	Clayey, brown, oxidized, not much sample return
26-27	ROCK	
27-33	SILT	Clayey, gray, unoxidized not much sample return
33-43	SAND	Very fine to coarse, primarily fine to medium sand, moderately sorted, with detrital lignites
43-51	SILT	Clayey, gray, no return
51-57	CLAY	Silty, massive, no inclusions, gray, plastic, soft (Lacustrine)
57-83	SAND	Very fine to coarse, primarily fine to medium sand, moderately sorted, with detrital lignites
83-136	CLAY	Silty, no inclusions, gray, moderately plastic, higher silt content than above at 51-57 feet
136-161	SAND	Fine to medium, well sorted, with detrital lignites
161-171	CLAY	Silty, no inclusions, gray, moderately plastic, high content of silt

171-312 SAND & GRAVEL Fine sand to coarse gravel, primarily coarse and medium gravel, poorly sorted, gravel was subrounded to rounded, consisting of carbonates, quartz, igneous and metamorphic rock fragments, shale tablets, gravel primarily shales, from 221 to 312 feet there was coarser gravel and cobbles alot of chattering

312-340 SHALE Grayish black, slightly indurated with layers of siltstone, sandstone, bentonite, from 331 to 340 feet was more of a grayish black silty clay (Bedrock Pierre Formation)

151-062-15AAA
NDSWC 5551

Date Completed: 10/17/1969 Purpose: Observation Well
 L.S. Elevation (ft): 1493 Well Type: 1.25 in. - ABS
 Depth Drilled (ft): 340 Aquifer: Spiritwood
 Screen Int. (ft.): 197-203 Data Source:
 Completion Info: Levels ran 10/1/2003 by NDSWC.

Depth (ft)	Unit	Description
0-1	TOPSOIL	Silty, sandy, clayey, grayish black
1-9	SAND	Silty, clayey, very fine- to coarse-grained, subangular to rounded, moderately well sorted, oxidized throughout
9-12	CLAY	Very silty, moderate yellowish brown, moderately cohesive, moderately plastic, oxidized (fluvial sediment)
12-30	SAND	Fine- to coarse- grained, subangular to rounded, moderately well sorted, mostly quartz and carbonates, some shale, oxidized
30-50	CLAY	Silty, slightly sandy, very gravelly, occasional cobbles and boulders, olive gray, moderately cohesive, moderately plastic, calcareous(till)
50-100	CLAY	Very silty, olive gray to medium gray, very cohesive, slightly plastic to non-plastic, very calcareous, laminated (fluvial sediment)
100-120	SAND	Very fine- to medium- grained, subangular to rounded, moderately well sorted, approximately 50 to 60% quartz, 10 to 20% shale and carbonates, remainder lignite and granitics, taking some water, not caving in
120-156	CLAY	Very silty, medium gray with occasional light olive gray laminations, very cohesive, slightly plastic, very calcareous, some detrital lignite fragments (fluvial sediments)
156-182	CLAY	Same as above, only interbedded throughout with thin lenses and layers of very fine- to medium- grained sand, no water loss
182-224	SAND	Very slightly gravelly, occasional thin silty clay lenses and layers, very fine- to very coarse- grained, subangular to rounded, moderately well sorted, approximately 40 to 60% quartz, 10 to 20% carbonates, 10 to 20% shale, lignite, granitics and siliceous rocks, taking some water, not caving in
224-260	GRAVEL	Sandy, (approximately 30 to 40% fine- to coarse- grained sand), interbedded with thin clay lenses and layers, fine to coarse, angular to rounded, fair sorting, approximately 20 to 30% carbonates, 20 to 30% shale, 15 to 30% granitics and siliceous rocks, less than 5% lignite, taking some water, not caving
260-280	SAND	Slightly gravelly (approximately 15 to 25% fine to medium gravel), fine- to very coarse-grained (mostly medium to coarse), angular to rounded, moderately well sorted, approximately 60 to 70% quartz, 20 to 30% carbonates, shale, granitics, and lignite, taking some water, not caving in
280-319	GRAVEL	Cobbles, boulders and silty clay, gravel is fine to coarse, angular to rounded, fair sorting, approximately 50 to 60% shale (grayish black,

319-340 SHALE derived from Pierre Formation), remainder, carbonates (limestone and dolomite), granitics, quartzite, chalcedony, chert, metamorphics and lignite, taking some water, not caving in
 Medium gray to brownish gray, numerous small white specks, moderately indurated, slightly calcareous to moderately calcareous, bedded (Niobrara Formation)

151-062-15BBB

NDSWC 5465

Date Completed: 09/11/1969 Purpose: Observation Well
 L.S. Elevation (ft): 1494.9 Well Type: 1.25 in. - ABS
 Depth Drilled (ft): 240 Aquifer: Spiritwood
 Screen Int. (ft.): 198-204 Data Source:

Depth (ft)	Unit	Description
0-1	TOPSOIL	Brownish black, silty
1-8	CLAY	Moderate yellowish brown, very silty, oxidized, cohesive, plastic
8-20	SAND	Fine to coarse, subrounded to angular, about 30% gravel, fine to coarse, mostly carbonates and shale, some quartz and igneous, oxidized
20-23	CLAY	Medium gray, very silty, cohesive, plastic, calcareous (fluvial sediment)
23-35	SAND	Fine to medium, subangular to rounded, about 40% quartz, others are shale, carbonates and igneous
35-40	CLAY	Olive gray, silty, pebbly, cohesive, plastic, calcareous
40-96	CLAY	Medium gray, very silty, cohesive, plastic, calcareous
96-115	SAND	Fine to coarse, gravelly, subrounded to angular about 50% shale and carbonates; interbedded with alternating layers of clay, olive gray, silty
115-119	SAND	Fine to coarse, rounded to subrounded, abundant lignite
119-134	SAND	Fine to medium, interbedded with about 50% clay lenses, abundant lignite
134-156	CLAY	Light gray to medium gray, very silty, very calcareous, cohesive, plastic
156-160	SAND	Fine to medium, silty, subrounded to angular, about 50% quartz, some lignite, carbonates and igneous
160-163	CLAY	Medium gray, silty, cohesive
163-185	GRAVEL	Fine to coarse; about 30 to 40% sand, coarse; rounded to subangular, about 40 to 50% quartz, carbonates, and shale, some lignite and igneous rocks
185-200	SAND	Fine to coarse; about 40% gravel, medium; rounded to subrounded, abundant quartz and carbonates
200-216	GRAVEL	Medium to coarse, well rounded to subrounded, about 30% sand, coarse, about 50% carbonates and quartz, some shale and igneous rocks
216-240	SHALE	Dark gray, siliceous, indurated, upper part fractured (Pierre Formation)

151-062-15CCC1

USBR

Date Completed: 00/00/00 Purpose: Observation Well
 L.S. Elevation (ft): 1475 Well Type: 1.25 in. - Steel
 Depth Drilled (ft): 0 Aquifer: Warwick

Screen Int. (ft.): 0-18.5 Data Source:
 Remarks: NORTH WELL BY TREES

151-062-15CCC2

USBR

Date Completed: 00/00/00 Purpose: Observation Well
 L.S. Elevation (ft): 1475 Well Type: 1.25 in. - Steel
 Depth Drilled (ft): 0 Aquifer: Warwick
 Screen Int. (ft.): 0-14 Data Source:
 Remarks: SOUTH WELL BY TREES

151-062-15CCC3

USBR

Date Completed: 10/10/1975 Purpose: Observation Well
 L.S. Elevation (ft): 1479.1 Well Type: 2 in. - PVC
 Depth Drilled (ft): 21 Aquifer: Warwick
 Screen Int. (ft.): 16.4-21.4 Data Source:
 Remarks: well nearest to the road

Depth (ft)	Unit	Description
0-2	Loam,sandy	
2-4	SAND	
4-6	SAND	loamy, coarse
6-7.5	SAND	fine
7.5-9	SAND	loamy, fine
9-15	SAND	loamy
15-19	SAND	
19-21	TILL	loamy

151-062-16BBB

NDSWC 15021

Date Completed: 08/13/2003 Purpose: Observation Well
 L.S. Elevation (ft): 1521 Well Type: 2 in. - PVC
 Depth Drilled (ft): 240 Aquifer: Spiritwood
 Screen Int. (ft.): 208-218 Data Source:
 Completion Info: Levels ran 10/6/2003 by NDSWC.

Depth (ft)	Unit	Description
0-1	TOPSOIL	Black
1-22	TILL	Clay, silty, sandy, pebbly w/inclusions, high sand content, soft moderately plastic, yellowish brown, oxidized, (granitic) rock @10-11 feet
22-34	SAND & GRAVEL	Fine sand to coarse gravel, predominately fine to medium sand, poorly sorted, subangular to subrounded, consisting of shales, carbonates, and igneous & metamorphic rock fragments, oxidized
34-41	TILL	Clay, silty, sandy, pebbly w/inclusions, high sand content, soft moderately plastic, yellowish brown, oxidized
41-60	SAND & GRAVEL	Fine sand to coarse gravel, predominately fine to medium sand, poorly sorted, subangular to subrounded, consisting of shales, carbonates, and igneous & metamorphic rock fragments, oxidized
60-71	TILL	Clay, silty, sandy, pebbly w/inclusions, high sand content, soft moderately plastic, gray, unoxidized
71-207	CLAY	Silty, no inclusions, gray, massive, firm, plastic (Lacustrine)
207-228	SAND & GRAVEL	Fine sand to coarse gravel, predominately fine to medium gravel, coarser w/depth, poorly sorted, subrounded to rounded,

228-240 SHALE consisting of shales, carbonates, igneous & metamorphic rock fragments, and quartz, fine to medium sand from 207-210 feet Grayish black, slightly indurated w/layers of siltstone (Bedrock Pierre Formation)

151-062-16BCA

D.L. SIOUX TRIBE

Date Completed: 01/01/1977 Purpose: Observation Well
 L.S. Elevation (ft): 1505 Well Type: 1.25 in. - PVC
 Depth Drilled (ft): 220 Aquifer: Spiritwood
 Screen Int. (ft.): 178-198 Data Source:

Remarks:

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-40	GRAVEL	fine to coarse, 30% sand
40-69	TILL	
69-163	CLAY	silty
163-176	SAND	fine to coarse, 15% gravel
176-215	GRAVEL	fine to coarse, 40% sand
215-220	BEDROCK	

151-062-16BCA2

D.L. SIOUX TRIBE

Date Completed: 01/01/1977 Purpose: Irrigation Well
 L.S. Elevation (ft): 1505 Well Type: 12 in. - Steel
 Depth Drilled (ft): 220 Aquifer: Spiritwood
 Screen Int. (ft.): 176-218 Data Source:

Depth (ft)	Unit	Description
0-0		see log for 16BCA

151-062-16CBC

USGS #336

Date Completed: 10/06/1950 Purpose: Test Hole
 L.S. Elevation (ft): 1490
 Depth Drilled (ft): 50

Depth (ft)	Unit	Description
0-1	TOPSOIL	Black
1-15	SAND & GRAVEL	Light brown, fine to medium, mainly detrital shale
15-31	GRAVEL	Medium to coarse, and sand; gravel mainly detrital shale
31-43	TILL	Gray
43-50	SHALE	Gray (Pierre Shale)

151-062-17A

GREEN

Date Completed: 01/01/1977 Purpose: Irrigation Well
 L.S. Elevation (ft): 1500 Well Type: 12 in. - Steel
 Depth Drilled (ft): 201 Aquifer: Spiritwood
 Screen Int. (ft.): 175-197 Data Source:

Remarks:

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-4	TILL	
4-39	GRAVEL	sandy
39-70	TILL	
70-160	CLAY	silty
160-166	SAND	fine
166-174	CLAY	silty
174-201	GRAVEL	sandy

151-062-17ABD1

TRIBE

Date Completed: 01/01/1977 Purpose: Observation Well
 L.S. Elevation (ft): 1500 Well Type: 1.25 in. - PVC
 Depth Drilled (ft): 210 Aquifer: Spiritwood
 Screen Int. (ft.): 178-198 Data Source:

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-4	TILL	
4-39	GRAVEL	fine to coarse, 30% sand
39-70	TILL	
70-161	CLAY	silty
161-166	SAND	fine to medium
166-174	CLAY	silty
174-201	GRAVEL	fine to coarse, 25% sand
201-210	BEDROCK	

151-062-17BBB1

NDSWC 15022

Date Completed: 08/14/2003 Purpose: Test Hole
 L.S. Elevation (ft): N/A
 Depth Drilled (ft): 40

Depth (ft)	Unit	Description
0-1	TOPSOIL	Black
1-11	SAND & GRAVEL	Medium sand to coarse gravel, brown, predominately coarse gravel, moderately sorted, angular to subangular, consisting of carbonates, igneous & metamorphic rock fragments and shales, oxidized
11-18	CLAY	silty, yellowish-brown massive, soft, greasy (Lacustrine)
18-40	SAND & GRAVEL	Medium sand to coarse gravel, predominately medium gravel, moderately sorted, subangular to subrounded, carbonates, igneous & metamorphic rock fragments and shales in tablet form (oxidized)

151-062-17BBB2

NDSWC 15023

Date Completed: 08/14/2003 Purpose: Observation Well
 L.S. Elevation (ft): 1495 Well Type: 2 in. - PVC
 Depth Drilled (ft): 220 Aquifer: Spiritwood
 Screen Int. (ft.): 178-188 Data Source:
 Completion Info: Levels ran 10/6/2003 by NDSWC.

Depth (ft)	Unit	Description
0-1	TOPSOIL	Black
1-43	SAND & GRAVEL	Medium sand to coarse gravel, predominately medium to coarse gravel, poorly sorted, angular to subangular, consisting of carbonates, igneous & metamorphic rock fragments, and shales in tablet form
43-82	GRAVEL	Medium to coarse, predominately coarse shale gravel w/carbonates and igneous & metamorphic rock fragments
82-122	CLAY	Silty, no inclusions, gray massive, firm, plastic (Lacustrine)
122-142	CLAY	Silty, sandy, no inclusions, brown, massive, soft, moderately plastic (lacustrine)
142-164	CLAY	Silty, no inclusions, gray massive, firm, plastic (Lacustrine)
164-172	SAND	Fine to medium consisting mostly of shales and detrital lignites
172-176	CLAY	Silty, sandy, no inclusions, brown, massive, soft, moderately plastic (lacustrine)
176-180	SAND	Fine to medium w/coarser shales and detrital lignites
180-203	GRAVEL	Medium to coarse, predominately coarse shale tablets with carbonates and igneous and metamorphic rock fragments 80% shale and 20% mixed
203-220	SHALE	Grayish black, slightly indurated w/layers of siltstone (Bedrock Pierre Formation)

151-062-18AAA

NDSWC 11009

Date Completed: 08/01/1979 Purpose: Test Hole
 L.S. Elevation (ft): 1495
 Depth Drilled (ft): 40
 Completion Info: Hole abandoned, caving badly

Depth (ft)	Unit	Description
0-9	GRAVEL	fine to coarse, sandy, angular to subrounded, oxidized
9-31	GRAVEL	as above, many sandstone boulders, put on rock bit
31-40	CLAY	sandy with gravel, interbedded, poor sample, had pump problems, abandoned hole, caving badly

151-062-18ADD

NDSWC 11008

Date Completed: 08/01/1979 Purpose: Test Hole
 L.S. Elevation (ft): 1485
 Depth Drilled (ft): 220
 Depth (ft) Unit Description

0-1	TOPSOIL	
1-24	GRAVEL	fine to coarse, with coarse sand, subrounded to rounded, some pebbles, sand mostly quartz, gravel mostly shale, dark brown, oxidized
24-29	CLAY	
29-52	GRAVEL	as above, clay from 34 to 35 feet, and 51 to 52 feet
52-62	GRAVEL	medium with coarse sand,, mostly angular shale
62-81	SAND	coarse,mostly shale
81-163	SILT	clayey, sandy, sticky, soft, and olive gray, poor return
163-201	CLAY	olive gray, sandy, silty
201-220	CLAY	dark, olive gray, compact, some shale, Pierre formation, bedrock

151-062-18ADD2

USBR WM-58

Date Completed: 05/25/1973 Purpose: Observation Well
 L.S. Elevation (ft): 1486 Well Type: 0 in. -
 Depth Drilled (ft): 43 Aquifer: Warwick
 Screen Int. (ft.): 0-32.9 Data Source:
 USGS Import

151-062-19AAA

NDSWC 11007

Date Completed: 07/31/1979 Purpose: Observation Well
 L.S. Elevation (ft): 1486 Well Type: 1.25 in. - PVC
 Depth Drilled (ft): 200 Aquifer: Spiritwood
 Screen Int. (ft.): 133-138 Data Source:
 Depth (ft) Unit Description

0-1	TOPSOIL	
1-4	GRAVEL	fine to coarse, mostly coarse, 10% pebbles
4-6	CLAY	yellow, oxidized
6-18	GRAVEL	as above
18-23	CLAY	yellow, sandy, silty, till
23-123	CLAY	till as above, olive gray
123-146	SAND	fine, grayish brown
146-189	CLAY	dark olive gray, brittle (Pierre ?), taking water, interbedded with lignite and sand, fast drilling
189-200	CLAY	dark olive gray, brittle, sticky, slow drilling, Pierre formation

151-062-19ABB

NDSWC 5295

Date Completed: 05/16/1978 Purpose: Observation Well
 L.S. Elevation (ft): 1484.6 Well Type: 1.25 in. - PVC
 Depth Drilled (ft): 80 Aquifer: Warwick
 Screen Int. (ft.): 30-33 Data Source:

Depth (ft)	Unit	Description
0-10	SAND & GRAVEL	60% sand, 40% gravel, sand is fine to very coarse, mostly coarse, 50% quartz, 40% carbonates, 10% granites, subrounded, gravel is fine to medium, angular to subrounded, mostly carbonates with shale, some quartz granites, oxidized, taking water, mixed 1 bag of mud
10-16	SILT	sandy, no sample return
16-35	SAND & GRAVEL	70% sand, 30% gravel, composition as above, some lignite, taking water, mixed 1 bag of mud
35-53	CLAY	olive gray, sandy, silty, pebbles, boulders, tight, cohesive, till
53-80	SHALE	black to grayish black, indurated, tight, brittle, fractured to about 63 feet, noncalcareous, Pierre formation, bedrock

151-062-19ADD1

NDSWC 2877

Date Completed: 10/19/1967 Purpose: Observation Well
 L.S. Elevation (ft): 1482.6 Well Type: 4 in. - PVC
 Depth Drilled (ft): 80 Aquifer: Warwick
 Screen Int. (ft.): 33-38 Data Source:

Remarks: Old recorder site.

Depth (ft)	Unit	Description
0-1	TOPSOIL	Silty; sandy; brownish black
1-4	CLAY	Silty (gravelly); sandy; ducky yellow to moderate yellowish brown; slightly cohesive; plastic; a few light gray layers visible in samples; (oxidized till)
4-20	SAND	Very fine to medium grained; subangular to rounded; well sorted; estimate 75 to 85 % quartz; remainder being limestone, dolostone and shale; with some mudstone; taking some water; oxidized and moderate yellowish brown color
20-28	SAND	Medium to very coarse; subangular to rounded; moderately well sorted; estimate 55 to 65%; remainder being mudstone, limestone, dolostone, and granitics; taking a little water; a small amount of fine to medium gravel present
28-41	GRAVEL	Sandy (approximately 20 to 30% coarse to very coarse, subangular to subrounded sandy); gravel is fine to coarse; angular to rounded; fair sorting; estimate composition- 60 to 70% mudstone (medium dark gray to grayish black, non-calcareous); remainder being limestone(yellowish gray 5Y8/1); dolostone (grayish orange); granitics- pinkish, reddish and some free quartz; taking some water; caving a little
41-43	CLAY	Silty; sandy; gravelly; olive gray; moderately cohesive; semi-plastic; calcareous (till)
43-45	GRAVEL	Same as above
45-80	SHALE	Medium dark gray to dark gray; slightly indurated to indurated; non-calcareous, fractured throughout; (Pierre Shale)

151-062-19ADD2

NDGS BP68-3

Date Completed:	01/01/1968	Purpose:	Observation Well
L.S. Elevation (ft):	1485	Well Type:	1.25 in. - ABS
Depth Drilled (ft):	39	Aquifer:	Warwick
Screen Int. (ft.):	28-30	Data Source:	

151-062-19DDA

SCHWANN

Date Completed:	12/22/1979	Purpose:	Observation Well
L.S. Elevation (ft):	1468.2	Well Type:	4 in. - PVC
Depth Drilled (ft):	70	Aquifer:	Warwick
Screen Int. (ft.):	40-45	Data Source:	

well sticks out of ground 7' can't sample.

IRRIG PILOT WELL

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-5	TILL	yellow, about 50% gravel
5-10	SAND	fine brown
10-35	SAND	fine gray
35-40	GRAVEL	medium
40-45	SAND & GRAVEL	medium gravel to fine sand
45-59	SHALE	gray cobbles
59-70	CLAY	gray

151-062-20AAA

USBR WM 31

Date Completed:	05/12/1970	Purpose:	Observation Well
L.S. Elevation (ft):	1485	Well Type:	3 in. - Unknown
Depth Drilled (ft):	38	Aquifer:	Warwick
Screen Int. (ft.):	0-27.3	Data Source:	

USGS Import

151-062-20AAC

Ronald Waldo

Date Completed:	06/08/1979	Purpose:	Irrigation Well
L.S. Elevation (ft):	N/A	Well Type:	12 in. - Steel
Depth Drilled (ft):	160	Aquifer:	Undefined
Screen Int. (ft.):	101-131	Data Source:	

Remarks:

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-5	TILL	40% fine sand
5-10	TILL	
10-20	GRAVEL	medium to coarse
20-25	TILL	
25-30	GRAVEL	medium
30-40	SAND	fine
40-45	GRAVEL	medium, layered with clay
45-55	GRAVEL	medium to coarse
55-134	SAND & GRAVEL	
134-140	CLAY	with cobbles
140-148	CLAY	
148-160	COBBLES	10% gravel

151-062-20ABB

NDSWC 5294

Date Completed:	05/16/1978	Purpose:	Observation Well
L.S. Elevation (ft):	1482.8	Well Type:	1.25 in. - PVC
Depth Drilled (ft):	200	Aquifer:	Spiritwood
Screen Int. (ft.):	148-151	Data Source:	

Depth (ft)	Unit	Description
0-22	GRAVEL	fine to medium, angular to subrounded, moderately to poorly sorted, mostly carbonates and shale, some quartz and granites, oxidized, taking water, mixed 1 mud
22-33	GRAVEL	fine to very coarse, angular to subrounded, poorly sorted, 70% shale, 20% carbonates, 10% quartz and granitics, taking some water
33-39	CLAY	very silty, sandy, medium dark gray, soft, smooth, sticky, with some interbedded coarse sands, little to poor sample return
39-53	GRAVEL	fine to medium, with some coarse sand, subangular to subrounded, moderate to poor sorting, mostly shale and carbonates
53-63	CLAY	very silty, sandy, medium dark gray, very soft, sticky, fluvial
63-85	SAND & GRAVEL	as above, more % of coarse sand,
85-120	CLAY	very silty, as above, fluvial
120-181	GRAVEL	medium to coarse, nearly all shale with some carbonates, angular to subangular, poor sorting, tripped for rock bit at 170 feet, coarse carbonate gravel from 173 to 181, drilled rather slowly for a gravel
181-200	CLAY	shale, medium dark gray to black, very tight, brittle, non-calcareous, Pierre formation

151-062-20ACA

RALPH WALDO

Date Completed:	07/22/1977	Purpose:	Observation Well
L.S. Elevation (ft):	1490	Well Type:	1.25 in. - PVC
Depth Drilled (ft):	200	Aquifer:	Undefined
Screen Int. (ft.):	168-183	Data Source:	

Remarks:

151-062-20BDD

RONALD WALDO

Date Completed:	0/0	Purpose:	Observation Well
L.S. Elevation (ft):	1480	Well Type:	4 in. - Unknown
Depth Drilled (ft):	0	Aquifer:	Warwick
Screen Int. (ft.):	0-98	Data Source:	

Remarks:

151-062-20CCB

USGS #335

Date Completed: 01/01/1950 Purpose: Test Hole

L.S. Elevation (ft): 1465

Depth Drilled (ft): 125

Depth (ft)	Unit	Description
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0-2	TOPSOIL	Black
2-10	SAND	Medium to very coarse, coarser material mainly detrital shale
10-30	SAND	Medium to very coarse, and gravel, fine to medium, coarser sand and gravel mainly detrital shale
30-70	GRAVEL	Fine to medium, and sand, medium to very coarse, coarser sand and gravel, mainly detrital shale; material coarser toward bottom
70-116	GRAVEL	Fine to coarse, and sand, coarse to very coarse, material mainly detrital shale
116-125	SHALE	Gray (Pierre Shale)

151-062-20CDA

NDSWC 11004

Date Completed: 07/31/1979 Purpose: Observation Well

L.S. Elevation (ft): 1476.9 Well Type: 1.25 in. - PVC

Depth Drilled (ft): 140 Aquifer: Warwick

Screen Int. (ft.): 78-81 Data Source:

Remarks: QUARTERLY

Depth (ft)	Unit	Description
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0-1	TOPSOIL	
1-24	SAND	fine to coarse, mostly medium to coarse, with some gravel, light brown, oxidized
24-44	SAND	as above, less gravel
44-68	GRAVEL	fine to coarse, 50% shale
68-101	SAND	coarse with gravel, fine to medium, gravel is mostly shale
101-110	CLAY	light gray, very silty and sandy
110-115	CLAY	black, silty, carbonaceous
115-140	CLAY	dark olive gray, smooth, hard, sticky, Pierre Shale, bedrock

151-062-20DAD1

NDSWC 11005A

Date Completed: 07/31/1979 Purpose: Observation Well

L.S. Elevation (ft): 1470.5 Well Type: 1.25 in. - PVC

Depth Drilled (ft): 200 Aquifer: Spiritwood

Screen Int. (ft.): 143-146 Data Source:

Remarks: East Well

Depth (ft)	Unit	Description
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0-1	TOPSOIL	
1-5	SAND	fine to medium, gray
5-16	SAND	brown, fine to coarse, mostly coarse, with gravel, fine to medium gravel, mostly shale, a few pebbles
16-57	SAND	as above light gray, little gravel, some lignite
57-68	GRAVEL	coarse, with pebbles, mostly shale
68-82	CLAY	sandy, silty, light olive gray, till
82-94	CLAY	till as above with gravel layers
94-108	CLAY	till as above with sand layers
108-109	CLAY	dark olive gray, compact, sticky

109-137	SAND	coarse, some fine angular gravel, mostly shale
137-141	CLAY	poor return
141-156	GRAVEL	fine to coarse, some sand, 15% lignite, coarse towards bottom
156-161	CLAY	clay
161-168	GRAVEL	as above
168-200	CLAY	dark olive gray, hard, brittle, Pierre formation

151-062-20DAD2

NDSWC 11005B

Date Completed:	07/31/1979	Purpose:	Observation Well
L.S. Elevation (ft):	1470.7	Well Type:	1.25 in. - PVC
Depth Drilled (ft):	80	Aquifer:	Warwick
Screen Int. (ft.):	55-58	Data Source:	
Remarks:	West Well		
<u>Depth (ft)</u>	<u>Unit</u>	<u>Description</u>	
0-0		see log for 20DAD1	

151-062-20DBA

WALDO

Date Completed:	1979	Purpose:	Irrigation Well
L.S. Elevation (ft):	N/A	Well Type:	12 in. - Unknown
Depth Drilled (ft):	160	Aquifer:	Undefined
Screen Int. (ft.):	0-131	Data Source:	
Remarks:			
<u>Depth (ft)</u>	<u>Unit</u>	<u>Description</u>	
0-0		no log	

151-062-21ACB

James Beekstand

Date Completed:	09/04/1975	Purpose:	Irrigation Well
L.S. Elevation (ft):	N/A	Well Type:	12 in. - Steel
Depth Drilled (ft):	190	Aquifer:	Undefined
Screen Int. (ft.):	147-182	Data Source:	
Remarks:			
<u>Depth (ft)</u>	<u>Unit</u>	<u>Description</u>	
0-0		no log	

151-062-21BAA

NDSWC 5550

Date Completed: 10/16/1969 Purpose: Observation Well
 L.S. Elevation (ft): 1485.5 Well Type: 1.25 in. - ABS
 Depth Drilled (ft): 200 Aquifer: Spiritwood
 Screen Int. (ft.): 160-166 Data Source:

Depth (ft)	Unit	Description
0-1	TOPSOIL	Silty, sandy, clayey, grayish black
1-34	SAND	Slightly gravelly, fine- to very coarse-grained, subangular to rounded, moderately well sorted, oxidized, approximately 50 to 60% quartz, 10 to 20% carbonates, remainder shale, granitics and siliceous rocks-taking water
34-43	CLAY	Very sandy, silty, pebbly, boulders and cobbles, lower 2 to 3 ft. of section, olive gray moderately cohesive, slightly plastic, calcareous (till)
43-140	CLAY	Very silty, medium gray to olive gray with a few light olive gray laminations, very cohesive, non-plastic, very calcareous (fluvial sediment)
140-156	CLAY	Silty, slightly sandy, pebbly, occasional thin gravel lenses and layers, olive gray, moderately cohesive, moderately plastic, calcareous (till)
156-195	SAND	Slightly gravelly (fine to medium gravel), interbedded with thin lenses and layers of silty clay, very fine- to very coarse-grained (mostly medium- to coarse-grained) subangular to rounded, moderately well sorted, approximately 50 to 60% quartz, 10 to 20% carbonates, 5 to 15% shale, remainder lignite, granitics and siliceous rocks-taking small amount of water, not caving in
195-196	BOULDER	Granite, hard
196-200	SHALE	Siliceous, grayish black, moderately indurated, non-calcareous, bentonitic (Pierre Formation)

151-062-22BBB2

NDSWC 5549

Date Completed: 10/16/1969 Purpose: Observation Well
 L.S. Elevation (ft): 1476.3 Well Type: 1.25 in. - Steel
 Depth Drilled (ft): 200 Aquifer: Spiritwood
 Screen Int. (ft.): 171-177 Data Source:

Depth (ft)	Unit	Description
0-1	TOPSOIL	Silty, clayey, sandy, grayish black
1-4	CLAY	Very sandy, silty, pebbly, moderate yellowish brown, moderately cohesive, moderately plastic, oxidized (till)
4-14	SAND	Very fine- to medium-grained, subangular to rounded, moderately well sorted, mostly quartz, some shale and carbonates, oxidized
14-21	CLAY	Silty, very sandy, pebbly, olive gray to medium gray, moderately cohesive, slightly plastic, calcareous (till)
21-79	CLAY	Very silty, olive gray to medium gray with occasional light olive gray laminations, very cohesive, non-plastic, calcareous (Fluvial Sediment)
79-124	SAND	Occasional thin silty clay lenses, very fine- to very coarse-grained (mostly medium-grained), subangular to rounded, moderately well sorted, approximately 50 to 60% quartz, 15 to 25% shale and carbonates, remainder granitics, lignite and siliceous rocks, stratified
124-145	GRAVEL	fine to coarse, subangular to subrounded, about 55 percent quartz, 15 percent carbonates, 15 percent detrital shale
145-160	SAND	Slightly to moderately gravelly (approximately 20 to 40% gravel) (fine to coarse gravel), very fine- to very coarse-grained, subangular

160-184	GRAVEL	to rounded, moderately well sorted, approximately 50 to 60% quartz, 10 to 20% carbonates, 10 to 20% shale, granitics, lignite and siliceous rocks-taking some water, not caving in-probably stratified
184-200	SHALE	fine to very coarse, subangular to rounded, fair to good sorting, about 35 percent carbonates, 20 percent detrital shale, and 25 percent granitics, detrital lignite and siliceous rocks
		grayish-black, siliceous, moderately indurated, bentonitic, slightly fractured 184-195 (Bedrock Pierre Formation)

151-062-23AAC
LESTER HANSON

Date Completed:	05/10/1977	Purpose:	Irrigation Well
L.S. Elevation (ft):	1480	Well Type:	12 in. - Steel
Depth Drilled (ft):	260	Aquifer:	Undefined
Screen Int. (ft.):	227-252	Data Source:	

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-21	SAND	fine
21-36	CLAY	gray
36-41	LIGNITE	
41-155	CLAY	gray
155-177	SAND	fine
177-195	GRAVEL	medium
195-215	GRAVEL	medium with coal
215-260	SAND & GRAVEL	coarse

151-062-23ABB
NDSWC 5293

Date Completed:	05/12/1978	Purpose:	Observation Well
L.S. Elevation (ft):	1477.2	Well Type:	1.25 in. - PVC
Depth Drilled (ft):	320	Aquifer:	Spiritwood
Screen Int. (ft.):	228-231	Data Source:	

Completion Info: War aq. overlies Spw aq. at this site
Remarks: East well

Depth (ft)	Unit	Description
0-58	SAND	fine to coarse sand, mostly medium sand, well sorted, subangular to rounded, mostly quartz (40%), also some carbonates, shale, and lignite, coarse bed of lignitic sand at 35 feet, oxidized zone ends at 26 feet, taking water, mixed mud at 60 feet
58-66	GRAVEL	sandy, fine to coarse gravel, mostly fine gravel, fine to coarse sand, moderately sorted and rounded, mostly shale gravel (390% to 40%)
66-74	SILT	clayey, sandy, light to dark gray clay, medium to coarse sand interbedded
74-93	SILT	very clayey, very poor return, medium to dark gray, 80% silt
93-100	CLAY	medium to dark gray, very plastic and compact
100-118	CLAY	silty, sandy, pebbles, dark gray, fine to coarse sand and pebbles, till
118-136	CLAY	silty, medium dark gray, very compact, moderately plastic
136-176	SAND	fine to very coarse, mostly medium sand, fairly well sorted, very coarse sand is mostly lignite, fine to medium sand is mostly quartz,
176-277	SAND	as above, mostly coarse to very coarse, some fine gravel, abundant shale pebbles, slightly plastic, taking water

277-320 CLAY shale, silty, medium light to dark gray with some brownish gray, tight, cohesive, brittle, calcareous, Niobrara formation, bedrock

151-062-23ABB2
NDSWC 12810A

Date Completed: 07/31/1991 Purpose: Observation Well
 L.S. Elevation (ft): 1476.1 Well Type: 2 in. - PVC
 Depth Drilled (ft): 160 Aquifer: Spiritwood
 Screen Int. (ft.): 148-153 Data Source:

Remarks: Middle well

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-19	SAND	very fine to medium, well sorted, iron stained, oxidized, taking water
19-45	SAND	very fine to coarse, unoxidized, well rounded, becomes very coarse with depth, 10% fine gravel, taking water
45-66	GRAVEL	sandy, pea to marble size shale gravel, taking lots of water mixed 1 bag of mud
66-76	GRAVEL	interbedded with silty clay
76-135	CLAY	olive silty
135-160	SAND	gravelly, medium sand to coarse gravel

151-062-23ABB3
NDSWC 12810B

Date Completed: 07/31/1991 Purpose: Observation Well
 L.S. Elevation (ft): 1476.5 Well Type: 2 in. - PVC
 Depth Drilled (ft): 60 Aquifer: Warwick
 Screen Int. (ft.): 48-53 Data Source:

Remarks: West well

Depth (ft)	Unit	Description
0-0		see log for 23 ABB2

151-062-23BBA
NDSWC 14466

Date Completed: 05/10/2000 Purpose: Test Hole
 L.S. Elevation (ft): 1470
 Depth Drilled (ft): 64
 Remarks: Site investigation for UND/Section 319 denitrification study / 2000

Depth (ft)	Unit	Description
0-2	TOPSOIL	
2-20	SAND	fine, silica, some small shale oxidized
20-21	SAND	fine, silica, more shale
21-29	SAND	fine sand, unoxidized, much shale
29-64	SAND	fine, much shale with detrtal lignite

151-062-23BBB1

USBR WM-51

Date Completed:	07/11/1975	Purpose:	Observation Well
L.S. Elevation (ft):	1470	Well Type:	1.25 in. -
Depth Drilled (ft):	38	Aquifer:	Warwick
Screen Int. (ft.):	0-32.1	Data Source:	

USGS Import

151-062-23BBB2

USBR WM-51A

Date Completed:	07/11/1975	Purpose:	Observation Well
L.S. Elevation (ft):	1471	Well Type:	1.25 in. -
Depth Drilled (ft):	17	Aquifer:	Warwick
Screen Int. (ft.):	0-17	Data Source:	

USGS Import

151-062-24AAA

NDSWC 5548

Date Completed:	10/16/1969	Purpose:	Observation Well
L.S. Elevation (ft):	1491.8	Well Type:	1.25 in. - ABS
Depth Drilled (ft):	220	Aquifer:	Spiritwood
Screen Int. (ft.):	197-203	Data Source:	

Depth (ft)	Unit	Description
0-1	TOPSOIL	Silty, clayey, sandy, grayish black
1-20	GRAVEL	Moderately sandy, clayey, silty, fine to coarse, poorly sorted, angular to subrounded, mostly shale and siltstone, some carbonates and granitics, oxidized throughout, taking some water
20-39	SAND	Silty, slightly clayey, very fine- to coarse- grained, fair sorting, subangular to rounded, approximately 50 to 60% quartz, 20 to 30% shale, remainder carbonates, oxidized throughout, taking small amount of water, not caving in
39-145	CLAY	Very silty, olive gray with light olive gray laminations, very cohesive, non-plastic, slightly indurated, very calcareous, (fluvial sediment)
145-174	SAND	Very fine- to medium-grained, interbedded with thin silty clay lenses and layers throughout section, subangular to rounded, moderately well sorted, approximately 60 to 70% quartz, 10 to 20% shale and carbonates, remainder lignite and granitics, not taking water, not caving in
174-180	CLAY	Very silty, interbedded with thin layers and lenses of very fine-grained sand, olive gray to medium gray with a few light olive gray laminations and streaks, cohesive, slightly plastic, very calcareous, (fluvial sediment)
180-208	SAND	Slightly gravelly, interbedded with layers and lenses of silty clay, fine- to very coarse-grained, subangular to rounded, fair sorting, approximately 50 to 60% quartz, 20 to 30% carbonates and shale, remainder granitics, lignite and siliceous rocks-taking a little water, not caving in
208-220	SHALE	Siliceous, grayish black, non-calcareous, moderately indurated, bentonitic (Pierre Formation)

151-062-24AAA2

USBR WM-50

Date Completed: 06/12/1973 Purpose: Observation Well
 L.S. Elevation (ft): 1493 Well Type: 0 in. -
 Depth Drilled (ft): 48 Aquifer: Warwick
 Screen Int. (ft.): 0-30 Data Source:
 USGS Import

151-062-24CCC

NDSWC 5292

Date Completed: 05/11/1978 Purpose: Observation Well
 L.S. Elevation (ft): 1479 Well Type: 1.25 in. - PVC
 Depth Drilled (ft): 320 Aquifer: Spiritwood
 Screen Int. (ft.): 258-261 Data Source:
 Completion Info: Levels ran 10/06/2003 by NDSWC.
 Remarks: South well

Depth (ft)	Unit	Description
0-14	SAND	gravelly, fine to coarse sand, fine gravel, mostly medium sand, well sorted, angular to rounded, oxidized
14-21	GRAVEL	sandy, fine to coarse gravel, fine to coarse sand, mostly medium gravel, mostly shale, fair to well sorted, rounded to slightly angular
21-25	CLAY	silty, sandy, medium plastic, dark gray clay, fine to medium sand (15%)
25-71	CLAY	light to dark gray, very plastic, compact
71-92	SAND	very fine to medium, mostly fine sand, very well sorted, mostly quartz, some lignite fragments
92-94	SAND	coarse sand with layers of lignite
94-142	CLAY	silty, dark gray, clay, 10 to 20 % silt, very plastic and cohesive, very compact at 135 feet
142-150	SAND	very fine to medium sand, mostly fine sand, very well sorted
150-162	SAND AND CLAY	interbedded, fine sand and gray clay, moderately compact
162-172	SAND	coarse lignitic sand interbedded with dark gray clay
172-181	SAND	as above, interbedded, more lignite
181-187	SAND	fine to medium, mostly medium, well sorted, subrounded
187-300	GRAVEL	sandy, fine to medium gravel, medium to coarse sand, mostly fine gravel, mostly quartz, shale and carbonates, some lignite, moderately well sorted, subrounded, bed of medium gravel, lignite fragments at 250 feet, some clay layers at 290 feet
300-320	CLAY	silty, dark gray clay, very compact, plastic (Niobrara) bedrock

151-062-24CCC2

NDSWC 12807A

Date Completed: 07/25/1991 Purpose: Observation Well
 L.S. Elevation (ft): 1479 Well Type: 2 in. - PVC
 Depth Drilled (ft): 160 Aquifer: Spiritwood
 Screen Int. (ft.): 148-153 Data Source:
 Completion Info: Levels ran 10/06/2003 by NDSWC.
 Remarks: Middle well

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-18	SAND	very fine to fine, oxidized
18-22	SAND	unweathered gravelly
22-31	CLAY	olive gray, till
31-71	CLAY	olive gray, silty

71-92	SAND	fine, lignitic
92-138	CLAY	silty, gray
138-160	SAND	very fine to medium, lignitic, drills fast, taking water

151-062-24CCC3

NDSWC 12807B

Date Completed:	07/25/1991	Purpose:	Observation Well
L.S. Elevation (ft):	1479	Well Type:	2 in. - PVC
Depth Drilled (ft):	30	Aquifer:	Warwick
Screen Int. (ft.):	18-23	Data Source:	
Completion Info:	Levels ran 10/06/2003 by NDSWC.		
Remarks:	North Well		

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-18	SAND	very fine to fine, oxidized
18-23	GRAVEL	coarse, unweathered, pea to marble size
23-30	CLAY	olive gray, silty, sandy with pebbles, till

151-062-24DDC1

NDSWC 12806A

Date Completed:	07/25/1991	Purpose:	Observation Well
L.S. Elevation (ft):	1484.8	Well Type:	2 in. - PVC
Depth Drilled (ft):	240	Aquifer:	Spiritwood
Screen Int. (ft.):	218-223	Data Source:	
Remarks:	East Well		

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-23	GRAVEL	coarse, pea to marble size, iron stained, oxidized, lots of unweathered sand and gravel from 15-23 feet, taking water
23-37	CLAY	olive gray, silty, sandy with pebbles, poorly sorted till layer of sand and gravel from 32-37 feet
37-48	CLAY	very silty, olive gray drills smooth and fast
48-67	CLAY	less silty, drills slower, olive gray
67-90	SAND	very fine to fine, lots of lignites, and shale
90-143	CLAY	olive gray, very hard
143-161	SAND	very fine to fine, drills fast lignitic, taking water, layer of clay from 58-61 feet
161-185	SAND	very fine to very coarse, drills choppy and fast, lignitic, taking water
185-231	GRAVEL	coarse sand to pea gravel, well rounded to subrounded, lots of lignites and shales
231-240	SHALE	black, hard, may be fractured, bedrock, (Pierre shale)

151-062-24DDC2

NDSWC 12806B

Date Completed: 07/25/1991 Purpose: Observation Well
 L.S. Elevation (ft): 1485.1 Well Type: 2 in. - PVC
 Depth Drilled (ft): 160 Aquifer: Spiritwood
 Screen Int. (ft.): 148-153 Data Source:

Remarks: Middle Well

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-24	SAND & GRAVEL	oxidized
24-36	CLAY	olive gray, silty, sandy, with pebbles, till
36-68	CLAY	olive gray
68-79	SAND	very fine to fine
79-84	CLAY	olive gray, silty
84-91	SAND	very fine, lignitic
91-143	CLAY	gray, hard
143-160	SAND	very fine to medium, lots of lignites

151-062-24DDC3

NDSWC 12806C

Date Completed: 07/25/1991 Purpose: Observation Well
 L.S. Elevation (ft): 1485.1 Well Type: 2 in. - PVC
 Depth Drilled (ft): 28 Aquifer: Warwick
 Screen Int. (ft.): 18-23 Data Source:

Remarks: West well

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-24	SAND & GRAVEL	iron stained, oxidized
24-28	CLAY	olive gray, silty, sandy, with pebbles, till

151-062-25ACD

HECK

Date Completed: 01/01/1975 Purpose: Irrigation Well
 L.S. Elevation (ft): 1480 Well Type: 10 in. - Steel
 Depth Drilled (ft): 302 Aquifer: Spiritwood
 Screen Int. (ft.): 220-250 Data Source:

Remarks:

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-14	CLAY	yellow silty, with sand
14-40	TILL	
40-50	SAND	very fine, green
50-58	TILL	gray
58-72	SAND	fine, gray
72-160	CLAY	lake bed
160-200	SAND	coarse sand to medium gravel
200-250	SAND & GRAVEL	medium to coarse sand and coarse gravel
250-280	GRAVEL	with clay layers
280-302	SHALE	

151-062-25BBB

USBR WM-52

Date Completed: 06/12/1973 Purpose: Observation Well
 L.S. Elevation (ft): 1477 Well Type: 0 in. -
 Depth Drilled (ft): 23 Aquifer: Warwick
 Screen Int. (ft.): 0-17.9 Data Source:
 USGS Import

151-062-25DAA1

NDSWC 12809A

Date Completed: 07/30/1991 Purpose: Observation Well
 L.S. Elevation (ft): 1482.08 Well Type: 2 in. - PVC
 Depth Drilled (ft): 240 Aquifer: Spiritwood
 Screen Int. (ft.): 218-223 Data Source:
 Remarks: North Well (LAND SURFACE)

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-15	GRAVEL	iron stained, sandy, oxidized, taking water
15-21	GRAVEL	unoxidized, sandy, coarse sand to pea to marble size gravel, taking water
21-37	CLAY	olive gray, silty, sandy with pebbles, rocky, till
37-47	CLAY	olive gray, sticky, drills slow
47-61	SAND	very fine to fine
61-142	CLAY	olive gray, silty
142-172	SAND	very fine to fine, drills fast, drills as if interbedded with clay
172-231	GRAVEL	sandy, 30% shale, drills very choppy, taking water, coarse sand to pea gravel, well rounded to subrounded
231-240	SHALE	black, brittle, with bentonite fragments, (Pierre shale)

151-062-25DAA2

NDSWC 12809B

Date Completed: 07/30/1991 Purpose: Observation Well
 L.S. Elevation (ft): 1482.3 Well Type: 2 in. - PVC
 Depth Drilled (ft): 160 Aquifer: Spiritwood
 Screen Int. (ft.): 148-153 Data Source:
 Remarks: Middle well (LAND SURFACE)

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-15	GRAVEL	oxidized, iron stained
15-21	GRAVEL	sandy, unweathered
21-31	CLAY	olive gray, silty, sandy with pebbles, till
31-46	CLAY	olive gray
46-61	SAND	fine, lots of lignite
61-141	CLAY	olive gray, silty
141-160	SAND	very fine to medium, drills fast, taking water

151-062-25DAA3

NDSWC 12809C

Date Completed:	07/31/1991	Purpose:	Observation Well
L.S. Elevation (ft):	1482.2	Well Type:	2 in. - PVC
Depth Drilled (ft):	30	Aquifer:	Warwick
Screen Int. (ft.):	18-23	Data Source:	

Remarks: South well (LAND SURFACE)

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-15	GRAVEL	iron stained, oxidized, sandy, taking water
15-21	GRAVEL	unweathered, sandy, coarse sand to pea gravel, taking water
21-30	CLAY	olive gray, silty, sandy with pebbles, rocky, poorly sorted, till

151-062-25DDD

USBR WM-35

Date Completed:	05/19/1970	Purpose:	Observation Well
L.S. Elevation (ft):	1477	Well Type:	3 in. -
Depth Drilled (ft):	23	Aquifer:	Warwick
Screen Int. (ft.):	0-18	Data Source:	

USGS Import

151-062-26BBA

USBR

Date Completed:	01/01/1952	Purpose:	Observation Well
L.S. Elevation (ft):	1469	Well Type:	0 in. - Unknown
Depth Drilled (ft):	0	Aquifer:	Undefined
Screen Int. (ft.):	0-13	Data Source:	

151-062-27AAA1

NDGS BP67-54

Date Completed:	01/01/1967	Purpose:	Observation Well -
Plugged			
L.S. Elevation (ft):	1468.4	Well Type:	1.25 in. - PVC
Depth Drilled (ft):	24	Aquifer:	Warwick
Screen Int. (ft.):	14-16	Data Source:	

Remarks: north well

does'nt pump

Well has not been sampled due to possible lift problems

Depth (ft)	Unit	Description
0-10	SAND	Fine to medium, silty; oxidized to 7 ft.
10-20	GRAVEL & SAND	Clayey
20-24	TILL	Olive gray

151-062-27AAA2

NDSWC 5464

Date Completed: 09/10/1969 Purpose: Observation Well
 L.S. Elevation (ft): 1468.6 Well Type: 1.25 in. - ABS
 Depth Drilled (ft): 320 Aquifer: Spiritwood
 Screen Int. (ft.): 198-204 Data Source:

Remarks: South well

Depth (ft)	Unit	Description
0-1	TOPSOIL	Silty to sandy, brownish black
1-11	SAND	Fine to medium, subrounded to angular, oxidized
11-25	CLAY	Olive gray, pebbly, silty to sandy, cohesive, plastic
25-64	CLAY	Very silty, olive gray to medium dark gray, cohesive slightly, plastic (fluvial sediments)
64-69	SAND	Fine to medium, subrounded, about 50 to 60 % quartz, and lignite, some shale
69-80	CLAY	Olive to medium gray, silty, pebbly, cohesive, plastic, (till) calcareous
80-128	CLAY	Very silty, medium gray to light gray, plastic, cohesive, laminated, very calcareous (fluvial sediment)
128-160	SAND	Fine to medium, subangular to rounded, mostly quartz (50 to 60%) and lignite (20%), some carbonates
160-202	GRAVEL	Fine to coarse; about 50% sand, coarse; subangular to subrounded, about 50% quartz, 30% shale, the rest carbonates and igneous
202-290	SAND	Fine to coarse; about 40%, gravel, fine to medium; subangular to rounded, predominately quartz and shale, some clay layers
290-320	SHALE	Light brownish gray, light buff colored specks, calcareous, light gray streaks also calcareous (Niobrara)

151-062-27AAA3

NDSWC 15030

Date Completed: 08/20/2003 Purpose: Observation Well
 L.S. Elevation (ft): 1466 Well Type: 2 in. - PVC
 Depth Drilled (ft): 0 Aquifer: Warwick
 Screen Int. (ft.): 6-11 Data Source:

Completion Info: replacement for well 27AAA; Levels ran 10/6/2003 by NDSWC.

Remarks: North well

Depth (ft)	Unit	Description
0-0		Replacement well for 27AAA which was plugged and abandoned.

151-062-27ABC

LARRY MANNIE

Date Completed: 05/25/1977 Purpose: Irrigation Well
 L.S. Elevation (ft): 1470 Well Type: 12 in. - Steel
 Depth Drilled (ft): 190 Aquifer: Spiritwood
 Screen Int. (ft.): 165-187 Data Source:

Remarks:

Depth (ft)	Unit	Description
0-2	TOPSOIL	
2-26	SAND	fine to coarse, 10% gravel
26-149	CLAY	silty
149-187	GRAVEL	fine to coarse, 10% sand
187-190	BEDROCK	

151-062-27BAD

WSI

Date Completed:	01/01/1976	Purpose:	Observation Well
L.S. Elevation (ft):	1470	Well Type:	1.25 in. - PVC
Depth Drilled (ft):	200	Aquifer:	Spiritwood
Screen Int. (ft.):	157-187	Data Source:	
Depth (ft)	Unit	Description	
0-0	See log for 27ABC		

151-062-27DDDA

NDSWC 11324

Date Completed:	09/01/1983	Purpose:	Observation Well
L.S. Elevation (ft):	1464.08	Well Type:	1.25 in. - PVC
Depth Drilled (ft):	220	Aquifer:	Spiritwood
Screen Int. (ft.):	188-193	Data Source:	
Depth (ft)	Unit	Description	
0-1	TOPSOIL	dark brown, sandy,	
1-10	SAND	yellowish brown, fine to medium, oxidized	
10-12	SAND	gray, fine, to coarse unoxidized	
12-24	TILL	olive gray, pebbly clay loam, sticky, cohesive, plastic, moderately hard	
24-53	CLAY	dark gray, slightly silty clay, massive, cohesive plastic, sticky, hard	
53-69	CLAY	olive gray, sandy, pebbly loam, cohesive, plastic	
69-85	SAND	gray, slightly silty, fine to medium sand, lignite layers	
85-112	CLAY	slightly silty, gray, whitish gray bentonitic clay, drills smooth, very hard, looks like bedrock, massive, lake clay?	
112-148	SAND	gray, silty, very fine to fine sand, abundant lignite layers	
148-184	SAND & GRAVEL	medium sand to granule gravel, largely coarse sand, moderately well sorted, 60% silicates, rounded, 30% shale and lignite, angular, and 10% carbonates, subrounded	
184-197	SAND & GRAVEL	very coarse sand to medium gravel, largely fine gravel, moderately well sorted except for large fragments of shale and lignite, 50% silicates, 30% shale and lignite, and 20% carbonates	
197-220	SHALE	black to dark gray shale, hard, interbedded with dark gray clay and whitish gray bentonitic clay, Pierre Shale, bedrock	

151-062-27DDDA2

USBR WM-53

Date Completed:	06/11/1973	Purpose:	Observation Well
L.S. Elevation (ft):	1464	Well Type:	0 in. -
Depth Drilled (ft):	18	Aquifer:	Warwick
Screen Int. (ft.):	0-10.9	Data Source:	
USGS Import			

151-062-29BCC

NDSWC BP68-16

Date Completed: 01/01/1968 Purpose: Test Hole

L.S. Elevation (ft): 1475

Depth Drilled (ft): 15

Depth (ft)	Unit	Description
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0-1	TOPSOIL	Black
1-3	CLAY	Yellowish gray, silty (lacustrine)
3-12	TILL	Light olive gray, silty to sandy
12-15	SHALE	Medium dark gray, indurated (Pierre Formation)

151-062-30ADD

NDGS BP68-19

Date Completed: 01/01/1968 Purpose: Test Hole

L.S. Elevation (ft): 1475

Depth Drilled (ft): 63

Depth (ft)	Unit	Description
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0-1	TOPSOIL	Brown, sandy
1-13	SAND	Dark yellowish brown, fine
13-28	SAND	Light olive gray, fine, saturated
28-57	SAND	Medium gray, fine to medium, saturated
57-58	BOULDER	
58-63	SHALE	Light bluish gray, indurated (Pierre Formation)

151-062-30DDA

NDSWC 5046

Date Completed: 07/18/1968 Purpose: Test Hole

L.S. Elevation (ft): 1465

Depth Drilled (ft): 40

Depth (ft)	Unit	Description
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0-1	TOPSOIL	Silty, sandy, brownish black
1-6	CLAY	Silty, sandy, a few pebbles, dusky yellow, slightly cohesive, slightly plastic, oxidized (till)
6-12	SAND	Very fine- to medium-grained, angular to subrounded, well sorted, predominantly quartz with some limestone, dolostone and shale, taking some water, not caving
12-14	CLAY	Silty, olive gray to medium dark gray, moderately cohesive, moderately plastic (till)
14-40	SHALE	Grayish black, indurated, moderately fractured, non-calcareous (Pierre Formation)

151-062-30DDA1

USGS

Date Completed: 07/18/1968 Purpose: Observation Well

L.S. Elevation (ft): 1465 Well Type: 0 in. -

Depth Drilled (ft): 0 Aquifer: Spiritwood

Screen Int. (ft.): 0-0 Data Source:

USGS IMPORT

151-062-31AAB

NDGS BP68-15

Date Completed: 01/01/1968 Purpose: Test Hole

L.S. Elevation (ft): 1475

Depth Drilled (ft): 9

Depth (ft)	Unit	Description
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0-2	SAND	Gravelly
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2-9	SHALE	Dark gray; oxidized along fractures; crumbly (Pierre Formation)
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151-062-32BCC

NDGS BP68-20

Date Completed: 1968 Purpose: Test Hole

L.S. Elevation (ft): 1490

Depth Drilled (ft): 15

Depth (ft)	Unit	Description
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0-1	TOPSOIL	Black
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1-5	TILL	Light olive brown, sandy
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5-15	SHALE	Dark gray (Pierre Formation)
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151-062-32CCB

NDSWC BP67-52

Date Completed: 01/01/1967 Purpose: Observation Well

L.S. Elevation (ft): 1468 Well Type: 1.25 in. - ABS

Depth Drilled (ft): 19 Aquifer: Undefined

Screen Int. (ft.): 15-19 Data Source:

Depth (ft)	Unit	Description
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0-16	SAND	Fine to medium; oxidized to 9 ft.
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16-18	GRAVEL	Medium
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18-19	TILL	Olive gray
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151-062-33CAD

USGS

Date Completed: 01/01/1953 Purpose: Test Hole

L.S. Elevation (ft): 1470

Depth Drilled (ft): 100

Depth (ft)	Unit	Description
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0-10	SAND	Fine and medium
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10-25	SAND	Mostly coarse, some fine gravel
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25-30	SAND	Fine and medium
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30-35	GRAVEL	And coarse sand
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35-40	GRAVEL	Coarse shale, and coarse sand
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40-55	SAND	Fine and medium
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55-65	GRAVEL	Fine, and coarse sand
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65-73	GRAVEL	Fine and medium, and coarse sand
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73-76	CLAY	
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76-79	GRAVEL	Fine and medium, and coarse sand
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79-100	CLAY	
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151-062-33CDB

TRIBE

Date Completed: 10/05/1979 Purpose: Irrigation Well
 L.S. Elevation (ft): 1470 Well Type: 14 in. - Steel
 Depth Drilled (ft): 100 Aquifer: Warwick
 Screen Int. (ft.): 58-83 Data Source:

Remarks:

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-44	SAND	20 to 30 slot
44-56	SAND	fine with gray clay
56-83	SAND & GRAVEL	30 slot
83-100	CLAY	

151-062-33DBB

TRIBE

Date Completed: 10/11/1979 Purpose: Irrigation Well
 L.S. Elevation (ft): 1470 Well Type: 12 in. - Steel
 Depth Drilled (ft): 75 Aquifer: Warwick
 Screen Int. (ft.): 33-58 Data Source:

Remarks:

Depth (ft)	Unit	Description
0-2	TOPSOIL	
2-24	SAND	brown, 20 slot
24-47	SAND & GRAVEL	30 slot
47-58	SAND	20 slot
58-75	CLAY	gray, with cobbles

151-062-34CCC

USBR WM-54

Date Completed: 06/07/1973 Purpose: Observation Well
 L.S. Elevation (ft): 1469 Well Type: 0 in. -
 Depth Drilled (ft): 18 Aquifer: Warwick
 Screen Int. (ft.): 0-12 Data Source:
 USGS Import

151-062-34DDD

NDSWC 2875

Date Completed: 10/19/1967 Purpose: Observation Well
 L.S. Elevation (ft): 1466.1 Well Type: 1.25 in. - ABS
 Depth Drilled (ft): 220 Aquifer: Spiritwood
 Screen Int. (ft.): 167-170 Data Source:

Depth (ft)	Unit	Description
0-1	TOPSOIL	Silty, sandy; brownish black
1-16	CLAY	Silty; sandy; dusky yellow to moderate yellowish brown; very slightly cohesive; non-plastic to slightly plastic; (oxidized fluvial sediment)
16-106	CLAY	Very silty; olive gray to dark greenish gray 5GY4/1; a few medium light gray layers visible in some samples; cohesive; moderately plastic to plastic; calcareous; (lake sediment)
106-120	CLAY	Silty; sandy; olive gray; cohesive; slightly plastic; calcareous; numerous limestone and shale grains, granules and a few pebbles present in clay matrix (till) (gravelly from 110 ft. to 114 ft.)

120-130	CLAY	Very silty; olive gray to dark greenish gray 5GY4/1; cohesive; moderately plastic to plastic; calcareous; fluvial sediment
130-174	SAND	Very fine- to medium-grained, becoming coarse-grained towards bottom of section; subrounded to rounded to well rounded; well sorted; estimate 70 to 80% quartz; remainder being limestone, dolostone and shale; taking some water
174-180	GRAVEL	Sandy, approximately 25 to 35% coarse to very coarse, subangular to rounded sand; gravel is fine
180-220	SHALE	Medium dark gray to grayish black; moderately indurated to indurated; non-calcareous; fractured upper 20 ft. of section (Pierre Formation)

151-062-36AAA

NDSWC 11325

Date Completed:	09/02/1983	Purpose:	Observation Well
L.S. Elevation (ft):	1476.9	Well Type:	1.25 in. - PVC
Depth Drilled (ft):	260	Aquifer:	Spiritwood
Screen Int. (ft.):	198-203	Data Source:	

Depth (ft)	Unit	Description
0-1	TOPSOIL	dark brown, sandy
1-15	SAND & GRAVEL	yellowish brown, fine sand to fine gravel, oxidized
15-25	CLAY	olive gray, sandy, pebbly clay loam, moderately cohesive, slightly sticky, crumbly, sandy till, unoxidized
25-51	CLAY	olive gray to gray, slightly silty clay, massive, cohesive, plastic, lake clay
51-97	SAND	gray, silty, very fine to fine, well sorted, soft, lignitic layers
97-141	CLAY	olive gray, silty clay, massive, cohesive, plastic, some bentonite at 97 feet, lake clay?
141-174	SAND	silty, very fine to fine
174-248	SAND	medium to very coarse sand, moderately well to well sorted, mostly medium sand, 60% silicates, 20% shale and 20% carbonates
248-260	CLAY	dark gray clay, interbedded with black shale, Pierre Shale, bedrock

151-062-36CCC

NDSWC 5463

Date Completed:	09/10/1969	Purpose:	Observation Well
L.S. Elevation (ft):	1462.3	Well Type:	1.25 in. - ABS
Depth Drilled (ft):	270	Aquifer:	Spiritwood
Screen Int. (ft.):	197-203	Data Source:	

Depth (ft)	Unit	Description
0-1	TOPSOIL	Silty, clayey, sandy, brownish black
1-7	CLAY	Silty, moderately sandy, pebbly, moderate yellowish brown, moderately cohesive, plastic, oxidized (till)
7-14	CLAY	Very silty, slightly sandy, dusky yellow to moderate yellowish brown, cohesive, very slightly plastic to non-plastic, oxidized (fluvial sediment)
14-80	CLAY	Very silty, olive gray to medium dark gray, cohesive, slightly plastic, calcareous, laminated (fluvial sediment)
80-113	CLAY	Silty, slightly sandy, pebbly, olive gray, moderately cohesive, moderately plastic, calcareous (till)

113-140	SAND	Very fine- to medium-grained (mostly fine-grained), subangular to subrounded, moderately well sorted, mostly quartz, small % carbonates and lignite
140-190	SAND	Slightly to moderately gravelly, very fine- to very coarse-grained, subangular to rounded, moderately well-sorted, mostly quartz, small % carbonates, granitics, shale and lignite, taking some water, not caving in, gravel is present as layers, stratified
190-220	GRAVEL	Sandy (approximately 25 to 35% fine- to very coarse-grained sand), fine to coarse, some cobble-sized material, subangular to rounded, moderately well sorted, approximately 20 to 30% carbonates (limestone and dolostone), 15 to 25% shale, 30 to 40% granitics and siliceous rocks (chalcedony, quartzite), some siltstone, sandstone, and lignite, taking some water, not caving in
220-262	SAND	Slightly gravelly, very fine- to very coarse-grained (mostly medium- to very coarse-grained), subangular to rounded, moderately well sorted, predominantly quartz, small % carbonates, granitics, and lignite, occasional thin clay layers lower feet of section, taking some water, not caving in
262-270	SHALE	Siliceous, grayish black, non-calcareous, bedded, moderately indurated, not fractured

152-061-02DDD

H. METCALF

Date Completed:	0/0	Purpose:	Domestic Well
L.S. Elevation (ft):	N/A	Well Type:	24 in. - Unknown
Depth Drilled (ft):	35	Aquifer:	Not Yet Entered
Screen Int. (ft.):	0-0	Data Source:	

152-061-07DDB

H. SMITH

Date Completed:	1/1943	Purpose:	Domestic Well
L.S. Elevation (ft):	N/A	Well Type:	4 in. - Unknown
Depth Drilled (ft):	156	Aquifer:	Not Yet Entered
Screen Int. (ft.):	140-156	Data Source:	

152-061-10CDC

NDSWC 5355

Date Completed:	07/24/1969	Purpose:	Test Hole
L.S. Elevation (ft):	1486		
Depth Drilled (ft):	80		
Depth (ft)	Unit	Description	

0-1	TOPSOIL	Sandy, silty, clayey, brownish-black
1-26	CLAY	Very silty, sandy, pebbly, occasional thin gravelly sand lenses, dusky yellow to moderate yellowish-brown, slightly cohesive, slightly plastic, oxidized (till)
26-39	CLAY	Silty, slightly sandy, pebbly, a few thin sand lenses, olive gray, moderately cohesive, very slightly plastic (till)
39-44	GRAVEL	Sandy, fine to coarse, angular to subrounded, fair sorting, mostly shale, some granitics and carbonates
44-55	CLAY	Silty, slightly sandy, pebbly, olive gray, cohesive (till)
55-80	SHALE	Siliceous, grayish-black, non-calcareous, slightly fractured upper 10' - 15', (Pierre Formation)

152-061-16ABB

NDSWC 5356

Date Completed: 07/24/1969 Purpose: Test Hole

L.S. Elevation (ft): 1505

Depth Drilled (ft): 60

Depth (ft)	Unit	Description
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0-1	TOPSOIL	Sandy, silty, pebbly, brownish-black
1-16	CLAY	Silty, sandy, pebbly, moderate yellowish-brown, slightly cohesive, slightly plastic, oxidized (till)
16-31	CLAY	Silty, slightly sandy, pebbly, olive gray, slightly to moderately cohesive, slightly plastic calcareous (till)
31-41	SAND	Slightly gravelly, fine – to very coarse-grained, angular to subrounded, fair sorting, mostly shale, some carbonates and granitics, taking some water
41-47	GRAVEL	Sandy, fine to coarse, fair sorting, subangular to subrounded, mostly shale, some carbonates and granitics, not taking much water, not caving
47-60	SHALE	Siliceous, grayish-black to black, slightly fractured, non-calcareous (Pierre Formation)

152-061-16CCC

NDSWC 5007

Date Completed: 06/27/1968 Purpose: Test Hole

L.S. Elevation (ft): 1490

Depth Drilled (ft): 60

Depth (ft)	Unit	Description
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0-1	TOPSOIL	Silty, slightly sandy, brownish-black
1-12	CLAY	Silty, sandy, pebbly, moderate yellowish-brown, slightly to moderately cohesive, moderately plastic, oxidized (till)
12-30	CLAY	Silty, slightly sandy, pebbly, olive gray, moderately cohesive, moderately plastic, calcareous (till)
30-60	SHALE	Fissile, black to grayish-black, slightly fractured, moderately indurated, non-calcareous (Pierre Formation)

152-061-18BCA

USAF

Date Completed: 1962 Purpose: Test Hole

L.S. Elevation (ft): N/A

Depth Drilled (ft): 130

Depth (ft)	Unit	Description
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0-48	CLAY	Silty
48-55	SAND	Fine to medium, silty
55-103	SHALE	Fractured and crushed, bentonitic in part
103-130	SHALE	Slightly fractured

152-061-19BCC

NDSWC 5359

Date Completed: 07/28/1969 Purpose: Test Hole

L.S. Elevation (ft): 1485

Depth Drilled (ft):	60	
<u>Depth (ft)</u>	<u>Unit</u>	<u>Description</u>
0-1	TOPSOIL	Sandy, silty, pebbly, brownish-black
1-20	CLAY	Silty, slightly sandy, pebbly, moderate yellowish-brown, cohesive, slightly plastic, oxidized (till)
20-42	CLAY	Moderately silty, slightly sandy, pebbly, olive gray, moderately cohesive, moderately plastic, calcareous (till)
42-60	SHALE	Siliceous, grayish-black, non-calcareous, slightly fractured, bedded, bentonitic, slightly clayey (Pierre Formation)

152-061-26AAD

NDSWC 5441

Date Completed:	09/02/1969	Purpose:	Test Hole
L.S. Elevation (ft):	1440		
Depth Drilled (ft):	180		

<u>Depth (ft)</u>	<u>Unit</u>	<u>Description</u>
0-1	TOPSOIL	Silty, clayey, sandy, brownish-black
1-14	CLAY	Very silty, dusky yellow to moderate yellowish-brown, slightly cohesive, slightly plastic, oxidized (lacustrine sediment)
14-64	CLAY	Silty, slightly sandy, pebbly, olive gray, cohesive, moderately to slightly plastic, calcareous (till)
64-71	SAND	Fine-to very coarse-grained, angular to subrounded, fair sorting, predominantly shale and quartz, some carbonates, granitics and lignite, taking small amount of water, not caving in
71-80	CLAY	Very silty, sandy, pebbly, olive gray, slightly to moderately cohesive, plastic, calcareous (till)
80-90	CLAY	Same as above, only occasional gravel layers (till)
90-96	SAND	Silty, very fine- to coarse-grained, angular to subrounded, fair to good sorting, mostly quartz and shale, some carbonates, lignite and granitics, no noticeable fluid loss
96-134	CLAY	Silty, moderately sandy, pebbly, gravelly, olive gray, moderately cohesive, moderately plastic, calcareous (till)
134-150	BLOCK	Shale, grayish-black fractured, non-calcareous, bentonitic (derived from Pierre Formation)
150-162	GRAVEL	Silty, clayey, sandy, fine to coarse, a few cobbles and boulders, poorly sorted to unsorted, mostly carbonates, some shale, granitics, siltstone and lignite, no appreciable fluid loss
162-180	SHALE	Moderately clayey, grayish-black to medium dark gray, moderately indurated, non-calcareous, bentonitic, occasional small limestone? concretions (Pierre Formation)

152-061-26CCC

NDSWC 5436

Date Completed:	08/28/1969	Purpose:	Test Hole
L.S. Elevation (ft):	1440		
Depth Drilled (ft):	140		

<u>Depth (ft)</u>	<u>Unit</u>	<u>Description</u>
0-1	TOPSOIL	Silty, clayey, pebbly, sandy, brown
1-18	CLAY	Very silty, dusky yellow to moderate yellowish-brown, moderately cohesive, very plastic, oxidized (lacustrine sediment)
18-97	CLAY	Very silty, moderately sandy, pebbly, olive gray, slightly cohesive, very slightly plastic, moderately calcareous (till)

97-100	SAND	Fine- to very coarse-grained, subangular to subrounded, fair sorting, mostly quartz and carbonates, some shale, not taking water, not caving – poor samples
100-112	CLAY	Silty, slightly sandy, gravelly, pebbly, olive gray, cohesive, slightly plastic, (till)
112-140	SHALE	Siliceous, grayish-black to medium dark gray, moderately indurated, non-calcareous, bentonitic, non-fractured (Pierre Formation)

152-061-26CDD

NDSWC NDGS

Date Completed: 1969 Purpose: Test Hole
 L.S. Elevation (ft): 1426
 Depth Drilled (ft): 25
 Remarks: NDGS N19

Depth (ft)	Unit	Description
0-18	SILT	Oxidized
18-24	SILT	Unoxidized
24-25	TILL	Unoxidized

152-061-27ADB1

NDSWC 5438

Date Completed: 08/28/1969 Purpose: Test Hole
 L.S. Elevation (ft): 1442
 Depth Drilled (ft): 220

Depth (ft)	Unit	Description
0-1	TOPSOIL	Silty, clayey, sandy, brownish-black
1-11	GRAVEL	Slightly sandy (silty, clayey), fine to coarse, angular to subrounded, fair to poor sorting, mostly shale and carbonates (limestone and dolostone), some granitics, taking a small amount of water, oxidized throughout
11-20	CLAY	Very silty, moderate yellowish-brown, cohesive, plastic, oxidized (lacustrine sediment)
20-42	CLAY	Very silty, olive gray, cohesive, moderately plastic, moderately calcareous, (Lacustrine sediment)
42-118	CLAY	Moderately silty, sandy, pebbly, a few thin sand lenses, olive gray, cohesive, moderately plastic, calcareous (till)
118-120	GRAVEL	Sandy, silty, fine to medium, subangular to subrounded, fair sorting, mostly carbonates (limestone and dolostone) and shale – not water loss
120-197	CLAY	Silty, slightly sandy, pebbly, occasional sand layers, gravelly, olive gray, cohesive, slightly plastic, calcareous (till)
197-220	SHALE	Siliceous, moderately clayey, grayish-black to medium dark gray, non-calcareous, bedded, moderately indurated (Pierre Formation)

152-061-27ADB2

NDSWC NDGS

Date Completed: 1969 Purpose: Test Hole
 L.S. Elevation (ft): 1440
 Depth Drilled (ft): 30

Remarks: NDGS N20

Depth (ft)	Unit	Description
0-20	SILT	Oxidized
20-25	SILT	Unoxidized
25-30	SILT	Clayey, sandy

152-061-27ADC

NDSWC 5439

Date Completed: 08/29/1969 Purpose: Test Hole
 L.S. Elevation (ft): 1440
 Depth Drilled (ft): 240

Depth (ft)	Unit	Description
0-1	TOPSOIL	Silty, clayey, sandy, brownish-black
1-18	CLAY	Very silty, moderate yellowish-brown, cohesive, very plastic, oxidized (lacustrine sediment)
18-32	CLAY	Very silty, olive gray, cohesive, very plastic, moderately calcareous, (lacustrine sediment)
32-44	SAND	Very fine- to medium-grained, subangular to subrounded, well-sorted, mostly shale and quartz, some carbonates
44-133	CLAY	Moderately silty, slightly sandy, a few sand lenses, pebbly, olive gray, cohesive, moderately plastic, calcareous (till)
133-136	GRAVEL	Silty, slightly sandy, fine to coarse, angular to subrounded, moderately well-sorted, mostly carbonates (limestone and dolostone) small % shale and granitics
136-211	CLAY	Silty, slightly sandy, pebbly, occasional thin gravel lenses, olive gray, cohesive, moderately plastic, calcareous (till)
211-216	GRAVEL	Fine to coarse, angular to subrounded, fair to poor sorting, mostly carbonates, some granitics, shale, western siliceous rock and lignite, not taking water, not caving in
216-240	SHALE	Moderately clayey, grayish-black to medium dark gray, non-calcareous, moderately indurated, bedded (Pierre Formation)

152-061-27DAB

NDSWC 5437

Date Completed: 08/28/1969 Purpose: Observation Well
 L.S. Elevation (ft): 1435 Well Type: 0 in. - ABS
 Depth Drilled (ft): 280 Aquifer: McVille
 Screen Int. (ft.): 247-253 Data Source:

Depth (ft)	Unit	Description
0-1	TOPSOIL	Silty, clayey, sandy, brown
1-15	CLAY	Very silty, dusky yellow to moderate yellowish-brown, cohesive, very plastic, oxidized (lacustrine sediment)
15-34	CLAY	Very silty, olive gray to medium dark gray, moderately cohesive, very plastic, moderately calcareous (lacustrine sediment)
34-37	SAND	Silty, fine- to very coarse-grained, subangular to subrounded, fair sorting, mostly quartz and shale, poor samples

37-100	CLAY	Very silty to silty, slightly sandy, pebbly, gravelly, a few cobbles, olive gray, moderately cohesive, moderately plastic, calcareous (till)
100-103	SAND	Very fine- to very coarse-grained, subangular to subrounded, fair sorting, mostly quartz and shale, some carbonates, fair to poor samples
103-150	CLAY	Silty, slightly sandy, pebbly, olive gray to medium dark gray, moderately cohesive, moderately plastic, calcareous (till)
150-237	CLAY	Very silty, slightly sandy, pebbly, occasional thin gravel lenses, a few cobbles, olive gray, moderately cohesive, moderately plastic, calcareous (till)
237-240	SAND	Fine- to very coarse-grained, subangular to subrounded, moderately well-sorted, mostly shale and quartz, some carbonates, not water loss – not caving in
240-265	GRAVEL	Slightly sandy, silty, interbedded throughout with clay layers (till), fine to coarse (mostly fine to medium), angular to subrounded, poor to fair sorting, approximately 30-60% shale, remainder mostly carbonates (limestone and dolostone), light and dark-colored granitics, a few western siliceous rock small % lignite, chalcedony, not taking water, not caving
265-280	SHALE	Moderately clayey, medium gray to medium dark gray with light brownish-gray bedding, very calcareous, numerous small white specks (Niobrara Formation)

152-061-27DAC
NDSWC 5440

Date Completed:	08/29/1969	Purpose:	Observation Well - Plugged
L.S. Elevation (ft):	1443	Well Type:	1.25 in. - ABS
Depth Drilled (ft):	140	Aquifer:	McVille
Screen Int. (ft.):	87-90	Data Source:	

Remarks: flowing, plugged and abandoned

Depth (ft)	Unit	Description
0-1	TOPSOIL	Silty, clayey, sandy, brownish-black
1-22	CLAY	Very silty, sandy, moderate yellowish-brown, cohesive, very plastic, oxidized (lacustrine sediment)
22-31	CLAY	Very silty, olive gray, cohesive, very plastic, calcareous (lacustrine sediment)
31-80	CLAY	Silty, slightly to moderately sandy, pebbly, occasional thin gravel lenses, cohesive, plastic, calcareous (till)
80-90	SAND	Silty, clayey, very fine- to very coarse-grained, subangular to subrounded, mostly shale, some quartz and carbonates
90-96	GRAVEL	Slightly sandy, interbedded with thin clay layers (till), fine to medium subangular to sub rounded, predominantly carbonates (limestone and dolostone) carbonates appear slightly oxidized), small amount of shale and granitics – no fluid loss – caving slightly
96-100	CLAY	Silty, moderately sandy, brownish-gray to dark gray, very cohesive, non-plastic, very calcareous (Fluvial sediment)
100-113	GRAVEL	Silty, clayey, slightly sandy, fine- to coarse, angular to subrounded, poor sorting, predominantly carbonates (limestone and dolostone), some shale, granitics, lignite and western siliceous rock, no water loss – caving some
113-140	SHALE	Siliceous, moderately clayey, grayish-black to medium dark gray, bentonitic, non-calcareous (Pierre Formation)

152-061-27DCD

NDSWC 5354

Date Completed: 07/24/1969 Purpose: Observation Well
 L.S. Elevation (ft): 1460 Well Type: 1.25 in. - ABS
 Depth Drilled (ft): 140 Aquifer: McVille
 Screen Int. (ft.): 97-100 Data Source:

Depth (ft)	Unit	Description
0-0.5	TOPSOIL	Sandy, silty, pebbly, brownish-black
0.5-30	CLAY	Very silty, sandy, pebbly, occasional thin sand lenses, moderate yellowish-brown, slightly to moderately cohesive, slightly plastic, oxidized (till)
30-40	SAND	Very fine- to medium-grained, angular to subrounded, fair sorting, mostly quartz, some shale, carbonates and lignite, oxidized, not taking water
40-87	CLAY	Silty, slightly sandy, pebbly, occasional cobbles, olive gray, slightly cohesive, slightly plastic, calcareous (till)
87-100	SAND	Slightly to moderately gravelly (fine gravel), fine- to very coarse-grained, angular to subrounded, moderately well-sorted, mostly quartz and carbonates (limestone and dolostone), small amount of shale and granitics, appears slightly oxidized, not taking much water, not caving in
100-129	GRAVEL	Sandy fine to coarse (some cobble-sized material) (mostly fine to medium), angular to subrounded, fair sorting, approximately 35-65% shale, remainder mostly carbonates (limestone and dolostone), some granitics, siltstone and lignite, taking some water, caving slightly
129-140	SHALE	Siliceous, bentonitic, grayish-black, non-calcareous, moderately indurated, slightly fractured upper 10 feet of section (Pierre Formation)

152-061-29AAA

NDSWC 5357

Date Completed: 07/24/1969 Purpose: Observation Well
 L.S. Elevation (ft): 1456 Well Type: 1.25 in. - ABS
 Depth Drilled (ft): 280 Aquifer: McVille
 Screen Int. (ft.): 177-180 Data Source:

Depth (ft)	Unit	Description
0-1	TOPSOIL	Sandy, pebbly, silty, brown
1-29	CLAY	Silty, sandy, pebbly, moderate yellowish-brown, moderately cohesive, slightly plastic, oxidized (till)
29-139	CLAY	Extremely silty, slightly to moderately sandy (occasional thin gravelly sand lenses lower 40' of section), pebbly, olive gray, cohesive, very plastic, calcareous (till)
139-195	GRAVEL	Sandy (approximately 20-35% fine- to very coarse-grained sand), fine to coarse (mostly fine to medium), angular to subrounded, fair sorting, mostly shale (approximately 35-75%, remainder mostly carbonates (limestone and dolostone) some granitics, lignite, siltstone, chalcedony, taking some water, caving slightly
195-205	SAND	Slightly gravelly, fine- to very coarse-grained, angular to subrounded, moderately well-sorted, mostly quartz and shale, some carbonates and lignite, taking some water, not caving
205-240	GRAVEL	Slightly sandy, fine to coarse, (mostly medium) moderately well-sorted, angular to subrounded, approximately 25-55% shale, remainder mostly carbonates (limestone and dolostone) and granitics,

240-259	CLAY	small % siltstone, chalcedony and lignite, taking water rapidly, caving in mixed 3 bags bentonite Silty, sandy, pebbly, occasional thin gravel lenses, a few cobbles and boulders lower 2' of section, olive gray, moderately cohesive, moderately plastic, calcareous (till)
259-280	SHALE	Siliceous, moderately clayey, grayish-black, non-calcareous, slightly fractured, bedded, bentonitic layers (Pierre Formation)

152-061-29AAD

NDGS

Date Completed: 1968 Purpose: Test Hole
 L.S. Elevation (ft): N/A
 Depth Drilled (ft): 49
 Remarks: NDGS N5

Depth (ft)	Unit	Description
0-16	TILL	Boulders near top, increase in sand content with depth
16-49	TILL	Unoxidized

152-061-29ADA

USGS

Date Completed: 00/00/00 Purpose: Surface Water Sample
 Site
 L.S. Elevation (ft): N/A Well Type: 0 in. -
 Depth Drilled (ft): 0 Aquifer: Surface Water
 Screen Int. (ft.): 0-0 Data Source:
 Remarks: Devils Lake Outlet to Stump Lake nr. Lakota; USGS gaging station; #05056636

152-061-30BBB

NDSWC 5358

Date Completed: 07/24/1969 Purpose: Observation Well -
 Plugged
 L.S. Elevation (ft): 1460 Well Type: 1.25 in. - ABS
 Depth Drilled (ft): 220 Aquifer: McVille
 Screen Int. (ft.): 177-180 Data Source:

Depth (ft)	Unit	Description
0-1	TOPSOIL	Silty, sandy, clayey, brownish-black
1-25	CLAY	Silty, slightly sandy, pebbly, moderate yellowish-brown, cohesive, slightly plastic, oxidized (till)
25-72	CLAY	Silty to very silty, slightly sandy, pebbly, olive gray, moderately cohesive to cohesive, plastic, moderately calcareous (till)
72-98	SAND	Fine- to very coarse-grained, angular to subrounded, moderately well-sorted, mostly quartz and shale, not taking water, not caving in
98-126	CLAY	Very silty, sandy, pebbly, dark gray to olive gray, slightly to moderately cohesive, plastic, calcareous (till)
126-144	CLAY	Extremely silty, slightly sandy, olive gray with occasional light olive gray laminations (alluvium)
144-149	CLAY	Silty, sandy, pebbly, olive gray, cohesive, slightly to moderately plastic, calcareous, a few thin gravel layers (till)
149-212	GRAVEL	Sandy (approximately 20-35% fine to very coarse-grained sand), fine to coarse (mostly fine- to medium – becomes more coarse with depth), angular to subrounded, fair to good sorting, mostly shale

212-220 SHALE (approximately 35-75% shale), remainder mostly carbonates (limestone and dolostone), small % granitics, lignite, siltstone and chalcedony, taking water-mixed 2 bags bentonite – caving slightly Siliceous, grayish-black, bentonitic, non-calcareous, clayey, slightly fractured, (Pierre Formation)

152-061-30BCC
NDSWC 5360

Date Completed: 07/28/1969 Purpose: Test Hole
L.S. Elevation (ft): 1484
Depth Drilled (ft): 40

Depth (ft)	Unit	Description
0-1	TOPSOIL	Sandy, silty, clayey, brownish-black
1-14	CLAY	Silty, slightly sandy, pebbly, moderate yellowish-brown, cohesive, slightly plastic, oxidized (till) a few boulders and cobbles
14-24	CLAY	Silty, slightly sandy, pebbly, olive gray, cohesive, moderately plastic, calcareous (till)
24-40	SHALE	Siliceous, grayish-black, moderately cohesive, slightly fractured, non-calcareous (Pierre Formation)

152-061-31DAA
NDSWC 15017

Date Completed: 08/08/2003 Purpose: Test Hole
L.S. Elevation (ft): N/A
Depth Drilled (ft): 80

Depth (ft)	Unit	Description
0-1	TOPSOIL	Black
1-32	TILL	Clay, silty, sandy, pebbly, with inclusions, yellowish brown, plastic, oxidized
32-57	TILL	Clay, silty, sandy, pebbly, with inclusions, gray, plastic, unoxidized, gravel from 53 to 54 feet (fine to medium, angular to subangular consisting of carbonates, igneous and metamorphic rock fragments, shales)
57-80	SHALE	Grayish black, slightly indurated with layers of sandstone (brown indurated)

152-061-33BCC
NDSWC 5006

Date Completed: 06/26/1968 Purpose: Observation Well
L.S. Elevation (ft): 1508 Well Type: 1.25 in. - ABS
Depth Drilled (ft): 200 Aquifer: McVile
Screen Int. (ft.): 147-150 Data Source:

Depth (ft)	Unit	Description
0-1	TOPSOIL	Sandy, silty, pebbly, brownish-black
1-22	CLAY	Sandy, silty, pebbly, moderate yellowish-brown, moderately cohesive, moderately plastic, oxidized (till)
22-46	CLAY	Silty, sandy, pebbly, olive gray, moderately cohesive, moderately plastic, calcareous, limestone and shale fragments in clay matrix (till)

46-53	GRAVEL	Slightly sandy, fine to coarse, angular to subrounded, fair sorting, mostly shale and limestone with a few granite rock and some chalcedony and lignite chips, taking small amount of water, not caving
53-137	CLAY	Very silty, olive gray with light olive gray laminations, very cohesive, moderately plastic, very calcareous, (Fluvial sediment)
137-156	GRAVEL	Sandy, (becomes more coarse with depth) (approximately 25-35% medium to very coarse, angular to subrounded sand), fine to coarse (predominantly fine to medium) angular to subrounded, moderately well-sorted, predominantly shale, with some limestone and dolostone, a few granite (light-colored) rock and lignite chips – taking small amount of water, not caving
156-172	GRAVEL	Same as above only interbedded with light olive gray, very silty clay, poorly sorted, not taking water
172-200	SHALE	Fissile, siliceous, black to grayish-black, moderately indurated, non-calcareous, slightly fractured, (Pierre Formation)

152-061-34DAB

P. Reeves

Date Completed:	00/00/00	Purpose:	Test Hole
L.S. Elevation (ft):	N/A		
Depth Drilled (ft):	70		
<u>Depth (ft)</u>	<u>Unit</u>	<u>Description</u>	
0-12	CLAY	Yellow	
12-18	GRAVEL		
18-26	CLAY	Blue	
26-70	SHALE		

152-061-35ABB

NDSWC 5435

Date Completed:	08/28/1969	Purpose:	Observation Well
L.S. Elevation (ft):	1427	Well Type:	1.25 in. - ABS
Depth Drilled (ft):	160	Aquifer:	McVille
Screen Int. (ft.):	57-60	Data Source:	
<u>Depth (ft)</u>	<u>Unit</u>	<u>Description</u>	
0-1	TOPSOIL	Silty, clayey, brownish-black	
1-3	CLAY	Very silty, sandy, pebbly, dusky yellow to moderate yellowish-brown, cohesive, slightly plastic, oxidized (till)	
3-68	SAND	Very fine- to very coarse-grained (occasional thin clay layers throughout section) becomes slightly to moderately gravelly with increasing depth, angular to subrounded, moderately well-sorted, approximately 40-50% shale, remainder mostly quartz, some carbonates and granitics – shale content increases with depth, oxidized to approximately 25’-30’ below land surface – taking water, caving some, mixed 2 bags bentonite	
68-138	CLAY	Silty, slightly sandy, pebbly, (occasional thin gravel lenses), olive gray, moderately cohesive, slightly to moderately plastic, calcareous (till)	
138-160	SHALE	Moderately clayey, grayish-black to dark gray, moderately indurated, non-calcareous, non-fractured (Pierre Formation)	

152-061-35BAA1

NDSWC 5353

Date Completed:	07/24/1969	Purpose:	Observation Well
L.S. Elevation (ft):	1427	Well Type:	1.25 in. - ABS
Depth Drilled (ft):	220	Aquifer:	McVile
Screen Int. (ft.):	157-163	Data Source:	NDSWC

Depth (ft)	Unit	Description
0-1	TOPSOIL	Sandy, silty, clayey, brown
1-19	CLAY	Extremely silty, sandy, dusky yellow to moderate yellowish-brown, slightly cohesive, plastic, oxidized (lacustrine sediment)
19-40	SAND	Very silty, very fine- to fine-grained, angular to subrounded, fair sorting, mostly quartz, some carbonates, shale and lignite, slightly oxidized
40-147	CLAY	Very silty, slightly sandy, pebbly, occasional thin gravelly sand layers, olive gray, moderately to slightly cohesive, plastic, calcareous (till)
147-210	GRAVEL	Sandy (approximately 20-40% very fine- to very coarse-grained sand), fine to coarse (mostly fine to medium – some cobble-sized material), angular to subrounded, moderately well-sorted, approximately 30-80% shale (Pierre Formation), remainder mostly carbonates (limestone and dolostone), some granitics, lignite, and chalcedony, taking some water, not caving, a few thin clay lenses occasionally
210-220	SHALE	Siliceous, grayish-black, non-calcareous, bentonitic, bedded, moderately indurated

152-061-35BAA2

NDSWC 5353A

Date Completed:	08/06/1969	Purpose:	Observation Well
L.S. Elevation (ft):	1427	Well Type:	4 in. - PVC
Depth Drilled (ft):	200	Aquifer:	McVile
Screen Int. (ft.):	178-182	Data Source:	NDSWC

Depth (ft)	Unit	Description
0-200	LOCATION	See log for 152-061-35BAA1.

152-061-36AAA

NDSWC 5008

Date Completed:	06/27/1968	Purpose:	Test Hole
L.S. Elevation (ft):	1470		
Depth Drilled (ft):	20		

Depth (ft)	Unit	Description
0-1	TOPSOIL	Clay, silty, sandy, brownish-black
1-5	GRAVEL	with cobbles and boulders
5-20	SHALE	Fissile, brown, weathered

152-061-36BAA

NDGS

Date Completed: 1969 Purpose: Test Hole
 L.S. Elevation (ft): 1440
 Depth Drilled (ft): 10
 Remarks: NDGS 17

Depth (ft)	Unit	Description
0-10	TILL	

152-061-36BBB

NDGS

Date Completed: 1969 Purpose: Test Hole
 L.S. Elevation (ft): 1424
 Depth Drilled (ft): 25
 Remarks: NDGS 18

Depth (ft)	Unit	Description
0-15	SILT	Sandy
15-20	SILT	Sandy, gravelly
20-25	TILL	Unoxidized

152-062-05ADD

D. Calderwood

Date Completed: 01/01/1957 Purpose: Stock Well
 L.S. Elevation (ft): 1518 Well Type: 6 in. - Unknown
 Depth Drilled (ft): 0 Aquifer: Not Yet Entered
 Screen Int. (ft.): 130-150 Data Source:
 Remarks: D. CALDERWOOD

152-062-07ACA1

NDSWC 8853

Date Completed: 08/21/1973 Purpose: Observation Well
 L.S. Elevation (ft): 1493.3 Well Type: 1.25 in. - ABS
 Depth Drilled (ft): 300 Aquifer: Spiritwood
 Screen Int. (ft.): 197-203 Data Source:
 Completion Info: Surveyed 7/27/1982 by NDSWC
 Remarks: South well

Depth (ft)	Unit	Description
0-1	LOAM	Clayey, silty, grayish black (topsoil)
1-20	CLAY	Moderately sandy, silty, pebbly, moderate yellowish brown, oxidized (till)
20-36	CLAY	Slightly sandy, pebbly, olive-gray, calcareous (till)
36-42	CLAY	Very sandy, pebbly light olive-gray to medium gray, calcareous (till)
42-54	SAND	Fine to very coarse, gravelly
54-66	GRAVEL	Fine to coarse, very sandy
66-82	SILT	Clayey, light olive-gray to medium dark gray, highly calcareous, laminated (glaciofluvial sediment)
82-157	SILT	Clayey, medium gray, highly calcareous; mottled light olive-gray (glaciofluvial sediment)
157-206	SAND	Fine to very coarse, gravelly, lignitic
206-230	SILT	Clayey, medium light gray, highly calcareous; mottled light greenish gray
230-285	SILT	Clayey, sandy, medium dark gray

285-300 SHALE Very silty, medium gray to medium dark gray, bentonitic; contains occasional yellowish gray, highly calcareous concretions

152-062-07ACA2

NDSWC 8853A

Date Completed: 08/21/1973 Purpose: Observation Well
 L.S. Elevation (ft): 1493.5 Well Type: 1.25 in. - PVC
 Depth Drilled (ft): 80 Aquifer: Undefined
 Screen Int. (ft.): 57-60 Data Source:
 Completion Info: Surveyed 7/27/1982 by NDSWC
 Remarks: North well

152-062-12DAD

NDSWC USAF103

Date Completed: 01/01/1962 Purpose: Unknown
 L.S. Elevation (ft): 1492 Well Type: 0 in. -
 Depth Drilled (ft): 130 Aquifer: Pierre Shale
 Screen Int. (ft.): 0-130 Data Source:

Depth (ft)	Unit	Description
0-2	SILT	Clayey, black
2-14	CLAY	Sandy, silty, slightly gravelly, brown
14-42	CLAY	Sandy, silty, slightly gravelly, gray
42-49	SAND	Fine, very silty, clayey, gray
49-58	SILT AND SHALE	Angular fragments of dark gray shale in a matrix of dense, clayey silt
58-102	SHALE	Dark gray, broken, highly fractured; contains crushed zones with clayey matrix (Pierre Shale)
102-130	SHALE	Dark gray, partly silty, blocky, massive, high fractured (Pierre Shale)

152-062-15BAB

NDSWC 8810

Date Completed: 08/07/1973 Purpose: Test Hole
 L.S. Elevation (ft): 1480
 Depth Drilled (ft): 60

Depth (ft)	Unit	Description
0-10	SAND	Fine to very coarse, very gravelly, slightly clayey, light brown, oxidized
10-20	CLAY	Moderately silty, slightly sandy, pebbly, olive-gray, calcareous (till)
20-30	GRAVEL	Fine, very sandy
30-60	SHALE	Grayish black, siliceous, very slightly fractured, brittle (Pierre Formation)

152-062-16BBB

NDSWC 15024

Date Completed: 08/14/2003 Purpose: Observation Well
 L.S. Elevation (ft): 1493 Well Type: 2 in. - PVC
 Depth Drilled (ft): 200 Aquifer: Spiritwood
 Screen Int. (ft.): 168-173 Data Source:
 Completion Info: Levels ran 10/1/2003 by NDSWC.

Depth (ft)	Unit	Description
0-3	TOPSOIL	Black
3-16	TILL	Clay, silty, sandy, pebbly w/inclusions, soft moderately plastic, yellowish-brown, oxidized
16-70	TILL	Clay, silty, sandy, pebbly w/inclusions, soft moderately plastic, gray unoxidized, rock @ 62-63 feet, more sandy & pebbly @ 63-69 feet, medium subangular to angular gravel from 69-70 feet
70-72	SHALE	Grayish-black, slightly indurated (Bedrock Pierre Formation)
72-142	CLAY	Silty, gray, massive, no inclusions, very firm, plastic (Lacustrine)
142-150	SILT	Gray w/layers of fine sand w/detrital lignites
150-163	SAND	Fine w/detrital lignites, w/layers of silty, sandy, clay (Lacustrine)
163-184	SAND & GRAVEL	Fine sand to medium gravel, predominately, fine gravel, subrounded to rounded, moderately sorted, consisting of carbonates, igneous & metamorphic rock fragments, shales and detrital lignites
184-200	SHALE	Grayish black, slightly indurated to soft, brittle to plastic, w/layers of siltstone, sandstone, and bentonite (Bedrock Pierre Shale)

152-062-18BDD

NDSWC 15025

Date Completed: 08/18/2003 Purpose: Observation Well -
 Plugged
 L.S. Elevation (ft): 1454 Well Type: 2 in. - PVC
 Depth Drilled (ft): 0 Aquifer: Spiritwood
 Screen Int. (ft.): 158-163 Data Source: NDSWC
 Completion Info: Levels ran 10/1/2003 by NDSWC.

Depth (ft)	Unit	Description
0-1	TOPSOIL	Black
1-15	TILL	Clay, slightly sandy, pebbly, inclusion, highly oxidized and weathered, matrix is highly oxidized and weathered, orangish brown
15-66	TILL	Clay, slightly sandy, pebbly, inclusion, medium gray, moderately firm, unoxidized
66-106	CLAY	Slightly silty, medium gray, slightly plastic, cohesive, drilling smooth and slow (Lacustrine)
106-125	SAND	Very fine to coarse, highly interbedded with clay lenses and layers, very shaley w/detrital lignites
125-197	SAND & GRAVEL	Fine sand to very coarse gravel, predominately coarse to very coarse sand to about 143 feet, then becomes coarse to medium size about 2 to 5 mm gravel, some gravels much larger, more chatter the deeper, cobbles and/or boulders at bottom, 25-30% shale, 40% quartz, 30-40% igneous and metamorphic rock fragments, round to subangular, predominately subrounded, "classic Spiritwood", wood chips found floating in mud pit! lot of lignite fragments fo mud pit screen
197-210	SHALE	Dark gray to black, some lenses very hard to brittle, some softer/plastic, drills slow, some chatter indicating indurated and brittle lenses

152-062-21BCC

NDSWC 15026

Date Completed: 08/19/2003 Purpose: Observation Well -
 Plugged
 L.S. Elevation (ft): 1450 Well Type: 2 in. - PVC
 Depth Drilled (ft): 0 Aquifer: Spiritwood
 Screen Int. (ft.): 158-163 Data Source:
 Completion Info: Levels ran 10/1/2003 by NDSWC.

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-4	TILL	Clay, oxidized clay matrix w/sand, silt, and pebbly inclusions, highly weathered orangish-yellowish-brown
4-9	CLAY	Clay, oxidized clay matrix, highly weathered, no inclusions orangish-yellowish-brown
9-22	TILL	Clay, oxidized clay matrix w/sand, silt, and pebbly inclusions, highly weathered orangish-yellowish-brown
22-56	TILL	Clay, w/sand, silt, and pebbly inclusions, gray, unoxidized, shaley gravel & sand at 46-49 feet
56-111	CLAY	Medium gray, massive, no inclusions, moderately firm, slightly plastic, siltier from 100-111 feet (lacustrine),
111-131	SAND & GRAVEL	Fine to coarse sand, predominately medium, moderate sorting, 25% shale, 40% quartz, 30% rock fragments, 5% lignite
131-194	SAND & GRAVEL	Fine sand to very coarse gravel, becomes coarser with depth, poorly sorted, median size is coarse to very coarse 131-148 feet, then 2mm to 5mm gravel below 150 feet, large fragments up to 25 mm coming up. ratio of mineralogy about the same as above, round to angular, predominately subrounded, "classic Spiritwood"
194-210	SHALE	Clay, dark gray to black, some zones very brittle as indicated by drilling chatter and sample return and some zones of bentonite (Bedrock Pierre Formation)

152-062-21DBD

NDSWC 8854

Date Completed: 08/22/1973 Purpose: Observation Well -
 Plugged
 L.S. Elevation (ft): 1444.6 Well Type: 1.25 in. - ABS
 Depth Drilled (ft): 180 Aquifer: Spiritwood
 Screen Int. (ft.): 124-130 Data Source:
 Remarks: PLUGGED

Depth (ft)	Unit	Description
0-6	CLAY	Moderately sandy, pebbly, dark yellowish brown, oxidized (till)
6-34	SAND	Fine to very coarse, gravelly
34-38	SILT	Medium gray,
38-43	SAND	Fine to very coarse, very slightly gravelly
43-68	CLAY	Very silty, pebbly, olive-gray, calcareous (till)
68-76	SAND	Very fine to coarse, slightly clayey, lignitic
76-106	CLAY	Silty, slightly sandy, pebbly, olive-gray, calcareous (till)
106-120	SILT	Clayey, medium gray to medium dark gray, highly calcareous (glaciofluvial sediment)
120-158	SAND	Very fine to very coarse, clayey
158-180	SHALE	Grayish black to black, siliceous, brittle (Pierre Formation)

152-062-26ACC

NDSWC Thelin

Date Completed:	7/1950	Purpose:	Domestic Well
L.S. Elevation (ft):	1487	Well Type:	0 in. -
Depth Drilled (ft):	0	Aquifer:	Not Yet Entered
Screen Int. (ft.):	0-40	Data Source:	
Remarks:	H. THELIN		

152-062-27AAA

NDSWC 8859

Date Completed:	08/24/1973	Purpose:	Observation Well -
Plugged			
L.S. Elevation (ft):	1450.3	Well Type:	4 in. - ABS
Depth Drilled (ft):	200	Aquifer:	Spiritwood
Screen Int. (ft.):	138-143	Data Source:	

Depth (ft)	Unit	Description
0-18	CLAY	Silty, moderately sandy, pebbly, dusky yellow to medium yellowish brown, oxidized (till)
18-70	CLAY	Slightly sandy, pebbly, olive-gray, calcareous (till)
70-88	SAND	Fine to very coarse, gravelly; consists of about 40% shale particles
88-110	SILT	Sandy, clayey, medium gray, highly calcareous (glaciofluvial sediment)
110-130	SAND	Very fine to very coarse, gravelly; contains an occasional thin clay lens
130-190	GRAVEL	Fine to coarse, very sandy, lignitic; consists of about 50% shale particles
190-200	SHALES	Medium dark gray to grayish black, siliceous, brittle (Pierre Formation)

152-062-28DBD

NDSWC 8855

Date Completed:	08/22/1973	Purpose:	Observation Well -
Plugged			
L.S. Elevation (ft):	1444.8	Well Type:	1.25 in. - ABS
Depth Drilled (ft):	240	Aquifer:	Spiritwood
Screen Int. (ft.):	137-143	Data Source:	
Remarks:	PLUGGED		

Depth (ft)	Unit	Description
0-4	CLAY	Sandy, silty, pebbly, dark yellowish brown, oxidized (till)
4-7	GRAVEL	Fine to coarse, clayey, oxidized
7-19	CLAY	Moderately sandy, gravelly, silty, pebbly, moderate yellowish brown, oxidized (till)
19-22	CLAY	Slightly sandy, pebbly, silty, olive-gray, calcareous (till)
22-34	GRAVEL	Fine to coarse, sandy, partly oxidized
34-82	CLAY	Very silty, slightly sandy, pebbly, olive-gray, calcareous (till)
82-86	SAND	Fine to medium
86-106	CLAY	Silty, sandy, slightly pebbly, medium gray to medium dark gray, highly calcareous (glaciofluvial sediment)
106-110	CLAY	Silty, pebbly, gravelly, olive-gray, calcareous (till)
110-205	GRAVEL	Fine to coarse, sandy, slightly clayey; consists of about 50% shale particles
205-215	COBBLES	Boulder, gravel, sand, and clay, poorly sorted
215-240	SHALES	Silty, medium dark gray, bentonitic (Pierre Formation)

152-062-30

Date Completed: 00/00/00 Purpose: Surface Water Sample
Site
L.S. Elevation (ft): N/A Well Type: 0 in. -
Depth Drilled (ft): 0 Aquifer: Surface Water
Screen Int. (ft.): 0-0 Data Source:
Remarks: East Devils Lake; USGS #475740098381600

152-062-33CDA1
NDSWC 12041A

Date Completed: 09/17/1987 Purpose: Observation Well
L.S. Elevation (ft): 1486.8 Well Type: 1.25 in. - PVC
Depth Drilled (ft): 340 Aquifer: Spiritwood
Screen Int. (ft.): 318-323 Data Source:
Remarks: WEST WELL MAP ON BACK

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-18	CLAY	yellowish brown, very sandy, silty with pebbles, slightly cohesive, oxidized till
18-22	TILL	oxidized/unoxidized transition zone
22-32	CLAY	olive gray, silty, sandy with pebbles unweathered till
32-42	SAND	gravelly, mostly coarse to very coarse shale sand, well rounded to subrounded
42-61	CLAY	olive gray, very silty, lignites in clay
61-78	SAND	silty, clayey, olive grey, drills fast, interbedded with lignite at 71, also some sandstone
78-151	CLAY	olive grey, silty, crumbly, drills slower
151-157	SAND	
157-160	CLAY	olive grey, silty, crumbly
160-182	SAND	gravelly, well rounded to subrounded, 50% shale, 10% lignites, remainder igneous and carbonates, drills fast and chatters, coarser at 166 ft.
182-340	GRAVEL	sandy, well rounded to subrounded, 80% pea to marble size gravel, 20% very coarse sand, 50 to 60% shale, 20% quartz, some carbonates and igneous

152-062-33CDA2
NDSWC 12041B

Date Completed: 09/18/1987 Purpose: Observation Well
L.S. Elevation (ft): 1486.8 Well Type: 1.25 in. - PVC
Depth Drilled (ft): 0 Aquifer: Clay Sediments
Screen Int. (ft.): 45-50 Data Source:
Remarks: 12 FT. EAST OF #1 WEST MID WELL

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-21	CLAY	yellowish brown, iron stained, silty, sandy with pebbles, oxidized till
21-36	CLAY	olive gray, till as above
36-44	GRAVEL	sandy, rocky, very fine sand to pea gravel mostly shale
44-51	CLAY	olive gray, very silty, lignite layers
51-77	CLAY	as above, layered with very fine sand
77-87	CLAY	olive gray, very silty, broke bit off at 87 feet, left hole for night, next day, raining heavily, completed well as deep as we could

152-062-33CDA3

NDSWC

Date Completed: 09/21/1987 Purpose: Observation Well
 L.S. Elevation (ft): 1487.1 Well Type: 1.25 in. - PVC
 Depth Drilled (ft): 180 Aquifer: Spiritwood
 Screen Int. (ft.): 168-173 Data Source:

Remarks: 15 FT. EAST OF #2 MIDDLE WELL

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-31	CLAY	yellowish brown, iron stained silty, very sandy with numerous pebbles, oxidized till
31-37	CLAY	olive gray, silty sandy with numerous pebbles, rocky, interbedded with sand and gravel, oxidized
37-41	GRAVEL	80 % shale, well rounded to subrounded, pea gravel to fine sand
41-46	CLAY	olive gray, very silty, interbedded with fine sand
46-90	SILT	olive gray, clayey, drills smooth and fast, at 76 feet picking up lignite layers and black lignitic clays
90-151	CLAY	olive gray, greasy, slightly silty, drills slower than above
151-157	SAND	silty, very fine to medium, drills fast
157-161	CLAY	olive gray, silty, drills smooth
161-180	GRAVEL	sandy, coarse to very coarse sand with pea to marble size gravel, well rounded to subrounded, chatters when drilling, taking a little water

152-062-33CDA4

NDSWC 12041D

Date Completed: 09/21/1987 Purpose: Observation Well
 L.S. Elevation (ft): 1487.2 Well Type: 1.25 in. - PVC
 Depth Drilled (ft): 140 Aquifer: Clay Sediments
 Screen Int. (ft.): 133-138 Data Source:

Remarks: 12 FT. EAST OF # 3 EAST MID WELL Doesn't pump

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-31	CLAY	yellowish brown, oxidized till
31-35	CLAY	unoxidized till, olive gray
35-38	SAND	very fine to medium
38-40	CLAY	olive gray, till
40-43	GRAVEL	coarse, sandy, poor return
43-44	CLAY	olive gray, silty
44-47	GRAVEL	coarse, sandy, poor return, drills choppy
47-84	SILT	clayey, poor return, drills smooth
84-140	CLAY	olive gray, silty, crumbles, drills smooth

152-062-33CDA5

NDSWC 12041E

Date Completed: 09/22/1987 Purpose: Observation Well
 L.S. Elevation (ft): 1487 Well Type: 2 in. - PVC
 Depth Drilled (ft): 35 Aquifer: Till
 Screen Int. (ft.): 18-23 Data Source:

Remarks: EAST WELL

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-33	CLAY	yellowish brown, iron stained, silty, sandy with pebbles, oxidized till
33-35	CLAY	olive gray, very silty, no pebbles

152-062-33DCB

NDSWC 8856

Date Completed: 08/22/1973 Purpose: Observation Well
 L.S. Elevation (ft): 1484.6 Well Type: 1.25 in. - PVC
 Depth Drilled (ft): 380 Aquifer: Spiritwood
 Screen Int. (ft.): 200-203 Data Source:

Doesn't pump

Depth (ft)	Unit	Description
0-6	SILT	Clayey, sandy, moderate yellowish brown, oxidized (till)
6-18	CLAY	Silty, moderately sandy, pebbly, moderate yellowish brown, oxidized (till)
18-22	CLAY	Moderately silty, slightly sandy, pebbly, olive-gray, calcareous (till)
22-27	CLAY	Very sandy, slightly pebbly, dark yellowish brown, oxidized (till)
27-37	CLAY	Very sandy, slightly pebbly, olive-gray, calcareous (till)
37-80	SAND	Very fine to coarse, slightly clayey, lignitic
80-146	SILT	Clayey, medium gray, highly calcareous; mottled light olive-gray (glaciofluvial sediment)
146-157	SAND	Very fine to medium, slightly clayey, lignitic
157-160	SILT	Clayey, medium gray, highly calcareous; mottled light olive gray; contains occasional thin sand layers (glaciofluvial sediment)
160-344	SAND	Fine to very coarse, slightly clayey; clay content increases with depth below 266 ft.; sand becomes coarser with depth
344-380	SHALE	Medium gray to brownish gray, slightly calcareous; white speckled (Niobrara Formation)

152-062-34AAD1

NDSWC 12802A

Date Completed: 07/22/1991 Purpose: Observation Well
 L.S. Elevation (ft): 1460 Well Type: 2 in. - PVC
 Depth Drilled (ft): 200 Aquifer: Spiritwood
 Screen Int. (ft.): 158-163 Data Source:

Remarks: North well

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-9	CLAY	yellowish brown, iron stained, silty, sandy with pebbles, oxidized till
9-55	TILL	as above, olive gray, unoxidized, layers of coarse sand from 22-26, 27-28, 38-40 and 50-51 feet
55-117	CLAY	olive gray, drills smooth
117-146	SAND	very fine to coarse gravel, well rounded to subrounded, lots of lignite

146-175 GRAVEL coarse sand to coarse gravel, well rounded to subrounded, drills choppy, taking water
 175-200 SHALE black to gray, brittle (Pierre shale)

152-062-34AAD2

NDSWC 12802B

Date Completed: 07/23/1991 Purpose: Observation Well
 L.S. Elevation (ft): 1460 Well Type: 2 in. - PVC
 Depth Drilled (ft): 140 Aquifer: Spiritwood
 Screen Int. (ft.): 128-133 Data Source:

Remarks: South well

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-5	SAND & GRAVEL	oxidized
5-9	CLAY	yellowish brown, oxidized, silty, sandy with pebbles, till
9-23	CLAY	olive gray, silty, sandy with pebbles, till
23-31	SAND & GRAVEL	fine sand to coarse gravel
31-41	TILL	olive gray, pebbles
41-46	GRAVEL	shale, lignitic
46-54	TILL	olive gray, pebbles
54-119	CLAY	olive gray, silty
119-140	SAND	very fine to fine from 119-128, from 128-140 becomes coarse sand to gravel

152-062-34DDA

NDSWC 12803

Date Completed: 07/23/1991 Purpose: Observation Well
 L.S. Elevation (ft): 1530.2 Well Type: 2 in. - PVC
 Depth Drilled (ft): 280 Aquifer: Spiritwood
 Screen Int. (ft.): 238-243 Data Source:

Depth (ft)	Unit	Description
0-1	TOPSOIL	
1-4	GRAVEL	iron stained, oxidized
4-28	CLAY	yellowish brown, silty, sandy with pebbles, oxidized till
28-44	CLAY	very silty, oxidized, 41-44 feet oxidized sand
44-76	CLAY	olive gray, silty, sandy with pebbles, unweathered till
76-212	CLAY	very silty, olive gray
212-224	SAND	fine to coarse, drills choppy, taking a little water, mostly quartz and igneous, some shale, lots of lignites
224-267	GRAVEL	coarse sand to fine gravel, well rounded to subrounded, drills real choppy, taking water, rocky, gravel is pea to marble size at 250
267-280	SHALE	black, brittle, (Pierre shale)

152-062-34DDA1

NDSWC 12803A

Date Completed: 07/22/1991 Purpose: Unknown
 L.S. Elevation (ft): 1525 Well Type: 2 in. -
 Depth Drilled (ft): 280 Aquifer: Spiritwood
 Screen Int. (ft.): 0-0 Data Source:

**150-061-05DDD
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,455.80
SI (ft.)=167-170**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
07/17/68	35.13	1420.67	06/05/80	37.68	1418.12	07/01/86	35.12	1420.68
08/20/68	35.72	1420.08	07/02/80	37.70	1418.10	08/01/86	35.22	1420.58
09/13/68	35.34	1420.46	07/30/80	37.79	1418.01	08/30/86	35.31	1420.49
10/12/68	35.10	1420.70	08/28/80	37.87	1417.93	09/30/86	35.24	1420.56
11/13/68	34.94	1420.86	09/24/80	37.52	1418.28	11/01/86	35.26	1420.54
			10/23/80	37.64	1418.16			
05/03/69	35.14	1420.66	11/21/80	37.66	1418.14	04/30/87	35.02	1420.78
07/01/69	33.79	1422.01	12/23/80	37.60	1418.20	05/30/87	34.97	1420.83
08/01/69	33.76	1422.04				07/02/87	35.02	1420.78
10/16/69	33.47	1422.33	04/08/81	37.49	1418.31	07/31/87	34.80	1421.00
11/08/69	33.82	1421.98	05/05/81	37.49	1418.31	08/29/87	34.86	1420.94
12/06/69	33.85	1421.95	06/04/81	39.48	1416.32	09/30/87	34.87	1420.93
			06/29/81	37.37	1418.43	10/30/87	34.85	1420.95
01/31/70	33.83	1421.97	07/29/81	37.36	1418.44	11/28/87	34.85	1420.95
03/07/70	33.80	1422.00	08/27/81	37.43	1418.37			
03/21/70	33.82	1421.98	09/24/81	37.43	1418.37	03/31/88	34.49	1421.31
04/18/70	33.86	1421.94	10/23/81	37.34	1418.46	04/29/88	34.50	1421.30
05/16/70	33.58	1422.22	11/18/81	37.30	1418.50	05/30/88	34.53	1421.27
07/16/70	33.41	1422.39	12/31/81	37.68	1418.12	06/28/88	34.79	1421.01
08/27/70	33.61	1422.19				08/01/88	34.88	1420.92
10/10/70	33.89	1421.91	04/15/82	36.80	1419.00	08/29/88	34.86	1420.94
11/07/70	33.73	1422.07	05/28/82	36.83	1418.97	09/30/88	34.85	1420.95
12/02/70	33.70	1422.10	06/25/82	36.78	1419.02	10/29/88	34.90	1420.90
			08/01/82	36.80	1419.00			
11/30/71	33.17	1422.63	09/04/82	36.89	1418.91	04/27/89	34.79	1421.01
			09/29/82	36.96	1418.84	05/31/89	34.89	1420.91
12/06/72	33.60	1422.20	11/02/82	36.69	1419.11	06/27/89	35.04	1420.76
			11/30/82	36.60	1419.20	07/29/89	35.30	1420.50
09/10/73	34.60	1421.20				08/30/89	35.28	1420.52
12/14/73	33.84	1421.96	04/05/83	36.05	1419.75	09/30/89	35.35	1420.45
			05/01/83	36.02	1419.78	10/30/89	35.44	1420.36
12/04/74	33.26	1422.54	06/04/83	36.00	1419.80	11/28/89	35.42	1420.38
			06/28/83	35.95	1419.85			
12/01/75	33.05	1422.75	08/02/83	35.97	1419.83	04/04/90	35.30	1420.50
			08/31/83	35.92	1419.88	04/30/90	35.30	1420.50
11/30/76	33.43	1422.37	09/30/83	35.75	1420.05	05/31/90	35.56	1420.24
			10/31/83	35.62	1420.18	06/30/90	35.47	1420.33
11/29/77	35.00	1420.80	11/27/83	35.50	1420.30	07/28/90	35.60	1420.20
						08/30/90	35.72	1420.08
06/01/78	36.70	1419.10	04/03/84	34.87	1420.93	09/27/90	35.87	1419.93
06/28/78	36.76	1419.04	04/30/84	34.87	1420.93	10/29/90	35.84	1419.96
07/07/78	36.85	1418.95	05/31/84	34.95	1420.85	11/27/90	35.83	1419.97
07/28/78	36.90	1418.90	06/30/84	34.96	1420.84			
08/09/78	37.06	1418.74	08/01/84	34.99	1420.81	03/28/91	35.89	1419.91
09/01/78	37.10	1418.70	08/31/84	35.14	1420.66	04/30/91	35.85	1419.95
09/29/78	37.13	1418.67	09/29/84	35.14	1420.66	05/30/91	35.87	1419.93
11/21/78	37.30	1418.50	10/29/84	35.12	1420.68	06/29/91	35.93	1419.87
12/14/78	37.12	1418.68	12/06/84	34.90	1420.90	07/28/91	35.96	1419.84
						08/31/91	36.07	1419.73
05/17/79	37.04	1418.76	04/28/85	34.88	1420.92	09/28/91	35.95	1419.85
06/13/79	37.15	1418.65	05/29/85	34.90	1420.90	10/26/91	35.95	1419.85
07/11/79	37.28	1418.52	06/29/85	34.99	1420.81			
08/07/79	37.35	1418.45	07/27/85	35.12	1420.68	04/28/92	35.56	1420.24
09/19/79	37.57	1418.23	08/29/85	35.19	1420.61	05/29/92	35.66	1420.14
10/03/79	37.55	1418.25	09/28/85	35.23	1420.57	07/01/92	35.71	1420.09
11/01/79	37.63	1418.17	10/29/85	35.19	1420.61	07/30/92	35.79	1420.01
12/18/79	37.60	1418.20				08/29/92	35.86	1419.94
			04/01/86	35.08	1420.72	09/29/92	35.80	1420.00
04/08/80	37.45	1418.35	04/29/86	35.08	1420.72	10/29/92	35.78	1420.02
05/06/80	38.99	1416.81	05/31/86	35.06	1420.74			

**150-061-05DDD (Continued),MP Elev (msl,ft)=1455.8 Spiritwood Aquifer
SI (ft.)=167-170**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
04/04/93	35.58	1420.22	07/31/96	33.90	1421.90			
05/01/93	35.52	1420.28	08/31/96	34.10	1421.70	07/02/00	33.58	1422.22
05/29/93	35.48	1420.32	09/29/96	34.13	1421.67	08/02/00	33.46	1422.34
06/30/93	35.31	1420.49	10/29/96	34.08	1421.72	09/03/00	33.64	1422.16
07/30/93	35.07	1420.73				10/03/00	33.57	1422.23
08/29/93	35.25	1420.55	04/30/97	34.09	1421.71	10/12/00	33.60	1422.20
09/27/93	35.25	1420.55	06/02/97	34.17	1421.63	10/28/00	33.46	1422.34
10/31/93	35.22	1420.58	06/28/97	34.19	1421.61			
			07/15/97	34.12	1421.68	06/05/01	33.11	1422.69
04/06/94	34.64	1421.16	07/30/97	34.40	1421.40	06/30/01	33.08	1422.72
05/01/94	34.68	1421.12	08/30/97	34.34	1421.46	07/30/01	32.02	1423.78
05/28/94	34.64	1421.16	09/30/97	34.54	1421.26	09/02/01	33.24	1422.56
06/30/94	34.57	1421.23	10/31/97	34.48	1421.32	09/29/01	33.34	1422.46
07/30/94	34.57	1421.23				11/10/01	33.22	1422.58
08/29/94	34.43	1421.37	07/02/98	34.51	1421.29			
09/28/94	34.38	1421.42	08/02/98	34.56	1421.24	05/31/02	33.02	1422.78
10/29/94	34.18	1421.62	08/31/98	34.62	1421.18	06/30/02	33.22	1422.58
			09/30/98	34.69	1421.11	07/29/02	33.45	1422.35
04/30/95	33.74	1422.06	11/07/98	34.64	1421.16	08/29/02	33.55	1422.25
05/31/95	33.79	1422.01	12/03/98	34.26	1421.54	09/29/02	33.74	1422.06
06/30/95	33.92	1421.88				10/31/02	33.72	1422.08
08/30/95	33.97	1421.83	06/04/99	34.14	1421.66			
09/29/95	33.95	1421.85	07/02/99	33.99	1421.81	05/08/03	33.62	1422.18
10/29/95	33.95	1421.85	08/01/99	34.17	1421.63	06/05/03	33.72	1422.08
			08/31/99	34.10	1421.70	07/10/03	33.63	1422.17
05/02/96	33.74	1422.06	10/02/99	34.14	1421.66	07/21/03	33.80	1422.00
06/01/96	33.64	1422.16	10/27/99	34.06	1421.74	08/05/03	33.77	1422.03
06/30/96	33.76	1422.04	11/01/99	34.11	1421.69			

**150-061-05DDD2
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,456.00
SI (ft.)=158-163**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
09/02/03	81.33	1374.67	05/04/04	80.64	1375.36	09/07/04	81.06	1374.94
09/30/03	81.65	1374.35	06/08/04	80.51	1375.49	10/04/04	81.01	1374.99
11/01/03	81.63	1374.37	07/13/04	80.54	1375.46	11/09/04	80.82	1375.18
12/02/03	81.56	1374.44	08/10/04	80.89	1375.11	12/07/04	80.80	1375.20
			09/01/04	81.10	1374.90			

**150-061-06BBB
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,464.50
SI (ft.)=197-203**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
10/16/69	13.41	1451.09	04/05/83	9.56	1454.94	09/30/89	16.51	1447.99
11/08/69	13.43	1451.07	05/01/83	9.06	1455.44	10/30/89	13.71	1450.79
12/06/69	13.43	1451.07	06/04/83	11.60	1452.90	11/29/89	12.29	1452.21
			06/28/83	14.55	1449.95			
05/16/70	13.24	1451.26	08/02/83	26.67	1437.83	04/04/90	10.03	1454.47
07/16/70	13.21	1451.29	08/30/83	20.22	1444.28	04/30/90	10.01	1454.49
08/27/70	12.96	1451.54	09/29/83	14.43	1450.07	05/31/90	11.93	1452.57
10/10/70	12.98	1451.52	10/30/83	12.00	1452.50	06/30/90	11.30	1453.20
11/07/70	12.94	1451.56	11/27/83	10.85	1453.65	07/28/90	20.65	1443.85
12/02/70	12.92	1451.58				08/29/90	25.42	1439.08
			04/03/84	8.80	1455.70	09/27/90	19.98	1444.52
06/01/78	13.99	1450.51	04/30/84	8.39	1456.11	10/28/90	14.83	1449.67
06/28/78	21.45	1443.05	05/31/84	10.77	1453.73	11/27/90	12.94	1451.56
07/07/78	24.32	1440.18	06/30/84	11.47	1453.03			
07/28/78	28.00	1436.50	07/31/84	24.72	1439.78	03/28/91	10.83	1453.67
08/09/78	34.75	1429.75	08/31/84	27.21	1437.29	04/30/91	10.46	1454.04
09/01/78	32.33	1432.17	09/29/84	17.98	1446.52	05/30/91	10.73	1453.77
09/29/78	21.98	1442.52	10/29/84	13.70	1450.80	06/29/91	11.43	1453.07
12/14/78	15.40	1449.10	12/07/84	11.45	1453.05	07/28/91	12.67	1451.83
						08/31/91	16.11	1448.39
05/17/79	13.37	1451.13	04/28/85	9.16	1455.34	09/29/91	12.94	1451.56
06/13/79	14.60	1449.90	05/29/85	13.10	1451.40	10/26/91	11.02	1453.48
07/11/79	18.33	1446.17	06/29/85	11.32	1453.18			
08/07/79	26.65	1437.85	07/27/85	24.62	1439.88	04/28/92	8.29	1456.21
09/19/79	22.42	1442.08	08/29/85	18.11	1446.39	05/29/92	8.67	1455.83
10/03/79	19.15	1445.35	09/28/85	13.58	1450.92	07/01/92	9.73	1454.77
11/01/79	16.17	1448.33	10/29/85	11.56	1452.94	07/30/92	11.43	1453.07
12/18/79	13.47	1451.03				08/29/92	14.73	1449.77
			03/31/86	8.93	1455.57	09/30/92	11.09	1453.41
04/08/80	11.56	1452.94	04/29/86	8.39	1456.11	10/29/92	10.26	1454.24
05/06/80	14.35	1450.15	05/31/86	10.91	1453.59			
06/05/80	24.99	1439.51	07/01/86	20.87	1443.63	04/04/93	8.23	1456.27
07/02/80	30.30	1434.20	07/30/86	15.38	1449.12	05/01/93	8.09	1456.41
07/30/80	36.38	1428.12	08/31/86	18.13	1446.37	05/29/93	7.73	1456.77
08/28/80	24.54	1439.96	09/30/86	13.19	1451.31	06/29/93	7.86	1456.64
09/24/80	18.70	1445.80	10/31/86	11.07	1453.43	07/30/93	7.01	1457.49
10/23/80	17.98	1446.52				08/29/93	12.05	1452.45
11/21/80	14.48	1450.02	04/28/87	8.00	1456.50	09/27/93	9.19	1455.31
12/23/80	13.60	1450.90	05/30/87	11.49	1453.01	11/01/93	7.20	1457.30
			07/02/87	12.08	1452.42			
04/09/81	11.87	1452.63	07/31/87	11.28	1453.22	04/06/94	4.76	1459.74
05/05/81	11.62	1452.88	08/30/87	10.82	1453.68	05/01/94	4.88	1459.62
06/03/81	13.89	1450.61	09/30/87	8.88	1455.62	05/29/94	5.17	1459.33
06/29/81	12.65	1451.85	10/29/87	7.86	1456.64	06/30/94	6.16	1458.34
07/29/81	17.19	1447.31	11/29/87	7.34	1457.16	07/30/94	9.44	1455.06
08/27/81	24.67	1439.83				08/29/94	11.55	1452.95
09/24/81	18.28	1446.22	03/31/88	6.43	1458.07	09/28/94	9.32	1455.18
10/23/81	14.50	1450.00	04/29/88	6.77	1457.73	10/29/94	7.15	1457.35
11/18/81	13.00	1451.50	05/30/88	8.62	1455.88			
12/31/81	11.75	1452.75	06/28/88	24.51	1439.99	04/30/95	5.01	1459.49
			08/01/88	29.09	1435.41	06/01/95	5.05	1459.45
04/15/82	10.39	1454.11	08/29/88	21.72	1442.78	06/30/95	8.60	1455.90
05/28/82	9.87	1454.63	09/30/88	15.27	1449.23	08/30/95	11.55	1452.95
06/25/82	10.90	1453.60	10/28/88	12.55	1451.95	09/29/95	8.40	1456.10
08/01/82	15.68	1448.82				10/29/95	6.77	1457.73
09/04/82	22.22	1442.28	04/27/89	8.57	1455.93			
09/29/82	17.20	1447.30	05/31/89	9.88	1454.62	05/02/96	5.56	1458.94
11/02/82	12.87	1451.63	06/27/89	14.39	1450.11	06/01/96	4.46	1460.04
11/30/82	11.35	1453.15	07/29/89	31.95	1432.55	06/29/96	7.44	1457.06
			08/30/89	25.59	1438.91	07/31/96	11.05	1453.45

150-061-06BBB (Continued),MP Elev (msl,ft)=1464.5 Spiritwood Aquifer SI (ft.)=197-203

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/31/96	13.77	1450.73	10/31/99	5.37	1459.13	06/05/03	3.20	1461.30
09/29/96	10.08	1454.42				07/10/03	5.87	1458.63
10/29/96	7.95	1456.55	07/02/00	6.57	1457.93	07/21/03	6.46	1458.04
			08/01/00	11.48	1453.02	08/05/03	15.30	1449.20
04/30/97	4.65	1459.85	09/03/00	10.63	1453.87	08/20/03	16.14	1448.36
06/02/97	5.07	1459.43	10/02/00	5.49	1459.01	09/02/03	16.14	1448.36
06/28/97	11.00	1453.50	10/12/00	6.43	1458.07	09/30/03	12.56	1451.94
07/16/97	6.87	1457.63	10/28/00	5.09	1459.41	10/08/03	12.10	1453.78
07/30/97	9.14	1455.36				10/08/03	11.88	1454.00
08/30/97	10.44	1454.06	06/05/01	2.46	1462.04	10/16/03	12.52	1453.36
09/30/97	8.37	1456.13	06/30/01	2.88	1461.62	11/03/03	10.11	1455.77
10/31/97	8.84	1455.66	07/30/01	3.89	1460.61	11/17/03	9.65	1456.23
			09/02/01	7.29	1457.21	11/17/03	9.93	1455.95
07/02/98	6.55	1457.95	09/29/01	4.86	1459.64	12/02/03	7.85	1456.65
08/01/98	17.28	1447.22	11/10/01	2.63	1461.87			
08/31/98	19.30	1445.20				05/04/04	4.33	1460.17
09/30/98	13.74	1450.76	05/31/02	2.59	1461.91	06/08/04	4.45	1460.05
11/07/98	8.73	1455.77	06/28/02	3.82	1460.68	07/13/04	8.21	1456.29
			07/29/02	13.96	1450.54	08/10/04	13.48	1451.02
06/04/99	4.79	1459.71	08/29/02	13.23	1451.27	08/31/04	13.00	1451.50
07/02/99	8.14	1456.36	09/29/02	8.02	1456.48	09/07/04	11.17	1453.33
08/01/99	11.42	1453.08	10/31/02	5.69	1458.81	10/04/04	8.83	1455.67
09/01/99	12.08	1452.42				11/09/04	5.27	1459.23
10/03/99	6.76	1457.74	05/08/03	2.78	1461.72	12/07/04	4.37	1460.13

150-061-06BBC2 Spiritwood Aquifer

**MP Elev (msl,ft)=1,460.45
SI (ft.)=265-270**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
10/08/03	7.57	1452.88	11/17/03	4.74	1455.71	05/04/04	0.61	1459.84
10/08/03	6.86	1453.59	11/17/03	4.48	1455.97	06/08/04	1.86	1458.59
10/16/03	6.48	1453.97	12/02/03	5.20	1455.25	07/13/04	4.02	1456.43
11/03/03	6.22	1454.23				08/03/04	12.40	1448.05

150-061-06BBC3 Spiritwood Aquifer

**MP Elev (msl,ft)=1,464.20
SI (ft.)=287-290**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
10/08/03	12.63	1452.88	11/03/03	10.62	1454.89	12/02/03	8.14	1456.06
10/08/03	9.50	1456.01	11/17/03	7.50	1458.01	10/16/03	9.10	1456.41
11/17/03	7.14	1458.37						

**150-061-06CCC2
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,470.41
SI (ft.)=198-203**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
04/03/84	14.70	1455.71	09/27/90	25.77	1444.64	07/30/97	14.53	1455.88
04/30/84	14.30	1456.11	10/29/90	20.81	1449.60	08/30/97	16.25	1454.16
05/31/84	16.13	1454.28	11/27/90	19.03	1451.38	09/30/97	14.27	1456.14
06/30/84	17.22	1453.19				10/01/97	13.81	1456.60
08/01/84	29.96	1440.45	03/28/91	16.80	1453.61	10/31/97	13.07	1457.34
08/31/84	33.17	1437.24	04/30/91	16.54	1453.87			
09/29/84	24.69	1445.72	05/30/91	16.62	1453.79	07/02/98	12.02	1458.39
10/29/84	19.79	1450.62	06/29/91	17.49	1452.92	08/01/98	22.11	1448.30
12/06/84	17.61	1452.80	07/28/91	18.33	1452.08	08/31/98	24.28	1446.13
			08/31/91	21.93	1448.48	09/30/98	20.05	1450.36
04/28/85	15.23	1455.18	09/28/91	19.05	1451.36	11/07/98	14.99	1455.42
05/29/85	19.07	1451.34	10/26/91	17.14	1453.27			
06/29/85	17.42	1452.99				06/04/99	11.04	1459.37
07/27/85	29.59	1440.82	01/06/92	15.27	1455.14	07/02/99	13.52	1456.89
08/29/85	24.43	1445.98	04/28/92	14.36	1456.05	08/01/99	16.96	1453.45
09/28/85	19.74	1450.67	05/29/92	14.65	1455.76	08/31/99	17.09	1453.32
10/29/85	17.71	1452.70	07/01/92	15.51	1454.90	10/02/99	12.82	1457.59
			07/30/92	17.40	1453.01	11/01/99	11.49	1458.92
04/01/86	15.02	1455.39	08/29/92	20.74	1449.67			
04/29/86	14.45	1455.96	09/29/92	17.22	1453.19	07/02/00	12.67	1457.74
05/31/86	16.03	1454.38	10/29/92	16.35	1454.06	08/01/00	15.59	1454.82
07/01/86	25.74	1444.67				09/03/00	15.27	1455.14
08/01/86	22.39	1448.02	04/04/93	14.35	1456.06	10/02/00	11.87	1458.54
08/30/86	23.69	1446.72	05/01/93	14.05	1456.36	10/12/00	11.58	1458.83
09/30/86	19.17	1451.24	05/29/93	13.80	1456.61	10/28/00	10.78	1459.63
11/01/86	17.19	1453.22	06/29/93	13.81	1456.60			
			08/29/93	17.80	1452.61	06/05/01	8.48	1461.93
04/30/87	13.97	1456.44	09/27/93	15.29	1455.12	06/30/01	8.80	1461.61
05/30/87	17.62	1452.79	10/31/93	13.26	1457.15	07/30/01	10.02	1460.39
07/02/87	18.28	1452.13				09/02/01	13.27	1457.14
07/31/87	17.45	1452.96	04/06/94	10.91	1459.50	09/29/01	11.01	1459.40
08/29/87	17.08	1453.33	05/01/94	10.85	1459.56	10/29/01	9.05	1461.36
09/30/87	14.80	1455.61	05/29/94	11.33	1459.08	11/10/01	8.74	1461.67
10/30/87	14.01	1456.40	06/30/94	11.73	1458.68			
11/28/87	13.52	1456.89	07/30/94	14.67	1455.74	05/31/02	8.18	1462.23
			08/29/94	17.49	1452.92	06/30/02	9.02	1461.39
03/31/88	12.56	1457.85	09/28/94	15.34	1455.07	07/29/02	10.53	1459.88
04/29/88	12.72	1457.69	10/28/94	12.88	1457.53	08/01/02	16.26	1454.15
05/30/88	14.36	1456.05	12/30/94	11.25	1459.16	08/29/02	19.39	1451.02
06/28/88	29.04	1441.37				09/29/02	14.32	1456.09
08/01/88	32.89	1437.52	04/30/95	10.70	1459.71	10/31/02	11.64	1458.77
08/29/88	27.52	1442.89	05/31/95	10.77	1459.64	12/04/02	10.44	1459.97
09/30/88	20.88	1449.53	06/30/95	14.74	1455.67			
10/29/88	18.73	1451.68	08/30/95	17.79	1452.62	05/08/03	8.82	1461.59
			09/29/95	14.50	1455.91	06/05/03	9.28	1461.13
04/27/89	14.68	1455.73	10/29/95	12.75	1457.66	07/10/03	11.67	1458.74
05/31/89	15.92	1454.49				07/21/03	11.18	1459.23
06/27/89	19.69	1450.72	05/02/96	10.98	1459.43	08/05/03	19.65	1450.76
07/29/89	37.30	1433.11	06/01/96	10.69	1459.72	08/19/03	20.05	1450.36
08/30/89	31.20	1439.21	06/30/96	13.58	1456.83	09/02/03	22.10	1448.31
09/30/89	22.84	1447.57	07/31/96	16.84	1453.57	09/30/03	17.78	1452.63
10/30/89	19.87	1450.54	08/31/96	19.72	1450.69	11/01/03	14.59	1455.82
11/28/89	18.37	1452.04	09/29/96	16.39	1454.02	11/18/03	13.89	1456.52
			10/29/96	13.65	1456.76	11/18/03	13.99	1456.42
04/04/90	16.02	1454.39	11/13/96	12.87	1457.54	11/18/03	14.03	1456.38
04/30/90	15.97	1454.44				12/02/03	13.10	1457.31
05/31/90	17.52	1452.89	04/30/97	10.89	1459.52			
06/30/90	17.29	1453.12	06/02/97	10.88	1459.53	05/04/04	10.16	1460.25
07/28/90	25.41	1445.00	06/28/97	15.57	1454.84	06/08/04	10.16	1460.25
08/30/90	30.90	1439.51	07/16/97	12.91	1457.50	07/13/04	13.13	1457.28

150-061-06CCC2 (Continued), MP Elev (msl,ft)=1470.41 Spiritwood Aquifer SI (ft.)=198-203

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/10/04	19.29	1451.12	09/07/04	17.11	1453.30	11/09/04	11.42	1458.99
08/31/04	18.42	1451.99	10/04/04	13.47	1456.94	12/07/04	10.52	1459.89

**150-061-09BCB
Warwick Aquifer**

**MP Elev (msl,ft)=1,463.00
SI (ft.)=0-18.2**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
09/21/73	9.41	1453.59	05/29/75	6.01	1456.99	07/07/77	10.21	1452.79
12/28/73	7.71	1455.29	06/18/75	6.11	1456.89	09/19/77	10.41	1452.59
04/11/74	8.01	1454.99	09/17/75	7.81	1455.19	07/26/78	8.41	1454.59
05/22/74	4.01	1458.99	12/18/75	8.01	1454.99	09/27/78	9.41	1453.59
06/19/74	5.11	1457.89	03/16/76	8.61	1454.39	06/20/79	6.11	1456.89
09/23/74	7.51	1455.49	06/29/76	7.81	1455.19	09/04/79	7.61	1455.39
12/16/74	7.41	1455.59	09/28/76	9.81	1453.19	06/26/80	8.71	1454.29
04/03/75	8.01	1454.99	12/27/76	9.91	1453.09	09/29/80	8.71	1454.29
05/06/75	6.01	1456.99	03/21/77	10.01	1452.99			

**150-061-14BBB
Warwick Aquifer**

**MP Elev (msl,ft)=1,461.29
SI (ft.)=0-13.5**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
05/19/70	5.28	1456.01	12/18/72	7.48	1453.81	06/29/76	6.88	1454.41
05/22/70	5.08	1456.21	03/20/73	7.48	1453.81	09/28/76	7.98	1453.31
06/17/70	5.18	1456.11	06/22/73	7.48	1453.81	12/27/76	8.38	1452.91
07/22/70	5.78	1455.51	09/21/73	7.98	1453.31	03/21/77	8.08	1453.21
08/20/70	6.28	1455.01	12/28/73	6.98	1454.31	07/07/77	8.48	1452.81
09/15/70	6.68	1454.61	04/05/74	7.48	1453.81	09/19/77	8.48	1452.81
10/22/70	6.88	1454.41	05/23/74	3.58	1457.71	01/03/78	8.18	1453.11
11/23/70	6.78	1454.51	06/19/74	4.48	1456.81	03/22/78	8.18	1453.11
12/22/70	6.88	1454.41	09/23/74	6.38	1454.91	07/26/78	6.98	1454.31
01/26/71	7.18	1454.11	12/16/74	6.48	1454.81	09/27/78	7.68	1453.61
02/23/71	7.38	1453.91	04/03/75	6.78	1454.51	12/11/78	7.98	1453.31
03/18/71	7.38	1453.91	05/06/75	5.08	1456.21	06/20/79	5.38	1455.91
04/22/71	5.58	1455.71	05/29/75	4.98	1456.31	09/04/79	6.68	1454.61
06/18/71	5.78	1455.51	06/18/75	5.38	1455.91	03/17/80	7.88	1453.41
09/17/71	6.88	1454.41	09/17/75	7.18	1454.11	06/26/80	7.58	1453.71
12/21/71	6.58	1454.71	12/18/75	7.38	1453.91	09/30/80	7.68	1453.61
03/17/72	7.18	1454.11	03/16/76	7.48	1453.81			
06/19/72	5.98	1455.31						
09/20/72	7.48	1453.81						

**150-061-14DDD
Warwick Aquifer**

**MP Elev (msl,ft)=1,457.10
SI (ft.)=0-20.5**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/22/73	5.48	1451.62	06/18/75	4.18	1452.92	01/03/78	6.98	1450.12
09/21/73	6.78	1450.32	09/17/75	6.78	1450.32	03/22/78	7.28	1449.82
12/28/73	5.98	1451.12	12/18/75	7.08	1450.02	07/26/78	6.88	1450.22
04/05/74	6.48	1450.62	03/16/76	6.78	1450.32	09/28/78	7.38	1449.72
05/23/74	2.78	1454.32	06/29/76	5.58	1451.52	12/11/78	7.48	1449.62
06/19/74	3.88	1453.22	09/28/76	7.18	1449.92	06/20/79	3.88	1453.22
09/23/74	5.98	1451.12	12/27/76	7.48	1449.62	09/06/79	6.48	1450.62
12/16/74	5.98	1451.12	03/21/77	7.18	1449.92	03/17/80	7.58	1449.52
04/03/75	6.18	1450.92	07/07/77	7.28	1449.82	06/26/80	7.08	1450.02
05/06/75	3.18	1453.92	09/19/77	7.48	1449.62	09/30/80	6.48	1450.62
05/29/75	3.98	1453.12						

**150-061-16DDD
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,465.96
SI (ft.)=148-153**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/20/03	89.85	1374.56	05/04/04	90.73	1375.23	09/07/04	91.07	1374.89
09/02/03	91.50	1374.46	06/08/04	90.38	1375.58	10/04/04	90.97	1374.99
09/30/03	91.67	1374.29	07/13/04	90.63	1375.33	11/09/04	90.92	1375.04
11/01/03	91.63	1374.33	08/10/04	90.99	1374.97	12/07/04	90.88	1375.08
12/02/03	91.59	1374.37						

**150-061-17AAA
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,465.93
SI (ft.)=158-163**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/19/03	91.20	1374.73	05/04/04	90.72	1375.21	08/31/04	91.12	1374.81
09/02/03	91.33	1374.60	06/08/04	90.54	1375.39	09/07/04	91.08	1374.85
09/30/03	91.58	1374.35	07/13/04	90.56	1375.37	10/04/04	91.00	1374.93
11/01/03	91.57	1374.36	08/10/04	90.93	1375.00	11/09/04	90.84	1375.09
12/02/03	91.54	1374.39				12/07/04	90.80	1375.13

**150-061-17DCC
Warwick Aquifer**

**MP Elev (msl,ft)=1,442.69
SI (ft.)=30-35**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
04/15/86	6.83	1435.86				09/15/93	6.63	1436.06
05/21/86	6.59	1436.10	04/14/93	8.23	1434.46	10/21/93	7.19	1435.50
07/02/86	8.67	1434.02	06/10/93	7.46	1435.23	11/17/93	7.11	1435.58
08/06/86	7.79	1434.90	07/14/93	6.41	1436.28			
			07/21/93	5.90	1436.79	03/08/94	7.84	1434.85
10/13/92	9.99	1432.70	08/09/93	6.16	1436.53	12/08/92	9.74	1432.95
08/17/93	6.25	1436.44						

**150-061-18BBB2
Warwick Aquifer**

**MP Elev (msl,ft)=1,460.44
SI (ft.)=0-15**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/21/73	8.40	1452.04	06/29/76	7.60	1452.84	06/26/80	8.00	1452.44
09/21/73	9.40	1451.04	09/28/76	9.50	1450.94	09/30/80	7.70	1452.74
12/21/73	7.80	1452.64	12/27/76	9.20	1451.24			
						10/13/92	8.06	1452.38
04/05/74	7.90	1452.54	03/21/77	9.30	1451.14	12/08/92	8.08	1452.36
05/22/74	4.20	1456.24	07/07/77	9.10	1451.34			
06/19/74	5.00	1455.44	09/19/77	10.10	1450.34	04/14/93	6.77	1453.67
09/23/74	8.50	1451.94				06/10/93	5.72	1454.72
12/16/74	8.10	1452.34	01/03/78	9.80	1450.64	07/14/93	4.22	1456.22
			03/22/78	9.10	1451.34	07/21/93	4.09	1456.35
04/03/75	7.70	1452.74	07/26/78	8.30	1452.14	08/09/93	4.82	1455.62
05/06/75	5.20	1455.24	09/27/78	9.50	1450.94	09/15/93	4.74	1455.70
05/29/75	5.80	1454.64	12/11/78	9.80	1450.64	10/21/93	5.96	1454.48
06/18/75	6.00	1454.44				11/17/93	6.24	1454.20
09/17/75	8.50	1451.94	06/20/79	5.50	1454.94			
12/18/75	8.50	1451.94	09/04/79	7.40	1453.04	03/08/94	5.95	1454.49
03/16/76	8.60	1451.84	03/17/80	8.50	1451.94	08/31/04	6.90	1453.54

**150-061-18BBB3
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,459.44
SI (ft.)=292-302**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/19/03	15.00	1444.44	11/18/03	15.05	1444.39	08/10/04	14.91	1444.53
09/02/03	15.16	1444.28	12/02/03	15.11	1444.33	08/31/04	15.02	1444.42
09/30/03	15.23	1444.21				09/07/04	15.02	1444.42
11/01/03	15.17	1444.27	05/04/04	14.70	1444.74	10/04/04	14.90	1444.54
11/18/03	15.06	1444.38	06/08/04	14.57	1444.87	11/09/04	14.78	1444.66
11/18/03	15.07	1444.37	07/13/04	14.73	1444.71	12/07/04	14.73	1444.71

**150-061-18DAA
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,445.21
SI (ft.)=168-173**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/19/03	70.74	1374.47	12/02/03	70.87	1374.34	07/13/04	69.93	1375.28
09/02/03	70.82	1374.39				08/03/04	70.24	1374.97
09/30/03	71.00	1374.21	05/04/04	70.05	1375.16	11/01/03	70.94	1374.27
06/08/04	69.66	1375.55						

**150-061-19BBB
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,461.73
SI (ft.)=175-181**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
07/16/70	93.10	1368.23				10/29/90	89.57	1372.16
08/27/70	93.37	1367.96	04/03/84	88.22	1373.11	11/27/90	89.38	1372.35
10/10/70	93.87	1367.46	04/30/84	88.10	1373.23			
11/07/70	93.70	1367.63	06/01/84	88.44	1372.89	03/29/91	89.13	1372.60
12/02/70	93.73	1367.60	07/01/84	88.58	1372.75	04/30/91	89.00	1372.73
			08/01/84	89.07	1372.26	05/30/91	89.13	1372.60
06/28/78	91.24	1370.09	08/31/84	89.25	1372.08	06/29/91	89.28	1372.45
07/07/78	91.38	1369.95	09/29/84	89.38	1371.95	07/28/91	89.37	1372.36
07/28/78	91.38	1369.95	10/29/84	88.95	1372.38	08/30/91	89.52	1372.21
08/09/78	91.62	1369.71	12/06/84	88.88	1372.45	09/28/91	89.38	1372.35
09/01/78	91.65	1369.68				10/26/91	89.33	1372.40
09/29/78	92.02	1369.31	04/28/85	88.49	1372.84			
12/14/78	91.97	1369.36	05/30/85	88.49	1372.84	01/06/92	89.10	1372.63
			06/29/85	88.70	1372.63	04/28/92	88.72	1373.01
05/17/79	90.70	1370.63	07/27/85	89.12	1372.21	05/29/92	88.93	1372.80
06/13/79	92.20	1369.13	08/29/85	89.06	1372.27	07/01/92	89.00	1372.73
07/11/79	92.05	1369.28	09/28/85	89.02	1372.31	07/30/92	88.99	1372.74
08/07/79	92.34	1368.99	10/29/85	88.81	1372.52	08/29/92	89.35	1372.38
09/19/79	92.99	1368.34				09/29/92	89.23	1372.50
10/04/79	93.24	1368.09	04/01/86	88.12	1373.21	10/29/92	89.26	1372.47
10/31/79	93.05	1368.28	04/29/86	87.92	1373.41			
12/19/79	92.87	1368.46	05/31/86	88.29	1373.04	04/04/93	88.27	1373.46
			07/01/86	88.87	1372.46	05/01/93	88.47	1373.26
04/08/80	91.55	1369.78	08/01/86	88.66	1372.67	05/29/93	88.54	1373.19
05/06/80	92.26	1369.07	08/30/86	88.82	1372.51	06/30/93	88.40	1373.33
06/05/80	92.07	1369.26	09/30/86	88.69	1372.64	07/30/93	87.52	1374.21
07/30/80	92.57	1368.76	11/01/86	88.67	1372.66	08/29/93	87.75	1373.98
08/29/80	92.77	1368.56				09/27/93	88.10	1373.63
09/25/80	92.42	1368.91	04/30/87	87.60	1373.73	10/31/93	88.23	1373.50
10/23/80	92.26	1369.07	05/30/87	87.75	1373.58			
11/23/80	92.14	1369.19	07/02/87	88.23	1373.10	04/06/94	87.20	1374.53
12/24/80	92.52	1368.81	07/31/87	87.75	1373.58	05/01/94	87.47	1374.26
			08/29/87	88.03	1373.30	05/29/94	87.52	1374.21
04/09/81	91.36	1369.97	09/30/87	88.15	1373.18	07/01/94	87.28	1374.45
05/05/81	91.69	1369.64	10/30/87	88.20	1373.13	07/30/94	87.50	1374.23
06/04/81	91.55	1369.78	11/28/87	88.14	1373.19	08/29/94	87.74	1373.99
07/29/81	91.90	1369.43				09/28/94	87.69	1374.04
08/27/81	92.17	1369.16	03/31/88	87.43	1375.10	10/28/94	87.62	1374.11
09/24/81	92.35	1368.98	04/29/88	87.60	1374.93	12/29/94	87.62	1374.11
10/23/81	92.30	1369.03	05/30/88	87.79	1374.74			
12/31/81	92.27	1369.06	06/28/88	92.48	1370.05	04/30/95	86.88	1374.85
			08/02/88	87.94	1374.59	05/31/95	86.89	1374.84
04/15/82	90.40	1370.93	08/29/88	88.42	1374.11	06/30/95	87.40	1374.33
05/28/82	91.44	1369.89	09/30/88	88.34	1374.19	08/30/95	87.59	1374.14
06/25/82	91.77	1369.56	10/29/88	88.29	1374.24	09/29/95	87.79	1373.94
08/01/82	91.40	1369.93				10/29/95	87.80	1373.93
09/04/82	92.24	1369.09	04/27/89	87.59	1374.94			
09/29/82	92.70	1368.63	05/31/89	87.96	1374.57	05/02/96	86.40	1375.33
11/02/82	90.07	1371.26	06/27/89	88.11	1374.42	06/01/96	86.76	1374.97
12/01/82	90.45	1370.88	07/29/89	88.64	1373.89	06/30/96	87.36	1374.37
			08/30/89	88.55	1373.98	07/31/96	87.63	1374.10
04/05/83	88.78	1372.55	09/30/89	88.58	1373.95	08/31/96	87.88	1373.85
05/01/83	88.97	1372.36	10/30/89	88.64	1373.89	09/29/96	87.97	1373.76
06/04/83	89.32	1372.01	11/28/89	88.59	1373.94	10/29/96	87.89	1373.84
06/28/83	89.35	1371.98				11/13/96	88.05	1373.68
08/02/83	89.93	1371.40	04/04/90	88.31	1374.22			
08/31/83	89.45	1371.88	04/30/90	88.15	1374.38	05/01/97	86.08	1375.65
09/30/83	89.44	1371.89	07/28/90	89.19	1372.54	06/02/97	86.95	1374.78
10/31/83	89.32	1372.01	08/30/90	89.36	1372.37	06/28/97	87.39	1374.34
11/27/83	89.17	1372.16	09/27/90	89.59	1372.14	07/15/97	87.46	1374.27

150-061-19BBB (Continued), MP Elev (msl, ft)=1461.73 Spiritwood Aquifer SI (ft.)=175-181

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
07/30/97	87.76	1373.97	09/03/00	87.47	1374.26	05/08/03	87.51	1374.22
08/30/97	87.99	1373.74	10/01/00	87.49	1374.24	06/05/03	87.65	1374.08
10/01/97	88.13	1373.60	10/12/00	87.51	1374.22	07/10/03	87.59	1374.14
10/31/97	88.35	1373.38	10/28/00	87.53	1374.20	07/21/03	87.60	1374.13
						08/05/03	87.67	1374.06
07/02/98	88.19	1373.54	06/05/01	86.79	1374.94	08/19/03	88.00	1373.73
08/01/98	88.62	1373.11	06/30/01	86.72	1375.01	09/02/03	88.16	1373.57
08/31/98	88.81	1372.92	07/30/01	86.74	1374.99	09/30/03	88.30	1373.43
09/30/98	88.84	1372.89	09/02/01	87.59	1374.14	11/01/03	88.26	1373.47
11/07/98	88.73	1373.00	09/29/01	88.12	1373.61	12/02/03	88.19	1373.54
12/03/98	88.29	1373.44	10/29/01	88.05	1373.68			
			11/10/01	88.06	1373.67	05/04/04	87.34	1374.39
06/04/99	87.47	1374.26				06/08/04	86.93	1374.80
07/02/99	87.69	1374.04	05/31/02	87.65	1374.08	07/13/04	87.23	1374.50
08/01/99	87.91	1373.82	06/30/02	87.59	1374.14	08/10/04	87.58	1374.15
08/31/99	87.73	1374.00	07/29/02	87.83	1373.90	08/31/04	87.75	1373.98
10/02/99	87.96	1373.77	08/01/02	87.92	1373.81	09/07/04	87.66	1374.07
10/27/99	87.78	1373.95	08/29/02	88.20	1373.53	10/04/04	87.56	1374.17
11/02/99	88.02	1373.71	09/29/02	88.30	1373.43	11/09/04	87.46	1374.27
			10/31/02	88.38	1373.35	12/07/04	87.45	1374.28
07/01/00	87.31	1374.42	12/04/02	88.23	1373.50	08/01/00	87.37	1374.36

**150-061-29AAA
Not Yet Entered Aquifer**

**MP Elev (msl, ft)=1,459.00
SI (ft.)=65-70**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
04/15/86	19.80	1439.20				09/15/93	19.10	1439.90
05/21/86	19.40	1439.60	04/14/93	20.85	1438.15	10/21/93	18.90	1440.10
07/02/86	19.46	1439.54	06/10/93	20.48	1438.52	11/17/93	18.74	1440.26
08/06/86	19.25	1439.75	07/14/93	20.11	1438.89			
			07/21/93	19.92	1439.08	03/08/94	18.30	1440.70
10/13/92	21.01	1437.99	08/09/93	19.54	1439.46	12/08/92	20.90	1438.10
08/16/93	19.43	1439.57						

**150-061-30ABB
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,460.50
SI (ft.)=237-240**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
07/24/68	89.94	1370.56	05/28/82	90.02	1370.48	11/28/87	87.03	1373.47
08/20/68	89.77	1370.73	06/25/82	90.38	1370.12			
09/13/68	89.53	1370.97	08/01/82	90.21	1370.29	03/31/88	86.30	1374.20
10/12/68	89.55	1370.95	09/04/82	90.87	1369.63	04/29/88	86.52	1373.98
11/13/68	89.40	1371.10	09/29/82	91.16	1369.34	05/30/88	86.67	1373.83
			11/02/82	89.17	1371.33	06/28/88	87.09	1373.41
05/03/69	90.84	1369.66	11/29/82	88.98	1371.52	08/02/88	87.17	1373.33
07/01/69	90.62	1369.88	12/01/82	89.02	1371.48	08/29/88	87.28	1373.22
08/01/69	90.99	1369.51				09/30/88	87.20	1373.30
11/08/69	91.09	1369.41	04/05/83	87.35	1373.15	10/29/88	87.14	1373.36
12/06/69	91.02	1369.48	05/01/83	87.59	1372.91	12/05/88	86.65	1373.85
			06/04/83	87.91	1372.59			
01/31/70	91.89	1368.61	06/28/83	87.90	1372.60	04/27/89	86.40	1374.10
03/07/70	91.38	1369.12	08/02/83	88.20	1372.30	05/31/89	86.77	1373.73
03/21/70	91.26	1369.24	08/31/83	88.06	1372.44	06/27/89	86.99	1373.51
04/17/70	90.12	1370.38	09/30/83	88.02	1372.48	07/29/89	87.48	1373.02
05/16/70	90.05	1370.45	10/31/83	87.96	1372.54	08/30/89	87.45	1373.05
06/04/70	90.30	1370.20	11/27/83	87.81	1372.69	09/30/89	87.40	1373.10
07/16/70	90.78	1369.72	12/07/83	87.79	1372.71	10/30/89	87.50	1373.00
08/27/70	91.02	1369.48				11/14/89	87.06	1373.44
10/10/70	91.45	1369.05	04/03/84	86.80	1373.70	11/28/89	87.44	1373.06
11/07/70	91.31	1369.19	04/30/84	86.70	1373.80			
12/02/70	91.10	1369.40	06/01/84	87.06	1373.44	04/04/90	87.16	1373.34
			06/19/84	87.10	1373.40	04/30/90	87.00	1373.50
11/30/71	91.22	1369.28	07/01/84	87.56	1372.94	06/01/90	87.15	1373.35
			08/01/84	87.72	1372.78	06/30/90	86.98	1373.52
12/06/72	91.22	1369.28	08/31/84	87.92	1372.58	07/28/90	87.27	1373.23
			09/29/84	88.29	1372.21	08/30/90	87.47	1373.03
09/10/73	91.10	1369.40	10/29/84	87.84	1372.66	09/27/90	87.68	1372.82
12/14/73	91.04	1369.46	11/26/84	87.72	1372.78	10/29/90	87.67	1372.83
			12/06/84	87.57	1372.93	11/13/90	87.36	1373.14
12/04/74	90.58	1369.92				11/27/90	87.52	1372.98
			04/28/85	87.33	1373.17			
12/01/75	91.00	1369.50	05/30/85	87.39	1373.11	03/29/91	87.18	1373.32
			06/29/85	87.60	1372.90	04/30/91	87.10	1373.40
11/30/76	90.64	1369.86	07/27/85	88.02	1372.48	05/30/91	87.23	1373.27
			08/29/85	87.95	1372.55	06/29/91	87.32	1373.18
11/29/77	89.78	1370.72	09/28/85	87.91	1372.59	07/28/91	87.49	1373.01
			10/29/85	87.69	1372.81	08/30/91	87.68	1372.82
11/21/78	91.04	1369.46	12/05/85	87.42	1373.08	09/28/91	87.49	1373.01
						10/26/91	87.45	1373.05
05/17/79	89.55	1370.95	04/01/86	86.99	1373.51	11/13/91	87.09	1373.41
08/14/79	91.25	1369.25	04/29/86	86.81	1373.69			
09/19/79	91.80	1368.70	05/31/86	87.20	1373.30	04/28/92	86.86	1373.64
11/29/79	91.32	1369.18	07/01/86	87.72	1372.78	05/29/92	87.05	1373.45
12/19/79	91.60	1368.90	08/01/86	87.53	1372.97	07/01/92	87.09	1373.41
			08/30/86	87.72	1372.78	07/30/92	87.29	1373.21
04/08/80	90.23	1370.27	09/30/86	87.49	1373.01	08/29/92	87.39	1373.11
07/02/80	91.47	1369.03	11/01/86	87.57	1372.93	09/29/92	87.40	1373.10
09/25/80	91.15	1369.35	12/05/86	87.19	1373.31	10/29/92	87.40	1373.10
12/03/80	91.05	1369.45				11/18/92	87.09	1373.41
12/24/80	91.29	1369.21	04/30/87	86.50	1374.00	11/21/92	87.02	1373.48
			05/30/87	86.63	1373.87			
04/09/81	90.13	1370.37	07/02/87	87.14	1373.36	01/24/93	86.90	1373.60
06/29/81	90.17	1370.33	07/31/87	86.61	1373.89	04/04/93	86.44	1374.06
09/24/81	90.97	1369.53	08/04/87	86.46	1374.04	05/01/93	86.60	1373.90
12/01/81	90.69	1369.81	08/29/87	86.93	1373.57	05/29/93	86.66	1373.84
12/31/81	90.80	1369.70	09/30/87	87.05	1373.45	06/30/93	86.52	1373.98
			10/30/87	87.06	1373.44	08/29/93	85.89	1374.61
04/15/82	88.94	1371.56	11/19/87	87.02	1373.48	09/27/93	86.27	1374.23

150-061-30ABB

(Continued), MP Elev (msl,ft)=1460.5 Spiritwood Aquifer SI (ft.)=237-240

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
10/31/93	86.40	1374.10	06/28/97	85.60	1374.90	09/02/01	85.72	1374.78
11/24/93	86.90	1373.60	07/15/97	85.42	1375.08	09/29/01	86.21	1374.29
			07/30/97	85.97	1374.53	11/10/01	86.19	1374.31
04/06/94	85.35	1375.15	08/30/97	85.64	1374.86			
05/01/94	85.64	1374.86	10/01/97	86.38	1374.12	05/31/02	85.77	1374.73
05/29/94	85.66	1374.84	10/31/97	86.30	1374.20	06/30/02	85.65	1374.85
07/01/94	85.43	1375.07				07/29/02	86.09	1374.41
07/30/94	85.71	1374.79	07/02/98	86.19	1374.31	08/29/02	86.29	1374.21
08/29/94	85.95	1374.55	08/01/98	86.65	1373.85	09/29/02	86.42	1374.08
09/28/94	85.90	1374.60	08/31/98	86.80	1373.70	10/31/02	86.50	1374.00
10/28/94	85.86	1374.64	09/30/98	86.88	1373.62			
11/17/94	85.54	1374.96	11/07/98	86.74	1373.76	05/08/03	85.50	1375.00
						06/05/03	85.59	1374.91
04/30/95	85.09	1375.41	06/04/99	85.49	1375.01	07/10/03	85.54	1374.96
05/31/95	85.12	1375.38	07/02/99	85.72	1374.78	07/21/03	85.56	1374.94
06/30/95	85.60	1374.90	08/01/99	85.92	1374.58	08/05/03	85.70	1374.80
08/30/95	85.82	1374.68	08/31/99	85.77	1374.73	08/19/03	86.02	1374.48
09/29/95	86.00	1374.50	10/02/99	86.00	1374.50	09/02/03	86.17	1374.33
10/29/95	85.90	1374.60	11/02/99	86.04	1374.46	09/30/03	86.30	1374.20
						11/01/03	86.25	1374.25
05/02/96	84.61	1375.89	07/01/00	85.35	1375.15	12/02/03	86.18	1374.32
06/01/96	85.07	1375.43	08/01/00	85.46	1375.04			
06/30/96	85.55	1374.95	09/03/00	85.53	1374.97	05/04/04	85.32	1375.18
07/31/96	85.83	1374.67	10/01/00	85.54	1374.96	06/08/04	84.88	1375.62
08/31/96	85.72	1374.78	10/12/00	85.48	1375.02	07/13/04	85.19	1375.31
09/29/96	86.22	1374.28	10/28/00	85.61	1374.89	08/10/04	85.57	1374.93
10/29/96	86.09	1374.41				09/07/04	85.62	1374.88
			06/05/01	84.92	1375.58	10/04/04	85.53	1374.97
05/01/97	84.22	1376.28	06/30/01	84.80	1375.70	11/09/04	85.45	1375.05
06/02/97	85.15	1375.35	07/30/01	84.82	1375.68	12/07/04	85.41	1375.09

150-062-01AAC
Spiritwood Aquifer

MP Elev (msl,ft)=1,462.97
SI (ft.)=265-270

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
10/08/03	9.66	1453.31	12/02/03	6.69	1456.28	08/31/04	12.00	1450.97
10/08/03	9.46	1453.51				09/07/04	10.14	1452.83
10/16/03	9.08	1453.89	05/04/04	3.26	1459.71	10/04/04	6.82	1456.15
11/03/03	7.89	1455.08	06/08/04	3.45	1459.52	11/09/04	4.30	1458.67
11/17/03	7.26	1455.71	07/13/04	6.56	1456.41	12/07/04	3.40	1459.57
11/17/03	7.10	1455.87	08/10/04	12.39	1450.58			

150-062-01AAD
Spiritwood Aquifer

MP Elev (msl,ft)=1,463.27
SI (ft.)=265-270

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
10/08/03	9.96	1453.31	12/02/03	7.08	1456.19	08/31/04	12.80	1450.47
10/08/03	9.66	1453.61				09/07/04	10.37	1452.90
10/16/03	9.30	1453.97	05/04/04	3.46	1459.81	10/04/04	7.10	1456.17
11/03/03	8.50	1454.77	06/08/04	4.17	1459.10	11/09/04	4.48	1458.79
11/17/03	7.49	1455.78	07/13/04	6.86	1456.41	12/07/04	3.58	1459.69
11/17/03	7.27	1456.00	08/10/04	12.62	1450.65			

**150-062-01CDC
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,474.34
SI (ft.)=258-263**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/20/03	24.40	1449.94				08/31/04	22.45	1451.89
09/02/03	26.00	1448.34	05/04/04	14.16	1460.18	09/07/04	21.08	1453.26
09/30/03	21.72	1452.62	06/08/04	14.16	1460.18	10/04/04	17.46	1456.88
11/01/03	18.63	1455.71	07/13/04	17.08	1457.26	11/09/04	15.49	1458.85
12/02/03	17.09	1457.25	08/10/04	23.23	1451.11	12/07/04	14.60	1459.74

**150-062-01DDD
Warwick Aquifer**

**MP Elev (msl,ft)=1,470.42
SI (ft.)=0-8.1**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
05/18/70	3.92	1466.50	12/18/72	8.22	1462.20	06/29/76	6.72	1463.70
05/22/70	4.02	1466.40				09/28/76	8.02	1462.40
06/17/70	4.92	1465.50	03/20/73	7.92	1462.50	12/27/76	8.42	1462.00
07/22/70	5.92	1464.50	06/21/73	8.22	1462.20			
08/20/70	6.62	1463.80	09/21/73	8.62	1461.80	03/21/77	8.32	1462.10
09/15/70	7.12	1463.30	12/21/73	7.62	1462.80	07/07/77	7.92	1462.50
10/22/70	7.32	1463.10				09/19/77	8.52	1461.90
11/23/70	7.32	1463.10	04/05/74	7.72	1462.70	12/29/77	8.52	1461.90
12/22/70	7.42	1463.00	05/22/74	3.12	1467.30			
			06/19/74	4.82	1465.60	03/22/78	8.32	1462.10
01/26/71	7.52	1462.90	09/23/74	7.02	1463.40	07/26/78	7.02	1463.40
02/23/71	7.82	1462.60	12/16/74	7.22	1463.20	09/27/78	7.72	1462.70
03/18/71	7.62	1462.80				12/11/78	8.12	1462.30
04/22/71	4.22	1466.20	04/03/75	6.92	1463.50			
06/18/71	6.22	1464.20	05/06/75	4.72	1465.70	06/20/79	3.72	1466.70
09/17/71	7.42	1463.00	05/29/75	5.12	1465.30	09/04/79	6.32	1464.10
12/21/71	7.42	1463.00	06/18/75	5.62	1464.80			
			09/17/75	7.12	1463.30	03/17/80	7.82	1462.60
03/17/72	7.62	1462.80	12/18/75	7.52	1462.90	06/26/80	6.62	1463.80
06/19/72	7.02	1463.40				09/30/80	6.42	1464.00
09/20/72	8.02	1462.40	03/16/76	7.42	1463.00			

**150-062-01DDD2
Warwick Aquifer**

**MP Elev (msl,ft)=0.00
SI (ft.)=0-0**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/31/04	5.90	-5.90						

**150-062-03ACB
Warwick Aquifer**

**MP Elev (msl,ft)=1,476.00
SI (ft.)=0-10**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
10/21/93	4.36	1471.64	11/17/93	4.65	1471.35			

**150-062-03ACBB
Warwick Aquifer**

**MP Elev (msl,ft)=1,477.07
SI (ft.)=0-18**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
10/13/92	8.57	1468.50	07/14/93	5.67	1471.40	10/21/93	4.36	1472.71
12/08/92	8.65	1468.42	07/21/93	4.81	1472.26	11/17/93	4.65	1472.42
			08/09/93	3.41	1473.66			
04/14/93	7.34	1469.73	08/17/93	3.31	1473.76	03/08/94	5.91	1471.16
06/10/93	6.17	1470.90	09/15/93	3.38	1473.69			

**150-062-03CCC
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,477.38
SI (ft.)=155-160**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/14/03	21.31	1456.06				09/07/04	19.50	1457.88
09/02/03	21.56	1455.82	05/04/04	14.68	1462.70	10/04/04	17.23	1460.15
09/30/03	20.33	1457.05	06/08/04	14.26	1463.12	11/09/04	15.94	1461.44
11/01/03	18.40	1458.98	07/13/04	16.01	1461.37	12/07/04	15.54	1461.84
12/02/03	17.42	1459.96	08/10/04	19.70	1457.68			

**150-062-03DDD
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,475.19
SI (ft.)=168-173**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
04/04/84	18.85	1456.34	08/30/90	34.17	1441.02			
04/30/84	18.12	1457.07	09/27/90	29.97	1445.22	07/02/98	16.09	1459.10
06/01/84	19.98	1455.21	10/29/90	25.07	1450.12	08/01/98	24.56	1450.63
07/01/84	20.91	1454.28	11/27/90	23.22	1451.97	08/31/98	27.95	1447.24
08/01/84	31.89	1443.30				09/30/98	24.56	1450.63
08/31/84	35.75	1439.44	03/28/91	20.99	1454.20	11/07/98	19.57	1455.62
09/29/84	28.46	1446.73	04/30/91	20.77	1454.42			
10/29/84	24.06	1451.13	05/30/91	20.64	1454.55	06/04/99	15.20	1459.99
12/07/84	21.70	1453.49	06/29/91	21.52	1453.67	07/02/99	17.49	1457.70
			07/28/91	22.09	1453.10	08/01/99	20.01	1455.18
04/28/85	19.41	1455.78	08/30/91	25.19	1450.00	08/31/99	20.02	1455.17
05/30/85	22.83	1452.36	09/28/91	23.10	1452.09	10/02/99	17.12	1458.07
06/29/85	21.54	1453.65	10/26/91	21.27	1453.92	11/01/99	15.73	1459.46
07/27/85	31.73	1443.46						
08/29/85	26.48	1448.71	01/06/92	19.39	1455.80	07/02/00	15.46	1459.73
09/28/85	23.83	1451.36	04/28/92	18.53	1456.66	08/01/00	18.73	1456.46
10/29/85	21.76	1453.43	05/29/92	18.80	1456.39	08/10/00	20.15	1455.04
			07/01/92	19.55	1455.64	09/03/00	19.41	1455.78
04/01/86	19.19	1456.00	07/30/92	21.23	1453.96	10/02/00	16.19	1459.00
04/29/86	18.60	1456.59	08/29/92	24.31	1450.88	10/12/00	15.55	1459.64
05/31/86	19.38	1455.81	09/30/92	21.23	1453.96	10/28/00	15.47	1459.72
07/01/86	28.12	1447.07	10/29/92	20.44	1454.75			
08/01/86	25.13	1450.06				07/01/01	12.74	1462.45
08/30/86	27.60	1447.59	04/04/93	18.58	1456.61	07/30/01	14.27	1460.92
09/30/86	23.30	1451.89	05/01/93	18.28	1456.91	09/01/01	16.75	1458.44
11/01/86	21.25	1453.94	05/29/93	17.99	1457.20	09/29/01	15.32	1459.87
			06/29/93	18.04	1457.15	10/29/01	13.46	1461.73
04/30/87	18.11	1457.08	10/31/93	17.51	1457.68	11/10/01	13.21	1461.98
05/30/87	21.53	1453.66						
07/02/87	22.17	1453.02	05/01/94	15.15	1460.04	05/31/02	12.36	1462.83
07/31/87	21.49	1453.70	05/29/94	15.50	1459.69	06/30/02	13.08	1462.11
08/29/87	21.07	1454.12	07/01/94	15.83	1459.36	07/29/02	17.32	1457.87
09/30/87	19.04	1456.15	07/30/94	18.12	1457.07	08/01/02	18.94	1456.25
10/30/87	18.22	1456.97	08/29/94	21.16	1454.03	08/29/02	23.16	1452.03
11/28/87	17.79	1457.40	09/28/94	19.30	1455.89	09/29/02	18.92	1456.27
			10/29/94	17.00	1458.19	10/31/02	16.41	1458.78
03/31/88	16.83	1458.36	12/30/94	15.36	1459.83	12/04/02	15.03	1460.16
04/29/88	16.91	1458.28						
05/30/88	18.34	1456.85	06/30/95	18.40	1456.79	05/08/03	13.22	1461.97
06/28/88	31.17	1444.02	08/30/95	21.57	1453.62	06/05/03	13.54	1461.65
08/02/88	36.26	1438.93	09/29/95	18.52	1456.67	07/10/03	15.06	1460.13
08/29/88	31.50	1443.69	10/29/95	16.77	1458.42	07/23/03	15.35	1459.84
09/30/88	25.65	1449.54				08/05/03	21.60	1453.59
10/29/88	22.97	1452.22	05/02/96	15.16	1460.03	08/14/03	22.08	1453.11
			06/01/96	14.98	1460.21	09/02/03	25.08	1450.11
04/27/89	18.91	1456.28	06/30/96	17.45	1457.74	09/30/03	21.51	1453.68
05/31/89	19.89	1455.30	07/31/96	20.43	1454.76	11/01/03	18.69	1456.50
06/27/89	22.97	1452.22	08/31/96	23.10	1452.09	12/02/03	17.18	1458.01
07/29/89	38.64	1436.55	09/29/96	20.57	1454.62			
08/30/89	34.42	1440.77	10/29/96	17.78	1457.41	05/04/04	14.26	1460.93
09/30/89	26.79	1448.40	11/13/96	17.04	1458.15	06/08/04	14.18	1461.01
10/30/89	24.03	1451.16				07/13/04	16.79	1458.40
11/28/89	22.39	1452.80	05/01/97	14.87	1460.32	08/10/04	22.48	1452.71
			06/02/97	14.90	1460.29	08/31/04	22.10	1453.09
04/04/90	20.33	1454.86	06/28/97	19.14	1456.05	09/07/04	20.85	1454.34
04/30/90	20.19	1455.00	07/30/97	17.96	1457.23	10/04/04	17.49	1457.70
06/01/90	21.56	1453.63	08/30/97	20.09	1455.10	11/09/04	15.65	1459.54
06/30/90	21.19	1454.00	10/01/97	18.17	1457.02	12/07/04	14.84	1460.35
07/28/90	27.73	1447.46	10/31/97	16.58	1458.61			

**150-062-03DDD2
Warwick Aquifer**

**MP Elev (msl,ft)=0.00
SI (ft.)=0-0**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/31/04	6.85	-6.85						

**150-062-04BBA
Warwick Aquifer**

**MP Elev (msl,ft)=1,473.40
SI (ft.)=50-56**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
09/24/81	9.07	1464.33	11/01/86	8.47	1464.93	06/30/92	7.94	1465.46
10/23/81	9.05	1464.35				07/30/92	9.86	1463.54
11/19/81	9.09	1464.31	05/31/87	6.26	1467.14	08/29/92	9.50	1463.90
12/29/81	9.21	1464.19	07/02/87	6.93	1466.47	09/29/92	8.65	1464.75
			08/29/87	6.09	1467.31	10/29/92	9.14	1464.26
05/28/82	8.26	1465.14	09/30/87	6.64	1466.76			
06/25/82	7.99	1465.41	10/30/87	7.08	1466.32	05/01/93	8.55	1464.85
08/02/82	11.78	1461.62	11/28/87	7.29	1466.11	05/29/93	7.70	1465.70
09/04/82	11.14	1462.26				06/30/93	7.06	1466.34
09/29/82	9.35	1464.05	04/29/88	7.36	1466.04			
11/02/82	8.60	1464.80	05/30/88	7.64	1465.76	09/29/96	7.60	1465.80
			06/28/88	9.23	1464.17	10/29/96	6.28	1467.12
05/02/83	7.82	1465.58	08/02/88	11.72	1461.68			
06/04/83	8.65	1464.75	08/29/88	11.88	1461.52	10/01/97	7.47	1465.93
06/28/83	10.30	1463.10	09/30/88	8.59	1464.81	10/31/97	7.59	1465.81
08/02/83	9.72	1463.68	10/29/88	9.71	1463.69			
08/31/83	8.79	1464.61				07/01/98	6.69	1466.71
09/30/83	8.03	1465.37	04/27/89	8.94	1464.46	08/01/98	10.32	1463.08
10/31/83	7.99	1465.41	06/01/89	9.03	1464.37	08/30/98	8.79	1464.61
			06/26/89	11.10	1462.30	09/29/98	7.36	1466.04
04/04/84	8.00	1465.40	07/30/89	11.10	1462.30			
04/30/84	7.18	1466.22	08/30/89	10.47	1462.93	06/04/99	6.16	1467.24
06/01/84	11.42	1461.98	09/30/89	10.29	1463.11	07/02/99	6.28	1467.12
07/01/84	7.47	1465.93	10/30/89	10.42	1462.98			
08/01/84	9.05	1464.35				10/12/00	5.28	1468.12
08/31/84	11.23	1462.17	04/30/90	10.41	1462.99			
09/29/84	8.96	1464.44	06/01/90	10.67	1462.73	05/08/03	6.54	1466.86
10/31/84	8.58	1464.82	06/30/90	9.58	1463.82	06/05/03	5.84	1467.56
12/06/84	8.60	1464.80	07/28/90	12.36	1461.04	07/10/03	4.95	1468.45
			08/29/90	10.84	1462.56	07/23/03	4.82	1468.58
04/28/85	8.56	1464.84	09/27/90	10.53	1462.87	08/05/03	4.80	1468.60
05/30/85	8.14	1465.26	10/29/90	10.53	1462.87	08/14/03	14.50	1458.90
06/29/85	7.76	1465.64	11/27/90	10.64	1462.76	09/02/03	5.37	1468.03
07/27/85	12.05	1461.35				09/30/03	5.90	1467.50
08/29/85	9.46	1463.94	03/29/91	10.93	1462.47	11/01/03	6.26	1467.14
09/29/85	8.75	1464.65	04/30/91	10.76	1462.64	12/02/03	6.52	1466.88
10/31/85	8.02	1465.38	05/30/91	11.97	1461.43			
			06/30/91	9.29	1464.11	05/04/04	4.63	1468.77
04/01/86	8.29	1465.11	07/28/91	11.51	1461.89	06/08/04	3.97	1469.43
04/28/86	7.30	1466.10	08/30/91	12.17	1461.23	07/13/04	4.38	1469.02
05/31/86	6.82	1466.58	09/28/91	8.66	1464.74	08/10/04	5.16	1468.24
07/01/86	8.32	1465.08	10/26/91	8.58	1464.82	09/07/04	5.58	1467.82
08/01/86	8.16	1465.24				10/04/04	5.12	1468.28
08/30/86	8.58	1464.82	04/28/92	7.90	1465.50	11/09/04	5.30	1468.10
09/30/86	8.44	1464.96	05/29/92	8.00	1465.40	12/07/04	5.66	1467.74

150-062-04CCC2
Warwick Aquifer

MP Elev (msl,ft)=1,476.59
SI (ft.)=0-13.1

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/20/73	10.25	1466.34	09/28/76	10.95	1465.64	09/29/80	9.35	1467.24
09/21/73	10.65	1465.94	12/27/76	10.65	1465.94			
12/21/73	10.25	1466.34				10/13/92	9.29	1467.30
			03/21/77	10.85	1465.74	12/08/92	9.60	1466.99
05/22/74	7.05	1469.54	07/07/77	10.75	1465.84			
06/19/74	7.45	1469.14	09/19/77	10.95	1465.64	04/14/93	9.14	1467.45
09/23/74	8.95	1467.64	12/29/77	11.25	1465.34	06/10/93	7.87	1468.72
12/16/74	9.45	1467.14				07/14/93	7.06	1469.53
			03/22/78	11.65	1464.94	07/21/93	6.20	1470.39
04/03/75	9.65	1466.94	07/26/78	9.75	1466.84	08/09/93	4.69	1471.90
05/05/75	8.15	1468.44	09/27/78	10.15	1466.44	08/17/93	4.51	1472.08
05/29/75	8.05	1468.54	12/11/78	9.95	1466.64	09/15/93	4.92	1471.67
06/18/75	8.55	1468.04				10/21/93	5.65	1470.94
09/18/75	9.35	1467.24	06/19/79	8.05	1468.54	11/17/93	5.78	1470.81
12/18/75	9.65	1466.94	09/06/79	8.65	1467.94			
						03/08/94	6.56	1470.03
03/16/76	10.05	1466.54	03/17/80	9.75	1466.84	06/29/76	8.95	1467.64
06/25/80	9.55	1467.04						

**150-062-06BBC
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,472.20
SI (ft.)=123-126**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
04/09/81	6.22	1465.98	03/31/88	5.27	1466.93	09/28/94	4.38	1467.82
06/29/81	5.14	1467.06	04/29/88	5.19	1467.01	10/28/94	3.67	1468.53
09/25/81	6.58	1465.62	05/30/88	5.73	1466.47			
12/29/81	6.82	1465.38	06/28/88	6.93	1465.27	04/29/95	2.95	1469.25
			08/02/88	7.49	1464.71	05/31/95	3.37	1468.83
04/15/82	5.74	1466.46	08/29/88	7.83	1464.37	06/29/95	3.97	1468.23
05/28/82	5.20	1467.00	09/30/88	8.07	1464.13	08/29/95	4.95	1467.25
06/25/82	5.09	1467.11	10/29/88	8.15	1464.05	09/29/95	5.58	1466.62
08/02/82	5.77	1466.43				10/28/95	5.28	1466.92
09/04/82	6.70	1465.50	04/27/89	6.64	1465.56			
09/29/82	6.91	1465.29	06/01/89	6.90	1465.30	05/02/96	3.54	1468.66
11/02/82	5.43	1466.77	06/26/89	7.41	1464.79	06/01/96	3.70	1468.50
12/01/82	5.94	1466.26	07/30/89	8.19	1464.01	06/30/96	4.47	1467.73
			08/30/89	8.40	1463.80	07/31/96	4.70	1467.50
04/05/83	5.74	1466.46	09/30/89	8.52	1463.68	08/31/96	5.45	1466.75
05/02/83	4.90	1467.30	10/30/89	8.58	1463.62	09/29/96	5.50	1466.70
06/04/83	5.39	1466.81	11/28/89	8.57	1463.63	10/29/96	5.30	1466.90
06/28/83	5.95	1466.25						
08/02/83	6.68	1465.52	04/04/90	8.65	1463.55	05/01/97	3.17	1469.03
08/31/83	6.47	1465.73	04/30/90	8.20	1464.00	06/02/97	3.87	1468.33
09/30/83	6.03	1466.17	06/01/90	8.05	1464.15	06/28/97	4.30	1467.90
10/31/83	5.94	1466.26	06/30/90	7.69	1464.51	07/15/97	4.00	1468.20
11/27/83	6.01	1466.19	07/28/90	8.15	1464.05	07/30/97	4.80	1467.40
			08/29/90	8.53	1463.67	08/30/97	5.37	1466.83
04/05/84	5.38	1466.82	09/27/90	8.79	1463.41	09/30/97	6.19	1466.01
04/30/84	4.25	1467.95	10/29/90	8.83	1463.37	10/31/97	6.00	1466.20
06/01/84	5.40	1466.80	11/27/90	8.88	1463.32			
07/01/84	5.48	1466.72				07/01/98	5.28	1466.92
08/02/84	6.77	1465.43	03/29/91	8.91	1463.29	08/01/98	6.35	1465.85
08/31/84	7.33	1464.87	04/30/91	8.58	1463.62	08/30/98	6.90	1465.30
09/29/84	7.57	1464.63	05/30/91	8.11	1464.09	09/29/98	7.24	1464.96
10/31/84	6.90	1465.30	06/30/91	7.62	1464.58	11/08/98	6.40	1465.80
12/06/84	6.83	1465.37	07/28/91	6.97	1465.23			
			08/30/91	7.54	1464.66	06/04/99	4.37	1467.83
04/28/85	6.39	1465.81	09/28/91	6.68	1465.52	07/02/99	3.92	1468.28
05/30/85	6.29	1465.91	10/26/91	6.89	1465.31	08/01/99	4.35	1467.85
06/29/85	6.20	1466.00				08/31/99	3.95	1468.25
07/27/85	7.13	1465.07	04/28/92	5.62	1466.58	10/02/99	4.30	1467.90
08/29/85	7.14	1465.06	05/29/92	6.12	1466.08	11/02/99	4.23	1467.97
09/29/85	7.20	1465.00	06/30/92	6.57	1465.63			
10/31/85	6.20	1466.00	07/30/92	7.03	1465.17	07/01/00	3.73	1468.47
			08/29/92	7.37	1464.83	08/01/00	3.67	1468.53
04/01/86	5.63	1466.57	09/29/92	7.55	1464.65	09/03/00	3.56	1468.64
04/28/86	4.35	1467.85	10/29/92	7.66	1464.54	10/03/00	3.97	1468.23
05/31/86	5.24	1466.96				10/12/00	3.87	1468.33
07/01/86	6.30	1465.90	04/04/93	7.17	1465.03	10/28/00	3.29	1468.91
08/01/86	5.78	1466.42	05/01/93	6.40	1465.80			
08/30/86	6.59	1465.61	05/29/93	6.09	1466.11	06/05/01	2.99	1469.21
09/30/86	6.48	1465.72	06/30/93	4.84	1467.36	07/01/01	2.76	1469.44
11/01/86	6.56	1465.64	07/30/93	2.69	1469.51	07/30/01	2.81	1469.39
			08/29/93	3.15	1469.05	09/01/01	3.49	1468.71
04/30/87	4.56	1467.64	09/27/93	3.33	1468.87	09/29/01	4.06	1468.14
05/31/87	4.24	1467.96	10/31/93	3.61	1468.59	11/10/01	3.63	1468.57
07/02/87	5.57	1466.63						
07/31/87	4.22	1467.98	04/05/94	2.84	1469.36	05/31/02	3.79	1468.41
08/29/87	4.78	1467.42	05/01/94	3.17	1469.03	06/30/02	3.42	1468.78
09/30/87	5.42	1466.78	05/29/94	3.60	1468.60	07/29/02	4.09	1468.11
10/30/87	5.66	1466.54	07/01/94	3.34	1468.86	08/29/02	4.58	1467.62
11/28/87	5.67	1466.53	07/30/94	3.70	1468.50	09/29/02	5.32	1466.88
			08/29/94	4.04	1468.16	10/31/02	5.25	1466.95

150-062-06BBC (Continued), MP Elev (msl, ft)=1472.2 Spiritwood Aquifer SI (ft.)=123-126

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
05/08/03	3.82	1468.38	10/01/03	4.19	1468.01	08/10/04	3.35	1468.85
06/05/03	4.03	1468.17	11/01/03	4.30	1467.90	09/07/04	3.66	1468.54
07/10/03	2.72	1469.48	12/02/03	4.50	1467.70	10/04/04	3.46	1468.74
07/24/03	3.35	1468.85	05/04/04	3.08	1469.12	11/09/04	3.49	1468.71
08/05/03	2.76	1469.44	06/08/04	2.70	1469.50	12/07/04	3.66	1468.54
07/14/04	2.88	1469.32				09/03/03	3.80	1468.40

**150-062-06DDA
Warwick Aquifer**

**MP Elev (msl, ft)=1,475.83
SI (ft.)=10.15-16.05**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
10/14/75	11.75	1464.08	12/11/78	13.15	1462.68	02/24/81	12.08	1463.75
12/18/75	12.05	1463.78	02/06/79	13.37	1462.46	05/13/81	11.52	1464.31
03/17/76	12.25	1463.58	05/17/79	11.43	1464.40	08/19/81	11.30	1464.53
06/29/76	11.65	1464.18	06/19/79	11.15	1464.68	10/13/92	11.51	1464.32
03/21/77	13.25	1462.58	08/15/79	11.20	1464.63	12/08/92	11.78	1464.05
07/07/77	13.05	1462.78	09/06/79	11.35	1464.48	04/14/93	11.62	1464.21
09/19/77	13.45	1462.38	11/15/79	11.86	1463.97	06/07/93	10.66	1465.17
03/22/78	13.75	1462.08	01/13/80	12.23	1463.60	07/14/93	9.60	1466.23
04/18/78	12.77	1463.06	03/17/80	12.45	1463.38	07/22/93	9.28	1466.55
05/18/78	12.37	1463.46	05/06/80	11.91	1463.92	08/10/93	6.00	1469.83
07/26/78	12.45	1463.38	06/25/80	12.25	1463.58	09/15/93	6.18	1469.65
08/29/78	12.75	1463.08	08/13/80	12.50	1463.33	10/21/93	6.90	1468.93
09/27/78	12.95	1462.88	09/29/80	12.25	1463.58	11/17/93	7.16	1468.67
11/15/78	13.07	1462.76	11/19/80	12.07	1463.76	03/08/94	8.16	1467.67

**150-062-07CCC
Warwick Aquifer**

**MP Elev (msl, ft)=1,467.00
SI (ft.)=27-33**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
04/15/86	4.46	1462.54	12/08/92	6.88	1460.12	11/17/93	3.67	1463.33
05/21/86	4.46	1462.54	04/14/93	5.96	1461.04	03/08/94	4.02	1462.98
08/06/86	5.68	1461.32	09/15/93	3.17	1463.83	10/13/92	6.97	1460.03
10/21/93	3.64	1463.36						

**150-062-07DDA
Warwick Aquifer**

**MP Elev (msl,ft)=1,476.33
SI (ft.)=50-56**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
04/15/86	13.80	1462.53	12/08/92	15.02	1461.31	08/09/93	10.49	1465.84
05/21/86	12.79	1463.54				09/15/93	10.48	1465.85
07/02/86	13.04	1463.29	04/14/93	14.91	1461.42	10/21/93	10.98	1465.35
08/06/86	13.21	1463.12	06/07/93	14.18	1462.15	11/17/93	11.27	1465.06
			07/14/93	13.75	1462.58			
10/13/92	14.82	1461.51	07/21/93	13.40	1462.93	03/08/94	12.00	1464.33

**150-062-10DDD
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,475.84
SI (ft.)=168-173**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
04/04/84	19.59	1456.25	08/30/91	25.73	1450.11	06/04/99	18.09	1457.75
06/01/84	20.12	1455.72	10/26/91	21.93	1453.91	08/01/99	20.22	1455.62
08/31/84	35.96	1439.88				10/02/99	18.12	1457.72
10/31/84	30.03	1445.81	04/28/92	19.19	1456.65			
			07/01/92	20.15	1455.69	07/02/00	17.83	1458.01
04/28/85	20.18	1455.66	07/30/92	21.58	1454.26	09/03/00	20.14	1455.70
07/27/85	30.97	1444.87	08/29/92	24.60	1451.24	10/12/00	16.51	1459.33
10/29/85	22.46	1453.38	10/29/92	21.09	1454.75	10/28/00	15.95	1459.89
04/01/86	19.91	1455.93	05/01/93	18.98	1456.86	06/05/01	13.54	1462.30
05/31/86	19.68	1456.16	06/29/93	18.71	1457.13	07/30/01	15.16	1460.68
08/01/86	25.68	1450.16	10/31/93	18.25	1457.59	09/29/01	16.29	1459.55
11/01/86	21.99	1453.85						
			05/01/94	15.88	1459.96	05/31/02	13.24	1462.60
04/30/87	18.77	1457.07	07/30/94	17.73	1458.11	07/29/02	17.64	1458.20
07/02/87	22.76	1453.08	10/29/94	17.74	1458.10	09/29/02	20.71	1455.13
08/29/87	21.72	1454.12						
10/30/87	18.98	1456.86	06/30/95	18.92	1456.92	05/08/03	14.40	1461.44
			09/29/95	19.35	1456.49	06/05/03	14.65	1461.19
03/31/88	17.58	1458.26	10/29/95	17.65	1458.19	07/10/03	15.69	1460.15
05/30/88	18.98	1456.86				07/23/03	16.18	1459.66
08/29/88	32.08	1443.76	06/01/96	15.68	1460.16	08/05/03	21.37	1454.47
10/29/88	23.76	1452.08	08/31/96	23.40	1452.44	08/14/03	4.70	1471.14
			10/29/96	18.64	1457.20	09/02/03	25.73	1450.11
04/27/89	19.66	1456.18				09/30/03	22.80	1453.04
06/27/89	22.98	1452.86	06/02/97	15.55	1460.29	11/01/03	19.88	1455.96
08/30/89	34.88	1440.96	06/28/97	19.37	1456.47	12/02/03	18.34	1457.50
10/30/89	24.81	1451.03	07/15/97	17.92	1457.92			
			07/29/97	18.38	1457.46	05/04/04	15.28	1460.56
04/04/90	21.07	1454.77	10/01/97	19.05	1456.79	06/08/04	15.16	1460.68
06/01/90	21.79	1454.05	10/31/97	17.39	1458.45	07/13/04	17.65	1458.19
08/30/90	34.39	1441.45				08/10/04	23.01	1452.83
10/29/90	25.49	1450.35	07/02/98	16.76	1459.08	08/31/04	22.95	1452.89
11/27/90	23.95	1451.89	08/31/98	29.86	1445.98	09/07/04	21.82	1454.02
			09/30/98	26.55	1449.29	10/04/04	18.55	1457.29
03/29/91	21.69	1454.15	11/07/98	21.10	1454.74	11/09/04	16.70	1459.14
06/29/91	22.07	1453.77				12/07/04	15.90	1459.94

**150-062-10DDD2
Warwick Aquifer**

**MP Elev (msl,ft)=1,476.00
SI (ft.)=0-10**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/21/73	8.39	1467.61	05/29/75	5.99	1470.01	07/26/78	8.39	1467.61
09/21/73	9.39	1466.61	06/18/75	6.39	1469.61	09/27/78	9.39	1466.61
01/14/74	8.49	1467.51	09/17/75	8.59	1467.41	06/20/79	5.49	1470.51
04/11/74	7.69	1468.31	12/18/75	8.69	1467.31	09/06/79	7.59	1468.41
05/22/74	3.89	1472.11	06/29/76	7.99	1468.01	06/25/80	8.09	1467.91
06/19/74	5.39	1470.61	09/28/76	9.79	1466.21	09/30/80	7.59	1468.41
09/23/74	8.49	1467.51	03/21/77	9.39	1466.61	08/31/04	5.95	1470.05
12/16/74	8.19	1467.81	07/07/77	9.39	1466.61	05/05/75	5.19	1470.81
04/03/75	7.99	1468.01	09/19/77	10.09	1465.91			

**150-062-12BBB
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,477.00
SI (ft.)=218-223**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
04/04/84	18.47	1458.53	06/29/85	20.92	1456.08	08/01/86	24.78	1452.22
04/30/84	18.02	1458.98	07/27/85	32.82	1444.18	08/30/86	27.54	1449.46
06/01/84	20.11	1456.89	08/29/85	27.89	1449.11	09/30/86	22.63	1454.37
07/01/84	20.89	1456.11	09/28/85	23.20	1453.80	11/01/86	20.60	1456.40
09/29/84	27.70	1449.30	10/29/85	21.12	1455.88	04/30/87	17.44	1459.56
10/29/84	23.34	1453.66	04/01/86	18.50	1458.50	05/30/87	21.05	1455.95
12/07/84	20.96	1456.04	04/29/86	17.93	1459.07	07/02/87	21.68	1455.32
04/28/85	18.58	1458.42	05/31/86	19.34	1457.66	07/31/87	20.91	1456.09
05/30/85	22.44	1454.56	07/01/86	28.91	1448.09	08/29/87	20.54	1456.46

**150-062-12CAC
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,472.85
SI (ft.)=226-231**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/20/03	22.40	1450.45				08/31/04	20.95	1451.90
09/02/03	24.41	1448.44	05/04/04	12.61	1460.24	09/07/04	19.55	1453.30
09/30/03	20.16	1452.69	06/08/04	12.67	1460.18	10/04/04	15.94	1456.91
11/01/03	17.17	1455.68	07/13/04	15.48	1457.37	11/09/04	14.01	1458.84
12/02/03	15.57	1457.28	08/10/04	21.61	1451.24	12/07/04	13.16	1459.69

**150-062-12CCCB
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,475.16
SI (ft.)=198-203**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
04/04/84	19.33	1455.83				10/26/91	21.70	1453.46
06/01/84	20.59	1454.57	04/29/88	17.22	1457.94	05/29/92	19.10	1456.06
08/31/84	37.22	1437.94	06/28/88	32.46	1442.70	07/30/92	21.79	1453.37
10/31/84	24.20	1450.96	08/29/88	32.42	1442.74	10/29/92	20.86	1454.30
			10/29/88	23.38	1451.78			
04/28/85	19.74	1455.42	04/27/89	18.88	1456.28	05/01/93	18.60	1456.56
07/27/85	33.17	1441.99	06/27/89	23.66	1451.50	06/29/93	18.39	1456.77
10/29/85	22.19	1452.97	08/30/89	34.93	1440.23	11/01/93	17.83	1457.33
			10/30/89	24.45	1450.71			
04/01/86	19.54	1455.62				07/30/94	18.62	1456.54
05/31/86	20.05	1455.11	06/01/90	21.90	1453.26	10/29/94	18.52	1456.64
08/01/86	25.80	1449.36	08/30/90	35.36	1439.80			
11/01/86	21.77	1453.39	10/29/90	25.51	1449.65	06/30/95	19.07	1456.09
						09/29/95	18.90	1456.26
04/30/87	18.44	1456.72	03/29/91	21.05	1454.11	10/29/95	18.04	1457.12
07/02/87	22.77	1452.39	06/29/91	21.91	1453.25	10/30/87	18.57	1456.59
08/29/87	21.58	1453.58						
08/30/91	26.23	1448.93						

**150-062-13CCC
Warwick Aquifer**

**MP Elev (msl,ft)=1,462.24
SI (ft.)=0-10.4**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
05/19/70	3.12	1459.12	03/20/73	5.62	1456.62	07/07/77	5.92	1456.32
05/22/70	3.02	1459.22	06/21/73	5.22	1457.02	09/19/77	6.62	1455.62
06/17/70	3.22	1459.02	09/21/73	6.42	1455.82			
07/22/70	4.22	1458.02	12/28/73	5.22	1457.02	01/03/78	6.42	1455.82
08/20/70	5.32	1456.92				03/22/78	6.12	1456.12
09/15/70	5.42	1456.82	04/05/74	5.92	1456.32	07/26/78	5.52	1456.72
10/22/70	5.52	1456.72	05/22/74	2.62	1459.62	09/27/78	6.32	1455.92
11/23/70	4.72	1457.52	06/19/74	3.32	1458.92	12/11/78	6.62	1455.62
12/22/70	5.32	1456.92	09/23/74	5.82	1456.42			
			12/16/74	5.32	1456.92	06/19/79	2.82	1459.42
01/26/71	5.92	1456.32				09/06/79	5.02	1457.22
02/23/71	6.02	1456.22	04/03/75	5.42	1456.82			
03/18/71	5.82	1456.42	05/06/75	3.02	1459.22	03/17/80	6.82	1455.42
04/22/71	2.82	1459.42	05/29/75	3.52	1458.72	06/26/80	5.52	1456.72
06/18/71	3.82	1458.42	06/18/75	3.82	1458.42	09/30/80	4.22	1458.02
09/17/71	5.42	1456.82	09/17/75	6.32	1455.92			
12/21/71	5.22	1457.02	12/18/75	6.52	1455.72	10/13/92	5.48	1456.76
03/17/72	6.62	1455.62	03/16/76	6.32	1455.92	04/14/93	3.28	1458.96
06/19/72	4.32	1457.92	06/29/76	4.62	1457.62			
09/20/72	5.92	1456.32	09/28/76	7.32	1454.92	08/31/04	4.21	1458.03
12/18/72	6.42	1455.82						
03/22/77	5.72	1456.52						

**150-062-14DDD2
Warwick Aquifer**

**MP Elev (msl,ft)=1,465.00
SI (ft.)=5-10**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
04/15/86	2.62	1462.38	10/13/92	4.84	1460.16	07/14/93	1.94	1463.06
05/21/86	2.56	1462.44	12/08/92	4.53	1460.47	09/15/93	1.22	1463.78
07/02/86	4.58	1460.42				10/21/93	2.45	1462.55
08/06/86	3.80	1461.20	04/14/93	2.73	1462.27	11/17/93	2.43	1462.57
			06/07/93	2.25	1462.75			

**150-062-15ABB2
Warwick Aquifer**

**MP Elev (msl,ft)=1,476.34
SI (ft.)=25-31**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
04/15/86	5.53	1470.81	12/08/92	7.32	1469.02	08/09/93	2.73	1473.61
05/21/86	4.52	1471.82				09/15/93	3.28	1473.06
07/02/86	5.99	1470.35	04/14/93	6.39	1469.95	10/21/93	4.13	1472.21
08/06/86	5.90	1470.44	06/07/93	4.90	1471.44	11/17/93	4.19	1472.15
			07/14/93	3.88	1472.46			
10/13/92	7.05	1469.29	07/21/93	3.26	1473.08	03/16/94	4.62	1471.72

**150-062-16AAA
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,475.60
SI (ft.)=152-155**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
10/23/81	23.05	1452.55	04/29/88	15.59	1460.01	10/28/94	15.64	1459.96
11/19/81	21.67	1453.93	05/30/88	16.77	1458.83	12/29/94	14.18	1461.42
12/29/81	20.52	1455.08	06/28/88	24.45	1451.15			
			08/02/88	29.99	1445.61	04/29/95	13.58	1462.02
04/15/82	19.15	1456.45	08/29/88	28.17	1447.43	05/31/95	13.56	1462.04
05/28/82	18.55	1457.05	09/30/88	23.80	1451.80	06/29/95	15.98	1459.62
06/25/82	18.60	1457.00	10/29/88	21.49	1454.11	08/29/95	18.88	1456.72
08/02/82	21.23	1454.37				09/29/95	17.15	1458.45
09/04/82	26.83	1448.77	04/27/89	17.79	1457.81	10/28/95	15.66	1459.94
09/29/82	24.69	1450.91	05/31/89	18.00	1457.60			
11/02/82	21.32	1454.28	06/26/89	19.71	1455.89	05/02/96	13.89	1461.71
12/01/82	19.93	1455.67	07/29/89	30.45	1445.15	06/01/96	13.66	1461.94
			08/30/89	30.54	1445.06	06/30/96	15.38	1460.22
04/05/83	18.04	1457.56	09/30/89	25.08	1450.52	07/31/96	17.99	1457.61
05/02/83	17.78	1457.82	10/30/89	22.42	1453.18	08/31/96	19.93	1455.67
06/04/83	18.00	1457.60	11/28/89	21.06	1454.54	09/29/96	18.92	1456.68
06/28/83	21.40	1454.20				10/29/96	16.60	1459.00
08/02/83	27.38	1448.22	04/04/90	19.06	1456.54	11/13/96	16.05	1459.55
08/31/83	27.59	1448.01	04/30/90	18.84	1456.76			
09/30/83	22.95	1452.65	06/01/90	19.28	1456.32	05/01/97	13.59	1462.01
10/31/83	20.64	1454.96	06/30/90	19.26	1456.34	06/02/97	13.51	1462.09
11/27/83	19.04	1456.56	07/28/90	22.60	1453.00	06/28/97	16.23	1459.37
			08/30/90	29.42	1446.18	07/15/97	15.78	1459.82
04/04/84	17.65	1457.95	09/27/90	27.28	1448.32	07/30/97	15.52	1460.08
04/30/84	17.09	1458.51	10/29/90	23.20	1452.40	08/30/97	17.60	1458.00
06/01/84	17.54	1458.06	11/27/90	21.63	1453.97	09/30/97	16.98	1458.62
07/01/84	18.71	1456.89				10/01/97	16.89	1458.71
08/01/84	26.08	1449.52	03/29/91	19.63	1455.97	10/31/97	15.56	1460.04
08/31/84	31.43	1444.17	04/30/91	19.34	1456.26			
09/29/84	26.58	1449.02	05/30/91	19.12	1456.48	07/01/98	14.77	1460.83
10/29/84	22.84	1452.76	06/30/91	19.40	1456.20	08/01/98	21.48	1454.12
12/06/84	20.58	1455.02	07/28/91	19.49	1456.11	08/30/98	26.78	1448.82
			08/30/91	22.29	1453.31	09/29/98	24.83	1450.77
04/28/85	18.25	1457.35	09/28/91	21.14	1454.46	11/08/98	19.78	1455.82
05/30/85	20.50	1455.10	10/26/91	19.54	1456.06	12/03/98	17.98	1457.62
06/29/85	19.94	1455.66						
07/27/85	25.74	1449.86	01/06/92	17.86	1457.74	06/04/99	14.23	1461.37
08/29/85	25.95	1449.65	04/28/92	17.04	1458.56	07/02/99	15.92	1459.68
09/28/85	22.25	1453.35	05/29/92	17.19	1458.41	08/01/99	17.59	1458.01
10/29/85	20.27	1455.33	06/30/92	17.83	1457.77	08/31/99	17.05	1458.55
			07/30/92	18.80	1456.80	10/02/99	16.06	1459.54
04/01/86	17.74	1457.86	08/29/92	21.25	1454.35	10/27/99	14.96	1460.64
04/28/86	17.06	1458.54	09/29/92	19.61	1455.99	11/02/99	14.90	1460.70
05/31/86	17.02	1458.58	10/29/92	18.83	1456.77			
07/01/86	22.79	1452.81				07/01/00	15.76	1459.84
08/01/86	22.44	1453.16	04/04/93	17.31	1458.29	08/01/00	15.35	1460.25
08/30/86	23.99	1451.61	05/01/93	16.97	1458.63	09/03/00	17.72	1457.88
09/30/86	21.38	1454.22	05/29/93	16.57	1459.03	10/03/00	15.17	1460.43
11/01/86	19.63	1455.97	06/30/93	16.26	1459.34	10/12/00	14.69	1460.91
			08/29/93	17.45	1458.15	10/28/00	14.16	1461.44
04/30/87	16.58	1459.02	09/27/93	17.10	1458.50			
05/30/87	19.15	1456.45	10/31/93	15.95	1459.65	06/05/01	11.81	1463.79
07/02/87	19.82	1455.78				07/01/01	11.78	1463.82
07/31/87	19.31	1456.29	04/06/94	13.84	1461.76	07/30/01	13.17	1462.43
08/29/87	18.96	1456.64	05/01/94	13.85	1461.75	09/01/01	14.16	1461.44
09/30/87	17.54	1458.06	05/29/94	14.11	1461.49	09/29/01	14.41	1461.19
10/30/87	16.88	1458.72	07/01/94	14.30	1461.30	10/29/01	13.04	1462.56
11/28/87	16.48	1459.12	07/30/94	15.22	1460.38	11/10/01	12.63	1462.97
			08/29/94	18.37	1457.23			
03/31/88	15.69	1459.91	09/28/94	17.56	1458.04	05/31/02	11.68	1463.92

150-062-16AAA (Continued), MP Elev (msl,ft)=1475.6 Spiritwood Aquifer SI (ft.)=152-155

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/30/02	12.09	1463.51	06/05/03	13.20	1462.40			
07/29/02	14.82	1460.78	07/10/03	13.58	1462.02	05/04/04	13.60	1462.00
08/01/02	15.94	1459.66	07/21/03	14.06	1461.54	06/08/04	13.30	1462.30
08/29/02	21.69	1453.91	08/05/03	17.34	1458.26	07/13/04	15.25	1460.35
09/29/02	19.17	1456.43	08/12/03	18.74	1456.86	08/10/04	19.36	1456.24
10/31/02	16.47	1459.13	09/02/03	21.86	1453.74	09/07/04	19.19	1456.41
12/04/02	15.07	1460.53	09/30/03	20.44	1455.16	10/04/04	16.59	1459.01
			11/01/03	17.94	1457.66	11/09/04	14.96	1460.64
05/08/03	13.22	1462.38	12/02/03	16.64	1458.96	12/07/04	14.30	1461.30

150-062-16ADD Warwick Aquifer

**MP Elev (msl,ft)=1,481.34
SI (ft.)=15-20**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
04/15/86	15.94	1465.40				09/15/93	13.15	1468.19
05/21/86	14.36	1466.98	04/14/93	17.33	1464.01	10/21/93	13.64	1467.70
07/02/86	15.14	1466.20	06/10/93	16.25	1465.09	11/17/93	13.87	1467.47
08/06/86	15.67	1465.67	07/14/93	16.90	1464.44			
			07/21/93	15.33	1466.01	03/08/94	14.66	1466.68
10/13/92	17.51	1463.83	08/09/93	12.96	1468.38	12/08/92	17.73	1463.61
08/17/93	12.75	1468.59						

150-062-16BBB Not Yet Entered Aquifer

**MP Elev (msl,ft)=1,470.09
SI (ft.)=20-25**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
04/15/86	6.39	1463.70	10/13/92	7.98	1462.11	07/14/93	7.53	1462.56
05/21/86	5.47	1464.62	12/08/92	8.16	1461.93	07/21/93	5.98	1464.11
07/02/86	6.13	1463.96				10/21/93	3.47	1466.62
08/06/86	6.20	1463.89	04/14/93	7.76	1462.33	11/17/93	3.96	1466.13
			06/07/93	7.00	1463.09			

150-062-16CBC Warwick Aquifer

**MP Elev (msl,ft)=1,465.16
SI (ft.)=24-30**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
04/15/86	4.60	1460.56				10/21/93	3.18	1461.98
05/21/86	4.10	1461.06	04/14/93	5.25	1459.91	11/17/93	3.22	1461.94
07/02/86	4.65	1460.51	06/07/93	4.78	1460.38			
08/06/86	4.53	1460.63	07/14/93	4.76	1460.40	03/08/94	3.40	1461.76
			07/21/93	4.32	1460.84	04/20/94	2.80	1462.36
10/13/92	5.67	1459.49	08/09/93	2.76	1462.40	12/08/92	5.68	1459.48
09/15/93	2.99	1462.17						

**150-062-17AAA
Warwick Aquifer**

**MP Elev (msl,ft)=1,470.32
SI (ft.)=0-11.2**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/20/73	9.17	1461.15	06/29/76	8.67	1461.65	06/25/80	8.97	1461.35
09/21/73	9.67	1460.65	09/28/76	9.47	1460.85	09/29/80	8.97	1461.35
12/21/73	9.47	1460.85	12/27/76	9.97	1460.35			
						10/13/92	7.83	1462.49
04/05/74	9.67	1460.65	03/21/77	9.77	1460.55	12/08/92	8.99	1461.33
05/22/74	7.47	1462.85	07/07/77	9.97	1460.35			
06/19/74	7.17	1463.15	09/19/77	10.17	1460.15	04/14/93	8.60	1461.72
09/23/74	8.57	1461.75	12/29/77	9.87	1460.45	06/10/93	7.90	1462.42
12/16/74	8.67	1461.65				07/14/93	7.45	1462.87
			03/22/78	10.17	1460.15	07/21/93	7.00	1463.32
04/03/75	8.67	1461.65	07/26/78	9.37	1460.95	08/09/93	3.15	1467.17
05/05/75	7.87	1462.45	09/27/78	9.77	1460.55	09/15/93	3.41	1466.91
05/29/75	7.57	1462.75	12/11/78	9.97	1460.35	10/21/93	4.64	1465.68
06/18/75	7.87	1462.45				11/17/93	5.05	1465.27
09/18/75	8.57	1461.75	06/19/79	8.17	1462.15			
12/18/75	8.97	1461.35	09/06/79	8.17	1462.15	03/08/94	5.59	1464.73
						03/16/96	8.77	1461.55
03/17/80	8.87	1461.45						

**150-062-18AAA
Warwick Aquifer**

**MP Elev (msl,ft)=1,476.13
SI (ft.)=0-17.5**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/17/52	18.20	1457.93	12/22/70	15.40	1460.73	07/07/77	17.20	1458.93
06/26/52	18.10	1458.03				09/19/77	17.40	1458.73
07/10/52	18.30	1457.83	01/26/71	15.60	1460.53	12/29/77	17.40	1458.73
08/07/52	18.40	1457.73	02/23/71	15.60	1460.53			
11/18/52	19.00	1457.13	03/18/71	15.60	1460.53	03/22/78	17.50	1458.63
			04/22/71	14.70	1461.43	07/28/78	16.50	1459.63
01/08/53	19.20	1456.93	06/18/71	15.10	1461.03	09/27/78	17.00	1459.13
02/25/53	19.20	1456.93	09/17/71	15.60	1460.53	12/11/78	17.20	1458.93
04/06/53	19.30	1456.83						
05/28/53	19.30	1456.83	03/17/72	15.70	1460.43	06/19/79	15.50	1460.63
07/06/53	18.90	1457.23	06/19/72	15.70	1460.43	09/06/79	15.50	1460.63
08/04/53	18.60	1457.53	09/20/72	18.40	1457.73			
12/03/53	19.30	1456.83	12/18/72	16.40	1459.73	03/17/80	16.30	1459.83
						06/25/80	16.40	1459.73
03/23/54	19.20	1456.93	03/20/73	16.50	1459.63	09/29/80	16.40	1459.73
07/22/54	18.70	1457.43	06/20/73	16.70	1459.43			
			09/21/73	17.00	1459.13	04/24/86	15.28	1460.85
02/03/55	19.20	1456.93	12/21/73	16.90	1459.23	05/21/86	14.70	1461.43
05/04/55	18.90	1457.23				07/02/86	15.00	1461.13
06/08/55	18.10	1458.03	04/05/74	16.90	1459.23	08/06/86	15.20	1460.93
07/20/55	17.90	1458.23	05/22/74	15.40	1460.73			
08/17/55	18.10	1458.03	06/19/74	14.40	1461.73	10/13/92	16.02	1460.11
09/26/55	18.40	1457.73	09/23/74	15.70	1460.43	12/08/92	16.18	1459.95
10/23/55	18.50	1457.63	12/16/74	16.10	1460.03			
12/05/55	18.60	1457.53				04/14/93	15.97	1460.16
			05/03/75	15.50	1460.63	06/10/93	15.37	1460.76
01/09/56	19.00	1457.13	05/29/75	15.20	1460.93	07/14/93	15.00	1461.13
			06/18/75	15.60	1460.53	07/21/93	14.76	1461.37
05/08/70	14.60	1461.53	09/18/75	15.80	1460.33	08/09/93	11.61	1464.52
05/21/70	14.40	1461.73	12/18/75	16.10	1460.03	09/15/93	12.46	1463.67
06/17/70	14.10	1462.03				10/21/93	12.97	1463.16
07/22/70	14.50	1461.63	03/16/76	16.40	1459.73	11/17/93	13.21	1462.92
08/20/70	14.80	1461.33	06/29/76	16.00	1460.13			
09/15/70	15.20	1460.93	09/28/76	16.70	1459.43	03/08/94	13.64	1462.49
10/22/70	15.30	1460.83				11/23/90	15.40	1460.73
03/21/77	17.00	1459.13						

**150-062-22AAC
Spiritwood Aquifer**

**MP Elev (msl,ft)=0.00
SI (ft.)=145-160**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
07/29/81	70.14	-70.14	08/31/83	60.17	-60.17			
08/27/81	60.76	-60.76	10/31/83	43.80	-43.80	05/31/86	33.96	-33.96
09/24/81	51.12	-51.12				08/01/86	34.94	-34.94
11/19/81	42.95	-42.95	04/30/84	35.14	-35.14	11/01/86	35.65	-35.65
			06/01/84	34.99	-34.99			
05/28/82	37.45	-37.45	08/31/84	79.28	-79.28	04/30/87	33.75	-33.75
12/01/82	35.83	-35.83	10/29/84	49.40	-49.40	07/02/87	34.30	-34.30
						08/29/87	34.47	-34.47
04/05/83	34.23	-34.23	04/28/85	37.09	-37.09	10/30/87	34.10	-34.10
06/04/83	34.01	-34.01	07/27/85	36.75	-36.75			

**150-062-23BBB
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,464.30
SI (ft.)=154-178**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
09/24/81	52.22	1412.08	03/31/88	34.06	1430.24	09/28/94	34.79	1429.51
10/23/81	46.85	1417.45	04/29/88	34.12	1430.18	10/28/94	34.62	1429.68
11/19/81	44.04	1420.26	05/30/88	34.44	1429.86			
12/31/81	41.22	1423.08	06/28/88	36.59	1427.71	04/30/95	33.57	1430.73
			08/02/88	42.63	1421.67	05/31/95	33.86	1430.44
04/15/82	38.05	1426.25	08/29/88	43.30	1421.00	06/30/95	35.76	1428.54
05/28/82	38.54	1425.76	09/30/88	40.31	1423.99	08/30/95	35.05	1429.25
06/25/82	38.44	1425.86	10/29/88	39.40	1424.90	09/29/95	35.23	1429.07
08/02/82	37.16	1427.14				10/29/95	35.18	1429.12
09/04/82	37.62	1426.68	04/27/89	36.03	1428.27			
09/29/82	38.33	1425.97	05/31/89	36.50	1427.80	05/02/96	33.64	1430.66
11/02/82	37.65	1426.65	06/27/89	65.45	1398.85	06/01/96	34.38	1429.92
12/01/82	36.98	1427.32	07/29/89	47.24	1417.06	06/30/96	35.11	1429.19
			08/30/89	45.98	1418.32	07/31/96	35.69	1428.61
04/05/83	35.33	1428.97	09/30/89	42.32	1421.98	08/31/96	36.28	1428.02
05/01/83	35.16	1429.14	10/30/89	41.14	1423.16	09/29/96	36.06	1428.24
06/04/83	35.12	1429.18	11/28/89	39.96	1424.34	10/29/96	35.98	1428.32
06/28/83	54.22	1410.08						
08/02/83	62.65	1401.65	04/04/90	37.41	1426.89	05/01/97	34.44	1429.86
08/31/83	61.20	1403.10	04/30/90	37.09	1427.21	06/02/97	34.34	1429.96
09/30/83	49.44	1414.86	06/01/90	37.35	1426.95	06/28/97	36.32	1427.98
10/31/83	44.89	1419.41	06/30/90	37.00	1427.30	07/15/97	35.58	1428.72
11/27/83	42.29	1422.01	07/28/90	39.40	1424.90	07/30/97	35.78	1428.52
			08/30/90	41.52	1422.78	08/30/97	36.87	1427.43
04/03/84	36.98	1427.32	09/27/90	40.37	1423.93	10/01/97	38.68	1425.62
04/30/84	36.20	1428.10	10/29/90	39.75	1424.55	10/31/97	36.70	1427.60
06/01/84	36.08	1428.22	11/27/90	38.24	1426.06			
07/01/84	36.03	1428.27				07/02/98	35.34	1428.96
08/01/84	83.00	1381.30	03/29/91	37.37	1426.93	08/01/98	132.59	1331.71
08/31/84	80.16	1384.14	04/30/91	37.01	1427.29	08/31/98	133.62	1330.68
09/29/84	58.86	1405.44	05/30/91	36.83	1427.47	09/30/98	100.55	1363.75
10/29/84	50.66	1413.64	06/29/91	42.66	1421.64	11/07/98	65.39	1398.91
12/06/84	44.97	1419.33	07/28/91	39.64	1424.66			
			08/30/91	38.89	1425.41	06/04/99	46.41	1417.89
04/28/85	38.18	1426.12	09/28/91	38.10	1426.20	07/02/99	39.80	1424.50
05/30/85	37.52	1426.78	10/26/91	37.60	1426.70	08/01/99	37.76	1426.54
06/29/85	37.50	1426.80				08/31/99	36.55	1427.75
07/27/85	37.85	1426.45	04/28/92	35.72	1428.58	10/02/99	36.25	1428.05
08/29/85	38.41	1425.89	05/29/92	35.89	1428.41	11/02/99	35.88	1428.42
09/28/85	38.50	1425.80	07/01/92	36.41	1427.89			
10/29/85	37.83	1426.47	07/30/92	37.43	1426.87	07/01/00	48.97	1415.33
			08/29/92	38.82	1425.48	08/01/00	43.47	1420.83
04/01/86	35.52	1428.78	09/29/92	38.12	1426.18	09/03/00	42.54	1421.76
04/29/86	35.02	1429.28	10/29/92	37.84	1426.46	10/01/00	38.77	1425.53
05/31/86	35.15	1429.15				10/12/00	38.40	1425.90
07/01/86	35.43	1428.87	04/04/93	35.82	1428.48	10/28/00	37.76	1426.54
08/01/86	36.02	1428.28	05/01/93	35.91	1428.39			
08/30/86	36.57	1427.73	05/29/93	36.17	1428.13	06/05/01	34.76	1429.54
09/30/86	36.86	1427.44	06/30/93	35.90	1428.40	06/30/01	34.51	1429.79
11/01/86	36.54	1427.76	07/30/93	33.82	1430.48	07/30/01	35.19	1429.11
			08/29/93	35.94	1428.36	09/02/01	33.77	1430.53
04/30/87	34.83	1429.47	09/27/93	35.37	1428.93	09/29/01	33.46	1430.84
05/30/87	35.18	1429.12	10/31/93	35.29	1429.01	11/10/01	33.04	1431.26
07/02/87	35.49	1428.81						
07/31/87	35.74	1428.56	04/06/94	33.65	1430.65	05/31/02	31.97	1432.33
08/29/87	35.42	1428.88	05/01/94	33.81	1430.49	06/30/02	33.51	1430.79
09/30/87	35.31	1428.99	05/29/94	34.04	1430.26	07/29/02	35.49	1428.81
10/30/87	35.10	1429.20	07/01/94	34.76	1429.54	08/29/02	90.13	1374.17
11/28/87	34.97	1429.33	07/30/94	34.38	1429.92	09/29/02	79.60	1384.70
			08/29/94	34.60	1429.70	10/31/02	54.55	1409.75

150-062-23BBB (Continued), MP Elev (msl, ft)=1464.3 Spiritwood Aquifer SI (ft.)=154-178

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
			09/02/03	70.13	1394.17	07/13/04	45.82	1418.48
05/08/03	42.96	1421.34	09/30/03	67.51	1396.79	08/10/04	45.15	1419.15
06/05/03	43.20	1421.10	11/01/03	54.95	1409.35	08/31/04	44.87	1419.43
07/10/03	45.73	1418.57	12/02/03	50.75	1413.55	09/07/04	44.73	1419.57
07/21/03	44.36	1419.94				10/04/04	44.19	1420.11
08/05/03	59.38	1404.92	05/04/04	44.03	1420.27	11/09/04	43.60	1420.70
08/19/03	120.65	1343.65	06/08/04	43.90	1420.40	12/07/04	43.11	1421.19

150-062-23BBB1 Undefined Aquifer

**MP Elev (msl, ft)=1,464.20
SI (ft.)=0-178**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
10/23/81	46.75	1417.45	08/29/85	38.31	1425.89	10/30/89	41.04	1423.16
11/19/81	43.94	1420.26	09/28/85	38.40	1425.80	11/28/89	39.86	1424.34
12/31/81	41.12	1423.08	10/29/85	37.73	1426.47			
						04/04/90	37.31	1426.89
04/15/82	37.95	1426.25	04/01/86	35.42	1428.78	04/30/90	36.99	1427.21
05/28/82	38.44	1425.76	04/29/86	34.92	1429.28	06/01/90	37.25	1426.95
06/25/82	38.34	1425.86	05/31/86	35.05	1429.15	06/30/90	36.90	1427.30
08/02/82	37.06	1427.14	07/01/86	35.33	1428.87	07/28/90	39.30	1424.90
09/04/82	37.52	1426.68	08/01/86	35.92	1428.28	08/30/90	41.42	1422.78
09/29/82	38.23	1425.97	08/30/86	36.47	1427.73	09/27/90	40.27	1423.93
11/02/82	37.55	1426.65	09/30/86	36.76	1427.44	10/29/90	39.65	1424.55
12/01/82	36.88	1427.32	11/01/86	36.44	1427.76	11/27/90	38.14	1426.06
04/05/83	35.23	1428.97	04/30/87	34.73	1429.47	03/29/91	37.27	1426.93
05/01/83	35.06	1429.14	05/30/87	35.08	1429.12	04/30/91	36.91	1427.29
06/04/83	35.02	1429.18	07/02/87	35.39	1428.81	05/30/91	36.73	1427.47
06/28/83	54.12	1410.08	07/31/87	35.64	1428.56	06/29/91	42.56	1421.64
08/02/83	62.55	1401.65	08/29/87	35.32	1428.88	07/28/91	39.54	1424.66
08/31/83	61.10	1403.10	09/30/87	35.21	1428.99	08/30/91	38.79	1425.41
09/30/83	49.34	1414.86	10/30/87	35.00	1429.20	09/28/91	38.00	1426.20
10/31/83	44.79	1419.41	11/28/87	34.87	1429.33	10/26/91	37.50	1426.70
11/27/83	42.19	1422.01						
			03/31/88	33.96	1430.24	04/28/92	35.62	1428.58
04/03/84	36.88	1427.32	04/29/88	34.02	1430.18	05/29/92	35.79	1428.41
04/30/84	36.10	1428.10	05/30/88	34.34	1429.86	07/01/92	36.31	1427.89
06/01/84	35.98	1428.22	06/28/88	36.49	1427.71	07/30/92	37.33	1426.87
07/01/84	35.93	1428.27	08/02/88	42.53	1421.67	08/29/92	38.72	1425.48
08/01/84	82.90	1381.30	08/29/88	43.20	1421.00	09/29/92	38.02	1426.18
08/31/84	80.06	1384.14	09/30/88	40.21	1423.99	10/29/92	37.74	1426.46
09/29/84	58.76	1405.44	10/29/88	39.30	1424.90			
10/29/84	50.56	1413.64				04/04/93	35.72	1428.48
12/06/84	44.87	1419.33	04/27/89	35.93	1428.27	05/01/93	35.81	1428.39
			05/31/89	36.40	1427.80	05/29/93	36.07	1428.13
04/28/85	38.08	1426.12	06/27/89	65.35	1398.85	06/30/93	35.80	1428.40
05/30/85	37.42	1426.78	07/29/89	47.14	1417.06	08/29/93	35.84	1428.36
06/29/85	37.40	1426.80	08/30/89	45.88	1418.32	09/27/93	35.27	1428.93
07/27/85	37.75	1426.45	09/30/89	42.22	1421.98	10/31/93	35.19	1429.01

150-062-23DCC2
Undefined Aquifer

MP Elev (msl,ft)=1,463.04
SI (ft.)=95-97

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
04/15/86	5.35	1457.69	12/08/92	6.77	1456.27	08/16/93	2.59	1460.45
05/21/86	3.96	1459.08				09/15/93	2.59	1460.45
07/02/86	6.07	1456.97	04/14/93	6.26	1456.78	10/21/93	3.20	1459.84
08/06/86	5.97	1457.07	06/10/93	5.26	1457.78	11/17/93	3.82	1459.22
			07/14/93	4.26	1458.78			
10/13/92	7.02	1456.02	07/21/93	3.68	1459.36	03/08/94	5.12	1457.92

**150-062-24CBB
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,464.88
SI (ft.)=158-163**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
04/03/84	89.82	1375.06	09/27/90	91.39	1373.49	07/15/97	87.88	1377.00
04/30/84	89.52	1375.36	10/29/90	91.35	1373.53	07/30/97	88.35	1376.53
06/01/84	89.51	1375.37	11/27/90	91.29	1373.59	08/30/97	88.37	1376.51
07/01/84	89.82	1375.06				10/01/97	88.78	1376.10
08/01/84	90.16	1374.72	03/29/91	91.09	1373.79	10/31/97	88.56	1376.32
08/31/84	90.61	1374.27	04/30/91	90.87	1374.01			
09/29/84	90.70	1374.18	05/30/91	90.78	1374.10	07/02/98	89.08	1375.80
10/29/84	90.44	1374.44	06/29/91	91.07	1373.81	08/01/98	89.44	1375.44
12/06/84	90.33	1374.55	07/28/91	91.09	1373.79	08/31/98	89.73	1375.15
			08/30/91	91.36	1373.52	09/30/98	90.01	1374.87
04/28/85	90.03	1374.85	09/28/91	91.22	1373.66	11/07/98	89.70	1375.18
05/30/85	90.05	1374.83	10/26/91	91.18	1373.70			
06/29/85	90.56	1374.32				06/04/99	88.53	1376.35
07/27/85	90.91	1373.97	01/06/92	90.94	1373.94	07/02/99	88.79	1376.09
08/29/85	91.00	1373.88	04/28/92	90.32	1374.56	08/01/99	88.96	1375.92
09/28/85	91.03	1373.85	05/29/92	90.52	1374.36	08/31/99	88.65	1376.23
10/29/85	91.02	1373.86	07/01/92	90.69	1374.19	10/02/99	88.80	1376.08
			07/30/92	90.82	1374.06	11/02/99	88.78	1376.10
04/01/86	90.33	1374.55	08/29/92	91.09	1373.79			
04/29/86	89.93	1374.95	09/29/92	90.97	1373.91	07/01/00	88.05	1376.83
05/31/86	90.03	1374.85	10/29/92	90.91	1373.97	08/01/00	87.99	1376.89
07/01/86	90.68	1374.20				09/03/00	88.25	1376.63
08/01/86	90.68	1374.20	04/04/93	90.21	1374.67	10/01/00	88.02	1376.86
08/30/86	90.62	1374.26	05/01/93	90.06	1374.82	10/12/00	88.04	1376.84
09/30/86	90.58	1374.30	05/29/93	90.14	1374.74	10/28/00	88.22	1376.66
11/01/86	90.66	1374.22	06/30/93	90.01	1374.87			
			07/30/93	89.24	1375.64	06/05/01	86.54	1378.34
04/30/87	89.14	1375.74	08/29/93	88.93	1375.95	06/30/01	86.41	1378.47
05/30/87	89.49	1375.39	09/27/93	89.30	1375.58	07/30/01	86.32	1378.56
07/02/87	89.85	1375.03	10/31/93	89.24	1375.64	09/02/01	86.66	1378.22
07/31/87	89.49	1375.39				09/29/01	87.23	1377.65
08/29/87	89.43	1375.45	04/06/94	87.19	1377.69	10/29/01	87.45	1377.43
09/30/87	89.64	1375.24	05/01/94	87.35	1377.53	11/10/01	87.27	1377.61
10/30/87	89.46	1375.42	05/29/94	87.24	1377.64			
11/28/87	89.41	1375.47	07/01/94	87.10	1377.78	05/31/02	87.41	1377.47
			07/30/94	87.00	1377.88	06/30/02	87.47	1377.41
03/31/88	88.59	1376.29	08/29/94	87.08	1377.80	07/29/02	87.78	1377.10
04/29/88	88.55	1376.33	09/28/94	87.06	1377.82	08/01/02	87.93	1376.95
05/30/88	88.73	1376.15	10/28/94	86.98	1377.90	08/29/02	88.34	1376.54
06/28/88	89.29	1375.59	12/29/94	86.68	1378.20	09/29/02	88.52	1376.36
08/02/88	89.52	1375.36				10/31/02	88.62	1376.26
08/29/88	89.86	1375.02	04/30/95	86.05	1378.83	12/04/02	88.79	1376.09
09/30/88	89.76	1375.12	05/31/95	85.70	1379.18			
10/29/88	90.02	1374.86	06/30/95	86.14	1378.74	05/08/03	88.43	1376.45
			08/30/95	86.37	1378.51	06/05/03	88.51	1376.37
04/27/89	89.49	1375.39	09/29/95	85.75	1379.13	07/10/03	88.69	1376.19
05/31/89	89.99	1374.89	10/29/95	86.90	1377.98	07/21/03	88.66	1376.22
06/27/89	90.11	1374.77				08/05/03	88.73	1376.15
07/29/89	89.28	1375.60	05/02/96	86.26	1378.62	08/19/03	88.95	1375.93
08/30/89	90.89	1373.99	06/01/96	86.60	1378.28	09/02/03	89.10	1375.78
09/30/89	88.24	1376.64	06/30/96	87.24	1377.64	09/30/03	89.50	1375.38
10/30/89	90.99	1373.89	07/31/96	87.52	1377.36	11/01/03	89.45	1375.43
11/28/89	91.10	1373.78	08/31/96	87.65	1377.23	12/02/03	89.32	1375.56
			09/29/96	87.84	1377.04			
04/04/90	90.74	1374.14	10/29/96	87.82	1377.06	05/04/04	88.10	1376.78
04/30/90	90.65	1374.23	11/13/96	88.10	1376.78	06/08/04	87.89	1376.99
06/01/90	90.64	1374.24				07/13/04	87.80	1377.08
06/30/90	90.74	1374.14	05/01/97	86.64	1378.24	08/10/04	88.02	1376.86
07/28/90	90.82	1374.06	06/02/97	87.24	1377.64	08/31/04	88.10	1376.78
08/30/90	91.03	1373.85	06/28/97	87.89	1376.99	09/07/04	88.02	1376.86

150-062-24CBB (Continued), MP Elev (msl,ft)=1464.88 Spiritwood Aquifer SI (ft.)=158-163

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
10/04/04	87.80	1377.08	11/09/04	87.45	1377.43	12/07/04	87.28	1377.60

**150-062-24DDC
Not Yet Entered Aquifer**

**MP Elev (msl,ft)=1,464.13
SI (ft.)=29-34**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
04/15/86	5.59	1458.54	12/08/92	9.42	1454.71	08/09/93	3.06	1461.07
05/21/86	3.98	1460.15				09/15/93	3.69	1460.44
07/02/86	6.64	1457.49	04/14/93	6.49	1457.64	10/21/93	5.06	1459.07
08/06/86	6.40	1457.73	06/07/93	6.06	1458.07	11/17/93	5.21	1458.92
			07/14/93	4.09	1460.04			
10/13/92	9.05	1455.08	07/21/93	2.63	1461.50	03/08/94	6.62	1457.51

**151-061-06CCC
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,514.63
SI (ft.)=223-228**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/15/91	63.86	1452.92	05/02/96	53.45	1461.18	09/02/01	52.34	1462.29
08/31/91	64.13	1450.50	05/31/96	53.23	1461.40	09/29/01	51.81	1462.82
09/04/91	64.80	1449.83	06/29/96	54.91	1459.72	11/10/01	50.67	1463.96
09/29/91	62.85	1451.78	07/31/96	57.45	1457.18			
10/25/91	61.78	1452.85	09/01/96	59.19	1455.44	05/30/02	49.76	1464.87
			09/28/96	57.29	1457.34	06/28/02	50.05	1464.58
01/06/92	60.22	1454.41	10/28/96	55.73	1458.90	07/29/02	54.36	1460.27
04/28/92	59.40	1455.23				08/29/02	56.57	1458.06
05/28/92	59.44	1455.19	04/30/97	53.80	1460.83	09/29/02	53.85	1460.78
06/30/92	59.88	1454.75	06/01/97	52.77	1461.86	10/31/02	52.55	1462.08
07/29/92	61.24	1453.39	06/28/97	56.09	1458.54			
08/29/92	63.50	1451.13	07/10/97	55.06	1459.57	05/08/03	50.56	1464.07
09/30/92	61.12	1453.51	07/30/97	56.03	1458.60	06/05/03	50.57	1464.06
10/29/92	60.45	1454.18	08/30/97	55.11	1459.52	07/10/03	50.77	1463.86
			09/30/97	55.67	1458.96	07/22/03	51.78	1462.85
04/03/93	58.82	1455.81	10/31/97	54.43	1460.20	08/05/03	55.86	1458.77
05/01/93	58.71	1455.92				08/12/03	57.80	1456.83
05/29/93	58.48	1456.15	07/01/98	53.41	1461.22	09/02/03	57.19	1457.44
06/29/93	58.45	1456.18	08/02/98	59.02	1455.61	09/30/03	55.90	1458.73
07/29/93	57.70	1456.93	08/30/98	60.60	1454.03	10/27/03	54.25	1460.38
08/30/93	59.79	1454.84	09/29/98	58.69	1455.94	10/29/03	54.27	1460.36
09/26/93	58.75	1455.88	11/07/98	56.16	1458.47	10/30/03	54.45	1460.18
11/01/93	57.12	1457.51				10/31/03	54.77	1459.86
			06/04/99	52.96	1461.67	11/01/03	55.11	1459.52
04/06/94	54.82	1459.81	07/02/99	54.33	1460.30	11/02/03	55.45	1459.18
05/01/94	54.73	1459.90	08/02/99	56.05	1458.58	11/03/03	55.66	1458.97
05/28/94	54.57	1460.06	08/31/99	56.02	1458.61	11/04/03	55.60	1459.03
06/30/94	54.76	1459.87	10/02/99	54.22	1460.41	11/06/03	55.42	1459.21
07/30/94	56.67	1457.96	10/31/99	53.19	1461.44	12/02/03	53.72	1460.91
08/28/94	58.13	1456.50						
09/28/94	56.95	1457.68	07/01/00	53.21	1461.42	05/04/04	51.36	1463.27
10/29/94	55.65	1458.98	08/02/00	54.75	1459.88	06/08/04	50.97	1463.66
			09/06/00	54.74	1459.89	07/13/04	52.83	1461.80
04/30/95	53.75	1460.88	10/03/00	53.32	1461.31	08/10/04	56.93	1457.70
05/31/95	53.47	1461.16	10/11/00	52.94	1461.69	09/07/04	55.67	1458.96
06/28/95	54.91	1459.72	10/28/00	52.64	1461.99	10/04/04	53.70	1460.93
08/27/95	56.39	1458.24				11/09/04	52.41	1462.22
09/28/95	56.04	1458.59	06/05/01	50.36	1464.27	12/07/04	51.80	1462.83
10/29/95	54.93	1459.70	06/30/01	50.22	1464.41			
07/30/01	51.09	1463.54						

151-061-07CCC
Spiritwood Aquifer

MP Elev (msl,ft)=1,514.98
SI (ft.)=178-183

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
04/04/84	56.18	1458.80	09/27/90	60.37	1454.61	07/10/97	49.90	1465.08
04/30/84	55.95	1459.03	10/28/90	59.70	1455.28	07/30/97	50.45	1464.53
05/31/84	56.03	1458.95	11/27/90	59.34	1455.64	08/30/97	47.44	1467.54
06/30/84	56.25	1458.73				09/30/97	50.70	1464.28
07/31/84	58.46	1456.52	03/28/91	59.15	1455.83	10/01/97	50.51	1464.47
08/30/84	60.10	1454.88	04/29/91	57.68	1457.30	10/31/97	50.35	1464.63
09/29/84	59.51	1455.47	05/30/91	57.45	1457.53			
10/29/84	54.69	1460.29	06/29/91	57.43	1457.55	07/01/98	49.61	1465.37
12/06/84	57.85	1457.13	07/28/91	57.74	1457.24	08/02/98	51.13	1463.85
			08/31/91	57.81	1457.17	08/30/98	52.25	1462.73
04/28/85	56.37	1458.61	09/29/91	57.61	1457.37	09/29/98	52.30	1462.68
05/28/85	56.96	1458.02	10/25/91	57.18	1457.80	11/07/98	51.79	1463.19
06/29/85	56.84	1458.14				12/03/98	51.22	1463.76
07/27/85	57.18	1457.80	01/06/92	56.15	1458.83			
08/29/85	48.76	1466.22	04/28/92	55.29	1459.69	06/04/99	49.74	1465.24
09/28/85	59.04	1455.94	05/28/92	55.26	1459.72	07/02/99	50.06	1464.92
10/29/85	58.17	1456.81	06/30/92	55.38	1459.60	08/02/99	50.33	1464.65
			07/29/92	55.80	1459.18	08/31/99	50.45	1464.53
03/31/86	56.78	1458.20	08/29/92	56.52	1458.46	10/02/99	49.85	1465.13
04/28/86	56.05	1458.93	09/30/92	56.17	1458.81	10/27/99	49.23	1465.75
05/31/86	55.15	1459.83	10/29/92	55.89	1459.09	10/31/99	49.42	1465.56
07/01/86	58.10	1456.88						
07/30/86	57.78	1457.20	04/03/93	54.97	1460.01	07/01/00	48.57	1466.41
08/29/86	58.54	1456.44	05/01/93	54.83	1460.15	08/02/00	49.05	1465.93
09/29/86	57.62	1457.36	05/29/93	54.68	1460.30	09/06/00	49.26	1465.72
10/31/86	57.19	1457.79	06/29/93	54.52	1460.46	10/03/00	49.01	1465.97
			07/29/93	54.32	1460.66	10/11/00	48.60	1466.38
04/28/87	54.96	1460.02	08/30/93	53.69	1461.29	10/28/00	48.62	1466.36
05/30/87	55.32	1459.66	09/26/93	53.44	1461.54			
07/02/87	55.53	1459.45	11/01/93	52.20	1462.78	06/05/01	46.87	1468.11
07/31/87	55.47	1459.51				06/30/01	46.84	1468.14
08/31/87	55.29	1459.69	04/06/94	50.90	1464.08	07/30/01	46.91	1468.07
10/01/87	54.92	1460.06	05/01/94	50.64	1464.34	09/02/01	47.24	1467.74
10/29/87	54.39	1460.59	05/28/94	50.50	1464.48	09/29/01	47.18	1467.80
11/29/87	54.10	1460.88	07/01/94	50.41	1464.57	10/29/01	46.98	1468.00
			07/30/94	50.95	1464.03	11/10/01	46.94	1468.04
03/30/88	53.35	1461.63	08/28/94	51.68	1463.30			
04/29/88	53.19	1461.79	09/28/94	51.58	1463.40	05/30/02	46.23	1468.75
05/30/88	53.63	1461.35	10/29/94	51.17	1463.81	06/28/02	46.25	1468.73
06/28/88	56.63	1458.35	12/30/94	50.45	1464.53	07/29/02	47.26	1467.72
07/31/88	59.18	1455.80				08/01/02	47.35	1467.63
08/29/88	59.30	1455.68	04/30/95	49.87	1465.11	08/29/02	48.54	1466.44
09/30/88	58.42	1456.56	05/31/95	49.62	1465.36	09/29/02	48.33	1466.65
10/28/88	56.38	1458.60	06/28/95	50.17	1464.81	10/31/02	47.85	1467.13
			08/27/95	50.90	1464.08	12/04/02	47.47	1467.51
04/27/89	55.48	1459.50	09/28/95	50.80	1464.18			
05/31/89	55.41	1459.57	10/29/95	50.70	1464.28	05/08/03	46.86	1468.12
06/27/89	56.02	1458.96				06/05/03	46.89	1468.09
07/29/89	59.85	1455.13	05/02/96	49.70	1465.28	07/10/03	47.03	1467.95
08/30/89	60.26	1454.72	05/31/96	49.42	1465.56	07/22/03	47.30	1467.68
09/30/89	60.01	1454.97	06/29/96	49.84	1465.14	08/05/03	48.32	1466.66
10/31/89	59.24	1455.74	07/30/96	50.69	1464.29	08/12/03	48.36	1466.62
11/29/89	58.35	1456.63	09/01/96	51.58	1463.40	09/02/03	49.01	1465.97
			09/28/96	51.49	1463.49	09/30/03	49.15	1465.83
04/04/90	57.00	1457.98	10/28/96	51.15	1463.83	10/27/03	48.58	1466.40
04/30/90	56.86	1458.12	11/13/96	50.87	1464.11	10/29/03	48.78	1466.20
05/31/90	57.18	1457.80				10/30/03	48.87	1466.11
06/30/90	56.94	1458.04	04/30/97	50.02	1464.96	10/31/03	48.95	1466.03
07/28/90	58.98	1456.00	06/01/97	49.66	1465.32	11/01/03	48.87	1466.11
08/29/90	60.08	1454.90	06/28/97	50.33	1464.65	11/02/03	48.95	1466.03

151-061-07CCC (Continued), MP Elev (msl,ft)=1514.98 Spiritwood Aquifer SI (ft.)=178-183

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
11/03/03	48.96	1466.02	05/04/04	47.48	1467.50	10/04/04	48.46	1466.52
11/04/03	48.86	1466.12	06/08/04	47.39	1467.59	11/09/04	47.86	1467.12
11/06/03	48.89	1466.09	07/13/04	47.56	1467.42	12/07/04	47.65	1467.33
12/02/03	48.60	1466.38	08/10/04	48.71	1466.27			
09/07/04	48.90	1466.08						

151-061-07DDD Spiritwood Aquifer

**MP Elev (msl,ft)=1,502.07
SI (ft.)=177-182**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
09/02/03	40.57	1461.50	11/02/03	39.65	1462.42	06/08/04	37.70	1464.37
09/30/03	40.17	1461.90	11/03/03	39.77	1462.30	07/13/04	38.25	1463.82
10/27/03	39.26	1462.81	11/04/03	39.62	1462.45	08/10/04	40.19	1461.88
10/29/03	39.49	1462.58	11/06/03	39.67	1462.40	09/07/04	40.04	1462.03
10/30/03	39.57	1462.50	12/02/03	39.25	1462.82	10/04/04	39.20	1462.87
10/31/03	39.68	1462.39				11/09/04	38.39	1463.68
11/01/03	39.66	1462.41	05/04/04	37.92	1464.15	12/07/04	38.10	1463.97

151-061-17CCC Spiritwood Aquifer

**MP Elev (msl,ft)=1,482.51
SI (ft.)=186-191**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/13/03	25.64	1456.87	11/02/03	23.54	1458.97	07/13/04	21.90	1460.61
09/02/03	28.40	1454.11	11/03/03	23.65	1458.86	08/10/04	26.65	1455.86
09/30/03	25.14	1457.37	11/04/03	23.62	1458.89	09/07/04	24.87	1457.64
10/27/03	23.32	1459.19	11/06/03	23.59	1458.92	10/04/04	22.55	1459.96
10/29/03	23.33	1459.18	12/02/03	22.33	1460.18	11/09/04	21.16	1461.35
10/30/03	23.34	1459.17				12/07/04	20.51	1462.00
10/31/03	23.41	1459.10	05/04/04	20.15	1462.36	11/01/03	23.47	1459.04
06/08/04	19.92	1462.59						

151-061-20BAA Pierre Shale Aquifer

**MP Elev (msl,ft)=1,461.17
SI (ft.)=147-157**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/13/03	<<	<<	10/09/03	3.19	1457.42	06/08/04	<<	<<
09/02/03	<<	<<				07/13/04	0.90	1460.27
09/30/03	<<	<<	05/04/04	<<	<<	08/03/04	7.57	1453.60

**151-061-29DDD2
Warwick Aquifer**

**MP Elev (msl,ft)=1,486.56
SI (ft.)=0-40**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/22/73	30.56	1456.00	06/18/75	29.36	1457.20	03/22/78	30.46	1456.10
09/21/73	30.56	1456.00	09/17/75	29.66	1456.90	07/26/78	29.66	1456.90
12/28/73	30.16	1456.40	12/18/75	29.66	1456.90	09/27/78	29.96	1456.60
						12/11/78	30.06	1456.50
04/05/74	30.36	1456.20	06/29/76	29.56	1457.00			
05/23/74	29.56	1457.00	09/28/76	29.86	1456.70	06/20/79	29.06	1457.50
06/19/74	29.26	1457.30	12/27/76	30.06	1456.50	09/04/79	29.16	1457.40
09/23/74	29.36	1457.20						
12/16/74	29.56	1457.00	03/21/77	30.16	1456.40	03/17/80	29.76	1456.80
			07/07/77	30.46	1456.10	06/26/80	29.76	1456.80
04/03/75	29.56	1457.00	09/19/77	30.46	1456.10	09/30/80	29.76	1456.80
05/06/75	29.16	1457.40	12/29/77	30.46	1456.10	05/29/75	29.16	1457.40

151-061-30AAA
Spiritwood Aquifer

MP Elev (msl,ft)=1,507.31
SI (ft.)=218-223

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
04/04/84	53.97	1453.34	08/29/90	66.79	1440.52	07/30/97	52.79	1454.52
04/30/84	51.58	1455.73	09/27/90	61.73	1445.58	08/30/97	53.11	1454.20
05/31/84	54.20	1453.11	10/28/90	57.54	1449.77	09/30/97	50.25	1457.06
06/30/84	54.68	1452.63	11/27/90	55.93	1451.38	10/01/97	49.60	1457.71
08/01/84	66.88	1440.43				10/31/97	48.67	1458.64
08/30/84	69.54	1437.77	03/28/91	53.87	1453.44			
09/29/84	60.14	1447.17	04/29/91	53.58	1453.73	07/02/98	48.79	1458.52
10/29/84	55.51	1451.80	05/30/91	53.42	1453.89	08/02/98	59.22	1448.09
12/06/84	54.48	1452.83	06/29/91	54.42	1452.89	08/31/98	59.54	1447.77
			07/28/91	55.74	1451.57	09/29/98	55.23	1452.08
04/28/85	52.24	1455.07	08/31/91	57.91	1449.40	11/07/98	51.07	1456.24
05/29/85	56.08	1451.23	09/29/91	55.66	1451.65			
06/29/85	54.18	1453.13	10/26/91	54.10	1453.21	06/04/99	47.56	1459.75
07/27/85	67.46	1439.85				07/01/99	50.06	1457.25
08/29/85	60.30	1447.01	04/28/92	51.54	1455.77	08/02/99	53.34	1453.97
09/28/85	56.41	1450.90	05/28/92	51.64	1455.67	09/01/99	54.22	1453.09
10/29/85	54.63	1452.68	07/01/92	52.83	1454.48	10/02/99	49.23	1458.08
			07/29/92	54.78	1452.53	10/31/99	47.76	1459.55
03/31/86	51.87	1455.44	08/29/92	57.26	1450.05			
04/29/86	51.65	1455.66	09/30/92	53.92	1453.39	07/02/00	48.54	1458.77
05/31/86	54.72	1452.59	10/29/92	53.18	1454.13	08/02/00	53.93	1453.38
07/01/86	64.03	1443.28				09/06/00	50.33	1456.98
07/30/86	58.31	1449.00	04/04/93	51.26	1456.05	10/02/00	48.52	1458.79
08/29/86	60.72	1446.59	05/01/93	51.08	1456.23	10/11/00	47.16	1460.15
09/30/86	55.95	1451.36	05/29/93	50.80	1456.51	10/28/00	47.12	1460.19
10/31/86	53.82	1453.49	06/30/93	50.85	1456.46			
			07/30/93	50.19	1457.12	06/05/01	44.88	1462.43
04/28/87	51.04	1456.27	08/30/93	54.44	1452.87	06/30/01	44.87	1462.44
05/30/87	54.11	1453.20	09/26/93	51.02	1456.29	07/30/01	45.14	1462.17
07/02/87	54.63	1452.68	11/01/93	49.99	1457.32	09/02/01	49.43	1457.88
07/31/87	53.98	1453.33				09/29/01	46.92	1460.39
08/30/87	53.44	1453.87	04/06/94	47.64	1459.67	11/10/01	45.17	1462.14
09/30/87	51.36	1455.95	05/01/94	47.58	1459.73			
10/29/87	50.88	1456.43	05/28/94	47.72	1459.59	05/30/02	44.26	1463.05
11/29/87	50.49	1456.82	07/01/94	47.02	1460.29	06/28/02	44.84	1462.47
			07/30/94	51.75	1455.56	07/29/02	51.08	1456.23
03/30/88	49.41	1457.90	08/29/94	53.53	1453.78	08/29/02	54.15	1453.16
04/29/88	49.69	1457.62	09/28/94	51.10	1456.21	09/29/02	49.53	1457.78
05/30/88	51.62	1455.69	10/29/94	48.87	1458.44	10/31/02	47.62	1459.69
06/28/88	67.26	1440.05						
07/31/88	70.50	1436.81	04/30/95	47.14	1460.17	05/08/03	44.60	1462.71
08/29/88	63.53	1443.78	05/31/95	47.02	1460.29	06/05/03	44.90	1462.41
09/30/88	57.74	1449.57	06/30/95	50.32	1456.99	07/10/03	47.79	1459.52
10/28/88	55.28	1452.03	08/28/95	53.40	1453.91	07/23/03	47.40	1459.91
			09/28/95	50.19	1457.12	08/05/03	56.88	1450.43
04/27/89	51.60	1455.71	10/29/95	47.99	1459.32	08/13/03	52.80	1454.51
06/01/89	52.75	1454.56				09/02/03	56.36	1450.95
06/27/89	57.68	1449.63	05/02/96	47.07	1460.24	09/30/03	51.90	1455.41
07/29/89	69.59	1437.72	05/31/96	46.83	1460.48	11/01/03	49.64	1457.67
08/30/89	67.48	1439.83	06/29/96	49.52	1457.79	12/02/03	48.27	1459.04
09/30/89	58.53	1448.78	07/30/96	52.44	1454.87			
10/31/89	56.49	1450.82	09/01/96	55.44	1451.87	05/04/04	45.79	1461.52
11/29/89	55.15	1452.16	09/28/96	51.93	1455.38	06/08/04	45.64	1461.67
			10/28/96	49.49	1457.82	07/13/04	48.13	1459.18
04/04/90	53.07	1454.24				08/10/04	53.92	1453.39
04/30/90	52.93	1454.38	05/01/97	47.00	1460.31	09/07/04	51.55	1455.76
05/31/90	54.81	1452.50	06/01/97	47.18	1460.13	10/04/04	48.61	1458.70
06/30/90	54.27	1453.04	06/28/97	52.64	1454.67	11/09/04	46.97	1460.34
07/28/90	63.81	1443.50	07/16/97	48.85	1458.46	12/07/04	46.23	1461.08

**151-061-30BBB
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,455.00
SI (ft.)=197-200**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
07/12/68	1.80	1453.40	08/28/80	11.78	1443.42	07/27/85	15.99	1439.21
08/20/68	1.73	1453.47	09/29/80	6.73	1448.47	08/29/85	6.08	1449.12
09/13/68	1.59	1453.61	10/23/80	4.35	1450.85	09/28/85	1.88	1453.32
10/12/68	1.81	1453.39	11/21/80	2.92	1452.28			
						05/31/86	2.50	1452.70
05/03/69	1.94	1453.26	05/05/81	0.40	1454.80	07/01/86	11.26	1443.94
07/01/69	1.97	1453.23	06/04/81	2.34	1452.86	07/30/86	2.89	1452.31
08/01/69	1.97	1453.23	06/30/81	0.91	1454.29	08/29/86	5.45	1449.75
11/08/69	1.87	1453.33	07/29/81	8.16	1447.04	09/30/86	0.34	1454.86
			08/27/81	12.45	1442.75			
05/16/70	2.26	1452.94	09/24/81	6.15	1449.05	06/24/87	1.39	1453.81
07/16/70	1.81	1453.39	10/23/81	2.80	1452.40	07/24/87	1.37	1455.57
08/27/70	1.40	1453.80	11/18/81	1.40	1453.80	07/31/87	0.50	1456.44
10/10/70	1.50	1453.70						
			06/24/82	3.22	1451.98	06/28/88	17.51	1439.43
06/28/78	12.68	1442.52	06/25/82	0.58	1454.62	07/31/88	19.65	1437.29
07/07/78	13.08	1442.12	08/01/82	6.86	1448.34	08/29/88	10.38	1446.56
07/28/78	19.94	1435.26	09/04/82	9.97	1445.23	09/30/88	4.44	1452.50
08/09/78	26.76	1428.44	09/29/82	5.18	1450.02	10/28/88	1.87	1455.07
09/01/78	18.93	1436.27	11/02/82	1.03	1454.17			
09/29/78	9.76	1445.44				06/27/89	2.43	1450.77
12/14/78	4.09	1451.11	06/04/83	0.58	1454.62	07/29/89	20.62	1436.32
			06/28/83	5.03	1450.17	08/30/89	16.02	1440.92
05/18/79	2.40	1452.80	08/02/83	17.29	1437.91	09/30/89	5.53	1451.41
06/13/79	5.18	1450.02	08/30/83	7.55	1447.65	10/31/89	2.70	1454.24
07/11/79	10.29	1444.91	09/29/83	2.32	1452.88	11/29/89	1.70	1455.24
08/07/79	16.70	1438.50						
09/19/79	10.03	1445.17	05/31/84	0.72	1454.48	07/28/90	11.58	1443.42
10/03/79	7.11	1448.09	06/30/84	0.20	1455.00	08/29/90	11.69	1443.31
11/01/79	4.48	1450.72	07/31/84	15.37	1439.83	09/27/90	6.79	1448.21
12/18/79	2.10	1453.10	08/30/84	15.89	1439.31	10/28/90	2.31	1452.69
			09/29/84	5.46	1449.74			
05/06/80	4.86	1450.34	10/29/84	1.95	1453.25	03/28/91	1.60	1453.40
06/05/80	5.15	1450.05	12/06/84	0.80	1454.40	07/28/91	1.74	1453.26
07/02/80	21.46	1433.74				07/30/80	25.43	1429.77
05/29/85	2.01	1453.19						

**151-061-31BCC
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,467.33
SI (ft.)=198-203**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/14/03	15.20	1452.13	11/18/03	10.65	1456.68	08/10/04	16.34	1450.99
09/02/03	18.96	1448.37	12/02/03	10.65	1456.68	09/01/04	14.82	1452.51
09/30/03	15.15	1452.18				09/07/04	13.97	1453.36
11/01/03	11.69	1455.64	05/04/04	7.30	1460.03	10/04/04	10.95	1456.38
11/18/03	10.59	1456.74	06/08/04	7.35	1459.98	11/09/04	8.25	1459.08
11/18/03	10.63	1456.70	07/13/04	10.67	1456.66	12/07/04	7.36	1459.97

**151-061-31CDD
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,458.56
SI (ft.)=158-163**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/20/03	10.30	1448.26	11/18/03	2.39	1456.17	08/31/04	7.25	1451.31
09/02/03	10.57	1447.99				09/07/04	5.60	1452.96
09/30/03	6.60	1451.96	05/04/04	<<	<<	10/04/04	2.21	1456.35
11/01/03	2.89	1455.67	06/08/04	<<	<<	11/09/04	<<	<<
11/18/03	2.03	1456.53	07/13/04	2.01	1456.55	12/07/04	<<	<<
11/18/03	2.34	1456.22	08/10/04	7.89	1450.67			

**151-061-31DDD
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,464.86
SI (ft.)=113-118**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/20/03	20.20	1444.66				08/31/04	19.25	1445.61
09/02/03	20.02	1444.84	05/04/04	19.75	1445.11	09/07/04	19.16	1445.70
09/30/03	19.90	1444.96	06/08/04	19.45	1445.41	10/04/04	18.97	1445.89
11/01/03	19.76	1445.10	07/13/04	19.27	1445.59	11/09/04	18.74	1446.12
12/02/03	19.62	1445.24	08/10/04	19.23	1445.63	12/07/04	18.59	1446.27

151-061-32BBB
Spiritwood Aquifer

MP Elev (msl,ft)=1,467.26
SI (ft.)=168-173

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
04/04/84	11.83	1455.43	09/27/90	22.33	1444.93	08/30/97	12.19	1455.07
04/30/84	11.41	1455.85	10/29/90	17.59	1449.67	09/30/97	10.57	1456.69
05/31/84	13.65	1453.61	11/27/90	15.91	1451.35	10/31/97	8.73	1458.53
06/30/84	14.66	1452.60						
08/01/84	27.42	1439.84	03/28/91	13.76	1453.50	07/02/98	8.68	1458.58
08/31/84	30.08	1437.18	04/30/91	13.48	1453.78	08/02/98	19.78	1447.48
09/29/84	20.65	1446.61	05/30/91	13.44	1453.82	08/31/98	20.19	1447.07
10/29/84	16.63	1450.63	06/29/91	14.39	1452.87	09/30/98	15.34	1451.92
12/06/84	14.47	1452.79	07/28/91	15.38	1451.88	11/07/98	10.75	1456.51
			08/31/91	18.70	1448.56			
04/28/85	12.18	1455.08	09/29/91	15.78	1451.48	06/04/99	7.58	1459.68
05/29/85	16.12	1451.14	10/26/91	14.06	1453.20	07/01/99	10.22	1457.04
06/29/85	14.29	1452.97				08/02/99	14.24	1453.02
07/27/85	27.60	1439.66	04/28/92	11.44	1455.82	08/31/99	14.85	1452.41
08/29/85	20.80	1446.46	05/28/92	11.58	1455.68	10/02/99	9.29	1457.97
09/28/85	16.54	1450.72	07/01/92	12.39	1454.87	11/01/99	7.92	1459.34
10/29/85	14.62	1452.64	07/29/92	14.37	1452.89			
			08/29/92	17.43	1449.83	07/02/00	8.94	1458.32
03/31/86	12.07	1455.19	09/29/92	13.92	1453.34	08/02/00	13.81	1453.45
04/29/86	11.56	1455.70	10/29/92	13.20	1454.06	09/03/00	11.43	1455.83
05/31/86	14.10	1453.16				10/01/00	8.38	1458.88
07/01/86	23.94	1443.32	04/04/93	11.20	1456.06	10/12/00	7.66	1459.60
07/30/86	18.62	1448.64	05/01/93	10.97	1456.29	10/28/00	7.18	1460.08
08/31/86	20.88	1446.38	05/29/93	10.72	1456.54			
09/30/86	15.93	1451.33	06/30/93	10.77	1456.49	06/05/01	4.97	1462.29
10/31/86	14.05	1453.21	07/30/93	10.06	1457.20	06/30/01	5.09	1462.17
			08/29/93	14.98	1452.28	07/30/01	6.41	1460.85
04/28/87	11.02	1456.24	09/27/93	12.04	1455.22	09/02/01	9.99	1457.27
05/30/87	14.40	1452.86	11/01/93	9.99	1457.27	09/29/01	7.23	1460.03
07/02/87	14.95	1452.31				11/10/01	5.24	1462.02
07/31/87	14.17	1453.09	04/06/94	7.66	1459.60			
08/30/87	13.69	1453.57	05/01/94	7.60	1459.66	05/30/02	4.42	1462.84
09/30/87	11.62	1455.64	05/28/94	7.95	1459.31	06/28/02	5.19	1462.07
10/29/87	10.93	1456.33	07/01/94	8.18	1459.08	07/29/02	11.03	1456.23
11/28/87	10.39	1456.87	07/30/94	11.92	1455.34	08/29/02	15.25	1452.01
			08/29/94	14.00	1453.26	09/29/02	9.97	1457.29
04/29/88	9.72	1457.54	09/28/94	11.56	1455.70	10/31/02	7.86	1459.40
05/30/88	11.34	1455.92	10/29/94	9.28	1457.98			
06/28/88	27.24	1440.02				05/08/03	5.01	1462.25
08/01/88	31.62	1435.64	04/30/95	7.31	1459.95	06/05/03	5.37	1461.89
08/29/88	24.29	1442.97	05/31/95	7.29	1459.97	07/10/03	8.52	1458.74
09/30/88	17.91	1449.35	06/30/95	9.65	1457.61	07/21/03	7.40	1459.86
10/28/88	15.39	1451.87	08/28/95	14.14	1453.12	08/05/03	17.48	1449.78
			09/28/95	10.65	1456.61	08/14/03	13.65	1453.61
04/27/89	11.52	1455.74	10/29/95	8.84	1458.42	09/02/03	17.89	1449.37
06/01/89	12.80	1454.46				09/30/03	12.97	1454.29
06/27/89	17.35	1449.91	05/02/96	7.36	1459.90	11/01/03	10.34	1456.92
07/29/89	34.72	1432.54	05/31/96	7.12	1460.14	12/02/03	8.90	1458.36
08/30/89	27.98	1439.28	06/29/96	10.05	1457.21			
09/30/89	19.16	1448.10	07/30/96	12.95	1454.31	05/04/04	6.28	1460.98
10/31/89	16.53	1450.73	09/01/96	15.93	1451.33	06/08/04	6.19	1461.07
11/29/89	15.12	1452.14	09/29/96	12.40	1454.86	07/13/04	8.90	1458.36
			10/28/96	9.84	1457.42	08/10/04	15.08	1452.18
04/04/90	12.94	1454.32				09/01/04	13.85	1453.41
04/30/90	12.81	1454.45	04/30/97	7.22	1460.04	09/07/04	12.58	1454.68
05/31/90	14.38	1452.88	06/02/97	7.42	1459.84	10/04/04	9.28	1457.98
06/30/90	14.29	1452.97	06/28/97	12.70	1454.56	11/09/04	7.50	1459.76
07/28/90	23.59	1443.67	07/16/97	9.27	1457.99	12/07/04	6.67	1460.59
08/29/90	27.83	1439.43	07/30/97	12.37	1454.89			

**151-061-33CCC
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,459.35
SI (ft.)=158-163**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/21/03	84.66	1374.69				09/01/04	84.40	1374.95
09/02/03	84.67	1374.68	05/04/04	82.74	1376.61	09/07/04	84.38	1374.97
09/30/03	84.99	1374.36	06/08/04	83.85	1375.50	10/04/04	84.35	1375.00
11/01/03	84.97	1374.38	07/13/04	83.85	1375.50	11/09/04	84.20	1375.15
12/02/03	84.92	1374.43	08/10/04	84.20	1375.15	12/07/04	84.13	1375.22

**151-062-01AAD
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,498.06
SI (ft.)=178-183**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/15/91	47.20	1450.86	05/02/96	37.22	1460.84	07/30/01	34.77	1463.29
08/31/91	47.64	1450.42	05/31/96	37.00	1461.06	09/02/01	36.04	1462.02
09/04/91	48.20	1449.86	06/29/96	38.63	1459.43	09/29/01	35.56	1462.50
09/29/91	46.44	1451.62	07/31/96	41.16	1456.90	11/10/01	33.98	1464.08
10/25/91	45.22	1452.84	09/01/96	42.98	1455.08			
			09/28/96	41.29	1456.77	05/30/02	33.38	1464.68
01/06/92	43.66	1454.40	10/28/96	39.52	1458.54	06/28/02	33.57	1464.49
04/28/92	43.10	1454.96				07/29/02	37.74	1460.32
05/28/92	43.11	1454.95	04/30/97	37.18	1460.88	08/29/02	39.34	1458.72
06/30/92	43.62	1454.44	06/01/97	36.97	1461.09	09/29/02	38.02	1460.04
07/29/92	44.97	1453.09	06/28/97	39.71	1458.35	10/31/02	36.58	1461.48
08/29/92	47.31	1450.75	07/10/97	38.65	1459.41			
09/30/92	44.95	1453.11	07/30/97	39.46	1458.60	05/08/03	33.99	1464.07
10/29/92	44.26	1453.80	08/30/97	40.63	1457.43	06/05/03	34.03	1464.03
			09/30/97	39.29	1458.77	07/10/03	34.20	1463.86
			10/31/97	38.05	1460.01	07/22/03	35.12	1462.94
04/03/93	42.60	1455.46				08/05/03	39.00	1459.06
05/01/93	42.47	1455.59	07/01/98	37.11	1460.95	08/12/03	39.24	1458.82
05/29/93	42.27	1455.79	08/02/98	42.74	1455.32	09/02/03	40.67	1457.39
06/29/93	42.24	1455.82	08/30/98	44.45	1453.61	09/30/03	39.42	1458.64
08/30/93	43.57	1454.49	09/29/98	42.54	1455.52	10/27/03	37.72	1460.34
09/26/93	42.58	1455.48	11/07/98	39.95	1458.11	10/29/03	37.70	1460.36
11/01/93	40.94	1457.12				10/30/03	37.85	1460.21
			06/04/99	36.65	1461.41	10/31/03	38.15	1459.91
04/06/94	38.55	1459.51	07/02/99	38.13	1459.93	11/01/03	38.52	1459.54
05/01/94	38.49	1459.57	08/02/99	39.72	1458.34	11/02/03	38.85	1459.21
05/28/94	38.36	1459.70	08/31/99	40.11	1457.95	11/03/03	39.12	1458.94
06/30/94	38.53	1459.53	10/02/99	37.99	1460.07	11/04/03	39.08	1458.98
07/30/94	40.27	1457.79	10/31/99	36.94	1461.12	11/06/03	38.91	1459.15
08/28/94	42.40	1455.66				12/02/03	37.12	1460.94
09/28/94	40.94	1457.12	07/01/00	36.97	1461.09			
10/29/94	39.45	1458.61	08/02/00	38.34	1459.72	05/04/04	34.84	1463.22
			09/06/00	38.61	1459.45	06/08/04	34.46	1463.60
04/30/95	37.52	1460.54	10/03/00	37.01	1461.05	07/13/04	36.34	1461.72
05/31/95	37.20	1460.86	10/11/00	36.46	1461.60	08/10/04	40.57	1457.49
06/28/95	39.49	1458.57	10/28/00	36.25	1461.81	09/07/04	39.32	1458.74
08/27/95	40.75	1457.31				10/04/04	37.24	1460.82
09/28/95	39.89	1458.17	06/05/01	33.97	1464.09	11/09/04	35.93	1462.13
10/29/95	38.73	1459.33	06/30/01	33.85	1464.21	12/07/04	35.29	1462.77

**151-062-02CCC
Warwick Aquifer**

**MP Elev (msl,ft)=1,536.60
SI (ft.)=70-75**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
04/15/86	48.83	1487.77	12/08/92	48.13	1488.47	08/10/93	47.41	1489.19
05/21/86	48.86	1487.74				09/15/93	47.04	1489.56
07/02/86	48.85	1487.75	04/14/93	48.11	1488.49	10/21/93	46.50	1490.10
08/06/86	48.74	1487.86	06/10/93	48.20	1488.40	11/17/93	46.07	1490.53
			07/15/93	48.28	1488.32			
10/14/92	48.20	1488.40	07/22/93	48.22	1488.38	03/08/94	45.20	1491.40

**151-062-03ADDA
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,610.20
SI (ft.)=350-355**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/09/91	160.95	1449.95				07/10/03	148.16	1462.04
09/04/91	163.65	1446.55	04/30/97	151.01	1459.19	07/22/03	149.40	1460.80
09/28/91	160.17	1450.03	06/01/97	150.82	1459.38	08/05/03	155.19	1455.01
10/26/91	158.79	1451.41	06/28/97	154.69	1455.51	08/13/03	154.20	1456.00
			07/10/97	152.56	1457.64	09/02/03	155.75	1454.45
01/06/92	157.20	1453.00	07/29/97	154.94	1455.26	09/30/03	153.77	1456.43
04/28/92	156.39	1453.81	08/30/97	155.35	1454.85	10/08/03	152.93	1457.27
05/28/92	157.26	1452.94	09/30/97	153.56	1456.64	10/27/03	152.05	1458.15
06/30/92	158.02	1452.18	10/31/97	151.98	1458.22	10/29/03	152.06	1458.14
07/29/92	159.79	1450.41				10/29/03	152.22	1457.98
08/29/92	162.24	1447.96	07/01/98	150.72	1459.48	10/29/03	152.24	1457.96
09/30/92	159.49	1450.71	08/02/98	158.05	1452.15	10/29/03	152.31	1457.89
10/29/92	158.65	1451.55	08/30/98	159.42	1450.78	10/29/03	152.36	1457.84
			09/29/98	156.67	1453.53	10/29/03	152.40	1457.80
04/03/93	156.90	1453.30	11/07/98	153.62	1456.58	10/29/03	152.54	1457.66
05/01/93	156.74	1453.46				10/29/03	152.69	1457.51
05/29/93	156.54	1453.66	06/04/99	150.04	1460.16	10/29/03	152.89	1457.31
06/28/93	156.62	1453.58	07/01/99	151.92	1458.28	10/29/03	153.18	1457.02
07/29/93	155.76	1454.44	08/01/99	154.37	1455.83	10/30/03	154.40	1455.80
08/30/93	158.83	1451.37	09/01/99	154.42	1455.78	10/31/03	155.40	1454.80
09/26/93	156.95	1453.25	10/03/99	151.69	1458.51	11/01/03	155.92	1454.28
10/30/93	155.55	1454.65	10/31/99	150.59	1459.61	11/02/03	156.47	1453.73
						11/02/03	156.57	1453.63
04/06/94	153.01	1457.19	07/01/00	150.86	1459.34	11/02/03	156.58	1453.62
05/01/94	152.89	1457.31	08/01/00	151.69	1458.51	11/02/03	156.55	1453.65
05/29/94	152.80	1457.40	09/06/00	152.54	1457.66	11/02/03	156.53	1453.67
06/30/94	153.03	1457.17	10/03/00	150.84	1459.36	11/02/03	156.51	1453.69
07/31/94	156.27	1453.93	10/11/00	150.20	1460.00	11/02/03	156.49	1453.71
08/28/94	157.77	1452.43	10/28/00	149.91	1460.29	11/02/03	156.47	1453.73
09/28/94	155.64	1454.56				11/02/03	156.45	1453.75
10/29/94	154.09	1456.11	06/07/01	147.47	1462.73	11/02/03	156.43	1453.77
			07/01/01	145.43	1464.77	11/02/03	156.31	1453.89
04/29/95	151.85	1458.35	07/30/01	148.48	1461.72	11/02/03	155.86	1454.34
05/31/95	151.46	1458.74	09/02/01	150.35	1459.85	11/03/03	155.04	1455.16
06/28/95	154.19	1456.01	09/29/01	149.34	1460.86	11/04/03	154.37	1455.83
08/27/95	155.60	1454.60	11/10/01	148.04	1462.16	11/06/03	153.55	1456.65
09/28/95	154.37	1455.83				12/02/03	151.18	1459.02
10/28/95	152.96	1457.24	05/30/02	147.09	1463.11			
			06/28/02	147.32	1462.88	05/04/04	148.51	1461.69
05/01/96	150.33	1459.87	07/29/02	152.87	1457.33	06/08/04	148.13	1462.07
05/31/96	151.06	1459.14	08/29/02	155.19	1455.01	07/13/04	150.34	1459.86
06/29/96	153.03	1457.17	09/29/02	151.72	1458.48	08/10/04	155.45	1454.75
07/30/96	156.24	1453.96	10/31/02	150.04	1460.16	09/07/04	153.60	1456.60
08/30/96	158.23	1451.97				10/04/04	151.21	1458.99
09/28/96	155.67	1454.53	05/08/03	147.60	1462.60	11/09/04	149.70	1460.50
10/28/96	153.55	1456.65	06/05/03	147.63	1462.57	12/07/04	148.99	1461.21

**151-062-03DDAA
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,547.13
SI (ft.)=258-263**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
10/09/03	90.29	1456.54	10/29/03	91.18	1454.01	05/04/04	86.19	1460.94
10/16/03	89.84	1456.99	11/01/03	94.25	1450.94	06/08/04	85.83	1461.30
10/20/03	89.62	1457.21	11/02/03	94.70	1450.49	07/13/04	88.08	1459.05
10/20/03	89.92	1457.21	11/03/03	91.67	1453.52	08/10/04	93.26	1453.87
10/20/03	87.98	1457.21	11/04/03	90.91	1454.28	09/07/04	91.33	1455.80
10/21/03	89.87	1457.26	11/06/03	90.14	1455.05	10/04/04	88.90	1458.23
10/29/03	88.74	1456.45	12/02/03	88.77	1458.36	11/09/04	87.38	1459.75
10/29/03	90.24	1454.95				12/07/04	86.73	1460.40

**151-062-03DDAD
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,540.96
SI (ft.)=258-263**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
10/09/03	83.38	1456.61	10/29/03	86.46	1453.88	05/04/04	79.97	1460.99
10/16/03	82.98	1457.01	11/01/03	87.54	1452.80	06/08/04	79.60	1461.36
10/20/03	82.74	1457.25	11/02/03	89.98	1450.36	07/13/04	81.86	1459.10
10/20/03	83.71	1457.25	11/03/03	85.74	1454.60	08/10/04	87.08	1453.88
10/20/03	83.09	1457.25	11/04/03	84.98	1455.36	09/07/04	85.13	1455.83
10/21/03	83.05	1457.29	11/06/03	84.22	1456.12	10/04/04	82.69	1458.27
10/29/03	82.86	1457.48	12/02/03	82.55	1458.41	11/09/04	81.15	1459.81
10/29/03	85.58	1454.76				12/07/04	80.48	1460.48

151-062-03DDD1
Warwick Aquifer

MP Elev (msl,ft)=1,537.40
SI (ft.)=62-65

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
09/27/73	50.90	1486.50	06/30/92	47.73	1489.67	06/04/99	40.67	1496.73
10/16/73	51.43	1485.97	07/29/92	47.76	1489.64	07/01/99	40.73	1496.67
11/21/73	51.26	1486.14	08/29/92	47.80	1489.60	08/01/99	40.77	1496.63
01/07/74	51.46	1485.94	09/30/92	47.78	1489.62	09/01/99	39.85	1497.55
02/13/74	51.51	1485.89	10/29/92	47.80	1489.60	10/03/99	40.26	1497.14
03/28/74	51.46	1485.94	12/08/92	47.07	1490.33	10/31/99	40.18	1497.22
05/07/74	51.14	1486.26	04/03/93	47.72	1489.68	07/01/00	39.86	1497.54
06/17/74	50.97	1486.43	05/01/93	47.78	1489.62	08/01/00	39.97	1497.43
07/22/74	50.84	1486.56	05/29/93	47.80	1489.60	08/09/00	39.88	1497.52
08/19/74	50.80	1486.60	06/28/93	47.83	1489.57	09/06/00	39.98	1497.42
09/23/74	50.77	1486.63	07/29/93	47.46	1489.94	10/03/00	40.04	1497.36
10/29/74	50.78	1486.62	08/30/93	46.75	1490.65	10/11/00	39.78	1497.62
11/25/74	50.73	1486.67	09/26/93	46.52	1490.88	10/28/00	39.95	1497.45
12/30/74	50.63	1486.77	10/30/93	45.95	1491.45			
			11/24/93	45.94	1491.46	06/07/01	38.97	1498.43
12/02/76	49.84	1487.56				07/01/01	38.98	1498.42
			04/06/94	44.45	1492.95	07/30/01	38.79	1498.61
11/30/77	50.12	1487.28	05/01/94	44.37	1493.03	09/02/01	38.63	1498.77
			05/29/94	44.17	1493.23	09/29/01	38.53	1498.87
11/21/78	50.17	1487.23	06/30/94	44.10	1493.30	11/10/01	38.28	1499.12
			07/31/94	43.95	1493.45			
11/28/79	49.76	1487.64	08/28/94	43.90	1493.50	05/30/02	37.48	1499.92
			09/28/94	43.70	1493.70	06/28/02	37.51	1499.89
12/04/80	48.58	1488.82	10/29/94	43.69	1493.71	07/29/02	37.90	1499.50
			11/14/94	43.60	1493.80	08/29/02	37.55	1499.85
07/22/81	49.98	1487.42	11/19/94	43.52	1493.88	09/29/02	37.46	1499.94
11/30/81	49.93	1487.47				10/31/02	37.52	1499.88
			04/29/95	42.79	1494.61			
11/29/82	49.32	1488.08	05/31/95	42.58	1494.82	05/08/03	37.53	1499.87
			06/28/95	42.51	1494.89	06/05/03	37.62	1499.78
11/28/83	48.98	1488.42	08/27/95	42.20	1495.20	07/10/03	37.62	1499.78
			09/28/95	42.23	1495.17	07/22/03	37.75	1499.65
11/30/84	48.68	1488.72	10/28/95	42.19	1495.21	08/05/03	37.61	1499.79
						08/13/03	37.70	1499.70
06/28/85	48.52	1488.88	05/01/96	41.80	1495.60	09/02/03	37.50	1499.90
12/12/85	48.43	1488.97	05/31/96	41.65	1495.75	09/30/03	37.41	1499.99
			06/29/96	41.54	1495.86	10/28/03	37.14	1500.26
12/03/86	48.10	1489.30	07/30/96	41.46	1495.94	10/29/03	37.11	1500.29
			08/30/96	41.46	1495.94	10/29/03	37.12	1500.28
12/01/87	46.86	1490.54	09/28/96	41.35	1496.05	10/31/03	36.90	1500.50
			10/28/96	41.40	1496.00	11/01/03	36.76	1500.64
07/18/88	46.58	1490.82				11/03/03	36.18	1501.22
11/23/88	46.48	1490.92	04/30/97	40.97	1496.43	11/03/03	36.16	1501.24
			06/01/97	40.49	1496.91	11/04/03	36.08	1501.32
11/30/89	46.86	1490.54	06/28/97	40.52	1496.88	11/06/03	36.10	1501.30
			07/29/97	40.58	1496.82	12/02/03	36.45	1500.95
11/14/90	47.41	1489.99	08/30/97	40.66	1496.74			
			09/30/97	40.64	1496.76	05/04/04	36.20	1501.20
08/31/91	47.80	1489.60	10/31/97	40.63	1496.77	06/08/04	36.32	1501.08
09/28/91	48.03	1489.37				07/13/04	36.32	1501.08
10/26/91	48.05	1489.35	07/01/98	40.90	1496.50	08/10/04	36.21	1501.19
11/14/91	47.89	1489.51	08/02/98	41.05	1496.35	09/01/04	36.22	1501.18
			08/30/98	41.05	1496.35	09/07/04	36.17	1501.23
01/06/92	47.94	1489.46	09/29/98	41.11	1496.29	10/04/04	36.04	1501.36
04/28/92	47.79	1489.61	11/07/98	41.19	1496.21	11/09/04	35.74	1501.66
05/28/92	47.75	1489.65				12/07/04	35.73	1501.67

151-062-03DDD2
Spiritwood Aquifer

MP Elev (msl,ft)=1,538.05
SI (ft.)=260-263

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
05/17/79	91.44	1445.76				08/30/93	85.33	1451.87
09/20/79	95.20	1442.00	04/28/87	82.63	1454.57	09/26/93	83.65	1453.55
12/18/79	88.50	1448.70	05/30/87	84.94	1452.26	10/30/93	81.82	1455.38
			07/02/87	85.65	1451.55			
04/07/80	86.60	1450.60	07/31/87	85.00	1452.20	04/06/94	79.28	1457.92
07/01/80	102.46	1434.74	08/30/87	84.77	1452.43	05/01/94	79.19	1458.01
09/24/80	92.48	1444.72	09/30/87	83.17	1454.03	05/29/94	79.11	1458.09
12/23/80	88.30	1448.90	10/29/87	80.66	1456.54	06/30/94	79.35	1457.85
			11/28/87	81.99	1455.21	07/31/94	83.22	1453.98
04/10/81	86.77	1450.43				08/28/94	84.46	1452.74
06/29/81	87.09	1450.11	03/30/88	81.08	1456.12	09/28/94	82.04	1455.16
07/28/81	91.11	1446.09	04/29/88	81.39	1455.81	10/29/94	80.49	1456.71
09/24/81	91.44	1445.76	05/30/88	82.58	1454.62			
12/30/81	86.50	1450.70	06/28/88	96.19	1441.01	04/29/95	78.21	1458.99
			07/31/88	98.74	1438.46	05/31/95	77.90	1459.30
04/15/82	85.19	1452.01	08/29/88	93.66	1443.54	06/28/95	80.75	1456.45
05/27/82	84.70	1452.50	09/30/88	89.39	1447.81	08/27/95	83.80	1453.40
06/24/82	86.76	1450.44	10/28/88	86.62	1450.58	09/28/95	80.79	1456.41
08/01/82	89.45	1447.75				10/28/95	79.38	1457.82
09/04/82	94.19	1443.01	04/27/89	83.20	1454.00			
09/29/82	90.57	1446.63	06/01/89	83.82	1453.38	05/01/96	77.83	1459.37
11/02/82	87.20	1450.00	06/26/89	87.98	1449.22	05/31/96	77.59	1459.61
12/01/82	85.97	1451.23	08/29/89	95.96	1441.24	06/29/96	79.67	1457.53
			09/29/89	90.20	1447.00	07/30/96	83.02	1454.18
04/06/83	83.96	1453.24	10/30/89	87.83	1449.37	08/30/96	85.08	1452.12
05/02/83	83.73	1453.47	11/28/89	86.74	1450.46	09/28/96	82.31	1454.89
06/04/83	85.88	1451.32				10/28/96	80.25	1456.95
06/28/83	87.90	1449.30	04/04/90	84.42	1452.78			
08/02/83	97.65	1439.55	04/30/90	84.52	1452.68	04/30/97	77.56	1459.64
08/30/83	92.28	1444.92	05/31/90	86.01	1451.19	06/01/97	77.49	1459.71
09/29/83	88.09	1449.11	06/30/90	85.39	1451.81	06/28/97	82.00	1455.20
10/30/83	86.15	1451.05	07/28/90	92.91	1444.29	08/30/97	79.87	1457.33
11/27/83	85.22	1451.98	08/29/90	95.71	1441.49	09/30/97	80.32	1456.88
			09/27/90	92.44	1444.76	10/02/97	79.50	1457.70
04/04/84	83.33	1453.87	10/28/90	88.94	1448.26	10/31/97	78.53	1458.67
04/30/84	82.93	1454.27	11/27/90	87.51	1449.69			
05/31/84	85.69	1451.51				07/01/98	77.70	1459.50
07/01/84	85.96	1451.24	03/28/91	85.57	1451.63	08/02/98	84.14	1453.06
08/02/84	95.39	1441.81	04/29/91	85.28	1451.92	08/30/98	86.58	1450.62
08/31/84	97.42	1439.78	05/30/91	85.22	1451.98	09/29/98	83.69	1453.51
09/29/84	90.69	1446.51	06/28/91	85.97	1451.23	11/07/98	80.59	1456.61
10/31/84	87.28	1449.92	07/28/91	87.24	1449.96			
12/06/84	85.69	1451.51	08/29/91	89.28	1447.92	06/04/99	76.72	1460.48
			09/28/91	87.24	1449.96	07/01/99	78.84	1458.36
04/28/85	83.56	1453.64	10/26/91	85.85	1451.35	08/01/99	80.34	1456.86
05/29/85	87.33	1449.87				09/01/99	80.52	1456.68
06/29/85	85.42	1451.78	01/06/92	84.35	1452.85	10/03/99	78.50	1458.70
07/27/85	96.48	1440.72	04/28/92	83.42	1453.78	10/31/99	77.44	1459.76
08/29/85	90.79	1446.41	05/28/92	83.54	1453.66			
09/29/85	87.50	1449.70	06/30/92	84.52	1452.68	07/01/00	77.72	1459.48
10/31/85	87.77	1449.43	07/29/92	86.44	1450.76	08/01/00	78.39	1458.81
			08/29/92	88.88	1448.32	08/09/00	80.20	1457.00
03/31/86	83.58	1453.62	09/30/92	85.84	1451.36	09/06/00	79.36	1457.84
04/28/86	83.12	1454.08	10/29/92	85.00	1452.20	10/03/00	77.72	1459.48
05/31/86	84.34	1452.86				10/11/00	76.96	1460.24
07/01/86	92.49	1444.71	04/03/93	84.13	1453.07	10/28/00	76.76	1460.44
07/30/86	88.43	1448.77	05/01/93	83.01	1454.19			
08/30/86	90.32	1446.88	05/29/93	82.84	1454.36	06/07/01	74.32	1462.88
09/29/86	86.97	1450.23	06/28/93	82.82	1454.38	07/01/01	74.30	1462.90
10/31/86	85.00	1452.20	07/29/93	82.07	1455.13	07/30/01	75.39	1461.81

151-062-03DDD2 (Continued), MP Elev (msl,ft)=1538.05 Spiritwood Aquifer SI (ft.)=260-263

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
09/02/01	77.44	1459.76	07/22/03	76.40	1460.80	11/02/03	88.23	1448.69
09/29/01	76.24	1460.96	08/05/03	82.81	1454.39	11/03/03	81.30	1455.62
11/10/01	74.86	1462.34	08/13/03	81.10	1456.10	11/04/03	80.55	1456.37
			09/02/03	82.73	1454.47	11/06/03	79.74	1457.18
05/30/02	73.44	1463.76	09/30/03	80.50	1456.70	12/02/03	78.62	1459.43
06/28/02	73.09	1464.11	10/09/03	79.57	1457.63			
07/29/02	80.83	1456.37	10/16/03	79.15	1458.05	05/04/04	75.98	1462.07
08/29/02	82.22	1454.98	10/20/03	78.94	1458.26	06/08/04	75.63	1462.42
09/29/02	78.59	1458.61	10/20/03	79.79	1458.26	07/13/04	77.90	1460.15
10/31/02	76.94	1460.26	10/20/03	78.66	1458.26	08/10/04	83.14	1454.91
			10/29/03	78.30	1458.62	09/07/04	81.14	1456.91
05/08/03	74.37	1462.83	10/29/03	83.77	1453.15	10/04/04	78.73	1459.32
06/05/03	74.41	1462.79	10/29/03	84.68	1452.24	11/09/04	77.18	1460.87
07/10/03	75.12	1462.08	11/01/03	87.78	1449.14	12/07/04	76.50	1461.55

151-062-03DDD3 Spiritwood Aquifer

**MP Elev (msl,ft)=1,538.22
SI (ft.)=258-263**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
10/09/03	80.91	1456.62	10/29/03	84.40	1452.73	05/04/04	77.18	1461.04
10/16/03	80.46	1457.07	11/01/03	87.48	1449.65	06/08/04	76.80	1461.42
10/20/03	80.24	1457.29	11/02/03	87.93	1449.20	07/13/04	79.09	1459.13
10/20/03	80.93	1457.29	11/03/03	82.46	1454.67	08/10/04	84.32	1453.90
10/20/03	79.84	1457.29	11/04/03	81.69	1455.44	09/07/04	82.33	1455.89
10/21/03	79.78	1457.35	11/06/03	80.94	1456.19	10/04/04	79.90	1458.32
10/29/03	79.56	1457.57	12/02/03	79.76	1458.46	11/09/04	78.39	1459.83
10/29/03	83.54	1453.59				12/07/04	77.73	1460.49

151-062-03DDD4 Spiritwood Aquifer

**MP Elev (msl,ft)=1,536.81
SI (ft.)=258-268**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
10/09/03	80.19	1455.80	11/01/03	92.84	1442.94	06/08/04	76.22	1460.59
10/16/03	79.76	1456.23	11/02/03	93.27	1442.51	07/13/04	78.50	1458.31
10/20/03	79.55	1456.44	11/03/03	81.96	1453.82	08/10/04	83.77	1453.04
10/20/03	80.37	1456.44	11/04/03	81.18	1454.60	09/01/04	82.90	1453.91
10/20/03	79.34	1456.44	11/06/03	80.39	1455.39	09/07/04	81.75	1455.06
10/29/03	78.96	1456.82	12/02/03	79.17	1457.64	10/04/04	79.32	1457.49
10/29/03	88.94	1446.84				11/09/04	77.80	1459.01
10/29/03	89.79	1445.99	05/04/04	76.57	1460.24	12/07/04	77.15	1459.66

151-062-03DDDD5
Spiritwood Aquifer

MP Elev (msl,ft)=1,535.95
SI (ft.)=250-275

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
10/29/03	78.38	1457.57	10/29/03	109.53	1426.42	10/29/03	108.65	1427.30
11/06/03	83.10	1452.85						

151-062-08ABB
Spiritwood Aquifer

MP Elev (msl,ft)=1,501.76
SI (ft.)=170-175

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/20/03	48.55	1453.21	11/02/03	43.90	1457.86	07/13/04	42.45	1459.31
09/02/03	46.71	1455.05	11/03/03	44.09	1457.67	08/10/04	46.01	1455.75
09/30/03	45.15	1456.61	11/04/03	44.17	1457.59	09/07/04	44.84	1456.92
10/27/03	43.53	1458.23	11/06/03	44.22	1457.54	10/04/04	43.07	1458.69
10/29/03	43.54	1458.22	12/02/03	43.08	1458.68	11/09/04	41.85	1459.91
10/30/03	43.58	1458.18				12/07/04	41.29	1460.47
10/31/03	43.62	1458.14	05/04/04	40.84	1460.92	11/01/03	43.74	1458.02
06/08/04	40.40	1461.36						

151-062-09ABB
Spiritwood Aquifer

MP Elev (msl,ft)=1,496.34
SI (ft.)=197-203

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/28/78	57.50	1438.24	09/29/84	49.28	1444.71	05/30/91	46.14	1450.20
07/07/78	59.32	1436.42	10/31/84	45.97	1448.02	06/28/91	46.78	1449.56
07/28/78	61.33	1434.41	12/06/84	44.39	1449.60	07/28/91	47.48	1448.86
08/09/78	66.09	1429.65				08/29/91	49.93	1446.41
09/01/78	64.65	1431.09	04/28/85	42.34	1451.65	09/28/91	48.13	1448.21
09/28/78	58.02	1437.72	05/29/85	45.43	1448.56	10/26/91	46.80	1449.54
12/15/78	53.13	1442.61	06/29/85	44.04	1449.95			
			07/27/85	53.60	1440.39	04/28/92	44.35	1451.99
05/17/79	51.28	1444.46	08/29/85	49.37	1444.62	05/28/92	44.49	1451.85
06/13/79	52.26	1443.48	09/29/85	46.15	1447.84	06/30/92	45.25	1451.09
07/11/79	53.00	1442.74	10/31/85	44.45	1449.54	07/29/92	46.97	1449.37
08/07/79	57.98	1437.76				08/29/92	49.67	1446.67
09/19/79	55.21	1440.53	03/31/86	42.33	1451.66	09/30/92	46.70	1449.64
10/03/79	53.10	1442.64	04/28/86	41.80	1452.19	10/29/92	45.97	1450.37
11/01/79	50.98	1444.76	05/31/86	42.53	1451.46			
12/18/79	48.70	1447.04	07/01/86	49.93	1444.06	04/03/93	44.20	1452.14
			07/30/86	46.90	1447.09	05/01/93	44.06	1452.28
04/08/80	46.85	1448.89	08/30/86	48.66	1445.33	05/29/93	43.83	1452.51
05/06/80	48.79	1446.95	09/29/86	47.82	1448.52	06/28/93	43.92	1452.42
06/04/80	56.90	1438.84	10/31/86	46.28	1450.06	07/29/93	43.05	1453.29
07/01/80	60.13	1435.61				08/30/93	46.00	1450.34
07/30/80	64.67	1431.07	04/28/87	43.50	1452.84	09/26/93	44.52	1451.82
08/28/80	56.94	1438.80	05/30/87	45.68	1450.66	10/30/93	42.77	1453.57
09/24/80	52.75	1442.99	07/02/87	46.39	1449.95			
12/23/80	48.63	1447.11	07/31/87	45.89	1450.45	04/06/94	40.24	1456.10
			08/30/87	45.58	1450.76	05/01/94	40.13	1456.21
04/10/81	47.05	1448.69	09/30/87	44.05	1452.29	05/29/94	40.02	1456.32
06/04/81	48.12	1447.62	10/29/87	43.31	1453.03	06/30/94	40.23	1456.11
06/29/81	47.36	1448.38	11/28/87	42.96	1453.38	07/31/94	43.34	1453.00
07/28/81	50.00	1445.74				08/28/94	42.30	1451.69
08/27/81	54.89	1440.85	03/30/88	41.99	1454.35	09/28/94	40.32	1453.67
09/24/81	51.65	1444.09	04/29/88	42.18	1454.16	10/28/94	38.80	1455.19
10/23/81	49.05	1446.69	05/30/88	43.39	1452.95			
11/18/81	47.95	1447.79	06/28/88	55.32	1441.02	04/29/95	36.52	1457.47
12/30/81	46.83	1448.91	07/31/88	58.51	1437.83	05/31/95	36.07	1457.92
			08/29/88	54.33	1442.01	06/28/95	41.49	1454.85
04/15/82	45.56	1450.18	09/30/88	49.59	1446.75	08/27/95	44.40	1451.94
05/27/82	45.10	1450.64	10/28/88	47.51	1448.83	09/28/95	41.74	1454.60
06/24/82	46.27	1449.47				10/28/95	40.39	1455.95
08/01/82	48.58	1447.16	04/27/89	44.10	1452.24			
09/04/82	52.54	1441.45	06/01/89	44.62	1451.72	05/01/96	38.67	1457.67
09/29/82	49.18	1444.81	06/26/89	48.35	1447.99	05/31/96	38.43	1457.91
11/02/82	45.93	1448.06	07/29/89	60.78	1435.56	06/29/96	40.37	1455.97
12/01/82	44.66	1449.33	08/29/89	56.33	1440.01	07/30/96	43.34	1453.00
			09/29/89	51.02	1445.32	08/30/96	45.56	1450.78
05/02/83	42.48	1451.51	10/30/89	48.69	1447.65	09/28/96	43.06	1453.28
06/04/83	44.17	1449.82	11/28/89	47.61	1448.73	10/28/96	41.02	1455.32
06/28/83	46.00	1447.99						
08/02/83	55.22	1438.77	04/04/90	45.61	1450.73	04/30/97	38.39	1457.95
08/30/83	50.74	1443.25	04/30/90	45.40	1450.94	06/01/97	38.16	1458.18
09/29/83	46.78	1447.21	05/31/90	46.49	1449.85	06/28/97	41.88	1454.46
10/30/83	44.88	1449.11	06/30/90	46.16	1450.18	07/29/97	41.83	1454.51
11/27/83	43.94	1450.05	07/28/90	52.37	1443.97	08/30/97	42.42	1453.92
			08/29/90	56.18	1440.16	09/30/97	40.79	1455.55
04/04/84	41.98	1452.01	09/27/90	52.96	1443.38	10/31/97	39.02	1457.32
04/30/84	41.60	1452.39	10/28/90	49.79	1446.55			
05/31/84	43.63	1450.36	11/27/90	48.40	1447.94	07/01/98	37.99	1458.35
07/01/84	44.27	1449.72				08/02/98	45.12	1451.22
08/02/84	53.65	1440.34	03/28/91	46.47	1449.87	08/30/98	46.43	1449.91
08/31/84	55.30	1438.69	04/29/91	46.15	1450.19	09/29/98	43.88	1452.46

151-062-09ABB (Continued), MP Elev (msl,ft)=1496.34 Spiritwood Aquifer SI (ft.)=197-203

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
11/07/98	40.90	1455.44	07/30/01	35.62	1460.72	09/30/03	40.95	1455.39
			09/02/01	37.46	1458.88	10/27/03	39.05	1457.29
06/04/99	37.18	1459.16	09/29/01	36.51	1459.83	10/29/03	39.08	1457.26
07/01/99	39.00	1457.34	11/10/01	35.17	1461.17	10/30/03	40.59	1455.75
08/01/99	41.35	1454.99				10/31/03	41.27	1455.07
09/01/99	41.24	1455.10	05/30/02	34.18	1462.16	11/01/03	42.01	1454.33
10/03/99	38.73	1457.61	06/28/02	34.47	1461.87	11/02/03	42.59	1453.75
10/31/99	37.74	1458.60	07/29/02	40.12	1456.22	11/03/03	42.03	1454.31
			08/29/02	42.17	1454.17	11/04/03	41.32	1455.02
07/01/00	37.98	1458.36	09/29/02	38.79	1457.55	11/06/03	40.61	1455.73
08/01/00	39.59	1456.75	10/31/02	37.17	1459.17			
08/10/00	40.70	1455.64				05/04/04	35.68	1460.66
09/06/00	39.65	1456.69	05/08/03	34.92	1461.42	06/08/04	35.32	1461.02
10/03/00	37.99	1458.35	06/05/03	34.99	1461.35	07/13/04	37.50	1458.84
10/11/00	37.58	1458.76	07/10/03	35.45	1460.89	08/10/04	42.57	1453.77
10/28/00	37.07	1459.27	07/22/03	38.50	1457.84	09/07/04	40.77	1455.57
			08/05/03	42.09	1454.25	10/04/04	38.43	1457.91
06/07/01	34.59	1461.75	08/12/03	41.24	1455.10	11/09/04	36.94	1459.40
06/30/01	34.51	1461.83	09/02/03	42.86	1453.48	12/07/04	36.28	1460.06

151-062-09DAA Spiritwood Aquifer

**MP Elev (msl,ft)=1,520.21
SI (ft.)=198-208**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
09/02/03	66.77	1453.44	11/02/03	66.38	1453.83	07/13/04	61.05	1459.16
09/30/03	64.50	1455.71	11/03/03	65.46	1454.75	08/10/04	66.38	1453.83
10/27/03	62.61	1457.60	11/04/03	64.69	1455.52	09/07/04	64.34	1455.87
10/29/03	62.56	1457.65	11/06/03	63.98	1456.23	10/04/04	61.87	1458.34
10/30/03	64.59	1455.62	12/02/03	61.69	1458.52	11/09/04	60.33	1459.88
10/31/03	65.31	1454.90				12/07/04	59.66	1460.55
11/01/03	66.03	1454.18	05/04/04	59.12	1461.09	11/02/03	66.59	1453.62
06/08/04	58.77	1461.44						

151-062-11AAD Spiritwood Aquifer

**MP Elev (msl,ft)=1,521.89
SI (ft.)=218-223**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/20/03	71.40	1453.22	11/02/03	66.79	1455.10	05/04/04	60.42	1461.47
09/02/03	67.80	1454.09	11/02/03	66.85	1455.04	06/08/04	60.08	1461.81
09/30/03	65.52	1456.37	11/02/03	66.71	1455.18	07/13/04	62.26	1459.63
10/27/03	63.62	1458.27	11/03/03	66.10	1455.79	08/10/04	67.32	1454.57
10/29/03	63.65	1458.24	11/04/03	65.48	1456.41	09/07/04	65.35	1456.54
10/30/03	65.07	1456.82	11/06/03	64.91	1456.98	10/04/04	63.01	1458.88
10/31/03	65.70	1456.19	12/02/03	62.83	1459.06	11/09/04	61.55	1460.34
11/01/03	66.34	1455.55				12/07/04	60.90	1460.99

151-062-11DCC No Obs Well Installed Aquifer

**MP Elev (msl,ft)=1,498.00
SI (ft.)=0-50**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
07/22/03	50.22	1447.78						

151-062-12DCC
Spiritwood Aquifer

MP Elev (msl,ft)=1,513.20
SI (ft.)=235-238

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
12/15/78	63.84	1449.36	12/06/84	58.67	1454.53	07/28/91	60.80	1452.40
05/18/79	62.07	1451.13	04/28/85	56.72	1456.48	08/31/91	61.68	1451.52
06/13/79	65.18	1448.02	05/28/85	61.38	1451.82	09/28/91	59.58	1453.62
07/11/79	66.43	1446.77	06/29/85	57.70	1455.50	10/25/91	58.31	1454.89
08/07/79	73.11	1440.09	07/27/85	69.43	1443.77	01/06/92	56.79	1456.41
09/20/79	67.15	1446.05	08/29/85	62.86	1450.34	04/28/92	56.51	1456.69
10/03/79	65.30	1447.90	09/28/85	60.21	1452.99	05/28/92	56.59	1456.61
11/01/79	63.50	1449.70	10/29/85	58.86	1454.34	06/30/92	57.68	1455.52
12/18/79	61.48	1451.72				07/29/92	59.99	1453.21
			03/31/86	56.38	1456.82	08/29/92	60.42	1452.78
04/08/80	59.80	1453.40	04/28/86	56.44	1456.76	09/30/92	58.18	1455.02
05/06/80	62.66	1450.54	05/31/86	59.83	1453.37	10/29/92	57.30	1455.90
06/05/80	68.83	1444.37	07/01/86	67.11	1446.09			
07/02/80	74.32	1438.88	07/30/86	60.78	1452.42	04/03/93	56.23	1456.97
07/30/80	77.31	1435.89	08/29/86	62.50	1450.70	05/01/93	55.52	1457.68
08/28/80	68.58	1444.62	09/29/86	59.45	1453.75	05/29/93	55.33	1457.87
09/24/80	65.15	1448.05	10/31/86	58.14	1455.06	06/29/93	55.33	1457.87
10/23/80	63.37	1449.83				07/29/93	54.72	1458.48
11/21/80	62.27	1450.93	04/28/87	56.00	1457.20	08/30/93	57.50	1455.70
12/23/80	61.55	1451.65	05/30/87	57.44	1455.76	09/26/93	55.84	1457.36
			07/02/87	57.97	1455.23	11/01/93	53.85	1459.35
04/09/81	59.97	1453.23	07/31/87	57.52	1455.68			
05/05/81	59.74	1453.46	08/31/87	57.19	1456.01	04/06/94	51.82	1461.38
06/04/81	60.92	1452.28	10/01/87	56.31	1456.89	05/01/94	51.67	1461.53
06/30/81	60.15	1453.05	10/29/87	55.12	1458.08	05/28/94	51.62	1461.58
07/29/81	64.18	1449.02	11/29/87	54.70	1458.50	07/01/94	51.78	1461.42
08/27/81	68.20	1445.00				07/30/94	56.82	1456.38
09/24/81	63.93	1449.27	03/30/88	53.81	1459.39	08/28/94	56.68	1456.52
10/23/81	61.60	1451.60	04/29/88	55.02	1458.18	09/28/94	53.93	1459.27
11/18/81	60.60	1452.60	05/30/88	56.09	1457.11	10/28/94	52.69	1460.51
12/31/81	59.62	1453.58	06/28/88	69.69	1443.51	12/30/94	51.50	1461.70
			07/31/88	70.14	1443.06			
04/15/82	58.30	1454.90	08/29/88	64.76	1448.44	04/30/95	50.84	1462.36
05/28/82	57.86	1455.34	09/30/88	61.01	1452.19	05/31/95	50.59	1462.61
06/24/82	61.36	1451.84	10/28/88	58.99	1454.21	06/28/95	53.05	1460.15
08/01/82	64.63	1448.57				08/27/95	55.59	1457.61
09/04/82	66.36	1446.84	04/27/89	55.70	1457.50	09/28/95	53.14	1460.06
09/29/82	62.90	1450.30	05/31/89	56.54	1456.66	10/29/95	52.01	1461.19
11/02/82	60.10	1453.10	06/27/89	61.46	1451.74			
12/01/82	58.97	1454.23	07/29/89	71.44	1441.76	05/02/96	50.59	1462.61
			08/30/89	67.89	1445.31	05/31/96	50.32	1462.88
04/05/83	57.11	1456.09	09/30/89	61.99	1451.21	06/29/96	52.17	1461.03
05/02/83	56.79	1456.41	10/31/89	60.39	1452.81	07/30/96	56.10	1457.10
06/04/83	59.36	1453.84	11/29/89	59.22	1453.98	09/01/96	58.44	1454.76
06/28/83	62.56	1450.64				09/28/96	54.98	1458.22
08/02/83	69.88	1443.32	04/04/90	57.25	1455.95	10/28/96	52.77	1460.43
08/30/83	64.17	1449.03	04/30/90	57.29	1455.91	11/13/96	52.25	1460.95
09/29/83	60.73	1452.47	05/31/90	59.73	1453.47			
10/30/83	59.01	1454.19	06/30/90	58.11	1455.09	04/30/97	50.50	1462.70
11/27/83	58.18	1455.02	07/28/90	67.71	1445.49	06/01/97	50.53	1462.67
			08/29/90	66.95	1446.25	06/28/97	55.03	1458.17
04/04/84	56.95	1456.25	09/27/90	63.74	1449.46	07/10/97	52.06	1461.14
04/30/84	55.96	1457.24	10/28/90	61.24	1451.96	07/30/97	56.94	1456.26
05/31/84	60.28	1452.92	11/27/90	60.03	1453.17	08/30/97	56.42	1456.78
06/30/84	59.26	1453.94				09/30/97	52.70	1460.50
07/31/84	68.67	1444.53	03/28/91	58.10	1455.10	10/02/97	52.49	1460.71
08/30/84	69.25	1443.95	04/29/91	58.02	1455.18	10/31/97	51.48	1461.72
09/29/84	62.80	1450.40	05/30/91	57.94	1455.26			
10/29/84	60.24	1452.96	06/29/91	58.49	1454.71	07/01/98	50.74	1462.46

151-062-12DCC

(Continued), MP Elev (msl, ft)=1513.2 Spiritwood Aquifer SI (ft.)=235-238

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/02/98	58.53	1454.67	07/30/01	48.32	1464.88	09/30/03	53.16	1460.04
08/30/98	58.45	1454.75	09/02/01	50.28	1462.92	10/27/03	51.51	1461.69
09/29/98	56.03	1457.17	09/29/01	49.06	1464.14	10/29/03	51.56	1461.64
11/07/98	53.41	1459.79	10/29/01	48.06	1465.14	10/30/03	52.01	1461.19
			11/10/01	47.84	1465.36	10/31/03	52.41	1460.79
06/04/99	50.35	1462.85				11/01/03	52.79	1460.41
07/02/99	51.70	1461.50	05/30/02	46.87	1466.33	11/02/03	53.08	1460.12
08/02/99	54.69	1458.51	06/28/02	47.20	1466.00	11/02/03	53.17	1460.03
09/01/99	54.55	1458.65	07/29/02	54.64	1458.56	11/03/03	53.05	1460.15
10/02/99	51.56	1461.64	08/01/02	53.94	1459.26	11/04/03	52.68	1460.52
10/31/99	50.52	1462.68	08/29/02	54.57	1458.63	11/06/03	52.33	1460.87
			09/29/02	51.50	1461.70	12/02/03	50.81	1462.39
07/01/00	50.50	1462.70	10/31/02	49.64	1463.56			
08/02/00	56.44	1456.76	12/04/02	48.86	1464.34	05/04/04	48.67	1464.53
09/06/00	52.02	1461.18				06/08/04	48.40	1464.80
10/03/00	50.52	1462.68	05/08/03	47.66	1465.54	07/13/04	50.22	1462.98
10/12/00	50.06	1463.14	06/05/03	47.78	1465.42	08/10/04	54.56	1458.64
10/28/00	49.72	1463.48	07/10/03	48.92	1464.28	09/07/04	52.95	1460.25
			08/05/03	56.71	1456.49	10/04/04	50.93	1462.27
06/05/01	47.49	1465.71	08/12/03	53.55	1459.65	11/09/04	49.62	1463.58
06/30/01	47.44	1465.76	09/02/03	55.32	1457.88	12/07/04	49.05	1464.15

151-062-13CBB
Spiritwood Aquifer

MP Elev (msl,ft)=1,498.40
SI (ft.)=238-241

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
12/14/78	49.40	1449.00	09/29/84	49.51	1448.89	06/28/91	44.45	1453.95
05/17/79	47.69	1450.71	10/29/84	46.04	1452.36	07/28/91	49.48	1448.92
06/01/79	47.53	1450.87	12/06/84	44.27	1454.13	08/29/91	48.46	1449.94
06/13/79	53.37	1445.03	04/28/85	42.36	1456.04	09/28/91	45.52	1452.88
06/25/79	50.50	1447.90	05/28/85	50.29	1448.11	10/25/91	44.14	1454.26
07/11/79	58.43	1439.97	06/29/85	44.16	1454.24	04/28/92	41.69	1456.71
08/08/79	64.15	1434.25	07/27/85	63.75	1434.65	05/28/92	41.74	1456.66
08/17/79	61.12	1437.28	08/29/85	49.56	1448.84	06/30/92	44.43	1453.97
09/20/79	53.60	1444.80	09/28/85	46.20	1452.20	07/29/92	47.64	1450.76
10/03/79	51.30	1447.10	10/29/85	44.63	1453.77	08/29/92	47.19	1451.21
11/01/79	49.16	1449.24	03/31/86	42.11	1456.29	09/30/92	44.25	1454.15
12/18/79	46.90	1451.50	04/28/86	41.62	1456.78	10/29/92	43.19	1455.21
04/04/80	45.14	1453.26	05/31/86	46.79	1451.61	04/03/93	41.38	1457.02
05/06/80	49.27	1449.13	07/01/86	59.59	1438.81	05/01/93	41.19	1457.21
06/05/80	56.46	1441.94	07/30/86	47.42	1450.98	05/29/93	40.97	1457.43
07/02/80	64.88	1433.52	08/29/86	49.63	1448.77	06/29/93	41.01	1457.39
07/30/80	68.68	1429.72	09/29/86	45.44	1452.96	07/29/93	40.27	1458.13
08/29/80	55.14	1443.26	10/31/86	43.82	1454.58	08/30/93	44.17	1454.23
09/24/80	50.94	1447.46	04/28/87	41.02	1457.38	09/26/93	42.02	1456.38
10/23/80	48.88	1449.52	05/30/87	43.59	1454.81	10/30/93	40.07	1458.33
11/21/80	47.69	1450.71	07/02/87	44.47	1453.93	04/06/94	37.57	1460.83
12/23/80	46.90	1451.50	07/31/87	43.60	1454.80	05/01/94	37.51	1460.89
04/09/81	45.37	1453.03	08/31/87	43.20	1455.20	05/29/94	37.53	1460.87
05/05/81	45.09	1453.31	10/01/87	41.57	1456.83	06/30/94	37.83	1460.57
06/30/81	45.70	1452.70	10/29/87	40.80	1457.60	07/30/94	43.45	1454.95
07/29/81	51.90	1446.50	11/28/87	40.44	1457.96	08/28/94	45.11	1453.29
08/27/81	56.30	1442.10	03/30/88	39.42	1458.98	09/28/94	40.52	1457.88
09/25/81	51.97	1446.43	04/29/88	43.00	1455.40	10/29/94	38.95	1459.45
10/23/81	47.30	1451.10	05/30/88	43.21	1455.19	04/30/95	36.80	1461.60
11/18/81	46.17	1452.23	06/28/88	63.94	1434.46	05/31/95	36.60	1461.80
12/31/81	43.75	1454.65	07/31/88	60.70	1437.70	06/28/95	39.84	1458.56
04/15/82	43.75	1454.65	08/29/88	52.24	1446.16	08/27/95	42.79	1455.61
05/28/82	43.30	1455.10	09/30/88	47.71	1450.69	09/28/95	39.49	1458.91
06/24/82	49.05	1449.35	10/28/88	44.93	1453.47	10/29/95	38.15	1460.25
08/01/82	56.10	1442.30	04/27/89	41.56	1456.84	05/01/96	36.55	1461.85
09/04/82	55.63	1442.77	05/31/89	42.44	1455.96	06/01/96	36.32	1462.08
09/29/82	49.20	1449.20	06/27/89	51.69	1446.71	06/29/96	38.78	1459.62
11/02/82	45.86	1452.54	07/29/89	61.49	1436.91	07/30/96	44.55	1453.85
11/30/82	44.55	1453.85	08/30/89	56.40	1442.00	08/30/96	44.43	1453.97
04/05/83	42.60	1455.80	09/29/89	48.43	1449.97	09/28/96	40.96	1457.44
05/01/83	42.36	1456.04	10/31/89	46.17	1452.23	10/28/96	38.94	1459.46
06/04/83	46.86	1451.54	11/28/89	45.04	1453.36	04/30/97	36.40	1462.00
06/28/83	51.75	1446.65	04/04/90	43.07	1455.33	06/02/97	36.67	1461.73
08/02/83	59.80	1438.60	04/30/90	42.89	1455.51	06/28/97	42.69	1455.71
08/30/83	51.02	1447.38	05/31/90	46.34	1452.06	07/10/97	33.35	1465.05
09/29/83	46.73	1451.67	06/30/90	44.03	1454.37	07/30/97	45.08	1453.32
10/30/83	44.73	1453.67	07/28/90	59.74	1438.66	08/30/97	45.39	1453.01
11/27/83	43.81	1454.59	08/30/90	54.36	1444.04	09/30/97	37.91	1460.49
04/04/84	41.88	1456.52	09/27/90	50.96	1447.44	10/31/97	37.43	1460.97
04/30/84	41.68	1456.72	10/28/90	47.25	1451.15	07/02/98	38.59	1459.81
05/31/84	50.49	1447.91	11/27/90	45.80	1452.60	08/01/98	48.86	1449.54
07/01/84	45.29	1453.11	04/29/91	43.63	1454.77	08/31/98	51.91	1446.49
07/31/84	61.40	1437.00	05/30/91	43.57	1454.83	09/29/98	42.93	1455.47
08/31/84	57.38	1441.02						

151-062-13CBB (Continued), MP Elev (msl, ft)=1498.4 Spiritwood Aquifer SI (ft.)=238-241

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
11/08/98	39.50	1458.90	09/02/01	37.11	1461.29	10/27/03	37.97	1460.43
			09/29/01	35.28	1463.12	10/29/03	37.97	1460.43
06/04/99	36.15	1462.25	11/10/01	33.75	1464.65	10/30/03	38.38	1460.02
07/01/99	38.14	1460.26				10/31/03	38.94	1459.46
08/01/99	42.03	1456.37	05/30/02	32.79	1465.61	11/01/03	39.40	1459.00
09/01/99	41.75	1456.65	06/28/02	33.25	1465.15	11/02/03	39.73	1458.67
10/02/99	37.80	1460.60	07/29/02	41.74	1456.66	11/03/03	39.68	1458.72
10/31/99	36.42	1461.98	08/29/02	41.65	1456.75	11/04/03	39.28	1459.12
			09/29/02	36.36	1462.04	11/06/03	38.86	1459.54
07/01/00	36.87	1461.53	10/31/02	35.90	1462.50	12/02/03	36.94	1461.46
08/01/00	47.04	1451.36						
09/06/00	38.51	1459.89	05/08/03	33.55	1464.85	05/04/04	34.53	1463.87
10/03/00	36.62	1461.78	06/05/03	33.69	1464.71	06/08/04	34.25	1464.15
10/12/00	36.04	1462.36	07/10/03	35.37	1463.03	07/13/04	37.15	1461.25
10/28/00	35.67	1462.73	07/22/03	36.78	1461.62	08/10/04	42.66	1455.74
			08/05/03	45.70	1452.70	09/07/04	39.76	1458.64
06/05/01	33.25	1465.15	08/12/03	40.90	1457.50	10/04/04	37.17	1461.23
06/30/01	33.33	1465.07	09/02/03	43.15	1455.25	11/09/04	35.66	1462.74
07/30/01	34.46	1463.94	09/30/03	39.97	1458.43	12/07/04	34.98	1463.42

**151-062-14AAA
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,513.00
SI (ft.)=218-224**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
09/16/69	63.01	1449.99	09/01/78	75.85	1437.15	06/30/84	60.25	1452.75
11/19/69	63.03	1449.97	09/12/78	73.23	1439.77	07/31/84	73.30	1439.70
			09/29/78	68.85	1444.15	08/30/84	71.78	1441.22
02/18/70	63.05	1449.95	10/13/78	67.23	1445.77	09/29/84	63.81	1449.19
04/15/70	63.08	1449.92	11/21/78	64.95	1448.05	10/29/84	60.66	1452.34
07/07/70	62.79	1450.21	12/15/78	64.24	1448.76	12/06/84	58.98	1454.02
10/06/70	62.92	1450.08						
11/30/70	62.80	1450.20	05/18/79	62.62	1450.38	04/28/85	56.86	1456.14
			06/13/79	66.52	1446.48	05/28/85	62.56	1450.44
11/30/71	62.58	1450.42	07/11/79	69.45	1443.55	06/29/85	58.64	1454.36
			08/07/79	76.00	1437.00	07/27/85	73.76	1439.24
12/05/72	62.76	1450.24	09/20/79	68.06	1444.94	08/29/85	64.08	1448.92
			10/03/79	65.85	1447.15	09/28/85	60.70	1452.30
12/05/73	63.23	1449.77	11/01/79	63.75	1449.25	10/29/85	59.11	1453.89
			12/18/79	61.55	1451.45			
12/03/74	62.00	1451.00				03/31/86	57.36	1455.64
			04/08/80	59.74	1453.26	04/28/86	56.88	1456.12
05/08/75	61.84	1451.16	05/06/80	63.37	1449.63	05/31/86	60.09	1452.91
06/11/75	61.69	1451.31	06/05/80	69.61	1443.39	07/01/86	70.55	1442.45
07/22/75	61.81	1451.19	07/02/80	77.37	1435.63	07/30/86	62.39	1450.61
08/14/75	62.06	1450.94	07/30/80	80.93	1432.07	08/29/86	64.39	1448.61
09/12/75	61.98	1451.02	08/28/80	69.70	1443.30	09/29/86	60.53	1452.47
10/08/75	61.82	1451.18	09/24/80	65.60	1447.40	10/31/86	59.00	1454.00
11/08/75	61.92	1451.08	10/23/80	63.55	1449.45			
12/02/75	61.70	1451.30	11/21/80	62.38	1450.62	04/28/87	56.27	1456.73
			12/23/80	61.60	1451.40	05/30/87	58.66	1454.34
01/13/76	61.85	1451.15				07/02/87	59.25	1453.75
02/11/76	61.78	1451.22	04/09/81	60.06	1452.94	07/31/87	58.69	1454.31
03/17/76	61.77	1451.23	05/05/81	59.78	1453.22	08/31/87	58.34	1454.66
04/15/76	61.70	1451.30	06/04/81	61.18	1451.82	10/01/87	56.71	1456.29
05/12/76	62.22	1450.78	06/30/81	60.35	1452.65	10/29/87	56.00	1457.00
06/07/76	66.52	1446.48	07/29/81	65.18	1447.82	11/28/87	55.63	1457.37
07/16/76	69.30	1443.70	08/27/81	69.82	1443.18			
08/04/76	70.58	1442.42	09/24/81	64.67	1448.33	03/30/88	54.63	1458.37
09/09/76	66.56	1446.44	10/23/81	61.96	1451.04	04/29/88	56.31	1456.69
10/13/76	64.44	1448.56	11/18/81	60.85	1452.15	05/30/88	57.10	1455.90
12/03/76	63.27	1449.73	12/31/81	59.74	1453.26	06/28/88	74.42	1438.58
						07/31/88	74.06	1438.94
07/27/77	79.74	1433.26	04/15/82	58.42	1454.58	08/29/88	67.20	1445.80
08/05/77	79.25	1433.75	05/28/82	57.97	1455.03	09/30/88	57.39	1455.61
08/19/77	78.83	1434.17	06/24/82	62.53	1450.47	10/28/88	60.11	1452.89
08/30/77	74.35	1438.65	08/01/82	66.73	1446.27			
09/14/77	69.52	1443.48	09/04/82	68.39	1444.61	04/27/89	56.78	1456.22
09/28/77	67.73	1445.27	09/29/82	63.74	1449.26	05/31/89	57.51	1455.49
11/08/77	64.65	1448.35	11/02/82	60.47	1452.53	06/27/89	64.71	1448.29
			11/30/82	59.21	1453.79	07/29/89	75.64	1437.36
01/17/78	63.27	1449.73				08/30/89	70.40	1442.60
02/13/78	62.99	1450.01	04/05/83	57.25	1455.75	09/29/89	63.62	1449.38
03/20/78	62.90	1450.10	05/01/83	57.10	1455.90	10/31/89	61.32	1451.68
04/13/78	62.65	1450.35	06/04/83	60.45	1452.55	11/28/89	60.22	1452.78
05/04/78	62.56	1450.44	06/28/83	63.81	1449.19			
05/17/78	62.95	1450.05	08/02/83	72.86	1440.14	04/04/90	57.90	1455.10
06/01/78	62.92	1450.08	08/30/83	65.42	1447.58	04/30/90	58.10	1454.90
06/05/78	62.86	1450.14	09/29/83	61.39	1451.61	05/31/90	61.12	1451.88
06/28/78	73.39	1439.61	10/30/83	59.40	1453.60	06/30/90	58.89	1454.11
07/07/78	71.49	1441.51	11/27/83	58.47	1454.53	07/28/90	70.89	1442.11
07/12/78	69.52	1443.48				08/29/90	69.49	1443.51
07/28/78	77.49	1435.51	04/04/84	56.56	1456.44	09/27/90	65.85	1447.15
08/09/78	83.96	1429.04	04/30/84	56.17	1456.83	10/28/90	62.39	1450.61
08/21/78	86.30	1426.70	05/31/84	61.97	1451.03	11/27/90	61.00	1452.00

151-062-14AAA (Continued),MP Elev (msl,ft)=1513Spiritwood AquiferSI (ft.)=218-224

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
			10/29/95	53.18	1459.82	09/02/01	51.94	1461.06
03/28/91	59.12	1453.88				09/29/01	50.34	1462.66
04/29/91	58.80	1454.20	05/01/96	51.58	1461.42	10/29/01	49.09	1463.91
05/30/91	58.75	1454.25	06/01/96	51.37	1461.63	11/10/01	48.89	1464.11
06/28/91	59.56	1453.44	06/29/96	53.58	1459.42			
07/28/91	63.32	1449.68	07/30/96	58.12	1454.88	05/30/02	47.91	1465.09
08/29/91	63.23	1449.77	08/30/96	59.15	1453.85	06/28/02	48.35	1464.65
09/28/91	60.67	1452.33	09/28/96	56.04	1456.96	07/29/02	56.74	1456.26
10/25/91	59.33	1453.67	10/28/96	53.95	1459.05	08/01/02	56.61	1456.39
			11/13/96	53.45	1459.55	08/29/02	56.39	1456.61
01/06/92	57.82	1455.18				09/29/02	52.62	1460.38
04/28/92	56.89	1456.11	04/30/97	51.49	1461.51	10/31/02	50.75	1462.25
05/28/92	56.94	1456.06	06/01/97	51.72	1461.28	12/04/02	50.00	1463.00
06/30/92	58.93	1454.07	06/28/97	57.25	1455.75			
07/29/92	61.56	1451.44	07/10/97	53.44	1459.56	05/08/03	48.64	1464.36
08/29/92	62.23	1450.77	07/30/97	59.04	1453.96	06/05/03	48.78	1464.22
09/29/92	61.56	1451.44	08/30/97	58.63	1454.37	07/10/03	50.09	1462.91
09/30/92	59.35	1453.65	09/30/97	53.88	1459.12	07/22/03	51.70	1461.30
10/29/92	58.33	1454.67	10/02/97	53.64	1459.36	08/05/03	59.58	1453.42
			10/31/97	52.42	1460.58	08/12/03	55.90	1457.10
04/03/93	56.60	1456.40				09/02/03	57.90	1455.10
05/01/93	56.42	1456.58	07/02/98	53.06	1459.94	09/30/03	55.14	1457.86
05/29/93	56.20	1456.80	08/01/98	60.22	1452.78	10/27/03	53.21	1459.79
06/29/93	56.23	1456.77	08/30/98	59.75	1453.25	10/29/03	53.22	1459.78
07/29/93	55.51	1457.49	09/29/98	57.66	1455.34	10/30/03	54.10	1458.90
08/30/93	59.09	1453.91	11/07/98	54.49	1458.51	10/31/03	54.63	1458.37
09/26/93	57.10	1455.90				11/01/03	55.16	1457.84
10/30/93	55.22	1457.78	06/04/99	51.13	1461.87	11/02/03	55.54	1457.46
			07/01/99	53.00	1460.00	11/02/03	55.63	1457.37
04/06/94	52.77	1460.23	08/01/99	56.52	1456.48	11/02/03	55.62	1457.38
05/01/94	52.68	1460.32	09/01/99	56.22	1456.78	11/03/03	55.26	1457.74
05/28/94	52.65	1460.35	10/02/99	52.61	1460.39	11/04/03	54.75	1458.25
06/30/94	52.95	1460.05	10/31/99	51.39	1461.61	11/06/03	54.25	1458.75
07/30/94	57.85	1455.15				12/02/03	52.29	1460.71
08/28/94	59.53	1453.47	07/01/00	51.75	1461.25			
09/28/94	55.56	1457.44	08/01/00	58.15	1454.85	05/04/04	49.90	1463.10
10/29/94	53.84	1459.16	09/06/00	53.38	1459.62	06/08/04	49.60	1463.40
12/30/94	52.59	1460.41	10/03/00	51.57	1461.43	07/13/04	51.99	1461.01
			10/12/00	51.19	1461.81	08/10/04	57.22	1455.78
04/30/95	51.90	1461.10	10/28/00	50.83	1462.17	09/07/04	54.97	1458.03
05/31/95	51.65	1461.35				10/04/04	52.52	1460.48
06/28/95	54.62	1458.38	06/05/01	48.48	1464.52	11/09/04	51.04	1461.96
08/27/95	57.72	1455.28	06/30/01	48.44	1464.56	12/07/04	50.38	1462.62
09/28/95	54.49	1458.51	07/30/01	49.56	1463.44			

**151-062-14BBB
Warwick Aquifer**

**MP Elev (msl,ft)=1,492.99
SI (ft.)=0-19.1**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
05/18/70	15.30	1477.69				09/28/76	15.80	1477.19
05/22/70	14.70	1478.29	03/20/73	15.80	1477.19	12/28/76	16.30	1476.69
06/17/70	13.80	1479.19	06/21/73	16.40	1476.59			
07/22/70	13.50	1479.49	09/21/73	16.60	1476.39	03/21/77	16.00	1476.99
08/20/70	14.50	1478.49	12/21/73	15.90	1477.09	07/07/77	15.20	1477.79
09/15/70	14.70	1478.29				09/19/77	15.90	1477.09
10/22/70	14.90	1478.09	04/05/74	16.70	1476.29	12/29/77	16.30	1476.69
11/23/70	15.20	1477.79	05/23/74	14.20	1478.79			
12/22/70	15.10	1477.89	06/19/74	12.20	1480.79	03/23/78	16.70	1476.29
			09/23/74	14.00	1478.99	07/26/78	14.40	1478.59
01/26/71	15.70	1477.29	12/16/74	14.70	1478.29	09/27/78	15.30	1477.69
02/23/71	15.70	1477.29				12/11/78	15.70	1477.29
03/18/71	16.00	1476.99	04/03/75	15.00	1477.99			
04/22/71	15.20	1477.79	05/05/75	14.20	1478.79	06/20/79	12.70	1480.29
06/18/71	14.80	1478.19	05/29/75	14.10	1478.89	09/06/79	13.90	1479.09
09/17/71	15.80	1477.19	06/18/75	14.30	1478.69			
12/21/71	16.00	1476.99	09/17/75	15.20	1477.79	03/17/80	15.40	1477.59
			12/18/75	15.40	1477.59	06/25/80	14.60	1478.39
03/17/72	15.60	1477.39				09/30/80	14.30	1478.69
06/19/72	15.50	1477.49	03/16/76	15.80	1477.19	09/20/72	16.10	1476.89
06/29/76	14.90	1478.09						

**151-062-14DDD
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,486.28
SI (ft.)=218-223**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/20/03	38.86	1447.42	11/02/03	29.62	1456.66	07/13/04	28.02	1458.26
09/02/03	33.94	1452.34	11/03/03	29.71	1456.57	08/10/04	33.57	1452.71
09/30/03	30.40	1455.88	11/04/03	29.42	1456.86	09/07/04	30.16	1456.12
10/27/03	28.35	1457.93	11/06/03	29.06	1457.22	10/04/04	27.45	1458.83
10/29/03	28.33	1457.95	12/02/03	27.22	1459.06	11/09/04	25.88	1460.40
10/30/03	28.62	1457.66				12/07/04	25.18	1461.10
10/31/03	28.96	1457.32	05/04/04	24.72	1461.56	11/01/03	29.34	1456.94
06/08/04	24.50	1461.78						

**151-062-15AAA
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,494.26
SI (ft.)=197-203**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
11/19/69	45.15	1449.07	11/21/78	47.68	1446.54	04/28/85	39.17	1455.05
04/15/70	45.24	1448.98	05/17/79	45.20	1449.02	05/28/85	43.80	1450.42
07/07/70	44.96	1449.26	06/13/79	48.10	1446.12	06/29/85	41.06	1453.16
10/06/70	45.08	1449.14	07/11/79	49.95	1444.27	07/27/85	54.99	1439.23
11/30/70	44.94	1449.28	08/07/79	55.94	1438.28	08/29/85	46.61	1447.61
11/30/71	44.72	1449.50	09/19/79	50.62	1443.60	09/29/85	43.15	1451.07
12/05/72	44.91	1449.31	10/03/79	48.31	1445.91	10/29/85	41.30	1452.92
12/05/73	45.40	1448.82	11/01/79	46.14	1448.08	03/31/86	39.20	1455.02
12/03/74	44.90	1449.32	12/18/79	43.80	1450.42	04/28/86	38.68	1455.54
05/08/75	44.79	1449.43	04/07/80	41.88	1452.34	05/31/86	41.03	1453.19
06/11/75	44.59	1449.63	05/05/80	45.89	1448.33	07/01/86	50.59	1443.63
07/22/75	44.69	1449.53	06/04/80	54.47	1439.75	07/30/86	44.44	1449.78
08/14/75	44.96	1449.26	07/01/80	59.08	1435.14	08/30/86	46.58	1447.64
09/12/75	44.89	1449.33	07/30/80	63.15	1431.07	09/29/86	42.51	1451.71
10/08/75	44.74	1449.48	08/28/80	52.24	1441.98	10/31/86	40.92	1453.30
11/08/75	44.82	1449.40	09/24/80	47.91	1446.31	04/28/87	38.13	1456.09
12/02/75	44.60	1449.62	10/23/80	50.80	1443.42	05/30/87	40.60	1453.62
01/13/76	44.70	1449.52	11/21/80	44.56	1449.66	07/02/87	41.31	1452.91
02/11/76	44.64	1449.58	12/23/80	43.76	1450.46	07/31/87	40.69	1453.53
04/15/76	44.58	1449.64	04/10/81	42.19	1452.03	08/30/87	40.38	1453.84
05/12/76	44.98	1449.24	05/05/81	42.96	1451.26	09/30/87	38.69	1455.53
06/07/76	50.91	1443.31	06/04/81	43.50	1450.72	10/29/87	37.94	1456.28
07/16/76	51.80	1442.42	06/30/81	42.57	1451.65	11/28/87	37.55	1456.67
08/04/76	53.22	1441.00	07/28/81	46.24	1447.98	04/29/88	37.11	1457.11
09/09/76	49.44	1444.78	08/27/81	51.88	1442.34	05/30/88	38.34	1455.88
10/13/76	47.39	1446.83	09/24/81	47.06	1447.16	06/28/88	55.26	1438.96
11/03/76	47.03	1447.19	10/23/81	44.28	1449.94	07/31/88	58.45	1435.77
12/03/76	46.08	1448.14	12/31/81	41.96	1452.26	08/29/88	49.78	1444.44
07/27/77	62.07	1432.15	04/15/82	40.62	1453.60	09/30/88	44.63	1449.59
08/04/77	60.99	1433.23	05/28/82	40.17	1454.05	10/28/88	42.37	1451.85
08/19/77	61.34	1432.88	06/24/82	43.70	1450.52	04/27/89	38.96	1455.26
08/30/77	57.60	1436.62	08/01/82	41.88	1452.34	06/01/89	39.68	1454.54
09/14/77	52.51	1441.71	09/04/82	50.25	1443.97	06/26/89	44.59	1449.63
09/28/77	50.63	1443.59	09/29/82	47.20	1447.02	07/29/89	58.62	1435.60
11/08/77	47.40	1446.82	11/02/82	42.70	1451.52	08/29/89	52.47	1441.75
01/17/78	43.97	1450.25	12/01/82	41.43	1452.79	09/29/89	45.96	1448.26
04/13/78	45.40	1448.82	04/05/83	39.51	1454.71	10/30/89	43.55	1450.67
05/04/78	45.30	1448.92	06/04/83	42.28	1451.94	11/28/89	42.43	1451.79
05/17/78	45.70	1448.52	06/28/83	44.58	1449.64	04/04/90	40.44	1453.78
06/01/78	45.63	1448.59	08/02/83	55.34	1438.88	04/30/90	40.25	1453.97
06/05/78	45.50	1448.72	08/30/83	48.09	1446.13	05/31/90	42.54	1451.68
06/28/78	54.47	1439.75	09/29/83	43.76	1450.46	06/30/90	41.26	1452.96
07/07/78	54.45	1439.77	10/30/83	41.80	1452.42	07/28/90	51.23	1442.99
07/12/78	52.20	1442.02	11/27/83	40.88	1453.34	08/29/90	52.09	1442.13
07/28/78	58.92	1435.30	04/04/84	38.99	1455.23	09/27/90	48.37	1445.85
08/09/78	64.98	1429.24	04/30/84	38.59	1455.63	10/28/90	44.67	1449.55
08/21/78	67.71	1426.51	05/31/84	43.03	1451.19	11/27/90	44.28	1449.94
09/01/78	59.13	1435.09	07/01/84	42.07	1452.15	03/28/91	41.37	1452.85
09/12/78	56.25	1437.97	08/02/84	53.08	1441.14	04/29/91	40.96	1453.26
09/29/78	51.75	1442.47	08/31/84	54.12	1440.10	05/30/91	40.91	1453.31
10/13/78	50.05	1444.17	09/29/84	46.54	1447.68	06/28/91	41.75	1452.47
			10/31/84	42.98	1451.24	07/28/91	44.14	1450.08
			12/07/84	41.29	1452.93	08/29/91	45.50	1448.72
						09/28/91	42.94	1451.28

151-062-15AAA

(Continued), MP Elev (msl, ft)=1494.26 Spiritwood Aquifer SI (ft.)=197-203

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
10/26/91	41.50	1452.72	09/28/96	39.19	1455.03	05/30/02	29.63	1464.59
01/06/92	39.53	1454.69	10/28/96	36.03	1458.19	06/28/02	30.02	1464.20
04/28/92	38.96	1455.26	11/13/96	35.10	1459.12	07/29/02	37.51	1456.71
05/28/92	39.17	1455.05	04/30/97	33.40	1460.82	08/01/02	38.11	1456.11
06/30/92	40.70	1453.52	06/01/97	33.54	1460.68	08/29/02	38.52	1455.70
07/29/92	42.93	1451.29	06/28/97	39.17	1455.05	09/29/02	34.47	1459.75
08/29/92	44.67	1449.55	07/29/97	39.55	1454.67	10/31/02	32.77	1461.45
09/30/92	41.59	1452.63	08/30/97	39.29	1454.93	12/04/02	31.58	1462.64
10/29/92	40.63	1453.59	09/30/97	36.19	1458.03	05/08/03	30.14	1464.08
04/03/93	39.02	1455.20	10/02/97	35.24	1458.98	06/05/03	30.27	1463.95
05/01/93	38.56	1455.66	10/31/97	34.31	1459.91	07/10/03	31.44	1462.78
05/29/93	38.34	1455.88	07/01/98	33.95	1460.27	07/22/03	32.85	1461.37
06/28/93	38.45	1455.77	08/02/98	42.49	1451.73	08/05/03	40.77	1453.45
07/29/93	37.63	1456.59	08/30/98	42.97	1451.25	08/12/03	37.40	1456.82
08/30/93	41.30	1452.92	09/29/98	39.68	1454.54	09/02/03	39.32	1454.90
09/26/93	39.34	1454.88	11/07/98	36.40	1457.82	09/30/03	36.60	1457.66
10/30/93	37.41	1456.81	06/04/99	32.75	1461.47	10/27/03	34.56	1459.70
04/06/94	34.88	1459.34	07/01/99	34.84	1459.38	10/29/03	34.60	1459.66
05/01/94	34.80	1459.42	08/01/99	38.37	1455.85	10/29/03	34.57	1459.69
05/29/94	34.78	1459.44	09/01/99	37.00	1457.22	10/29/03	34.61	1459.65
06/30/94	35.05	1459.17	10/02/99	34.48	1459.74	10/29/03	34.68	1459.58
07/31/94	40.22	1454.00	10/31/99	33.27	1460.95	10/29/03	34.83	1459.43
08/28/94	40.97	1453.25	07/01/00	33.69	1460.53	10/30/03	36.13	1458.13
09/28/94	37.78	1456.44	08/01/00	37.86	1456.36	10/31/03	36.70	1457.56
10/29/94	36.19	1458.03	08/09/00	36.81	1457.41	11/01/03	37.36	1456.90
12/30/94	34.29	1459.93	09/03/00	35.96	1458.26	11/02/03	37.83	1456.43
04/29/95	33.93	1460.29	10/03/00	33.54	1460.68	11/02/03	37.88	1456.38
05/31/95	33.70	1460.52	10/12/00	32.77	1461.45	11/02/03	37.77	1456.49
06/28/95	36.87	1457.35	10/28/00	32.58	1461.64	11/03/03	37.08	1457.18
08/27/95	38.80	1455.42	06/05/01	30.19	1464.03	11/04/03	36.41	1457.85
09/28/95	36.50	1457.72	06/30/01	30.14	1464.08	11/06/03	35.79	1458.47
10/28/95	35.27	1458.95	07/30/01	31.29	1462.93	12/02/03	33.63	1460.63
05/01/96	33.61	1460.61	09/02/01	33.73	1460.49	05/04/04	31.12	1463.14
05/31/96	33.40	1460.82	09/29/01	32.14	1462.08	06/08/04	30.80	1463.46
06/29/96	35.65	1458.57	10/29/01	30.64	1463.58	07/13/04	33.17	1461.09
07/30/96	40.02	1454.20	11/10/01	30.64	1463.58	08/10/04	38.68	1455.58
08/30/96	41.49	1452.73				09/07/04	36.43	1457.83
						10/04/04	33.86	1460.40
						11/09/04	32.30	1461.96
						12/07/04	31.63	1462.63

**151-062-15BBB
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,496.80
SI (ft.)=198-204**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
09/16/69	48.87	1447.93	06/24/82	44.58	1452.22	09/30/88	46.49	1450.31
11/19/69	48.86	1447.94	08/01/82	47.41	1449.39	10/28/88	44.29	1452.51
			09/04/82	51.79	1445.01			
02/18/70	48.84	1447.96	09/29/82	47.76	1449.04	04/27/89	40.66	1456.14
04/15/70	48.88	1447.92	11/02/82	44.46	1452.34	06/01/89	41.29	1455.51
07/07/70	49.15	1447.65	12/01/82	43.19	1453.61	06/26/89	45.30	1451.50
10/06/70	48.80	1448.00				07/29/89	59.28	1437.52
11/30/70	48.66	1448.14	04/05/83	40.85	1455.95	08/29/89	53.49	1443.31
			04/06/83	40.85	1455.95	09/29/89	47.44	1449.36
07/27/77	64.14	1432.66	05/02/83	40.99	1455.81	10/30/89	45.06	1451.74
08/05/77	63.28	1433.52	06/04/83	43.40	1453.40	11/28/89	43.95	1452.85
08/19/77	63.72	1433.08	06/28/83	45.32	1451.48			
08/30/77	60.76	1436.04	08/02/83	54.97	1441.83	04/04/90	41.83	1454.97
09/14/77	55.76	1441.04	08/30/83	49.40	1447.40	04/30/90	41.61	1455.19
09/28/77	53.85	1442.95	09/29/83	45.18	1451.62	05/31/90	43.36	1453.44
11/08/77	50.60	1446.20	10/30/83	43.06	1453.74	06/30/90	42.47	1454.33
			11/27/83	42.12	1454.68	07/28/90	50.72	1446.08
05/04/78	48.47	1448.33				08/29/90	52.78	1444.02
06/01/78	48.85	1447.95	04/04/84	40.18	1456.62	09/27/90	49.32	1447.48
06/28/78	56.57	1440.23	04/30/84	39.73	1457.07	10/28/90	45.78	1451.02
07/07/78	57.45	1439.35	05/31/84	42.88	1453.92	11/27/90	44.42	1452.38
07/28/78	61.00	1435.80	07/01/84	42.56	1454.24			
08/09/78	66.66	1430.14	08/02/84	53.01	1443.79	03/28/91	42.48	1454.32
09/01/78	62.34	1434.46	08/31/84	54.23	1442.57	04/29/91	42.19	1454.61
09/28/78	55.07	1441.73	09/29/84	47.39	1449.41	05/30/91	42.15	1454.65
12/15/78	50.10	1446.70	10/31/84	43.84	1452.96	06/28/91	42.86	1453.94
			12/06/84	42.27	1454.53	07/28/91	46.03	1450.77
05/17/79	48.29	1448.51				08/29/91	47.95	1448.85
06/13/79	50.50	1446.30	04/28/85	40.06	1456.74	09/28/91	45.56	1451.24
07/11/79	51.97	1444.83	05/29/85	43.56	1453.24	10/26/91	44.13	1452.67
08/07/79	57.57	1439.23	06/29/85	41.59	1455.21			
09/20/79	53.43	1443.37	07/27/85	53.10	1443.70	04/28/92	41.61	1455.19
10/03/79	51.13	1445.67	08/29/85	46.89	1449.91	05/28/92	41.77	1455.03
11/01/79	49.94	1446.86	09/29/85	43.49	1453.31	06/30/92	42.98	1453.82
12/18/79	46.60	1450.20	10/31/85	41.69	1455.11	07/29/92	44.92	1451.88
						08/29/92	47.30	1449.50
04/07/80	44.68	1452.12	03/31/86	39.35	1457.45	09/30/92	44.08	1452.72
05/05/80	47.80	1449.00	04/28/86	38.88	1457.92	10/29/92	43.24	1453.56
06/04/80	56.60	1440.20	05/31/86	40.20	1456.60			
07/01/80	60.48	1436.32	07/01/86	48.29	1448.51	04/03/93	41.40	1455.40
07/30/80	64.95	1431.85	07/30/86	43.93	1452.87	05/01/93	41.23	1455.57
08/28/80	54.85	1441.95	08/30/86	45.73	1451.07	05/29/93	40.99	1455.81
09/24/80	50.42	1446.38	09/29/86	45.18	1451.62	06/28/93	39.08	1457.72
10/23/80	48.20	1448.60	10/31/86	43.68	1453.12	07/29/93	40.25	1456.55
11/21/80	46.95	1449.85				08/30/93	43.78	1453.02
12/23/80	46.10	1450.70	04/28/87	40.79	1456.01	09/26/93	41.89	1454.91
			05/30/87	43.18	1453.62	10/30/93	39.94	1456.86
04/10/81	44.39	1452.41	07/02/87	43.80	1453.00			
05/05/81	44.09	1452.71	07/31/87	43.25	1453.55	04/06/94	37.60	1459.20
06/04/81	43.52	1453.28	08/30/87	42.87	1453.93	05/01/94	37.29	1459.51
06/30/81	44.63	1452.17	09/30/87	41.21	1455.59	05/29/94	37.22	1459.58
07/28/81	47.89	1448.91	10/29/87	40.43	1456.37	06/30/94	37.69	1459.11
08/27/81	53.00	1443.80	11/28/87	40.05	1456.75	07/31/94	42.02	1454.78
09/24/81	48.96	1447.84				08/28/94	42.85	1453.95
10/23/81	46.10	1450.70	03/30/88	38.98	1457.82	09/28/94	40.14	1456.66
11/18/81	45.00	1451.80	04/29/88	39.33	1457.47	10/29/94	38.54	1458.26
12/30/81	43.90	1452.90	05/30/88	40.58	1456.22			
			06/28/88	55.06	1441.74	04/29/95	36.25	1460.55
04/15/82	42.53	1454.27	07/31/88	56.14	1440.66	05/31/95	35.92	1460.88
05/28/82	42.10	1454.70	08/29/88	51.36	1445.44	06/28/95	38.89	1457.91

151-062-15BBB (Continued), MP Elev (msl, ft)=1496.8 Spiritwood Aquifer SI (ft.)=198-204

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/27/95	42.26	1454.54	07/01/99	37.25	1459.55	05/08/03	32.89	1463.91
09/28/95	39.29	1457.51	08/01/99	40.20	1456.60	06/05/03	33.00	1463.80
10/28/95	37.90	1458.90	09/01/99	39.86	1456.94	07/10/03	33.93	1462.87
			10/03/99	36.70	1460.10	07/22/03	35.20	1461.60
05/01/96	36.24	1460.56	10/27/99	35.52	1461.28	08/05/03	42.70	1454.10
05/31/96	36.03	1460.77	10/31/99	35.54	1461.26	08/12/03	40.00	1456.80
06/29/96	38.23	1458.57				09/02/03	41.88	1454.92
07/30/96	42.07	1454.73	07/01/00	35.99	1460.81	09/30/03	39.33	1457.47
08/30/96	43.94	1452.86	08/01/00	38.81	1457.99	10/27/03	37.30	1459.50
09/28/96	40.80	1456.00	08/09/00	39.20	1457.60	10/29/03	37.32	1459.48
10/28/96	38.60	1458.20	09/06/00	37.87	1458.93	10/30/03	39.25	1457.55
			10/03/00	36.02	1460.78	10/31/03	39.63	1457.17
04/30/97	35.94	1460.86	10/12/00	35.58	1461.22	11/01/03	40.31	1456.49
06/01/97	35.96	1460.84	10/28/00	35.08	1461.72	11/02/03	40.84	1455.96
06/28/97	41.03	1455.77				11/02/03	40.82	1455.98
07/29/97	41.23	1455.57	06/07/01	32.62	1464.18	11/03/03	40.10	1456.70
08/30/97	41.22	1455.58	06/30/01	32.58	1464.22	11/04/03	39.36	1457.44
09/30/97	38.54	1458.26	07/30/01	33.77	1463.03	11/06/03	38.68	1458.12
10/02/97	37.96	1458.84	09/02/01	36.03	1460.77	12/02/03	36.40	1460.40
10/31/97	36.72	1460.08	09/29/01	34.58	1462.22			
			11/10/01	33.13	1463.67	05/04/04	33.83	1462.97
07/01/98	35.78	1461.02				06/08/04	33.54	1463.26
08/02/98	44.22	1452.58	05/30/02	32.09	1464.71	07/13/04	35.87	1460.93
08/30/98	45.00	1451.80	06/28/02	32.46	1464.34	08/10/04	41.34	1455.46
09/29/98	41.87	1454.93	07/29/02	39.84	1456.96	09/07/04	39.13	1457.67
11/07/98	38.65	1458.15	08/29/02	40.81	1455.99	10/04/04	36.56	1460.24
12/03/98	37.37	1459.43	09/29/02	36.89	1459.91	11/09/04	35.03	1461.77
			10/31/02	35.10	1461.70	12/07/04	34.38	1462.42
06/04/99	34.99	1461.81						

**151-062-15CCC1
Warwick Aquifer**

**MP Elev (msl, ft)=0.00
SI (ft.)=0-18.5**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/10/00	8.55	-8.55						

**151-062-15CCC2
Warwick Aquifer**

**MP Elev (msl, ft)=0.00
SI (ft.)=0-14**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/10/00	9.42	-9.42						

**151-062-15CCC3
Warwick Aquifer**

**MP Elev (msl,ft)=1,481.90
SI (ft.)=16.4-21.4**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
10/14/75	12.00	1469.90	12/31/81	11.48	1470.42	06/28/88	11.87	1470.03
12/18/75	12.00	1469.90				07/31/88	12.52	1469.38
			04/15/82	9.00	1472.90	08/29/88	12.87	1469.03
03/16/76	12.10	1469.80	05/28/82	9.80	1472.10	09/30/88	13.12	1468.78
06/29/76	10.80	1471.10	06/24/82	9.80	1472.10	10/28/88	13.15	1468.75
09/28/76	12.80	1469.10	08/01/82	10.47	1471.43			
12/28/76	13.10	1468.80	09/04/82	11.34	1470.56	04/27/89	11.20	1470.70
			09/29/82	11.67	1470.23	06/01/89	11.69	1470.21
03/22/77	12.90	1469.00	11/02/82	10.99	1470.91	06/26/89	12.04	1469.86
07/07/77	12.90	1469.00	12/01/82	11.00	1470.90	07/29/89	12.76	1469.14
09/19/77	13.50	1468.40				08/29/89	13.24	1468.66
			04/05/83	9.05	1472.85	09/29/89	13.40	1468.50
03/23/78	13.50	1468.40	05/02/83	10.40	1471.50	10/30/89	13.43	1468.47
04/18/78	8.83	1473.07	06/04/83	10.39	1471.51	11/28/89	13.43	1468.47
05/18/78	9.98	1471.92	06/28/83	10.70	1471.20			
07/26/78	11.10	1470.80	08/02/83	11.40	1470.50	04/04/90	13.10	1468.80
08/29/78	11.35	1470.55	08/30/83	9.80	1472.10	04/30/90	13.17	1468.73
09/27/78	12.10	1469.80	09/30/83	10.32	1471.58	05/31/90	13.09	1468.81
11/15/78	12.17	1469.73	10/31/83	10.37	1471.53	06/30/90	12.78	1469.12
12/11/78	12.40	1469.50	11/27/83	10.43	1471.47	07/28/90	12.94	1468.96
						08/29/90	13.37	1468.53
02/06/79	12.44	1469.46	04/04/84	8.94	1472.96	09/27/90	13.62	1468.28
05/17/79	6.94	1474.96	04/30/84	8.40	1473.50	10/28/90	13.62	1468.28
06/20/79	8.60	1473.30	05/31/84	9.29	1472.61	11/27/90	13.58	1468.32
08/15/79	10.33	1471.57	07/01/84	9.29	1472.61			
09/04/79	11.10	1470.80	08/02/84	10.71	1471.19	03/28/91	13.57	1468.33
09/20/79	11.06	1470.84	08/31/84	11.43	1470.47	04/30/91	13.50	1468.40
10/03/79	11.30	1470.60	09/29/84	11.80	1470.10	05/30/91	13.29	1468.61
11/01/79	11.44	1470.46	10/31/84	11.51	1470.39	06/28/91	12.09	1469.81
11/15/79	11.64	1470.26	12/06/84	11.51	1470.39	07/28/91	11.23	1470.67
12/18/79	11.56	1470.34				08/29/91	11.91	1469.99
			04/28/85	11.03	1470.87	09/28/91	11.73	1470.17
03/17/80	12.40	1469.50	05/29/85	10.90	1471.00	10/26/91	11.75	1470.15
04/08/80	10.25	1471.65	06/29/85	10.99	1470.91			
05/06/80	10.79	1471.11	07/27/85	11.60	1470.30	04/28/92	10.06	1471.84
06/04/80	11.10	1470.80	08/29/85	12.09	1469.81	05/28/92	10.29	1471.61
06/25/80	11.80	1470.10	09/29/85	12.20	1469.70	06/30/92	10.91	1470.99
07/02/80	11.50	1470.40	10/31/85	11.66	1470.24	07/29/92	11.29	1470.61
07/30/80	12.06	1469.84				08/29/92	11.80	1470.10
08/13/80	12.48	1469.42	04/01/86	10.47	1471.43	09/29/92	12.07	1469.83
08/28/80	12.27	1469.63	04/28/86	9.83	1472.07	10/29/92	12.12	1469.78
09/24/80	11.84	1470.06	05/31/86	10.14	1471.76			
09/30/80	12.20	1469.70	07/01/86	11.24	1470.66	04/04/93	9.14	1472.76
10/23/80	11.71	1470.19	08/01/86	11.48	1470.42	04/14/93	9.42	1472.48
11/19/80	11.66	1470.24	08/30/86	11.96	1469.94	05/01/93	9.87	1472.03
11/21/80	11.47	1470.43	09/29/86	12.26	1469.64	05/29/93	9.69	1472.21
12/23/80	11.45	1470.45	10/31/86	12.21	1469.69	06/09/93	9.54	1472.36
						06/28/93	9.36	1472.54
02/24/81	9.88	1472.02	04/28/87	8.75	1473.15	07/15/93	9.46	1472.44
04/09/81	10.63	1471.27	05/30/87	9.45	1472.45	07/22/93	8.54	1473.36
05/05/81	10.45	1471.45	07/02/87	10.52	1471.38	07/30/93	5.69	1476.21
05/13/81	10.64	1471.26	07/31/87	9.41	1472.49	08/10/93	7.20	1474.70
06/04/81	10.54	1471.36	08/29/87	10.69	1471.21	08/29/93	8.11	1473.79
06/30/81	9.07	1472.83	09/30/87	11.21	1470.69	09/15/93	8.43	1473.47
07/29/81	11.30	1470.60	10/29/87	11.32	1470.58	09/26/93	8.74	1473.16
08/19/81	10.98	1470.92	11/28/87	11.39	1470.51	10/21/93	9.54	1472.36
08/27/81	11.00	1470.90				10/30/93	9.19	1472.71
09/24/81	11.41	1470.49	03/30/88	10.68	1471.22	11/17/93	9.32	1472.58
10/23/81	11.44	1470.46	04/29/88	10.70	1471.20			
11/18/81	11.36	1470.54	05/30/88	11.05	1470.85	03/08/94	10.08	1471.82

151-062-15CCC3 (Continued), MP Elev (msl,ft)=1481.9 Warwick Aquifer SI (ft.)=16.4-21.4

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
04/05/94	6.09	1475.81	10/31/97	10.02	1471.88	11/10/01	7.96	1473.94
05/01/94	6.82	1475.08	11/18/97	9.99	1471.91			
05/29/94	7.49	1474.41				05/31/02	6.85	1475.05
06/30/94	7.77	1474.13	04/16/98	7.20	1474.70	06/30/02	6.02	1475.88
07/30/94	8.70	1473.20	06/04/98	8.37	1473.53	07/29/02	8.47	1473.43
08/28/94	9.54	1472.36	07/01/98	8.73	1473.17	08/29/02	9.02	1472.88
09/28/94	9.90	1472.00	07/10/98	8.88	1473.02	09/29/02	9.78	1472.12
10/29/94	9.11	1472.79	08/01/98	9.94	1471.96	10/31/02	9.67	1472.23
			08/20/98	10.48	1471.42			
04/29/95	6.04	1475.86	08/30/98	10.79	1471.11	05/08/03	7.10	1474.80
05/31/95	7.15	1474.75	09/22/98	11.10	1470.80	06/05/03	7.36	1474.54
06/28/95	8.29	1473.61	09/29/98	11.20	1470.70	07/10/03	5.54	1476.36
08/27/95	10.13	1471.77	11/08/98	10.60	1471.30	07/23/03	7.00	1474.90
09/28/95	10.79	1471.11				08/05/03	7.47	1474.43
10/28/95	10.79	1471.11	03/24/99	10.56	1471.34	08/14/03	7.36	1474.54
			05/19/99	5.61	1476.29	09/02/03	8.81	1473.09
05/02/96	7.71	1474.19	06/04/99	7.28	1474.62	09/30/03	9.44	1472.46
06/01/96	8.14	1473.76	06/23/99	7.51	1474.39	10/27/03	9.46	1472.44
06/29/96	9.10	1472.80	07/02/99	6.97	1474.93	10/29/03	9.49	1472.41
07/10/96	9.50	1472.40	07/21/99	7.32	1474.58	10/30/03	9.54	1472.36
07/30/96	9.88	1472.02	08/01/99	7.70	1474.20	10/31/03	9.55	1472.35
08/13/96	10.11	1471.79	08/31/99	7.31	1474.59	11/01/03	9.51	1472.39
08/27/96	10.50	1471.40	10/02/99	7.99	1473.91	11/02/03	9.52	1472.38
08/30/96	10.65	1471.25	11/02/99	8.18	1473.72	11/03/03	9.52	1472.38
09/28/96	11.15	1470.75				11/04/03	9.49	1472.41
10/28/96	11.15	1470.75	07/01/00	7.12	1474.78	11/06/03	9.49	1472.41
10/29/96	11.07	1470.83	08/01/00	8.17	1473.73	12/02/03	9.58	1472.32
			08/10/00	8.25	1473.65			
04/30/97	5.63	1476.27	09/03/00	8.32	1473.58	05/04/04	6.24	1475.66
05/01/97	5.79	1476.11	10/03/00	8.33	1473.57	06/08/04	5.55	1476.35
06/01/97	7.36	1474.54	10/12/00	8.31	1473.59	07/13/04	6.64	1475.26
06/04/97	7.51	1474.39	10/28/00	7.22	1474.68	08/10/04	8.49	1473.41
06/28/97	8.84	1473.06				09/01/04	8.92	1472.98
07/09/97	8.86	1473.04	06/05/01	6.45	1475.45	09/07/04	8.90	1473.00
07/22/97	8.81	1473.09	07/01/01	5.56	1476.34	10/04/04	8.11	1473.79
07/30/97	9.33	1472.57	07/31/01	5.61	1476.29	11/09/04	7.92	1473.98
08/30/97	9.86	1472.04	09/01/01	8.21	1473.69	12/07/04	8.18	1473.72
09/30/97	10.33	1471.57	09/29/01	8.94	1472.96			

151-062-16BBB Spiritwood Aquifer

MP Elev (msl,ft)=1,523.09
SI (ft.)=208-218

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/20/03	78.88	1444.21	11/02/03	57.78	1465.31	07/13/04	59.36	1463.73
09/02/03	61.18	1461.91	11/03/03	57.80	1465.29	08/10/04	63.56	1459.53
09/30/03	58.48	1464.61	11/04/03	57.73	1465.36	09/01/04	59.90	1463.19
10/27/03	57.68	1465.41	11/06/03	57.73	1465.36	09/07/04	58.78	1464.31
10/29/03	57.76	1465.33	12/02/03	57.62	1465.47	10/04/04	57.55	1465.54
10/30/03	56.75	1466.34				11/09/04	57.25	1465.84
10/31/03	57.80	1465.29	05/04/04	56.40	1466.69	12/07/04	57.22	1465.87
11/01/03	57.79	1465.30	06/08/04	56.20	1466.89			

**151-062-16BCA
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,505.00
SI (ft.)=178-198**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/19/77	64.08	1440.92	06/13/79	45.15	1459.85	08/28/80	51.74	1453.26
09/14/77	48.45	1456.55	08/07/79	50.10	1454.90	09/24/80	45.40	1459.60
09/28/77	46.87	1458.13	09/20/79	45.66	1459.34	12/23/80	44.00	1461.00
			10/03/79	44.08	1460.92			
05/04/78	43.50	1461.50	11/01/79	43.44	1461.56	04/09/81	44.27	1460.73
06/28/78	53.27	1451.73	12/18/79	43.05	1461.95	06/30/81	43.54	1461.46
09/01/78	54.17	1450.83				09/24/81	43.47	1461.53
09/28/78	46.67	1458.33	04/08/80	43.17	1461.83	12/30/81	43.58	1461.42
			05/06/80	42.93	1462.07	05/17/79	44.92	1460.08
06/04/80	82.44	1422.56						

**151-062-17ABD1
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,500.00
SI (ft.)=178-198**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
05/17/79	32.31	1467.69						

**151-062-17BBB2
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,496.91
SI (ft.)=178-188**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/20/03	35.48	1461.43	11/02/03	31.32	1465.59	07/13/04	31.01	1465.90
09/02/03	32.61	1464.30	11/03/03	31.33	1465.58	08/10/04	32.79	1464.12
09/30/03	31.60	1465.31	11/04/03	31.28	1465.63	09/07/04	31.39	1465.52
10/27/03	31.20	1465.71	11/06/03	31.28	1465.63	10/04/04	30.94	1465.97
10/29/03	31.29	1465.62	12/02/03	31.25	1465.66	11/09/04	30.83	1466.08
10/30/03	31.29	1465.62				12/07/04	30.83	1466.08
10/31/03	31.35	1465.56	05/04/04	30.09	1466.82	11/01/03	31.31	1465.60
06/08/04	29.94	1466.97						

**151-062-18ADD2
Warwick Aquifer**

**MP Elev (msl,ft)=1,486.68
SI (ft.)=0-32.9**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/21/73	25.22	1461.46	03/16/76	24.42	1462.26			
09/21/73	25.32	1461.36	06/29/76	24.02	1462.66	03/17/80	25.02	1461.66
12/21/73	25.42	1461.26	09/28/76	24.72	1461.96	06/25/80	25.82	1460.86
			12/28/76	24.92	1461.76	09/30/80	26.22	1460.46
04/08/74	24.92	1461.76						
05/22/74	23.72	1462.96	03/21/77	25.22	1461.46	10/14/92	24.58	1462.10
06/19/74	23.42	1463.26	07/07/77	25.52	1461.16	12/08/92	24.53	1462.15
09/23/74	23.62	1463.06	09/19/77	26.62	1460.06			
12/16/74	24.02	1462.66	12/29/77	26.42	1460.26	04/14/93	24.00	1462.68
						06/10/93	23.97	1462.71
04/03/75	24.22	1462.46	03/23/78	26.32	1460.36	07/15/93	23.85	1462.83
05/05/75	23.32	1463.36	07/26/78	25.72	1460.96	07/22/93	23.49	1463.19
05/29/75	23.52	1463.16	09/27/78	26.52	1460.16	08/10/93	21.86	1464.82
06/18/75	23.62	1463.06	12/14/78	26.32	1460.36	09/15/93	20.42	1466.26
09/17/75	24.12	1462.56				10/21/93	20.66	1466.02
12/18/75	24.32	1462.36	06/19/79	24.02	1462.66	11/17/93	20.76	1465.92
			09/04/79	24.72	1461.96			

151-062-19AAA
Spiritwood Aquifer

MP Elev (msl,ft)=1,488.20
SI (ft.)=133-138

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/08/79	24.03	1464.17	08/29/85	23.91	1464.29	05/29/92	22.43	1465.77
09/20/79	23.88	1464.32	09/29/85	23.47	1464.73	06/30/92	23.85	1464.35
10/03/79	23.54	1464.66	10/31/85	23.12	1465.08	07/30/92	24.35	1463.85
11/01/79	23.35	1464.85				08/29/92	25.64	1462.56
12/18/79	23.27	1464.93	04/01/86	22.38	1465.82	09/29/92	23.76	1464.44
			04/28/86	22.00	1466.20	10/29/92	23.43	1464.77
04/07/80	23.34	1464.86	05/31/86	21.91	1466.29			
05/06/80	23.16	1465.04	07/01/86	23.25	1464.95	04/04/93	23.01	1465.19
06/09/80	28.28	1459.92	08/01/86	22.72	1465.48	05/01/93	22.71	1465.49
07/01/80	26.78	1461.42	08/30/86	22.87	1465.33	05/29/93	22.72	1465.48
07/30/80	28.02	1460.18	09/30/86	22.53	1465.67	06/28/93	22.40	1465.80
08/28/80	26.47	1461.73	11/01/86	22.49	1465.71	07/30/93	20.05	1468.15
09/24/80	24.96	1463.24				08/29/93	20.55	1467.65
11/21/80	24.26	1463.94	04/30/87	21.03	1467.17	09/27/93	20.05	1468.15
12/23/80	24.15	1464.05	05/31/87	21.49	1466.71	10/31/93	20.17	1468.03
			07/02/87	23.31	1464.89			
04/10/81	23.62	1464.58	07/31/87	21.43	1466.77	04/05/94	19.86	1468.34
05/05/81	23.44	1464.76	08/29/87	22.29	1465.91	05/01/94	20.04	1468.16
06/04/81	23.36	1464.84	09/30/87	21.62	1466.58	05/29/94	20.38	1467.82
06/30/81	23.06	1465.14	10/30/87	21.57	1466.63	06/30/94	21.26	1466.94
07/28/81	25.73	1462.47	11/28/87	21.40	1466.80	07/30/94	23.12	1465.08
08/27/81	24.59	1463.61				08/29/94	23.38	1464.82
09/24/81	23.24	1464.96	03/30/88	21.49	1466.71	09/28/94	21.86	1466.34
10/23/81	23.00	1465.20	04/29/88	21.47	1466.73	10/28/94	21.21	1466.99
11/18/81	22.93	1465.27	05/30/88	22.05	1466.15			
12/30/81	22.90	1465.30	06/28/88	27.47	1460.73	04/29/95	20.15	1468.05
			08/02/88	27.45	1460.75	05/31/95	20.36	1467.84
04/15/82	22.44	1465.76	08/29/88	26.59	1461.61	06/29/95	20.71	1467.49
05/28/82	22.25	1465.95	09/30/88	24.14	1464.06	08/29/95	18.95	1469.25
06/25/82	22.85	1465.35	10/29/88	23.84	1464.36	09/29/95	21.25	1466.95
08/02/82	23.48	1464.72				10/28/95	21.28	1466.92
09/04/82	24.12	1464.08	04/27/89	23.25	1464.95			
09/29/82	23.34	1464.86	06/01/89	23.04	1465.16	05/02/96	20.18	1468.02
11/02/82	22.84	1465.36	06/26/89	26.05	1462.15	06/01/96	20.25	1467.95
12/01/82	22.83	1465.37	07/29/89	28.29	1459.91	06/30/96	20.76	1467.44
			08/29/89	25.46	1462.74	07/30/96	23.56	1464.64
04/05/83	22.25	1465.95	09/29/89	24.71	1463.49	08/31/96	24.03	1464.17
05/02/83	21.95	1466.25	10/30/89	24.50	1463.70	09/28/96	21.74	1466.46
06/04/83	22.24	1465.96	11/28/89	24.44	1463.76	10/29/96	21.57	1466.63
06/28/83	22.31	1465.89						
08/02/83	24.48	1463.72	04/04/90	24.45	1463.75	05/01/97	19.91	1468.29
08/31/83	22.82	1465.38	04/30/90	24.33	1463.87	06/01/97	22.15	1466.05
09/30/83	22.23	1465.97	06/01/90	25.97	1462.23	06/28/97	22.45	1465.75
10/31/83	22.07	1466.13	06/30/90	24.74	1463.46	07/17/97	20.47	1467.73
11/27/83	22.07	1466.13	07/28/90	28.03	1460.17	07/30/97	22.85	1465.35
			08/29/90	26.13	1462.07	08/30/97	23.17	1465.03
04/04/84	21.80	1466.40	09/27/90	25.38	1462.82	09/30/97	21.53	1466.67
04/30/84	21.58	1466.62	10/29/90	24.99	1463.21	10/31/97	21.39	1466.81
06/01/84	22.46	1465.74	11/27/90	24.86	1463.34			
07/01/84	22.24	1465.96				07/01/98	21.39	1466.81
08/02/84	24.82	1463.38	03/29/91	24.82	1463.38	08/01/98	23.95	1464.25
08/31/84	25.93	1462.27	04/30/91	24.70	1463.50	08/30/98	22.61	1465.59
09/29/84	23.40	1464.80	05/30/91	24.59	1463.61	09/29/98	22.50	1465.70
10/31/84	23.15	1465.05	06/29/91	24.33	1463.87	11/08/98	22.06	1466.14
12/06/84	22.99	1465.21	07/28/91	25.17	1463.03			
			08/30/91	25.42	1462.78	06/04/99	20.12	1468.08
04/28/85	22.78	1465.42	09/28/91	23.80	1464.40	07/02/99	20.13	1468.07
05/29/85	23.20	1465.00	10/26/91	23.52	1464.68	08/01/99	21.06	1467.14
06/29/85	22.68	1465.52				08/31/99	19.72	1468.48
07/27/85	24.80	1463.40	04/28/92	22.30	1465.90	10/02/99	19.85	1468.35

151-062-19AAA (Continued), MP Elev (msl, ft)=1488.2 Spiritwood Aquifer SI (ft.)=133-138

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
11/02/99	20.01	1468.19	06/30/02	20.23	1467.97	10/31/03	20.16	1468.04
			07/29/02	24.52	1463.68	11/01/03	20.16	1468.04
07/01/00	20.55	1467.65	08/29/02	20.96	1467.24	11/02/03	20.14	1468.06
08/01/00	22.90	1465.30	09/29/02	20.58	1467.62	11/03/03	20.17	1468.03
09/03/00	20.52	1467.68	10/31/02	20.68	1467.52	11/04/03	20.11	1468.09
10/03/00	20.31	1467.89				11/06/03	20.11	1468.09
10/12/00	19.89	1468.31	05/08/03	20.06	1468.14	12/02/03	20.10	1468.10
10/28/00	20.21	1467.99	06/05/03	19.95	1468.25			
			07/10/03	20.58	1467.62	05/04/04	18.83	1469.37
06/05/01	19.48	1468.72	07/24/03	20.00	1468.20	06/08/04	18.63	1469.57
07/01/01	19.16	1469.04	08/05/03	22.95	1465.25	07/13/04	19.46	1468.74
07/31/01	19.77	1468.43	08/14/03	21.68	1466.52	08/10/04	21.01	1467.19
09/01/01	20.41	1467.79	09/02/03	20.96	1467.24	09/07/04	20.16	1468.04
09/29/01	20.07	1468.13	09/30/03	20.30	1467.90	10/04/04	19.83	1468.37
11/10/01	19.97	1468.23	10/27/03	20.06	1468.14	11/09/04	19.74	1468.46
			10/29/03	20.10	1468.10	12/07/04	19.76	1468.44
05/31/02	20.06	1468.14	10/30/03	20.14	1468.06			

151-062-19ABB
Warwick Aquifer

MP Elev (msl,ft)=1,486.30
SI (ft.)=30-33

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/01/78	20.87	1465.43	06/01/84	19.71	1466.59	11/27/90	21.57	1464.73
06/28/78	20.78	1465.52	07/01/84	19.76	1466.54			
07/07/78	20.74	1465.56	08/02/84	19.79	1466.51	03/29/91	21.85	1464.45
07/28/78	20.77	1465.53	08/31/84	19.88	1466.42	04/30/91	21.95	1464.35
08/09/78	20.79	1465.51	09/29/84	19.92	1466.38	05/30/91	21.99	1464.31
09/01/78	20.74	1465.56	10/31/84	20.12	1466.18	06/29/91	21.97	1464.33
09/28/78	20.90	1465.40	12/07/84	20.12	1466.18	07/28/91	21.23	1465.07
						08/30/91	21.14	1465.16
05/17/79	19.68	1466.62	04/28/85	20.28	1466.02	09/28/91	21.06	1465.24
06/13/79	20.62	1465.68	05/29/85	20.29	1466.01	10/26/91	21.04	1465.26
07/11/79	19.66	1466.64	06/29/85	20.42	1465.88			
08/07/79	19.57	1466.73	07/27/85	20.39	1465.91	04/28/92	20.42	1465.88
09/20/79	19.85	1466.45	08/29/85	20.44	1465.86	05/29/92	20.47	1465.83
10/03/79	21.62	1464.68	09/29/85	20.53	1465.77	06/30/92	20.50	1465.80
11/01/79	21.70	1464.60	10/31/85	20.45	1465.85	07/30/92	20.56	1465.74
12/18/79	20.04	1466.26				08/29/92	20.59	1465.71
			04/01/86	20.29	1466.01	09/29/92	20.26	1466.04
04/07/80	19.77	1466.53	04/28/86	19.93	1466.37	10/29/92	20.77	1465.53
05/06/80	20.30	1466.00	05/31/86	19.99	1466.31			
06/04/80	20.39	1465.91	07/01/86	19.89	1466.41	04/04/93	21.02	1465.28
07/01/80	20.50	1465.80	08/01/86	19.90	1466.40	05/01/93	20.57	1465.73
07/30/80	20.55	1465.75	08/30/86	19.90	1466.40	05/29/93	20.60	1465.70
08/28/80	20.61	1465.69	09/30/86	19.99	1466.31	06/28/93	20.59	1465.71
09/24/80	20.68	1465.62	11/01/86	20.09	1466.21	07/30/93	19.36	1466.94
10/23/80	20.75	1465.55				08/29/93	17.96	1468.34
11/21/80	20.79	1465.51	04/30/87	18.69	1467.61	09/27/93	17.68	1468.62
12/23/80	20.83	1465.47	05/31/87	18.93	1467.37	10/31/93	17.61	1468.69
			07/02/87	18.95	1467.35			
04/08/81	20.55	1465.75	07/31/87	18.59	1467.71	04/05/94	17.39	1468.91
04/10/81	20.59	1465.71	08/29/87	18.35	1467.95	05/01/94	17.34	1468.96
06/04/81	20.59	1465.71	09/30/87	18.38	1467.92	05/29/94	17.44	1468.86
06/30/81	20.59	1465.71	10/30/87	18.52	1467.78	06/30/94	17.53	1468.77
07/28/81	20.49	1465.81	11/28/87	18.60	1467.70	07/30/94	17.64	1468.66
08/27/81	20.35	1465.95				08/29/94	17.73	1468.57
09/24/81	20.34	1465.96	03/30/88	18.89	1467.41	09/28/94	17.88	1468.42
10/23/81	20.35	1465.95	04/29/88	18.89	1467.41	10/29/94	17.98	1468.32
11/18/81	20.37	1465.93	05/30/88	19.02	1467.28			
12/30/81	20.42	1465.88	06/28/88	18.89	1467.41	04/29/95	17.30	1469.00
			08/02/88	19.22	1467.08	05/31/95	17.48	1468.82
04/15/82	20.28	1466.02	08/29/88	19.34	1466.96	06/29/95	17.66	1468.64
05/28/82	20.03	1466.27	09/30/88	19.42	1466.88	08/29/95	17.89	1468.41
06/25/82	20.04	1466.26	10/29/88	19.59	1466.71	09/29/95	18.05	1468.25
08/02/82	19.70	1466.60				10/28/95	18.21	1468.09
09/04/82	20.06	1466.24	04/27/89	19.99	1466.31			
09/29/82	20.15	1466.15	06/01/89	20.10	1466.20	05/02/96	17.48	1468.82
11/02/82	20.22	1466.08	06/26/89	20.16	1466.14	06/01/96	17.59	1468.71
12/01/82	20.17	1466.13	07/29/89	20.26	1466.04	06/30/96	17.79	1468.51
			08/29/89	20.37	1465.93	07/30/96	17.97	1468.33
04/05/83	19.97	1466.33	09/29/89	20.30	1466.00	08/31/96	18.07	1468.23
05/02/83	19.51	1466.79	10/30/89	20.59	1465.71	09/28/96	18.23	1468.07
06/04/83	19.65	1466.65	11/28/89	20.69	1465.61	10/29/96	18.28	1468.02
06/28/83	19.70	1466.60						
08/02/83	19.73	1466.57	04/04/90	21.11	1465.19	05/01/97	16.89	1469.41
08/31/83	19.59	1466.71	04/30/90	21.16	1465.14	06/01/97	16.93	1469.37
09/30/83	19.49	1466.81	06/01/90	20.19	1466.11	06/28/97	17.30	1469.00
10/31/83	19.46	1466.84	06/30/90	21.30	1465.00	07/17/97	17.10	1469.20
11/27/83	19.51	1466.79	07/28/90	21.32	1464.98	07/30/97	17.55	1468.75
			08/29/90	21.38	1464.92	08/30/97	17.72	1468.58
04/04/84	19.78	1466.52	09/27/90	21.44	1464.86	09/30/97	17.92	1468.38
04/30/84	19.73	1466.57	10/29/90	21.48	1464.82	10/31/97	18.06	1468.24

151-062-19ABB

(Continued), MP Elev (msl, ft)=1486.3 Warwick Aquifer SI (ft.)=30-33

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
07/01/98	18.59	1467.71	10/12/00	17.06	1469.24	06/05/03	17.58	1468.72
08/01/98	18.69	1467.61	10/28/00	17.39	1468.91	07/10/03	17.24	1469.06
08/30/98	18.79	1467.51	06/05/01	16.16	1470.14	07/24/03	17.00	1469.30
09/29/98	18.89	1467.41	07/01/01	16.01	1470.29	08/05/03	16.82	1469.48
11/08/98	19.04	1467.26	07/31/01	16.48	1469.82	08/14/03	16.82	1469.48
06/04/99	17.82	1468.48	09/01/01	15.95	1470.35	09/02/03	16.72	1469.58
07/02/99	17.89	1468.41	09/29/01	16.19	1470.11	09/30/03	16.79	1469.51
08/01/99	17.82	1468.48	11/10/01	16.44	1469.86	11/01/03	16.89	1469.41
08/31/99	17.13	1469.17	05/31/02	17.29	1469.01	12/02/03	17.02	1469.28
10/02/99	17.08	1469.22	06/30/02	17.02	1469.28	05/04/04	15.93	1470.37
11/02/99	17.10	1469.20	07/29/02	16.89	1469.41	06/08/04	16.00	1470.30
07/01/00	17.76	1468.54	08/29/02	17.07	1469.23	07/13/04	15.83	1470.47
08/01/00	17.63	1468.67	09/29/02	17.19	1469.11	08/10/04	15.91	1470.39
09/03/00	17.27	1469.03	10/31/02	17.36	1468.94	09/07/04	16.08	1470.22
10/03/00	17.44	1468.86	05/08/03	17.63	1468.67	10/04/04	16.20	1470.10
						11/09/04	16.31	1469.99
						12/07/04	16.52	1469.78

151-062-19ADD1
Warwick Aquifer

MP Elev (msl,ft)=1,483.80
SI (ft.)=33-38

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
11/02/67	18.75	1465.05	10/05/68	18.68	1465.12	11/25/69	18.68	1465.12
11/05/67	18.75	1465.05	10/10/68	18.72	1465.08	11/30/69	18.67	1465.13
11/10/67	18.68	1465.12	10/15/68	18.69	1465.11	12/05/69	18.69	1465.11
11/15/67	18.73	1465.07	10/20/68	18.69	1465.11			
11/20/67	18.75	1465.05	10/25/68	18.74	1465.06	01/20/70	18.75	1465.05
11/25/67	18.72	1465.08	10/31/68	18.72	1465.08	01/25/70	18.79	1465.01
11/30/67	18.75	1465.05	11/15/68	18.75	1465.05	01/31/70	18.83	1464.97
12/05/67	18.76	1465.04	11/20/68	18.76	1465.04	02/05/70	18.86	1464.94
12/10/67	18.78	1465.02	11/25/68	18.75	1465.05	02/15/70	18.90	1464.90
12/15/67	18.86	1464.94	11/30/68	18.71	1465.09	02/20/70	18.90	1464.90
12/20/67	18.84	1464.96	12/10/68	18.70	1465.10	02/25/70	18.92	1464.88
12/25/67	18.85	1464.95	12/15/68	18.74	1465.06	02/28/70	18.91	1464.89
12/31/67	18.87	1464.93	12/20/68	18.77	1465.03	03/05/70	18.89	1464.91
			12/25/68	18.81	1464.99	03/10/70	18.88	1464.92
01/05/68	18.91	1464.89				03/25/70	18.97	1464.83
01/10/68	18.91	1464.89	01/15/69	18.88	1464.92	03/31/70	18.92	1464.88
01/15/68	18.93	1464.87	01/20/69	18.90	1464.90	04/05/70	18.90	1464.90
01/20/68	18.97	1464.83	01/25/69	18.92	1464.88	04/10/70	18.82	1464.98
01/25/68	18.99	1464.81	01/31/69	18.92	1464.88	04/15/70	18.72	1465.08
01/31/68	18.98	1464.82	02/15/69	19.00	1464.80	04/20/70	18.65	1465.15
02/05/68	19.01	1464.79	02/20/69	19.01	1464.79	04/25/70	18.63	1465.17
02/10/68	19.02	1464.78	02/25/69	19.01	1464.79	04/30/70	18.60	1465.20
02/15/68	19.06	1464.74	02/28/69	19.02	1464.78	05/15/70	18.42	1465.38
02/20/68	19.02	1464.78	03/10/69	19.03	1464.77	05/20/70	18.39	1465.41
02/25/68	18.95	1464.85	03/15/69	19.03	1464.77	05/25/70	18.31	1465.49
02/29/68	18.91	1464.89	03/20/69	19.03	1464.77	05/31/70	18.29	1465.51
03/05/68	18.99	1464.81	03/25/69	19.03	1464.77	06/25/70	18.18	1465.62
03/10/68	19.02	1464.78	04/10/69	18.95	1464.85	06/30/70	18.16	1465.64
03/15/68	19.09	1464.71	04/15/69	18.73	1465.07	07/05/70	18.35	1465.45
03/20/68	19.08	1464.72	04/20/69	18.42	1465.38	07/10/70	18.40	1465.40
03/25/68	19.03	1464.77	04/25/69	18.40	1465.40	09/10/70	18.74	1465.06
03/31/68	19.08	1464.72	04/30/69	18.39	1465.41	09/15/70	18.77	1465.03
04/05/68	19.07	1464.73	05/05/69	18.33	1465.47	09/20/70	18.77	1465.03
04/10/68	19.04	1464.76	05/10/69	18.16	1465.64	09/25/70	18.81	1464.99
04/15/68	18.96	1464.84	05/15/69	18.12	1465.68	10/05/70	18.88	1464.92
04/20/68	18.80	1465.00	05/20/69	18.10	1465.70	10/10/70	18.88	1464.92
04/25/68	18.76	1465.04	05/25/69	18.06	1465.74	10/15/70	18.91	1464.89
04/30/68	18.71	1465.09	06/15/69	18.10	1465.70	10/20/70	18.91	1464.89
05/05/68	18.64	1465.16	06/20/69	18.12	1465.68	11/10/70	18.90	1464.90
05/15/68	18.59	1465.21	06/25/69	18.12	1465.68	11/30/70	18.83	1464.97
05/20/68	18.57	1465.23	06/30/69	18.13	1465.67			
05/25/68	18.54	1465.26	07/05/69	18.09	1465.71	01/19/71	19.05	1464.75
05/31/68	18.52	1465.28	07/15/69	18.08	1465.72	02/03/71	19.11	1464.69
06/20/68	18.45	1465.35	07/20/69	18.08	1465.72	03/03/71	19.00	1464.80
06/25/68	18.44	1465.36	07/25/69	18.12	1465.68	04/13/71	18.80	1465.00
06/30/68	18.41	1465.39	07/31/69	18.16	1465.64	05/13/71	18.26	1465.54
07/05/68	18.44	1465.36	08/20/69	18.35	1465.45	06/10/71	18.18	1465.62
07/10/68	18.44	1465.36	08/25/69	18.37	1465.43	07/01/71	18.22	1465.58
07/15/68	18.49	1465.31	08/31/69	18.40	1465.40	07/30/71	18.42	1465.38
07/20/68	18.51	1465.29	09/05/69	18.44	1465.36	09/02/71	18.63	1465.17
07/25/68	18.52	1465.28	09/15/69	18.61	1465.19	10/07/71	18.80	1465.00
07/31/68	18.55	1465.25	09/20/69	18.59	1465.21	10/29/71	18.78	1465.02
08/20/68	18.67	1465.13	09/25/69	18.60	1465.20	11/30/71	18.73	1465.07
08/25/68	18.72	1465.08	09/30/69	18.61	1465.19	12/29/71	18.83	1464.97
08/31/68	18.70	1465.10	10/15/69	18.64	1465.16			
09/05/68	18.70	1465.10	10/20/69	18.64	1465.16	02/03/72	19.06	1464.74
09/15/68	18.68	1465.12	10/25/69	18.66	1465.14	03/02/72	18.24	1465.56
09/20/68	18.70	1465.10	10/31/69	18.68	1465.12	03/28/72	19.23	1464.57
09/25/68	18.69	1465.11	11/05/69	18.66	1465.14	04/26/72	18.27	1465.53
09/30/68	18.69	1465.11	11/20/69	18.71	1465.09	06/01/72	18.52	1465.28

151-062-19ADD1 (Continued), MP Elev (msl, ft)=1483.8 Warwick AquiferSI (ft.)=33-38

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/29/72	18.53	1465.27	09/19/79	18.98	1464.82	08/29/85	18.85	1464.95
08/02/72	18.76	1465.04	10/03/79	19.02	1464.78	09/29/85	18.89	1464.91
08/29/72	18.87	1464.93	11/01/79	19.11	1464.69	10/31/85	18.61	1465.19
10/03/72	19.04	1464.76	12/18/79	19.33	1464.47			
11/01/72	19.05	1464.75				04/01/86	18.27	1465.53
12/05/72	19.10	1464.70	04/07/80	19.63	1464.17	04/24/86	18.21	1465.59
			05/06/80	19.08	1464.72	04/28/86	17.91	1465.89
02/27/73	19.46	1464.34	06/04/80	19.13	1464.67	05/21/86	17.89	1465.91
04/05/73	19.42	1464.38	07/01/80	19.38	1464.42	05/31/86	17.66	1466.14
05/09/73	19.23	1464.57	07/30/80	19.70	1464.10	07/01/86	17.90	1465.90
05/28/73	18.79	1465.01	08/28/80	20.10	1463.70	07/02/86	18.12	1465.68
07/02/73	19.20	1464.60	09/24/80	20.14	1463.66	08/01/86	18.01	1465.79
07/24/73	19.39	1464.41	10/23/80	19.97	1463.83	08/06/86	18.17	1465.63
08/29/73	19.57	1464.23	11/21/80	19.82	1463.98	08/30/86	18.16	1465.64
10/04/73	19.55	1464.25	12/23/80	19.75	1464.05	09/30/86	18.26	1465.54
10/31/73	19.35	1464.45				11/01/86	18.28	1465.52
12/05/73	19.39	1464.41	04/10/81	19.51	1464.29			
			05/05/81	19.28	1464.52	04/30/87	17.09	1466.71
05/30/74	18.16	1465.64	06/04/81	19.03	1464.77	05/31/87	17.33	1466.47
08/29/74	18.34	1465.46	06/29/81	18.80	1465.00	07/02/87	17.55	1466.25
			07/28/81	18.55	1465.25	07/31/87	17.05	1466.75
03/20/75	18.71	1465.09	08/27/81	18.70	1465.10	08/29/87	17.19	1466.61
05/08/75	18.22	1465.58	09/24/81	18.80	1465.00	09/30/87	17.37	1466.43
07/22/75	18.10	1465.70	10/23/81	18.70	1465.10	10/30/87	17.54	1466.26
08/14/75	18.42	1465.38	11/18/81	18.70	1465.10	11/28/87	17.57	1466.23
			12/30/81	18.70	1465.10			
03/18/76	19.06	1464.74				03/30/88	17.61	1466.19
06/07/76	18.44	1465.36	04/15/82	18.60	1465.20	04/29/88	17.47	1466.33
07/16/76	18.59	1465.21	05/28/82	18.25	1465.55	05/30/88	17.60	1466.20
08/04/76	18.83	1464.97	06/25/82	18.26	1465.54	06/28/88	17.90	1465.90
09/09/76	19.22	1464.58	08/02/82	18.33	1465.47	08/02/88	18.45	1465.35
10/13/76	19.50	1464.30	09/04/82	18.70	1465.10	08/29/88	18.91	1464.89
11/03/76	19.71	1464.09	09/29/82	18.80	1465.00	09/30/88	19.22	1464.58
12/03/76	19.70	1464.10	11/02/82	18.68	1465.12	10/29/88	19.36	1464.44
			12/01/82	18.56	1465.24			
05/09/77	19.77	1464.03				04/27/89	19.16	1464.64
06/15/77	19.52	1464.28	04/05/83	18.51	1465.29	06/01/89	18.82	1464.98
07/11/77	19.66	1464.14	05/02/83	18.10	1465.70	06/26/89	18.82	1464.98
08/08/77	19.96	1463.84	06/04/83	18.05	1465.75	07/29/89	19.39	1464.41
09/12/77	20.37	1463.43	06/28/83	18.17	1465.63	08/29/89	19.88	1463.92
10/20/77	20.35	1463.45	08/02/83	18.38	1465.42	09/29/89	20.02	1463.78
11/17/77	20.38	1463.42	08/31/83	18.54	1465.26	10/30/89	20.10	1463.70
11/30/77	20.34	1463.46	09/30/83	18.32	1465.48	11/28/89	20.04	1463.76
			10/31/83	18.18	1465.62			
01/19/78	20.42	1463.38	11/27/83	18.20	1465.60	04/04/90	20.32	1463.48
02/13/78	20.43	1463.37				04/30/90	20.20	1463.60
03/20/78	20.52	1463.28	04/04/84	18.04	1465.76	06/01/90	19.71	1464.09
04/13/78	20.10	1463.70	04/30/84	17.85	1465.95	06/30/90	19.80	1464.00
05/17/78	19.57	1464.23	06/01/84	17.87	1465.93	07/28/90	19.78	1464.02
06/05/78	19.28	1464.52	07/01/84	17.85	1465.95	08/29/90	20.20	1463.60
07/12/78	19.18	1464.62	08/02/84	18.19	1465.61	09/27/90	20.47	1463.33
08/21/78	19.86	1463.94	08/31/84	19.49	1464.31	10/29/90	20.55	1463.25
09/13/78	19.00	1464.80	09/29/84	18.72	1465.08	11/27/90	20.57	1463.23
10/13/78	20.28	1463.52	10/31/84	18.71	1465.09			
11/22/78	20.34	1463.46	12/06/84	18.60	1465.20	03/29/91	20.67	1463.13
						04/30/91	20.58	1463.22
05/17/79	18.70	1465.10	04/28/85	18.54	1465.26	05/30/91	20.31	1463.49
06/13/79	18.98	1464.82	05/29/85	18.41	1465.39	06/29/91	20.09	1463.71
07/13/79	18.34	1465.46	06/29/85	18.35	1465.45	07/28/91	19.41	1464.39
08/07/79	18.70	1465.10	07/27/85	18.56	1465.24	08/30/91	19.35	1464.45

151-062-19ADD1 (Continued), MP Elev (msl, ft)=1483.8 Warwick Aquifer SI (ft.)=33-38

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
09/28/91	19.29	1464.51	10/28/95	17.33	1466.47	10/02/99	16.23	1467.57
10/26/91	19.18	1464.62				11/02/99	16.28	1467.52
			05/02/96	16.53	1467.27			
04/28/92	18.27	1465.53	06/01/96	16.50	1467.30	07/01/00	16.53	1467.27
05/29/92	18.22	1465.58	06/30/96	16.73	1467.07	08/01/00	16.46	1467.34
06/30/92	18.38	1465.42	07/10/96	16.81	1466.99	08/10/00	16.48	1467.32
07/30/92	18.46	1465.34	07/30/96	17.04	1466.76	09/03/00	16.55	1467.25
08/29/92	18.76	1465.04	08/13/96	17.09	1466.71	10/03/00	16.48	1467.32
09/29/92	18.94	1464.86	08/27/96	17.21	1466.59	10/12/00	16.49	1467.31
10/14/92	18.58	1465.22	08/31/96	17.23	1466.57	10/28/00	16.43	1467.37
10/29/92	19.08	1464.72	09/28/96	17.52	1466.28			
12/08/92	18.53	1465.27	10/29/96	17.40	1466.40	06/05/01	15.73	1468.07
						07/01/01	15.55	1468.25
04/04/93	19.05	1464.75	04/30/97	16.09	1467.71	07/31/01	15.61	1468.19
04/14/93	18.34	1465.46	05/01/97	16.15	1467.65	09/01/01	15.79	1468.01
05/01/93	18.64	1465.16	06/01/97	16.30	1467.50	09/29/01	16.06	1467.74
05/29/93	18.45	1465.35	06/04/97	16.30	1467.50	11/10/01	16.15	1467.65
06/09/93	17.98	1465.82	06/28/97	16.64	1467.16			
06/28/93	18.22	1465.58	07/09/97	16.65	1467.15	05/31/02	16.24	1467.56
07/15/93	17.57	1466.23	07/30/97	16.88	1466.92	06/30/02	16.11	1467.69
07/22/93	17.33	1466.47	08/30/97	17.17	1466.63	07/29/02	16.02	1467.78
07/30/93	15.80	1468.00	09/30/97	17.34	1466.46	08/29/02	16.53	1467.27
08/10/93	14.87	1468.93	10/31/97	17.37	1466.43	09/29/02	16.67	1467.13
08/29/93	15.41	1468.39	11/18/97	17.31	1466.49	10/31/02	16.77	1467.03
09/15/93	15.16	1468.64						
09/27/93	15.77	1468.03	04/16/98	16.85	1466.95	05/08/03	16.55	1467.25
10/21/93	15.62	1468.18	06/04/98	16.99	1466.81	06/05/03	16.40	1467.40
10/31/93	16.08	1467.72	07/01/98	17.10	1466.70	07/10/03	16.26	1467.54
11/17/93	15.75	1468.05	07/10/98	17.15	1466.65	07/24/03	16.02	1467.78
			08/01/98	17.38	1466.42	08/05/03	16.01	1467.79
03/08/94	16.22	1467.58	08/20/98	17.61	1466.19	08/14/03	16.00	1467.80
04/05/94	16.06	1467.74	08/30/98	17.77	1466.03	09/02/03	16.19	1467.61
05/01/94	16.25	1467.55	09/22/98	17.91	1465.89	09/30/03	16.44	1467.36
05/29/94	16.48	1467.32	09/29/98	18.00	1465.80	11/01/03	16.47	1467.33
06/30/94	16.61	1467.19	11/08/98	17.90	1465.90	12/02/03	16.50	1467.30
07/30/94	16.78	1467.02						
08/29/94	17.02	1466.78	03/24/99	17.95	1465.85	05/04/04	15.50	1468.30
09/28/94	17.19	1466.61	05/19/99	16.33	1467.47	06/08/04	15.46	1468.34
10/29/94	17.12	1466.68	06/04/99	16.59	1467.21	07/13/04	15.48	1468.32
			06/23/99	16.40	1467.40	08/10/04	15.89	1467.91
04/29/95	16.25	1467.55	07/02/99	16.51	1467.29	09/07/04	16.21	1467.59
05/31/95	16.40	1467.40	07/07/99	16.42	1467.38	10/04/04	16.26	1467.54
06/29/95	16.69	1467.11	07/21/99	16.40	1467.40	11/09/04	16.20	1467.60
08/29/95	17.03	1466.77	08/01/99	16.43	1467.37	12/07/04	16.33	1467.47
09/29/95	17.10	1466.70	08/31/99	16.20	1467.60			

151-062-19DDA
Warwick Aquifer

MP Elev (msl,ft)=1,470.70
SI (ft.)=40-45

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
04/07/80	7.31	1463.39	04/28/86	6.35	1464.35	09/29/92	9.11	1461.59
05/06/80	6.61	1464.09	05/31/86	6.69	1464.01	10/29/92	9.08	1461.62
06/04/80	6.76	1463.94	07/01/86	7.50	1463.20			
07/01/80	7.59	1463.11	08/01/86	7.25	1463.45	04/04/93	8.28	1462.42
07/30/80	8.37	1462.33	08/30/86	7.72	1462.98	05/01/93	7.94	1462.76
08/28/80	8.14	1462.56	09/30/86	7.41	1463.29	05/29/93	7.91	1462.79
09/24/80	7.57	1463.13	11/01/86	7.45	1463.25	06/28/93	7.81	1462.89
10/23/80	7.27	1463.43				07/30/93	6.33	1464.37
11/11/80	7.20	1463.50	04/30/87	6.72	1463.98	08/29/93	6.48	1464.22
12/23/80	7.80	1462.90	05/31/87	6.72	1463.98	09/27/93	7.06	1463.64
			07/02/87	7.33	1463.37	10/31/93	7.09	1463.61
04/10/81	6.78	1463.92	07/31/87	6.77	1463.93			
05/05/81	6.39	1464.31	08/29/87	6.98	1463.72	04/05/94	6.12	1464.58
06/04/81	6.13	1464.57	09/30/87	7.12	1463.58	05/01/94	6.33	1464.37
06/29/81	5.89	1464.81	10/30/87	7.19	1463.51	05/29/94	7.75	1462.95
07/28/81	5.88	1464.82	11/28/87	7.06	1463.64	06/30/94	7.89	1462.81
08/27/81	6.59	1464.11				07/30/94	7.97	1462.73
09/24/81	6.95	1463.75	03/03/88	6.50	1464.20	08/29/94	8.19	1462.51
10/23/81	6.43	1464.27	03/30/88	6.50	1464.20	09/28/94	8.28	1462.42
11/18/81	6.41	1464.29	04/29/88	6.95	1463.75	10/29/94	7.78	1462.92
12/30/81	6.74	1463.96	05/30/88	7.32	1463.38			
			06/28/88	8.19	1462.51	05/31/95	7.95	1462.75
04/15/82	5.70	1465.00	08/02/88	8.94	1461.76	06/29/95	8.25	1462.45
05/28/82	6.13	1464.57	08/29/88	9.43	1461.27	08/29/95	9.04	1461.66
06/25/82	6.23	1464.47	09/30/88	9.62	1461.08	09/29/95	8.79	1461.91
08/02/82	6.78	1463.92	10/29/88	9.54	1461.16	10/28/95	8.95	1461.75
09/04/82	7.43	1463.27						
09/29/82	7.34	1463.36	04/27/89	7.80	1462.90	06/01/96	7.70	1463.00
11/02/82	6.74	1463.96	06/01/89	8.15	1462.55	06/30/96	7.94	1462.76
12/01/82	6.79	1463.91	06/26/89	8.70	1462.00	07/30/96	8.95	1461.75
			07/29/89	9.69	1461.01	08/31/96	9.19	1461.51
04/05/83	6.74	1463.96	08/29/89	10.10	1460.60	09/28/96	9.26	1461.44
05/02/83	6.27	1464.43	09/29/89	10.18	1460.52	10/29/96	9.08	1461.62
06/04/83	6.61	1464.09	10/30/89	9.77	1460.93			
06/28/83	6.84	1463.86	11/28/89	9.93	1460.77	05/01/97	8.02	1462.68
08/02/83	7.40	1463.30				06/01/97	8.24	1462.46
08/31/83	7.24	1463.46	04/04/90	9.79	1460.91	06/28/97	9.21	1461.49
09/30/83	6.91	1463.79	04/30/90	9.50	1461.20	07/30/97	9.42	1461.28
10/31/83	6.77	1463.93	06/01/90	9.13	1461.57	08/30/97	9.35	1461.35
11/27/83	6.79	1463.91	06/30/90	8.75	1461.95	09/30/97	9.44	1461.26
			07/28/90	9.19	1461.51	10/31/97	9.54	1461.16
04/04/84	5.76	1464.94	08/29/90	9.93	1460.77			
04/30/84	5.49	1465.21	09/27/90	10.47	1460.23	07/01/98	9.33	1461.37
06/01/84	6.38	1464.32	10/29/90	10.01	1460.69	08/01/98	9.99	1460.71
07/01/84	5.80	1464.90	11/27/90	10.27	1460.43	08/30/98	9.81	1460.89
08/02/84	7.08	1463.62				09/29/98	9.91	1460.79
08/31/84	7.52	1463.18	03/29/91	10.16	1460.54	11/08/98	9.16	1461.54
09/29/84	7.48	1463.22	04/30/91	9.48	1461.22			
10/31/84	7.02	1463.68	05/30/91	9.20	1461.50	06/04/99	9.20	1461.50
12/06/84	6.98	1463.72	06/29/91	8.61	1462.09	07/02/99	9.00	1461.70
			07/28/91	8.40	1462.30	08/01/99	9.32	1461.38
04/28/85	6.72	1463.98	08/30/91	8.79	1461.91	08/31/99	9.06	1461.64
05/29/85	6.80	1463.90	09/28/91	8.45	1462.25	10/02/99	9.12	1461.58
06/29/85	6.75	1463.95	10/26/91	8.40	1462.30	11/02/99	9.08	1461.62
07/27/85	7.66	1463.04						
08/29/85	7.45	1463.25	04/28/92	7.49	1463.21	07/01/00	9.55	1461.15
09/29/85	7.52	1463.18	05/29/92	7.98	1462.72	08/01/00	9.69	1461.01
10/31/85	7.05	1463.65	06/30/92	8.07	1462.63	09/03/00	9.58	1461.12
			07/30/92	8.39	1462.31	10/03/00	9.61	1461.09
04/01/86	6.80	1463.90	08/29/92	8.72	1461.98	10/28/00	9.18	1461.52

151-062-19DDA (Continued), MP Elev (msl,ft)=1470.7 Warwick Aquifer SI (ft.)=40-45

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/05/01	9.95	1460.75	09/01/01	10.26	1460.44	05/31/02	10.16	1460.54
07/01/01	9.77	1460.93	09/29/01	10.34	1460.36	06/30/02	10.36	1460.34
07/31/01	8.84	1461.86	11/10/01	10.01	1460.69	07/29/02	10.83	1459.87

**151-062-20AAA
Warwick Aquifer**

**MP Elev (msl,ft)=1,487.55
SI (ft.)=0-27.3**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
05/13/70	19.31	1468.24	06/21/73	20.21	1467.34	03/23/78	20.21	1467.34
05/22/70	19.31	1468.24	09/21/73	20.21	1467.34	07/26/78	19.01	1468.54
06/17/70	19.21	1468.34	12/21/73	20.51	1467.04	09/27/78	19.31	1468.24
07/22/70	19.31	1468.24				12/11/78	19.61	1467.94
08/20/70	19.21	1468.34	05/23/74	17.41	1470.14			
09/15/70	19.31	1468.24	06/19/74	18.41	1469.14	06/20/79	18.31	1469.24
10/22/70	19.21	1468.34	09/23/74	18.41	1469.14	09/04/79	17.71	1469.84
11/23/70	19.41	1468.14	12/16/74	18.61	1468.94			
12/22/70	19.31	1468.24				06/25/80	19.21	1468.34
			04/03/75	18.81	1468.74	09/30/80	19.21	1468.34
01/26/71	19.51	1468.04	05/05/75	17.41	1470.14			
02/23/71	19.51	1468.04	05/29/75	18.21	1469.34	10/14/92	18.38	1469.17
03/18/71	19.71	1467.84	06/18/75	18.51	1469.04	12/08/92	18.54	1469.01
04/22/71	17.21	1470.34	09/17/75	18.81	1468.74			
06/18/71	19.01	1468.54	12/18/75	18.91	1468.64	04/14/93	17.62	1469.93
09/17/71	19.31	1468.24				06/10/93	18.10	1469.45
12/21/71	19.61	1467.94	06/29/76	18.81	1468.74	07/15/93	17.86	1469.69
			09/28/76	19.21	1468.34	07/22/93	17.06	1470.49
03/17/72	19.71	1467.84	12/28/76	19.51	1468.04	08/10/93	14.91	1472.64
06/19/72	19.11	1468.44				08/19/93	13.97	1473.58
09/20/72	19.81	1467.74	03/21/77	19.61	1467.94	09/15/93	14.04	1473.51
12/28/72	19.61	1467.94	07/07/77	19.91	1467.64	10/21/93	14.32	1473.23
			09/19/77	20.21	1467.34	11/17/93	14.51	1473.04
03/20/73	18.91	1468.64						

**151-062-20ABB
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,484.20
SI (ft.)=148-151**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
05/17/79	19.20	1465.00	04/28/85	18.72	1465.48	09/28/91	20.00	1464.20
06/13/79	18.45	1465.75	05/29/85	19.28	1464.92	10/26/91	19.74	1464.46
07/11/79	20.56	1463.64	06/29/85	18.82	1465.38			
08/07/79	20.00	1464.20	07/27/85	21.12	1463.08	04/28/92	18.52	1465.68
09/19/79	19.87	1464.33	08/29/85	19.84	1464.36	05/29/92	18.66	1465.54
10/03/79	19.63	1464.57	09/29/85	19.55	1464.65	06/30/92	19.97	1464.23
11/01/79	19.45	1464.75	10/31/85	19.10	1465.10	07/30/92	20.72	1463.48
12/18/79	19.36	1464.84				08/29/92	21.56	1462.64
			04/01/86	18.70	1465.50	09/29/92	19.97	1464.23
04/08/80	19.40	1464.80	04/28/86	18.23	1465.97	10/29/92	19.68	1464.52
05/06/80	19.26	1464.94	05/31/86	18.14	1466.06			
06/04/80	23.97	1460.23	07/01/86	19.36	1464.84	04/04/93	19.23	1464.97
07/01/80	22.98	1461.22	08/01/86	19.30	1464.90	05/01/93	18.95	1465.25
07/30/80	24.11	1460.09	08/30/86	19.22	1464.98	05/29/93	18.93	1465.27
08/28/80	22.35	1461.85	09/30/86	18.90	1465.30	06/28/93	18.59	1465.61
09/24/80	21.00	1463.20	11/01/86	18.74	1465.46	07/30/93	16.09	1468.11
10/23/80	20.64	1463.56				08/29/93	16.68	1467.52
11/21/80	20.38	1463.82	04/30/87	17.25	1466.95	09/27/93	16.29	1467.91
12/23/80	20.19	1464.01	05/31/87	17.84	1466.36	10/31/93	16.43	1467.77
			07/02/87	19.93	1464.27			
04/09/81	19.69	1464.51	07/31/87	17.67	1466.53	04/05/94	15.78	1468.42
05/05/81	19.45	1464.75	08/29/87	18.58	1465.62	05/01/94	16.32	1467.88
06/04/81	19.39	1464.81	09/30/87	17.89	1466.31	05/29/94	16.67	1467.53
06/29/81	19.01	1465.19	10/30/87	17.86	1466.34	06/30/94	17.41	1466.79
07/29/81	20.89	1463.31	11/28/87	17.87	1466.33	07/30/94	19.49	1464.71
08/26/81	20.30	1463.90				08/29/94	20.05	1464.15
09/24/81	19.24	1464.96	03/30/88	17.75	1466.45	09/28/94	18.06	1466.14
10/23/81	19.02	1465.18	04/29/88	17.76	1466.44	10/29/94	17.48	1466.72
11/18/81	18.41	1465.79	05/30/88	18.32	1465.88			
12/30/81	18.92	1465.28	06/28/88	23.62	1460.58	04/29/95	16.43	1467.77
			08/02/88	23.11	1461.09	05/31/95	16.59	1467.61
04/15/82	18.42	1465.78	08/29/88	22.57	1461.63	06/29/95	17.00	1467.20
05/28/82	18.36	1465.84	09/30/88	20.34	1463.86	08/29/95	15.10	1469.10
06/25/82	19.09	1465.11	10/29/88	20.16	1464.04	09/29/95	17.32	1466.88
08/02/82	19.16	1465.04				10/29/95	17.57	1466.63
09/04/82	20.03	1464.17	04/27/89	19.62	1464.58			
09/29/82	19.37	1464.83	06/01/89	19.32	1464.88	05/02/96	16.41	1467.79
11/02/82	18.99	1465.21	06/26/89	22.24	1461.96	06/01/96	16.53	1467.67
12/01/82	18.87	1465.33	07/29/89	24.22	1459.98	06/30/96	17.02	1467.18
			08/29/89	21.75	1462.45	07/30/96	19.95	1464.25
04/05/83	18.22	1465.98	09/29/89	21.03	1463.17	08/31/96	20.29	1463.91
05/02/83	17.84	1466.36	10/30/89	20.84	1463.36	09/28/96	18.05	1466.15
06/04/83	18.26	1465.94	11/28/89	20.75	1463.45	10/29/96	17.87	1466.33
06/28/83	18.37	1465.83						
08/02/83	20.51	1463.69	04/04/90	20.74	1463.46	05/01/97	16.12	1468.08
08/31/83	18.85	1465.35	04/30/90	20.59	1463.61	06/01/97	18.55	1465.65
09/30/83	18.33	1465.87	06/01/90	21.64	1462.56	06/28/97	18.19	1466.01
10/31/83	18.12	1466.08	06/30/90	20.87	1463.33	07/17/97	16.90	1467.30
11/27/83	18.12	1466.08	07/28/90	24.25	1459.95	07/30/97	19.37	1464.83
			08/29/90	22.25	1461.95	08/30/97	21.11	1463.09
04/04/84	17.82	1466.38	09/27/90	21.44	1462.76	09/30/97	17.84	1466.36
04/30/84	17.59	1466.61	10/29/90	21.30	1462.90	10/31/97	17.67	1466.53
06/01/84	18.92	1465.28	11/27/90	21.18	1463.02			
07/01/84	18.19	1466.01				07/01/98	17.66	1466.54
08/02/84	21.07	1463.13	03/29/91	21.11	1463.09	08/01/98	20.33	1463.87
08/31/84	21.69	1462.51	04/30/91	20.99	1463.21	08/30/98	18.93	1465.27
09/29/84	19.28	1464.92	05/30/91	20.88	1463.32	09/29/98	18.79	1465.41
10/31/84	19.24	1464.96	06/29/91	20.58	1463.62	11/08/98	18.35	1465.85
12/06/84	19.08	1465.12	07/28/91	21.49	1462.71			
			08/30/91	21.38	1462.82	06/04/99	16.36	1467.84

151-062-20ABB (Continued), MP Elev (msl,ft)=1484.2 Spiritwood Aquifer SI (ft.)=148-151

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
07/02/99	16.38	1467.82	11/10/01	16.27	1467.93	10/29/03	16.51	1467.69
08/01/99	17.40	1466.80				10/30/03	16.59	1467.61
08/31/99	15.98	1468.22	05/31/02	16.36	1467.84	10/31/03	16.59	1467.61
10/02/99	16.14	1468.06	06/30/02	16.55	1467.65	11/01/03	16.56	1467.64
11/02/99	16.34	1467.86	07/29/02	19.66	1464.54	11/02/03	16.55	1467.65
			08/29/02	17.36	1466.84	11/03/03	16.57	1467.63
07/01/00	16.88	1467.32	09/29/02	17.04	1467.16	11/04/03	16.51	1467.69
08/01/00	18.64	1465.56	10/31/02	16.98	1467.22	11/06/03	16.52	1467.68
09/03/00	16.73	1467.47				12/02/03	16.51	1467.69
10/03/00	16.60	1467.60	05/08/03	16.48	1467.72			
10/12/00	16.31	1467.89	06/05/03	16.31	1467.89	05/04/04	15.23	1468.97
10/28/00	16.48	1467.72	07/10/03	16.73	1467.47	06/08/04	14.99	1469.21
			07/24/03	16.38	1467.82	07/13/04	15.82	1468.38
06/05/01	15.81	1468.39	08/05/03	18.83	1465.37	08/10/04	17.34	1466.86
07/01/01	15.42	1468.78	08/14/03	17.82	1466.38	09/07/04	16.58	1467.62
07/31/01	16.08	1468.12	09/02/03	17.41	1466.79	10/04/04	16.27	1467.93
09/01/01	16.64	1467.56	09/30/03	16.66	1467.54	11/09/04	16.18	1468.02
09/29/01	16.36	1467.84	10/27/03	16.46	1467.74	12/07/04	16.23	1467.97

151-062-20ACA Undefined Aquifer

**MP Elev (msl,ft)=1,491.70
SI (ft.)=168-183**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
09/14/77	24.02	1467.68	08/31/78	24.59	1467.11	09/20/79	22.28	1469.42
09/28/77	23.72	1467.98	09/28/78	23.67	1468.03	10/03/79	22.06	1469.64
			12/15/78	23.20	1468.50	11/01/79	21.89	1469.81
05/04/78	22.10	1469.60				12/18/79	21.80	1469.90
06/28/78	23.20	1468.50	05/27/79	21.00	1470.70			
07/07/78	24.72	1466.98	06/13/79	21.00	1470.70	04/08/80	21.70	1470.00
07/27/78	25.60	1466.10	07/11/79	22.44	1469.26	05/06/80	21.39	1470.31
08/09/78	24.72	1466.98	08/07/79	22.24	1469.46			

151-062-20BDD Warwick Aquifer

**MP Elev (msl,ft)=1,484.00
SI (ft.)=0-98**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
05/04/78	23.85	1460.15	07/11/79	22.83	1461.17	12/23/80	24.28	1459.72
06/28/78	23.73	1460.27	08/07/79	23.35	1460.65			
07/07/78	24.13	1459.87	09/19/79	23.83	1460.17	04/09/81	23.75	1460.25
07/27/78	24.62	1459.38	10/03/79	23.76	1460.24	05/05/81	23.53	1460.47
08/09/78	25.08	1458.92	11/01/79	23.68	1460.32	06/30/81	22.86	1461.14
08/31/78	25.22	1458.78	12/18/79	23.60	1460.40	08/27/81	23.60	1460.40
09/28/78	25.03	1458.97				09/24/81	23.29	1460.71
12/15/78	24.98	1459.02	04/08/80	23.66	1460.34	10/23/81	23.10	1460.90
			05/06/80	23.40	1460.60	12/30/81	23.03	1460.97
05/17/79	22.10	1461.90	07/30/80	25.87	1458.13	06/13/79	22.25	1461.75
10/23/80	24.73	1459.27						

151-062-20CDA
Warwick Aquifer

MP Elev (msl,ft)=1,479.00
SI (ft.)=78-81

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/08/79	14.95	1464.05	06/01/84	14.07	1464.93	06/28/93	13.90	1465.10
09/19/79	15.62	1463.38	08/31/84	15.24	1463.76	09/27/93	12.60	1466.40
10/03/79	15.60	1463.40	10/31/84	14.93	1464.07	10/31/93	12.76	1466.24
11/01/79	15.42	1463.58						
12/18/79	15.47	1463.53	04/28/85	14.35	1464.65	05/29/94	13.08	1465.92
			07/27/85	15.05	1463.95	07/30/94	13.46	1465.54
04/07/80	15.30	1463.70				10/29/94	13.47	1465.53
05/06/80	14.97	1464.03	05/31/86	13.79	1465.21			
06/04/80	15.33	1463.67	08/01/86	14.40	1464.60	06/29/95	12.68	1466.32
07/01/80	15.82	1463.18	11/01/86	14.38	1464.62	09/29/95	13.76	1465.24
07/30/80	16.67	1462.33				10/28/95	13.76	1465.24
08/28/80	16.78	1462.22	04/30/87	13.53	1465.47			
10/23/80	15.94	1463.06	07/02/87	14.14	1464.86	06/30/96	13.18	1465.82
11/21/80	15.73	1463.27	08/29/87	13.95	1465.05			
12/23/80	15.85	1463.15	10/30/87	14.00	1465.00	06/28/97	13.20	1465.80
						07/17/97	13.05	1465.95
04/09/81	15.27	1463.73	04/29/88	13.65	1465.35	09/30/97	13.08	1465.92
05/05/81	14.87	1464.13	05/30/88	13.91	1465.09	10/02/97	13.68	1465.32
06/30/81	14.15	1464.85	09/30/88	16.15	1462.85	10/31/97	13.60	1465.40
07/07/81	14.50	1464.50	10/29/88	16.00	1463.00			
08/27/81	14.85	1464.15				07/01/98	13.23	1465.77
09/24/81	14.85	1464.15	04/27/89	14.89	1464.11	08/30/98	13.84	1465.16
10/23/81	14.64	1464.36	08/29/89	16.82	1462.18	11/08/98	14.06	1464.94
11/18/81	14.60	1464.40	10/30/89	16.53	1462.47			
12/30/81	14.70	1464.30				06/04/99	12.66	1466.34
			06/01/90	15.88	1463.12	08/01/99	12.71	1466.29
04/15/82	14.10	1464.90	09/27/90	17.01	1461.99	10/02/99	12.64	1466.36
05/28/82	13.94	1465.06	10/29/90	16.80	1462.20			
08/02/82	14.59	1464.41	11/27/90	16.77	1462.23	07/01/00	12.68	1466.32
09/29/82	15.22	1463.78				10/12/00	12.65	1466.35
12/01/82	14.59	1464.41	03/29/91	16.70	1462.30			
			09/28/91	15.13	1463.87	07/01/01	12.16	1466.84
04/05/83	14.34	1464.66	10/26/91	15.07	1463.93	07/31/01	12.19	1466.81
06/04/83	14.08	1464.92				09/29/01	12.86	1466.14
08/31/83	14.77	1464.23	04/28/92	14.09	1464.91			
10/31/83	14.23	1464.77	10/29/92	15.15	1463.85	07/24/03	12.26	1466.74
						04/04/84	13.75	1465.25
05/29/93	14.09	1464.91						

151-062-20DAD1
Spiritwood Aquifer

MP Elev (msl,ft)=1,472.60
SI (ft.)=143-146

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/07/79	8.70	1463.90	07/27/85	8.87	1463.73	04/28/92	7.39	1465.21
08/17/79	9.00	1463.60	08/29/85	8.70	1463.90	05/29/92	7.55	1465.05
09/19/79	9.19	1463.41	09/29/85	8.60	1464.00	06/30/92	7.93	1464.67
10/03/79	9.09	1463.51	10/31/85	8.79	1463.81	07/30/92	8.20	1464.40
11/01/79	8.90	1463.70				08/29/92	8.99	1463.61
12/18/79	8.88	1463.72	04/01/86	7.63	1464.97	09/29/92	8.73	1463.87
			04/28/86	7.08	1465.52	10/29/92	8.63	1463.97
04/08/80	8.67	1463.93	05/31/86	7.10	1465.50			
05/06/80	8.47	1464.13	07/01/86	7.95	1464.65	05/01/93	7.85	1464.75
06/04/80	9.69	1462.91	08/01/86	7.60	1465.00	05/29/93	7.67	1464.93
07/02/80	9.85	1462.75	08/30/86	8.05	1464.55	06/28/93	7.34	1465.26
07/30/80	10.87	1461.73	09/30/86	7.85	1464.75	08/29/93	5.50	1467.10
08/28/80	10.79	1461.81	11/01/86	7.83	1464.77	09/27/93	5.70	1466.90
09/24/80	10.10	1462.50				10/31/93	5.90	1466.70
10/23/80	9.75	1462.85	04/30/87	6.59	1466.01			
11/21/80	9.47	1463.13	05/31/87	6.83	1465.77	04/05/94	5.64	1466.96
12/23/80	9.42	1463.18	07/02/87	7.61	1464.99	05/01/94	5.83	1466.77
			07/31/87	6.85	1465.75	05/29/94	6.13	1466.47
04/09/81	8.91	1463.69	08/29/87	7.21	1465.39	06/30/94	6.30	1466.30
05/05/81	8.55	1464.05	09/30/87	7.17	1465.43	07/30/94	7.05	1465.55
06/30/81	7.82	1464.78	10/30/87	7.19	1465.41	08/29/94	7.31	1465.29
07/29/81	8.46	1464.14	11/28/87	7.16	1465.44	09/28/94	7.10	1465.50
08/27/81	8.60	1464.00				10/29/94	6.77	1465.83
09/24/81	8.41	1464.19	03/30/88	7.00	1465.60			
10/23/81	8.16	1464.44	04/29/88	6.93	1465.67	04/29/95	5.89	1466.71
11/18/81	8.10	1464.50	05/30/88	6.95	1465.65	05/31/95	6.10	1466.50
12/31/81	8.25	1464.35	06/28/88	8.73	1463.87	06/29/95	6.46	1466.14
			08/02/88	9.68	1462.92	08/29/95	6.90	1465.70
04/15/82	7.75	1464.85	08/29/88	9.91	1462.69	09/29/95	6.01	1466.59
05/28/82	7.45	1465.15	09/30/88	9.69	1462.91	10/28/95	6.93	1465.67
06/25/82	7.50	1465.10	10/29/88	9.48	1463.12			
08/02/82	8.15	1464.45				05/02/96	6.13	1466.47
09/04/82	8.87	1463.73	04/27/89	8.60	1464.00	06/01/96	6.03	1466.57
09/29/82	8.75	1463.85	06/01/89	8.39	1464.21	06/30/96	6.52	1466.08
11/02/82	8.38	1464.22	06/26/89	9.05	1463.55	07/30/96	7.04	1465.56
12/01/82	8.10	1464.50	07/29/89	10.67	1461.93	08/31/96	7.68	1464.92
			08/29/89	10.67	1461.93	09/28/96	7.35	1465.25
04/05/83	7.90	1464.70	09/29/89	10.28	1462.32	10/29/96	7.15	1465.45
05/02/83	7.51	1465.09	10/30/89	10.00	1462.60			
06/04/83	7.49	1465.11	11/28/89	9.93	1462.67	05/01/97	5.75	1466.85
06/28/83	7.74	1464.86				06/01/97	6.09	1466.51
08/02/83	8.50	1464.10	04/04/90	9.95	1462.65	06/28/97	6.69	1465.91
08/31/83	8.30	1464.30	04/30/90	9.76	1462.84	07/16/97	6.30	1466.30
09/30/83	7.83	1464.77	06/01/90	9.78	1462.82	07/30/97	6.95	1465.65
10/31/83	7.60	1465.00	06/30/90	9.38	1463.22	08/30/97	7.40	1465.20
11/27/83	7.58	1465.02	07/28/90	9.92	1462.68	09/30/97	7.24	1465.36
			08/29/90	10.49	1462.11	10/31/97	7.00	1465.60
04/04/84	7.25	1465.35	09/27/90	10.53	1462.07			
04/30/84	6.84	1465.76	10/29/90	10.33	1462.27	07/01/98	6.73	1465.87
06/01/84	7.53	1465.07	11/27/90	10.24	1462.36	08/01/98	7.79	1464.81
07/01/84	7.22	1465.38				08/30/98	8.17	1464.43
08/02/84	8.69	1463.91	03/29/91	10.22	1462.38	09/29/98	8.06	1464.54
08/31/84	8.91	1463.69	04/30/91	10.02	1462.58	11/08/98	7.55	1465.05
09/29/84	8.75	1463.85	05/30/91	9.68	1462.92			
10/31/84	8.35	1464.25	06/29/91	8.87	1463.73	06/04/99	5.89	1466.71
12/06/84	8.22	1464.38	07/28/91	8.87	1463.73	07/01/99	5.74	1466.86
			08/30/91	9.34	1463.26	08/01/99	6.05	1466.55
04/28/85	7.94	1464.66	09/28/91	8.72	1463.88	08/31/99	5.54	1467.06
05/29/85	8.10	1464.50	10/26/91	8.54	1464.06	10/02/99	5.75	1466.85
06/29/85	7.82	1464.78				11/02/99	5.92	1466.68

151-062-20DAD1 (Continued), MP Elev (msl, ft)=1472.6 Spiritwood Aquifer SI (ft.)=143-146

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
07/01/00	6.09	1466.51	05/31/02	5.76	1466.84	09/02/03	6.08	1466.52
08/01/00	6.15	1466.45	06/30/02	5.57	1467.03	09/30/03	6.11	1466.49
09/03/00	5.99	1466.61	07/29/02	6.48	1466.12	11/01/03	6.05	1466.55
10/03/00	5.98	1466.62	08/29/02	6.52	1466.08	12/02/03	6.09	1466.51
10/12/00	5.84	1466.76	09/29/02	6.61	1465.99	05/04/04	5.24	1467.36
10/28/00	5.75	1466.85	10/31/02	6.44	1466.16	06/08/04	4.93	1467.67
06/05/01	5.54	1467.06	05/08/03	5.75	1466.85	07/13/04	5.39	1467.21
07/01/01	5.13	1467.47	06/05/03	5.74	1466.86	08/10/04	6.52	1466.08
07/31/01	5.42	1467.18	07/10/03	5.27	1467.33	09/01/04	6.60	1466.00
09/01/01	5.99	1466.61	07/24/03	5.34	1467.26	09/07/04	6.33	1466.27
09/29/01	6.01	1466.59	08/05/03	5.59	1467.01	10/04/04	6.02	1466.58
11/10/01	5.84	1466.76	08/14/03	5.70	1466.90	11/09/04	5.86	1466.74
						12/07/04	5.90	1466.70

151-062-20DAD2
Warwick Aquifer

MP Elev (msl,ft)=1,472.80
SI (ft.)=55-58

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/07/79	8.80	1464.00	07/27/85	8.78	1464.02	04/28/92	7.44	1465.36
08/17/79	9.04	1463.76	08/29/85	8.92	1463.88	05/29/92	7.65	1465.15
09/19/79	9.40	1463.40	09/29/85	8.71	1464.09	06/30/92	7.85	1464.95
10/03/79	9.29	1463.51	10/31/85	8.27	1464.53	07/30/92	8.06	1464.74
11/01/79	9.07	1463.73				08/29/92	8.79	1464.01
12/18/79	9.10	1463.70	04/01/86	7.62	1465.18	09/29/92	8.77	1464.03
			04/28/86	7.00	1465.80	10/29/92	8.69	1464.11
04/08/80	8.71	1464.09	05/31/86	7.24	1465.56			
05/06/80	8.54	1464.26	07/01/86	7.93	1464.87	05/01/93	7.85	1464.95
06/04/80	9.38	1463.42	08/01/86	7.65	1465.15	05/29/93	7.68	1465.12
07/02/80	9.74	1463.06	08/30/86	8.15	1464.65	06/28/93	7.43	1465.37
07/30/80	10.61	1462.19	09/30/86	7.88	1464.92	08/29/93	5.62	1467.18
08/28/80	10.80	1462.00	11/01/86	7.85	1464.95	09/27/93	5.85	1466.95
09/24/80	10.20	1462.60				10/31/93	6.02	1466.78
10/23/80	9.83	1462.97	04/30/87	6.72	1466.08			
11/21/80	9.53	1463.27	05/31/87	6.85	1465.95	04/05/94	5.68	1467.12
12/23/80	9.53	1463.27	07/02/87	7.59	1465.21	05/01/94	5.95	1466.85
			07/31/87	6.98	1465.82	05/29/94	6.27	1466.53
04/09/81	8.97	1463.83	08/29/87	7.26	1465.54	06/30/94	6.43	1466.37
05/05/81	8.60	1464.20	09/30/87	7.24	1465.56	07/30/94	6.89	1465.91
06/30/81	7.80	1465.00	10/30/87	7.25	1465.55	08/29/94	7.30	1465.50
07/29/81	8.30	1464.50	11/28/87	7.20	1465.60	09/28/94	7.22	1465.58
08/27/81	8.61	1464.19				10/29/94	6.84	1465.96
09/24/81	8.47	1464.33	03/30/88	7.01	1465.79			
10/23/81	8.22	1464.58	04/29/88	6.97	1465.83	04/29/95	5.98	1466.82
11/18/81	8.17	1464.63	05/30/88	7.37	1465.43	05/31/95	6.29	1466.51
12/31/81	8.34	1464.46	06/28/88	8.37	1464.43	06/29/95	6.58	1466.22
			08/02/88	9.52	1463.28	08/29/95	7.17	1465.63
04/15/82	7.73	1465.07	08/29/88	9.81	1462.99	09/29/95	6.10	1466.70
05/28/82	7.56	1465.24	09/30/88	9.72	1463.08	10/28/95	6.94	1465.86
06/25/82	7.59	1465.21	10/28/88	9.53	1463.27			
08/02/82	8.20	1464.60				05/02/96	6.20	1466.60
09/04/82	8.93	1463.87	04/27/89	8.58	1464.22	06/01/96	6.05	1466.75
09/29/82	8.80	1464.00	06/01/89	8.43	1464.37	06/30/96	6.65	1466.15
11/02/82	8.27	1464.53	06/26/89	8.79	1464.01	07/30/96	7.06	1465.74
12/01/82	8.19	1464.61	07/29/89	10.36	1462.44	08/31/96	7.60	1465.20
			08/29/89	10.63	1462.17	09/28/96	7.34	1465.46
04/05/83	7.95	1464.85	09/29/89	10.28	1462.52	10/29/96	7.15	1465.65
05/02/83	7.58	1465.22	10/30/89	10.08	1462.72			
06/04/83	7.60	1465.20	11/28/89	9.98	1462.82	05/01/97	5.85	1466.95
06/28/83	7.84	1464.96				06/01/97	6.23	1466.57
08/02/83	8.48	1464.32	04/04/90	9.97	1462.83	06/28/97	6.60	1466.20
08/31/83	8.38	1464.42	04/30/90	9.79	1463.01	07/16/97	6.42	1466.38
09/30/83	7.98	1464.82	06/01/90	9.68	1463.12	07/30/97	7.05	1465.75
10/31/83	7.69	1465.11	06/30/90	9.43	1463.37	08/30/97	7.44	1465.36
11/27/83	7.70	1465.10	07/28/90	9.84	1462.96	09/30/97	7.32	1465.48
			08/29/90	10.47	1462.33	10/31/97	7.03	1465.77
04/04/84	7.28	1465.52	09/27/90	10.58	1462.22			
04/30/84	6.87	1465.93	10/29/90	10.39	1462.41	07/01/98	6.70	1466.10
06/01/84	7.51	1465.29	11/27/90	10.30	1462.50	08/01/98	7.59	1465.21
07/01/84	7.21	1465.59				08/30/98	8.04	1464.76
08/02/84	8.43	1464.37	03/29/91	10.27	1462.53	09/29/98	8.08	1464.72
08/31/84	8.94	1463.86	04/30/91	9.98	1462.82	11/08/98	7.59	1465.21
09/29/84	8.86	1463.94	05/30/91	9.68	1463.12			
10/31/84	8.36	1464.44	06/29/91	9.28	1463.52	06/04/99	6.09	1466.71
12/06/84	8.29	1464.51	07/28/91	8.78	1464.02	07/02/99	5.95	1466.85
			08/30/91	9.30	1463.50	08/01/99	6.09	1466.71
04/28/85	7.92	1464.88	09/28/91	8.77	1464.03	08/31/99	5.83	1466.97
05/29/85	8.07	1464.73	10/26/91	8.59	1464.21	10/02/99	5.91	1466.89
06/29/85	7.82	1464.98				11/02/99	6.05	1466.75

151-062-20DAD2 (Continued), MP Elev (msl, ft)=1472.8 Warwick AquiferSI (ft.)=55-58

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
07/01/00	6.15	1466.65	05/31/02	5.84	1466.96	09/02/03	6.21	1466.59
08/01/00	6.29	1466.51	06/30/02	5.66	1467.14	09/30/03	6.25	1466.55
09/03/00	6.07	1466.73	07/29/02	6.45	1466.35	11/01/03	6.14	1466.66
10/03/00	6.13	1466.67	08/29/02	6.57	1466.23	12/02/03	6.20	1466.60
10/12/00	5.95	1466.85	09/29/02	6.66	1466.14	05/04/04	5.43	1467.37
10/28/00	5.81	1466.99	10/31/02	6.52	1466.28	06/08/04	5.17	1467.63
06/05/01	5.71	1467.09	05/08/03	5.73	1467.07	07/13/04	5.55	1467.25
07/01/01	5.42	1467.38	06/05/03	5.87	1466.93	08/10/04	6.51	1466.29
07/31/01	5.21	1467.59	07/10/03	5.07	1467.73	09/01/04	6.60	1466.20
09/01/01	6.11	1466.69	07/24/03	5.50	1467.30	09/07/04	6.41	1466.39
09/29/01	6.15	1466.65	08/05/03	5.39	1467.41	10/04/04	6.14	1466.66
11/10/01	5.83	1466.97	08/14/03	5.80	1467.00	11/09/04	5.97	1466.83
						12/07/04	5.99	1466.81

**151-062-21BAA
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,487.10
SI (ft.)=160-166**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
11/19/69	22.49	1464.61	10/13/76	23.79	1463.31	12/31/81	22.60	1464.50
04/15/70	22.67	1464.43	11/03/76	21.65	1465.45	04/15/82	22.32	1464.78
06/23/70	21.63	1465.47	12/03/76	23.74	1463.36	05/28/82	21.87	1465.23
09/08/70	22.50	1464.60	08/19/77	40.63	1446.47	06/25/82	23.99	1463.11
11/30/70	22.61	1464.49	08/30/77	35.94	1451.16	08/02/82	25.29	1461.81
02/03/71	22.92	1464.18	09/14/77	27.12	1459.98	09/04/82	28.34	1458.76
03/03/71	23.01	1464.09	09/28/77	25.67	1461.43	09/29/82	23.67	1463.43
04/13/71	22.88	1464.22	11/08/77	24.70	1462.40	11/02/82	22.42	1464.68
05/13/71	22.07	1465.03	11/17/77	24.67	1462.43	12/01/82	22.47	1464.63
06/10/71	21.99	1465.11	11/30/77	24.52	1462.58	04/05/83	22.24	1464.86
07/01/71	21.90	1465.20	01/19/78	24.50	1462.60	05/02/83	21.85	1465.25
07/30/71	22.26	1464.84	02/13/78	24.48	1462.62	06/04/83	22.31	1464.79
09/02/71	22.52	1464.58	03/20/78	24.50	1462.60	06/28/83	27.84	1459.26
10/07/71	22.55	1464.55	04/13/78	23.88	1463.22	08/02/83	33.10	1454.00
10/29/71	22.54	1464.56	05/04/78	23.50	1463.60	08/31/83	24.48	1462.62
11/30/71	22.40	1464.70	05/17/78	23.38	1463.72	09/30/83	20.38	1466.72
12/29/71	22.52	1464.58	06/01/78	23.35	1463.75	10/31/83	21.96	1465.14
02/03/72	22.79	1464.31	06/05/78	23.27	1463.83	11/27/83	21.83	1465.27
03/02/72	22.94	1464.16	06/28/78	43.50	1443.60	04/04/84	21.66	1465.44
03/28/72	22.95	1464.15	07/07/78	39.55	1447.55	04/30/84	21.19	1465.91
04/26/72	22.75	1464.35	07/12/78	42.63	1444.47	06/01/84	27.94	1459.16
06/01/72	22.24	1464.86	07/27/78	48.90	1438.20	07/01/84	22.14	1464.96
06/29/72	22.28	1464.82	08/21/78	50.00	1437.10	08/02/84	41.92	1445.18
08/02/72	22.55	1464.55	08/31/78	33.30	1453.80	08/31/84	30.06	1457.04
08/29/72	22.71	1464.39	09/12/78	32.41	1454.69	09/29/84	23.53	1463.57
10/03/72	22.80	1464.30	09/28/78	26.30	1460.80	10/31/84	22.78	1464.32
11/01/72	22.88	1464.22	10/13/78	25.42	1461.68	12/06/84	22.47	1464.63
12/05/72	22.88	1464.22	11/22/78	24.65	1462.45	04/28/85	22.16	1464.94
02/27/73	23.10	1464.00	12/15/78	24.52	1462.58	05/29/85	27.39	1459.71
04/05/73	22.68	1464.42	05/17/79	22.30	1464.80	06/29/85	22.19	1464.91
05/29/73	22.95	1464.15	06/13/79	34.84	1452.26	07/27/85	37.18	1449.92
07/02/73	23.05	1464.05	07/11/79	39.50	1447.60	08/29/85	26.95	1460.15
07/24/73	23.23	1463.87	08/07/79	29.55	1457.55	09/29/85	23.24	1463.86
08/29/73	23.40	1463.70	09/20/79	25.82	1461.28	10/31/85	22.57	1464.53
10/04/73	23.34	1463.76	10/03/79	24.13	1462.97	04/01/86	21.79	1465.31
10/31/73	23.09	1464.01	11/01/79	23.40	1463.70	04/28/86	21.34	1465.76
12/05/73	23.07	1464.03	12/18/79	23.15	1463.95	05/31/86	21.20	1465.90
05/08/75	21.94	1465.16	04/08/80	23.20	1463.90	07/01/86	29.44	1457.66
06/11/75	21.62	1465.48	05/06/80	22.94	1464.16	08/01/86	23.93	1463.17
07/22/75	32.44	1454.66	06/04/80	52.57	1434.53	08/30/86	24.24	1462.86
08/14/75	37.19	1449.91	07/02/80	41.75	1445.35	09/30/86	22.35	1464.75
09/12/75	24.20	1462.90	07/30/80	49.42	1437.68	11/01/86	22.15	1464.95
10/08/75	22.95	1464.15	08/28/80	30.76	1456.34	04/30/87	20.66	1466.44
11/08/75	22.90	1464.20	09/24/80	25.30	1461.80	05/31/87	21.82	1465.28
12/02/75	22.30	1464.80	11/21/80	23.99	1463.11	07/02/87	30.64	1456.46
01/13/76	22.90	1464.20	12/23/80	23.80	1463.30	07/31/87	22.07	1465.03
02/11/76	23.00	1464.10	04/09/81	23.34	1463.76	08/29/87	23.89	1463.21
03/17/76	22.84	1464.26	05/05/81	23.08	1464.02	09/30/87	21.59	1465.51
04/15/76	22.20	1464.90	06/04/81	23.65	1463.45	10/30/87	21.29	1465.81
05/12/76	22.14	1464.96	06/30/81	23.40	1463.70	11/28/87	21.24	1465.86
06/07/76	25.42	1461.68	07/29/81	43.90	1443.20	03/30/88	21.15	1465.95
07/16/76	32.93	1454.17	08/27/81	28.30	1458.80	04/29/88	21.02	1466.08
08/04/76	44.20	1442.90	09/24/81	23.35	1463.75	05/30/88	22.80	1464.30
09/09/76	24.69	1462.41	10/23/81	22.82	1464.28			
			11/18/81	22.65	1464.45			

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/28/88	54.94	1432.16	10/31/93	18.90	1468.20	08/10/00	21.70	1465.40
08/02/88	42.09	1445.01				09/03/00	19.74	1467.36
08/29/88	37.56	1449.54	04/05/94	19.59	1467.51	10/03/00	19.86	1467.24
09/30/88	25.10	1462.00	05/01/94	19.60	1467.50	10/12/00	19.82	1467.28
10/29/88	23.91	1463.19	05/29/94	21.21	1465.89	10/28/00	19.61	1467.49
			06/30/94	22.88	1464.22			
04/27/89	22.89	1464.21	07/30/94	37.89	1449.21	06/05/01	19.04	1468.06
06/01/89	23.09	1464.01	08/29/94	26.33	1460.77	07/01/01	18.84	1468.26
06/26/89	49.02	1438.08	09/28/94	22.29	1464.81	07/31/01	21.05	1466.05
07/29/89	48.28	1438.82	10/29/94	20.82	1466.28	09/01/01	23.68	1463.42
08/29/89	29.43	1457.67				09/29/01	20.43	1466.67
09/29/89	24.97	1462.13	04/29/95	19.70	1467.40	11/10/01	19.61	1467.49
10/30/89	24.42	1462.68	05/31/95	19.75	1467.35			
11/28/89	24.18	1462.92	06/29/95	20.95	1466.15	05/31/02	19.37	1467.73
			08/29/95	20.80	1466.30	06/30/02	29.59	1457.51
04/04/90	23.99	1463.11	09/29/95	20.92	1466.18	07/29/02	34.88	1452.22
04/30/90	23.82	1463.28	10/28/95	20.85	1466.25	08/29/02	22.15	1464.95
06/01/90	37.67	1449.43				09/29/02	20.68	1466.42
06/30/90	25.38	1461.72	05/02/96	20.14	1466.96	10/31/02	20.36	1466.74
07/28/90	35.00	1452.10	06/01/96	19.85	1467.25			
08/29/90	29.49	1457.61	06/30/96	21.47	1465.63	05/08/03	19.76	1467.34
09/27/90	25.73	1461.37	07/30/96	28.25	1458.85	06/05/03	19.55	1467.55
10/29/90	24.69	1462.41	08/31/96	38.80	1448.30	07/10/03	24.09	1463.01
11/27/90	24.42	1462.68	09/28/96	22.03	1465.07	07/24/03	21.60	1465.50
			10/29/96	21.30	1465.80	08/05/03	29.30	1457.80
03/29/91	24.26	1462.84				08/14/03	26.00	1461.10
04/30/91	24.08	1463.02	05/01/97	19.78	1467.32	09/02/03	23.19	1463.91
05/30/91	25.69	1461.41	06/01/97	25.55	1461.55	09/30/03	20.97	1466.13
06/29/91	23.97	1463.13	06/28/97	27.82	1459.28	10/27/03	20.20	1466.90
07/28/91	39.70	1447.40	07/30/97	29.50	1457.60	10/29/03	20.23	1466.87
08/30/91	34.69	1452.41	08/30/97	28.28	1458.82	10/30/03	20.23	1466.87
09/28/91	25.49	1461.61	09/30/97	21.42	1465.68	10/31/03	20.28	1466.82
10/26/91	22.79	1464.31	10/31/97	20.95	1466.15	11/01/03	20.27	1466.83
						11/02/03	20.26	1466.84
04/28/92	21.54	1465.56	07/01/98	31.87	1455.23	11/03/03	20.27	1466.83
05/29/92	21.86	1465.24	08/01/98	41.31	1445.79	11/04/03	20.22	1466.88
06/30/92	29.13	1457.97	08/30/98	34.59	1452.51	11/06/03	20.19	1466.91
07/30/92	39.50	1447.60	09/29/98	24.45	1462.65	12/02/03	20.08	1467.02
08/29/92	36.12	1450.98	11/08/98	21.68	1465.42			
09/29/92	26.20	1460.90				05/04/04	18.97	1468.13
10/29/92	23.09	1464.01	06/04/99	19.60	1467.50	06/08/04	18.68	1468.42
			07/02/99	19.67	1467.43	07/13/04	26.19	1460.91
04/04/93	22.53	1464.57	08/01/99	31.64	1455.46	08/10/04	29.56	1457.54
05/01/93	22.04	1465.06	08/31/99	19.78	1467.32	09/07/04	21.97	1465.13
05/29/93	24.22	1462.88	10/02/99	19.54	1467.56	10/04/04	20.22	1466.88
06/28/93	21.49	1465.61	11/02/99	19.63	1467.47	11/09/04	19.80	1467.30
07/30/93	19.73	1467.37				12/07/04	19.74	1467.36
08/29/93	22.67	1464.43	07/01/00	30.06	1457.04	09/27/93	20.17	1466.93
08/01/00	23.47	1463.63						

**151-062-22BBB2
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,477.50
SI (ft.)=171-177**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
11/19/69	12.90	1464.60				10/31/84	12.78	1464.72
			05/17/79	12.30	1465.20	12/06/84	12.46	1465.04
02/18/70	13.20	1464.30	06/01/79	12.12	1465.38			
04/15/70	13.10	1464.40	06/29/79	16.70	1460.80	04/28/85	12.17	1465.33
06/23/70	12.05	1465.45	07/11/79	34.06	1443.44	05/29/85	18.80	1458.70
09/08/70	12.89	1464.61	08/08/79	20.62	1456.88	06/29/85	12.26	1465.24
11/30/70	13.00	1464.50	08/17/79	26.23	1451.27	07/27/85	31.89	1445.61
			09/20/79	26.33	1451.17	08/29/85	17.93	1459.57
11/30/71	12.78	1464.72	10/03/79	14.26	1463.24	09/29/85	13.34	1464.16
			11/01/79	13.44	1464.06	10/31/85	12.57	1464.93
12/05/72	13.29	1464.21	12/18/79	13.15	1464.35			
						04/01/86	12.40	1465.10
12/05/73	13.43	1464.07	04/08/80	13.17	1464.33	04/28/86	11.77	1465.73
			05/06/80	12.88	1464.62	05/31/86	11.59	1465.91
12/03/74	12.70	1464.80	06/04/80	48.87	1428.63	07/01/86	21.55	1455.95
			07/02/80	36.35	1441.15	08/01/86	14.39	1463.11
05/08/75	11.95	1465.55	07/30/80	47.08	1430.42	08/30/86	15.12	1462.38
06/11/75	11.61	1465.89	08/28/80	21.67	1455.83	09/29/86	12.82	1464.68
07/22/75	26.87	1450.63	09/24/80	15.42	1462.08	10/31/86	12.63	1464.87
08/14/75	32.85	1444.65	10/23/80	14.45	1463.05			
09/12/75	14.55	1462.95	11/21/80	13.97	1463.53	04/28/87	11.16	1466.34
10/08/75	12.99	1464.51	12/23/80	13.80	1463.70	05/30/87	12.55	1464.95
11/08/75	12.83	1464.67				07/02/87	22.95	1454.55
12/03/75	12.60	1464.90	04/09/81	13.29	1464.21	07/31/87	12.64	1464.86
			05/05/81	13.05	1464.45	08/29/87	14.94	1462.56
01/13/76	12.89	1464.61	06/04/81	13.79	1463.71	09/30/87	12.13	1465.37
02/11/76	12.93	1464.57	06/30/81	13.55	1463.95	10/29/87	11.72	1465.78
04/15/76	12.27	1465.23	07/29/81	40.74	1436.76	11/28/87	11.64	1465.86
05/12/76	12.08	1465.42	08/27/81	19.19	1458.31			
06/07/76	16.30	1461.20	09/24/81	13.45	1464.05	03/30/88	11.61	1465.89
07/16/76	29.22	1448.28	10/23/81	12.85	1464.65	04/29/88	11.49	1466.01
08/04/76	42.80	1434.70	11/18/81	12.64	1464.86	05/30/88	13.52	1463.98
09/09/76	15.10	1462.40	12/31/81	12.60	1464.90	06/28/88	48.91	1428.59
10/13/76	13.84	1463.66				07/31/88	37.55	1439.95
11/03/76	14.10	1463.40	04/15/82	12.31	1465.19	08/29/88	30.46	1447.04
12/03/76	13.60	1463.90	05/28/82	11.83	1465.67	09/30/88	15.87	1461.63
			06/24/82	11.40	1466.10	10/28/88	14.37	1463.13
08/19/77	33.50	1444.00	08/01/82	16.99	1460.51			
08/30/77	27.37	1450.13	09/04/82	19.50	1458.00	04/27/89	13.32	1464.18
09/14/77	17.50	1460.00	09/29/82	13.75	1463.75	06/01/89	13.55	1463.95
09/28/77	15.85	1461.65	11/02/82	12.60	1464.90	06/26/89	46.91	1430.59
11/08/77	14.10	1463.40	12/01/82	12.44	1465.06	07/29/89	43.20	1434.30
						08/29/89	19.57	1457.93
04/13/78	13.92	1463.58	04/05/83	12.22	1465.28	09/29/89	15.56	1461.94
05/04/78	13.42	1464.08	05/02/83	11.70	1465.80	10/30/89	14.91	1462.59
05/17/78	13.44	1464.06	06/04/83	12.35	1465.15	11/28/89	14.65	1462.85
06/01/78	13.50	1464.00	06/28/83	13.69	1463.81			
06/05/78	13.33	1464.17	08/02/83	25.35	1452.15	04/04/90	14.42	1463.08
06/28/78	38.78	1438.72	08/30/83	15.07	1462.43	04/30/90	14.27	1463.23
07/07/78	31.80	1445.70	09/30/83	12.40	1465.10	05/31/90	30.39	1447.11
07/12/78	36.29	1441.21	10/31/83	11.95	1465.55	06/30/90	15.78	1461.72
07/27/78	45.53	1431.97	11/27/83	11.82	1465.68	07/28/90	25.71	1451.79
08/09/78	33.76	1443.74				08/29/90	20.38	1457.12
08/21/78	46.27	1431.23	04/04/84	11.63	1465.87	09/27/90	16.42	1461.08
08/31/78	24.92	1452.58	04/30/84	11.13	1466.37	10/28/90	15.17	1462.33
09/12/78	23.84	1453.66	05/31/84	20.89	1456.61	11/27/90	14.90	1462.60
09/28/78	16.60	1460.90	07/01/84	12.22	1465.28			
10/13/78	15.52	1461.98	08/02/84	36.31	1441.19	03/28/91	14.77	1462.73
11/22/78	14.68	1462.82	08/31/84	21.60	1455.90	04/30/91	14.50	1463.00
12/15/78	14.55	1462.95	09/29/84	13.71	1463.79	05/30/91	17.17	1460.33

151-062-22BBB2 (Continued), MP Elev (msl, ft)=1477.5 Spiritwood AquiferSI (ft.)=171-177

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/28/91	14.69	1462.81	06/01/96	10.30	1467.20	09/01/01	15.03	1462.47
07/28/91	36.09	1441.41	06/29/96	12.52	1464.98	09/29/01	11.09	1466.41
08/29/91	32.11	1445.39	07/30/96	18.97	1458.53	11/10/01	10.13	1467.37
09/28/91	14.47	1463.03	08/30/96	31.33	1446.17			
10/26/91	13.26	1464.24	09/28/96	12.62	1464.88	05/31/02	9.87	1467.63
			10/28/96	11.84	1465.66	06/30/02	22.13	1455.37
04/28/92	11.98	1465.52				07/29/02	28.25	1449.25
05/28/92	12.38	1465.12	05/01/97	10.24	1467.26	08/29/02	13.04	1464.46
06/30/92	22.84	1454.66	06/01/97	16.99	1460.51	09/29/02	11.28	1466.22
07/29/92	19.69	1457.81	06/28/97	19.61	1457.89	10/31/02	10.77	1466.73
08/29/92	29.04	1448.46	07/30/97	23.00	1454.50			
09/29/92	14.98	1462.52	08/30/97	18.29	1459.21	05/08/03	10.33	1467.17
10/29/92	13.62	1463.88	09/30/97	11.95	1465.55	06/05/03	10.10	1467.40
			10/31/97	10.39	1467.11	07/10/03	15.25	1462.25
05/01/93	12.50	1465.00				07/23/03	12.50	1465.00
05/29/93	15.33	1462.17	07/01/98	24.79	1452.71	08/05/03	20.27	1457.23
06/28/93	11.99	1465.51	08/01/98	19.95	1457.55	08/14/03	17.02	1460.48
07/30/93	10.29	1467.21	08/30/98	27.87	1449.63	09/02/03	14.29	1463.21
08/29/93	13.52	1463.98	09/29/98	15.49	1462.01	09/30/03	11.71	1465.79
09/26/93	10.80	1466.70	11/08/98	12.18	1465.32	10/27/03	10.83	1466.67
10/30/93	10.39	1467.11				10/29/03	10.85	1466.65
			06/04/99	10.05	1467.45	10/30/03	10.86	1466.64
04/05/94	10.12	1467.38	07/02/99	10.12	1467.38	10/31/03	10.90	1466.60
05/01/94	9.96	1467.54	08/01/99	24.16	1453.34	11/01/03	10.89	1466.61
05/29/94	12.60	1464.90	08/31/99	10.29	1467.21	11/02/03	10.88	1466.62
06/30/94	13.72	1463.78	10/02/99	9.99	1467.51	11/03/03	10.89	1466.61
07/30/94	31.50	1446.00	11/02/99	10.10	1467.40	11/04/03	10.82	1466.68
08/28/94	16.44	1461.06				11/06/03	10.81	1466.69
09/28/94	12.77	1464.73	07/01/00	22.62	1454.88	12/02/03	10.69	1466.81
10/29/94	11.32	1466.18	08/01/00	13.70	1463.80			
			08/10/00	12.35	1465.15	05/04/04	9.46	1468.04
04/29/95	10.07	1467.43	09/03/00	10.83	1466.67	06/08/04	9.19	1468.31
05/31/95	10.10	1467.40	10/03/00	10.34	1467.16	07/13/04	18.05	1459.45
06/28/95	11.52	1465.98	10/12/00	10.28	1467.22	08/10/04	22.35	1455.15
08/27/95	11.23	1466.27	10/28/00	10.16	1467.34	09/01/04	15.20	1462.30
09/28/95	11.34	1466.16				09/07/04	12.98	1464.52
10/28/95	11.29	1466.21	06/05/01	9.54	1467.96	10/04/04	10.90	1466.60
			07/01/01	9.36	1468.14	11/09/04	10.40	1467.10
05/02/96	10.58	1466.92	07/31/01	11.99	1465.51	12/07/04	10.33	1467.17

151-062-23ABB
Spiritwood Aquifer

MP Elev (msl,ft)=1,479.30
SI (ft.)=228-231

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/01/78	28.65	1450.65	05/31/84	29.83	1449.47	11/27/90	26.60	1452.70
06/28/78	40.63	1438.67	07/01/84	25.91	1453.39			
07/07/78	37.94	1441.36	08/01/84	39.63	1439.67	03/28/91	24.64	1454.66
07/27/78	46.45	1432.85	08/31/84	38.51	1440.79	04/29/91	24.35	1454.95
08/09/78	53.11	1426.19	09/29/84	30.37	1448.93	05/30/91	24.31	1454.99
08/31/78	43.05	1436.25	10/29/84	26.88	1452.42	06/28/91	25.26	1454.04
09/28/78	34.82	1444.48	12/06/84	25.03	1454.27	07/28/91	30.50	1448.80
12/14/78	29.89	1449.41				08/31/91	29.89	1449.41
			04/28/85	22.95	1456.35	09/28/91	26.36	1452.94
05/18/79	27.10	1452.20	05/28/85	28.57	1450.73	10/25/91	24.88	1454.42
06/13/79	33.35	1445.95	06/29/85	24.78	1454.52			
07/11/79	37.29	1442.01	07/27/85	43.06	1436.24	01/06/92	23.31	1455.99
08/07/79	44.67	1434.63	08/29/85	30.45	1448.85	04/28/92	22.30	1457.00
09/20/79	32.39	1446.91	09/28/85	26.74	1452.56	05/28/92	22.52	1456.78
10/03/79	31.96	1447.34	10/29/85	25.22	1454.08	06/30/92	25.94	1453.36
11/01/79	29.73	1449.57				07/29/92	28.56	1450.74
12/18/79	27.45	1451.85	03/31/86	22.78	1456.52	08/29/92	28.23	1451.07
			04/28/86	22.25	1457.05	09/30/92	25.04	1454.26
04/08/80	25.65	1453.65	05/31/86	27.54	1451.76	10/29/92	24.00	1455.30
05/06/80	30.29	1449.01	07/01/86	38.60	1440.70			
06/05/80	38.96	1440.34	07/30/86	28.39	1450.91	04/04/93	22.15	1457.15
07/02/80	47.32	1431.98	08/30/86	32.00	1447.30	05/01/93	21.93	1457.37
07/30/80	50.92	1428.38	09/29/86	26.29	1453.01	05/29/93	21.73	1457.57
08/28/80	36.13	1443.17	10/31/86	24.62	1454.68	06/30/93	21.69	1457.61
09/24/80	31.69	1447.61				07/30/93	20.93	1458.37
10/23/80	29.65	1449.65	04/28/87	21.80	1457.50	08/29/93	26.11	1453.19
11/21/80	28.33	1450.97	05/30/87	24.56	1454.74	09/26/93	22.83	1456.47
12/23/80	27.55	1451.75	07/02/87	25.14	1454.16	10/30/93	20.83	1458.47
			07/31/87	24.50	1454.80			
04/09/81	25.99	1453.31	08/31/87	24.10	1455.20	04/06/94	18.31	1460.99
05/05/81	25.73	1453.57	09/30/87	22.38	1456.92	05/01/94	18.28	1461.02
06/04/81	27.45	1451.85	10/29/87	21.61	1457.69	05/29/94	18.33	1460.97
06/30/81	26.39	1452.91	11/28/87	21.22	1458.08	06/30/94	18.67	1460.63
07/29/81	33.43	1445.87				07/31/94	26.00	1453.30
08/27/81	37.29	1442.01	03/30/88	20.18	1459.12	08/28/94	25.45	1453.85
10/23/81	28.08	1451.22	04/29/88	21.39	1457.91	09/28/94	21.48	1457.82
11/18/81	26.85	1452.45	05/30/88	23.59	1455.71	10/28/94	19.78	1459.52
12/31/81	25.76	1453.54	06/28/88	44.00	1435.30			
			07/31/88	42.25	1437.05	04/30/95	17.66	1461.64
04/15/82	24.43	1454.87	08/29/88	33.98	1445.32	05/31/95	17.45	1461.85
05/28/82	23.95	1455.35	09/30/88	28.36	1450.94	06/28/95	20.83	1458.47
06/24/82	29.37	1449.93	10/28/88	25.81	1453.49	08/27/95	24.18	1455.12
08/01/82	35.19	1444.11				09/28/95	20.50	1458.80
09/04/82	36.13	1443.17	04/27/89	22.34	1456.96	10/29/95	19.04	1460.26
09/29/82	30.13	1449.17	05/31/89	23.19	1456.11			
11/02/82	26.57	1452.73	06/27/89	32.44	1446.86	05/01/96	17.40	1461.90
11/30/82	24.20	1455.10	07/29/89	43.85	1435.45	06/01/96	17.18	1462.12
			08/30/89	37.54	1441.76	06/29/96	19.67	1459.63
04/05/83	23.27	1456.03	09/30/89	29.26	1450.04	07/31/96	26.44	1452.86
05/01/83	23.06	1456.24	10/31/89	27.00	1452.30	08/30/96	25.77	1453.53
06/04/83	27.57	1451.73	11/28/89	25.85	1453.45	09/28/96	22.17	1457.13
06/28/83	30.10	1449.20				10/28/96	19.86	1459.44
08/02/83	42.02	1437.28	04/04/90	23.82	1455.48			
08/30/83	32.14	1447.16	04/30/90	23.67	1455.63	04/30/97	17.25	1462.05
09/29/83	27.56	1451.74	05/31/90	28.72	1450.58	06/02/97	17.55	1461.75
10/30/83	25.52	1453.78	06/30/90	24.40	1454.90	06/28/97	24.02	1455.28
11/27/83	24.56	1454.74	07/28/90	38.90	1440.40	07/10/97	19.50	1459.80
			08/30/90	35.85	1443.45	07/30/97	26.17	1453.13
04/04/84	22.61	1456.69	09/27/90	32.06	1447.24	08/30/97	24.80	1454.50
04/30/84	22.20	1457.10	10/28/90	28.13	1451.17	09/30/97	19.96	1459.34

151-062-23ABB (Continued), MP Elev (msl, ft)=1479.3 Spiritwood Aquifer SI (ft.)=228-231

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
10/31/97	18.43	1460.87	06/05/01	14.39	1464.91	10/27/03	19.35	1459.95
			06/30/01	14.44	1464.86	10/29/03	19.35	1459.95
07/02/98	19.97	1459.33	07/30/01	15.67	1463.63	10/30/03	19.71	1459.59
08/01/98	29.37	1449.93	09/02/01	18.54	1460.76	10/31/03	20.12	1459.18
08/31/98	31.38	1447.92	09/29/01	16.51	1462.79	11/01/03	20.55	1458.75
09/29/98	24.25	1455.05	11/10/01	14.89	1464.41	11/02/03	20.85	1458.45
11/08/98	20.58	1458.72				11/03/03	20.89	1458.41
			05/30/02	13.86	1465.44	11/04/03	20.56	1458.74
06/04/99	17.11	1462.19	06/28/02	14.27	1465.03	11/06/03	20.17	1459.13
07/01/99	19.26	1460.04	07/29/02	23.29	1456.01	12/02/03	18.21	1461.09
08/01/99	23.47	1455.83	08/29/02	23.26	1456.04			
09/01/99	23.20	1456.10	09/29/02	18.97	1460.33	05/04/04	15.70	1463.60
10/02/99	19.29	1460.01	10/31/02	17.15	1462.15	06/08/04	15.48	1463.82
10/31/99	17.43	1461.87				07/13/04	19.04	1460.26
			05/08/03	14.67	1464.63	08/10/04	24.61	1454.69
07/01/00	18.05	1461.25	06/05/03	14.86	1464.44	09/01/04	22.40	1456.90
08/01/00	26.46	1452.84	07/10/03	16.80	1462.50	09/07/04	21.22	1458.08
09/06/00	19.69	1459.61	07/23/03	18.84	1460.46	10/04/04	18.48	1460.82
10/03/00	17.66	1461.64	08/05/03	27.32	1451.98	11/09/04	16.89	1462.41
10/12/00	17.24	1462.06	08/13/03	24.10	1455.20	12/07/04	16.19	1463.11
10/28/00	16.84	1462.46	09/02/03	24.96	1454.34			
09/30/03	21.44	1457.86						

151-062-23ABB2
Spiritwood Aquifer

MP Elev (msl,ft)=1,478.10
SI (ft.)=148-153

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/15/91	32.18	1445.92	05/01/96	18.20	1459.90	09/02/01	19.18	1458.92
08/31/91	30.59	1447.51	06/01/96	17.96	1460.14	09/29/01	17.16	1460.94
09/04/91	32.29	1445.81	06/29/96	20.46	1457.64	11/10/01	15.52	1462.58
09/28/91	27.08	1451.02	07/31/96	27.26	1450.84			
10/25/91	25.59	1452.51	08/30/96	26.59	1451.51	05/30/02	14.56	1463.54
			09/28/96	22.96	1455.14	06/28/02	15.06	1463.04
01/06/92	23.83	1454.27	10/28/96	20.65	1457.45	07/29/02	23.95	1454.15
04/28/92	23.06	1455.04				08/29/02	23.96	1454.14
05/28/92	23.21	1454.89	04/30/97	18.06	1460.04	09/29/02	19.62	1458.48
06/30/92	26.69	1451.41	06/02/97	18.37	1459.73	10/31/02	17.80	1460.30
07/29/92	29.36	1448.74	06/28/97	24.84	1453.26			
08/29/92	28.94	1449.16	07/10/97	20.10	1458.00	05/08/03	15.23	1462.87
09/30/92	25.77	1452.33	07/30/97	26.87	1451.23	06/05/03	15.41	1462.69
10/29/92	24.71	1453.39	08/30/97	25.52	1452.58	07/10/03	17.35	1460.75
			09/30/97	20.65	1457.45	07/23/03	19.40	1458.70
04/04/93	22.89	1455.21	10/31/97	19.15	1458.95	08/05/03	27.83	1450.27
05/01/93	22.67	1455.43				08/13/03	24.70	1453.40
05/29/93	22.44	1455.66	07/02/98	20.68	1457.42	09/02/03	25.48	1452.62
06/30/93	22.41	1455.69	08/01/98	30.13	1447.97	09/30/03	21.95	1456.15
07/30/93	21.73	1456.37	08/31/98	32.08	1446.02	10/27/03	19.87	1458.23
08/29/93	26.88	1451.22	09/29/98	24.98	1453.12	10/29/03	19.86	1458.24
09/26/93	23.65	1454.45	11/08/98	21.11	1456.99	10/30/03	20.26	1457.84
10/30/93	21.62	1456.48				10/31/03	20.65	1457.45
			06/04/99	17.86	1460.24	11/01/03	21.06	1457.04
04/06/94	19.11	1458.99	07/01/99	20.00	1458.10	11/02/03	21.36	1456.74
05/01/94	19.08	1459.02	08/01/99	24.28	1453.82	11/03/03	21.41	1456.69
05/29/94	19.13	1458.97	09/01/99	23.92	1454.18	11/04/03	21.08	1457.02
06/30/94	19.49	1458.61	10/02/99	20.02	1458.08	11/06/03	20.68	1457.42
07/31/94	26.75	1451.35	10/31/99	18.16	1459.94	12/02/03	18.74	1459.36
08/28/94	26.27	1451.83						
09/28/94	22.29	1455.81	07/01/00	18.79	1459.31	05/04/04	16.23	1461.87
10/28/94	20.61	1457.49	08/01/00	27.15	1450.95	06/08/04	16.02	1462.08
			09/06/00	20.42	1457.68	07/13/04	19.57	1458.53
04/30/95	18.43	1459.67	10/03/00	18.41	1459.69	08/10/04	25.16	1452.94
05/31/95	18.26	1459.84	10/12/00	17.76	1460.34	09/01/04	22.95	1455.15
06/28/95	21.63	1456.47	10/28/00	17.43	1460.67	09/07/04	21.75	1456.35
08/27/95	24.89	1453.21				10/04/04	19.00	1459.10
09/28/95	21.33	1456.77	06/05/01	15.07	1463.03	11/09/04	17.41	1460.69
10/29/95	19.82	1458.28	06/30/01	15.06	1463.04	12/07/04	16.71	1461.39
			07/30/01	16.29	1461.81			

**151-062-23ABB3
Warwick Aquifer**

**MP Elev (msl,ft)=1,478.55
SI (ft.)=48-53**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/15/91	13.00	1465.55	05/01/96	9.87	1468.68	09/02/01	9.01	1469.54
08/31/91	13.28	1465.27	06/01/96	9.89	1468.66	09/29/01	9.17	1469.38
09/04/91	13.29	1465.26	06/29/96	10.10	1468.45	11/10/01	8.97	1469.58
09/28/91	12.92	1465.63	07/31/96	10.49	1468.06			
10/25/91	13.09	1465.46	08/30/96	11.19	1467.36	05/30/02	8.98	1469.57
			09/28/96	11.37	1467.18	06/28/02	8.51	1470.04
01/06/92	13.06	1465.49	10/28/96	11.25	1467.30	07/29/02	9.29	1469.26
04/28/92	12.03	1466.52				08/29/02	9.26	1469.29
05/28/92	12.17	1466.38	04/30/97	9.23	1469.32	09/29/02	9.70	1468.85
06/30/92	12.60	1465.95	06/02/97	9.89	1468.66	10/31/02	9.65	1468.90
07/29/92	12.45	1466.10	06/28/97	10.14	1468.41			
08/29/92	12.88	1465.67	07/10/97	9.82	1468.73	05/08/03	8.85	1469.70
09/30/92	12.97	1465.58	07/30/97	10.26	1468.29	06/05/03	9.04	1469.51
10/29/92	13.11	1465.44	08/30/97	10.58	1467.97	07/10/03	8.41	1470.14
			09/30/97	10.93	1467.62	07/23/03	8.64	1469.91
04/04/93	12.76	1465.79	10/31/97	10.66	1467.89	08/05/03	8.68	1469.87
05/01/93	12.15	1466.40				08/13/03	8.65	1469.90
05/29/93	11.90	1466.65	07/02/98	9.99	1468.56	09/02/03	9.10	1469.45
06/30/93	11.55	1467.00	08/01/98	10.67	1467.88	09/30/03	9.29	1469.26
07/30/93	8.92	1469.63	08/31/98	11.35	1467.20	10/27/03	9.23	1469.32
08/29/93	10.16	1468.39	09/29/98	11.75	1466.80	10/29/03	9.25	1469.30
09/26/93	6.47	1472.08	11/08/98	10.94	1467.61	10/30/03	9.28	1469.27
10/30/93	10.73	1467.82				10/31/03	9.31	1469.24
			06/04/99	9.60	1468.95	11/01/03	9.28	1469.27
04/06/94	10.18	1468.37	07/01/99	9.37	1469.18	11/02/03	9.29	1469.26
05/01/94	10.13	1468.42	08/01/99	9.75	1468.80	11/03/03	9.32	1469.23
05/29/94	10.32	1468.23	09/01/99	9.42	1469.13	11/04/03	9.27	1469.28
06/30/94	10.22	1468.33	10/02/99	9.58	1468.97	11/06/03	9.28	1469.27
07/31/94	10.58	1467.97	10/31/99	9.60	1468.95	12/02/03	9.42	1469.13
08/28/94	10.88	1467.67						
09/28/94	10.90	1467.65	07/01/00	9.31	1469.24	05/04/04	8.68	1469.87
10/28/94	10.42	1468.13	08/01/00	9.47	1469.08	06/08/04	8.18	1470.37
			09/06/00	9.18	1469.37	07/13/04	8.37	1470.18
04/30/95	9.72	1468.83	10/03/00	9.42	1469.13	08/10/04	8.80	1469.75
05/31/95	9.90	1468.65	10/12/00	9.18	1469.37	09/01/04	9.00	1469.55
06/28/95	9.95	1468.60	10/28/00	9.09	1469.46	09/07/04	8.94	1469.61
08/27/95	10.65	1467.90				10/04/04	8.67	1469.88
09/28/95	11.16	1467.39	06/05/01	8.86	1469.69	11/09/04	8.63	1469.92
10/29/95	10.96	1467.59	06/30/01	8.63	1469.92	12/07/04	8.74	1469.81
			07/30/01	8.66	1469.89			

**151-062-23BBB1
Warwick Aquifer**

**MP Elev (msl,ft)=1,472.22
SI (ft.)=0-32.1**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
09/17/75	8.80	1463.42				12/08/92	7.30	1464.92
11/04/75	8.70	1463.52	03/23/78	10.60	1461.62			
12/18/75	9.00	1463.22	09/27/78	10.10	1462.12	04/14/93	5.22	1467.00
			12/11/78	10.30	1461.92	06/10/93	4.84	1467.38
03/16/76	9.10	1463.12				07/15/93	5.00	1467.22
06/29/76	7.40	1464.82	06/20/79	6.40	1465.82	07/22/93	4.20	1468.02
09/28/76	9.80	1462.42	09/04/79	8.70	1463.52	08/10/93	3.66	1468.56
12/28/76	10.00	1462.22				08/19/93	4.55	1467.67
			03/17/80	10.00	1462.22	09/15/93	4.94	1467.28
03/21/77	9.60	1462.62	06/25/80	9.30	1462.92	10/21/93	5.28	1466.94
07/07/77	9.20	1463.02	09/30/80	9.40	1462.82	11/17/93	5.15	1467.07
09/19/77	10.60	1461.62						
12/29/77	10.50	1461.72	10/14/92	7.53	1464.69	03/08/94	5.85	1466.37

151-062-23BBB2
Warwick Aquifer

MP Elev (msl,ft)=1,473.88
SI (ft.)=0-17

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
09/17/75	10.10	1463.78				12/08/92	8.62	1465.26
11/04/75	10.10	1463.78	03/23/78	12.00	1461.88	04/14/93	6.69	1467.19
12/18/75	10.40	1463.48	09/27/78	11.60	1462.28	06/10/93	6.26	1467.62
			12/11/78	11.80	1462.08	07/15/93	6.45	1467.43
03/16/76	10.60	1463.28				07/22/93	5.60	1468.28
06/29/76	8.80	1465.08	06/20/79	7.80	1466.08	08/10/93	5.90	1467.98
09/28/76	11.20	1462.68	09/04/79	10.20	1463.68	08/19/93	6.01	1467.87
12/28/76	11.50	1462.38				09/15/93	6.40	1467.48
			03/17/80	11.40	1462.48	10/21/93	6.73	1467.15
03/21/77	11.10	1462.78	06/25/80	10.80	1463.08	11/17/93	6.62	1467.26
07/07/77	10.70	1463.18	09/30/80	10.90	1462.98			
09/19/77	12.10	1461.78				03/08/94	7.26	1466.62
12/29/77	12.00	1461.88	10/14/92	8.62	1465.26			

**151-062-24AAA
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,493.90
SI (ft.)=197-203**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
11/19/69	41.80	1452.10	10/13/78	47.05	1446.85	12/06/84	39.88	1454.02
			11/21/78	45.03	1448.87			
04/15/70	41.54	1452.36				04/28/85	37.76	1456.14
07/07/70	41.23	1452.67	05/18/79	42.20	1451.70	05/28/85	42.43	1451.47
10/06/70	41.33	1452.57	06/13/79	45.53	1448.37	06/29/85	39.45	1454.45
11/30/70	41.47	1452.43	07/11/79	49.89	1444.01	07/27/85	54.53	1439.37
			08/07/79	56.07	1437.83	08/29/85	44.78	1449.12
11/30/71	41.01	1452.89	09/19/79	48.75	1445.15	09/28/85	41.54	1452.36
			10/03/79	46.33	1447.57	10/29/85	40.03	1453.87
12/05/72	41.26	1452.64	11/01/79	44.15	1449.75			
			12/18/79	41.92	1451.98	03/31/86	36.83	1457.07
12/05/73	41.71	1452.19				04/28/86	36.60	1457.30
			04/08/80	40.12	1453.78	05/31/86	41.39	1452.51
12/03/74	41.14	1452.76	05/06/80	43.74	1450.16	07/01/86	50.28	1443.62
			06/05/80	51.08	1442.82	07/30/86	42.32	1451.58
05/08/75	41.03	1452.87	07/02/80	58.92	1434.98	08/29/86	44.50	1449.40
06/11/75	40.85	1453.05	07/30/80	62.25	1431.65	09/30/86	40.10	1453.80
07/22/75	40.79	1453.11	08/28/80	50.28	1443.62	10/31/86	38.56	1455.34
08/14/75	41.19	1452.71	09/24/80	46.12	1447.78			
09/12/75	41.12	1452.78	10/23/80	44.07	1449.83	04/28/87	35.85	1458.05
10/08/75	41.00	1452.90	11/21/80	42.86	1451.04	05/30/87	38.28	1455.62
11/08/75	41.11	1452.79	12/23/80	42.05	1451.85	07/02/87	38.82	1455.08
12/02/75	41.10	1452.80				07/31/87	38.25	1455.65
			04/09/81	40.45	1453.45	08/31/87	37.86	1456.04
01/13/76	41.01	1452.89	05/05/81	40.19	1453.71	09/30/87	36.24	1457.66
02/11/76	40.99	1452.91	06/04/81	42.46	1451.44	10/29/87	35.51	1458.39
03/17/76	41.20	1452.70	06/30/81	40.77	1453.13	11/29/87	35.11	1458.79
04/15/76	40.93	1452.97	07/29/81	47.07	1446.83			
05/12/76	41.23	1452.67	08/27/81	49.70	1444.20	03/30/88	34.05	1459.85
06/07/76	45.08	1448.82	09/24/81	45.15	1448.75	04/29/88	34.87	1459.03
07/16/76	48.58	1445.32	10/23/81	42.38	1451.52	05/30/88	37.85	1456.05
08/04/76	49.51	1444.39	11/18/81	41.24	1452.66	06/28/88	53.84	1440.06
09/09/76	46.10	1447.80	12/31/81	40.87	1453.03	07/31/88	54.80	1439.10
10/13/76	43.93	1449.97				08/29/88	46.67	1447.23
11/03/76	43.83	1450.07	04/15/82	38.78	1455.12	09/30/88	42.79	1451.11
12/03/76	42.75	1451.15	05/28/82	38.34	1455.56	10/28/88	39.66	1454.24
			06/24/82	41.50	1452.40			
07/27/77	60.78	1433.12	08/01/82	46.04	1447.86	04/27/89	36.29	1457.61
08/05/77	58.07	1435.83	09/04/82	48.39	1445.51	05/31/89	37.32	1456.58
08/19/77	60.02	1433.88	09/29/82	44.15	1449.75	06/27/89	44.28	1449.62
08/30/77	54.30	1439.60	11/02/82	40.89	1453.01	07/29/89	55.62	1438.28
09/14/77	49.28	1444.62	11/30/82	39.59	1454.31	08/30/89	51.82	1442.08
09/28/77	47.47	1446.43				09/30/89	42.92	1450.98
11/08/77	44.28	1449.62	04/05/83	38.03	1455.87	10/31/89	40.89	1453.01
			05/02/83	37.32	1456.58	11/29/89	39.71	1454.19
01/17/78	43.12	1450.78	06/04/83	40.35	1453.55			
04/13/78	42.27	1451.63	06/28/83	44.57	1449.33	04/04/90	37.77	1456.13
05/04/78	42.13	1451.77	08/02/83	54.17	1439.73	04/30/90	37.72	1456.18
05/17/78	42.45	1451.45	08/30/83	45.94	1447.96	05/31/90	41.63	1452.27
06/01/78	42.67	1451.23	09/29/83	41.74	1452.16	06/30/90	38.67	1455.23
06/05/78	42.35	1451.55	10/30/83	39.79	1454.11	07/28/90	50.63	1443.27
06/28/78	52.76	1441.14	11/27/83	38.80	1455.10	08/29/90	49.42	1444.48
07/07/78	51.18	1442.72				09/27/90	45.56	1448.34
07/12/78	49.28	1444.62	04/04/84	36.90	1457.00	10/28/90	41.93	1451.97
07/28/78	58.10	1435.80	04/30/84	36.54	1457.36	11/27/90	40.49	1453.41
08/09/78	64.15	1429.75	06/30/84	40.77	1453.13			
08/21/78	65.74	1428.16	07/31/84	53.69	1440.21	03/28/91	38.59	1455.31
09/01/78	56.17	1437.73	08/30/84	53.16	1440.74	04/29/91	38.31	1455.59
09/12/78	53.33	1440.57	09/29/84	44.77	1449.13	05/30/91	38.27	1455.63
09/29/78	48.80	1445.10	10/29/84	41.15	1452.75	06/29/91	38.98	1454.92

151-062-24AAA

(Continued), MP Elev (msl, ft)=1493.9 Spiritwood Aquifer SI (ft.)=197-203

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
07/28/91	41.87	1452.03	05/31/96	31.12	1462.78	09/02/01	32.37	1461.53
08/31/91	42.82	1451.08	06/29/96	33.38	1460.52	09/29/01	30.43	1463.47
09/29/91	40.06	1453.84	07/30/96	37.08	1456.82	10/29/01	29.14	1464.76
10/25/91	38.74	1455.16	09/01/96	41.26	1452.64	11/10/01	28.96	1464.94
			09/28/96	35.99	1457.91			
01/06/92	37.22	1456.68	10/28/96	33.69	1460.21	05/30/02	28.02	1465.88
04/28/92	36.29	1457.61	11/13/96	33.40	1460.50	06/28/02	28.44	1465.46
05/28/92	36.33	1457.57				07/29/02	36.08	1457.82
07/01/92	38.28	1455.62	04/30/97	31.33	1462.57	08/01/02	36.75	1457.15
07/29/92	41.70	1452.20	06/02/97	31.17	1462.73	08/29/02	36.62	1457.28
08/29/92	41.62	1452.28	06/28/97	37.24	1456.66	09/29/02	32.72	1461.18
09/30/92	38.62	1455.28	07/10/97	33.38	1460.52	10/31/02	31.08	1462.82
10/29/92	37.73	1456.17	07/30/97	38.18	1455.72	12/04/02	30.10	1463.80
			08/30/97	36.11	1457.79			
04/04/93	35.95	1457.95	09/30/97	33.75	1460.15	05/08/03	28.73	1465.17
05/01/93	35.79	1458.11	10/01/97	33.60	1460.30	06/05/03	28.94	1464.96
05/29/93	35.56	1458.34	10/31/97	32.59	1461.31	07/10/03	31.11	1462.79
06/29/93	35.59	1458.31				07/23/03	31.70	1462.20
07/29/93	34.97	1458.93	07/02/98	33.31	1460.59	08/05/03	40.46	1453.44
08/30/93	38.59	1455.31	08/02/98	42.94	1450.96	08/13/03	36.20	1457.70
09/29/93	36.42	1457.48	08/31/98	44.49	1449.41	09/02/03	38.48	1455.42
11/01/93	34.49	1459.41	09/29/98	40.39	1453.51	09/30/03	35.10	1458.80
			11/08/98	35.15	1458.75	10/27/03	33.18	1460.72
04/06/94	32.20	1461.70				10/29/03	33.17	1460.73
05/01/94	32.12	1461.78	06/04/99	31.40	1462.50	10/30/03	33.26	1460.64
05/28/94	32.17	1461.73	07/01/99	33.48	1460.42	10/31/03	33.43	1460.47
07/01/94	32.39	1461.51	08/01/99	37.03	1456.87	11/01/03	33.62	1460.28
07/30/94	39.22	1454.68	09/01/99	36.95	1456.95	11/02/03	33.78	1460.12
08/28/94	37.92	1455.98	10/03/99	32.86	1461.04	11/03/03	33.91	1459.99
09/28/94	35.10	1458.80	10/31/99	31.64	1462.26	11/04/03	33.79	1460.11
10/28/94	33.38	1460.52				11/06/03	33.64	1460.26
12/30/94	32.16	1461.74	07/01/00	31.99	1461.91	12/02/03	32.13	1461.77
			08/01/00	38.41	1455.49			
04/30/95	31.51	1462.39	09/06/00	33.64	1460.26	05/04/04	29.80	1464.10
05/31/95	31.35	1462.55	10/03/00	31.75	1462.15	06/08/04	29.60	1464.30
06/30/95	34.05	1459.85	10/11/00	31.22	1462.68	07/13/04	31.78	1462.12
08/28/95	37.22	1456.68	10/28/00	30.97	1462.93	08/10/04	36.86	1457.04
09/28/95	34.24	1459.66				09/07/04	34.84	1459.06
10/29/95	32.88	1461.02	06/05/01	28.59	1465.31	10/04/04	32.36	1461.54
			06/30/01	28.60	1465.30	11/09/04	30.91	1462.99
05/02/96	31.37	1462.53	07/30/01	29.69	1464.21	12/07/04	30.24	1463.66

151-062-24AAA2
Warwick AquiferMP Elev (msl, ft)=1,494.28
SI (ft.)=0-30

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/21/73	31.30	1462.98	05/29/75	30.40	1463.88			
09/20/73	31.40	1462.88	06/18/75	30.40	1463.88	03/23/78	31.40	1462.88
12/21/73	31.40	1462.88	09/17/75	30.60	1463.68	07/26/78	31.10	1463.18
			12/18/75	30.50	1463.78	09/27/78	31.10	1463.18
04/05/74	31.40	1462.88				12/11/78	31.20	1463.08
05/23/74	31.10	1463.18	06/29/76	30.30	1463.98			
06/19/74	31.00	1463.28	09/28/76	30.70	1463.58	06/20/79	29.70	1464.58
09/23/74	30.50	1463.78	12/28/76	31.40	1462.88	09/04/79	30.70	1463.58
12/16/74	30.40	1463.88						
			07/07/77	31.30	1462.98	03/17/80	29.90	1464.38
04/03/75	30.30	1463.98	09/19/77	31.30	1462.98	06/25/80	30.90	1463.38
05/05/75	30.40	1463.88	12/29/77	31.40	1462.88	09/30/80	31.00	1463.28

151-062-24CCC
Spiritwood Aquifer

MP Elev (msl,ft)=1,481.53
SI (ft.)=258-261

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/01/78	32.33	1449.20	05/31/84	32.00	1449.53	11/27/90	30.66	1450.87
06/28/78	43.15	1438.38	07/01/84	29.72	1451.81			
07/07/78	42.25	1439.28	07/31/84	40.67	1440.86	03/28/91	28.59	1452.94
07/28/78	50.10	1431.43	08/31/84	43.83	1437.70	04/30/91	28.30	1453.23
08/09/78	56.85	1424.68	09/29/84	34.84	1446.69	05/30/91	28.27	1453.26
09/01/78	47.95	1433.58	10/29/84	31.06	1450.47	06/29/91	29.18	1452.35
09/29/78	39.07	1442.46	12/07/84	29.00	1452.53	07/28/91	33.32	1448.21
12/14/78	33.56	1447.97				08/31/91	34.79	1446.74
			04/28/85	26.88	1454.65	09/29/91	30.43	1451.10
05/18/79	31.73	1449.80	05/29/85	31.48	1450.05	10/25/91	28.86	1452.67
06/13/79	35.40	1446.13	06/29/85	28.87	1452.66			
07/11/79	40.45	1441.08	07/27/85	45.56	1435.97	01/06/92	27.22	1454.31
08/07/79	47.40	1434.13	08/29/85	35.38	1446.15	04/28/92	26.22	1455.31
09/19/79	38.11	1443.42	09/28/85	31.02	1450.51	05/28/92	26.41	1455.12
10/03/79	36.40	1445.13	10/29/85	29.22	1452.31	07/01/92	29.10	1452.43
11/01/79	33.88	1447.65				07/29/92	31.57	1449.96
12/18/79	31.45	1450.08	03/31/86	26.80	1454.73	08/29/92	32.33	1449.20
			04/28/86	26.28	1455.25	09/30/92	28.95	1452.58
04/08/80	29.60	1451.93	05/31/86	31.58	1449.95	10/29/92	28.00	1453.53
05/06/80	34.52	1447.01	07/01/86	41.32	1440.21			
06/05/80	42.80	1438.73	07/30/86	32.94	1448.59	04/04/93	26.06	1455.47
07/02/80	51.94	1429.59	08/31/86	37.54	1443.99	05/01/93	25.85	1455.68
07/30/80	55.39	1426.14	09/30/86	30.49	1451.04	05/29/93	25.60	1455.93
08/28/80	40.98	1440.55	10/31/86	28.67	1452.86	06/29/93	25.69	1455.84
09/24/80	35.98	1445.55				07/30/93	24.84	1456.69
10/23/80	33.64	1447.89	04/28/87	25.75	1455.78	08/30/93	29.58	1451.95
11/21/80	32.31	1449.22	05/30/87	28.85	1452.68	09/26/93	27.00	1454.53
12/23/80	31.47	1450.06	07/02/87	29.43	1452.10	11/01/93	24.80	1456.73
			07/31/87	28.73	1452.80			
04/09/81	29.87	1451.66	08/31/87	28.28	1453.25	04/06/94	22.35	1459.18
05/05/81	29.60	1451.93	09/30/87	26.41	1455.12	05/01/94	22.39	1459.14
06/04/81	31.60	1449.93	10/29/87	25.62	1455.91	05/28/94	22.56	1458.97
06/30/81	30.39	1451.14	11/29/87	25.17	1456.36	06/30/94	22.88	1458.65
08/27/81	40.95	1440.58				07/30/94	30.08	1451.45
09/24/81	35.40	1446.13	03/30/88	24.16	1457.37	08/29/94	28.89	1452.64
10/23/81	32.14	1449.39	04/29/88	24.74	1456.79	09/28/94	25.99	1455.54
11/18/81	30.85	1450.68	05/30/88	27.51	1454.02	10/28/94	23.89	1457.64
12/31/81	29.66	1451.87	06/28/88	47.10	1434.43			
			07/31/88	48.13	1433.40	04/30/95	21.70	1459.83
04/15/82	28.32	1453.21	08/29/88	38.37	1443.16	05/31/95	21.57	1459.96
05/28/82	28.84	1452.69	09/30/88	32.64	1448.89	06/30/95	25.46	1456.07
06/25/82	30.93	1450.60	10/28/88	30.02	1451.51	08/28/95	28.62	1452.91
08/01/82	36.90	1444.63				09/29/95	25.24	1456.29
09/04/82	40.00	1441.53	04/27/89	26.31	1455.22	10/29/95	23.70	1457.83
09/29/82	34.52	1447.01	06/01/89	27.44	1454.09			
11/02/82	30.63	1450.90	06/27/89	34.68	1446.85	05/02/96	22.09	1459.44
11/30/82	29.22	1452.31	07/29/89	49.71	1431.82	06/01/96	21.83	1459.70
			08/30/89	43.23	1438.30	06/29/96	24.56	1456.97
04/05/83	27.20	1454.33	09/30/89	33.54	1447.99	07/31/96	28.93	1452.60
05/01/83	26.99	1454.54	10/30/89	31.17	1450.36	09/01/96	32.60	1448.93
06/04/83	30.55	1450.98	11/29/89	29.86	1451.67	09/28/96	27.09	1454.44
06/28/83	34.00	1447.53				10/29/96	24.52	1457.01
08/02/83	47.45	1434.08	04/04/90	27.79	1453.74			
08/30/83	36.79	1444.74	04/30/90	27.64	1453.89	04/30/97	21.90	1459.63
09/29/83	31.78	1449.75	05/31/90	32.15	1449.38	06/02/97	22.53	1459.00
10/30/83	29.55	1451.98	06/30/90	28.89	1452.64	06/28/97	28.76	1452.77
11/27/83	28.51	1453.02	07/28/90	42.15	1439.38	07/16/97	23.60	1457.93
			08/29/90	41.58	1439.95	07/30/97	29.76	1451.77
04/04/84	26.56	1454.97	09/27/90	36.70	1444.83	08/30/97	28.15	1453.38
04/30/84	26.13	1455.40	10/28/90	32.32	1449.21	09/30/97	24.75	1456.78

151-062-24CCC (Continued), MP Elev (msl, ft)=1481.53 Spiritwood Aquifer SI (ft.)=258-261

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
10/31/97	23.11	1458.42	06/05/01	19.17	1462.36	10/27/03	24.40	1457.13
			06/30/01	19.33	1462.20	10/29/03	24.37	1457.16
07/02/98	24.57	1456.96	07/30/01	20.48	1461.05	10/30/03	24.39	1457.14
08/02/98	34.82	1446.71	09/01/01	24.01	1457.52	10/31/03	24.61	1456.92
08/31/98	36.47	1445.06	09/29/01	21.36	1460.17	11/01/03	24.79	1456.74
09/29/98	29.52	1452.01	11/10/01	19.51	1462.02	11/02/03	24.99	1456.54
11/08/98	25.54	1455.99				11/03/03	25.12	1456.41
			05/30/02	18.65	1462.88	11/04/03	25.03	1456.50
06/04/99	21.89	1459.64	06/28/02	19.38	1462.15	11/06/03	24.84	1456.69
07/02/99	23.50	1458.03	07/29/02	27.54	1453.99	12/02/03	23.03	1458.50
08/02/99	28.59	1452.94	08/29/02	28.79	1452.74			
09/01/99	27.85	1453.68	09/29/02	24.10	1457.43	05/04/04	20.43	1461.10
10/03/99	23.75	1457.78	10/31/02	22.09	1459.44	06/08/04	20.27	1461.26
10/31/99	21.71	1459.82				07/13/04	22.90	1458.63
			05/08/03	19.28	1462.25	08/10/04	28.94	1452.59
07/01/00	22.99	1458.54	06/05/03	19.57	1461.96	09/01/04	27.68	1453.85
08/01/00	29.76	1451.77	07/10/03	22.25	1459.28	09/07/04	26.40	1455.13
09/06/00	24.77	1456.76	07/23/03	23.15	1458.38	10/04/04	23.36	1458.17
10/03/00	22.49	1459.04	08/05/03	33.55	1447.98	11/09/04	22.67	1458.86
10/11/00	21.86	1459.67	08/13/03	28.12	1453.41	12/07/04	20.90	1460.63
10/28/00	21.42	1460.11	09/02/03	30.93	1450.60			
09/30/03	26.70	1454.83						

151-062-24CCC2
Spiritwood Aquifer

MP Elev (msl,ft)=1,481.32
SI (ft.)=148-153

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/15/91	34.20	1446.57	06/01/96	21.60	1459.72	09/29/01	21.15	1460.17
08/31/91	34.07	1446.70	06/29/96	24.35	1456.97	11/10/01	19.32	1462.00
09/29/91	30.47	1450.85	07/31/96	28.90	1452.42			
10/25/91	28.90	1452.42	09/01/96	32.36	1448.96	05/30/02	18.39	1462.93
			09/28/96	26.95	1454.37	06/28/02	18.88	1462.44
01/06/92	27.50	1453.82	10/29/96	24.17	1457.15	07/29/02	27.26	1454.06
04/28/92	26.24	1455.08				08/29/02	28.56	1452.76
05/28/92	26.49	1454.83	04/30/97	21.68	1459.64	09/29/02	23.88	1457.44
07/01/92	29.12	1452.20	06/02/97	22.33	1458.99	10/31/02	21.85	1459.47
07/29/92	31.58	1449.74	06/28/97	28.57	1452.75			
08/29/92	32.36	1448.96	07/16/97	23.36	1457.96	05/08/03	19.04	1462.28
09/30/92	29.01	1452.31	07/30/97	29.47	1451.85	06/05/03	19.33	1461.99
10/29/92	27.96	1453.36	08/30/97	27.97	1453.35	07/10/03	22.02	1459.30
			09/30/97	24.54	1456.78	07/23/03	22.90	1458.42
04/04/93	26.12	1455.20	10/31/97	22.88	1458.44	08/05/03	33.30	1448.02
05/01/93	25.81	1455.51				08/13/03	27.90	1453.42
05/29/93	25.67	1455.65	07/02/98	24.63	1456.69	09/02/03	30.73	1450.59
06/29/93	25.78	1455.54	08/02/98	34.59	1446.73	09/30/03	26.45	1454.87
07/30/93	24.98	1456.34	08/31/98	36.22	1445.10	10/27/03	24.16	1457.16
08/30/93	29.63	1451.69	09/29/98	29.30	1452.02	10/29/03	24.13	1457.19
09/26/93	27.04	1454.28	11/08/98	25.29	1456.03	10/30/03	24.15	1457.17
11/01/93	24.84	1456.48				10/31/03	24.38	1456.94
			06/04/99	21.69	1459.63	11/01/03	24.56	1456.76
04/06/94	22.36	1458.96	07/02/99	23.76	1457.56	11/02/03	24.73	1456.59
05/01/94	22.40	1458.92	08/02/99	28.04	1453.28	11/03/03	24.88	1456.44
05/28/94	22.60	1458.72	09/01/99	28.33	1452.99	11/04/03	24.79	1456.53
06/30/94	22.93	1458.39	10/03/99	23.46	1457.86	11/06/03	24.60	1456.72
07/30/94	30.09	1451.23	10/31/99	21.96	1459.36	12/02/03	22.78	1458.54
08/29/94	29.01	1452.31						
09/28/94	26.01	1455.31	07/01/00	22.77	1458.55	05/04/04	20.19	1461.13
10/28/94	23.92	1457.40	08/01/00	29.60	1451.72	06/08/04	20.02	1461.30
			09/06/00	24.52	1456.80	07/13/04	22.67	1458.65
04/30/95	21.97	1459.35	10/03/00	22.27	1459.05	08/10/04	28.72	1452.60
05/31/95	21.84	1459.48	10/11/00	21.63	1459.69	09/01/04	27.45	1453.87
06/30/95	25.25	1456.07	10/28/00	21.23	1460.09	09/07/04	26.16	1455.16
08/28/95	28.40	1452.92				10/04/04	23.11	1458.21
09/29/95	24.96	1456.36	06/05/01	18.92	1462.40	11/09/04	21.43	1459.89
10/29/95	23.41	1457.91	06/30/01	18.98	1462.34	12/07/04	20.66	1460.66
			07/30/01	20.31	1461.01	05/02/96	21.85	1459.47
09/01/01	23.81	1457.51						

151-062-24CCC3
Warwick Aquifer

MP Elev (msl,ft)=1,480.80
SI (ft.)=18-23

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/15/91	10.40	1469.85	05/02/96	5.23	1475.57	09/01/01	6.97	1473.83
08/31/91	10.61	1469.64	06/01/96	5.69	1475.11	09/29/01	7.46	1473.34
09/03/91	11.17	1469.63	06/29/96	6.65	1474.15	11/10/01	6.91	1473.89
09/29/91	10.96	1469.84	07/31/96	7.64	1473.16			
10/25/91	10.79	1470.01	09/01/96	8.67	1472.13	05/30/02	7.41	1473.39
			09/28/96	9.13	1471.67	06/28/02	6.46	1474.34
01/06/92	10.41	1470.39	10/29/96	9.20	1471.60	07/29/02	7.63	1473.17
04/28/92	9.38	1471.42				08/29/02	8.47	1472.33
05/28/92	9.54	1471.26	04/30/97	5.78	1475.02	09/29/02	8.98	1471.82
07/01/92	9.87	1470.93	06/02/97	6.30	1474.50	10/31/02	9.07	1471.73
07/29/92	10.20	1470.60	06/28/97	6.85	1473.95			
08/29/92	10.50	1470.30	07/16/97	6.52	1474.28	05/08/03	8.06	1472.74
09/30/92	10.66	1470.14	07/30/97	7.53	1473.27	06/05/03	7.81	1472.99
10/29/92	10.80	1470.00	08/30/97	8.22	1472.58	07/10/03	7.03	1473.77
			09/30/97	8.80	1472.00	07/23/03	7.30	1473.50
04/04/93	9.60	1471.20	10/31/97	8.84	1471.96	08/05/03	7.53	1473.27
05/01/93	9.39	1471.41				08/13/03	7.52	1473.28
05/29/93	9.17	1471.63	07/02/98	7.94	1472.86	09/02/03	8.09	1472.71
06/29/93	8.76	1472.04	08/02/98	8.97	1471.83	09/30/03	8.47	1472.33
07/30/93	5.79	1475.01	08/31/98	9.76	1471.04	10/27/03	8.50	1472.30
08/30/93	5.68	1475.12	09/29/98	10.18	1470.62	10/29/03	8.57	1472.23
09/26/93	6.57	1474.23	11/08/98	9.88	1470.92	10/30/03	8.61	1472.19
11/01/93	6.85	1473.95				10/31/03	8.66	1472.14
			06/04/99	6.76	1474.04	11/01/03	8.62	1472.18
04/06/94	6.65	1474.15	07/02/99	6.74	1474.06	11/02/03	8.62	1472.18
05/01/94	6.57	1474.23	08/02/99	7.22	1473.58	11/03/03	8.65	1472.15
05/28/94	6.99	1473.81	09/01/99	6.78	1474.02	11/04/03	8.62	1472.18
06/30/94	7.00	1473.80	10/03/99	6.99	1473.81	11/06/03	8.64	1472.16
07/30/94	7.13	1473.67	10/31/99	7.22	1473.58	12/02/03	8.72	1472.08
08/29/94	7.67	1473.13						
09/28/94	7.80	1473.00	07/01/00	6.74	1474.06	05/04/04	6.67	1474.13
10/28/94	7.15	1473.65	08/01/00	7.07	1473.73	06/08/04	5.60	1475.20
			09/06/00	6.86	1473.94	07/13/04	5.90	1474.90
04/30/95	5.67	1475.13	10/03/00	7.33	1473.47	08/10/04	6.85	1473.95
05/31/95	6.17	1474.63	10/11/00	7.15	1473.65	09/01/04	7.30	1473.50
06/30/95	6.88	1473.92	10/28/00	6.66	1474.14	09/07/04	7.26	1473.54
08/28/95	7.75	1473.05				10/04/04	6.92	1473.88
09/29/95	8.63	1472.17	06/05/01	6.13	1474.67	11/09/04	7.03	1473.77
10/29/95	8.76	1472.04	06/30/01	5.83	1474.97	12/07/04	7.39	1473.41
			07/30/01	6.14	1474.66			

151-062-24DDC1
Spiritwood Aquifer

MP Elev (msl,ft)=1,486.80
SI (ft.)=218-223

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/15/91	40.11	1446.89	05/02/96	26.70	1460.10	09/02/01	28.49	1458.31
08/31/91	38.88	1448.12	05/31/96	26.47	1460.33	09/29/01	26.04	1460.76
09/03/91	40.30	1446.50	06/29/96	29.22	1457.58	11/10/01	24.23	1462.57
09/29/91	35.27	1451.53	07/30/96	32.66	1454.14			
10/25/91	33.59	1453.21	09/01/96	36.48	1450.32	05/30/02	23.31	1463.49
			09/28/96	31.65	1455.15	06/28/02	23.97	1462.83
01/06/92	31.87	1454.93	10/28/96	29.15	1457.65	07/29/02	31.42	1455.38
04/28/92	31.14	1455.66				08/29/02	33.52	1453.28
05/28/92	31.24	1455.56	04/30/97	26.59	1460.21	09/29/02	28.72	1458.08
07/01/92	33.33	1453.47	06/02/97	27.27	1459.53	10/31/02	26.76	1460.04
07/29/92	35.59	1451.21	06/28/97	33.13	1453.67			
08/29/92	37.10	1449.70	07/16/97	23.32	1463.48	05/08/03	24.02	1462.78
09/30/92	33.67	1453.13	07/30/97	33.29	1453.51	06/05/03	24.33	1462.47
10/29/92	32.80	1454.00	08/30/97	32.59	1454.21	07/10/03	27.23	1459.57
			09/30/97	29.36	1457.44	07/23/03	27.52	1459.28
04/04/93	30.88	1455.92	10/31/97	27.76	1459.04	08/05/03	38.78	1448.02
05/01/93	30.67	1456.13				08/13/03	32.65	1454.15
05/29/93	30.44	1456.36	07/02/98	28.74	1458.06	09/02/03	35.88	1450.92
06/29/93	30.49	1456.31	08/02/98	40.35	1446.45	09/30/03	31.50	1455.30
07/30/93	29.73	1457.07	08/31/98	41.56	1445.24	10/27/03	29.18	1457.62
08/30/93	34.33	1452.47	09/29/98	34.19	1452.61	10/29/03	29.14	1457.66
09/26/93	31.79	1455.01	11/08/98	30.18	1456.62	10/30/03	29.12	1457.68
11/01/93	29.63	1457.17				10/31/03	29.25	1457.55
			06/04/99	26.59	1460.21	11/01/03	29.37	1457.43
04/06/94	27.18	1459.62	07/01/99	29.11	1457.69	11/02/03	29.50	1457.30
05/01/94	27.20	1459.60	08/01/99	33.12	1453.68	11/03/03	29.64	1457.16
05/28/94	27.41	1459.39	09/01/99	33.31	1453.49	11/04/03	29.63	1457.17
06/30/94	27.75	1459.05	10/03/99	28.31	1458.49	11/06/03	29.48	1457.32
07/30/94	34.00	1452.80	10/31/99	26.87	1459.93	12/02/03	27.78	1459.02
08/29/94	33.62	1453.18						
09/28/94	30.85	1455.95	07/01/00	27.70	1459.10	05/04/04	25.20	1461.60
10/28/94	28.74	1458.06	08/01/00	34.65	1452.15	06/08/04	25.06	1461.74
			09/06/00	29.41	1457.39	07/13/04	27.66	1459.14
04/30/95	26.76	1460.04	10/02/00	27.19	1459.61	08/10/04	33.65	1453.15
05/31/95	26.67	1460.13	10/11/00	26.63	1460.17	09/01/04	32.46	1454.34
06/30/95	30.05	1456.75	10/28/00	26.14	1460.66	09/07/04	31.15	1455.65
08/28/95	33.29	1453.51				10/04/04	28.10	1458.70
09/28/95	29.88	1456.92	06/05/01	23.80	1463.00	11/09/04	26.41	1460.39
10/29/95	28.22	1458.58	06/30/01	23.92	1462.88	12/07/04	25.65	1461.15
			07/30/01	25.16	1461.64			

151-062-24DDC2
Spiritwood Aquifer

MP Elev (msl,ft)=1,487.00
SI (ft.)=148-153

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/15/91	39.17	1447.83	05/02/96	27.11	1459.89	09/02/01	28.87	1458.13
08/31/91	38.99	1448.01	05/31/96	26.89	1460.11	09/29/01	26.42	1460.58
09/03/91	40.59	1446.41	06/29/96	29.48	1457.52	11/10/01	24.59	1462.41
09/29/91	35.64	1451.36	07/30/96	33.04	1453.96			
10/25/91	34.05	1452.95	09/01/96	36.85	1450.15	05/30/02	23.75	1463.25
			09/28/96	32.05	1454.95	06/28/02	24.35	1462.65
01/06/92	32.16	1454.84	10/28/96	29.54	1457.46	07/29/02	31.79	1455.21
04/28/92	31.52	1455.48				08/29/02	33.91	1453.09
05/28/92	31.64	1455.36	04/30/97	26.97	1460.03	09/29/02	28.96	1458.04
07/01/92	33.57	1453.43	06/02/97	27.70	1459.30	10/31/02	27.14	1459.86
07/29/92	35.98	1451.02	06/28/97	33.49	1453.51			
08/29/92	37.47	1449.53	07/16/97	23.65	1463.35	05/08/03	24.31	1462.69
09/30/92	34.09	1452.91	07/30/97	33.70	1453.30	06/05/03	24.67	1462.33
10/29/92	33.14	1453.86	08/30/97	33.02	1453.98	07/10/03	27.58	1459.42
			09/30/97	29.76	1457.24	07/23/03	27.85	1459.15
04/04/93	31.28	1455.72	10/31/97	28.18	1458.82	08/05/03	39.14	1447.86
05/01/93	31.05	1455.95				08/13/03	32.96	1454.04
05/29/93	30.79	1456.21	07/02/98	29.08	1457.92	09/02/03	36.20	1450.80
06/29/93	30.89	1456.11	08/02/98	40.66	1446.34	09/30/03	31.83	1455.17
07/30/93	30.10	1456.90	08/31/98	41.94	1445.06	10/27/03	29.51	1457.49
08/30/93	34.71	1452.29	09/29/98	34.58	1452.42	10/29/03	29.48	1457.52
09/26/93	31.61	1455.39	11/08/98	30.43	1456.57	10/30/03	29.45	1457.55
11/01/93	30.03	1456.97				10/31/03	29.59	1457.41
			06/04/99	26.99	1460.01	11/01/03	29.68	1457.32
04/06/94	27.54	1459.46	07/01/99	29.49	1457.51	11/02/03	29.81	1457.19
05/01/94	27.54	1459.46	08/01/99	33.54	1453.46	11/03/03	29.95	1457.05
05/28/94	27.80	1459.20	09/01/99	33.68	1453.32	11/04/03	29.93	1457.07
06/30/94	28.15	1458.85	10/03/99	28.70	1458.30	11/06/03	29.80	1457.20
07/30/94	34.34	1452.66	10/31/99	27.27	1459.73	12/02/03	28.10	1458.90
08/29/94	34.00	1453.00						
09/28/94	31.23	1455.77	07/01/00	28.12	1458.88	05/04/04	25.53	1461.47
10/28/94	29.12	1457.88	08/01/00	35.04	1451.96	06/08/04	25.40	1461.60
			09/06/00	29.79	1457.21	07/13/04	27.99	1459.01
04/30/95	27.13	1459.87	10/02/00	27.58	1459.42	08/10/04	33.96	1453.04
05/31/95	27.05	1459.95	10/11/00	26.94	1460.06	09/01/04	32.76	1454.24
06/30/95	30.42	1456.58	10/28/00	26.52	1460.48	09/07/04	31.49	1455.51
08/28/95	33.56	1453.44				10/04/04	28.43	1458.57
09/28/95	30.28	1456.72	06/05/01	24.24	1462.76	11/09/04	26.75	1460.25
10/29/95	28.62	1458.38	06/30/01	24.28	1462.72	12/07/04	25.99	1461.01
			07/30/01	25.64	1461.36			

**151-062-24DDC3
Warwick Aquifer**

**MP Elev (msl,ft)=1,486.95
SI (ft.)=18-23**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/15/91	19.59	1467.36	05/02/96	18.06	1468.89	09/02/01	17.36	1469.59
08/31/91	19.70	1467.25	05/31/96	18.45	1468.50	09/29/01	17.49	1469.46
09/03/91	19.77	1467.18	06/29/96	18.74	1468.21	11/10/01	17.66	1469.29
09/29/91	19.86	1467.09	07/30/96	19.13	1467.82			
10/25/91	19.80	1467.15	09/01/96	19.04	1467.91	05/30/02	18.49	1468.46
			09/28/96	19.12	1467.83	06/28/02	19.51	1467.44
01/06/92	19.33	1467.62	10/28/96	19.14	1467.81	07/29/02	18.29	1468.66
04/28/92	19.54	1467.41				08/29/02	18.45	1468.50
05/28/92	19.65	1467.30	04/30/97	17.29	1469.66	09/29/02	18.53	1468.42
07/01/92	19.76	1467.19	06/02/97	18.28	1468.67	10/31/02	18.42	1468.53
07/29/92	19.79	1467.16	06/28/97	18.57	1468.38			
08/29/92	19.85	1467.10	07/16/97	18.48	1468.47	05/08/03	18.47	1468.48
09/30/92	19.88	1467.07	07/30/97	18.80	1468.15	06/05/03	18.55	1468.40
10/29/92	19.90	1467.05	08/30/97	18.95	1468.00	07/10/03	18.72	1468.23
			09/30/97	19.06	1467.89	07/23/03	18.44	1468.51
04/04/93	19.12	1467.83	10/31/97	19.09	1467.86	08/05/03	18.34	1468.61
05/01/93	19.28	1467.67				08/13/03	18.30	1468.65
05/29/93	19.58	1467.37	07/02/98	19.38	1467.57	09/02/03	18.10	1468.85
06/29/93	19.70	1467.25	08/02/98	19.27	1467.68	09/30/03	18.07	1468.88
07/30/93	17.32	1469.63	08/31/98	19.15	1467.80	10/27/03	18.07	1468.88
08/30/93	17.73	1469.22	09/29/98	19.28	1467.67	10/29/03	18.04	1468.91
09/26/93	17.75	1469.20	11/08/98	19.33	1467.62	10/30/03	18.08	1468.87
11/01/93	17.84	1469.11				10/31/03	18.09	1468.86
			06/04/99	18.64	1468.31	11/01/03	18.15	1468.80
04/06/94	17.34	1469.61	07/01/99	18.52	1468.43	11/02/03	18.09	1468.86
05/01/94	17.87	1469.08	08/01/99	18.35	1468.60	11/03/03	18.17	1468.78
05/28/94	18.16	1468.79	09/01/99	18.02	1468.93	11/04/03	18.09	1468.86
06/30/94	18.33	1468.62	10/03/99	18.01	1468.94	11/06/03	18.13	1468.82
07/30/94	18.29	1468.66	10/31/99	18.04	1468.91	12/02/03	18.16	1468.79
08/29/94	18.22	1468.73						
09/28/94	18.27	1468.68	07/01/00	18.12	1468.83	05/04/04	17.81	1469.14
10/28/94	18.25	1468.70	08/01/00	18.19	1468.76	06/08/04	17.38	1469.57
			09/06/00	17.95	1469.00	07/13/04	17.18	1469.77
04/30/95	17.75	1469.20	10/02/00	17.98	1468.97	08/10/04	17.25	1469.70
05/31/95	18.04	1468.91	10/11/00	17.75	1469.20	09/01/04	17.35	1469.60
06/30/95	18.23	1468.72	10/28/00	17.97	1468.98	09/07/04	17.39	1469.56
08/28/95	18.18	1468.77				10/04/04	17.47	1469.48
09/28/95	18.40	1468.55	06/05/01	17.74	1469.21	11/09/04	17.59	1469.36
10/29/95	18.52	1468.43	06/30/01	17.54	1469.41	12/07/04	17.74	1469.21
			07/30/01	17.28	1469.67			

**151-062-25ACD
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,480.00
SI (ft.)=220-250**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
05/18/79	31.48	1448.52	09/24/80	35.80	1444.20	04/30/81	29.98	1450.02
09/19/79	39.28	1440.72				09/24/81	35.27	1444.73
			04/09/81	30.38	1449.62	12/31/81	28.40	1451.60

151-062-25BBB
Warwick Aquifer

MP Elev (msl,ft)=1,478.30
SI (ft.)=0-17.9

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/21/73	9.16	1469.14	05/29/75	5.86	1472.44	09/19/77	9.76	1468.54
09/21/73	9.76	1468.54	06/18/75	6.26	1472.04			
12/21/73	8.56	1469.74	09/17/75	7.96	1470.34	07/26/78	7.46	1470.84
			12/18/75	8.26	1470.04	09/27/78	8.66	1469.64
04/05/74	9.36	1468.94				12/11/78	8.86	1469.44
05/23/74	4.46	1473.84	06/29/76	7.96	1470.34			
06/19/74	5.16	1473.14	09/28/76	9.26	1469.04	06/20/79	4.66	1473.64
09/23/74	7.66	1470.64	12/28/76	9.46	1468.84	09/04/79	6.86	1471.44
12/16/74	7.86	1470.44						
			03/21/77	9.46	1468.84	06/25/80	8.26	1470.04
05/03/75	5.26	1473.04	07/07/77	9.16	1469.14	09/30/80	8.36	1469.94

151-062-25DAA1
Spiritwood Aquifer

MP Elev (msl,ft)=1,482.08
SI (ft.)=218-223

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/08/91	30.57	1453.61	09/28/95	25.59	1456.49	10/12/00	22.65	1459.43
08/31/91	34.30	1447.78	10/29/95	23.88	1458.20	10/28/00	21.97	1460.11
09/03/91	35.29	1446.79						
09/29/91	30.96	1451.12	05/02/96	22.39	1459.69	06/05/01	19.73	1462.35
10/26/91	29.20	1452.88	05/31/96	22.07	1460.01	06/30/01	19.91	1462.17
			06/29/96	24.98	1457.10	07/30/01	21.14	1460.94
01/06/92	27.48	1454.60	07/30/96	28.17	1453.91	09/02/01	24.56	1457.52
04/28/92	26.53	1455.55	09/01/96	31.63	1450.45	09/29/01	22.02	1460.06
05/28/92	26.68	1455.40	09/29/96	27.39	1454.69	11/10/01	20.05	1462.03
07/01/92	27.69	1454.39	10/28/96	24.83	1457.25			
07/29/92	30.24	1451.84				05/30/02	19.22	1462.86
08/29/92	32.67	1449.41	04/30/97	22.23	1459.85	06/28/02	19.91	1462.17
09/30/92	29.14	1452.94	06/02/97	23.85	1458.23	07/29/02	26.66	1455.42
10/29/92	28.30	1453.78	06/28/97	28.41	1453.67	08/29/02	29.76	1452.32
			07/16/97	24.14	1457.94	09/29/02	24.79	1457.29
04/04/93	26.30	1455.78	07/30/97	28.20	1453.88	10/31/02	22.64	1459.44
05/01/93	26.08	1456.00	08/30/97	27.17	1454.91			
05/29/93	25.83	1456.25	09/30/97	25.33	1456.75	05/08/03	19.94	1462.14
06/30/93	25.85	1456.23	10/31/97	23.58	1458.50	06/05/03	20.29	1461.79
07/30/93	25.14	1456.94				07/10/03	23.39	1458.69
08/30/93	29.89	1452.19	07/02/98	24.84	1457.24	07/21/03	22.64	1459.44
09/27/93	27.12	1454.96	08/02/98	37.22	1444.86	08/05/03	34.96	1447.12
11/01/93	25.04	1457.04	08/31/98	38.39	1443.69	08/13/03	28.80	1453.28
			09/30/98	30.36	1451.72	09/02/03	32.48	1449.60
04/06/94	22.65	1459.43	11/07/98	25.91	1456.17	09/30/03	27.89	1454.19
05/01/94	22.70	1459.38				11/01/03	25.41	1456.67
05/28/94	23.10	1458.98	06/04/99	22.28	1459.80	12/02/03	23.85	1458.23
06/30/94	23.46	1458.62	07/01/99	24.68	1457.40			
07/30/94	28.91	1453.17	08/01/99	29.11	1452.97	05/04/04	21.22	1460.86
08/29/94	29.24	1452.84	09/01/99	29.58	1452.50	06/08/04	21.14	1460.94
09/28/94	26.65	1455.43	10/03/99	24.15	1457.93	07/13/04	23.83	1458.25
10/28/94	24.33	1457.75	10/31/99	22.79	1459.29	08/10/04	29.95	1452.13
						09/01/04	28.80	1453.28
04/30/95	22.37	1459.71	07/02/00	23.66	1458.42	09/07/04	27.48	1454.60
06/01/95	22.34	1459.74	08/01/00	30.97	1451.11	10/04/04	24.22	1457.86
06/30/95	25.88	1456.20	09/06/00	28.33	1453.75	11/09/04	22.44	1459.64
08/28/95	29.10	1452.98	10/03/00	23.12	1458.96	12/07/04	21.65	1460.43

151-062-25DAA2
Spiritwood Aquifer

MP Elev (msl,ft)=1,482.30
SI (ft.)=148-153

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/08/91	31.55	1452.45	09/28/95	25.60	1456.70	10/12/00	22.70	1459.60
08/31/91	34.34	1447.96	10/29/95	23.88	1458.42	10/28/00	21.94	1460.36
09/03/91	35.29	1447.01						
09/29/91	31.00	1451.30	05/02/96	22.43	1459.87	06/05/01	19.73	1462.57
10/26/91	29.29	1453.01	05/31/96	22.15	1460.15	06/30/01	19.86	1462.44
			06/29/96	24.95	1457.35	07/30/01	21.11	1461.19
01/06/92	27.50	1454.80	07/30/96	28.20	1454.10	09/02/01	24.53	1457.77
04/28/92	26.63	1455.67	09/01/96	31.62	1450.68	09/29/01	21.97	1460.33
05/28/92	26.84	1455.46	09/29/96	27.49	1454.81	11/10/01	21.06	1461.24
07/01/92	28.37	1453.93	10/28/96	24.85	1457.45			
07/29/92	30.32	1451.98				05/30/02	19.27	1463.03
08/29/92	32.79	1449.51	04/30/97	22.19	1460.11	06/28/02	19.81	1462.49
09/30/92	29.20	1453.10	06/02/97	23.88	1458.42	07/29/02	26.71	1455.59
10/29/92	28.38	1453.92	06/28/97	28.52	1453.78	08/29/02	29.88	1452.42
			07/16/97	24.22	1458.08	09/29/02	24.79	1457.51
04/04/93	26.40	1455.90	07/30/97	28.29	1454.01	10/31/02	22.53	1459.77
05/01/93	26.18	1456.12	08/30/97	27.09	1455.21			
05/29/93	25.81	1456.49	09/30/97	25.26	1457.04	05/08/03	20.00	1462.30
06/30/93	25.95	1456.35	10/31/97	23.58	1458.72	06/05/03	20.37	1461.93
07/30/93	25.22	1457.08				07/10/03	23.47	1458.83
08/30/93	24.96	1457.34	07/02/98	24.68	1457.62	07/21/03	22.70	1459.60
09/27/93	27.24	1455.06	08/02/98	37.21	1445.09	08/05/03	35.05	1447.25
11/01/93	25.20	1457.10	08/31/98	38.33	1443.97	08/13/03	28.82	1453.48
			09/30/98	30.35	1451.95	09/02/03	32.52	1449.78
04/06/94	22.72	1459.58	11/07/98	25.89	1456.41	09/30/03	27.91	1454.39
05/01/94	22.70	1459.60				11/01/03	25.45	1456.85
05/28/94	23.13	1459.17	06/04/99	22.30	1460.00	12/02/03	23.89	1458.41
06/30/94	23.53	1458.77	07/01/99	24.84	1457.46			
07/30/94	28.89	1453.41	08/01/99	29.09	1453.21	05/04/04	21.24	1461.06
08/29/94	29.31	1452.99	09/01/99	29.54	1452.76	06/08/04	21.16	1461.14
09/28/94	27.04	1455.26	10/03/99	24.14	1458.16	07/13/04	23.87	1458.43
10/28/94	24.45	1457.85	10/31/99	22.70	1459.60	08/10/04	30.00	1452.30
						09/01/04	28.80	1453.50
04/30/95	22.40	1459.90	07/02/00	23.64	1458.66	09/07/04	27.51	1454.79
06/01/95	22.34	1459.96	08/01/00	30.88	1451.42	10/04/04	24.25	1458.05
06/30/95	25.93	1456.37	09/06/00	25.51	1456.79	11/09/04	22.46	1459.84
08/28/95	29.11	1453.19	10/03/00	23.07	1459.23	12/07/04	21.66	1460.64

151-062-25DAA3
Warwick Aquifer

MP Elev (msl,ft)=1,482.20
SI (ft.)=18-23

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/09/91	12.62	1469.58	09/28/95	10.99	1471.21	10/12/00	10.00	1472.20
08/31/91	12.61	1469.59	10/29/95	11.29	1470.91	10/28/00	10.19	1472.01
09/03/91	12.60	1469.60						
09/29/91	12.68	1469.52	05/02/96	10.82	1471.38	06/05/01	9.83	1472.37
10/26/91	12.15	1470.05	05/31/96	11.32	1470.88	06/30/01	9.25	1472.95
			06/29/96	11.47	1470.73	07/30/01	9.16	1473.04
01/06/92	12.52	1469.68	07/30/96	11.66	1470.54	09/02/01	9.31	1472.89
04/28/92	12.42	1469.78	09/01/96	11.77	1470.43	09/29/01	9.64	1472.56
05/28/92	12.49	1469.71	09/29/96	12.04	1470.16	11/10/01	9.02	1473.18
07/01/92	12.58	1469.62	10/28/96	12.10	1470.10			
07/29/92	12.64	1469.56				05/30/02	11.17	1471.03
08/29/92	12.75	1469.45	04/30/97	10.99	1471.21	06/28/02	10.62	1471.58
09/30/92	12.90	1469.30	06/02/97	11.49	1470.71	07/29/02	10.45	1471.75
10/29/92	13.03	1469.17	06/28/97	11.61	1470.59	08/29/02	10.22	1471.98
			07/16/97	11.65	1470.55	09/29/02	10.52	1471.68
04/04/93	13.32	1468.88	07/30/97	11.74	1470.46	10/31/02	10.87	1471.33
05/01/93	13.19	1469.01	08/30/97	11.98	1470.22			
05/29/93	13.21	1468.99	09/30/97	12.15	1470.05	05/08/03	12.01	1470.19
06/30/93	13.09	1469.11	10/31/97	12.25	1469.95	06/05/03	11.62	1470.58
07/30/93	8.51	1473.69				07/10/03	11.38	1470.82
08/30/93	9.84	1472.36	07/02/98	12.37	1469.83	07/21/03	10.95	1471.25
09/27/93	9.83	1472.37	08/02/98	12.01	1470.19	08/05/03	10.72	1471.48
11/01/93	10.13	1472.07	08/31/98	12.17	1470.03	08/13/03	10.65	1471.55
			09/30/98	12.30	1469.90	09/02/03	10.60	1471.60
04/06/94	10.59	1471.61	11/07/98	12.43	1469.77	09/30/03	10.79	1471.41
05/01/94	10.84	1471.36				11/01/03	11.03	1471.17
05/28/94	10.99	1471.21	06/04/99	10.80	1471.40	12/02/03	11.25	1470.95
06/30/94	10.93	1471.27	07/01/99	10.72	1471.48			
07/30/94	10.91	1471.29	08/01/99	10.49	1471.71	05/04/04	10.94	1471.26
08/29/94	11.06	1471.14	09/01/99	10.28	1471.92	06/08/04	9.70	1472.50
09/28/94	11.20	1471.00	10/03/99	10.35	1471.85	07/13/04	9.73	1472.47
10/28/94	11.13	1471.07	10/31/99	10.55	1471.65	08/10/04	9.92	1472.28
						09/01/04	10.15	1472.05
04/30/95	10.39	1471.81	07/02/00	10.15	1472.05	09/07/04	10.20	1472.00
06/01/95	10.50	1471.70	08/01/00	9.94	1472.26	10/04/04	10.39	1471.81
06/30/95	10.58	1471.62	09/06/00	9.97	1472.23	11/09/04	10.64	1471.56
08/28/95	10.67	1471.53	10/03/00	10.03	1472.17	12/07/04	10.88	1471.32

151-062-25DDD
Warwick Aquifer

MP Elev (msl,ft)=1,478.32
SI (ft.)=0-18

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
05/19/70	10.69	1467.63	12/21/73	11.39	1466.93	07/26/78	10.89	1467.43
05/22/70	10.59	1467.73				09/27/78	10.99	1467.33
06/17/70	10.19	1468.13	04/05/74	11.89	1466.43	12/11/78	11.49	1466.83
07/22/70	9.89	1468.43	05/23/74	9.19	1469.13			
08/20/70	10.09	1468.23	06/19/74	8.99	1469.33	06/20/79	9.19	1469.13
09/15/70	10.39	1467.93	09/23/74	9.69	1468.63	09/04/79	9.29	1469.03
10/22/70	10.49	1467.83	12/16/74	10.39	1467.93			
11/23/70	10.59	1467.73				03/17/80	10.69	1467.63
12/22/70	10.79	1467.53	04/03/75	10.69	1467.63	06/25/80	10.69	1467.63
			05/06/75	9.49	1468.83	09/30/80	9.79	1468.53
01/26/71	10.99	1467.33	05/29/75	9.59	1468.73			
02/23/71	11.19	1467.13	06/18/75	9.79	1468.53	10/14/92	10.13	1468.19
03/18/71	11.29	1467.03	09/17/75	10.09	1468.23	12/08/92	10.44	1467.88
04/22/71	8.89	1469.43	12/18/75	10.59	1467.73			
06/18/71	10.09	1468.23				04/14/93	10.14	1468.18
09/17/71	10.39	1467.93	03/16/76	10.99	1467.33	06/10/93	10.15	1468.17
12/21/71	10.89	1467.43	06/29/76	10.69	1467.63	07/15/93	9.52	1468.80
			09/28/76	11.19	1467.13	07/22/93	8.95	1469.37
03/17/72	11.29	1467.03	12/27/76	11.69	1466.63	08/10/93	6.39	1471.93
06/19/72	10.99	1467.33				08/19/93	6.55	1471.77
09/20/72	11.39	1466.93	03/21/77	11.79	1466.53	09/15/93	6.82	1471.50
12/18/72	11.69	1466.63	07/07/77	11.49	1466.83	10/21/93	7.38	1470.94
			09/19/77	11.79	1466.53	11/17/93	7.66	1470.66
03/20/73	11.89	1466.43	12/29/77	12.09	1466.23			
06/22/73	12.09	1466.23				03/08/94	8.64	1469.68
09/21/73	12.19	1466.13	03/23/78	12.29	1466.03			

151-062-27AAA1
Warwick Aquifer

MP Elev (msl,ft)=1,471.40
SI (ft.)=14-16

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
11/15/67	7.28	1464.12	06/07/76	7.15	1464.25	08/27/81	7.73	1463.67
12/14/67	7.65	1463.75	07/16/76	7.61	1463.79	09/25/81	7.41	1463.99
			08/04/76	8.30	1463.10	10/23/81	7.25	1464.15
01/17/68	8.02	1463.38	09/09/76	8.65	1462.75	11/18/81	7.35	1464.05
02/22/68	8.18	1463.22	10/13/76	8.55	1462.85	12/31/81	8.05	1463.35
03/13/68	7.60	1463.80	11/03/76	8.54	1462.86			
06/19/68	5.43	1465.97	12/03/76	8.61	1462.79	05/28/82	6.39	1465.01
07/15/68	6.31	1465.09				06/25/82	5.97	1465.43
08/21/68	5.33	1466.07	07/27/77	8.02	1463.38	08/01/82	6.33	1465.07
09/17/68	3.99	1467.41	08/05/77	8.08	1463.32	09/04/82	8.04	1463.36
10/08/68	4.88	1466.52	08/19/77	7.92	1463.48	09/29/82	8.08	1463.32
11/14/68	5.20	1466.20	08/30/77	7.95	1463.45	11/02/82	6.08	1465.32
12/10/68	5.24	1466.16	09/14/77	7.65	1463.75	11/30/82	6.72	1464.68
			09/28/77	7.20	1464.20			
01/14/69	6.99	1464.41	11/08/77	7.27	1464.13	06/04/83	7.04	1464.36
03/12/69	7.22	1464.18				06/28/83	7.67	1463.73
05/08/69	3.67	1467.73	01/17/78	8.12	1463.28	08/02/83	7.67	1463.73
06/17/69	5.50	1465.90	02/13/78	8.52	1462.88	08/30/83	6.67	1464.73
07/15/69	5.24	1466.16	03/20/78	8.40	1463.00	09/29/83	6.52	1464.88
08/20/69	7.03	1464.37	05/04/78	6.07	1465.33	10/30/83	6.28	1465.12
09/16/69	7.23	1464.17	05/17/78	6.18	1465.22	11/27/83	6.64	1464.76
11/19/69	6.84	1464.56	06/01/78	4.34	1467.06			
			06/05/78	4.96	1466.44	04/30/84	3.59	1467.81
02/18/70	8.73	1462.67	06/28/78	6.14	1465.26	05/31/84	5.99	1465.41
03/23/70	8.68	1462.72	07/07/78	6.15	1465.25	07/01/84	5.13	1466.27
04/15/70	7.73	1463.67	07/12/78	5.95	1465.45	07/31/84	6.48	1464.92
07/07/70	5.76	1465.64	07/28/78	6.75	1464.65	08/31/84	7.86	1463.54
11/12/70	6.31	1465.09	08/09/78	7.17	1464.23	09/29/84	8.73	1462.67
11/30/70	6.81	1464.59	08/21/78	7.36	1464.04	10/29/84	6.52	1464.88
			09/01/78	6.18	1465.22	12/07/84	7.32	1464.08
06/10/71	5.83	1465.57	09/12/78	5.52	1465.88			
09/02/71	7.76	1463.64	09/29/78	6.72	1464.68	04/28/85	6.74	1464.66
11/30/71	6.78	1464.62	10/13/78	6.93	1464.47	05/29/85	6.48	1464.92
			11/21/78	7.25	1464.15	06/29/85	5.94	1465.46
03/03/72	3.56	1467.84				07/27/85	7.58	1463.82
06/01/72	6.03	1465.37	05/17/79	4.10	1467.30	08/29/85	6.97	1464.43
08/29/72	7.78	1463.62	06/13/79	5.77	1465.63	09/28/85	6.83	1464.57
			07/11/79	5.54	1465.86	10/29/85	5.63	1465.77
04/05/73	7.77	1463.63	08/07/79	6.46	1464.94			
12/05/73	6.93	1464.47	09/19/79	7.53	1463.87	03/31/86	4.20	1467.20
			10/03/79	7.66	1463.74	04/28/86	3.71	1467.69
02/27/74	8.73	1462.67	11/01/79	7.66	1463.74	05/31/86	5.50	1465.90
05/30/74	3.95	1467.45	12/18/79	8.23	1463.17	07/01/86	6.40	1465.00
08/29/74	7.35	1464.05				07/30/86	5.70	1465.70
12/03/74	7.03	1464.37	04/08/80	7.13	1464.27	08/30/86	6.79	1464.61
			05/06/80	7.42	1463.98	09/30/86	6.15	1465.25
05/08/75	4.58	1466.82	06/05/80	5.85	1465.55	10/31/86	6.30	1465.10
06/11/75	4.95	1466.45	07/02/80	8.03	1463.37			
07/22/75	7.55	1463.85	07/30/80	8.59	1462.81	04/28/87	4.74	1466.66
08/14/75	8.25	1463.15	08/28/80	7.67	1463.73	05/30/87	4.28	1467.12
09/12/75	8.14	1463.26	09/24/80	7.07	1464.33	07/02/87	5.33	1466.07
10/08/75	7.92	1463.48	10/23/80	6.60	1464.80	07/31/87	3.53	1467.87
11/08/75	7.82	1463.58	11/21/80	6.50	1464.90	08/30/87	4.99	1466.41
12/02/75	7.90	1463.50	12/23/80	7.95	1463.45	09/30/87	5.63	1465.77
						10/29/87	5.86	1465.54
01/13/76	8.44	1462.96	04/09/81	7.45	1463.95	11/29/87	5.95	1465.45
02/11/76	8.58	1462.82	05/05/81	6.55	1464.85			
03/18/76	8.40	1463.00	06/04/81	5.50	1465.90	03/30/88	6.81	1464.59
04/15/76	6.16	1465.24	06/30/81	4.83	1466.57	04/29/88	6.63	1464.77
05/12/76	6.70	1464.70	07/29/81	6.88	1464.52	05/30/88	6.44	1464.96

151-062-27AAA1 (Continued), MP Elev (msl, ft)=1471.4 Warwick AquiferSI (ft.)=14-16

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/28/88	7.61	1463.79	05/29/93	4.29	1467.11	08/30/98	7.44	1463.96
08/01/88	8.52	1462.88	06/29/93	3.66	1467.74	09/29/98	7.59	1463.81
08/29/88	8.40	1463.00	08/29/93	3.56	1467.84	11/08/98	6.02	1465.38
09/30/88	8.38	1463.02	09/27/93	4.17	1467.23	12/03/98	5.66	1465.74
10/28/88	7.56	1463.84	10/31/93	4.58	1466.82			
						06/04/99	4.99	1466.41
04/27/89	5.28	1466.12	04/06/94	2.91	1468.49	07/02/99	4.42	1466.98
05/31/89	7.09	1464.31	05/01/94	3.90	1467.50	08/02/99	5.39	1466.01
06/27/89	7.72	1463.68	05/29/94	4.28	1467.12	09/01/99	4.29	1467.11
07/29/89	8.60	1462.80	07/01/94	3.89	1467.51	10/03/99	4.72	1466.68
08/30/89	8.42	1462.98	07/30/94	4.74	1466.66	10/27/99	5.10	1466.30
09/30/89	8.36	1463.04	08/29/94	5.44	1465.96	10/31/99	5.10	1466.30
10/30/89	8.50	1462.90	09/28/94	5.03	1466.37			
11/29/89	8.56	1462.84	10/29/94	3.66	1467.74	07/01/00	4.64	1466.76
			12/30/94	5.42	1465.98	08/01/00	5.01	1466.39
04/04/90	8.74	1462.66				08/10/00	5.00	1466.40
04/30/90	8.44	1462.96	04/29/95	3.47	1467.93	09/03/00	4.71	1466.69
05/31/90	8.02	1463.38	05/31/95	4.17	1467.23	10/03/00	4.78	1466.62
06/30/90	5.88	1465.52	06/30/95	4.72	1466.68	10/12/00	4.97	1466.43
07/28/90	6.43	1464.97	08/29/95	6.70	1464.70	10/28/00	4.04	1467.36
08/29/90	6.15	1465.25	09/29/95	7.17	1464.23			
09/27/90	6.18	1465.22	10/28/95	6.51	1464.89	06/05/01	4.84	1466.56
10/28/90	6.33	1465.07				06/30/01	4.56	1466.84
11/27/90	6.53	1464.87	05/02/96	0.81	1470.59	07/30/01	4.59	1466.81
			06/01/96	3.77	1467.63	09/01/01	6.34	1465.06
03/28/91	7.29	1464.11	06/29/96	4.94	1466.46	09/29/01	6.84	1464.56
04/30/91	6.03	1465.37	07/31/96	6.11	1465.29	10/29/01	5.48	1465.92
05/30/91	5.05	1466.35	09/01/96	7.13	1464.27	11/10/01	5.16	1466.24
06/29/91	3.39	1468.01	09/28/96	7.05	1464.35			
07/28/91	4.33	1467.07	10/29/96	6.62	1464.78	05/30/02	5.24	1466.16
08/31/91	5.16	1466.24	11/13/96	6.74	1464.66	06/28/02	4.51	1466.89
09/28/91	3.39	1468.01				07/29/02	6.94	1464.46
10/25/91	4.08	1467.32	04/30/97	3.65	1467.75	08/01/02	7.33	1464.07
			06/02/97	4.87	1466.53	08/29/02	7.51	1463.89
01/06/92	5.45	1465.95	06/28/97	5.20	1466.20	09/29/02	8.31	1463.09
04/28/92	3.23	1468.17	07/30/97	5.85	1465.55	10/31/02	8.15	1463.25
05/29/92	4.42	1466.98	08/30/97	4.95	1466.45	12/04/02	8.73	1462.67
07/01/92	4.56	1466.84	09/30/97	6.20	1465.20			
07/30/92	5.49	1465.91	10/01/97	6.15	1465.25	05/08/03	5.25	1466.15
08/29/92	5.72	1465.68	10/31/97	5.19	1466.21	06/05/03	5.72	1465.68
09/30/92	5.94	1465.46				07/10/03	4.68	1466.72
10/29/92	6.07	1465.33	07/02/98	4.76	1466.64	07/23/03	5.45	1465.95
			08/01/98	7.14	1464.26	08/05/03	4.21	1467.19

**151-062-27AAA2
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,470.80
SI (ft.)=198-204**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
09/16/69	18.18	1452.62				10/29/87	12.79	1458.01
11/19/69	18.22	1452.58	11/18/81	18.07	1452.73	11/29/87	12.38	1458.42
			12/31/81	16.95	1453.85			
02/18/70	18.31	1452.49				03/30/88	11.41	1459.39
03/23/70	18.32	1452.48	04/15/82	15.60	1455.20	04/29/88	11.81	1458.99
04/15/70	18.34	1452.46	05/28/82	15.13	1455.67	05/30/88	13.66	1457.14
07/07/70	17.98	1452.82	06/25/82	18.22	1452.58	06/28/88	34.34	1436.46
11/12/70	18.19	1452.61	08/01/82	23.28	1447.52	08/01/88	34.40	1436.40
11/30/70	18.06	1452.74	09/04/82	27.08	1443.72	08/29/88	25.49	1445.31
			09/29/82	21.74	1449.06	09/30/88	19.57	1451.23
03/03/71	17.44	1453.36	11/02/82	17.86	1452.94	10/28/88	17.09	1453.71
06/10/71	17.87	1452.93	11/30/82	16.49	1454.31			
09/02/71	17.92	1452.88				04/27/89	13.45	1457.35
11/30/71	18.42	1452.38	04/05/83	14.51	1456.29	05/31/89	14.61	1456.19
			05/01/83	14.29	1456.51	06/27/89	20.80	1450.00
06/01/72	17.65	1453.15	06/04/83	17.90	1452.90	07/29/89	36.79	1434.01
08/29/72	17.95	1452.85	06/28/83	20.43	1450.37	08/30/89	29.41	1441.39
			08/02/83	35.63	1435.17	09/30/89	20.75	1450.05
04/05/73	18.34	1452.46	08/30/83	23.62	1447.18	10/30/89	18.27	1452.53
12/05/73	18.34	1452.46	09/29/83	19.07	1451.73	11/29/89	16.97	1453.83
			10/30/83	16.86	1453.94			
03/27/74	18.60	1452.20	11/27/83	15.82	1454.98	04/04/90	14.94	1455.86
05/30/74	17.71	1453.09				04/30/90	14.78	1456.02
08/29/74	17.99	1452.81	04/04/84	13.70	1457.10	05/31/90	19.43	1451.37
12/03/74	17.90	1452.90	04/30/84	13.28	1457.52	06/30/90	16.06	1454.74
			05/31/84	19.17	1451.63	07/28/90	29.70	1441.10
03/20/75	17.90	1452.90	07/01/84	16.83	1453.97	08/29/90	28.68	1442.12
05/08/75	17.74	1453.06	07/31/84	32.69	1438.11	09/27/90	23.80	1447.00
06/11/75	17.54	1453.26	08/31/84	30.88	1439.92	10/28/90	19.42	1451.38
07/22/75	17.64	1453.16	09/29/84	21.89	1448.91	11/27/90	17.77	1453.03
08/14/75	17.93	1452.87	10/29/84	18.17	1452.63			
09/12/75	17.91	1452.89	12/07/84	16.12	1454.68	03/28/91	15.72	1455.08
10/08/75	17.76	1453.04				04/30/91	15.42	1455.38
11/08/75	17.86	1452.94	04/28/85	14.03	1456.77	05/30/91	15.38	1455.42
12/03/75	17.30	1453.50	05/29/85	18.82	1451.98	06/29/91	16.32	1454.48
			06/29/85	16.00	1454.80	07/28/91	20.88	1449.92
01/13/76	17.84	1452.96	07/27/85	31.75	1439.05	08/31/91	23.92	1446.88
02/11/76	17.72	1453.08	08/29/85	22.08	1448.72	09/28/91	17.61	1453.19
03/18/76	17.62	1453.18	09/28/85	18.13	1452.67	10/25/91	16.01	1454.79
04/15/76	17.61	1453.19	10/29/85	16.35	1454.45			
05/12/76	17.97	1452.83				01/06/92	14.35	1456.45
06/07/76	22.06	1448.74	03/31/86	13.92	1456.88	04/28/92	13.33	1457.47
07/16/76	26.38	1444.42	04/24/86	13.72	1457.08	05/29/92	13.54	1457.26
08/04/76	27.38	1443.42	04/28/86	13.40	1457.40	07/01/92	15.85	1454.95
09/09/76	23.16	1447.64	05/21/86	13.39	1457.41	07/30/92	19.02	1451.78
10/13/76	20.82	1449.98	05/31/86	17.75	1453.05	08/29/92	19.52	1451.28
11/03/76	20.43	1450.37	07/01/86	27.51	1443.29	09/30/92	16.07	1454.73
12/03/76	19.36	1451.44	07/02/86	28.21	1442.59	10/29/92	15.13	1455.67
			07/30/86	20.05	1450.75			
01/17/78	19.15	1451.65	08/06/86	24.22	1446.58	04/04/93	13.35	1457.45
02/13/78	18.90	1451.90	08/30/86	23.12	1447.68	05/01/93	13.01	1457.79
03/20/78	18.77	1452.03	09/30/86	17.68	1453.12	05/29/93	12.74	1458.06
04/13/78	18.60	1452.20	10/31/86	15.85	1454.95	06/29/93	12.83	1457.97
05/17/78	19.08	1451.72				08/29/93	17.38	1453.42
06/05/78	18.74	1452.06	04/28/87	12.93	1457.87	09/27/93	14.22	1456.58
07/12/78	26.10	1444.70	05/30/87	16.03	1454.77	10/31/93	12.08	1458.72
08/21/78	46.92	1423.88	07/02/87	16.59	1454.21			
09/12/78	32.00	1438.80	07/31/87	15.94	1454.86	04/06/94	9.70	1461.10
10/13/78	23.42	1447.38	08/30/87	15.53	1455.27	05/01/94	9.55	1461.25
11/21/78	20.87	1449.93	09/30/87	13.57	1457.23	05/29/94	9.70	1461.10

151-062-27AAA2 (Continued), MP Elev (msl, ft)=1470.8 Spiritwood Aquifer SI (ft.)=198-204

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
07/01/94	10.03	1460.77	08/30/98	19.77	1451.03	09/29/02	11.07	1459.73
07/30/94	18.02	1452.78	09/29/98	16.47	1454.33	10/31/02	8.98	1461.82
08/29/94	16.07	1454.73	11/08/98	12.48	1458.32	12/04/02	8.01	1462.79
09/28/94	13.10	1457.70	12/03/98	11.03	1459.77			
10/29/94	11.09	1459.71				05/08/03	6.45	1464.35
12/30/94	9.67	1461.13	06/04/99	8.84	1461.96	06/05/03	6.73	1464.07
			07/02/99	10.92	1459.88	07/10/03	9.20	1461.60
04/29/95	9.11	1461.69	08/02/99	15.52	1455.28	07/23/03	10.14	1460.66
05/31/95	8.94	1461.86	09/01/99	15.52	1455.28	08/05/03	19.78	1451.02
06/30/95	12.34	1458.46	10/03/99	10.69	1460.11	08/14/03	15.30	1455.50
08/29/95	16.00	1454.80	10/27/99	9.18	1461.62	09/02/03	17.93	1452.87
09/29/95	12.10	1458.70	10/31/99	9.16	1461.64	09/30/03	13.80	1457.00
10/28/95	10.51	1460.29				10/27/03	11.55	1459.25
			07/01/00	9.92	1460.88	10/29/03	11.50	1459.30
05/02/96	8.95	1461.85	08/01/00	15.79	1455.01	10/30/03	11.54	1459.26
06/01/96	8.72	1462.08	08/10/00	13.90	1456.90	10/31/03	11.70	1459.10
06/29/96	11.45	1459.35	09/03/00	12.40	1458.40	11/01/03	12.01	1458.79
07/31/96	15.87	1454.93	10/03/00	9.50	1461.30	11/02/03	12.22	1458.58
09/01/96	19.08	1451.72	10/12/00	8.96	1461.84	11/03/03	12.37	1458.43
09/28/96	13.99	1456.81	10/28/00	8.44	1462.36	11/04/03	12.25	1458.55
10/29/96	11.49	1459.31				11/06/03	12.02	1458.78
11/13/96	10.87	1459.93	06/05/01	6.12	1464.68	12/02/03	10.17	1460.63
			06/30/01	6.17	1464.63			
04/30/97	8.79	1462.01	07/30/01	7.51	1463.29	05/04/04	7.55	1463.25
06/02/97	9.11	1461.69	09/01/01	10.98	1459.82	06/08/04	7.40	1463.40
06/28/97	15.63	1455.17	09/29/01	8.34	1462.46	07/13/04	10.09	1460.71
07/30/97	17.46	1453.34	10/29/01	6.91	1463.89	08/10/04	16.10	1454.70
08/30/97	14.75	1456.05	11/10/01	6.54	1464.26	09/01/04	14.88	1455.92
09/30/97	11.61	1459.19				09/07/04	13.52	1457.28
10/01/97	11.48	1459.32	05/30/02	5.59	1465.21	10/04/04	10.49	1460.31
10/31/97	10.12	1460.68	06/28/02	6.19	1464.61	11/09/04	8.80	1462.00
			07/29/02	14.38	1456.42	12/07/04	8.03	1462.77
07/02/98	12.60	1458.20	08/01/02	15.97	1454.83	08/01/98	21.38	1449.42
08/29/02	15.79	1455.01						

151-062-27AAA3
Warwick Aquifer

MP Elev (msl, ft)=1,468.33
SI (ft.)=6-11

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/20/03	3.44	1464.89	11/02/03	4.68	1463.65	07/13/04	2.83	1465.50
09/02/03	4.52	1463.81	11/03/03	4.80	1463.53	08/10/04	5.13	1463.20
09/30/03	5.00	1463.33	11/04/03	4.77	1463.56	09/01/04	5.50	1462.83
10/27/03	4.20	1464.13	11/06/03	4.87	1463.46	09/07/04	4.83	1463.50
10/29/03	4.45	1463.88	12/02/03	5.50	1462.83	10/04/04	3.80	1464.53
10/30/03	4.49	1463.84				11/09/04	3.70	1464.63
10/31/03	4.52	1463.81	05/04/04	2.93	1465.40	12/07/04	4.23	1464.10
11/01/03	4.72	1463.61	06/08/04	2.25	1466.08			

151-062-27DDDA
Spiritwood Aquifer

MP Elev (msl,ft)=1,466.78
SI (ft.)=188-193

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
04/04/84	11.21	1455.57	08/29/90	26.99	1439.79	07/16/97	8.55	1458.23
04/30/84	10.75	1456.03	09/27/90	21.70	1445.08	07/30/97	13.77	1453.01
05/31/84	15.36	1451.42	10/28/90	17.20	1449.58	08/30/97	13.11	1453.67
07/01/84	14.06	1452.72	11/27/90	15.48	1451.30	09/30/97	9.70	1457.08
07/31/84	29.30	1437.48				10/01/97	9.37	1457.41
08/31/84	29.07	1437.71	03/29/91	13.39	1453.39	10/31/97	8.06	1458.72
09/29/84	19.95	1446.83	04/30/91	13.08	1453.70			
10/29/84	15.99	1450.79	05/30/91	13.04	1453.74	07/01/98	7.47	1459.31
12/07/84	13.67	1453.11	06/29/91	14.03	1452.75	08/01/98	18.94	1447.84
			07/28/91	17.73	1449.05	08/30/98	19.47	1447.31
04/28/85	11.65	1455.13	08/31/91	21.00	1445.78	09/30/98	14.74	1452.04
05/29/85	16.34	1450.44	09/28/91	15.40	1451.38	11/07/98	10.42	1456.36
06/29/85	13.73	1453.05	10/26/91	13.62	1453.16			
07/27/85	30.08	1436.70				06/04/99	6.73	1460.05
08/29/85	20.07	1446.71	01/06/92	11.82	1454.96	07/02/99	8.97	1457.81
09/28/85	15.91	1450.87	04/28/92	11.00	1455.78	08/02/99	13.41	1453.37
10/29/85	14.02	1452.76	05/29/92	11.21	1455.57	09/01/99	13.62	1453.16
			07/01/92	13.05	1453.73	10/03/99	8.65	1458.13
03/31/86	11.55	1455.23	07/30/92	15.66	1451.12	10/31/99	7.09	1459.69
04/28/86	11.04	1455.74	08/29/92	17.27	1449.51			
05/31/86	14.39	1452.39	09/30/92	13.69	1453.09	07/02/00	8.05	1458.73
07/01/86	24.20	1442.58	10/29/92	12.84	1453.94	08/01/00	12.72	1454.06
07/30/86	17.88	1448.90				09/03/00	10.59	1456.19
08/30/86	20.56	1446.22	04/04/93	10.88	1455.90	10/03/00	7.49	1459.29
09/30/86	15.39	1451.39	05/01/93	10.63	1456.15	10/12/00	6.89	1459.89
10/31/86	13.51	1453.27	05/29/93	10.37	1456.41	10/28/00	6.38	1460.40
			06/29/93	10.49	1456.29			
04/28/87	10.50	1456.28	08/29/93	15.13	1451.65	06/05/01	4.08	1462.70
05/30/87	13.75	1453.03	09/27/93	11.74	1455.04	06/30/01	4.19	1462.59
07/02/87	14.40	1452.38	10/31/93	9.74	1457.04	07/30/01	5.57	1461.21
07/31/87	13.67	1453.11				09/01/01	9.11	1457.67
08/30/87	13.24	1453.54	04/06/94	7.26	1459.52	09/29/01	6.47	1460.31
09/30/87	11.25	1455.53	05/01/94	7.30	1459.48	10/29/01	4.70	1462.08
10/29/87	10.43	1456.35	05/29/94	7.54	1459.24	11/10/01	4.48	1462.30
11/29/87	9.89	1456.89	07/01/94	7.88	1458.90			
			07/30/94	14.48	1452.30	05/30/02	3.71	1463.07
03/31/88	9.13	1457.65	08/29/94	13.84	1452.94	06/28/02	4.79	1461.99
04/27/88	11.14	1455.64	09/28/94	11.09	1455.69	07/29/02	11.34	1455.44
04/29/88	9.31	1457.47	10/29/94	8.94	1457.84	08/01/02	13.48	1453.30
05/30/88	11.12	1455.66	12/30/94	7.35	1459.43	08/29/02	14.23	1452.55
06/28/88	30.10	1436.68				09/29/02	9.30	1457.48
08/01/88	31.81	1434.97	04/30/95	6.89	1459.89	10/31/02	7.22	1459.56
08/29/88	23.59	1443.19	06/01/95	6.82	1459.96	12/04/02	5.91	1460.87
09/30/88	17.44	1449.34	06/30/95	10.38	1456.40			
10/28/88	14.91	1451.87	08/29/95	13.72	1453.06	05/08/03	4.30	1462.48
			09/29/95	10.14	1456.64	06/05/03	4.62	1462.16
04/27/89	11.14	1455.64	10/28/95	8.48	1458.30	07/10/03	7.23	1459.55
05/31/89	12.34	1454.44				07/23/03	7.52	1459.26
06/26/89	17.05	1449.73	05/02/96	6.74	1460.04	08/05/03	17.20	1449.58
07/29/89	35.03	1431.75	06/01/96	6.62	1460.16	09/02/03	16.44	1450.34
08/30/89	27.43	1439.35	06/29/96	9.38	1457.40	09/30/03	12.05	1454.73
09/30/89	18.72	1448.06	07/31/96	13.17	1453.61	10/27/03	9.67	1457.11
10/30/89	16.08	1450.70	09/01/96	16.29	1450.49	10/29/03	9.60	1457.18
11/29/89	14.67	1452.11	09/28/96	12.09	1454.69	10/30/03	9.58	1457.20
			10/29/96	9.31	1457.47	10/31/03	9.67	1457.11
04/04/90	12.60	1454.18	11/13/96	8.63	1458.15	11/01/03	9.79	1456.99
04/30/90	12.43	1454.35				11/02/03	9.90	1456.88
05/31/90	16.49	1450.29	04/30/97	6.69	1460.09	11/03/03	10.03	1456.75
06/30/90	13.76	1453.02	06/02/97	7.05	1459.73	11/04/03	10.02	1456.76
07/28/90	25.91	1440.87	06/28/97	12.59	1454.19	11/06/03	9.90	1456.88

151-062-27DDDA (Continued), MP Elev (msl,ft)=1466.78 Spiritwood Aquifer SI (ft.)=188-193

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
12/02/03	8.17	1458.61	07/13/04	8.05	1458.73	10/04/04	8.50	1458.28
			08/10/04	14.22	1452.56	11/09/04	6.74	1460.04
05/04/04	5.47	1461.31	09/01/04	13.10	1453.68	12/07/04	5.96	1460.82
06/08/04	5.34	1461.44	09/07/04	11.73	1455.05			

151-062-27DDDA2 Warwick Aquifer

**MP Elev (msl,ft)=1,465.93
SI (ft.)=0-10.9**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/21/73	6.34	1459.59	06/18/75	5.54	1460.39			
09/21/73	8.44	1457.49	09/17/75	8.34	1457.59	03/23/78	7.64	1458.29
12/21/73	7.34	1458.59	12/18/75	8.04	1457.89	07/26/78	7.24	1458.69
						09/27/78	7.94	1457.99
04/05/74	7.34	1458.59	03/17/76	7.84	1458.09	12/11/78	8.14	1457.79
05/23/74	4.14	1461.79	06/29/76	6.24	1459.69			
06/19/74	5.14	1460.79	09/28/76	8.74	1457.19	06/20/79	4.74	1461.19
09/23/74	7.14	1458.79	12/28/76	9.34	1456.59	09/04/79	7.54	1458.39
12/16/74	7.44	1458.49						
			03/21/77	9.14	1456.79	03/17/80	8.14	1457.79
04/03/75	7.24	1458.69	07/07/77	7.74	1458.19	06/25/80	7.44	1458.49
05/05/75	4.64	1461.29	09/19/77	8.44	1457.49	09/30/80	7.04	1458.89
05/29/75	5.14	1460.79	12/29/77	8.54	1457.39			

151-062-30DDA1 Spiritwood Aquifer

**MP Elev (msl,ft)=1,467.00
SI (ft.)=0-0**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
10/14/92	5.83	1451.17	04/14/93	3.36	1453.64	10/21/93	2.34	1454.66
12/08/92	5.59	1451.41	06/10/93	2.64	1454.36	11/17/93	2.26	1454.74
			07/15/93	2.93	1454.07			

151-062-32CCB Undefined Aquifer

**MP Elev (msl,ft)=1,470.00
SI (ft.)=15-19**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
10/04/67	7.30	1462.70	09/17/68	5.77	1464.23	09/16/69	6.97	1463.03
11/15/67	7.68	1462.32	10/08/68	6.31	1463.69	11/19/69	7.10	1462.90
12/14/67	7.85	1462.15	11/14/68	6.56	1463.44			
			12/10/68	6.60	1463.40	04/15/70	6.18	1463.82
01/17/68	8.15	1461.85				10/06/70	7.56	1462.44
02/22/68	8.36	1461.64	01/14/69	7.10	1462.90			
03/13/68	7.86	1462.14	02/12/69	7.41	1462.59	04/24/86	3.91	1466.09
04/17/68	6.92	1463.08	04/21/69	3.82	1466.18	05/21/86	3.91	1466.09
06/18/68	5.19	1464.81	05/08/69	4.12	1465.88	07/02/86	6.03	1463.97
07/14/68	6.27	1463.73	06/17/69	4.92	1465.08	08/06/86	5.90	1464.10
08/21/68	6.50	1463.50	08/20/69	6.19	1463.81			

**151-062-34CCC
Warwick Aquifer**

**MP Elev (msl,ft)=1,471.32
SI (ft.)=0-12**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/21/73	7.93	1463.39	05/05/75	3.93	1467.39	09/19/77	9.83	1461.49
09/21/73	9.13	1462.19	05/29/75	5.03	1466.29			
01/14/74	8.13	1463.19	06/18/75	5.63	1465.69	07/26/78	8.13	1463.19
04/11/74	7.83	1463.49	09/17/75	8.33	1462.99	09/27/78	9.13	1462.19
05/23/74	3.73	1467.59	12/18/75	7.83	1463.49			
06/19/74	5.03	1466.29				06/20/79	5.63	1465.69
09/23/74	8.23	1463.09	06/29/76	7.33	1463.99	09/04/79	7.83	1463.49
12/16/74	7.73	1463.59	09/28/76	9.33	1461.99			
						06/25/80	8.23	1463.09
04/04/75	7.73	1463.59	03/21/77	8.33	1462.99	09/30/80	8.43	1462.89
			07/07/77	8.73	1462.59			

151-062-34DDD
Spiritwood Aquifer

MP Elev (msl,ft)=1,468.10
SI (ft.)=167-170

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
11/15/67	16.45	1451.65						
12/14/67	16.57	1451.53						
			03/18/76	16.15	1451.95	03/31/88	9.94	1458.16
			06/07/76	19.14	1448.96	04/29/88	10.02	1458.08
01/17/68	16.48	1451.62	09/09/76	21.80	1446.30	05/30/88	11.35	1456.75
02/22/68	16.40	1451.70	12/03/76	17.78	1450.32	06/28/88	27.09	1441.01
03/13/68	16.60	1451.50				08/01/88	31.12	1436.98
04/11/68	16.34	1451.76	03/20/78	17.19	1450.91	08/29/88	24.73	1443.37
05/02/68	16.41	1451.69	06/05/78	17.13	1450.97	09/30/88	18.59	1449.51
06/19/68	16.22	1451.88	09/12/78	31.24	1436.86	10/28/88	15.96	1452.14
07/15/68	16.33	1451.77	11/21/78	19.59	1448.51			
08/21/68	16.29	1451.81				04/27/89	11.96	1456.14
09/17/68	16.17	1451.93	08/27/81	26.66	1441.44	05/31/89	13.12	1454.98
10/08/68	16.27	1451.83	09/25/81	21.38	1446.72	06/26/89	16.72	1451.38
11/14/68	16.32	1451.78	10/23/81	17.92	1450.18	07/29/89	34.23	1433.87
12/10/68	16.35	1451.75				08/30/89	27.90	1440.20
			04/05/83	12.84	1455.26	09/30/89	19.82	1448.28
01/14/69	16.38	1451.72	05/01/83	12.64	1455.46	10/30/89	17.02	1451.08
04/21/69	16.39	1451.71	06/04/83	14.91	1453.19	11/29/89	15.55	1452.55
05/08/69	16.21	1451.89	06/28/83	17.44	1450.66			
06/17/69	16.11	1451.99	08/02/83	28.74	1439.36	04/04/90	12.79	1455.31
07/15/69	15.90	1452.20	08/30/83	23.61	1444.49	04/30/90	13.25	1454.85
08/20/69	16.12	1451.98	09/29/83	17.90	1450.20	05/31/90	15.57	1452.53
09/16/69	15.90	1452.20	10/30/83	15.42	1452.68	06/30/90	14.45	1453.65
11/19/69	16.28	1451.82	11/27/83	14.27	1453.83	07/28/90	23.31	1444.79
						08/29/90	28.09	1440.01
02/18/70	16.34	1451.76	04/04/84	13.06	1455.04	09/27/90	22.90	1445.20
03/23/70	16.33	1451.77	04/30/84	11.60	1456.50	10/28/90	18.14	1449.96
04/15/70	16.35	1451.75	05/31/84	14.04	1454.06	11/27/90	16.28	1451.82
05/13/70	16.03	1452.07	07/01/84	14.58	1453.52			
06/23/70	15.84	1452.26	07/31/84	27.06	1441.04	03/28/91	14.13	1453.97
07/07/70	15.94	1452.16	08/31/84	29.73	1438.37	04/30/91	13.83	1454.27
09/08/70	16.21	1451.89	09/29/84	21.28	1446.82	05/30/91	13.74	1454.36
10/06/70	16.27	1451.83	10/29/84	16.95	1451.15	06/29/91	14.74	1453.36
11/12/70	16.20	1451.90	12/07/84	14.72	1453.38	07/28/91	16.39	1451.71
11/30/70	16.16	1451.94				08/31/91	19.63	1448.47
			04/28/85	12.44	1455.66	09/28/91	16.12	1451.98
03/03/71	16.32	1451.78	05/29/85	16.30	1451.80	10/26/91	14.35	1453.75
06/10/71	15.86	1452.24	06/29/85	14.62	1453.48			
09/02/71	16.03	1452.07	07/27/85	26.72	1441.38	01/06/92	12.73	1455.37
11/30/71	15.89	1452.21	08/29/85	21.30	1446.80	04/28/92	11.66	1456.44
			09/28/85	16.85	1451.25	05/29/92	11.90	1456.20
03/02/72	15.93	1452.17	10/29/85	14.80	1453.30	07/01/92	12.95	1455.15
06/01/72	15.75	1452.35				07/30/92	15.04	1453.06
08/29/72	16.09	1452.01	03/31/86	12.19	1455.91	08/29/92	17.80	1450.30
12/05/72	16.22	1451.88	04/28/86	11.68	1456.42	09/30/92	14.38	1453.72
			05/31/86	13.17	1454.93	10/29/92	13.56	1454.54
04/05/73	16.43	1451.67	07/01/86	22.55	1445.55			
05/05/73	16.57	1451.53	07/30/86	18.70	1449.40	04/04/93	11.60	1456.50
08/29/73	16.80	1451.30	08/30/86	21.12	1446.98	05/01/93	11.33	1456.77
12/05/73	16.60	1451.50	09/30/86	16.24	1451.86	05/29/93	11.04	1457.06
			10/31/86	14.26	1453.84	06/29/93	11.15	1456.95
02/27/74	16.81	1451.29				07/30/93	10.24	1457.86
05/30/74	16.09	1452.01	04/28/87	11.17	1456.93	08/29/93	15.19	1452.91
08/29/74	16.32	1451.78	05/30/87	14.62	1453.48	09/27/93	12.39	1455.71
12/03/74	16.08	1452.02	07/02/87	15.26	1452.84	10/31/93	10.57	1457.53
			07/31/87	14.59	1453.51			
03/20/75	14.72	1453.38	08/30/87	14.10	1454.00	04/06/94	8.03	1460.07
06/11/75	15.75	1452.35	09/30/87	12.11	1455.99	05/01/94	8.10	1460.00
09/12/75	16.25	1451.85	10/29/87	11.26	1456.84	05/29/94	8.43	1459.67
12/02/75	16.10	1452.00	11/29/87	10.79	1457.31	07/01/94	8.80	1459.30

151-062-34DDD

(Continued), MP Elev (msl, ft)=1468.1 Spiritwood Aquifer SI (ft.)=167-170

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
07/30/94	12.64	1455.46	07/01/98	8.67	1459.43	06/28/02	5.64	1462.46
08/29/94	14.48	1453.62	08/01/98	18.80	1449.30	07/29/02	11.03	1457.07
09/28/94	12.20	1455.90	08/30/98	20.73	1447.37	08/01/02	13.10	1455.00
10/29/94	9.90	1458.20	09/30/98	16.85	1451.25	08/29/02	16.13	1451.97
12/30/94	8.42	1459.68	11/07/98	12.00	1456.10	09/29/02	11.22	1456.88
						10/31/02	8.93	1459.17
04/29/95	7.85	1460.25	06/04/99	8.02	1460.08	12/04/02	7.73	1460.37
06/01/95	7.80	1460.30	07/02/99	10.45	1457.65			
06/30/95	11.49	1456.61	08/02/99	13.95	1454.15	05/08/03	6.00	1462.10
08/29/95	14.58	1453.52	09/01/99	14.19	1453.91	06/05/03	6.35	1461.75
09/29/95	11.34	1456.76	10/03/99	9.57	1458.53	07/10/03	8.52	1459.58
10/28/95	9.55	1458.55	10/31/99	8.52	1459.58	07/23/03	8.35	1459.75
						08/05/03	16.42	1451.68
05/02/96	7.93	1460.17	07/02/00	9.57	1458.53	08/14/03	13.08	1455.02
06/01/96	7.69	1460.41	08/01/00	12.27	1455.83	09/02/03	18.34	1449.76
06/29/96	10.45	1457.65	08/10/00	13.40	1454.70	09/30/03	14.15	1453.95
07/31/96	13.61	1454.49	09/03/00	12.24	1455.86	11/01/03	11.44	1456.66
09/01/96	16.49	1451.61	10/02/00	9.59	1458.51	12/02/03	9.93	1458.17
09/28/96	13.40	1454.70	10/12/00	8.39	1459.71			
10/29/96	10.49	1457.61	10/28/00	7.74	1460.36	05/04/04	7.09	1461.01
11/13/96	9.95	1458.15				06/08/04	6.88	1461.22
			06/05/01	5.55	1462.55	07/13/04	9.77	1458.33
04/30/97	7.55	1460.55	06/30/01	5.66	1462.44	08/10/04	15.82	1452.28
06/02/97	7.80	1460.30	07/30/01	7.11	1460.99	08/31/04	15.08	1453.02
06/28/97	12.57	1455.53	09/01/01	10.31	1457.79	09/07/04	13.68	1454.42
07/30/97	11.69	1456.41	09/29/01	8.12	1459.98	10/04/04	10.30	1457.80
08/30/97	13.58	1454.52	10/29/01	6.34	1461.76	11/09/04	8.45	1459.65
10/01/97	10.73	1457.37	11/10/01	6.03	1462.07	12/07/04	7.64	1460.46
10/31/97	9.56	1458.54						
05/30/02	5.27	1462.83						

151-062-36AAA
Spiritwood Aquifer

MP Elev (msl,ft)=1,479.40
SI (ft.)=198-203

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
04/03/84	23.84	1455.56	09/27/90	34.59	1444.81	07/16/97	21.50	1457.90
04/30/84	23.38	1456.02	10/28/90	29.87	1449.53	07/30/97	24.91	1454.49
05/31/84	26.57	1452.83	11/27/90	28.08	1451.32	08/30/97	24.47	1454.93
06/30/84	26.69	1452.71				09/30/97	22.67	1456.73
07/31/84	41.03	1438.37	03/28/91	25.96	1453.44	10/01/97	22.34	1457.06
08/31/84	42.22	1437.18	04/30/91	25.66	1453.74	10/31/97	20.85	1458.55
09/29/84	32.82	1446.58	05/30/91	25.65	1453.75			
10/29/84	28.78	1450.62	06/29/91	26.62	1452.78	07/02/98	21.29	1458.11
12/07/84	26.52	1452.88	07/28/91	28.37	1451.03	08/02/98	33.19	1446.21
			08/31/91	31.43	1447.97	08/31/98	34.15	1445.25
04/28/85	24.32	1455.08	09/29/91	27.97	1451.43	09/30/98	27.82	1451.58
05/29/85	28.47	1450.93	10/26/91	26.23	1453.17	11/07/98	23.39	1456.01
06/29/85	26.43	1452.97				12/03/98	21.78	1457.62
07/27/85	41.43	1437.97	01/06/92	24.40	1455.00			
08/29/85	33.00	1446.40	04/28/92	24.60	1454.80	06/04/99	19.64	1459.76
09/28/85	28.67	1450.73	05/28/92	23.79	1455.61	07/01/99	22.46	1456.94
10/29/85	26.75	1452.65	07/01/92	25.06	1454.34	08/01/99	26.16	1453.24
			07/29/92	26.95	1452.45	09/01/99	26.84	1452.56
03/31/86	24.19	1455.21	08/29/92	29.88	1449.52	10/03/99	21.35	1458.05
04/29/86	23.66	1455.74	09/29/92	26.20	1453.20	10/27/99	19.89	1459.51
05/31/86	27.79	1451.61	10/29/92	25.34	1454.06	10/31/99	19.93	1459.47
07/01/86	39.00	1440.40						
07/30/86	30.71	1448.69	04/04/93	23.40	1456.00	07/02/00	20.99	1458.41
08/31/86	33.37	1446.03	05/01/93	23.17	1456.23	08/01/00	26.63	1452.77
09/30/86	28.09	1451.31	05/29/93	22.92	1456.48	09/03/00	23.62	1455.78
10/31/86	26.22	1453.18	06/30/93	22.97	1456.43	10/02/00	20.36	1459.04
			07/30/93	22.21	1457.19	10/12/00	20.17	1459.23
04/28/87	23.16	1456.24	08/29/93	27.40	1452.00	10/28/00	19.22	1460.18
05/30/87	26.55	1452.85	09/27/93	24.32	1455.08			
07/02/87	27.12	1452.28	11/01/93	22.27	1457.13	06/05/01	16.97	1462.43
07/31/87	26.39	1453.01				06/30/01	17.31	1462.09
08/30/87	25.92	1453.48	04/06/94	19.96	1459.44	07/30/01	18.44	1460.96
09/30/87	23.90	1455.50	05/01/94	19.85	1459.55	09/02/01	21.87	1457.53
10/29/87	23.03	1456.37	05/28/94	20.40	1459.00	09/29/01	19.32	1460.08
11/29/87	22.52	1456.88	07/01/94	20.44	1458.96	10/29/01	17.59	1461.81
			07/30/94	25.33	1454.07	11/10/01	17.27	1462.13
03/30/88	21.56	1457.84	08/29/94	26.45	1452.95			
04/29/88	21.85	1457.55	09/28/94	24.08	1455.32	05/30/02	16.65	1462.75
05/30/88	25.00	1454.40	10/28/94	21.59	1457.81	06/28/02	17.51	1461.89
06/28/88	42.10	1437.30	12/30/94	20.35	1459.05	07/29/02	23.62	1455.78
08/01/88	44.80	1434.60				08/01/02	27.91	1451.49
08/29/88	36.97	1442.43	04/30/95	19.73	1459.67	08/29/02	27.42	1451.98
09/30/88	30.19	1449.21	05/31/95	19.62	1459.78	09/29/02	22.27	1457.13
10/28/88	27.60	1451.80	06/30/95	23.32	1456.08	10/31/02	20.07	1459.33
			08/28/95	26.51	1452.89	12/04/02	18.77	1460.63
04/27/89	23.72	1455.68	09/28/95	22.94	1456.46			
06/01/89	24.97	1454.43	10/29/95	21.26	1458.14	05/08/03	17.28	1462.12
06/27/89	31.05	1448.35				06/05/03	17.67	1461.73
07/29/89	48.00	1431.40	05/02/96	19.69	1459.71	07/10/03	20.74	1458.66
08/30/89	41.78	1437.62	05/31/96	19.60	1459.80	07/21/03	20.00	1459.40
09/30/89	31.38	1448.02	06/29/96	22.42	1456.98	08/05/03	31.55	1447.85
10/31/89	28.72	1450.68	07/30/96	25.50	1453.90	08/13/03	26.64	1452.76
11/29/89	27.29	1452.11	09/01/96	28.79	1450.61	09/02/03	30.19	1449.21
			09/29/96	24.80	1454.60	09/30/03	25.69	1453.71
04/04/90	25.17	1454.23	10/28/96	22.45	1456.95	11/01/03	22.83	1456.57
04/30/90	25.01	1454.39	11/13/96	21.57	1457.83	11/18/03	22.07	1457.33
05/31/90	27.46	1451.94				11/18/03	22.02	1457.38
06/30/90	26.48	1452.92	04/30/97	19.53	1459.87	11/18/03	22.00	1457.40
07/28/90	37.90	1441.50	06/02/97	20.33	1459.07	12/02/03	21.41	1457.99
08/29/90	40.10	1439.30	06/28/97	25.48	1453.92			

151-062-36AAA (Continued), MP Elev (msl, ft)=1479.4 Spiritwood Aquifer SI (ft.)=198-203

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
05/04/04	18.64	1460.76	08/10/04	27.60	1451.80	10/04/04	21.73	1457.67
06/08/04	18.50	1460.90	09/01/04	26.30	1453.10	11/09/04	19.77	1459.63
07/13/04	21.45	1457.95	09/07/04	25.15	1454.25	12/07/04	18.90	1460.50

151-062-36CCC
Spiritwood Aquifer

MP Elev (msl,ft)=1,464.20
SI (ft.)=197-203

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
09/16/69	11.75	1452.45				08/29/90	24.43	1439.77
11/19/69	11.83	1452.37	04/04/84	7.62	1456.58	09/27/90	18.79	1445.41
			04/30/84	7.19	1457.01	10/28/90	13.98	1450.22
02/18/70	11.89	1452.31	05/31/84	9.79	1454.41	11/27/90	12.11	1452.09
04/15/70	11.95	1452.25	07/01/84	10.22	1453.98			
07/07/70	11.56	1452.64	07/31/84	23.42	1440.78	03/28/91	9.93	1454.27
10/06/70	11.81	1452.39	08/31/84	25.89	1438.31	04/30/91	9.64	1454.56
11/30/70	11.69	1452.51	09/29/84	17.10	1447.10	05/30/91	9.67	1454.53
			10/29/84	12.76	1451.44	06/29/91	10.59	1453.61
11/30/71	11.49	1452.71	12/07/84	9.25	1454.95	07/28/91	12.02	1452.18
						08/31/91	15.39	1448.81
12/05/72	11.76	1452.44	04/28/85	7.99	1456.21	09/29/91	12.07	1452.13
			05/29/85	12.22	1451.98	10/26/91	10.20	1454.00
12/05/73	12.16	1452.04	06/29/85	10.41	1453.79			
			07/27/85	23.65	1440.55	04/28/92	7.49	1456.71
12/03/74	11.65	1452.55	08/29/85	17.22	1446.98	05/29/92	7.64	1456.56
			09/28/85	12.69	1451.51	07/01/92	8.87	1455.33
05/08/75	11.46	1452.74	10/29/85	10.68	1453.52	07/30/92	11.10	1453.10
06/11/75	11.28	1452.92				08/29/92	13.85	1450.35
07/22/75	11.39	1452.81	03/31/86	8.14	1456.06	09/30/92	10.21	1453.99
08/14/75	11.69	1452.51	04/29/86	7.65	1456.55	10/29/92	9.43	1454.77
09/12/75	11.68	1452.52	05/31/86	8.90	1455.30			
10/08/75	11.57	1452.63	07/01/86	19.73	1444.47	04/04/93	7.42	1456.78
11/08/75	11.70	1452.50	07/30/86	14.75	1449.45	05/01/93	7.17	1457.03
12/03/75	11.30	1452.90	08/31/86	17.19	1447.01	05/29/93	6.77	1457.43
			09/30/86	12.22	1451.98	06/29/93	7.01	1457.19
01/13/76	11.56	1452.64	10/31/86	10.24	1453.96	08/29/93	11.16	1453.04
02/11/76	11.54	1452.66				09/27/93	8.35	1455.85
03/17/76	11.67	1452.53	04/28/87	7.18	1457.02	11/01/93	6.34	1457.86
04/15/76	11.43	1452.77	05/30/87	10.67	1453.53			
05/12/76	11.54	1452.66	07/02/87	11.27	1452.93	04/06/94	3.87	1460.33
06/07/76	15.00	1449.20	07/31/87	10.47	1453.73	05/01/94	3.91	1460.29
07/16/76	19.75	1444.45	08/30/87	10.04	1454.16	05/29/94	4.31	1459.89
08/04/76	21.08	1443.12	09/30/87	7.94	1456.26	07/01/94	4.87	1459.33
09/09/76	17.57	1446.63	10/29/87	7.09	1457.11	07/30/94	8.73	1455.47
10/13/76	14.94	1449.26	11/29/87	6.59	1457.61	08/29/94	10.57	1453.63
11/03/76	14.95	1449.25				09/28/94	8.29	1455.91
12/03/76	13.49	1450.71	03/31/88	5.67	1458.53	10/29/94	5.90	1458.30
			04/29/88	5.84	1458.36			
01/17/78	13.40	1450.80	05/30/88	7.70	1456.50	04/29/95	3.80	1460.40
02/13/78	11.94	1452.26	06/28/88	23.74	1440.46	06/01/95	3.69	1460.51
03/20/78	12.75	1451.45	08/01/88	27.85	1436.35	06/30/95	7.64	1456.56
04/13/78	12.62	1451.58	08/29/88	20.78	1443.42	08/29/95	10.59	1453.61
05/17/78	12.40	1451.80	09/30/88	14.45	1449.75	09/29/95	7.34	1456.86
06/05/78	12.79	1451.41	10/28/88	11.73	1452.47	10/29/95	5.51	1458.69
07/12/78	20.75	1443.45						
08/21/78	36.80	1427.40	04/27/89	7.78	1456.42	05/02/96	3.85	1460.35
09/12/78	26.86	1437.34	05/31/89	9.01	1455.19	06/01/96	3.55	1460.65
10/13/78	18.32	1445.88	06/27/89	13.36	1450.84	06/29/96	6.49	1457.71
11/21/78	15.22	1448.98	07/29/89	30.79	1433.41	07/31/96	9.84	1454.36
			08/30/89	24.50	1439.70	09/01/96	12.73	1451.47
04/05/83	8.25	1455.95	09/30/89	15.61	1448.59	09/29/96	9.20	1455.00
05/01/83	7.97	1456.23	10/30/89	12.86	1451.34	10/29/96	6.44	1457.76
06/04/83	10.49	1453.71	11/29/89	11.34	1452.86			
06/28/83	13.37	1450.83				04/30/97	3.64	1460.56
08/02/83	25.32	1438.88	04/04/90	9.16	1455.04	06/02/97	3.79	1460.41
08/30/83	19.06	1445.14	04/30/90	9.03	1455.17	06/28/97	8.90	1455.30
09/29/83	13.29	1450.91	05/31/90	11.14	1453.06	07/16/97	5.75	1458.45
10/30/83	10.81	1453.39	06/30/90	10.39	1453.81	07/30/97	8.19	1456.01
11/27/83	9.65	1454.55	07/28/90	19.79	1444.41	08/30/97	9.59	1454.61

151-062-36CCC

(Continued), MP Elev (msl, ft)=1464.2 Spiritwood Aquifer SI (ft.)=197-203

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
10/01/97	6.68	1457.52	10/12/00	4.35	1459.85	07/23/03	4.42	1459.78
10/31/97	5.79	1458.41	10/28/00	3.43	1460.77	08/05/03	13.62	1450.58
						08/20/03	14.30	1449.90
07/02/98	5.33	1458.87	06/05/01	1.26	1462.94	09/02/03	14.62	1449.58
08/01/98	15.53	1448.67	06/30/01	1.52	1462.68	09/30/03	10.33	1453.87
08/31/98	17.42	1446.78	07/30/01	2.76	1461.44	11/01/03	7.30	1456.90
09/30/98	12.59	1451.61	09/02/01	6.08	1458.12	11/18/03	6.58	1457.62
11/07/98	7.72	1456.48	09/29/01	3.69	1460.51	11/18/03	6.55	1457.65
			11/10/01	1.52	1462.68	11/18/03	6.57	1457.63
06/04/99	3.86	1460.34				12/02/03	5.82	1458.38
07/02/99	6.22	1457.98	05/31/02	0.99	1463.21			
08/02/99	10.18	1454.02	06/28/02	1.68	1462.52	05/04/04	2.91	1461.29
09/01/99	10.60	1453.60	07/29/02	7.39	1456.81	06/08/04	2.95	1461.25
10/03/99	5.66	1458.54	08/29/02	11.97	1452.23	07/13/04	5.84	1458.36
10/31/99	4.22	1459.98	09/29/02	6.89	1457.31	08/10/04	11.95	1452.25
			10/31/02	4.58	1459.62	08/31/04	11.05	1453.15
07/02/00	5.43	1458.77				09/07/04	9.67	1454.53
08/01/00	8.72	1455.48	05/08/03	1.60	1462.60	10/04/04	6.20	1458.00
09/03/00	7.98	1456.22	06/05/03	2.01	1462.19	11/09/04	4.10	1460.10
10/02/00	4.69	1459.51	07/10/03	4.67	1459.53	12/07/04	3.23	1460.97

152-061-35BAA1
McVille AquiferMP Elev (msl, ft)=1,429.00
SI (ft.)=157-163

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
07/30/69	10.30	1418.70	12/02/74	10.07	1418.93			
08/20/69	10.42	1418.58				12/05/86	9.50	1419.50
10/03/69	10.65	1418.35	12/01/75	10.58	1418.42			
11/08/69	10.72	1418.28				08/04/87	8.48	1420.52
12/06/69	10.70	1418.30	11/30/76	11.69	1417.31	11/19/87	9.14	1419.86
01/31/70	10.80	1418.20	11/29/77	12.20	1416.80	11/28/88	10.98	1418.02
03/07/70	10.97	1418.03						
03/21/70	10.98	1418.02	11/21/78	11.97	1417.03	11/14/89	11.39	1417.61
04/18/70	10.87	1418.13						
05/16/70	10.34	1418.66	08/14/79	10.84	1418.16	11/13/90	11.78	1417.22
07/16/70	9.86	1419.14	11/29/79	11.44	1417.56			
08/03/70	10.20	1418.80				07/02/91	8.89	1420.11
08/24/70	10.43	1418.57	12/03/80	11.29	1417.71	11/13/91	10.40	1418.60
10/10/70	10.72	1418.28				12/08/91	9.55	1419.45
11/07/70	10.66	1418.34	12/01/81	10.32	1418.68			
12/02/70	10.15	1418.85				11/18/92	10.03	1418.97
			11/29/82	9.25	1419.75	12/08/92	9.55	1419.45
11/30/71	8.92	1420.08						
			11/30/83	9.01	1419.99	01/24/93	7.45	1421.55
12/06/72	10.79	1418.21				11/24/93	7.45	1421.55
			06/11/84	8.99	1420.01			
09/10/73	11.60	1417.40	11/26/84	10.29	1418.71	11/17/94	6.94	1422.06
12/14/73	10.89	1418.11				11/23/94	6.99	1422.01
			12/05/85	9.76	1419.24			

**152-061-35BAA2
McVille Aquifer**

**MP Elev (msl,ft)=1,429.00
SI (ft.)=178-182**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/14/79	10.74	1418.26						

**152-062-07ACA1
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,495.50
SI (ft.)=197-203**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
09/26/73	66.29	1429.21	06/02/86	50.58	1444.92	08/31/96	46.02	1449.48
10/16/73	66.25	1429.25	07/31/86	53.05	1442.45	10/30/96	45.66	1449.84
11/21/73	66.09	1429.41	11/02/86	52.59	1442.91			
						04/30/97	43.08	1452.42
01/07/74	66.04	1429.46	04/29/87	50.02	1445.48	06/28/97	42.17	1453.33
02/13/74	66.00	1429.50	07/02/87	50.43	1445.07	07/29/97	42.22	1453.28
03/28/74	65.93	1429.57	08/30/87	50.89	1444.61	10/01/97	43.17	1452.33
05/07/74	65.67	1429.83	10/30/87	50.08	1445.42	10/02/97	43.11	1452.39
06/17/74	65.17	1430.33				10/30/97	42.49	1453.01
07/22/74	65.56	1429.94	03/31/88	48.88	1446.62			
08/16/74	65.58	1429.92	05/30/88	49.38	1446.12	07/01/98	40.41	1455.09
09/23/74	65.64	1429.86	08/30/88	56.19	1439.31	08/30/98	43.78	1451.72
10/29/74	65.70	1429.80	10/29/88	54.18	1441.32	11/07/98	43.33	1452.17
11/25/74	65.63	1429.87						
12/30/74	65.53	1429.97	04/26/89	50.94	1444.56	06/05/99	39.46	1456.04
			06/27/89	51.60	1443.90	08/02/99	40.10	1455.40
09/20/79	59.26	1436.24	08/31/89	57.46	1438.04	10/03/99	40.69	1454.81
12/18/79	55.85	1439.65	10/31/89	55.24	1440.26			
						07/01/00	39.50	1456.00
04/08/80	54.06	1441.44	04/03/90	52.49	1443.01	08/09/00	39.88	1455.62
07/01/80	57.50	1438.00	06/01/90	52.35	1443.15	09/06/00	40.28	1455.22
09/24/80	58.95	1436.55	08/31/90	56.15	1439.35	10/11/00	40.40	1455.10
12/24/80	55.50	1440.00	10/29/90	56.12	1439.38	10/29/00	40.10	1455.40
04/10/81	53.95	1441.55	03/30/91	53.49	1442.01	06/07/01	36.98	1458.52
06/29/81	53.78	1441.72	06/30/91	53.05	1442.45	08/01/01	37.66	1457.84
09/24/81	56.45	1439.05	08/29/91	53.97	1441.53	09/30/01	38.73	1456.77
12/30/81	54.00	1441.50	10/27/91	53.89	1441.61			
						05/31/02	37.42	1458.08
04/15/82	52.80	1442.70	04/28/92	51.96	1443.54	07/29/02	38.39	1457.11
05/27/82	52.30	1443.20	06/30/92	52.23	1443.27	09/29/02	40.58	1454.92
08/02/82	52.89	1442.61	08/30/92	53.70	1441.80			
09/30/82	55.58	1439.92	10/30/92	53.33	1442.17	05/08/03	37.79	1457.71
12/01/82	53.28	1442.22				07/23/03	37.85	1457.65
			04/04/93	51.99	1443.51	08/05/03	38.35	1457.15
04/06/83	51.39	1444.11	06/29/93	51.50	1444.00	08/13/03	39.10	1456.40
06/04/83	50.89	1444.61	08/30/93	49.96	1445.54	09/02/03	40.47	1455.03
09/01/83	55.51	1439.99	10/31/93	49.87	1445.63	09/30/03	41.25	1454.25
11/01/83	53.36	1442.14				11/03/03	40.85	1454.65
			04/05/94	47.64	1447.86	12/02/03	40.62	1454.88
04/04/84	50.92	1444.58	05/29/94	47.09	1448.41			
06/01/84	50.66	1444.84	07/31/94	46.95	1448.55	05/04/04	37.99	1457.51
08/31/84	56.02	1439.48	10/28/94	47.85	1447.65	06/08/04	37.47	1458.03
10/31/84	54.49	1441.01				07/13/04	37.92	1457.58
			04/29/95	45.25	1450.25	08/10/04	39.54	1455.96
04/28/85	51.41	1444.09	06/29/95	44.64	1450.86	09/07/04	40.77	1454.73
07/28/85	53.90	1441.60	09/28/95	46.41	1449.09	10/04/04	40.37	1455.13
10/31/85	53.39	1442.11				11/09/04	39.22	1456.28
			05/01/96	44.00	1451.50	12/07/04	38.79	1456.71
04/02/86	51.17	1444.33	06/30/96	43.69	1451.81			

**152-062-07ACA2
Undefined Aquifer**

**MP Elev (msl,ft)=1,495.50
SI (ft.)=57-60**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
10/02/86	6.97	1487.03	08/05/03	5.76	1488.24	06/08/04	5.99	1489.51
08/01/91	13.91	1480.09	08/13/03	5.75	1488.25	07/13/04	4.95	1490.55
10/11/00	7.11	1486.89	09/02/03	5.82	1488.18	08/10/04	5.10	1490.40
05/08/03	8.67	1485.33	09/30/03	6.05	1487.95	09/07/04	5.55	1489.95
07/23/03	6.00	1488.00	11/03/03	6.28	1487.72	10/04/04	5.90	1489.60
			12/02/03	6.38	1487.62	11/09/04	5.94	1489.56
			05/04/04	7.20	1488.30	12/07/04	5.91	1489.59

**152-062-16BBB
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,495.42
SI (ft.)=168-173**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/20/03	40.24	1455.18	11/02/03	41.43	1453.99	07/13/04	38.59	1456.83
09/02/03	41.15	1454.27	11/03/03	41.48	1453.94	08/10/04	40.23	1455.19
09/30/03	41.86	1453.56	11/04/03	41.48	1453.94	09/07/04	41.43	1453.99
10/27/03	41.39	1454.03	11/06/03	41.55	1453.87	10/04/04	40.98	1454.44
10/29/03	41.42	1454.00	12/02/03	41.20	1454.22	11/09/04	39.84	1455.58
10/30/03	41.43	1453.99				12/07/04	39.40	1456.02
10/31/03	41.45	1453.97	05/04/04	38.59	1456.83	11/01/03	41.42	1454.00
06/08/04	38.08	1457.34						

**152-062-18BDD
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,456.22
SI (ft.)=158-163**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/19/03	1.05	1455.17	12/02/03	2.18	1454.04	07/13/04	<<	<<
09/02/03	2.00	1454.22				08/03/04	0.53	1455.69
09/30/03	2.79	1453.43	05/04/04	<<	<<	11/03/03	2.40	1453.82
06/08/04	<<	<<						

**152-062-21BCC
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,456.14
SI (ft.)=158-163**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
09/02/03	0.90	1454.24	10/30/03	0.95	1454.19	07/13/04	<<	<<
09/30/03	1.45	1453.69				08/03/04	0.44	1455.70
10/27/03	0.91	1454.23	05/04/04	<<	<<	10/29/03	0.93	1454.21
06/08/04	<<	<<						

**152-062-21DBD
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,446.60
SI (ft.)=124-130**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
09/26/73	15.60	1431.00	04/15/82	2.73	1443.87			
10/16/73	15.50	1431.10	05/27/82	2.25	1444.35	04/26/89	1.23	1445.37
11/21/73	15.37	1431.23	08/01/82	3.17	1443.43	06/27/89	2.12	1444.48
			09/29/82	5.80	1440.80	08/31/89	8.42	1438.18
01/07/74	15.36	1431.24	12/01/82	2.94	1443.66	10/31/89	5.45	1441.15
05/07/74	15.00	1431.60				11/30/89	4.44	1442.16
06/17/74	14.48	1432.12	04/06/83	2.64	1443.96			
07/22/74	14.72	1431.88	06/04/83	2.89	1443.71	06/01/90	2.66	1443.94
08/19/74	14.80	1431.80	09/01/83	6.00	1440.60	08/31/90	7.17	1439.43
09/23/74	14.87	1431.73	10/30/83	3.39	1443.21	10/29/90	6.34	1440.26
10/29/74	14.46	1432.14				11/14/90	5.77	1440.83
11/25/74	14.77	1431.83	04/04/84	3.20	1443.40			
12/30/74	14.70	1431.90	06/01/84	3.29	1443.31	03/30/91	3.68	1442.92
			06/20/84	2.89	1443.71	06/30/91	3.25	1443.35
12/02/76	14.52	1432.08	08/31/84	6.70	1439.90	08/29/91	4.58	1442.02
			10/31/84	4.41	1442.19	10/26/91	3.81	1442.79
11/30/77	15.11	1431.49	11/30/84	3.35	1443.25	11/14/91	3.58	1443.02
11/21/78	15.89	1430.71	04/28/85	1.40	1445.20	04/28/92	2.05	1444.55
			06/28/85	2.22	1444.38	06/30/92	2.39	1444.21
05/17/79	13.03	1433.57	07/28/85	4.94	1441.66	08/29/92	4.23	1442.37
08/17/79	9.70	1436.90	10/31/85	3.42	1443.18	10/29/92	3.40	1443.20
09/20/79	9.79	1436.81						
11/28/79	6.55	1440.05	04/02/86	1.36	1445.24	04/04/93	2.01	1444.59
12/18/79	5.88	1440.72	06/02/86	0.85	1445.75	06/28/93	1.58	1445.02
			07/31/86	3.54	1443.06	08/30/93	0.85	1445.75
07/01/80	10.51	1436.09	11/02/86	2.79	1443.81	11/24/93	0.00	1446.60
09/24/80	9.04	1437.56	12/03/86	2.02	1444.58			
12/04/80	5.84	1440.76				11/14/94	0.00	1446.60
12/23/80	5.50	1441.10	07/02/87	1.24	1445.36			
			08/30/87	1.30	1445.30	08/30/96	<<	<<
04/10/81	3.94	1442.66	10/30/87	0.20	1446.40			
06/29/81	3.84	1442.76	12/01/87	0.00	1446.60	04/30/97	<<	<<
07/22/81	4.24	1442.36				06/28/97	<<	<<
09/24/81	6.84	1439.76	07/18/88	5.29	1441.31	07/29/97	<<	<<
11/30/81	4.57	1442.03	08/30/88	7.08	1439.52	10/01/97	<<	<<
12/30/81	4.00	1442.60	10/29/88	4.48	1442.12	10/02/97	<<	<<
			11/23/88	3.49	1443.11			

152-062-27AAA
Spiritwood Aquifer

MP Elev (msl,ft)=1,451.30
SI (ft.)=138-143

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
10/05/73	14.03	1437.27	04/07/80	3.32	1447.98	07/11/86	4.76	1446.54
11/05/73	11.45	1439.85	05/06/80	3.86	1447.44	07/31/86	5.91	1445.39
12/10/73	10.88	1440.42	06/04/80	5.45	1445.85	09/03/86	6.62	1444.68
01/20/74	11.30	1440.00	06/10/80	5.23	1446.07	11/01/86	5.85	1445.45
02/28/74	11.55	1439.75	07/01/80	6.76	1444.54	12/03/86	5.04	1446.26
03/10/74	11.49	1439.81	07/30/80	8.42	1442.88			
04/05/74	12.18	1439.12	08/28/80	8.46	1442.84	03/31/87	0.20	1451.10
05/25/74	8.40	1442.90	09/24/80	7.37	1443.93	04/29/87	3.29	1448.01
06/30/74	8.62	1442.68	10/01/80	7.32	1443.98	06/15/87	3.55	1447.75
07/31/74	10.26	1441.04	12/04/80	7.09	1444.21	07/02/87	3.89	1447.41
08/05/74	11.81	1439.49	12/23/80	6.70	1444.60	08/12/87	1.20	1450.10
09/20/74	11.73	1439.57				08/30/87	4.00	1447.30
10/25/74	11.70	1439.60	03/06/81	7.40	1443.90	10/30/87	3.28	1448.02
11/25/74	10.77	1440.53	04/10/81	4.89	1446.41	12/01/87	2.99	1448.31
12/05/74	10.60	1440.70	06/30/81	5.72	1445.58			
04/14/75	11.35	1439.95	07/28/81	5.94	1445.36	03/03/88	2.10	1449.20
05/08/75	8.92	1442.38	10/19/81	7.97	1443.33	05/30/88	2.88	1448.42
06/06/75	9.70	1441.60	11/30/81	6.82	1444.48	06/01/88	2.97	1448.33
07/22/75	10.41	1440.89	12/30/81	6.48	1444.82	08/23/88	9.19	1442.11
08/14/75	10.69	1440.61				08/30/88	9.33	1441.97
09/09/75	12.92	1438.38	03/01/82	6.53	1444.77	10/29/88	7.64	1443.66
10/07/75	11.18	1440.12	04/15/82	5.35	1445.95	11/23/88	6.78	1444.52
10/13/76	12.99	1438.31	05/25/82	4.79	1446.51			
11/03/76	13.18	1438.12	05/27/82	5.83	1445.47	02/23/89	5.24	1446.06
12/02/76	12.92	1438.38	07/15/82	4.75	1446.55	04/26/89	4.75	1446.55
01/04/77	12.95	1438.35	08/01/82	5.01	1446.29	06/27/89	5.23	1446.07
02/03/77	12.75	1438.55	09/29/82	7.61	1443.69	08/02/89	8.94	1442.36
03/09/77	12.62	1438.68	10/13/82	6.38	1444.92	08/31/89	10.65	1440.65
04/12/77	11.98	1439.32	11/29/82	5.58	1445.72	10/31/89	8.78	1442.52
05/09/77	10.96	1440.34	12/01/82	5.63	1445.67	11/30/89	8.00	1443.30
06/15/77	11.81	1439.49						
07/11/77	13.27	1438.03	03/03/83	5.58	1445.72	03/14/90	5.59	1445.71
09/14/77	14.95	1436.35	04/06/83	4.27	1447.03	04/03/90	6.44	1444.86
10/20/77	13.47	1437.83	05/26/83	3.34	1447.96	06/01/90	6.25	1445.05
11/17/77	12.00	1439.30	06/04/83	4.02	1447.28	06/20/90	5.18	1447.25
11/30/77	11.89	1439.41	08/03/83	5.95	1445.35	08/16/90	7.38	1445.05
03/20/78	11.35	1439.95	09/01/83	7.72	1443.58	08/31/90	7.13	1445.30
06/05/78	9.28	1442.02	09/08/83	6.59	1444.71	09/05/90	9.75	1442.68
09/14/78	13.60	1437.70	10/30/83	5.68	1445.62	10/29/90	8.55	1443.88
11/21/78	12.40	1438.90	11/28/83	4.92	1446.38	11/14/90	9.23	1443.20
03/14/79	11.71	1439.59						
05/17/79	7.74	1443.56	03/08/84	4.56	1446.74	03/07/91	9.48	1442.95
06/08/79	6.04	1445.26	04/04/84	3.78	1447.52	03/30/91	6.23	1446.20
06/13/79	5.50	1445.80	06/01/84	3.68	1447.62	06/30/91	5.71	1445.59
07/11/79	5.09	1446.21	06/18/84	3.89	1447.41	07/25/91	8.00	1443.30
08/07/79	4.78	1446.52	08/31/84	8.14	1443.16	08/29/91	6.34	1444.96
08/17/79	5.17	1446.13	09/18/84	8.72	1442.58	09/11/91	7.98	1443.32
09/18/79	5.06	1446.24	10/31/84	7.51	1443.79	10/26/91	6.02	1445.28
09/20/79	5.13	1446.17	11/30/84	6.64	1444.66	11/14/91	6.68	1444.62
11/01/79	5.30	1446.00						
11/28/79	5.46	1445.84	03/11/85	5.64	1445.66	02/05/92	5.78	1445.52
12/18/79	5.76	1445.54	04/28/85	4.95	1446.35	04/28/92	4.22	1447.08
03/03/80	6.70	1444.60	07/28/85	6.93	1444.37	05/26/92	4.42	1446.88
			09/19/85	7.50	1443.80	06/30/92	4.43	1446.87
			10/31/85	6.42	1444.88	08/19/92	6.26	1445.04
			12/12/85	5.61	1445.69	08/29/92	6.55	1444.75
						10/29/92	6.67	1444.63
			02/27/86	5.05	1446.25	12/08/92	6.15	1445.15
			04/02/86	4.65	1446.65			
			06/02/86	4.00	1447.30	04/04/93	5.29	1446.01

152-062-27AAA

(Continued), MP Elev (msl, ft)=1451.3 Spiritwood Aquifer SI (ft.)=138-143

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/01/93	4.22	1447.08	08/30/96	1.40	1449.90	09/06/00	1.26	1450.04
06/28/93	4.23	1447.07	10/28/96	1.37	1449.93	10/11/00	1.13	1450.17
08/30/93	2.56	1448.74				10/29/00	0.94	1450.36
09/03/93	2.76	1448.54	04/30/97	0.35	1450.95			
09/11/93	2.76	1448.54	06/28/97	1.28	1450.02	06/07/01	0.98	1450.32
10/30/93	2.71	1448.59	07/29/97	1.30	1450.00	08/01/01	1.00	1450.30
11/24/93	1.51	1449.79	10/01/97	1.32	1449.98	09/30/01	1.25	1450.05
			10/02/97	1.27	1450.03			
04/06/94	0.72	1450.58	10/30/97	1.28	1450.02	05/31/02	0.84	1450.46
05/29/94	1.30	1450.00				07/29/02	1.22	1450.08
07/31/94	1.25	1450.05	07/02/98	1.27	1450.03	09/29/02	1.29	1450.01
10/28/94	1.40	1449.90	08/30/98	1.20	1450.10			
11/14/94	1.20	1450.10	11/07/98	0.89	1450.41	05/08/03	1.07	1450.23
						06/05/03	1.20	1450.10
04/29/95	1.12	1450.18	06/05/99	0.90	1450.40	07/10/03	0.92	1450.38
06/28/95	1.28	1450.02	08/02/99	0.95	1450.35	07/22/03	1.20	1450.10
09/28/95	1.36	1449.94	10/03/99	1.08	1450.22	08/05/03	1.28	1450.02
			10/31/99	1.18	1450.12	08/13/03	1.30	1450.00
05/01/96	0.91	1450.39				06/29/96	1.32	1449.98
07/01/00	1.24	1450.06						

152-062-28DBD
Spiritwood AquiferMP Elev (msl, ft)=1,446.80
SI (ft.)=137-143

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
09/26/73	15.08	1431.72	05/27/82	2.15	1444.65	08/31/89	8.56	1438.24
10/16/73	15.05	1431.75	08/01/82	3.34	1443.46	10/31/89	5.15	1441.65
11/21/73	14.91	1431.89	09/29/82	5.89	1440.91			
			12/01/82	3.09	1443.71	06/01/90	2.48	1444.32
01/07/74	14.91	1431.89				08/31/90	7.56	1439.24
02/13/74	14.87	1431.93	06/04/83	2.99	1443.81	10/29/90	6.08	1440.72
03/28/74	14.79	1432.01	09/01/83	6.18	1440.62			
05/07/74	14.55	1432.25	10/30/83	3.28	1443.52	03/30/91	3.39	1443.41
06/17/74	14.07	1432.73				06/30/91	3.04	1443.76
07/22/74	14.36	1432.44	04/04/84	3.31	1443.49	08/29/91	4.54	1442.26
08/19/74	14.37	1432.43	06/01/84	3.31	1443.49	10/26/91	3.97	1442.83
09/23/74	14.45	1432.35	08/31/84	7.39	1439.41			
10/29/74	14.51	1432.29	10/31/84	4.26	1442.54	04/28/92	1.80	1445.00
11/25/74	14.37	1432.43				06/30/92	2.15	1444.65
12/30/74	14.13	1432.67	04/28/85	1.22	1445.58	08/29/92	4.31	1442.49
			07/28/85	5.57	1441.23	10/29/92	3.18	1443.62
05/17/79	12.69	1434.11	10/31/85	3.16	1443.64			
08/17/79	10.04	1436.76				04/04/93	1.76	1445.04
09/20/79	9.83	1436.97	04/02/86	2.11	1444.69	06/28/93	1.12	1445.68
12/18/79	5.68	1441.12	06/02/86	0.73	1446.07	08/30/93	1.06	1445.74
			07/31/86	3.57	1443.23			
04/08/80	3.83	1442.97	11/02/86	2.54	1444.26	08/30/96	<<	<<
07/01/80	9.44	1437.36						
09/24/80	8.85	1437.95	07/02/87	1.23	1445.57	04/30/97	<<	<<
12/23/80	5.36	1441.44	08/30/87	1.15	1445.65	06/01/97	<<	<<
						06/28/97	<<	<<
04/10/81	3.80	1443.00	08/30/88	7.19	1439.61	07/29/97	<<	<<
06/29/81	3.79	1443.01	10/29/88	4.01	1442.79	10/01/97	<<	<<
09/24/81	6.79	1440.01				10/02/97	<<	<<
12/30/81	3.80	1443.00	04/26/89	0.84	1445.96			
06/27/89	2.30	1444.50						

152-062-33CDA1
Spiritwood Aquifer

MP Elev (msl,ft)=1,488.67
SI (ft.)=318-323

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
09/30/87	36.92	1451.75				11/30/99	29.30	1459.37
10/01/87	36.76	1451.91	04/18/91	39.34	1449.33			
10/06/87	36.78	1451.89	06/10/91	39.55	1449.12	05/17/00	28.06	1460.61
10/14/87	36.63	1452.04	07/10/91	39.20	1449.47	08/23/00	33.41	1455.26
10/20/87	36.47	1452.20	08/07/91	40.90	1447.77	10/11/00	29.95	1458.72
10/27/87	36.32	1452.35	09/12/91	42.56	1446.11	11/28/00	28.45	1460.22
11/10/87	36.10	1452.57	10/09/91	40.41	1448.26			
12/08/87	35.65	1453.02	11/20/91	38.98	1449.69	05/03/01	27.09	1461.58
						08/09/01	27.93	1460.74
01/19/88	35.34	1453.33	04/09/92	37.68	1450.99	11/13/01	27.35	1461.32
02/24/88	35.11	1453.56	06/30/92	38.17	1450.50			
03/31/88	35.01	1453.66	08/24/92	42.35	1446.32	05/02/02	26.43	1462.24
05/07/88	35.99	1452.68	12/16/92	37.91	1450.76	08/01/02	32.37	1456.30
06/04/88	36.79	1451.88				12/03/02	28.68	1459.99
07/08/88	48.65	1440.02	03/25/93	37.31	1451.36			
08/04/88	49.48	1439.19	06/21/93	37.10	1451.57	05/08/03	27.26	1461.41
09/09/88	44.99	1443.68	08/24/93	38.09	1450.58	07/22/03	28.50	1460.17
10/13/88	41.47	1447.20				08/05/03	33.08	1455.59
11/10/88	39.85	1448.82	04/12/94	33.22	1455.45	08/12/03	32.90	1455.77
12/17/88	38.77	1449.90	07/15/94	33.76	1454.91	09/02/03	34.46	1454.21
			10/11/94	34.82	1453.85	09/30/03	32.93	1455.74
03/20/89	37.41	1451.26				10/27/03	31.23	1457.44
04/20/89	37.09	1451.58	05/04/95	31.79	1456.88	10/29/03	31.26	1457.41
06/15/89	38.90	1449.77	06/06/95	31.75	1456.92	10/30/03	32.17	1456.50
07/13/89	48.10	1440.57	07/13/95	33.67	1455.00	10/31/03	32.80	1455.87
08/08/89	50.63	1438.04	10/13/95	33.45	1455.22	11/01/03	33.48	1455.19
09/12/89	45.98	1442.69				11/02/03	34.02	1454.65
10/12/89	42.62	1446.05	04/25/96	31.20	1457.47	11/03/03	33.91	1454.76
12/19/89	39.96	1448.71	09/12/96	37.49	1451.18	11/04/03	33.36	1455.31
						11/06/03	32.73	1455.94
02/06/90	39.12	1449.55	06/05/97	30.65	1458.02			
04/16/90	38.52	1450.15	07/16/97	31.77	1456.90	05/04/04	27.92	1460.75
05/16/90	38.40	1450.27	08/14/97	34.63	1454.04	06/08/04	27.53	1461.14
06/13/90	39.16	1449.51	10/29/97	31.39	1457.28	07/13/04	29.54	1459.13
07/10/90	40.44	1448.23				08/10/04	34.17	1454.50
07/11/90	40.44	1448.23	05/28/98	29.60	1459.07	09/07/04	32.78	1455.89
08/10/90	46.85	1441.82	09/23/98	36.54	1452.13	10/04/04	30.67	1458.00
09/06/90	48.10	1440.57	12/03/98	31.99	1456.68	11/09/04	29.21	1459.46
10/02/90	44.82	1443.85				12/07/04	28.55	1460.12
10/31/90	42.44	1446.23	05/26/99	29.38	1459.29	11/28/90	41.34	1447.33
08/25/99	31.61	1457.06						

152-062-33CDA2
Clay Sediments Aquifer

MP Elev (msl,ft)=1,488.43
SI (ft.)=45-50

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
09/30/87	21.95	1466.48				11/30/99	16.05	1472.38
10/01/87	21.49	1466.94	04/18/91	31.67	1456.76			
10/06/87	21.97	1466.46	06/10/91	31.70	1456.73	05/17/00	21.10	1467.33
10/14/87	22.31	1466.12	07/10/91	31.32	1457.11	08/23/00	14.04	1474.39
10/20/87	22.55	1465.88	08/07/91	31.07	1457.36	10/11/00	15.42	1473.01
10/27/87	22.52	1465.91	09/12/91	30.72	1457.71	11/28/00	10.80	1477.63
11/10/87	22.85	1465.58	10/09/91	30.11	1458.32			
12/08/87	23.01	1465.42	11/20/91	28.93	1459.50	05/03/01	13.39	1475.04
						08/09/01	9.30	1479.13
01/19/88	24.13	1464.30	04/09/92	27.97	1460.46	11/13/01	11.49	1476.94
02/24/88	24.55	1463.88	06/30/92	27.18	1461.25			
03/31/88	25.02	1463.41	08/24/92	27.16	1461.27	05/02/02	17.36	1471.07
05/07/88	24.71	1463.72	12/16/92	28.26	1460.17	08/01/02	12.52	1475.91
06/04/88	25.42	1463.01				12/03/02	18.80	1469.63
07/08/88	25.75	1462.68	03/25/93	29.01	1459.42			
08/04/88	26.09	1462.34	06/21/93	27.58	1460.85	05/08/03	20.49	1467.94
09/09/88	26.20	1462.23	08/24/93	12.83	1475.60	07/22/03	11.80	1476.63
10/13/88	26.82	1461.61				08/05/03	12.65	1475.78
11/10/88	27.00	1461.43	04/12/94	15.69	1472.74	08/12/03	13.20	1475.23
12/17/88	27.83	1460.60	07/15/94	14.10	1474.33	09/02/03	14.31	1474.12
			10/11/94	18.36	1470.07	09/30/03	15.87	1472.56
03/20/89	28.39	1460.04				10/27/03	16.18	1472.25
04/20/89	28.31	1460.12	05/04/95	16.90	1471.53	10/29/03	16.64	1471.79
06/15/89	28.52	1459.91	06/06/95	16.20	1472.23	10/30/03	16.97	1471.46
07/13/89	28.89	1459.54	07/13/95	17.08	1471.35	10/31/03	17.23	1471.20
08/08/89	28.81	1459.62	10/13/95	20.01	1468.42	11/01/03	17.20	1471.23
09/12/89	29.24	1459.19				11/02/03	17.21	1471.22
10/12/89	29.09	1459.34	04/25/96	22.70	1465.73	11/03/03	17.41	1471.02
12/19/89	29.51	1458.92	09/12/96	23.07	1465.36	11/04/03	17.13	1471.30
						11/06/03	17.27	1471.16
02/06/90	29.67	1458.76	06/05/97	21.01	1467.42			
04/16/90	30.27	1458.16	07/16/97	21.51	1466.92	05/04/04	14.70	1473.73
05/16/90	29.96	1458.47	08/14/97	21.46	1466.97	06/08/04	12.02	1476.41
06/13/90	30.35	1458.08	10/29/97	23.56	1464.87	07/13/04	10.40	1478.03
07/10/90	30.25	1458.18				08/10/04	11.80	1476.63
07/11/90	30.25	1458.18	05/28/98	23.21	1465.22	09/07/04	13.70	1474.73
08/10/90	30.42	1458.01	09/23/98	24.79	1463.64	10/04/04	15.15	1473.28
09/06/90	30.35	1458.08	12/03/98	25.75	1462.68	11/09/04	16.30	1472.13
10/02/90	30.06	1458.37				12/07/04	17.34	1471.09
10/31/90	30.42	1458.01	05/26/99	21.20	1467.23	11/28/90	31.04	1457.39
08/25/99	14.02	1474.41						

152-062-33CDA3
Spiritwood Aquifer

MP Elev (msl,ft)=1,488.85
SI (ft.)=168-173

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
09/30/87	36.99	1451.86				11/30/99	29.35	1459.50
10/01/87	36.89	1451.96	04/18/91	39.41	1449.44			
10/06/87	36.82	1452.03	06/10/91	39.62	1449.23	05/17/00	28.10	1460.75
10/14/87	36.66	1452.19	07/10/91	39.28	1449.57	08/23/00	33.49	1455.36
10/20/87	36.52	1452.33	08/07/91	40.97	1447.88	10/11/00	30.02	1458.83
10/27/87	36.34	1452.51	09/12/91	42.62	1446.23	11/28/00	28.47	1460.38
11/10/87	36.16	1452.69	10/09/91	40.49	1448.36			
12/08/87	35.70	1453.15	11/20/91	39.07	1449.78	05/03/01	27.10	1461.75
						08/09/01	27.97	1460.88
01/19/88	35.35	1453.50	04/09/92	37.73	1451.12	11/13/01	27.38	1461.47
02/24/88	35.13	1453.72	06/30/92	38.22	1450.63			
03/31/88	35.03	1453.82	08/24/92	42.58	1446.27	05/02/02	26.46	1462.39
05/07/88	36.06	1452.79	12/16/92	37.99	1450.86	08/01/02	32.41	1456.44
06/04/88	36.83	1452.02				12/03/02	28.74	1460.11
07/08/88	49.08	1439.77	03/25/93	37.31	1451.54			
08/04/88	49.56	1439.29	06/21/93	37.05	1451.80	05/08/03	27.30	1461.55
09/09/88	45.05	1443.80	08/24/93	38.16	1450.69	07/22/03	28.52	1460.33
10/13/88	41.54	1447.31				08/05/03	33.13	1455.72
11/10/88	39.90	1448.95	04/12/94	33.25	1455.60	08/12/03	32.90	1455.95
12/17/88	38.82	1450.03	07/15/94	33.80	1455.05	09/02/03	34.50	1454.35
			10/11/94	34.90	1453.95	09/30/03	32.99	1455.86
03/20/89	37.50	1451.35				10/27/03	31.26	1457.59
04/20/89	37.13	1451.72	05/04/95	31.84	1457.01	10/29/03	31.37	1457.48
06/15/89	38.98	1449.87	06/06/95	31.79	1457.06	10/30/03	32.21	1456.64
07/13/89	48.19	1440.66	07/13/95	33.72	1455.13	10/31/03	32.85	1456.00
08/08/89	50.72	1438.13	10/13/95	33.45	1455.40	11/01/03	33.53	1455.32
09/12/89	46.03	1442.82				11/02/03	34.06	1454.79
10/12/89	42.68	1446.17	04/25/96	31.22	1457.63	11/03/03	33.96	1454.89
12/19/89	40.03	1448.82	09/12/96	37.55	1451.30	11/04/03	33.40	1455.45
						11/06/03	32.77	1456.08
02/06/90	39.18	1449.67	06/05/97	30.71	1458.14			
04/16/90	38.57	1450.28	07/16/97	31.82	1457.03	05/04/04	27.98	1460.87
05/16/90	38.48	1450.37	08/14/97	34.70	1454.15	06/08/04	27.57	1461.28
06/13/90	39.22	1449.63	10/29/97	31.43	1457.42	07/13/04	29.58	1459.27
07/10/90	40.52	1448.33				08/10/04	34.22	1454.63
07/11/90	40.52	1448.33	05/28/98	29.66	1459.19	09/07/04	32.82	1456.03
08/10/90	46.94	1441.91	09/23/98	36.59	1452.26	10/04/04	30.70	1458.15
09/06/90	48.19	1440.66	12/03/98	32.05	1456.80	11/09/04	29.25	1459.60
10/02/90	44.89	1443.96				12/07/04	28.59	1460.26
10/31/90	42.50	1446.35	05/26/99	29.42	1459.43	11/28/90	41.40	1447.45
08/25/99	31.66	1457.19						

152-062-33CDA4
Clay Sediments Aquifer

MP Elev (msl,ft)=1,488.26
SI (ft.)=133-138

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
09/30/87	21.20	1467.06	11/28/90	30.41	1457.85	05/26/99	25.37	1462.89
10/01/87	85.69	1402.57				08/25/99	22.71	1465.55
10/06/87	33.32	1454.94	04/18/91	30.85	1457.41	11/30/99	19.25	1469.01
10/14/87	27.28	1460.98	06/10/91	30.90	1457.36			
10/20/87	31.10	1457.16	07/10/91	30.81	1457.45	05/17/00	20.04	1468.22
10/27/87	30.36	1457.90	08/07/91	31.80	1456.46	08/23/00	18.67	1469.59
10/28/87	83.94	1404.32	09/12/91	31.50	1456.76	11/28/00	17.12	1471.14
11/10/87	26.00	1462.26	10/09/91	31.09	1457.17			
12/08/87	23.38	1464.88	11/20/91	30.57	1457.69	05/03/01	16.06	1472.20
						08/09/01	14.18	1474.08
01/19/88	23.23	1465.03	04/09/92	29.57	1458.69	11/13/01	13.79	1474.47
02/24/88	23.49	1464.77	06/18/92	28.89	1459.37			
03/31/88	23.95	1464.31	06/30/92	31.85	1456.41	05/02/02	15.27	1472.99
05/07/88	24.20	1464.06	08/24/92	28.72	1459.54	08/01/02	15.43	1472.83
06/04/88	24.40	1463.86	12/16/92	28.28	1459.98	12/03/02	16.10	1472.16
07/08/88	24.80	1463.46						
08/04/88	25.27	1462.99	03/25/93	28.59	1459.67	05/08/03	18.98	1469.28
09/09/88	25.85	1462.41	06/21/93	28.66	1459.60	07/22/03	17.88	1470.38
10/13/88	26.15	1462.11	08/24/93	26.60	1461.66	08/05/03	18.42	1469.84
11/10/88	26.30	1461.96				08/12/03	17.60	1470.66
12/17/88	26.48	1461.78	04/12/94	19.75	1468.51	09/02/03	17.75	1470.51
			07/15/94	18.40	1469.86	09/30/03	16.87	1471.39
03/20/89	26.88	1461.38	10/11/94	18.39	1469.87	10/27/03	16.85	1471.41
04/20/89	27.27	1460.99				10/29/03	16.84	1471.42
06/15/89	27.65	1460.61	05/04/95	20.40	1467.86	10/31/03	16.83	1471.43
07/13/89	27.94	1460.32	06/06/95	19.75	1468.51	11/01/03	16.84	1471.42
08/08/89	28.29	1459.97	07/13/95	19.32	1468.94	11/02/03	16.83	1471.43
09/12/89	28.37	1459.89	10/13/95	19.64	1468.62	11/03/03	16.83	1471.43
10/12/89	28.65	1459.61				11/04/03	16.83	1471.43
12/19/89	28.84	1459.42	04/25/96	22.50	1465.76	11/06/03	16.83	1471.43
			09/12/96	22.47	1465.79			
02/06/90	28.98	1459.28				05/04/04	18.75	1469.51
04/16/90	29.36	1458.90	06/05/97	23.93	1464.33	06/08/04	17.74	1470.52
05/16/90	29.58	1458.68	07/16/97	23.10	1465.16	07/13/04	16.49	1471.77
06/13/90	29.46	1458.80	08/14/97	23.76	1464.50	08/10/04	15.78	1472.48
07/10/90	29.73	1458.53	10/29/97	23.16	1465.10	09/07/04	15.50	1472.76
07/11/90	29.73	1458.53				10/04/04	15.44	1472.82
08/10/90	29.97	1458.29	05/28/98	24.11	1464.15	11/09/04	15.65	1472.61
09/06/90	30.05	1458.21	09/23/98	24.57	1463.69	12/07/04	15.97	1472.29
10/02/90	30.25	1458.01	12/03/98	24.63	1463.63	10/31/90	30.36	1457.90

152-062-33CDA5
Till Aquifer

MP Elev (msl,ft)=1,488.85
SI (ft.)=18-23

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
09/30/87	22.33	1466.52	12/16/92	28.63	1460.22			
10/01/87	21.89	1466.96				05/03/01	13.70	1475.15
10/06/87	22.36	1466.49	03/25/93	29.45	1459.40	08/09/01	9.58	1479.27
10/14/87	22.71	1466.14	06/21/93	28.00	1460.85	11/13/01	11.80	1477.05
10/20/87	22.98	1465.87	08/24/93	13.00	1475.85			
10/27/87	22.92	1465.93				05/02/02	17.68	1471.17
11/10/87	23.26	1465.59	04/12/94	15.97	1472.88	08/01/02	12.84	1476.01
12/08/87	23.44	1465.41	07/15/94	14.49	1474.36	12/03/02	19.26	1469.59
			10/11/94	18.80	1470.05			
01/19/88	24.55	1464.30				05/08/03	20.81	1468.04
02/24/88	24.93	1463.92	05/04/95	17.31	1471.54	07/22/03	12.12	1476.73
03/31/88	25.39	1463.46	06/06/95	16.59	1472.26	08/05/03	12.98	1475.87
05/07/88	25.10	1463.75	07/13/95	17.51	1471.34	08/12/03	13.55	1475.30
06/04/88	25.84	1463.01	10/13/95	20.44	1468.41	09/02/03	14.64	1474.21
07/08/88	26.18	1462.67				09/30/03	16.30	1472.55
08/04/88	26.44	1462.41	04/25/96	23.09	1465.76	10/27/03	16.54	1472.31
09/09/88	26.62	1462.23	09/12/96	23.48	1465.37	10/29/03	17.01	1471.84
10/13/88	27.25	1461.60				10/31/03	17.61	1471.24
11/10/88	27.41	1461.44	06/05/97	21.38	1467.47	11/01/03	17.56	1471.29
12/17/88	28.27	1460.58	07/16/97	21.95	1466.90	11/02/03	17.58	1471.27
			08/14/97	21.86	1466.99	11/03/03	17.77	1471.08
03/20/89	28.81	1460.04	10/29/97	23.95	1464.90	11/04/03	17.50	1471.35
04/20/89	28.71	1460.14				11/06/03	17.64	1471.21
06/15/89	28.98	1459.87	05/28/98	23.66	1465.19			
07/13/89	29.31	1459.54	09/23/98	25.18	1463.67	05/04/04	15.02	1473.83
08/08/89	29.24	1459.61	12/03/98	26.16	1462.69	06/08/04	12.30	1476.55
09/12/89	29.70	1459.15				07/13/04	10.72	1478.13
10/12/89	29.55	1459.30	05/26/99	21.59	1467.26	08/10/04	12.14	1476.71
12/19/89	29.98	1458.87	08/25/99	14.45	1474.40	09/07/04	14.06	1474.79
			11/30/99	16.44	1472.41	10/04/04	15.51	1473.34
04/09/92	28.40	1460.45				11/09/04	16.67	1472.18
06/18/92	28.70	1460.15	05/17/00	21.50	1467.35	12/07/04	17.71	1471.14
06/30/92	27.55	1461.30	08/23/00	14.43	1474.42	08/24/92	27.63	1461.22
11/28/00	11.19	1477.66						

**152-062-33DCB
Spiritwood Aquifer**

**MP Elev (msl,ft)=1,486.56
SI (ft.)=200-203**

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
09/27/73	44.49	1442.07	07/10/90	39.45	1447.11	06/05/97	30.31	1456.25
10/16/73	44.53	1442.03	07/11/90	39.45	1447.11	08/14/97	30.00	1456.56
11/21/73	44.49	1442.07	08/10/90	39.52	1447.04	10/29/97	30.26	1456.30
			09/06/90	39.72	1446.84			
01/07/74	44.35	1442.21	10/02/90	39.85	1446.71	05/28/98	28.51	1458.05
02/13/74	44.30	1442.26	10/31/90	39.90	1446.66	09/23/98	31.85	1454.71
03/28/74	44.34	1442.22	11/28/90	39.88	1446.68	12/03/98	31.73	1454.83
05/07/74	44.21	1442.35						
06/17/74	43.91	1442.65	04/18/91	39.55	1447.01	05/26/99	29.96	1456.60
07/22/74	43.77	1442.79	06/10/91	39.65	1446.91	08/25/99	29.61	1456.95
08/19/74	43.96	1442.60	07/10/91	39.32	1447.24	11/30/99	29.20	1457.36
09/23/74	43.99	1442.57	08/07/91	38.79	1447.77			
10/29/74	43.94	1442.62	09/12/91	39.31	1447.25	05/17/00	27.61	1458.95
11/25/74	43.88	1442.68	10/09/91	39.26	1447.30	08/23/00	27.79	1458.77
12/30/74	43.46	1443.10	11/20/91	37.77	1448.79	11/28/00	27.77	1458.79
07/24/87	37.11	1449.45	04/09/92	36.73	1449.83	05/03/01	26.86	1459.70
08/13/87	37.47	1449.09	06/30/92	36.05	1450.51	08/09/01	26.36	1460.20
09/09/87	37.40	1449.16	08/24/92	37.59	1448.97	11/13/01	26.29	1460.27
10/15/87	37.29	1449.27	10/14/92	37.58	1448.98			
11/10/87	37.20	1449.36	12/16/92	37.07	1449.49	05/02/02	25.53	1461.03
12/08/87	37.09	1449.47				08/01/02	25.49	1461.07
			03/25/93	36.14	1450.42	12/03/02	26.30	1460.26
01/19/88	36.87	1449.69	04/14/93	35.96	1450.60			
02/24/88	36.70	1449.86	06/10/93	35.59	1450.97	05/08/03	26.11	1460.45
03/31/88	36.54	1450.02	06/21/93	35.58	1450.98	07/22/03	25.95	1460.61
05/07/88	36.39	1450.17	07/15/93	35.38	1451.18	08/05/03	27.02	1459.54
06/04/88	36.33	1450.23	07/22/93	35.32	1451.24	09/02/03	32.19	1454.37
07/08/88	36.53	1450.03	08/10/93	35.27	1451.29	09/30/03	30.73	1455.83
08/04/88	36.87	1449.69	08/24/93	35.19	1451.37	10/27/03	29.00	1457.56
09/09/88	37.22	1449.34	09/15/93	35.24	1451.32	10/29/03	28.98	1457.58
10/13/88	37.37	1449.19	10/21/93	35.14	1451.42	10/30/03	29.94	1456.62
11/10/88	37.41	1449.15	11/17/93	34.80	1451.76	10/31/03	30.58	1455.98
12/16/88	37.38	1449.18				11/01/03	31.26	1455.30
			03/08/94	31.54	1455.02	11/02/03	31.81	1454.75
04/20/89	37.10	1449.46	04/12/94	31.30	1455.26	11/03/03	31.70	1454.86
06/15/89	36.99	1449.57	07/15/94	31.10	1455.46	11/04/03	31.16	1455.40
07/13/89	37.09	1449.47	10/11/94	33.50	1453.06	11/06/03	30.50	1456.06
08/08/89	37.45	1449.11						
09/12/89	37.84	1448.72	05/04/95	30.32	1456.24	05/04/04	25.66	1460.90
10/12/89	40.30	1446.26	06/06/95	29.99	1456.57	06/08/04	25.29	1461.27
12/19/89	40.17	1446.39	07/13/95	30.57	1455.99	07/13/04	27.29	1459.27
			10/13/95	31.55	1455.01	08/10/04	31.95	1454.61
02/06/90	40.00	1446.56				09/07/04	30.53	1456.03
04/16/90	39.75	1446.81	04/25/96	30.49	1456.07	10/04/04	28.42	1458.14
05/16/90	39.69	1446.87	09/12/96	31.01	1455.55	11/09/04	26.93	1459.63
06/13/90	39.54	1447.02				12/07/04	26.28	1460.28

152-062-34AAD1
Spiritwood Aquifer

MP Elev (msl,ft)=1,462.00
SI (ft.)=158-163

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/08/91	12.63	1448.87	05/01/96	3.69	1458.31	07/30/01	0.71	1461.29
08/31/91	14.25	1447.25	05/31/96	3.51	1458.49	09/02/01	2.32	1459.68
09/03/91	15.44	1446.56	06/29/96	5.36	1456.64	09/29/01	1.64	1460.36
09/28/91	13.33	1448.67	07/30/96	8.03	1453.97	11/10/01	0.29	1461.71
10/26/91	12.06	1449.94	08/30/96	10.37	1451.63			
			09/28/96	8.13	1453.87	05/30/02	<<	<<
01/06/92	10.37	1451.63	10/28/96	6.12	1455.88	06/28/02	<<	<<
04/28/92	9.60	1452.40				07/29/02	4.54	1457.46
05/28/92	9.78	1452.22	04/30/97	3.42	1458.58	08/29/02	7.21	1454.79
06/30/92	10.40	1451.60	06/01/97	3.17	1458.83	09/29/02	3.99	1458.01
07/29/92	11.98	1450.02	06/28/97	6.23	1455.77	10/31/02	3.30	1458.70
08/29/92	14.79	1447.21	07/29/97	6.20	1455.80			
09/30/92	11.87	1450.13	08/30/97	7.09	1454.91	05/08/03	<<	<<
10/29/92	11.22	1450.78	09/30/97	5.90	1456.10	06/05/03	<<	<<
			10/31/97	4.13	1457.87	07/10/03	0.13	1461.87
04/03/93	9.42	1452.58				07/22/03	1.04	1460.96
05/01/93	9.28	1452.72	07/01/98	3.10	1458.90	08/05/03	5.81	1456.19
05/29/93	9.08	1452.92	08/02/98	9.60	1452.40	08/13/03	4.80	1457.20
06/28/93	9.10	1452.90	08/30/98	11.34	1450.66	09/02/03	7.51	1454.49
08/30/93	10.96	1451.04	09/29/98	8.93	1453.07	09/30/03	5.87	1456.13
09/26/93	9.73	1452.27	11/07/98	5.99	1456.01	10/27/03	3.98	1458.02
10/30/93	8.02	1453.98				10/29/03	3.97	1458.03
			06/04/99	2.24	1459.76	10/30/03	4.52	1457.48
04/06/94	5.47	1456.53	07/01/99	4.01	1457.99	10/31/03	5.38	1456.62
05/01/94	5.36	1456.64	08/01/99	5.93	1456.07	11/01/03	6.11	1455.89
05/29/94	5.22	1456.78	09/01/99	5.99	1456.01	11/02/03	6.70	1455.30
06/30/94	5.44	1456.56	10/03/99	3.75	1458.25	11/02/03	6.89	1455.11
07/31/94	7.86	1454.14	10/31/99	2.80	1459.20	11/03/03	6.81	1455.19
08/28/94	9.80	1452.20				11/04/03	6.40	1455.60
09/28/94	8.07	1453.93	07/01/00	3.02	1458.98	11/06/03	5.70	1456.30
10/28/94	6.56	1455.44	08/01/00	4.11	1457.89	12/02/03	3.25	1458.75
			08/09/00	5.60	1456.40			
04/29/95	4.24	1457.76	09/06/00	4.52	1457.48	05/04/04	0.62	1461.38
05/31/95	3.83	1458.17	10/03/00	3.07	1458.93	06/08/04	0.21	1461.79
06/28/95	6.47	1455.53	10/11/00	2.55	1459.45	07/13/04	2.40	1459.60
08/27/95	9.20	1452.80	10/28/00	2.11	1459.89	08/10/04	7.34	1454.66
09/28/95	6.80	1455.20				09/07/04	5.74	1456.26
10/28/95	5.40	1456.60	06/07/01	<<	<<	10/04/04	3.40	1458.60
			07/01/01	<<	<<	11/09/04	1.88	1460.12

152-062-34AAD2
Spiritwood Aquifer

MP Elev (msl,ft)=1,461.95
SI (ft.)=128-133

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/08/91	13.09	1448.86	05/01/96	3.72	1458.23	07/30/01	0.68	1461.27
08/31/91	14.71	1447.24	05/31/96	3.52	1458.43	09/02/01	2.30	1459.65
09/03/91	15.38	1446.57	06/29/96	5.40	1456.55	09/29/01	1.59	1460.36
09/28/91	13.33	1448.62	07/30/96	8.09	1453.86	11/10/01	0.31	1461.64
10/26/91	12.06	1449.89	08/30/96	10.26	1451.69			
			09/28/96	8.16	1453.79	05/30/02	<<	<<
01/06/92	10.28	1451.67	10/28/96	6.14	1455.81	06/28/02	<<	<<
04/28/92	9.60	1452.35				07/29/02	4.54	1457.41
05/28/92	9.77	1452.18	04/30/97	3.40	1458.55	08/29/02	7.21	1454.74
06/30/92	10.43	1451.52	06/01/97	3.16	1458.79	09/29/02	3.99	1457.96
07/29/92	11.99	1449.96	06/28/97	6.23	1455.72	10/31/02	3.30	1458.65
08/29/92	14.88	1447.07	07/29/97	6.25	1455.70			
09/30/92	11.87	1450.08	08/30/97	7.11	1454.84	05/08/03	<<	<<
10/29/92	11.20	1450.75	09/30/97	5.91	1456.04	06/05/03	<<	<<
			10/31/97	4.14	1457.81	07/10/03	<<	<<
04/03/93	9.44	1452.51				07/22/03	1.00	1460.95
05/01/93	9.28	1452.67	07/01/98	3.05	1458.90	08/05/03	5.80	1456.15
05/29/93	9.09	1452.86	08/02/98	9.60	1452.35	08/13/03	4.70	1457.25
06/28/93	9.12	1452.83	08/30/98	11.35	1450.60	09/02/03	7.44	1454.51
08/30/93	11.00	1450.95	09/29/98	8.98	1452.97	09/30/03	5.78	1456.17
09/26/93	9.70	1452.25	11/07/98	6.00	1455.95	10/27/03	3.90	1458.05
10/30/93	7.99	1453.96				10/29/03	3.89	1458.06
			06/04/99	2.26	1459.69	10/30/03	4.39	1457.56
04/06/94	5.47	1456.48	07/01/99	4.03	1457.92	10/31/03	5.30	1456.65
05/01/94	5.36	1456.59	08/01/99	5.98	1455.97	11/01/03	6.03	1455.92
05/29/94	5.23	1456.72	09/01/99	6.02	1455.93	11/02/03	6.61	1455.34
06/30/94	5.44	1456.51	10/03/99	3.86	1458.09	11/02/03	6.80	1455.15
07/31/94	7.50	1454.45	10/31/99	2.85	1459.10	11/03/03	6.71	1455.24
08/28/94	9.79	1452.16				11/04/03	6.32	1455.63
09/28/94	8.10	1453.85	07/01/00	3.03	1458.92	11/06/03	5.62	1456.33
10/28/94	6.56	1455.39	08/01/00	4.12	1457.83	12/02/03	3.18	1458.77
			08/09/00	5.50	1456.45			
04/29/95	4.23	1457.72	09/06/00	4.77	1457.18	05/04/04	0.57	1461.38
05/31/95	3.83	1458.12	10/03/00	3.09	1458.86	06/08/04	0.14	1461.81
06/28/95	6.45	1455.50	10/11/00	2.47	1459.48	07/13/04	2.34	1459.61
08/27/95	9.10	1452.85	10/28/00	2.17	1459.78	08/10/04	7.23	1454.72
09/28/95	6.80	1455.15				09/07/04	5.66	1456.29
10/28/95	5.41	1456.54	06/07/01	<<	<<	10/04/04	3.33	1458.62
			07/01/01	<<	<<	11/09/04	1.82	1460.13

152-062-34DDA
Spiritwood Aquifer

MP Elev (msl,ft)=1,532.20
SI (ft.)=238-243

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/09/91	83.20	1449.00	05/01/96	73.49	1458.71	09/02/01	72.39	1459.81
08/31/91	84.77	1447.43	05/31/96	73.46	1458.74	09/29/01	71.57	1460.63
09/03/91	85.62	1446.58	06/29/96	75.40	1456.80	11/10/01	70.24	1461.96
09/28/91	83.25	1448.95	07/30/96	79.18	1453.02			
10/26/91	81.97	1450.23	08/30/96	80.49	1451.71	05/30/02	69.24	1462.96
			09/28/96	78.13	1454.07	06/28/02	69.56	1462.64
01/06/92	80.27	1451.93	10/28/96	76.06	1456.14	07/29/02	74.57	1457.63
04/28/92	79.54	1452.66				08/29/02	77.26	1454.94
05/28/92	79.68	1452.52	04/30/97	73.42	1458.78	09/29/02	73.72	1458.48
06/30/92	80.37	1451.83	06/01/97	73.18	1459.02	10/31/02	72.11	1460.09
07/29/92	82.03	1450.17	06/28/97	76.61	1455.59			
08/29/92	84.79	1447.41	07/29/97	76.60	1455.60	05/08/03	69.88	1462.32
09/30/92	81.84	1450.36	08/30/97	77.30	1454.90	06/05/03	69.90	1462.30
10/29/92	81.13	1451.07	09/30/97	75.88	1456.32	07/10/03	70.30	1461.90
			10/31/97	74.10	1458.10	07/22/03	71.34	1460.86
04/03/93	79.35	1452.85				08/05/03	76.49	1455.71
05/01/93	79.22	1452.98	07/01/98	73.02	1459.18	08/13/03	76.04	1456.16
05/29/93	79.01	1453.19	08/02/98	79.93	1452.27	09/02/03	77.67	1454.53
06/28/93	79.08	1453.12	08/30/98	81.49	1450.71	09/30/03	75.89	1456.31
07/29/93	78.20	1454.00	09/29/98	78.95	1453.25	10/27/03	73.98	1458.22
08/30/93	81.04	1451.16	11/07/98	76.00	1456.20	10/29/03	74.00	1458.20
09/26/93	79.68	1452.52				10/30/03	75.07	1457.13
10/30/93	77.89	1454.31	06/04/99	72.26	1459.94	10/31/03	76.05	1456.15
			07/01/99	74.09	1458.11	11/01/03	76.78	1455.42
04/06/94	75.40	1456.80	08/01/99	76.09	1456.11	11/02/03	77.38	1454.82
05/01/94	75.29	1456.91	09/01/99	76.26	1455.94	11/02/03	77.50	1454.70
05/29/94	75.15	1457.05	10/03/99	73.86	1458.34	11/02/03	77.40	1454.80
06/30/94	75.36	1456.84	10/31/99	72.84	1459.36	11/03/03	76.96	1455.24
07/31/94	78.05	1454.15				11/04/03	76.39	1455.81
08/28/94	79.89	1452.31	07/01/00	73.05	1459.15	11/06/03	75.64	1456.56
09/28/94	77.99	1454.21	08/01/00	74.44	1457.76	12/02/03	73.23	1458.97
10/28/94	76.51	1455.69	08/09/00	75.74	1456.46			
			09/06/00	74.79	1457.41	05/04/04	70.64	1461.56
04/29/95	74.19	1458.01	10/03/00	73.10	1459.10	06/08/04	70.25	1461.95
05/31/95	73.83	1458.37	10/11/00	72.53	1459.67	07/13/04	72.42	1459.78
06/28/95	76.49	1455.71	10/28/00	72.14	1460.06	08/10/04	77.42	1454.78
08/27/95	75.80	1456.40				09/07/04	75.73	1456.47
09/28/95	76.72	1455.48	06/07/01	69.67	1462.53	10/04/04	73.41	1458.79
10/28/95	75.37	1456.83	07/01/01	69.63	1462.57	11/09/04	71.88	1460.32
			07/30/01	70.68	1461.52	12/07/04	71.23	1460.97

Table 10. General chemical analyses for Water Samples Collected in the Study Area.

Location	Screened Interval (ft)	Date Sampled	(milligrams per liter)														Spec						
			SiO ₂	Fe	Mn	Ca	Mg	Na	K	HCO ₃	CO ₃	SO ₄	Cl	F	NO ₃	B	TDS	Hardness CaCO ₃	as NCH	% Na	SAR	Cond (µmho)	Temp (°C)
152-062-33CDA4	133-138	10/28/87	15	0.05	0.97	150	67	130	12	623	0	420	19	0.3	12	0.3	1130	650	140	30	2.2	1620	7
152-062-33CDA4	133-138	06/30/92	18	0.17	0.32	160	65	130	12	662	0	400	22	0.3	23	0.46	1160	670	120	29	2.2		
152-062-33CDA4	133-138	07/16/97		0.05	0.23	170	78	130	11	593	0	380	22	0.3	0.44		1090	750	260	27	2.1	1340	9.6
152-062-33CDA4	133-138	08/12/03	28.7	0.860	0.166	176.	77.3	143.	9.7	697.	<1	367.	19.5	0.248	0.18		1140	758.	187.	28.7	2.26		
152-062-33CDA5	18-23	10/27/87	26	0.07	0.67	530	280	88	22	483	0	2200	73	0.2	1	0.08	3460	2500	2100	7	0.8	3700	7
152-062-33CDA5	18-23	06/18/92	26	0.06	0.04	510	290	90	22	448	0	2300	31	0.3	2.7	0.11	3490	2500	2100	7	0.8	4000	8
152-062-33CDA5	18-23	07/16/97		0.05	0.04	530	320	110	22	495	0	2400	29	0.2	1.11		3660	2600	2200	8	0.9	2300	12.5
152-062-33CDA5	18-23	07/22/03	31.5	0.106	0.050	488.	342.	105.	16.7	385.	<1	2560	17.7	0.300	3.81		3720	2630	2320	7.9	0.89	2110	
152-062-33CDA5	18-23	08/12/03													4.52								
152-062-33DCB	200-203	07/16/97		1.5	0.11	43	25	53	24	406	0	2.1	19	0.2	0.31		369	210	0	32	1.6	576	10.9
152-062-34AAD1	158-163	08/08/91	32	0.93	0.56	180	51	98	8.1	562	0	380	17	0.1	1	0.28	1050	660	200	24	1.7	1408	9
152-062-34AAD1	158-163	07/20/95		4.2	0.57	170	51	100	8.9	570	0	420	18	0.1	1		1050	630	170	25	1.7	1320	13
152-062-34AAD1	158-163	08/09/00		6.1	0.58	180	51	110	8.9	578	0	400	14	0.1	0.1		1060	660	190	26	1.9	1335	
152-062-34AAD1	158-163	07/22/03	41.4	6.59	0.562	186.	53.4	107.	8.9	555.	<1	347.	14.0	0.100	0.09		992.	685.	229.	25.0	1.78	1160	
152-062-34AAD1	158-163	08/13/03													<0.09							1290	
152-062-34AAD2	128-133	08/08/91	36	7	0.08	170	50	48	5.9	532	0	320	6.8	0.1	1	0.18	907	630	190	14	0.8	1240	8
152-062-34AAD2	128-133	07/20/95		4.6	0.1	170	51	50	7.1	542	0	320	7	0.1	1		878	630	190	14	0.9	1130	13
152-062-34AAD2	128-133	08/09/00		9.1	0.08	170	51	53	7.1	544	0	330	7.3	0.1	0.1		900	630	190	15	0.9	1153	
152-062-34AAD2	128-133	07/22/03	42.8	9.94	0.080	185.	53.0	50.9	7.3	526.	<1	299.	5.02	0.116	<0.09		861.	681.	249.	13.8	0.85	1072	
152-062-34AAD2	128-133	08/13/03													0.09							1075	
152-062-34DDA	238-243	08/09/91	37	2.7	0.27	190	50	27	6.2	506	0	330	4.2	0.1	1	0.12	898	680	270	8	0.5	1178	8
152-062-34DDA	238-243	07/20/95		2.5	0.3	180	51	27	6.9	524	0	330	7.7	0.1	1		865	660	230	8	0.5	1070	13
152-062-34DDA	238-243	08/09/00		8.5	0.28	190	51	31	6.9	515	0	330	4.4	0.1	0.1		876	680	260	9	0.5	1130	
152-062-34DDA	238-243	07/22/03	43.6	8.31	0.309	207.	55.1	30.5	7.8	507.	<1	308.	4.04	0.092	<0.09		864.	744.	328.	8.0	0.49	1025	
152-062-34DDA	238-243	08/13/03													0.09							956	

Table 11 Stable isotope analyses of samples collected on August 31, 2004

Sample	Location	18O	2H	Aquifer
1	150-062-23BBB	-15.29	-114.19	Spiritwood
2	150-062-13CCC	-10.88	-88.16	Warwick
3	150-062-24CBB	-15.91	-117.42	Spiritwood
4	150-061-19BBB	-14.50	-107.84	Spiritwood
5	150-061-17AAA	-15.89	-119.32	Spiritwood
6	150-061-18BBB2	-12.86	-99.65	Warwick
7	150-061-18BBB3	-14.62	-112.02	Spiritwood
8	150-062-01DDD2	-11.93	-90.45	Warwick
9	150-061-06CCC2	-13.27	-109.49	Spiritwood
10	150-062-01CDC†	-14.12	-106.89	Spiritwood
11	150-062-12CAC	-14.03	-106.45	Spiritwood
12	150-062-03DDD2	-7.42	-68.73	Warwick
13	150-062-03DDD	-14.31	-107.90	Spiritwood
14	150-062-10DDD	-14.42	-107.53	Spiritwood
15	150-062-10DDD2	-14.25	-107.43	Warwick
16	151-062-34DDD	-15.50	-115.53	Spiritwood
17	151-062-36CCC	-13.98	-106.15	Spiritwood
18	150-061-06BBB	-14.35	-108.94	Spiritwood
19	151-061-31DDD	-14.73	-112.33	Spiritwood
20	151-061-31CDD	-14.84	-112.34	Spiritwood
21	150-062-01AAC	-14.34	-108.18	Spiritwood
22	150-062-01AAD	-14.28	-110.75	Spiritwood
23	151-062-03DDD1	-15.90	-122.41	Warwick
24	151-062-03DDD4	-14.56	-117.49	Spiritwood
25	151-062-16BBB	-14.93	-114.41	Spiritwood
26	151-062-20DAD2	-13.55	-103.61	Warwick
27	151-062-20DAD1	-15.50	-118.70	Spiritwood
28	151-062-15CCC3	-13.38	-103.06	Warwick
29	151-062-22BBB2	-15.94	-121.36	Spiritwood
30	151-062-27AAA3	-10.22	-85.52	Warwick
31	151-062-27AAA2	-14.47	-109.22	Spiritwood
32	151-062-27DDDA	-14.39	-107.26	Spiritwood
33	151-062-23ABB3	-11.40	-87.63	Warwick
34	151-062-23ABB2	-13.14	-100.18	Spiritwood
35	151-062-23ABB	-14.41	-109.22	Spiritwood
36	151-062-24CCC3	-11.99	-97.39	Warwick
37	151-062-24CCC2	-14.43	-110.25	Spiritwood
38	151-062-24CCC	-14.12	-109.04	Spiritwood
39	151-062-24DDC3	-14.07	-107.85	Warwick
40	151-062-24DDC2	-15.66	-119.87	Spiritwood
41	151-062-24DDC1†	-15.59	-119.18	Spiritwood
42	151-062-25DAA3	-10.93	-83.62	Warwick
43	151-062-25DAA2	-14.42	-110.20	Spiritwood
44	151-062-25DAA1	-14.95	-116.18	Spiritwood
45	151-062-36AAA	-14.56	-109.73	Spiritwood
46	151-061-31BCC	-14.50	-107.20	Spiritwood
47	151-061-32BBB	-13.99	-105.50	Spiritwood
48	151-061-33CCC	-15.75	-118.83	Spiritwood
49	150-061-05DDD2	-15.02	-113.61	Spiritwood

† - wrong location from Waterloo - this has been corrected here

Table 12. Trace Element Analyses of Water Samples Collected in the Study Area.

Location	Aquifer	Screen interval (ft)	Date Sampled	µg/l						
				Sele-nium	Lead	Mer-cury	Arsenic	Lith-ium	Molyb-denium	Stron-tium
15006105DDD	Spiritwood	167-170	7/17/91	0	0	0.1	24	130	8	750
15006105DDD2	Spiritwood	158-163	8/21/03	2.23	<1	<0.2	3.2	139	1.98	852
15006105DDD2	Spiritwood	158-163	9/1/04	2.71	<1	<0.2	5.54	155	2.42	803
15006106BBB	Spiritwood	197-203	8/20/03	<1	<1	<0.2	5.31	58.5	5.78	330
15006106BBB	Spiritwood	197-203	8/31/04	<1	<1	<0.2	6.06	59.7	6.08	287
15006106BBC	Spiritwood	227-230	8/20/03	<1	<1	<0.2	5.73	60.5	8.81	245
15006106CCC2	Spiritwood	198-203	7/17/91	0	0	0.1	5	70	7	540
15006106CCC2	Spiritwood	198-203	8/19/03	<1	<1	<0.2	6.77	61.3	7.61	223
15006106CCC2	Spiritwood	198-203	8/31/04	<1	<1	<0.2	7.79	62.3	8.81	192
15006116DDD	Spiritwood	148-153	8/20/03	3.89	<1	<0.2	1.47	107	1.61	697
15006117AAA	Spiritwood	158-163	8/19/03	1.55	<1	<0.2	3.27	113	4.35	560
15006117AAA	Spiritwood	158-163	8/31/04	2.13	<1	<0.2	6.51	129	4.66	588
15006118BBB2	Warwick	0-15	8/31/04	<1	<1	<0.2	8.92	17.8	5.84	222
15006118BBB3	Spiritwood	292-302	8/19/03	6.64	<1	<0.2	9.25	121	15.2	657
15006118BBB3	Spiritwood	292-302	8/31/04	7.62	<1	<0.2	11.2	128	14.9	598
15006118DAA	Spiritwood	168-173	8/19/03	1.49	<1	<0.2	5.45	108	7.56	603
15006119BBB	Spiritwood	175-181	8/19/03	2.39	<1	<0.2	6	118	5.14	584
15006119BBB	Spiritwood	175-181	8/31/04	2.15	<1	<0.2	7.55	124	5.48	497
15006129AAA		65-70	9/23/86	1	0	0		130	3	410
15006130ABB	Spiritwood	237-240	8/19/03	1.55	<1	<0.2	11	117	6.82	649
15006201AAC	Spiritwood	265-270	8/31/04	<1	<1	<0.2	7.71	69.3	5.98	124
15006201AAD	Spiritwood	265-270	8/31/04	<1	<1	<0.2	8.12	61.6	12.1	128
15006201CDC	Spiritwood	258-263	8/20/03	<1	<1	<0.2	7.37	44.3	5	237
15006201CDC	Spiritwood	258-263	8/31/04	<1	<1	<0.2	8.55	51.2	5.17	208
15006201DDD2	Warwick	00	8/31/04	1.08	<1	<0.2	5.79	12.1	1.68	138
15006203CCC	Spiritwood	155-160	8/14/03	<1	<1	<0.2	<1	19.3	2.42	501
15006203DDD	Spiritwood	168-173	7/17/91	0	0	0.1	2	20	0	590
15006203DDD	Spiritwood	168-173	8/14/03	<1	<1	<0.2	4.18	14.7	1.53	291
15006203DDD	Spiritwood	168-173	8/31/04	<1	<1	<0.2	5.63	16.7	1.92	260
15006203DDD2	Warwick	00	8/31/04	<1	<1	<0.2	3.96	8.94	6.97	136
15006204BBA	Warwick	50-56	8/14/03	<1	<1	<0.2	2.5	7.17	1.13	222
15006210DDD	Spiritwood	168-173	7/17/91	0	0	0.1	2	40	1	730
15006210DDD	Spiritwood	168-173	8/14/03	<1	<1	<0.2	2.89	32.5	3.09	431
15006210DDD	Spiritwood	168-173	8/31/04	<1	<1	<0.2	4.44	34.2	3.35	384
15006210DDD2	Warwick	0-10	8/31/04	1.22	<1	<0.2	2.38	6.93	<1	129
15006212CAC	Spiritwood	226-231	8/20/03	<1	<1	<0.2	6.76	51.4	4.08	222
15006212CAC	Spiritwood	226-231	8/31/04	<1	<1	<0.2	8.19	55.7	4.24	189
15006213CCC	Warwick	0-10.4	8/31/04	1.27	<1	<0.2	77.6	66	4.78	572
15006216AAA	Spiritwood	152-155	7/17/91	0	0	0.1	2	30	1	640
15006216AAA	Spiritwood	152-155	8/12/03	<1	<1	<0.2	5.29	32	2.8	390
15006216BBB		20-25	9/23/86	1	0	0	0	9	1	140
15006223BBB	Spiritwood	154-178	8/6/91	0	0	0.2	2	100	19	570
15006223BBB	Spiritwood	154-178	8/19/03	1.92	<1	<0.2	5.63	103	10.3	396
15006223BBB	Spiritwood	154-178	8/31/04	2.54	<1	<0.2	8.16	111	16.2	343
15006224CBB	Spiritwood	158-163	8/19/03	<1	<1	<0.2	3.23	85.8	5.76	291
15006224CBB	Spiritwood	158-163	8/31/04	<1	<1	0.39	6.03	87.3	6.07	260
15006224DDC		29-34	9/23/86	1	1	0	7	62	5	390
15106106CCC	Spiritwood	223-228	8/15/91	0	1	0	6	80	4	800
15106106CCC	Spiritwood	223-228	8/12/03	<1	<1	<0.2	12.4	79.8	1.24	804
15106107CCC	Spiritwood	178-183	7/18/91	0	0	0	1	60	3	490
15106107CCC	Spiritwood	178-183	8/12/03	<1	<1	<0.2	6.89	49.2	1.92	606
15106107DDD	Spiritwood	177-182	8/12/03	<1	<1	<0.2	18.8	62.8	2.14	655
15106117CCC	Spiritwood	186-191	8/13/03	<1	<1	<0.2	4.2	31.3	2.34	369
15106120BAA	Pierre Fm.	147-157	8/13/03	<1	<1	<0.2	<1	186	<1	480
15106130AAA	Spiritwood	218-223	7/17/91	1	1	0.1	2	70	0	950
15106130AAA	Spiritwood	218-223	8/13/03	<1	<1	<0.2	6.55	62.2	2.31	648
15106131BCC	Spiritwood	198-203	8/14/03	<1	<1	<0.2	4.12	62.4	7.66	322
15106131BCC	Spiritwood	198-203	9/1/04	<1	<1	<0.2	5.43	66.4	8.14	283
15106131CBC	Spiritwood	00	8/20/03	<1	<1	<0.2	5.23	63.5	10.2	270
15106131CCC	Spiritwood	00	8/20/03	<1	<1	<0.2	5.22	61.1	8.35	281
15106131CDD	Spiritwood	158-163	8/20/03	<1	<1	<0.2	2.31	59.9	22.4	178
15106131CDD	Spiritwood	158-163	8/31/04	<1	<1	<0.2	3.26	63.4	23.5	155
15106131DDD	Spiritwood	113-118	8/20/03	1.96	<1	<0.2	11.1	86.1	17.6	391
15106131DDD	Spiritwood	113-118	8/31/04	2.15	<1	<0.2	12.5	88	18.5	352

Table 12. Trace Element Analyses of Water Samples Collected in the Study Area.

Location	Aquifer	Screen interval (ft)	Date Sampled	µg/l						
				Sele-nium	Lead	Mer-cury	Arsenic	Lith-ium	Molyb-denium	Stron-tium
15106132BBB	Spiritwood	168-173	7/16/91	1	0	0.1	4	80	7	560
15106132BBB	Spiritwood	168-173	8/14/03	1	<1	<0.2	4.93	80.3	8.81	270
15106132BBB	Spiritwood	168-173	9/1/04	<1	<1	<0.2	6.37	87.7	9.47	242
15106133CCC	Spiritwood	158-163	8/21/03	4.07	<1	<0.2	1.85	133	2.01	612
15106133CCC	Spiritwood	158-163	9/1/04	4.63	<1	<0.2	3.78	147	2.21	539
15106201AAD	Spiritwood	178-183	8/15/91	0	1	0	1	170	2	900
15106201AAD	Spiritwood	178-183	8/12/03	<1	<1	<0.2	2.46	167	1.46	934
15106203ADDA	Spiritwood	350-355	8/9/91	0	0	0	2	60	1	780
15106203ADDA	Spiritwood	350-355	8/13/03	<1	<1	<0.2	5.54	62.7	<1	820
15106203DDAA	Spiritwood	258-263	10/21/03	<1	<1	<0.2	3.68	35.2	1.04	648
15106203DDAD	Spiritwood	258-263	10/20/03	<1	<1	<0.2	4.53	35.5	1.13	619
15106203DDDD1	Warwick	62-65	8/13/03	7.64	<1	<0.2	1.49	36.5	2.5	297
15106203DDDD1	Warwick	62-65	9/1/04	5.14	<1	<0.2	2.68	36.6	2.39	256
15106203DDDD2	Spiritwood	260-263	7/18/91	0	0	0	0	30	1	770
15106203DDDD2	Spiritwood	260-263	8/20/03	<1	<1	<0.2	3.94	27.1	1.83	650
15106203DDDD3	Spiritwood	258-263	10/20/03	<1	<1	<0.2	4.92	23.1	1.62	488
15106203DDDD4	Spiritwood	258-268	10/20/03	<1	<1	<0.2	3.39	23.3	1.6	511
15106203DDDD4	Spiritwood	258-268	9/1/04	<1	<1	<0.2	4.98	24.9	1.66	501
15106203DDDD5	Spiritwood	250-275	10/29/03	1.29	<1	<0.2	5.06	21.9	1.42	453
15106203DDDD5	Spiritwood	250-275	10/30/03	<1	<1	<0.2	4.78	22.7	1.26	459
15106203DDDD5	Spiritwood	250-275	10/31/03	<1	<1	<0.2	4.87	30.4	1.27	604
15106203DDDD5	Spiritwood	250-275	11/1/03	<1	<1	0.2	4.72	29.9	1.24	586
15106203DDDD5	Spiritwood	250-275	11/2/03	<1	<1	<0.2	4.88	29.6	1.2	582
15106208ABB	Spiritwood	170-175	8/20/03	<1	<1	<0.2	1	80.2	2.41	593
15106209ABB	Spiritwood	197-203	8/2/91	0	0	0	0	50	3	760
15106209ABB	Spiritwood	197-203	8/12/03	<1	<1	<0.2	3.95	51.4	3.41	505
15106209DAA	Spiritwood	198-208	8/14/03	<1	<1	<0.2	1.53	46.9	3.41	367
15106211AAD	Spiritwood	218-223	8/20/03	<1	<1	<0.2	11	58.6	1.07	760
15106212DCC	Spiritwood	235-238	7/16/91	1	1	0.1	1	40	0	830
15106212DCC	Spiritwood	235-238	8/12/03	<1	<1	<0.2	9.13	38.8	2.01	564
15106213CBB	Spiritwood	238-241	8/12/03	<1	<1	<0.2	4.29	20.8	4.61	476
15106214AAA	Spiritwood	218-224	8/12/03	<1	<1	<0.2	7.41	43.8	2.41	685
15106214DDD	Spiritwood	218-223	8/20/03	<1	<1	<0.2	4.11	34.9	8.04	393
15106215AAA	Spiritwood	197-203	8/12/03	<1	<1	<0.2	4.33	17.1	2.69	139
15106215BBB	Spiritwood	198-204	7/18/91	0	0	0	0	60	1	520
15106215BBB	Spiritwood	198-204	8/12/03	<1	4.49	<0.2	<1	64	<1	547
15106215CCC3	Warwick	16.4-21.4	7/18/91	5	0	0	1	30	4	290
15106215CCC3	Warwick	16.4-21.4	8/14/03	4.64	<1	<0.2	1.1	23.2	4.12	287
15106215CCC3	Warwick	16.4-21.4	9/1/04	4.4	<1	<0.2	2.05	25.8	4.72	294
15106216BBB	Spiritwood	208-218	8/20/03	<1	<1	<0.2	14.9	60	5.4	310
15106216BBB	Spiritwood	208-218	9/1/04	<1	<1	<0.2	16.3	60.8	5.96	256
15106217BBB2	Spiritwood	178-188	8/20/03	<1	<1	<0.2	17.6	22	4.63	414
15106219AAA	Spiritwood	133-138	8/14/03	<1	<1	<0.2	<1	54.6	2.2	351
15106219ABB	Warwick	30-33	8/14/03	<1	<1	<0.2	5.91	15.6	1.33	198
15106219ADD1	Warwick	33-38	8/14/03	<1	<1	<0.2	5.16	18.9	1.36	258
15106220ABB	Spiritwood	148-151	8/14/03	<1	<1	<0.2	8.42	16	2.33	478
15106220DAD1	Spiritwood	143-146	8/14/03	<1	<1	<0.2	<1	12.8	4.25	374
15106220DAD1	Spiritwood	143-146	9/1/04	<1	<1	<0.2	1.27	14.9	4.59	348
15106220DAD2	Warwick	55-58	8/14/03	<1	<1	<0.2	16.1	13.6	2.01	244
15106220DAD2	Warwick	55-58	9/1/04	<1	<1	<0.2	16.9	17.5	2.36	227
15106221BAA	Spiritwood	160-166	8/14/03	<1	<1	<0.2	3.09	97.7	6.18	363
15106222BBB2	Spiritwood	171-177	8/14/03	<1	<1	<0.2	7.44	68.2	2.13	358
15106222BBB2	Spiritwood	171-177	9/1/04	<1	<1	<0.2	7.2	68.8	2.31	317
15106223ABB	Spiritwood	228-231	7/18/91	0	0	0	4	70	6	470
15106223ABB	Spiritwood	228-231	8/13/03	<1	<1	<0.2	2.24	66	7.69	256
15106223ABB	Spiritwood	228-231	9/1/04	<1	<1	<0.2	2.85	61.5	7.2	161
15106223ABB2	Spiritwood	148-153	8/15/91	0	1	0	0	50	3	270
15106223ABB2	Spiritwood	148-153	8/13/03	<1	<1	<0.2	<1	41.2	2.2	376
15106223ABB2	Spiritwood	148-153	9/1/04	1.39	<1	<0.2	2.83	41	2.35	315
15106223ABB3	Warwick	48-53	8/15/91	0	3	0	3	10	2	230
15106223ABB3	Warwick	48-53	8/13/03	<1	<1	<0.2	3.33	19	2.89	262
15106223ABB3	Warwick	48-53	9/1/04	<1	<1	<0.2	6.19	21.4	3.05	254
15106224AAA	Spiritwood	197-203	8/13/03	<1	<1	<0.2	3.86	21.1	5.76	339
15106224CCC	Spiritwood	258-261	7/18/91	0	0	0	5	80	10	240

Table 12. Trace Element Analyses of Water Samples Collected in the Study Area.

Location	Aquifer	Screen interval (ft)	Date Sampled	µg/l						
				Sele-nium	Lead	Mer-cury	Arsenic	Lith-ium	Molyb-denium	Stron-tium
15106224CCC	Spiritwood	258-261	8/13/03	1.22	<1	<0.2	5.82	72	15	225
15106224CCC	Spiritwood	258-261	9/1/04	1.74	<1	<0.2	8.8	75.3	16.5	195
15106224CCC2	Spiritwood	148-153	8/15/91	0	0	0	1	60	2	330
15106224CCC2	Spiritwood	148-153	8/13/03	<1	<1	<0.2	<1	56.9	3.18	319
15106224CCC2	Spiritwood	148-153	9/1/04	<1	<1	<0.2	2.94	59.3	3.55	266
15106224CCC3	Warwick	18-23	8/15/91	0	1	0	1	3	4	140
15106224CCC3	Warwick	18-23	8/13/03	<1	<1	<0.2	<1	5.69	<1	146
15106224CCC3	Warwick	18-23	9/1/04	<1	<1	<0.2	2.99	7.22	<1	138
15106224DDC1	Spiritwood	218-223	8/15/91	0	0	0	2	60	5	430
15106224DDC1	Spiritwood	218-223	8/13/03	<1	<1	<0.2	4.19	50.2	5.52	403
15106224DDC1	Spiritwood	218-223	9/1/04	<1	<1	<0.2	6.36	52.1	6.35	337
15106224DDC2	Spiritwood	148-153	8/15/91	0	0	0	0	60	2	350
15106224DDC2	Spiritwood	148-153	8/13/03	<1	<1	<0.2	1.14	64.4	2.45	367
15106224DDC2	Spiritwood	148-153	9/1/04	<1	<1	<0.2	4.05	68.4	2.5	333
15106224DDC3	Warwick	18-23	8/15/91	1	1	0	2	20	1	320
15106224DDC3	Warwick	18-23	8/13/03	2.8	<1	<0.2	2.01	24.6	1.54	307
15106224DDC3	Warwick	18-23	9/1/04	3.67	<1	<0.2	5.03	26.9	1.51	282
15106225DAA1	Spiritwood	218-223	8/13/03	<1	<1	<0.2	4.71	88.1	16.7	311
15106225DAA1	Spiritwood	218-223	9/1/04	1.17	<1	<0.2	6.12	93.8	18.3	270
15106225DAA2	Spiritwood	148-153	8/8/91	0	0	0	0	60	1	340
15106225DAA2	Spiritwood	148-153	8/13/03	<1	<1	<0.2	<1	64	2.33	348
15106225DAA2	Spiritwood	148-153	9/1/04	<1	<1	<0.2	2.05	66.8	2.32	299
15106225DAA3	Warwick	18-23	8/9/91	1	0	0.1	2	20	1	500
15106225DAA3	Warwick	18-23	8/13/03	2.6	<1	<0.2	2.58	18.4	<1	369
15106225DAA3	Warwick	18-23	9/1/04	1.1	<1	<0.2	4.38	21.1	<1	330
15106227AAA2	Spiritwood	198-204	7/18/91	0	0	0	2	50	2	430
15106227AAA2	Spiritwood	198-204	8/14/03	<1	<1	<0.2	7.16	38.2	2.4	431
15106227AAA2	Spiritwood	198-204	9/1/04	<1	<1	<0.2	10.4	41.4	2.72	384
15106227AAA3	Warwick	6-11	8/20/03	<1	<1	<0.2	1.69	32.1	1.11	516
15106227AAA3	Warwick	6-11	9/1/04	<1	<1	<0.2	1.97	44.3	1.27	449
15106227DDDA	Spiritwood	188-193	8/14/03	<1	<1	<0.2	6.93	42.7	2.46	403
15106227DDDA	Spiritwood	188-193	9/1/04	<1	<1	<0.2	10.1	46.3	2.73	353
15106234DDD	Spiritwood	167-170	8/14/03	<1	<1	<0.2	4.27	41.8	2.64	391
15106234DDD	Spiritwood	167-170	8/31/04	<1	<1	<0.2	1.98	53.7	1.91	306
15106236AAA	Spiritwood	198-203	7/16/91	1	0	0.1	4	70	10	550
15106236AAA	Spiritwood	198-203	8/13/03	<1	<1	<0.2	3.73	63.3	13	241
15106236AAA	Spiritwood	198-203	9/1/04	<1	<1	<0.2	5.04	69	14.7	215
15106236CCC	Spiritwood	197-203	8/20/03	<1	<1	<0.2	7.52	25.8	1.88	604
15106236CCC	Spiritwood	197-203	8/31/04	<1	<1	<0.2	8.04	26.9	1.75	503
15206129ADA	Surface Water		5/8/02	2	0	0	6	320	1	500
15206129ADA	Surface Water		7/23/02	1	1	0.2	22	400	0	410
15206129ADA	Surface Water		4/14/03	3	0	0	6	130	1	220
15206129ADA	Surface Water		7/7/03	13.6	1.19	<0.2	28.3	363	1.52	547
15206129ADA	Surface Water		4/12/04	21	<1	<0.2	17.3	217	1.8	358
15206129ADA	Surface Water		8/26/04	12.3	<1	<0.2	28.7	385	3.99	444
15206207ACA1	Spiritwood	197-203	8/13/03	2.41	<1	<0.2	1.45	215	<1	973
15206207ACA2	Undefined	57-60	8/13/03	3.08	<1	<0.2	4.53	267	5.9	1520
15206216BBB	Spiritwood	168-173	8/20/03	1.51	<1	<0.2	<1	190	1.35	1270
15206218BDD	Spiritwood	158-163	8/20/03	1.27	<1	<0.2	5.58	180	1.58	623
15206221BCC	Spiritwood	158-163	8/20/03	<1	<1	<0.2	8.41	102	1.21	1290
15206221DBD	Spiritwood	124-130	8/1/91	0	0	0	1	130	4	1200
15206227AAA	Spiritwood	138-143	1/1/86	1	1	0.1	2	130	6	800
15206227AAA	Spiritwood	138-143	8/14/91	0	1	0	3	170	14	980
15206228DBD	Spiritwood	137-143	8/1/91	0	0	0	3	48	2	1100
15206233CDA1	Spiritwood	318-323	9/30/87	1	1	0.2	5	110	0	630
15206233CDA1	Spiritwood	318-323	8/2/91	0	0	0	4	100	2	860
15206233CDA1	Spiritwood	318-323	8/12/03	<1	<1	<0.2	8.28	98.9	1.72	696
15206233CDA2	Clay	45-50	9/30/87	1	1	0.1	4	130	3	2600
15206233CDA2	Clay	45-50	8/2/91	0	1	0.1	0	190	11	2700
15206233CDA2	Clay	45-50	8/12/03	7.03	<1	<0.2	6.55	271	<1	3090
15206233CDA3	Spiritwood	168-173	9/30/87	0	0	0.1	4	46	2	300
15206233CDA3	Spiritwood	168-173	8/12/03	<1	<1	<0.2	<1	45.2	2.22	420
15206233CDA4	Clay	133-138	10/28/87	0	0	0	9	88	3	1300
15206233CDA4	Clay	133-138	8/12/03	1.17	<1	<0.2	59.4	91.4	<1	1300

Table 12. Trace Element Analyses of Water Samples Collected in the Study Area.

Location	Aquifer	Screen interval (ft)	Date Sampled	<-----µg/l----->						
				Selenium	Lead	Mercury	Arsenic	Lithium	Molybdenum	Strontium
15206233CDA5	Till	18-23	10/27/87	1	1	0.1	2	680	2	3000
15206233CDA5	Till	18-23	8/12/03	34.3	<1	<0.2	2.24	564	3.06	2940
15206234AAD1	Spiritwood	158-163	8/8/91	0	1	0.1	0	120	2	1200
15206234AAD1	Spiritwood	158-163	8/13/03	1.19	<1	<0.2	6.74	117	<1	1100
15206234AAD2	Spiritwood	128-133	8/8/91	0	1	0.1	0	90	2	1100
15206234AAD2	Spiritwood	128-133	8/13/03	<1	<1	<0.2	<1	90.3	<1	1020
15206234DDA	Spiritwood	238-243	8/9/91	0	0	0	0	88	1	970
15206234DDA	Spiritwood	238-243	8/13/03	<1	<1	<0.2	2.77	81	<1	1040