

**REPORT OF GEOLOGIC/HYDROGEOLOGIC SERVICES  
UPPER TWIN LAKE WATER & SEWER COMPANY  
KOOTENAI COUNTY, IDAHO**

**Completed by  
Idaho Water Resources Research Institute**

**January 21, 2004**

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## INTRODUCTION

### General

This report summarizes the results of the geologic/hydrogeologic services supporting the development of new water resources for the Upper Twin Lakes Water & Sewer Company (UTL). The services are provided by the Idaho Water Resources Research Institute's (IWRRI) Technical Assistance for Rural Ground Water Development Within Idaho program.

UTL is located approximately 25 miles northwest of Coeur d'Alene Idaho in the northern panhandle portion of Idaho. The approximate location of the UTL in relation to nearby surrounding physical features can be seen in Figure 1. UTL currently supplies about 170 people from two wells. According to UTL personnel the two wells do not produce sufficient quantities of water and additional water resources were needed to increase capacity especially during summer months. A third well was completed to increase production; analytical testing indicated elevated arsenic concentrations.

UTL has requested assistance in evaluating potential water well sites in the area to replace the third well and provide greater water system capacity with acceptable arsenic concentrations.

### Purpose and Scope

The purpose of this evaluation is to provide technical information to aid in the development of new water resources for the UTL. The evaluation consists of three tasks: 1) research selected information that includes geologic maps, water well reports, and other existing available information, 2) characterize the geologic/hydrogeologic and hydrochemical setting of UTL and surrounding area, and 3) identify potential areas for the location of a new water well.

### UTL Water System

The UTL water system currently supplies their service area with two water wells, UTL#1 and UTL#2, as can be seen in Figure 2. The available water well reports for the UTL water system are included in Appendix A. UTL #2 was completed in May of 1989 and is located in the northwest portion of the UTL development (Figure 2). UTL#2 is completed 62 feet below ground surface (bgs) and has been reported to have a flow rate at the time of drilling of approximately 10 gallons per minute (gpm). There is no water well report available for UTL #1. UTL #3 was completed in 1992 to supplement UTL #1 and UTL #2. Elevated arsenic concentrations resulted in discontinued use of UTL #3 as a potable water supply.

## GEOLOGIC SETTING

### General

Our interpretation of geologic/hydrogeologic conditions in the vicinity of UTL are based on review of selected information in the available literature, Idaho Department of Water Resources (IDWR) water well reports, and a reconnaissance of UTL and surrounding areas. The information reviewed included an Idaho Geological Survey (IGS) geology map (Lewis, 2002) and hydrogeological/geological studies of the north Idaho area. (Buchanan, 1999; Conners, 1976; Graham, 1994; Harvey, 1984; Jehn, 1988). The

geology of the area is described and illustrated at a scale of 1:100,000 in Lewis (2002) and can be seen in Figure 3. A geologic map and cross section of the study area can be seen in Figure 4 depicting our interpretation of subsurface conditions inferred from the water well reports and from previous studies. The approximate locations of pertinent wells reviewed as described in the IDWR water well reports are shown in Figure 4 and the associated water well reports are included in Appendix B.

Depth to bedrock from the ground surface can be estimated by measuring changes in gravity values of an area (Burger, 1989). The relative depth to bedrock was estimated for the UTL area and the Rathdrum Prairie area through the use of gravity data. A regional bouguer gravity map was constructed from existing data (NGDC, 1984). A regional trend was removed with a low order polynomial surface and the resultant residual bouguer gravity map is shown in Figure 5. Lower gravity values (indicated by red shaded areas) represent areas with significant thickness of unconsolidated sediments and high gravity values (indicated by blue shaded areas) represent areas with shallow unconsolidated sediments or exposed bedrock.

### **Regional Geology**

UTL is located on the north shore of the Upper Twin Lakes in the northern panhandle area of Idaho. The panhandle of Idaho consists of four primary geologic units: 1) The Priest River Metamorphic complex (YX\*), 2) the Belt Supergroup (Y\*), 3) Tertiary Granitic Intrusions (Tbgf) and 4) the Missoula flood deposits (Qg\*). The various geologic units are discussed below and can be seen in Figures 3 and 4.

The Priest River metamorphic complex near Twin Lakes is composed predominantly of gneiss (Lewis, 2002) and appears to be the oldest rocks of the area with age dates of approximately two billion years old. The gneiss is commonly composed of black and white bands. The light colored layers consist of quarts and feldspars and the dark colored layers are composed largely of biotite. The origin and depositional environment of the Priest River metamorphic complex is not well understood. It is believed to have been either metamorphosed from very old basement rock or the base units of the Belt Supergroup and exposed during the development of the Kaniksu Batholith as discussed below.

The Belt Supergroup is comprised of a variety of very old sedimentary units that are over a billion years old and are believed to have been deposited in a narrow ocean basin. The Belt Supergroup sediments have been estimated to be tens of thousands of feet thick. Pressure of the overlying sediments have caused the rocks to metamorphose or recrystallize with time into siltstones and sandstones. The Belt rocks were deformed into folds and faults during the Cretaceous Period (70 to 80 million years ago).

Granitic intrusions began during the Cretaceous Period (70 to 80 million years ago) with a large granitic intrusion (batholith) rising up into the earth's crust underneath the Priest River Metamorphic Complex and the Belt Supergroup sediments, forming the Kaniksu Batholith. It is believed that the large mass of granite pushed the belt rocks upward and to the east (see Figure 6). The contact between the two is called the Purcell trench and is oriented approximately north-south. The trench exists from Canada south into the Rathdrum Prairie through approximately Bonners Ferry, Sandpoint and Coeur d'Alene.

The movement of the belt rocks east exposed the underlying granitic batholith and the Priest River metamorphic complex discussed earlier. The result is predominantly gneissic and granitic rocks to the west of the Rathdrum Prairie and Belt Supergroup rocks to the east of the Rathdrum Prairie. The Priest River Complex gneiss was intruded by younger Tertiary age (approximately 52 million years old) granitic rocks. The granitic rocks are generally gray with a fine-grained texture.

The gravity data as seen in Figure 5 shows relative depth to bedrock in the Rathdrum Prairie. The area immediately east of the UTL study area shows relatively shallow bedrock across the entire area with increasing depth farther south. The area with the greatest depth to bedrock is a large bedrock bowl section that can be seen northwest from the city of Coeur d'Alene.

The area of northern Idaho was further modified by glaciation apparently during at least two ice ages with glaciers that flowed south from Canada (Breckenridge, 1989). The most recent glaciation (Cordilleran) existed approximately 10,000 to 15,000 years ago. The extent of the glaciations can be seen in Figure 7. The glaciation resulted in the deposition of sediments consisting predominantly of silt, sand, and gravel. These glacial deposits cover significant portions of the UTL area.

Glacial deposits typically consist of 1) advance outwash, 2) till, and 3) recessional outwash. Advance outwash is composed of mixtures of silt, sand, and gravel deposited in front of the advancing glacier by melt water streams emerging from the base. As the glacier overrides the advance outwash deposits, the weight of glaciers, thousands of feet thick, will consolidate the underlying deposits at the base of the glacier to form a glacial till. The till, also known as "hardpan", is generally very dense and impermeable. Recessional outwash is deposited as the glacier recedes from the area and is generally composed of loose, poorly sorted silt, sand, and gravel.

Lobes of glacial ice blocked the flow from the Clark Fork River near the city of Clark Fork, Idaho. The resulting lobe formed an "ice dam" that created Lake Missoula. The water behind the ice dam increased in depth eventually causing failure due to the increased pressure and intrusion of water in and around the ice dam. The dam would fail catastrophically creating significant flood events. The sequence of ice dam formation, dam failure and flood event was repeated a number of times. Due to the significant flood events caused by failures of the ice dams areas south of the existing glacier (Figure 7) have had the glacial sequence of advance outwash, till, and recessional outwash removed resulting in undifferentiated and mixed glacial deposits. The areas covered by the glacial ice were unaffected and retain recognizable glacial deposits and sequences. The reworked glacial sediments caused by the flood events compose the body of the Spokane Valley-Rathdrum Prairie aquifer.

Recent unconsolidated sediments are derived from erosion of the upland area surrounding UTL. The sediments are then transported downslope by gravity or within area streams.

## **Project Area Geology**

The bedrock in the UTL area consists of Priest River metamorphic complex gneisses intruded by fine-grained granitic rocks. (Figure 4a). A fine-grained granite intrusive unit can be seen immediately north of UTL. The unit appears to strike approximately northeast-southwest and dip to the north. The granitic intrusion appears to be part of a larger intrusion located to the west of the UTL. The exact locations of the contacts with the surrounding metamorphic gneiss are unknown.

The bedrock topography indicates a large downward step located approximately between wells # 12 and 13 as can be seen in Figure 4b. The creation of the step is most likely related to both structural control and erosion related to the creation of the Rathdrum Prairie.

The glacial flood deposits are located in the area east of the UTL. The flood deposits consist of significant quantities of sand and gravel. As indicated on the water well reports the flood deposits appear to contain higher concentrations of silt to the west grading into sand and gravel with little to no interstitial material to the east. The silt is most likely the result of a backwater environment with lower floodwater velocities near the margin of the Rathdrum Prairie allowing for deposition of the finer grained material.

## **PROJECT AREA HYDROGEOLOGY**

### **General**

The UTL area consists predominantly of metamorphic and intrusive igneous bedrock covered largely with alluvium/colluvium. Review of available information for the UTL area indicate the presence of two potential sources of ground water: 1) bedrock and 2) glacial flood/alluvial deposits. The igneous and metamorphic basement rocks within the UTL area can be used as a limited water resource. Wells drilled into the basement rocks produce small quantities of water that are suitable for domestic purposes.

The ground water flow direction can be inferred from the limited water well reports of the area. A ground water contour map constructed from static water levels as reported on the water well reports can be seen in Figure 8. The water well reports presented do not include all the water well reports on file at the Idaho Department of Water Resources, but a large sampling that covers the geographic area. The well construction characteristics for the wells used are shown in Table 1 and the water well reports are included in Appendix B. The surface elevations at the approximate well location are extrapolated from 7.5 minute USGS topographic maps of the area. The wells in the UTL area have static water levels between 9 and 630 feet below ground surface (bgs) that correspond to elevations of 2,367 and 1,966 feet relative to mean sea level (msl) respectively.

There are two ground water systems within the study area: 1) the Fish Creek Basin and 2) the Rathdrum Prairie. The Fish Creek Basin is located west of Upper Twin Lake and consists of an approximate 35 square mile area as can be seen in Figure 1. The local aquifer within the basin is defined by limited fluvial/alluvial sediment thickness and the bedrock of the area, and terminates near the west-northwest end of Upper Twin Lake at

the bedrock bench between wells #12 and #13. The Rathdrum Prairie Aquifer is part of the much larger regional aquifer that extends from north of Lake Pend Oreille to the Idaho-Washington state line. The approximate boundaries of the Rathdrum Prairie aquifer can be seen in Figure 1.

Groundwater recharge to the UTL study area is predominantly through precipitation within the surrounding upland areas. The nearest weather station that measures precipitation is located in Coeur d'Alene, Idaho approximately 25 miles to the southeast. The average precipitation measured at the Coeur d'Alene, Idaho station for the period between 1895 and 2003 is 25.31 inches per year (Western Regional Climate Center, 2003). The actual precipitation within the UTL area may vary due to changes in geographic location and elevation. The portion of precipitation available for recharge to the aquifers within the UTL area is significantly reduced by evapotranspiration and overland flow.

The recharge areas for Fish Creek Basin are located within the northwestern upper portions of the Fish Creek Drainage and discharge areas are located at the lower southwestern area near the confluence of Fish Creek and Upper Twin Lake. The portions of the study area that are located within sediments of the Rathdrum Prairie, are recharged from upgradient areas to the northeast and discharges to the southeast.

The hydraulic connection of the aquifers in the area to Lower and Upper Twin Lakes appears limited. The ground water elevation appears to be significantly below the bottom lake elevation by approximately 80 feet in all areas with the exception of the far west portion of Upper Twin Lake. The perched condition of the lakes indicates little or no ground water contributions from or to the lakes.

## **Project Area Aquifers**

### **Bedrock Aquifers**

Bedrock is used as ground water source for wells north of UTL and consists largely of gneiss. The aquifer is composed of fractures and/or faults in the bedrock. Wells completed in the bedrock typically obtain water from a number of fractures that will eventually contribute the desired quantity of water. Water well reports in the area indicate that wells completed upto 400 feet bgs result in yields ranging from 0 to 40 gallons per minute (gpm) averaging approximately nine gpm. Wells completed in this type of bedrock at the time of drilling (as reported on the water well reports) appear to have adequate yields for domestic supplies. There is some evidence that long term pumping at rates necessary for municipal supplies may result in a significant decrease in well yields over a short period of time.

### **Glacial/Alluvial Deposit Aquifers**

The glacial/alluvial deposits in the UTL vicinity represents a complex assemblage of sediments. The glacial/alluvial aquifers are used as the primary water well source in the area. There appears to be two aquifers, the Fish Creek Basin aquifer and the Rathdrum Prairie aquifer separated by the bedrock bench between wells #12 and 13. The ground

water elevation in the study area of the Fish Creek Basin aquifer is approximately 2,320 feet msl near Upper Twin Lake and the Rathdrum Prairie aquifer has an approximate elevation of 2,175 feet msl.

## **HYDROGEOCHEMICAL SETTING**

### **General**

The most significant issue in the UTL area is the elevated concentration of arsenic in the ground water. The elevated ground water arsenic concentrations are a result of the specific geologic/hydrogeologic conditions of the area, and have become significant in view of the new regulatory mandates recently implemented by the EPA. An understanding of arsenic geochemistry and the revised EPA regulations must be understood so that the siting of a new well can be successful. Below is a discussion of the relevant geochemistry and regulatory arsenic concerns.

### **Arsenic Regulatory Compliance**

The maximum allowed concentration of arsenic in drinking water supplied by public water systems was 0.05 milligrams per liter (mg/l) as determined in 1943 by the U.S. Public Health Service. In March of 1999, a report by the National Academy of Sciences concluded that the current standard of 0.05 mg/l does not protect the public health and should be lowered (EPA, 2002).

Recently the Environmental Protection Agency (EPA, 2002) revised the maximum contaminant level (MCL) of arsenic to 0.01 mg/l. The EPA lowered the MCL from 0.05 to 0.01 mg/l to prevent long-term exposures to arsenic and the associated health related issues. Regulatory compliance of arsenic concentrations is required only in municipal water wells; domestic wells are not regulated by the EPA or the Idaho Department of Environmental Quality.

Arsenic in ground water can be found through out Idaho in concentrations above the EPA recommended 0.01 mg/l (Neely, 2002). Approximately 5% of the wells tested in northern Idaho have arsenic concentrations above the 0.01 mg/l of arsenic (Neely, 2002). The elevated arsenic concentration in ground water is most likely associated with specific geological environments. The arsenic concentrations can be regional in nature or might be restricted to small geographic areas.

### **Arsenic Hydrochemistry**

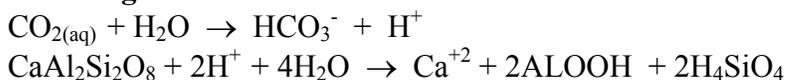
Arsenic occurs naturally in certain types of geological environments. Dissolution of minerals within these geological environments can result in ground water with elevated concentrations of arsenic. Arsenic within a hydrogeochemical system has many controls and is discussed below in the following sections 1) Sources, 2) Transport and 3) Release Mechanisms.

### **Sources**

Weathering of the bedrock and arsenic sources contributes a variety of ions to ground water. Weathering of silicate rocks is the result of the introduction of atmospheric carbon dioxide (CO<sub>2</sub>) and water acting on the exposed rock surfaces. The weathering causes dissolution of the silica rock introducing various dissolved constituents. The process of

dissolution consumes hydrogen ions [H<sup>+</sup>] and increases the pH and produces bicarbonate (HCO<sub>3</sub>). General equations for the weathering of silicate rocks are as follows:

**Weathering of silicate rocks**



The most common source of naturally occurring arsenic is the mineral arsenopyrite. Arsenopyrite is formed as a hydrothermal deposit associated with the emplacement of granitic rocks into older country or basement rocks. The chemical composition of arsenopyrite is an iron arsenic sulfide (FeAsS). Weathering is a process that causes chemical changes to minerals by the addition of water (rain) and oxygen. Arsenopyrite if exposed at the surface will weather (oxidize) to a iron arsenic (hydr)oxide. The iron will change its valence state after oxidation from Fe<sup>+2</sup> to Fe<sup>+3</sup>. Weathering will also create sulfate (SO<sub>4</sub><sup>-2</sup>) from the sulfur (S) in the arsenopyrite. The general equation for the weathering of arsenopyrite is as follows:

**Weathering of arsenopyrite will yield:**



Arsenic occurs in two charged states; Arsenate (As<sup>+5</sup>) and Arsenite (As<sup>+3</sup>). Arsenate will occur as a negatively charged oxyanion (H<sub>2</sub>AsO<sup>-4 or -2</sup>) and arsenite will occur in a zero valence state (H<sub>3</sub>AsO<sub>3</sub><sup>0</sup>). The arsenic can either 1) combine structurally with the iron (hydr)oxide or 2) electrostatically adhere to the outside of the iron (hydr)oxide molecule.

**Transport**

Arsenic may be transported either: 1) with the ground water through the aquifer or 2) adhered to grains of sedimentary material and deposited through erosional/depositional processes. The iron (hydr)oxide will generally form in an amorphous, hydrated state (ferrihydrite or hydrous ferric oxide) and develop into more structured minerals such as hematite or goethite dependent on time and aqueous iron concentrations (Langmuir, 1996).

The iron arsenic (hydr)oxide is relatively insoluble under surface conditions and is generally transported through the aquifer as a particulate that is usually colloid size, approximately 0.1 to 0.5 microns in diameter. The iron arsenic (hydr)oxide under surface conditions may coat small sedimentary grains. The coated grains are then transported through erosion to accumulate in fluvial/lacustrine sedimentary depositional units.

**Release Mechanisms**

Release mechanisms that will cause arsenic to go into solution are based largely on three chemical parameters/interactions 1) Eh, 2) pH and 3) ion exchange. Eh is the measure of the oxidation potential of the water. The Eh is commonly expressed as an electrical potential and can be either positive or negative. The positive charge is indicative of oxidizing conditions (losing electrons) and a negative charge is indicative of reducing conditions (gaining electrons). The more dissolved oxygen that is present the more

oxidizing the conditions and the higher the Eh. The less oxygen that is present will result in reducing conditions and a lower Eh.

A decrease in Eh will cause oxidized ions to form into more reduced ions. The change will occur sequentially in a known order of ion pairs as the environment changes from aerobic to anaerobic as can be seen in Figure 9. This is important in arsenic geochemistry as it relates to the arsenic that is either chemically bonded to or adsorbed onto the iron (hydr)oxide. If the Eh is lowered to a point that the iron (hydr)oxide changes from the oxidized ( $\text{Fe}^{+3}$ ) to the reduced ( $\text{Fe}^{+2}$ ) form, then the iron (hydr)oxide molecule will break apart and release iron and arsenic into solution (Ferguson, 1972). This usually happens with either iron reduction or sulfate reduction.

The pH is a measure of the hydrogen ion concentration and is commonly expressed as

$$\text{pH} = \text{Log} [1/\text{H}^+]$$

The lower the pH the higher is the number of hydrogen ions. The arsenic adsorbed onto the surface of iron (hydr)oxide is held in place by an electrostatic charge. The surface charge of iron (hydr)oxides will change dependent on the pH of the ground water (see Fig. 10). As the pH decreases the number of positively charged hydrogen ions increases. The hydrogen ions will cause the surface charge of the iron (hydr)oxide to become positive (protonation). The positive charge will attract the negative charged arsenic oxyanions. The lower the pH the more arsenic will be adsorbed onto the surface of the iron (hydr)oxides. As the pH rises the number of hydrogen ions decreases and the iron (hydr)oxide surface charge will become less positive until it reaches a pH where the surface charge is zero. This is termed the zero point charge (ZPC). Above the ZPC the surface charge of the iron (hydr)oxide will be negative. The negative surface charge will repel the negatively charged arsenic oxyanions and little will be adsorbed onto the surface (Pierce, 1981). The zero point charge for iron (hydr)oxides is generally between a pH of 7.5 and 8.0. At pH's below the ZPC negative arsenic oxyanions will be adsorbed onto iron (hydr)oxides and above the ZPC negative arsenic oxyanions will be repelled.

The third release mechanism for arsenic involves ion exchange. Ion exchange involves the replacement of one ion bound onto a molecule with a different ion that has a similar charge and size. A noted ion exchange occurs with arsenic in iron (hydr)oxides and phosphate ( $\text{PO}_4^{-2}$ ) (Peryea, 1991). This became a concern with the use of phosphate-based fertilizer in areas that had used lead arsenate as a pesticide. The arsenic in the pesticide generally becomes immobilized in the soil and would not be transported downward into the ground water. Use of phosphate-based fertilizer mobilized the arsenic by ion exchange with the phosphorus releasing arsenic to the ground water.

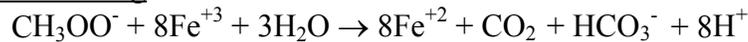
### **Biologic Mediation**

Subsurface microorganisms can have a significant affect on the ground water hydrochemistry. The subsurface microorganisms can create reactions causing changes in the ground water chemistry. The chemical reactions generally involve the utilization of a carbon source. The presence of microorganisms causes biologically mediated chemical reactions that may not occur in their absence (Lovley, 1991). The two most important biological reactions that take place in reference to arsenopyrite is iron and sulfate

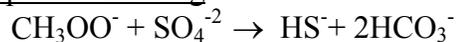
reduction. Biologically mediated reduction is the process of bacteria deriving energy from the reduction of specific redox pairs. Different environmental conditions will cause some species of bacteria to predominate over others. Iron reducing bacteria (IRB) will predominate over sulfate reducing bacteria (SRB) when iron is present (Chapelle, 1992). The IRB will utilize carbon sources, reduce ferric ( $\text{Fe}^{+3}$ ) to ferrous ( $\text{Fe}^{+2}$ ) iron and release any adsorbed arsenic (Cummings, 1999, Nickson, 2000, Raymahashay, B.C., 2003). The SRB population will be restricted due to the food source being utilized by the IRB. If sulfate is present with little or no iron then the SRB population will predominate. The general equations for bacterial mediation are as follows (Murphy, 1992):

### **Biologic Mediation**

#### Iron Reducing



#### Sulphate Reducing



### **Project Area Hydrochemistry**

#### **General**

The hydrochemistry of the UTL area is defined primarily by the location in a silicate (gneissic) terrain. Arsenic is associated with minerals deposited with these silicate rock assemblages. The elevated arsenic concentrations in the ground water of the area will determine the potential locations for new water wells in the area. An understanding of the occurrence and distribution of arsenic and its relation to the geology/hydrogeology of the area is essential.

#### **Analytical Results**

Eight samples were obtained from water wells in the UTL area. Five of the samples were collected from municipal wells and three were collected from domestic wells (D1, D2 and D3). The samples were collected and submitted to the Holm Research Center at the University of Idaho in Moscow Idaho for analysis of inorganic constituents. The samples were analyzed by EPA methods 200.7, 200.8, 300.0 and 310.1. The approximate location of the sampled water wells can be seen in Figure 11. The analytical results are tabulated in Table 2 and shown in Figure 12. The analytical laboratory reports are included in Appendix C.

The analytical results indicate the well with the highest concentrations of arsenic is found on the west side of the study area is in well D1. The other wells samples all had total arsenic concentrations below 3  $\mu\text{g}/\text{l}$ . The D1 has elevated calcium, magnesium and bicarbonate and lower sulfate relative to the adjacent sampled wells.

The proportion of dissolved arsenic versus total arsenic and dissolved iron versus total iron for each well sampled can be seen in Figure 13. Dissolved constituents are defined as those that can pass through a 0.45  $\mu\text{m}$  filter. The well with the highest concentration of arsenic (D1) appears to have all the arsenic in the dissolved form. The D2 and D3 Wells also both have distinctive hydrochemistry with elevated calcium, bicarbonate and sulfate.

## **Interpretation**

### **Current Conditions**

All the wells sampled with the exception of wells D2 and D3 wells are completed in unconsolidated deposits. The D2 and D3 wells are completed in bedrock and are most likely completed near the gneiss/granite contact (Figure 11). The elevated sulfate (relative to wells completed in the unconsolidated deposits) is most likely caused by oxidation of a sulfide deposit and is indicative of the proximity to a source.

All the other wells are completed in unconsolidated deposits consisting of silts, sands and gravels. The unconsolidated sediments are derived from flood deposits and/or colluvium derived from adjacent upland areas. All the wells have relative concentrations of constituents that are typical of silicate weathering with the exception of wells D1, D2 and D3. The wells have elevated calcium, bicarbonate and arsenic and lower sulfate concentration relative to the two adjacent wells. The analytical results of D1 and D2 are most likely reflect their completion in bedrock.

A conceptual model that may explain the analytical results of D1 involves biologically mediated sulfate reduction. Sulfate reducing bacteria will consume dissolved organic carbon (DOC), oxygen and hydrogen ions [H<sup>+</sup>] and catalyze the reduction of sulfate. The consumption of oxygen will lower the Eh causing dissolution of iron arsenic oxides. Biologic metabolism will also increase the production of CO<sub>2</sub> and bicarbonate as a by-product of the DOC consumption. The lowered Eh will create the reduced ions arsenite and ferrous iron. Most of the reduced iron will remain in a solid form with as much as 98% sequestered in iron rich clays (Chappelle, 1992). The remaining iron will most likely react with available sulfur and/or CO<sub>2</sub> and precipitate as either pyrite (FeS) or siderite (FeCO<sub>3</sub>). Excess CO<sub>2</sub> will react with water and result in silicate dissolution that will increase the calcium and further increase the bicarbonate. The significant change in hydrochemistry would indicate that the wells are located proximate to an arsenopyrite source associated with the granite-gneiss contact.

The saturation Indices were calculated for various iron and sulphur rich minerals using the PHREEQE software (Parkhurst, 1980) and can be seen in Figure 14. The modeling results indicate that the ground water sampled at the surface is significantly undersaturated in iron sulfide. There are some indications (Peters, 2003, von Bromssen, 1999) that these precipitants will be deposited on the bedrock or possibly the aquifer material and will not be transported with the ground water. The modeling results also indicate that the sampled water is in equilibrium with or slightly oversaturated with iron (hydr)oxides and is most likely the result of oxidation of any ferrous iron in solution by pumping conditions of the well.

### **Historic Conditions**

The historic arsenic and iron concentrations of UTL #3 were much higher than was measured in the most recent sampling event in August 2003 as can be seen in Figure 15. The question arises why were the arsenic and iron concentrations so much higher in the past?

The two considerations were 1) sampling procedures and 2) changing environmental conditions. The UTL#3 well will characteristically produce red colored water when first turned on. The red colored water is most likely a result of the oxidation and resulting precipitation of reduced ferrous iron in the water. As described earlier the iron (hydr)oxide will adsorb arsenic. If the well was not purged sufficiently of the iron precipitant then the water sampled obtained may have elevated concentrations of iron and arsenic. The potential change of iron and arsenic with total pump volume was evaluated by pumping UTL#3 and obtaining a series of samples over the period of pumping. UTL#3 was pumped for a period of one-hour with samples obtained periodically over the duration of the test. The samples were submitted for analysis of total iron and arsenic by EPA method 200.7. The results of the test can be seen in Figure 16, and the analytical results have been compiled in Table 3.

Figure 16 shows the first sample obtained had elevated concentrations of arsenic with almost no iron. The next three samples obtained show increased iron concentrations relative to the first sample, but subsequently decreasing along with the arsenic. After approximately 15-minutes, that iron and arsenic concentrations stabilize indicating an equilibrium condition was being achieved. The results indicate three stages and are as follows:

#### **Stage 1 (Sample #1)**

The water in the discharge pipe has most likely reached equilibrium, as the well had not been pumped for approximately 2 to 3 weeks. The time to purge the discharge pipe of water at a pump rate of approximately 5 gpm is about 15-minutes and any analytical results before this would be indicative of water collected in the discharge pipe. The first four samples obtained most likely reflect the chemical environment in the discharge pipe. The water is closed to the outside environment. Some oxygen is consumed by forming iron (hydr)oxide but not enough to lower the Eh so that reductive dissolution is limited. Some of the available arsenic is also oxidized and binds with the iron (hydr)oxide. The pH is near neutral so that there will be little adsorbed negative oxyanions or zero valence arsenic. The water in the first sample represents the top portion of the discharge pipe with no solids only an aqueous solution. The results most likely indicate that all the iron is located at the bottom of the discharge pipe with only arsenic in solution.

#### **Stage 2 (Samples #2 – #4)**

The well starts to produce iron (hydr)oxides with arsenic. There appears to be a correlation with iron and arsenic. The iron (hydr)oxide most likely has arsenic chemically bound to and adsorbed onto the molecule.

#### **Stage 3 (Samples #4 - #10).**

The well begins to produce water predominantly from the aquifer. The iron and arsenic concentrations have reached an equilibrium that reflects the chemistry of the aquifer.

The available historic analytical results for total iron, arsenic and sulfate for UTL #3 can be seen in Figure 15. The three analytes show large variations while the well was in operation. There is a noticeable negative correlation between sulfate and arsenic, as the arsenic concentrations increase the sulfate concentrations decrease. The negative correlation would be indicative of sulfate reduction processes.

The sulfate reducing bacteria (SRB) will not be effective at reducing iron. In order to produce iron concentrations of 8 mg/l it would be necessary to have iron-reducing bacteria catalyzing this reaction. The two reducing bacterias are documented as to be exclusionary (Chapelle, 1992). Iron bacteria will be present in significant numbers if iron concentrations are elevated enough and will utilize available food sources at the exclusion of the sulfate bacteria. It would appear that conditions have changed so that the current sulfate reducing bacteria population would most likely have been replaced predominantly with iron reducing bacteria in the past to produce the significant historic quantities of iron concentrations.

The conceptual model that may explain the significant changes in iron and arsenic concentrations is a combination of changing physical and biological conditions and is illustrated in Figure 17. The aquifer used by UTL #3 is an unconfined aquifer. The water table will rise and fall with pumping conditions. As the well pumps the cone of depression will form, lowering the water table. The arsenic source may be exposed during the lowering of the water table and will oxidize the source producing iron arsenic (hydr)oxides. At the same time the well will be acquiring water from the arsenic source area, as well as clean water from other areas. When pumping is terminated, the water table will rebound and resaturate the sediments. The iron concentration of the water will start to increase (as iron arsenic (hydr)oxide). There will be a corresponding increase in iron reducing bacteria that will start to reduce the ferric to ferrous iron, subsequently releasing arsenic. The cycling of the well will continue to oxidize the arsenopyrite source and increase the iron concentration of the water. Increased iron concentrations will result in increased IRB populations and an increase in ferrous iron and arsenic. Sulfate concentrations will increase, as there will be more sulfate introduced from the oxidation of the arsenopyrite source but no significant population of SRB's due to the increased iron concentrations (Chapelle, 1992).

As the pumping is reduced or stopped, the iron concentrations will decrease and the sulfate reducing populations will increase. The reduction of sulfate will create conditions conducive to the dissolution of minor quantities of iron (hydr)oxide. There will be small increases in arsenic and ferrous iron but less than the quantities measured previously during iron reduction. The pump rate, pump cycle and distance to the source will all have an impact on the resultant concentration of arsenic and iron in the well.

## **POTENTIAL WELL SITE**

The potential locations for water well siting that may acquire yields of approximately 10 gpm with arsenic concentrations below the 10 ug/l MCL in the UTL area are limited. Based on existing information, the bedrock aquifers in the UTL area do not appear adequate for municipal supply and are not considered as a potential target aquifer. There is one potential drilling site located near UTL as can be seen in Figure 18 and is discussed below.

A water well constructed east of UTL #1 and #2 on the Twin Lakes Community Center property would be advantageous due 1) property ownership by the UTL community, 2) proximity to the current water supply infrastructure and 3) the potential for low arsenic

concentrations. Other water supply wells in the area indicate that approximate pump rate of 10 gpm maybe achieved. Analytical results from UTL #2 (north) indicate Arsenic concentrations below the future MCL of 10 ug/l. The drilling site appears to be on top of the bedrock bench and should be isolated from arsenopyrite sources along the gneiss/granite contact at depth.

If the potential for drilling in Area 1 were to be fully evaluated, we would recommend that a drill site geologist/hydrogeologist be present when drilling and a detailed lithologic description of the subsurface material encountered be recorded. The subsurface information should be used for 1) evaluating the suitability for a municipal well and 2) construction specifications of the well including an engineered well screen. After completion of the well a 24-hour aquifer test should be performed to further evaluate the suitability for use as a municipal well. Water quality samples should also be acquired and an appropriate analysis for a Group A water system should be completed.

If UTL decides to drill a water well then we would recommend the following:

1. The city fully explores property ownership and easement options for potential water well site.
2. If an acceptable area and aquifer are located, it is highly recommended to have an engineered well construction and screen design. The proper well construction and screen design will maximize the efficiency of the well and increase the longevity of the well while minimizing many maintenance issues.
3. Completion of a long-term aquifer test to determine aquifer parameters and safe yield of the well.
4. UTL may also want to investigate the costs and benefits of connecting to the North Kooenai Water System located to the east of the study area.

## **CONCLUSION**

The geology of the UTL study area is composed predominantly of Priest River metamorphic complex gneiss with Tertiary age granitic intrusions. The UTL study area is composed of two separate ground water systems the 1) Fish Creek Basin and 2) Rathdrum Prairie aquifer. The elevated arsenic concentrations appear to be derived from arsenopyrite associated with hydrothermal deposits along the granite-gneiss contact. The elevated arsenic concentrations obtained from UTL #3 are most likely derived from a combination of distance to the source, pump duration and pump cycling. The best location for a new water well is the Twin Lakes Community Center regarding quantity and quality concerns.

## REFERENCES CITED

- Breckenridge, R.M., 1989. Pleistocene Ice Dams and Glacial Lake Missoula Floods in Northern Idaho and Adjacent Areas in Guidebook to the Geology of Northern and Western Idaho and Surrounding Area: Idaho Geological Survey, University of Idaho, Moscow, Idaho.
- Buchanan, J.P., 1999. Unified Groundwater Flow Model of the Rathdrum Prairie-Spokane Valley Aquifer System. Prepared for the Spokane Public Works and the Idaho Department of Environmental Quality.
- Burger, H.R., 1992. Exploration Geophysics of the Shallow Subsurface. Prentice Hall.
- Chapelle, F.H., Lovley, D.R., 1992. Competitive exclusion of Sulfate Reduction by Fe(III)-Reducing Bacteria: A Mechanism for Producing Discrete Zones of High-Iron Ground Water. *Ground Water*, Vol. 30, No. 1., pp. 29 – 36.
- Chapelle, F.H., 1993. *Ground-Water Microbiology & Geochemistry*. John Wiley & Sons, Inc.
- Conners, J.A., 1976. Quaternary History of Northern Idaho and Adjacent Areas: University of Idaho PhD dissertation.
- Cummings, D.E., Caccavo, F., Fendorf, S., Rosenzweig, F.R., 1999. Arsenic Mobilization by the Dissimilatory Fe(III)-Reducing Bacterium *Shewanella alga* BrY. *Environ. Sci. Technol.* Vol. 33, pp 723-729.
- Environmental Protection Agency, 2002. Implementation Guidance for the Arsenic Rule; Drinking Water Regulations for Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring. EPA-816-K-02-018
- Ferguson, J.F., Gavis, J., 1972. A Review of the Arsenic Cycle in Natural Waters. *Water Research* Vol 6, pp. 1259-1274.
- Graham, W.A., Buchanan, J.P., 1994. A Hydrogeologic Characterization and Reconnaissance Water Quality Study of the Chilco Channel Area, Kootenai County, Idaho. Prepared for the Idaho Department of Environmental Quality.
- Harvey, A.F., 1984. Surficial and Environmental geology of the Sandpoint Area, Bonner County, Idaho: University of Idaho M.S. Thesis.
- Jehn, P., 1988. The Rathdrum Prairie Aquifer Technical Report. Prepared for the Idaho Department of Environmental Quality.
- Langmuir, D., 1996. *Aqueous Environmental Geochemistry*. Prentice Hall.

Lovley, D.R., Phillips, E.J.P., Lonergan, D.J., 1991. Enzymatic versus Nonenzymatic Mechanisms for Fe(III) Reduction on Aquatic Sediments. *Environ. Sci. Technol.*, Vol 25, No. 6. pp. 1062-1067.

Lewis, R.S., Burmester, R.F., Breckenridge, R.M., McFaddan, M.D., and Kauffman, J.D., 2002. Geologic Map of the Coeur d'Alene 30 X 60 Minute Quadrangle, Idaho. Idaho Geologic Survey, Geologic Map 33.

Murphy, E.M. et al., 1992. The influence of Microbial Activity and Sedimentary organic Carbon on the Isotope geochemistry of the Middendorf Aquifer. *Water Resources Research*, Vol. 28, No. 3. pp 723-740

Neely, K.W., 2002. Arsenic Results from the Statewide Program; 1991-2001. Idaho Department of Water Resources Technical Summary.

Nickson, R.T., McArthur, J.M., Ravenscroft, P., Burgess, W.G., Ahmed, K.M., 2000. Mechanism of Arsenic Release to Groundwater, Bangladesh and West Bengal. *Applied Chemistry* Vol 15, pp 403 –413.

Parkhurst, D.L., Thorstenson, D.C. and Plummer, L.N., 1980, PHREEQE, A Computer Program for Geochemical Calculations. U.S. Geol. Surv. Water Resources Investigations 80-96, 210p.

Peryea, F.J., 1991. Phosphate-Induced release of Arsenic from Soils Contaminated with Lead Arsenate. *Soil Sci. Soc. Am. J.* Vol. 55, pp.1301-1306

Peters S. C. and Blum J.D. 2003, The Source and Transport of Arsenic in a Bedrock Aquifer, New Hampshire. *Applied Geochemistry* 18, 1773-1787.

Pierce, M.L., Moore, C.B., 1992. Adsorption of Arsenite and Arsenate on Amorphous Iron Hydroxide. *Water Research* Vol. 16, pp. 1247 to 1253.

Raymahashay, B.C., Khare, A.S., 2003. The Arsenic Cycle in Late Quaternary Fluvial Sediments: Mineralogical Considerations. *Current Science*, Vol 84, No. 8., pp 1102 – 1104.

von Bromssen, M., 1999. Genesis of High Arsenic Groundwater in the Bengal Delta Plains, West-Bengal and Bangladesh. Department of Civil and Environmental Engineering, Royal Institute of Technology, Stockholm, Sweden.

Western Regional Climate Center (WRCC), 2001, Regional Summary. 2215 Reggio Parkway, Reno Nevada, 89512.

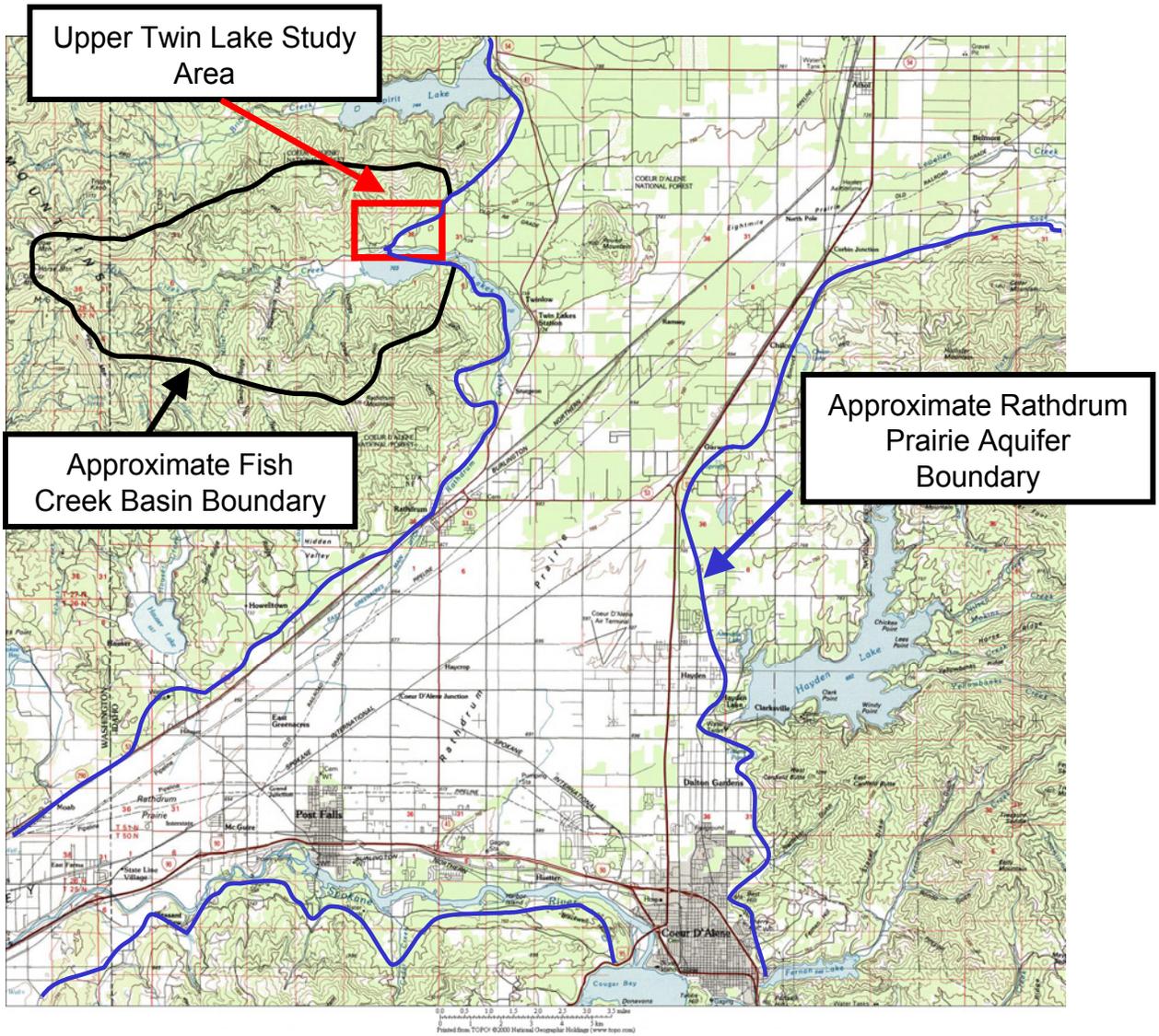


Figure 1. Upper Twin Lake Study Area Vicinity Map

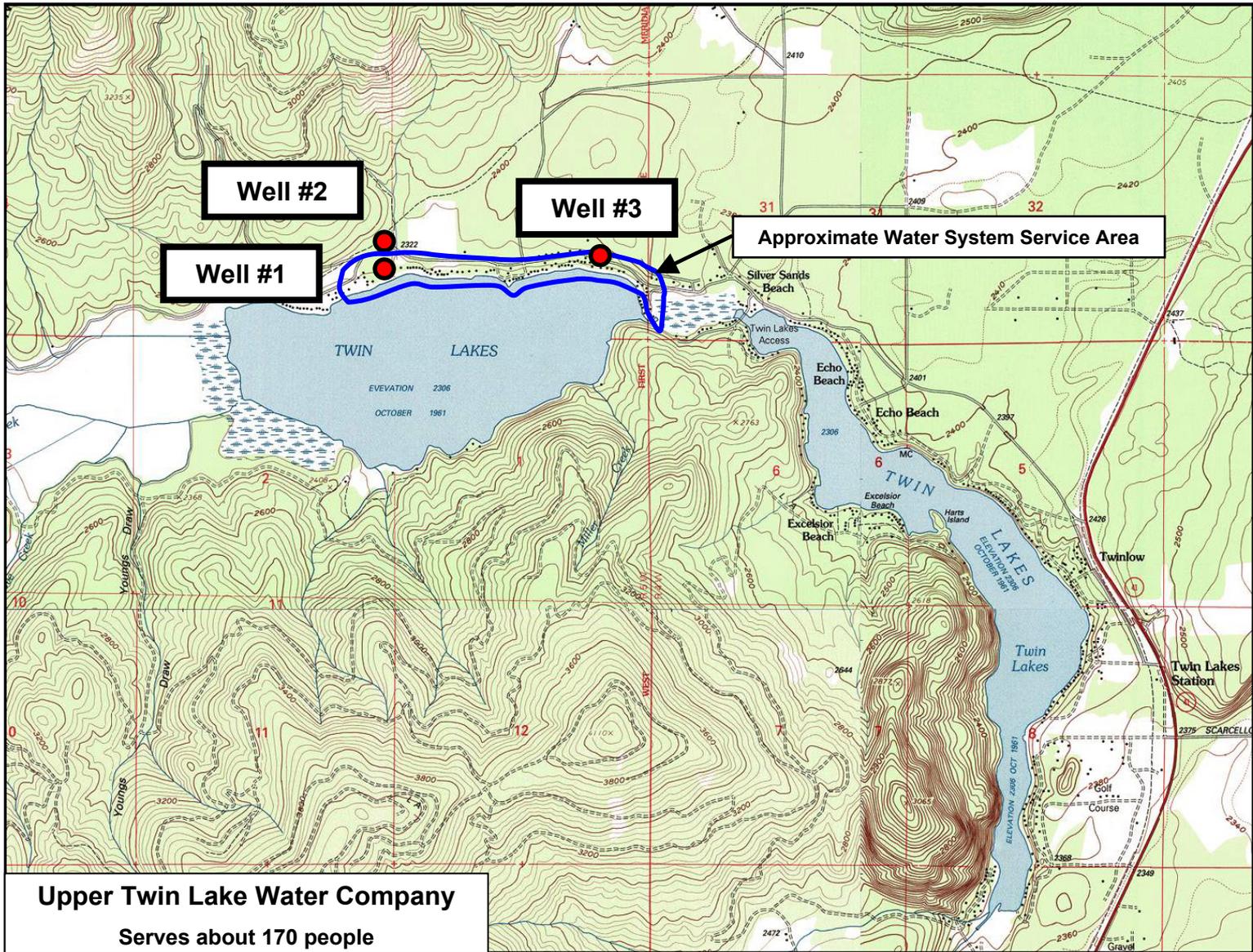
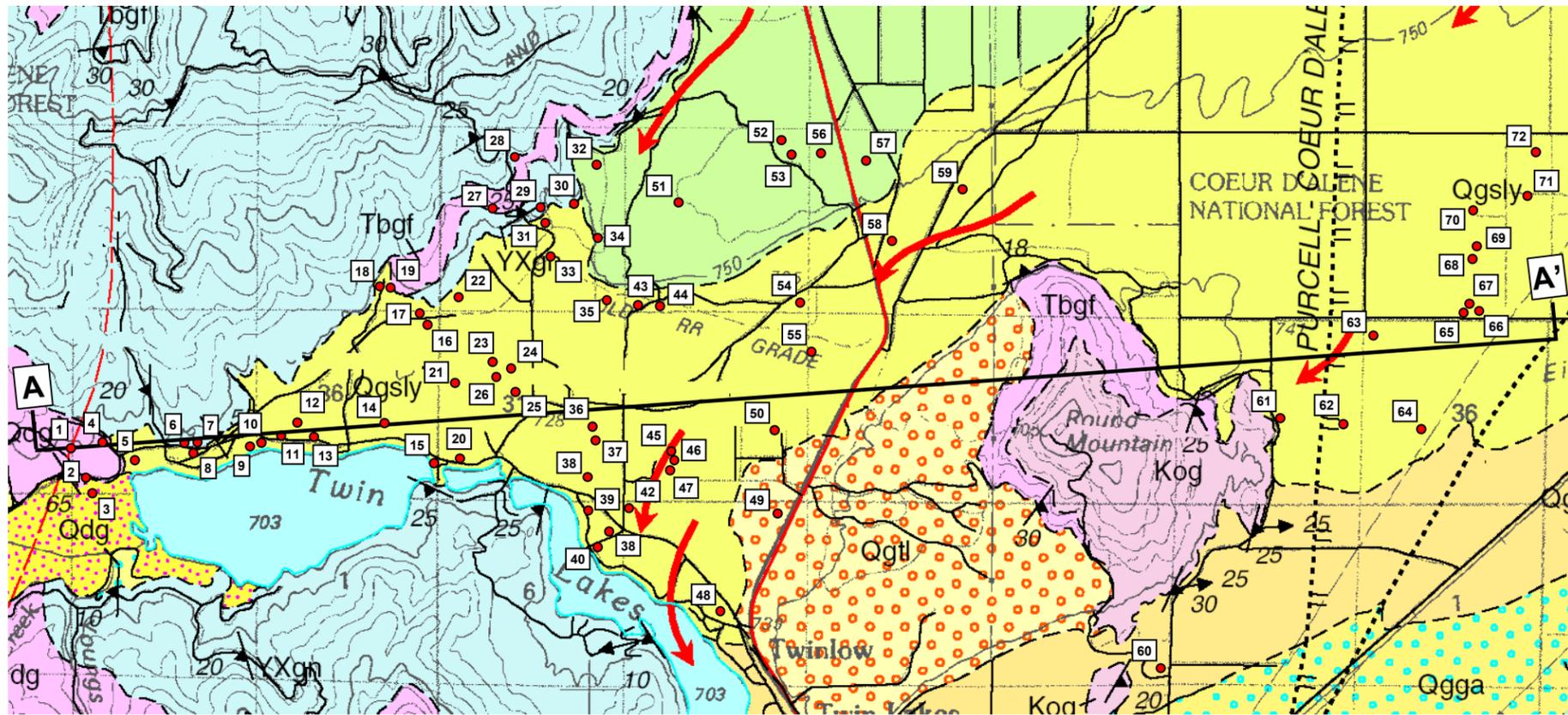


Figure 2. Upper Twin Lake Study Area Vicinity Map



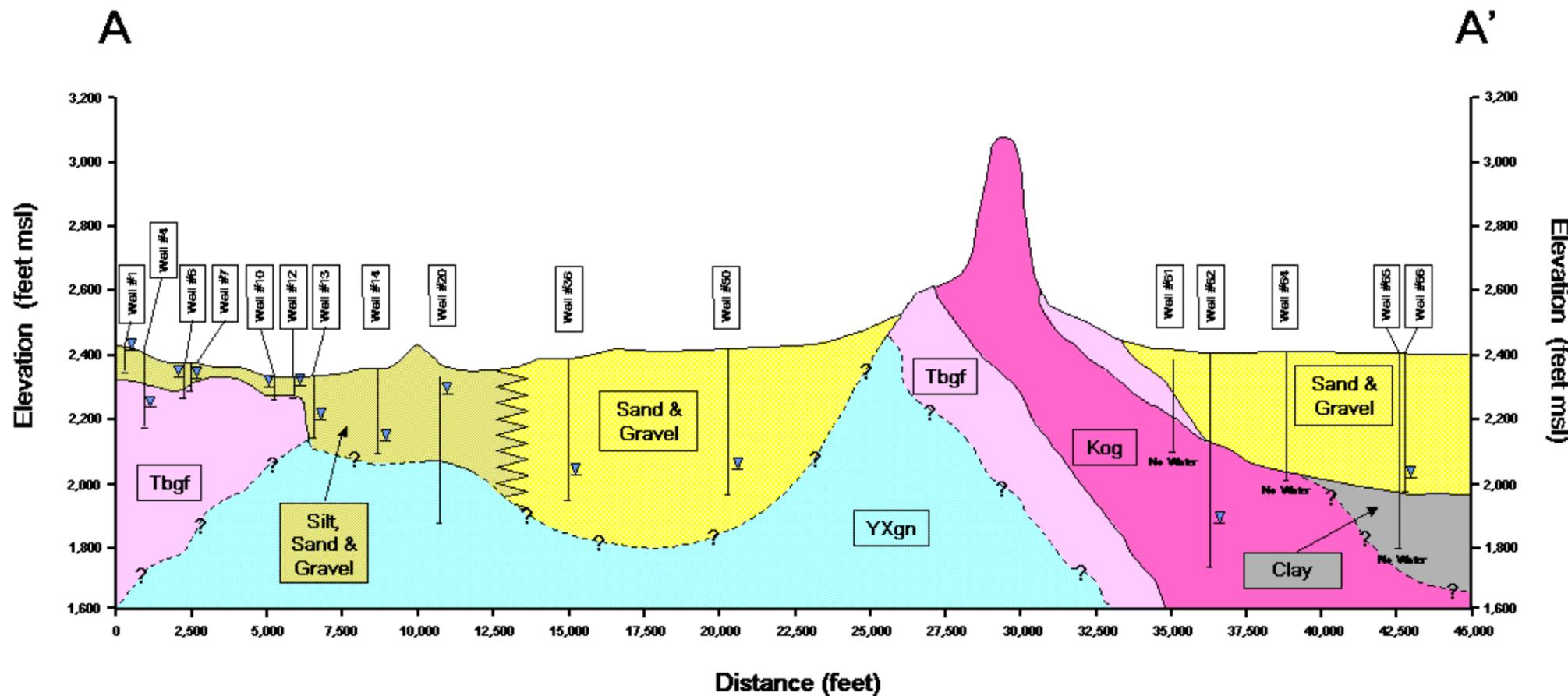


### Map Units

- Silt, Sand & Gravel
  - Sand & Gravel
  - Tbgf
  - Kog
  - YXgn
  - 64
- } Qgsly Gravel of Spirit Lake (Pleistocene)  
 } Fine-grained biotite granite (Eocene)  
 } Orthogneiss (Cretaceous)  
 } Gneiss of the Priest Rapid River metamorphic complex (Proterozoic)  
 } Water well (report is referenced and included in Appendix B)

Reference: Lewis et al., 2002, Geologic Map of the Coeur d'Alene 30 x60 Minute Quadrangle. Idaho Geological Survey.

Figure 4a



Geologic cross section of the Twin Lake area based on Lewis et al, 2002.

Vertical Exaggeration = 12.5x

Figure 4b

Figures 4a & b. Geologic Map and Cross section of the Upper Twin Lake Study Area

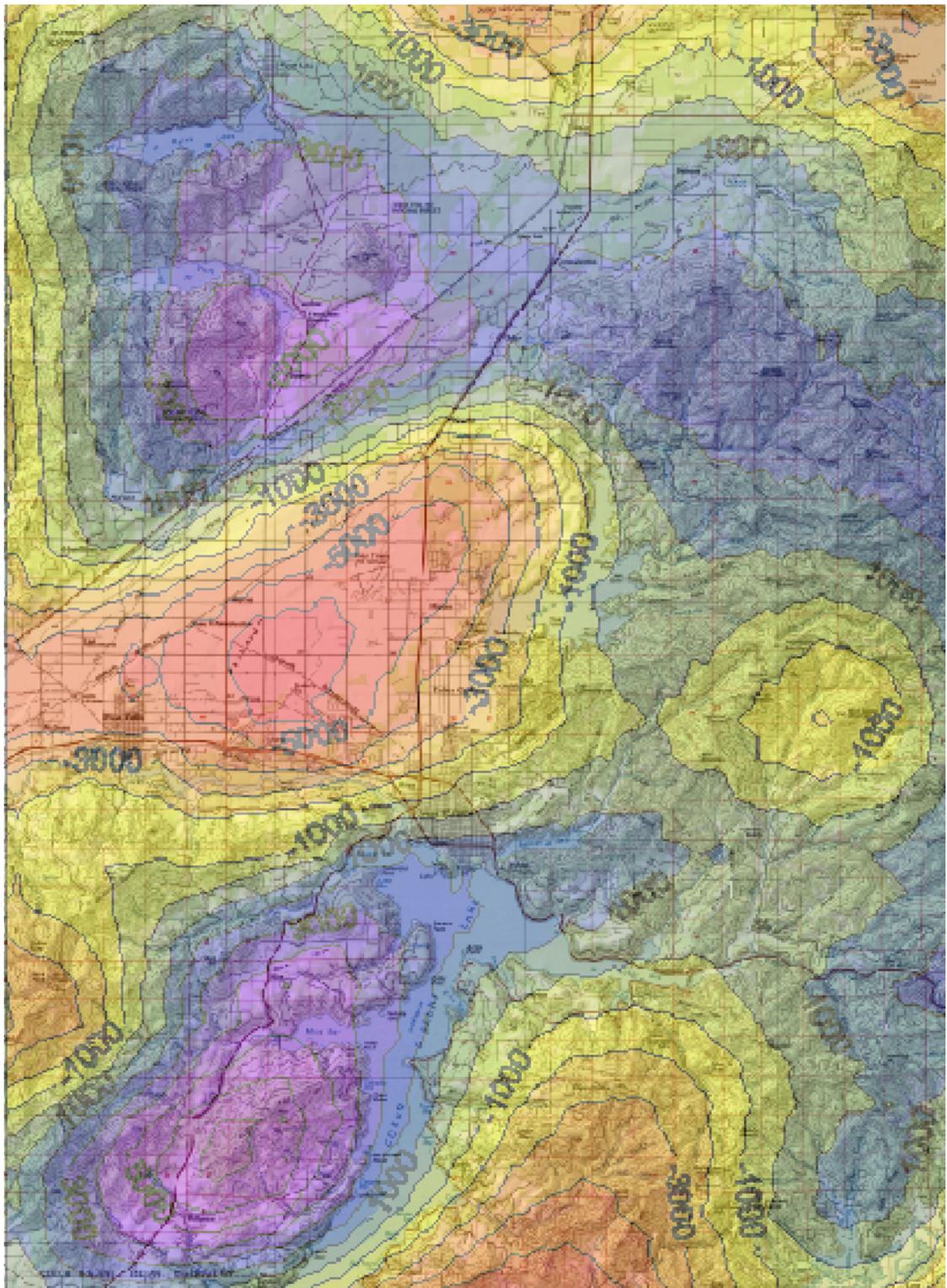
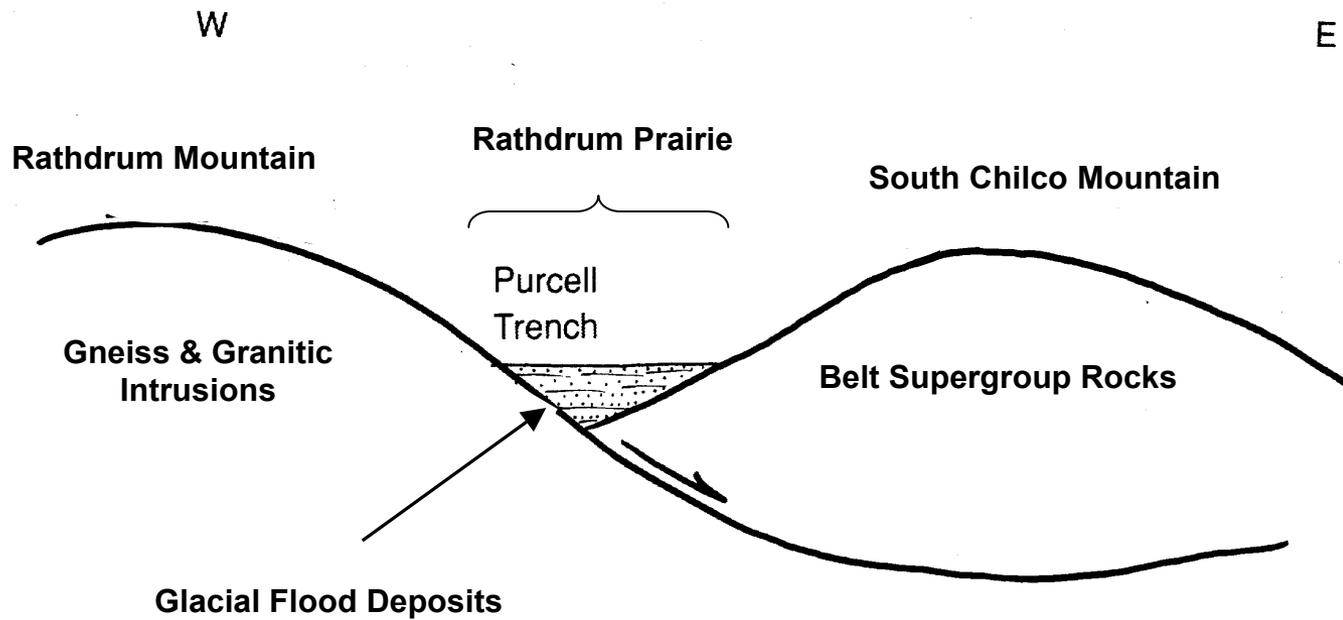
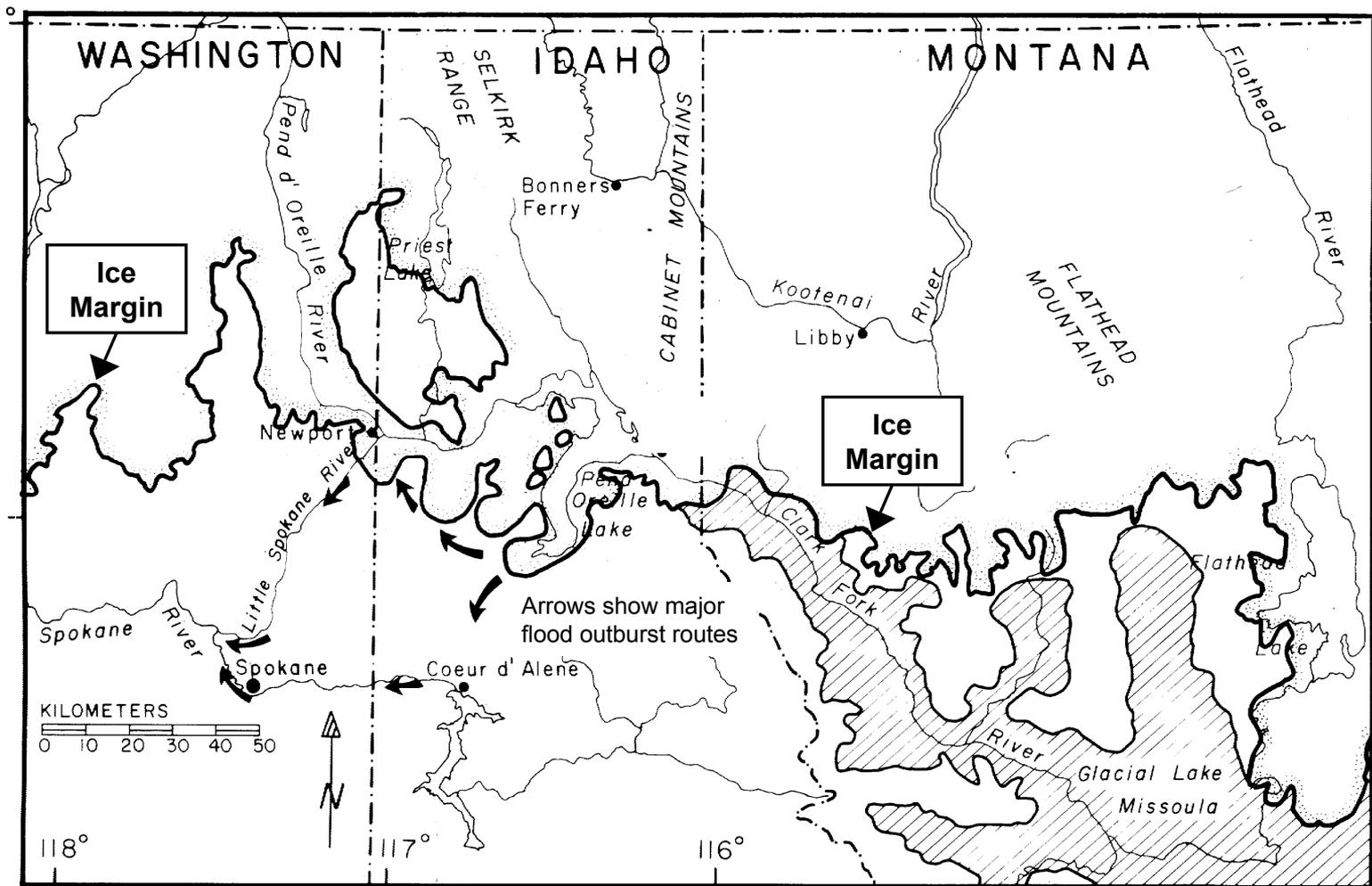


Figure 5. Rathdrum Prairie Residual Bouguer Gravity Map. All values are in milliGals.



Reference: Modified from Alt, Hyndman, 1995

Figure 6. Diagrammatic Geologic Cross Section of the Rathdrum Prairie



Reference: Breckenridge, 1989

Figure 7. Southern Margin of Cordilleran Glaciation

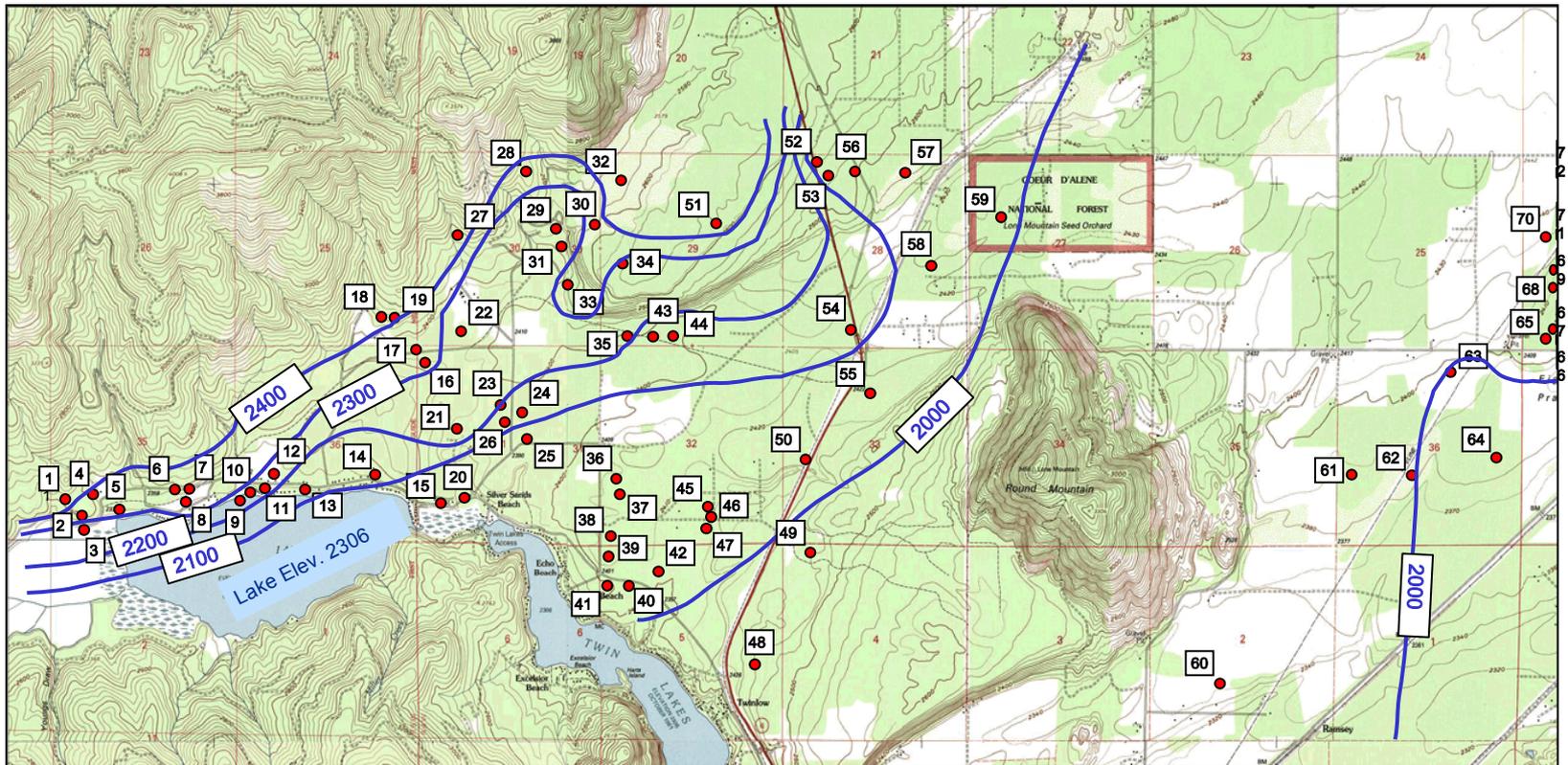
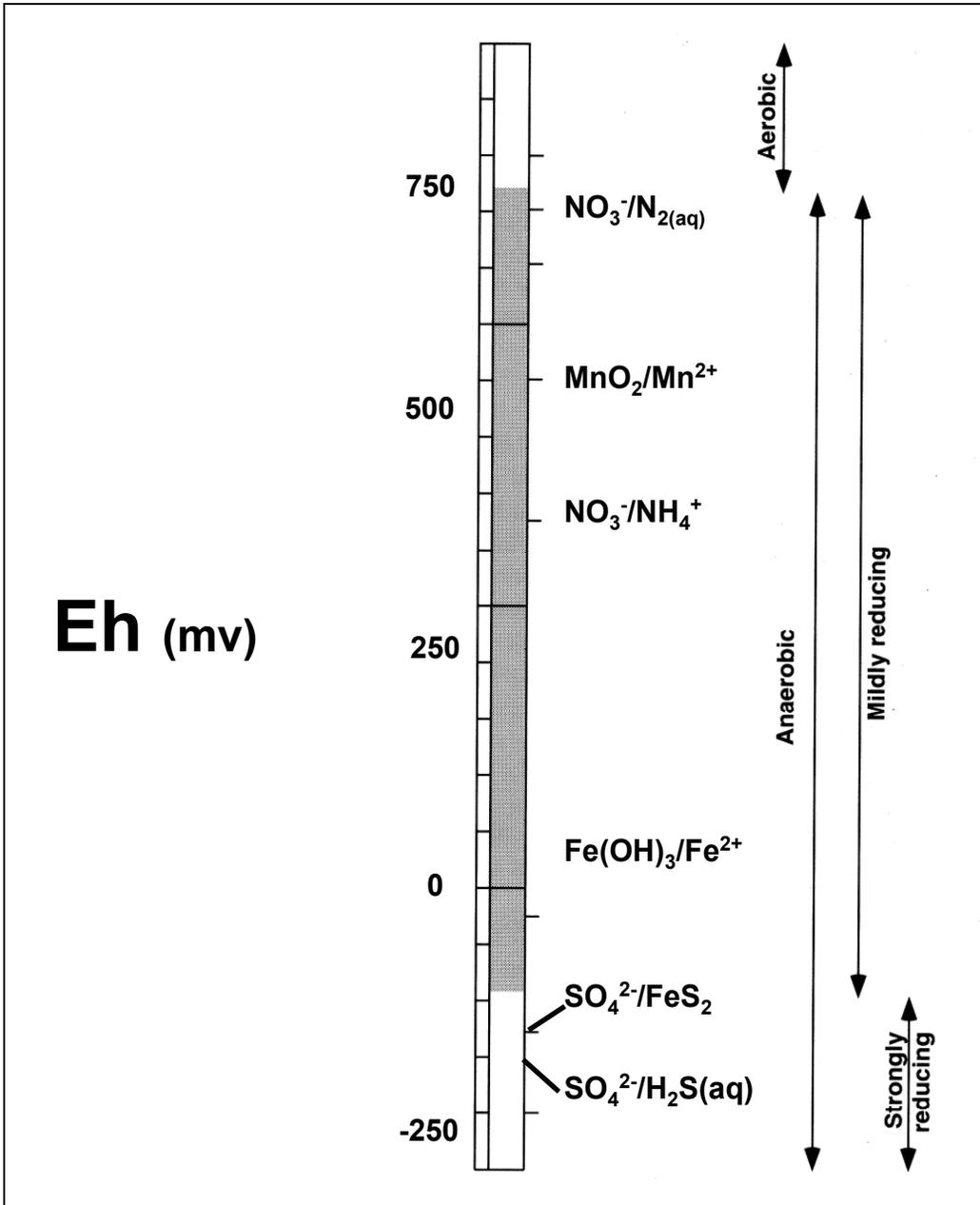


Figure 8. Ground Water Contour Map of the Upper Twin Lake Vicinity



Reference: Hounslow, H., 1995. Water Quality Data: Analysis and Interpretation

Figure 9. Eh Sequence for Common Redox Pairs

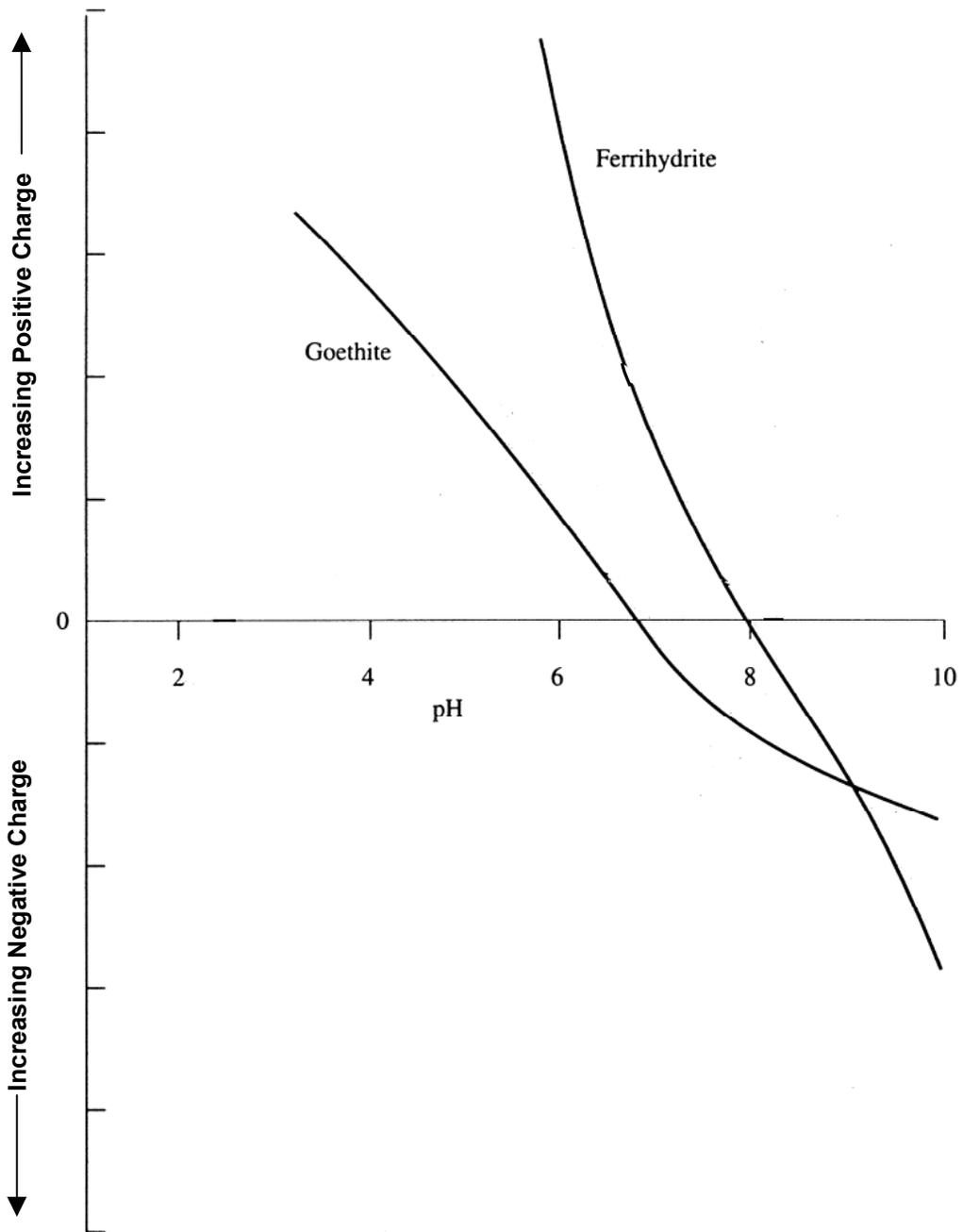


Figure 10. pH vs. Surface Charge for Iron (Hydr)oxides

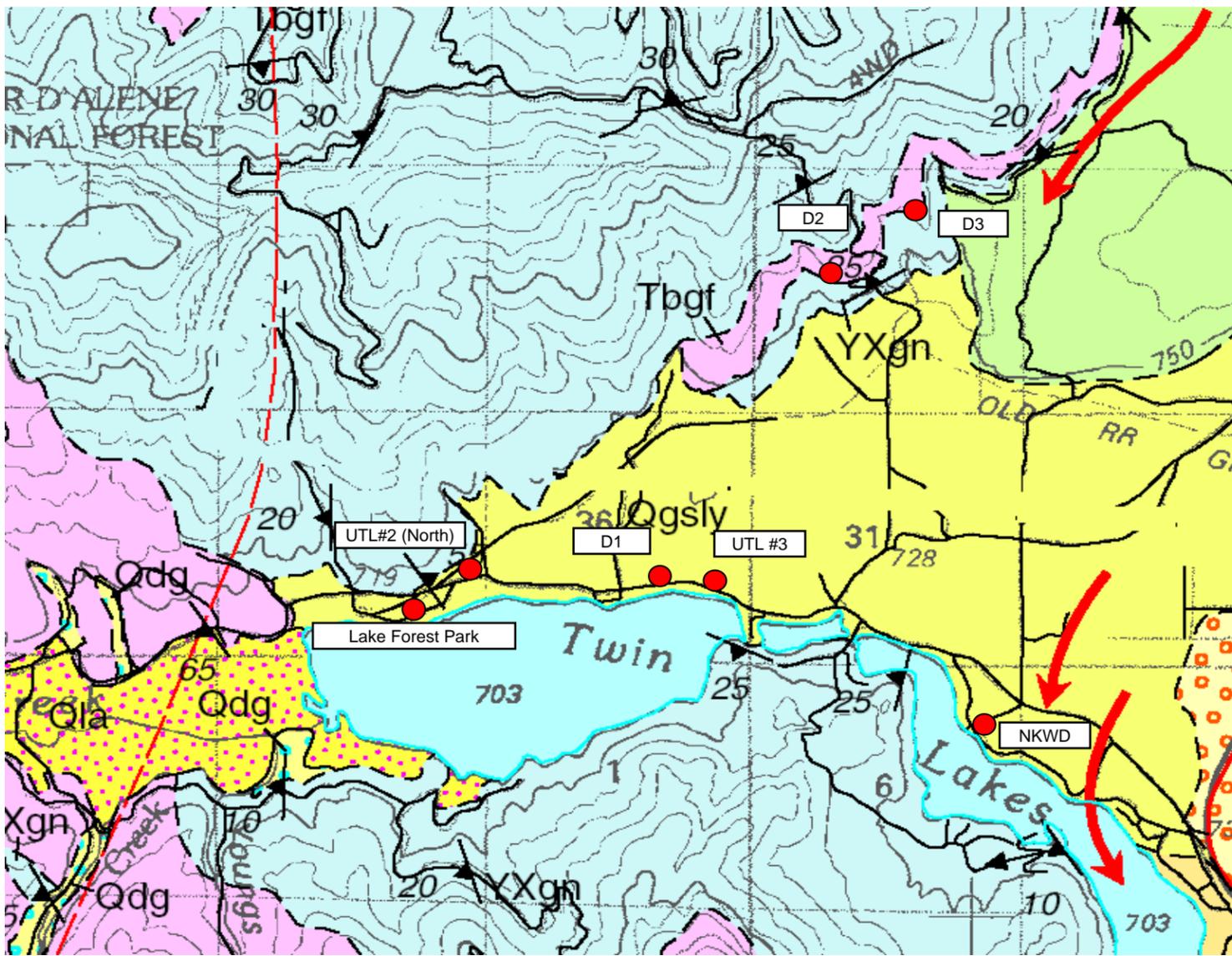


Figure 11. Location of Sampled Wells in the Upper Twin Lake Study Area

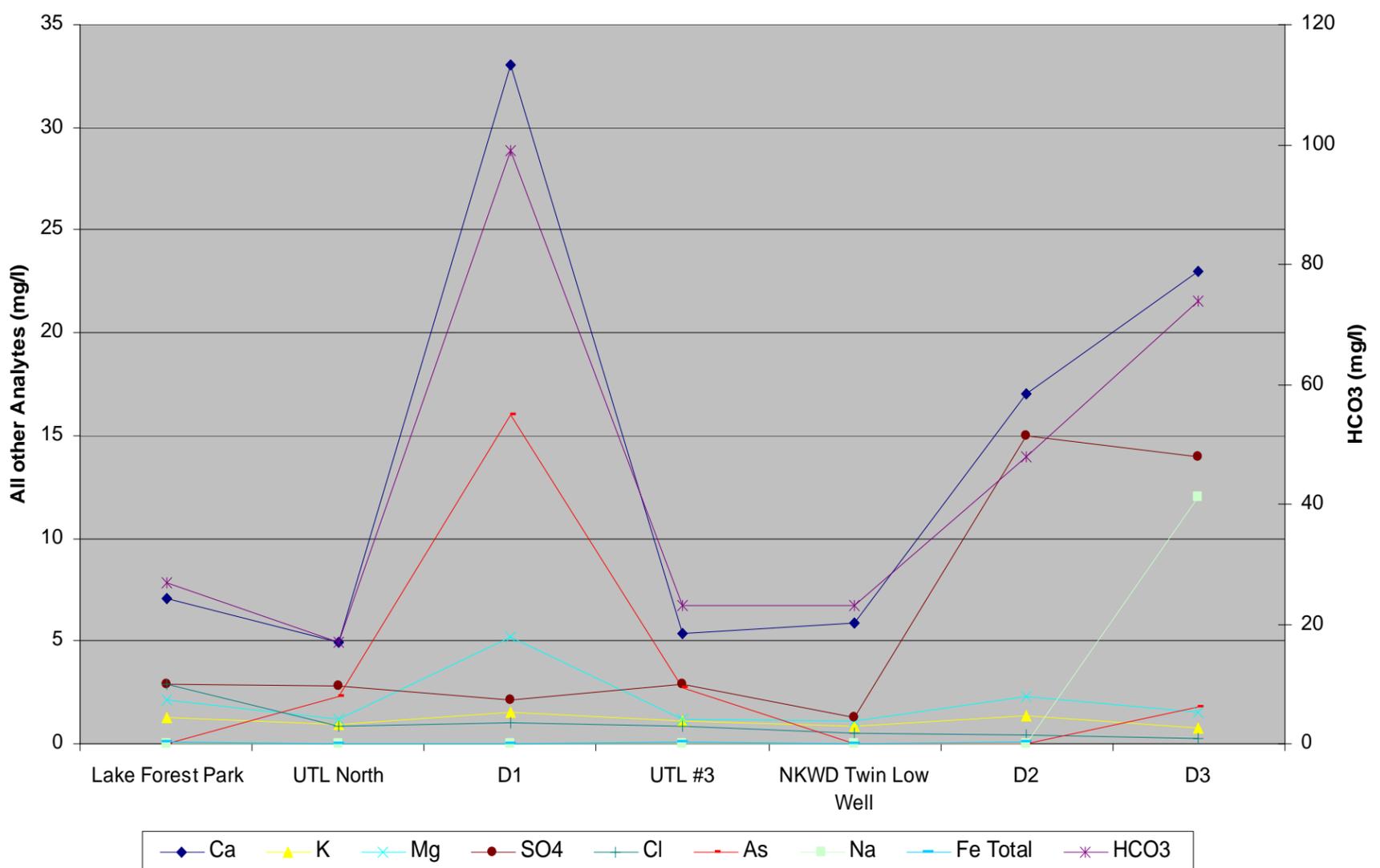


Figure 12. Analytical results of Wells Sampled in the Upper Twin Lake Study Area

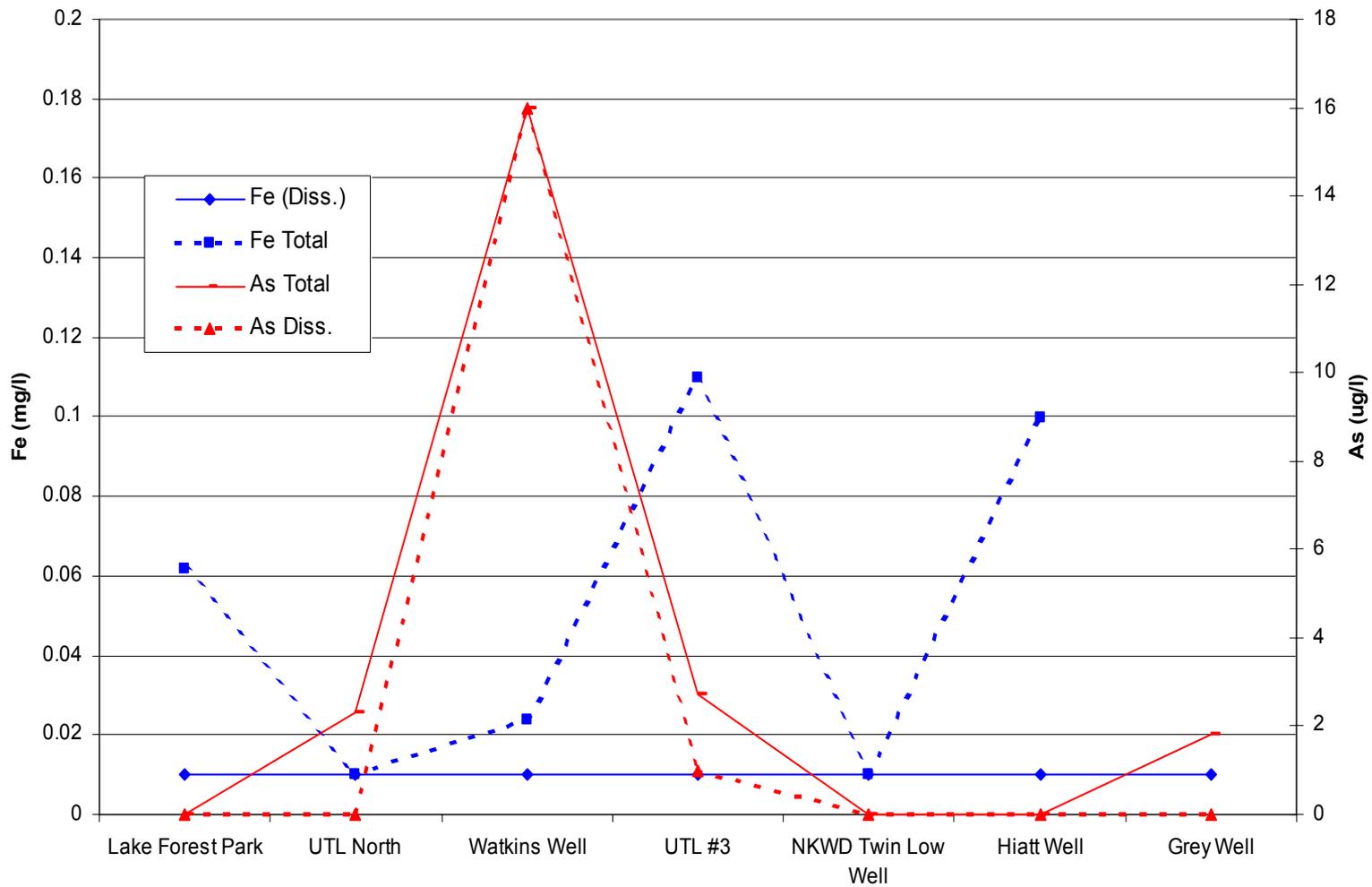


Figure 13. Dissolved & Total iron and Arsenic Analytical Results – Upper Twin Lake Study Area

### Well D1

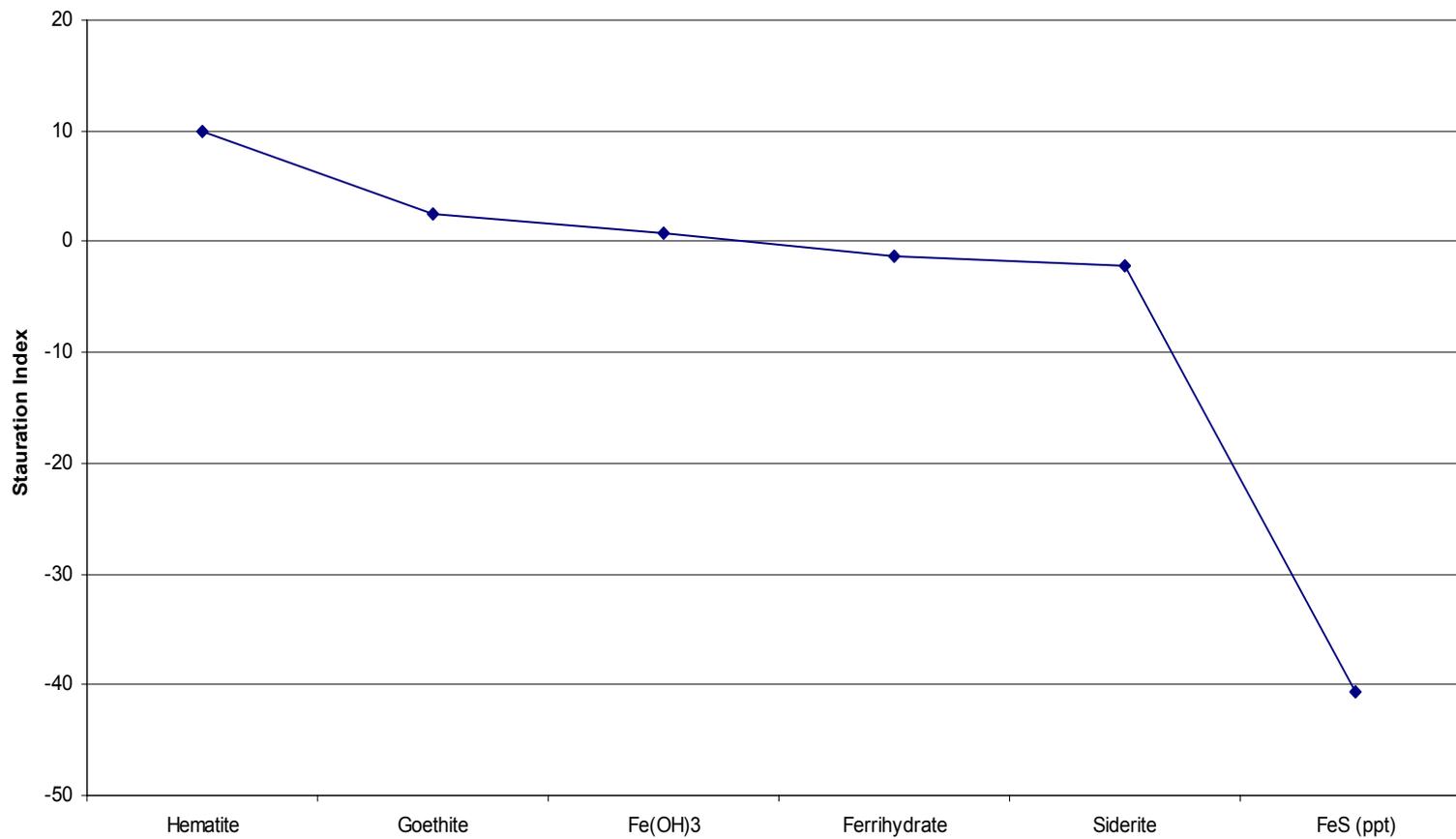


Figure 14. PHREEQE modeling results for water obtained from Well D1.

## Upper Twin Lakes Water Company

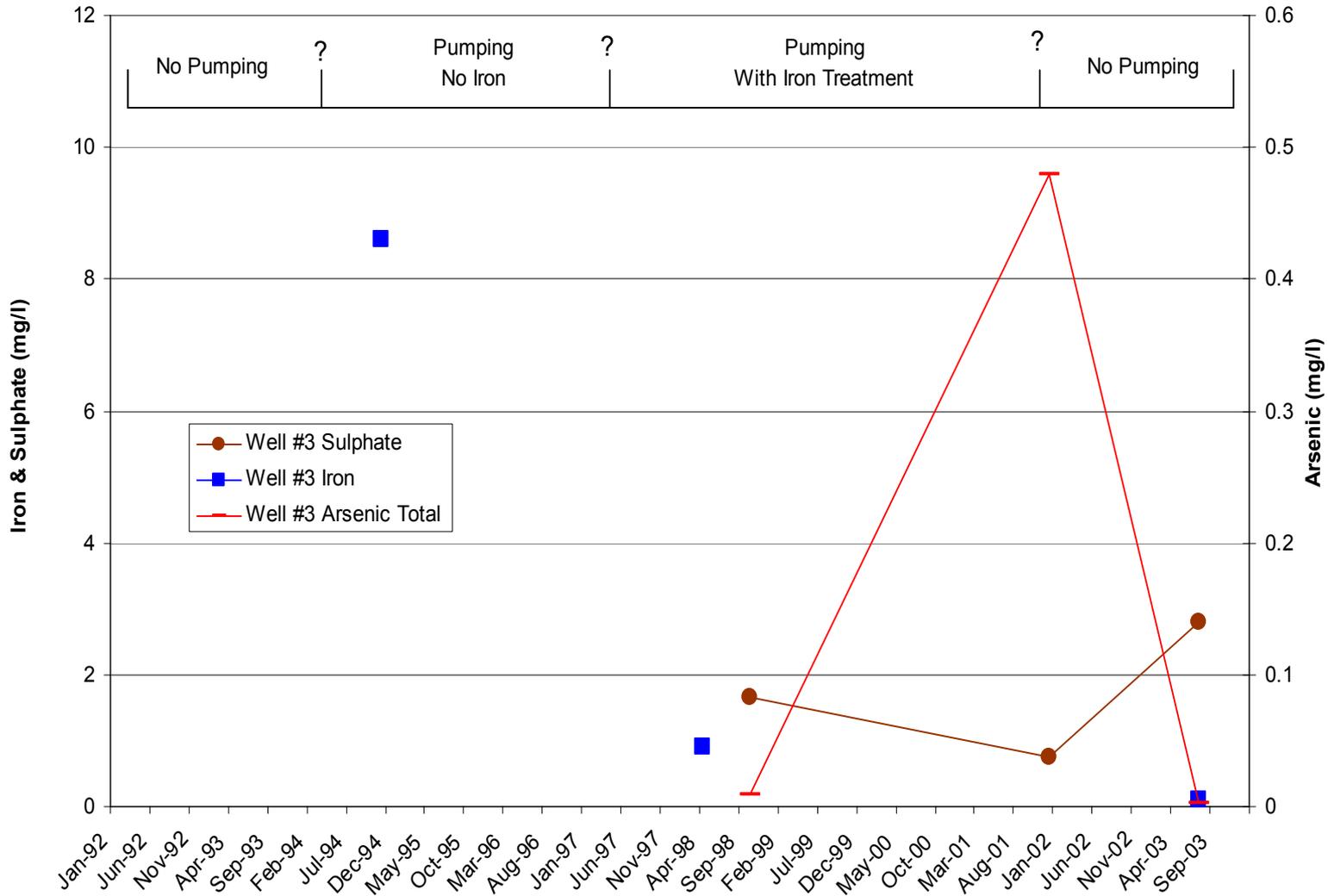


Figure 15. Selected Historical Analytical Results from UTL#3

### Upper Twin Lake Water Company Well #3

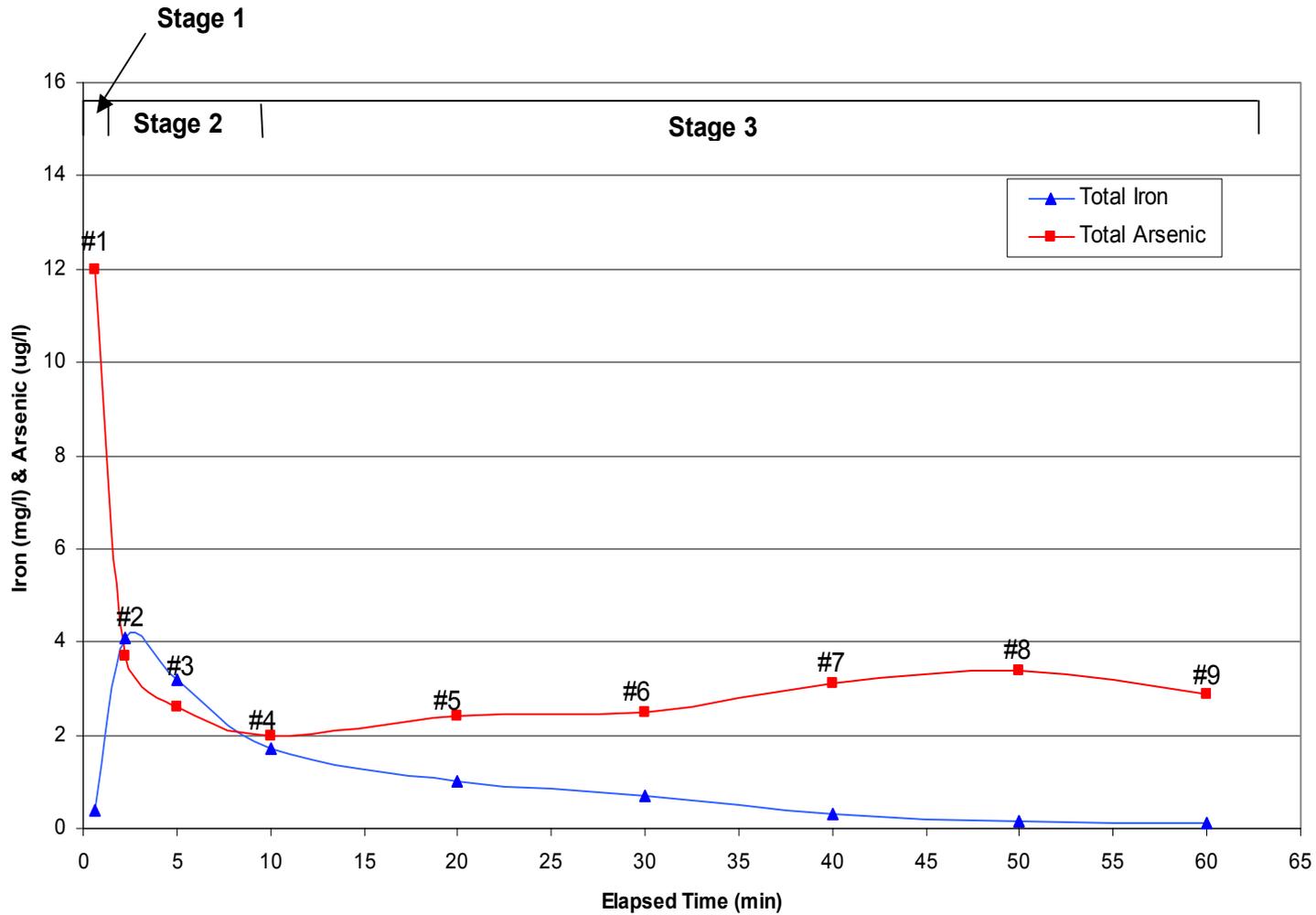


Figure 16. Analytical Results of Time Series Sampling Event – UTL#3

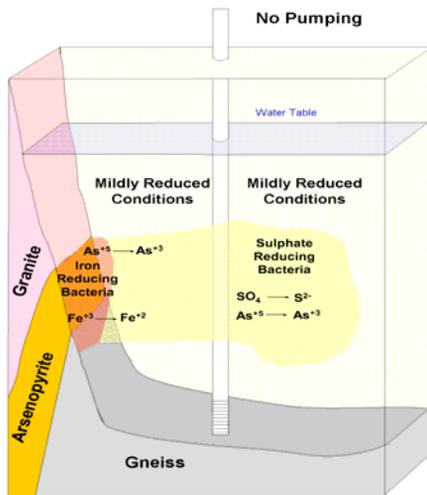


Fig.17a. Time=T1.

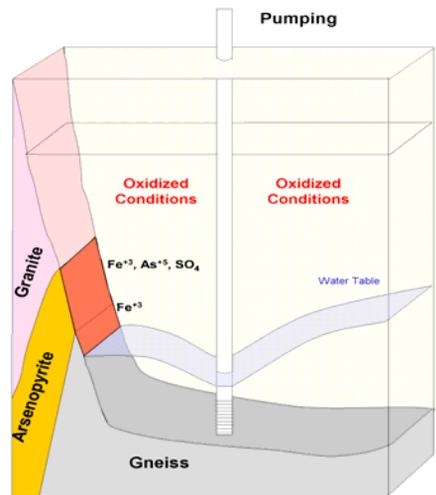


Fig.17b. Time=T2.

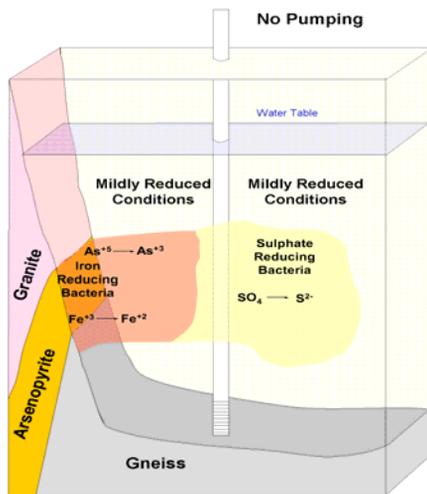


Fig.17c. Time=T3.

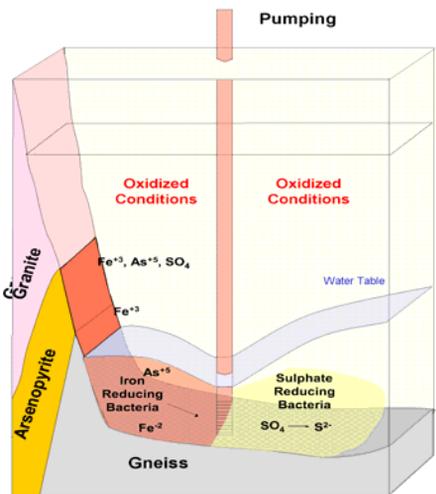


Fig.17d. Time=T4.

Figure 17. Hydrogeochemical conceptual model for UTL #3. Time increases from T1 to T10.

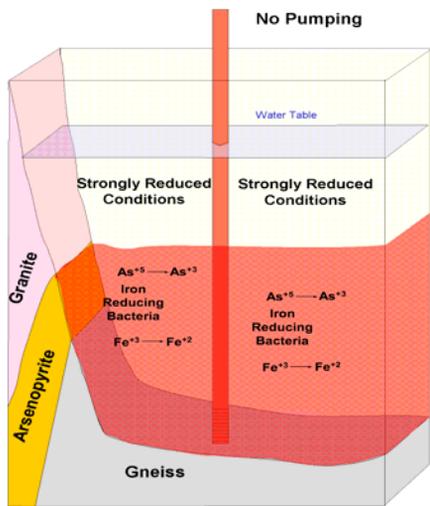


Fig.17e. Time=T5.

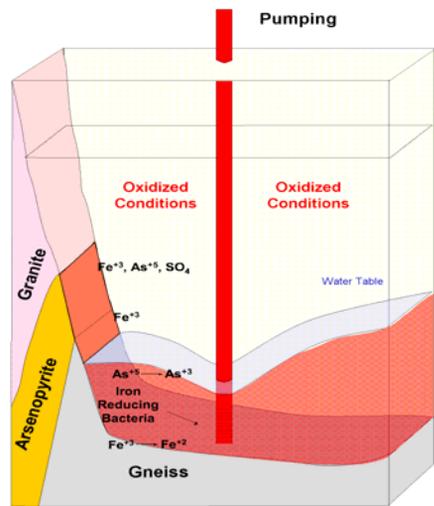


Fig.17f. Time=T6.

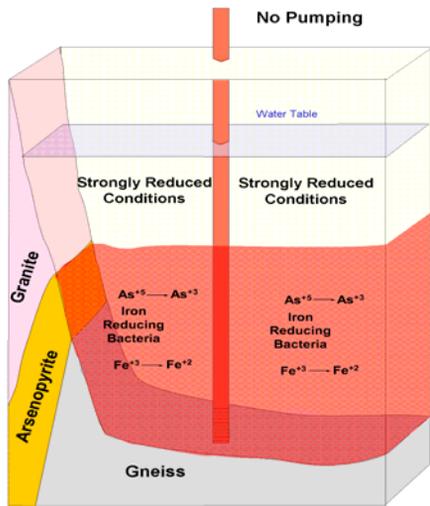


Fig.17g. Time=T7.

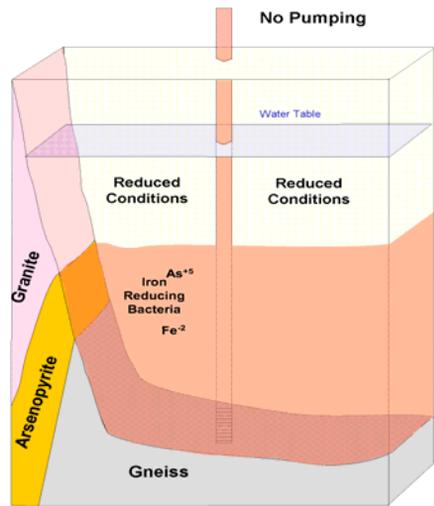


Fig.17h. Time=T8.

Figure 17. Cont.

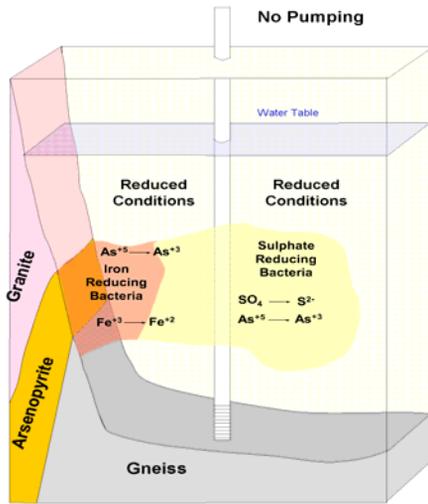


Fig.17i. Time=T9.

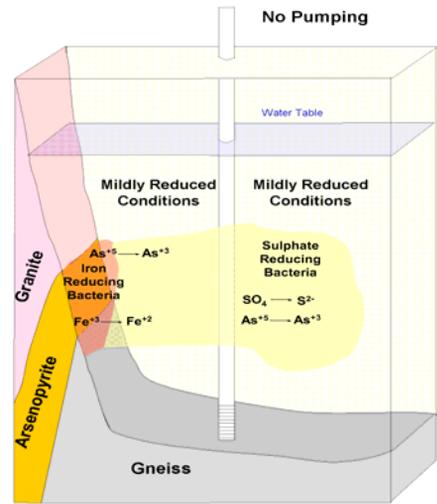


Fig.17j. Time=T10.

Figure 17. Cont.

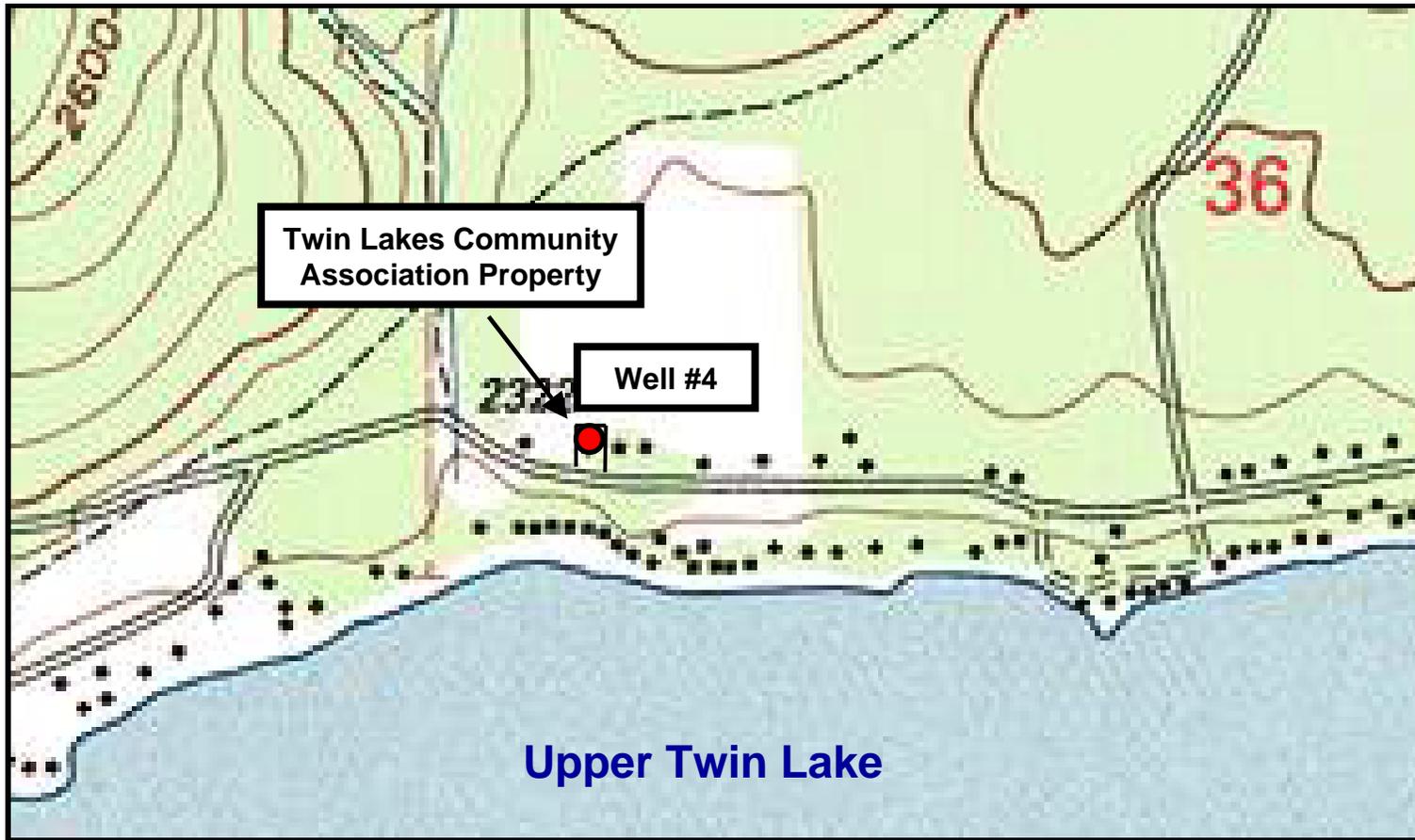


Figure 18. Potential Drill Site for UTL water Well #4

**Table 1- Upper Twin Lakes Vicinity Water Well Characteristics**

Well # <sup>1</sup>	Well Head Elevation <sup>2</sup> (ft)	Completion Depth (ft)	Completion Elevation (ft msl)	Material at Depth <sup>3</sup>	SWL <sup>4</sup>		Well Capacity <sup>5</sup> (gpm)	Specific Capacity (gpm/ft)
					bgs (ft)	(ft msl)		
1	2428	38	2,390	U	10	2,418	30	1.15
2	2376	60	2,316	U	9	2,367	-	-
3	2316	100	2,216	U	25	2,291	60	6.00
4	2390	223	2,167	B	63	2,327	1	0.01
5	2335	52	2,283	B	10	2,325	5	0.16
6	2391	75	2,316	B	18	2,373	8	0.13
7	2389	52	2,337	B	22	2,367	12	0.63
8	2356	103	2,253	B	30	2,326	20	0.48
9	2312	58	2,254	U	35	2,277	22	2.75
10	2321	67	2,254	U	39	2,283	22	1.91
11	2317	60	2,257	U	42	2,275	30	3.00
12	2332	62	2,270	U	37	2,295	20	4.00
13	2318	192	2,126	U	149	2,169	22	44.00
14	2349	260	2,089	U	220	2,129	22	44.00
15	2339	225	2,114	U	201	2,138	10	5.00
16	2405	101	2,304	B	16	2,389	14	0.16
17	2405	262	2,143	B	227	2,178	20	10.00
18	2443	340	2,103	B	32	2,411	3	-
19	2454	100	2,354	B	10	2,444	1	-
20	2326	468	1,858	B	40	2,286	34	-
21	2365	185	2,180	B	85	2,280	1	0.03
22	2398	380	2,018	B	180	2,218	40	0.20
23	2386	645	1,741	B	366	2,020	60	0.22
24	2390	346	2,044	B	150	2,240	80	0.42
25	2381	423	1,958	U	373	2,008	38	75.00
26	2382	690	1,692	B	300	2,082	7	0.02
27	2631	240	2,391	B	20	2,611	17	0.10
28	2800	665	2,135	B	NA	-	5	-
29	2445	605	1,840	B	316	2,129	5	-
30	2454	425	2,029	B	50	2,404	3	-
31	2426	815	1,611	B	300	2,126	2	0.00
32	2579	206	2,373	B	63	2,516	10	-
33	2411	200	2,211	B	60	2,351	2	0.01
34	2522	460	2,062	B	275	2,247	6	-
35	2413	296	2,117	U	216	2,197	35	70.00
36	2411	437	1,974	U	393	2,018	10	0.24
37	2415	445	1,970	U	405	2,010	36	-
38	2399	434	1,965	U	399	2,000	15	30.00
39	2378	445	1,933	U	395	1,983	15	-
40	2362	355	2,007	U	322	2,040	15	-
41	2385	401	1,984	U	-	-	42	84.00
42	2409	439	1,970	U	405	2,004	20	0.67
43	2407	300	2,107	U	NA	-	0	-
44	2402	445	1,957	U	403	1,999	15	30.00
45	2415	460	1,955	U	380	2,035	30	-
46	2414	300	2,114	U	NA	NA	-	-
47	2412	441	1,971	U	385	2,027	15	0.33
48	2415	462	1,953	U	425	1,990	-	-
49	2441	504	1,937	U	450	1,991	30	-
50	2425	450	1,975	U	393	2,032	10	0.21
51	2628	305	2,323	B	27	2,601	3	0.01
52	2615	700	1,915	U	600	2,015	20	-
53	2596	680	1,916	U	630	1,966	30	-
54	2415	272	2,143	U	244	2,171	10	20.00
55	2428	438	1,990	U	395	2,033	20	0.50
56	2542	427	2,115	U	390	2,152	35	-
57	2512	540	1,972	U	479	2,033	30	0.73
58	2420	449	1,971	U	408	2,012	15	-
59	2434	460	1,974	U	419	2,015	10	20.00
60	2346	300	2,046	B	120	2,226	16	0.09
61	2395	340	2,055	B	NA	-	-	-
62	2395	700	1,695	B	540	1,855	1	-
63	2415	426	1,989	U	397	2,018	25	50.00
64	2392	415	1,977	B	NA	-	-	-
65	2411	613	1,798	U	NA	-	-	-
66	2411	428	1,983	U	386	2,025	40	-
67	2414	438	1,976	U	408	2,006	20	0.74
68	2429	485	1,944	U	410	2,019	30	-
69	2431	445	1,986	U	415	2,016	20	0.11
70	2434	458	1,976	U	410	2,024	20	0.44
71	2435	443	1,992	U	400	2,035	10	-
72	2441	493	1,948	U	NA	-	25	-

Footnotes:

<sup>1</sup>See Figure 4 for well location

<sup>2</sup>Well locations estimated from descriptions in IDWR water well reports.

Approximate elevations were estimated relative to elevations presented on 7.5 minute USGS quadrangle maps of the area.

<sup>3</sup>U = Glacial/Alluvial material, B = Bedrock.

<sup>4</sup>SWL = Static Water Level

<sup>5</sup>As reported on the water well reports at the time of drilling

**Table 2- Upper Twin Lakes Vicinity Analytical Results**

Well Name	Well No. <sup>1</sup>	Well Depth (ft)	Ca (mg/l)	Na (mg/l)	K (mg/l)	Mg (mg/l)	HCO <sub>3</sub> (mg/l)	SO <sub>4</sub> (mg/l)	Cl (mg/l)	Fe Diss.	Fe Total	As Diss.	As Total	pH	Turbidity (NTU)	Conducta mmho
Lake Forest Park	3	100	7.1	0	1.3	2.1	27	2.9	2.9	0.01	0.062	0.25	0	6.3	0	78
UTL North	12	58	4.9	0	0.93	1.2	17	2.8	0.85	0.01	0.01	0.25	2.3	5.9	0	50
D1 (Watkins Well)	13	192	33	0	1.5	5.2	99	2.1	1	0.01	0.024	16	16	7.9	0	220
UTL #3	14	262	5.4	0	1.1	1.2	23	2.9	0.86	0.01	0.11	1	2.7	5.8	0.36	57
NKWD Twin Low Well	40	439	5.9	0	0.81	1.1	23	1.3	0.47	0.01	0.01	0.25	0	6.9	0.23	52
D2 (Hiatt Well)	27	200	17	0	1.4	2.3	48	15	0.42	0.01	0.1	0.25	0	6.8	0	140
D3 (Grey Well)	NA	NA	23	12	0.79	1.5	74	14	0.27	0.01	-	0.25	1.8	7.6	0.1	190

<sup>1</sup> See Appendix B for Water Well reports

**Table 3- Analytical Results and Water Quality Parameters of UTL #3 Time Series Sampling Event**

Sample #	Elapsed Time (min)	Total Iron (mg/l)	Total Arsenic (mg/l)	pH	Eh (mv)	Temp (Cel.)
1	0.65	0.39	12		-18	30.6
2	2.25	4.1	3.7	6.14	52	26.1
3	5.00	3.2	2.6	6.07	68	23.3
4	10.00	1.7	2	5.99	106	22.9
5	20.00	1	2.4	5.87	144	22.5
6	30.00	0.71	2.5	5.84	185	22.1
7	40.00	0.3	3.1	5.82	197	21.5
8	50.00	0.16	3.4	5.82	212	20.9
9	60.00	0.12	2.9	5.81	216	20.5

**APPENDIX A**  
**UTL Water System Water Well Reports**

# WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

<p><b>1. WELL OWNER</b></p> <p>Name <u>UPPER TWIN LAKES WATER CO. INC.</u></p> <p>Address <u>Twin Lakes, Id. 83858</u></p> <p>Owner's Permit No. <u>95-89-N-16</u></p>	<p><b>7. WATER LEVEL</b></p> <p>Static water level <u>37</u> feet below land surface.</p> <p>Flowing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No G.P.M. flow _____</p> <p>Artesian closed-in pressure _____ p.s.i.</p> <p>Controlled by: <input type="checkbox"/> Valve <input type="checkbox"/> Cap <input type="checkbox"/> Plug</p> <p>Temperature _____ °F. Quality _____</p> <p><small>Describe artesian or temperature zones below.</small></p>																																														
<p><b>2. NATURE OF WORK</b></p> <p><input checked="" type="checkbox"/> New well <input type="checkbox"/> Deepened <input type="checkbox"/> Replacement</p> <p><input type="checkbox"/> Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)</p>	<p><b>8. WELL TEST DATA</b></p> <p><input type="checkbox"/> Pump <input checked="" type="checkbox"/> Bailer <input type="checkbox"/> Air <input type="checkbox"/> Other _____</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Discharge G.P.M.</th> <th>Pumping Level</th> <th>Hours Pumped</th> </tr> <tr> <td style="text-align: center;"><u>20</u></td> <td style="text-align: center;"><u>42</u></td> <td style="text-align: center;"><u>2</u></td> </tr> </table>	Discharge G.P.M.	Pumping Level	Hours Pumped	<u>20</u>	<u>42</u>	<u>2</u>																																								
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<p><b>3. PROPOSED USE</b></p> <p><input type="checkbox"/> Domestic <input type="checkbox"/> Irrigation <input type="checkbox"/> Test <input checked="" type="checkbox"/> Municipal</p> <p><input type="checkbox"/> Industrial <input type="checkbox"/> Stock <input type="checkbox"/> Waste Disposal or Injection</p> <p><input type="checkbox"/> Other _____ (specify type)</p>	<p><b>9. LITHOLOGIC LOG</b></p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Bore Diam.</th> <th colspan="2">Depth</th> <th rowspan="2">Material</th> <th colspan="2">Water</th> </tr> <tr> <th>From</th> <th>To</th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>10"</td> <td>0'</td> <td>6'</td> <td>SILT &amp; SAND</td> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td>10"</td> <td>6'</td> <td>18'</td> <td>SILT &amp; SAND</td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td>6"</td> <td>18'</td> <td>28'</td> <td>SILT &amp; SAND</td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td>6"</td> <td>28'</td> <td>38'</td> <td>SAND, SILT, &amp; GRAVEL</td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td>6"</td> <td>38'</td> <td>57'</td> <td>SAND, SILT &amp; GRAVEL</td> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td>6"</td> <td>57'</td> <td>62'</td> <td>DECOMPOSED GRANITE</td> <td></td> <td style="text-align: center;">X</td> </tr> </tbody> </table>	Bore Diam.	Depth		Material	Water		From	To	Yes	No	10"	0'	6'	SILT & SAND	X		10"	6'	18'	SILT & SAND		X	6"	18'	28'	SILT & SAND		X	6"	28'	38'	SAND, SILT, & GRAVEL		X	6"	38'	57'	SAND, SILT & GRAVEL	X		6"	57'	62'	DECOMPOSED GRANITE		X
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<p><b>4. METHOD DRILLED</b></p> <p><input type="checkbox"/> Rotary <input type="checkbox"/> Air <input type="checkbox"/> Hydraulic <input type="checkbox"/> Reverse rotary</p> <p><input checked="" type="checkbox"/> Cable <input type="checkbox"/> Dug <input type="checkbox"/> Other _____</p>	<div style="border: 2px solid black; padding: 10px; font-size: 2em; font-weight: bold; transform: rotate(-2deg);">             RECEIVED              JUL 14 1989              Department of Water Resources           </div>																																														
<p><b>5. WELL CONSTRUCTION</b></p> <p>Casing schedule: <input checked="" type="checkbox"/> Steel <input type="checkbox"/> Concrete <input type="checkbox"/> Other _____</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Thickness</th> <th>Diameter</th> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td><u>.312</u> inches</td> <td><u>6</u> inches</td> <td><u>2</u> feet</td> <td><u>51</u> feet</td> </tr> <tr> <td><u>.250</u> inches</td> <td><u>5</u> inches</td> <td><u>30</u> feet</td> <td><u>52</u> feet</td> </tr> <tr> <td><u>.250</u> inches</td> <td><u>5</u> inches</td> <td><u>57</u> feet</td> <td><u>62</u> feet</td> </tr> </tbody> </table> <p>Was casing drive shoe used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Was a packer or seal used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Perforated? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>How perforated? <input type="checkbox"/> Factory <input type="checkbox"/> Knife <input type="checkbox"/> Torch</p> <p>Size of perforation _____ inches by _____ inches</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Number</th> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td>_____ perforations</td> <td>_____ feet</td> <td>_____ feet</td> </tr> <tr> <td>_____ perforations</td> <td>_____ feet</td> <td>_____ feet</td> </tr> <tr> <td>_____ perforations</td> <td>_____ feet</td> <td>_____ feet</td> </tr> </tbody> </table> <p>Well screen installed? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Manufacturer's name <u>COOK</u></p> <p>Type _____ Model No. _____</p> <p>Diameter <u>6"</u> Slot size <u>50</u> Set from <u>52</u> feet to <u>57</u> feet</p> <p>Diameter _____ Slot size _____ Set from _____ feet to _____ feet</p> <p>Gravel packed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Size of gravel _____</p> <p>Placed from _____ feet to _____ feet</p> <p>Surface seal depth <u>18"</u> Material used in seal: <input type="checkbox"/> Cement grout</p> <p><input checked="" type="checkbox"/> Bentonite <input type="checkbox"/> Puddling clay <input type="checkbox"/> _____</p> <p>Sealing procedure used: <input type="checkbox"/> Slurry pit <input checked="" type="checkbox"/> Temp. surface casing</p> <p><input type="checkbox"/> Overbore to seal depth</p> <p>Method of joining casing: <input type="checkbox"/> Threaded <input checked="" type="checkbox"/> Welded <input type="checkbox"/> Solvent</p> <p><input type="checkbox"/> Weld</p> <p><input type="checkbox"/> Cemented between strata</p> <p>Describe access port <u>6" WELL CAP</u></p>		Thickness	Diameter	From	To	<u>.312</u> inches	<u>6</u> inches	<u>2</u> feet	<u>51</u> feet	<u>.250</u> inches	<u>5</u> inches	<u>30</u> feet	<u>52</u> feet	<u>.250</u> inches	<u>5</u> inches	<u>57</u> feet	<u>62</u> feet	Number	From	To	_____ perforations	_____ feet	_____ feet	_____ perforations	_____ feet	_____ feet	_____ perforations	_____ feet	_____ feet																		
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<p><b>6. LOCATION OF WELL</b></p> <p>Sketch map location <u>must</u> agree with written location.</p> <div style="text-align: center;"> </div> <p>Subdivision Name _____</p> <p>Lot No. _____ Block No. _____</p> <p>County <u>KEOUCHE</u></p> <p><u>N. 1/4 S. 1/4 Sec. 36, T. 53 N. 1/4 R. 5 E. 1/4</u></p>	<p><b>10.</b> Work started <u>5/4/89</u> finished <u>5/11/89</u></p>																																														
<p><b>11. DRILLERS CERTIFICATION</b></p> <p>I/We certify that all minimum well construction standards were complied with at the time the rig was removed.</p> <p>Firm Name <u>Flanigan &amp; Flanigan</u> Firm No. <u>433</u></p> <p>Address <u>P.O. Box 320 Rathbun ID</u> Date <u>5/11/89</u></p> <p>Signed by (Firm Official) <u>James H. Flanigan</u></p> <p>and</p> <p>(Operator) <u>James H. Flanigan</u></p>																																															

STATE OF IDAHO  
DEPARTMENT OF WATER RESOURCES  
**WELL DRILLER'S REPORT**

USE TYPEWRITER OR  
BALLPOINT PEN

State law requires that this report be filed with the Director, Department of Water Resources  
within 30 days after the completion or abandonment of the well.

**1. WELL OWNER**  
Name UPPER TWIN WATER ASSN. 40 DAN McHEWELLS  
Address TWIN LAKES RD. RATHDRUM IDAHO  
Drilling Permit No. 95-92-N-24  
Water Right Permit No. \_\_\_\_\_

**7. WATER LEVEL**  
Static water level 220 feet below land surface. (14)  
Flowing?  Yes  No G.P.M. flow \_\_\_\_\_  
Artesian closed-in pressure \_\_\_\_\_ p.s.i.  
Controlled by:  Valve  Cap  Plug  
Temperature \_\_\_\_\_ OF. Quality \_\_\_\_\_  
*Describe artesian or temperature zones below*

**2. NATURE OF WORK**  
 New well  Deepened  Replacement  
 Well diameter increase  
 Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

**8. WELL TEST DATA**  
 Pump  Bailer  Air  Other \_\_\_\_\_

Discharge G.P.M.	Pumping Level	Hours Pumped
<u>22</u>	<u>220</u>	<u>2</u>

**3. PROPOSED USE**  
 Domestic  Irrigation  Test  Municipal  
 Industrial  Stock  Waste Disposal or Injection  
 Other \_\_\_\_\_ (specify type)

**9. LITHOLOGIC LOG**

Bore Diam.	Depth		Material	Water	
	From	To		Yes	No
8"	0	20'	SAND, GRAVEL & SILT		X
6"	20'	79'	SAND, GRAVEL & SILT		X
	79'	147'	GRAVEL SAND & SILT		X
	147'	150'	BOLDER		X
	150'	210'	GRAVEL SAND & SILT		X
	210'	260'	GRAVEL SAND & SILT	X	X

**4. METHOD DRILLED**  
 Rotary  Air  Hydraulic  Reverse rotary  
 Cable  Dug  Other \_\_\_\_\_

**5. WELL CONSTRUCTION**  
Casing schedule:  Steel  Concrete  Other \_\_\_\_\_

Thickness	Diameter	From	To
<u>2.50</u> inches	<u>6</u> inches	<u>3</u> feet	<u>210</u> feet
<u>3.12</u> inches	<u>6</u> inches	<u>210</u> feet	<u>250</u> feet

Was casing drive shoe used?  Yes  No  
Was a packer or seal used?  Yes  No  
Perforated?  Yes  No  
How perforated?  Factory  Knife  Torch  Gun  
Size of perforation \_\_\_\_\_ inches by \_\_\_\_\_ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed?  Yes  No  
Manufacturer's name HOWARD SMITH SCREEN CO.  
Type STAINLESS STEEL Model NOT TELESCOPING  
Diameter 6" Slot size 50 Set from 238 feet to 260 feet  
Diameter \_\_\_\_\_ Slot size \_\_\_\_\_ Set from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
Gravel packed?  Yes  No  Size of gravel \_\_\_\_\_  
Placed from \_\_\_\_\_ feet to \_\_\_\_\_ feet

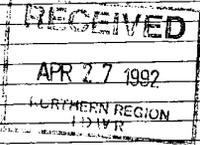
Surface seal depth 30' Material used in seal:  Cement grout  
 Bentonite  Puddling clay  \_\_\_\_\_  
Sealing procedure used:  Slurry pit  Temp. surface casing  
 Overbore to seal depth  
Method of joining casing:  Threaded  Welded  Solvent Weld  
 Cemented between strata

Describe access port 1" PLUG IN 6" CAP

**6. LOCATION OF WELL**  
Sketch map location must agree with written location.  
Subdivision Name 2ND  
Address ADDITION TO LAKE PARK  
Lot No. 6 Block No. F  
County KOOTENAI  
N.W. 1/4 S.E. 1/4 Sec. 36, T. 53 N. R. 5 W.

**10. Work started** 3/12/92 finished 4/7/92

**11. DRILLERS CERTIFICATION**  
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.  
Firm Name Flanigan & Flanigan Firm No. 433  
Address PO Box 320 Rathdrum ID Date 4/22/92  
Signed by (Firm Official) James H. Flanigan  
and  
(Operator) James H. Flanigan



**APPENDIX B**  
**Water Well Reports**





USE TYPEWRITER OR BALL POINT PEN

State of Idaho  
Department of Reclamation

**WELL DRILLER'S REPORT**

State law requires that this report be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well.

RECEIVED  
NOV 16 1971  
Department of Water Administration

**1. WELL OWNER**  
Name Lake Forest Homes  
Address Upper Twin Lakes Idaho  
Owner's Permit No. 96-705-0

**7. WATER LEVEL**  
Static water level 25 feet below land surface  
Flowing?  Yes  No G.P.M. flow \_\_\_\_\_  
Temperature \_\_\_\_\_ ° F. Quality \_\_\_\_\_  
Artesian closed-in pressure \_\_\_\_\_ p.s.i.  
Controlled by  Valve  Cap  Plug

**2. NATURE OF WORK** 95-70-N-37  
 New well  Deepened  Replacement  
 Abandoned (describe method of abandoning)  
47.892 @ 85

**8. WELL TEST DATA**  
 Pump  Bailor  Other  
Discharge G.P.M. 60 Draw Down 10 Hours Pumped 8

**3. PROPOSED USE** 2346  
 Domestic  Irrig  
 Municipal  Industrial  Stock

**9. LITHOLOGIC LOG**

Hole Diam.	Depth		Material	Water	
	From	To		Yes	No
8	0	8	Sand and silt		X
	8	37	Silt and sand		X
	37	60	sand and gravel and silt		X
	60	65	silt and sand and gravel		X
	65	75	silt and sand		X
	75	100	Sand	X	

**4. METHOD DRILLED**  
 Cable  Rotary  Dug  Other

**5. WELL CONSTRUCTION**  
Diameter of hole 8 inches Total depth 100 feet  
Casing schedule:  Steel  Concrete  
Thickness 250 inches Diameter 8 inches From 1.5 feet To 100 feet  
\_\_\_\_\_ inches \_\_\_\_\_ inches \_\_\_\_\_ feet \_\_\_\_\_ feet  
Was a packer or seal used?  Yes  No  
Perforated?  Yes  No  
How perforated?  Factory  Knife  Torch  
Size of perforation 1/8 inches by 1 inches  
Number 360 perforations From 75 feet To 95 feet  
\_\_\_\_\_ perforations \_\_\_\_\_ feet \_\_\_\_\_ feet  
\_\_\_\_\_ perforations \_\_\_\_\_ feet \_\_\_\_\_ feet  
Well screen installed?  Yes  No  
Manufacturer's name \_\_\_\_\_  
Type \_\_\_\_\_ Model No. \_\_\_\_\_  
Diameter \_\_\_\_\_ Slot size \_\_\_\_\_ Set from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
Diameter \_\_\_\_\_ Slot size \_\_\_\_\_ Set from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
Gravel packed?  Yes  No Size of gravel \_\_\_\_\_  
Placed from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
Surface seal?  Yes  No To what depth 20 feet  
Material used in seal  Cement grout  Puddling clay

**6. LOCATION OF WELL**  
Sketch map location must agree with written location.  
  
SW 1/4 SW 1/4 Sec. 35 T. 53 N. R. 5 W

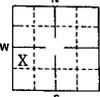
**10.** Work started 6/15/70 finished 6/27/70

**11. DRILLER'S CERTIFICATION**  
This well was drilled under my supervision and this report is true to the best of my knowledge.  
Spekane Drilling Co 112  
Driller's or Firm's Name \_\_\_\_\_ Number \_\_\_\_\_  
E. 2710 Garland Spekane Washington  
Address \_\_\_\_\_  
Signed By William J. Ray 11/16/71  
Date \_\_\_\_\_

STATE OF IDAHO  
DEPARTMENT OF WATER RESOURCES  
**WELL DRILLER'S REPORT**

USE TYPEWRITER OR  
BALLPOINT PEN

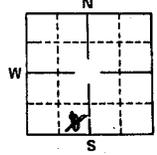
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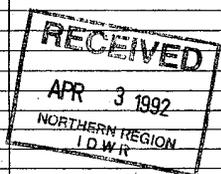
<p><b>1. WELL OWNER</b> Name <u>PERRY PHELPS</u> Address <u>W 2805 UPPER TWIN LAKES RD</u> Drilling Permit No. <u>95-93-N-16-000</u> Water Right Permit No. <u>See #1</u></p>	<p><b>7. WATER LEVEL</b> Static water level <u>63</u> feet below land surface. Flowing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No G.P.M. flow _____ Artesian closed-in pressure _____ p.s.i. Controlled by: <input type="checkbox"/> Valve <input type="checkbox"/> Cap <input type="checkbox"/> Plug Temperature _____ °F. Quality _____ <i>Describe artesian or temperature zones below.</i></p>																																																																																																				
<p><b>2. NATURE OF WORK</b> <input checked="" type="checkbox"/> New well <input type="checkbox"/> Deepened <input type="checkbox"/> Replacement <input type="checkbox"/> Well diameter increase <input type="checkbox"/> Modification <input type="checkbox"/> Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. in lithologic log, section 9.)</p>	<p><b>8. WELL TEST DATA</b> <input type="checkbox"/> Pump <input type="checkbox"/> Bailer <input checked="" type="checkbox"/> Air <input type="checkbox"/> Other _____</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Discharge G.P.M.</th> <th>Pumping Level</th> <th>Hours Pumped</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">220</td> <td style="text-align: center;">1</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Discharge G.P.M.	Pumping Level	Hours Pumped	1	220	1																																																																																														
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<p><b>6. LOCATION OF WELL</b> Sketch map location must agree with written location.  Subdivision Name _____ Lot No. _____ Block No. _____ County <u>KOOTENAI</u> Address of Well Site <u>2805 UPPER TWIN LAKES RD</u> (give at least name of road) T <u>53</u> N <input checked="" type="checkbox"/> or S <input type="checkbox"/> NW <u>1/4</u> SW <u>1/4</u> Sec. <u>35</u>, R. <u>5</u> E <input type="checkbox"/> or W <input checked="" type="checkbox"/></p>	<p><b>10.</b> Work started <u>2/9/93</u> finished <u>2/10/93</u></p>																																																																																																				

FEB 22 1993  
IDAHO DEPARTMENT OF WATER RESOURCES  
BOISE

# WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

<p><b>1. WELL OWNER</b>                  Name <u>John Habberstad</u>                  Address <u>N12819 Perry Spokane WA</u>                  Drilling Permit No. <u>95-92-N-19 920 B</u>                  Water Right Permit No. <u>Forest Coon Rd.</u></p>	<p><b>7. WATER LEVEL</b>                  Static water level <u>10'</u> feet below land surface.                  Flowing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No G.P.M. flow _____                  Artesian closed-in pressure _____ p.s.i.                  Controlled by: <input type="checkbox"/> Valve <input type="checkbox"/> Cap <input type="checkbox"/> Plug                  Temperature _____ °F. Quality _____                  Describe artesian or temperature zones below.</p>																																																				
<p><b>2. NATURE OF WORK</b>  <input checked="" type="checkbox"/> New well <input type="checkbox"/> Deepened <input type="checkbox"/> Replacement  <input type="checkbox"/> Well diameter increase  <input type="checkbox"/> Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)</p>	<p><b>8. WELL TEST DATA</b>  <input type="checkbox"/> Pump <input checked="" type="checkbox"/> Bailor <input type="checkbox"/> Air <input type="checkbox"/> Other _____</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Discharge G.P.M.</th> <th>Pumping Level</th> <th>Hours Pumped</th> </tr> <tr> <td style="text-align: center;">10</td> <td style="text-align: center;">42</td> <td style="text-align: center;">3</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	Discharge G.P.M.	Pumping Level	Hours Pumped	10	42	3																																														
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<p><b>5. WELL CONSTRUCTION</b>                  Casing schedule: <input checked="" type="checkbox"/> Steel <input type="checkbox"/> Concrete <input type="checkbox"/> Other _____                  Thickness _____ inches Digmeter _____ inches From _____ feet To _____ feet                  _____ inches _____ inches _____ feet _____ feet                  _____ inches _____ inches _____ feet _____ feet                  _____ inches _____ inches _____ feet _____ feet                  Was casing drive shoe used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No                  Was a packer or seal used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                  Perforated? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                  How perforated? <input type="checkbox"/> Factory <input type="checkbox"/> Knife <input type="checkbox"/> Torch <input type="checkbox"/> Gun                  Size of perforation _____ inches by _____ inches                  _____ perforations _____ feet _____ feet                  _____ perforations _____ feet _____ feet                  _____ perforations _____ feet _____ feet                  Well screen installed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                  Manufacturer's name _____                  Type _____ Model No. _____                  Diameter _____ Slot size _____ Set from _____ feet to _____ feet                  Diameter _____ Slot size _____ Set from _____ feet to _____ feet                  Gravel packed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Size of gravel _____                  Placed from _____ feet to _____ feet                  Surface seal depth <u>18'</u> Material used in seal: <input type="checkbox"/> Cement grout  <input checked="" type="checkbox"/> Bentonite <input type="checkbox"/> Puddling clay <input type="checkbox"/> _____                  Sealing procedure used: <input type="checkbox"/> Slurry pit <input checked="" type="checkbox"/> Temp. surface casing  <input type="checkbox"/> Overbore to seal depth                  Method of joining casing: <input type="checkbox"/> Threaded <input checked="" type="checkbox"/> Welded <input type="checkbox"/> Solvent Weld                  Describe access port <u>5' PLUG IN WELL SEAL</u> <input type="checkbox"/> Cemented between strata</p>	<p><b>11. DRILLERS CERTIFICATION</b>                  I/We certify that all minimum well construction standards were complied with at the time the rig was removed.                  Firm Name <u>Flanigan &amp; Flanigan</u> Firm No. <u>433</u>                  Address <u>PO Box 320 Rathbun ID.</u> Date <u>3/28/92</u>                  Signed by (Firm Official) <u>James H. Flanigan</u>                  and                  (Operator) <u>James H. Flanigan</u></p>																																																				
<p><b>6. LOCATION OF WELL</b>                  Sketch map location must agree with written location.                    Subdivision Name _____                  Lot No. _____ Block No. _____                  County _____                  S.E. 1/4 S.W. 1/4 Sec. <u>35</u>, T. <u>53</u> N. R. <u>5</u> E. S. R. <u>5</u> W. R. <u>4</u></p>	<p><b>FORWARD THE WHITE COPY TO THE DEPARTMENT</b></p>																																																				



RECEIVED

REPORT OF WELL DRILLER  
State of Idaho

State law requires that this report shall be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well.

WELL OWNER:  
Name James Flanigan  
Address Box 212 Calbert Wa. 99005

Size of drilled hole: 6" Total  
depth of well: 75 Standing water  
level below ground: 18' Temp.  
Fahr. ° Test delivery: 7 1/2 gpm  
or \_\_\_\_\_ cfs Pump?  Bail   
Size of pump and motor used to make test:

Owner's Permit No. 95-74-N-100  
NATURE OF WORK (check): Replacement well   
New well  Deepened  Abandoned

Length of time of test: 3 Hrs. 10 Min.  
Drawdown: 8' 6 1/2 ft. Artesian pressure: ft.  
above land surface Give flow \_\_\_\_\_ cfs  
or \_\_\_\_\_ gpm. Shutoff pressure:

Water is to be used for: Domestic  
METHOD OF CONSTRUCTION: Rotary  Cable   
Aug  Other \_\_\_\_\_

Controlled by: Valve  Cap  Plug   
No control  Does well leak around casing?  
Yes  No

CASING SCHEDULE: Threaded \_\_\_\_\_ Welded .250  
6 "Diam. from 0 ft. to 4 1/2 ft.  
"Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
"Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
"Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
Thickness of casing: .250 Material:  
Steel  concrete  wood  other

DEPTH MATERIAL WATER

FROM	TO	MATERIAL	YES OR NO
0'	4 1/2'	SILT & SAND	
4 1/2'	75'	decomposed granite	yes

(explain)  
PERFORATED? Yes  No  Type of  
perforator used: \_\_\_\_\_

Size of perforations: \_\_\_\_\_ " by \_\_\_\_\_ "  
\_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
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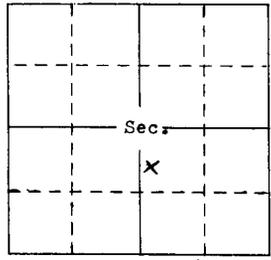
WAS SCREEN INSTALLED? Yes  No   
Manufacturer's name \_\_\_\_\_  
Type \_\_\_\_\_ Model No. \_\_\_\_\_  
Diam. \_\_\_\_\_ Slot size \_\_\_\_\_ Set from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
Diam. \_\_\_\_\_ Slot size \_\_\_\_\_ Set from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

CONSTRUCTION: Well gravel packed? Yes   
No  size of gravel \_\_\_\_\_ Gravel  
placed from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Surface seal  
provided? Yes  No  To what depth?  
20 ft. Material used in seal: Bentonite

Did any strata contain unusable water? Yes   
No  Type of water: \_\_\_\_\_  
Depth of strata \_\_\_\_\_ ft. Method of sealing  
strata off: \_\_\_\_\_

Surface casing used? Yes  No   
Cemented in place? Yes  No

Locate well in section



LOCATION OF WELL: County Kootenai Lot 1  
NW 1/4 Sec. 35 T. 53 N/S R. 50 W

Work started: Sept 74  
Work finished: Sept 74  
Well Driller's Statement: This well was  
drilled under my supervision and this report  
is true to the best of my knowledge  
Name: SPOKANE DRILLING CO.  
Address: Box 185 Calbert Wa  
Signed by: James F. Flanigan  
License No. 112 Date: 5/27/75

Use other side for additional remarks





STATE OF IDAHO  
DEPARTMENT OF WATER RESOURCES  
**WELL DRILLER'S REPORT**

USE TYPEWRITER OR  
BALLPOINT PEN

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

**1. WELL OWNER**  
Name JAMES BLAINE  
Address W. 1700 LAKE FOREST DR. PATTERSON ID  
Owner's Permit No. 95-85-N-6

**7. WATER LEVEL**  
Static water level 35 feet below land surface. (9)  
Flowing?  Yes  No G.P.M. flow 22  
Artesian closed-in pressure \_\_\_\_\_ p.s.i.  
Controlled by:  Valve  Cap  Plug  
Temperature \_\_\_\_\_ of Quality \_\_\_\_\_  
*Describe artesian or temperature zones below.*

**2. NATURE OF WORK** 9222 Blaine  
 New well  Deepened  Replacement  
 Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)  
477.89421 well  
116.91018 north of  
2 1/2 46

**8. WELL TEST DATA**  
 Pump  Bailor  Air  Other \_\_\_\_\_  
Discharge G.P.M. 22 Pumping Level 43' Hours Pumped 2

**3. PROPOSED USE**  
 Domestic  Irrigation  Test  Municipal  
 Industrial  Stock  Waste Disposal or Injection  
 Other \_\_\_\_\_ (specify type)

**9. LITHOLOGIC LOG**

Bore Diam.	Depth		Material	Water	
	From	To		Yes	No
10"	0'	1'	TOP SOIL		
10"	1'	18'	SILT + SAND		X
8"	18'	27'	SAND + SILT (SOME GRAVEL)		X
8"	27'	35'	SAND + SILT (SOME GRAVEL)	X	
8"	35'	53'	SAND + GRAVEL	X	
8"	53'	58'	DECOMPOSED GRANITE		X

**4. METHOD DRILLED**  
 Rotary  Air  Hydraulic  Reverse rotary  
 Cable  Dug  Other \_\_\_\_\_

**5. WELL CONSTRUCTION**  
Casing schedule:  Steel  Concrete  Other \_\_\_\_\_  
Thickness \_\_\_\_\_ Diameter \_\_\_\_\_ From \_\_\_\_\_ To \_\_\_\_\_  
322 inches 8 inches + 15 feet 47 feet  
322 inches 7 inches 45 feet 47 feet  
250 inches 6 inches 52 feet 58 feet  
Was casing drive shoe used?  Yes  No  
Was a packer or seal used?  Yes  No  
Perforated?  Yes  No  
How perforated?  Factory  Knife  Torch  
Size of perforation \_\_\_\_\_ inches by \_\_\_\_\_ inches  
Number \_\_\_\_\_ From \_\_\_\_\_ To \_\_\_\_\_  
\_\_\_\_\_ perforations \_\_\_\_\_ feet \_\_\_\_\_ feet  
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\_\_\_\_\_ perforations \_\_\_\_\_ feet \_\_\_\_\_ feet  
Well screen installed?  Yes  No  
Manufacturer's name COOK (Stainless Steel)  
Type TELESCOPING Model No. \_\_\_\_\_  
Diameter 8 Slot size 25 Set from 47 feet to 52 feet  
Diameter \_\_\_\_\_ Slot size \_\_\_\_\_ Set from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
Gravel packed?  Yes  No  Size of gravel \_\_\_\_\_  
Placed from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
Surface seal depth 18 Material used in seal:  Cement grout  
 Bentonite  Puddling clay  \_\_\_\_\_  
Sealing procedure used:  Slurry pit  Temp. surface casing  
 Overbore to seal depth  
Method of joining casing:  Threaded  Welded  Solvent  
Weld \_\_\_\_\_  
 Cemented between strata  
Describe access port 8" WELL CAP

**6. LOCATION OF WELL**  
Sketch map location must agree with written location.  
Subdivision Name \_\_\_\_\_  
Lot No. \_\_\_\_\_ Block No. \_\_\_\_\_  
County KOOTENAI  
S.E. 1/4 S.E. 1/4 Sec. 35 T. 53 N. R. 5

**10.** Work started 5/30/85 finished 6/4/85

**11. DRILLERS CERTIFICATION**  
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.  
Firm Name Flanigan & Flanigan Firm No. 433  
Address P.O. Box 32, Patterson ID Date 6/18/85  
Signed by (Firm Official) James H. Flanigan  
and  
(Operator) James F. Flanigan

RECEIVED  
JUN 20 1985  
Department of Water Resources  
Northern District Office

RECEIVED  
JUN 21 1985  
Department of Water Resources  
Northern District Office

RECEIVED  
JUN 23 1985  
Department of Water Resources  
Northern District Office

# WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

**1. WELL OWNER**

Name JAMES BLAINE

Address W. 1700 LAKE FOREST DR. PATH DRUM ID.

Owner's Permit No. 95-88-N-14

**7. WATER LEVEL**

Static water level 38'-6" feet below land surface.

Flowing?  Yes  No G.P.M. flow 22

Artesian closed-in pressure \_\_\_\_\_ p.s.i.

Controlled by:  Valve  Cap  Plug

Temperature \_\_\_\_\_ of. Quality \_\_\_\_\_

*Describe artesian or temperature zones below.*

**2. NATURE OF WORK**

New well  Deepened  Replacement

Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

**8. WELL TEST DATA**

Pump  Bailor  Air  Other \_\_\_\_\_

Discharge G.P.M.	Pumping Level	Hours Pumped
<u>22</u>	<u>50'</u>	<u>4</u>

**3. PROPOSED USE**

Domestic  Irrigation  Test  Municipal

Industrial  Stock  Waste Disposal or Injection

Other \_\_\_\_\_ (specify type)

**9. LITHOLOGIC LOG**

Bore Diam.	Depth		Material	Water	
	From	To		Yes	No
10"	0'	18'	SILT & SAND		X
6"	18'	42'	SILT & SAND		X
6"	42'	51'	SAND SILT & GRAVEL	X	
6"	51'	59'	SAND SILT & GRAVEL	X	
6"	59'	65'	SAND SILT & GRAVEL	X	
6"	65'	67'	DECOMPOSED GRANITE		X

**4. METHOD DRILLED**

Rotary  Air  Hydraulic  Reverse rotary

Cable  Dug  Other \_\_\_\_\_

**5. WELL CONSTRUCTION**

Casing schedule:  Steel  Concrete  Other \_\_\_\_\_

Thickness	Diameter	From	To
<u>2.50</u> inches	<u>6</u> inches	<u>1</u> feet	<u>60</u> feet
<u>1.50</u> inches	<u>5</u> inches	<u>65</u> feet	<u>67</u> feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was casing drive shoe used?  Yes  No

Was a packer or seal used?  Yes  No

Perforated?  Yes  No

How perforated?  Factory  Knife  Torch

Size of perforation \_\_\_\_\_ inches by \_\_\_\_\_ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed?  Yes  No

Manufacturer's name COOK STAINLESS STEEL

Type TELESCOPING Model No. \_\_\_\_\_

Diameter 6 Slot size 35 Set from 59 feet to 65 feet

Diameter \_\_\_\_\_ Slot size \_\_\_\_\_ Set from \_\_\_\_\_ feet to \_\_\_\_\_ feet

Gravel packed?  Yes  No  Size of gravel \_\_\_\_\_

Placed from \_\_\_\_\_ feet to \_\_\_\_\_ feet

Surface seal depth 18' Material used in seal:  Cement grout

Bentonite  Pudding clay  \_\_\_\_\_

Sealing procedure used:  Slurry pit  Temp. surface casing

Overbore to seal depth

Method of joining casing:  Threaded  Welded  Solvent

Weld \_\_\_\_\_

Describe access port 6" WELL CAP

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Department of Water Resources

RECEIVED  
MAY 1988

Department of Water Resources  
Northern District Office

**6. LOCATION OF WELL**

Sketch map location must agree with written location.

Subdivision Name \_\_\_\_\_

Lot No. \_\_\_\_\_ Block No. \_\_\_\_\_

County KOOTENAI

N6 1/4 SE 1/4 Sec. 35, T. 53 N/S, R. 5 E/W.

**10.** Work started 4/11/88 finished 4/16/88

**11. DRILLERS CERTIFICATION**

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name FLANIGAN & FLANIGAN Firm No. 433

Address P.O. Box 320 Path Drum ID. Date 4/18/88

Signed by (Firm Official) James H. Flanigan

and  
(Operator) James H. Flanigan

STATE OF IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

USE TYPEWRITER OR BALLPOINT PEN

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER Name: Sus Roth Address: Upper Twin Lakes, Id. Owner's Permit No. 95-86-N-96

7. WATER LEVEL Static water level 42 feet below land surface. Flowing? No G.P.M. flow 30

2. NATURE OF WORK 9770 W Twin Lakes Id. New well Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

8. WELL TEST DATA Pump Discharge G.P.M. 25 30 Pumping Level 46' 52' Hours Pumped 2:00 1:00

3. PROPOSED USE Domestic Irrigation Test Municipal Industrial Stock Waste Disposal or Injection Other

9. LITHOLOGIC LOG Table with columns: Bore Diam, Depth From, To, Material, Water Yes/No. Rows include Silt & Sand, Sand & Silt, Sand, Silt & Gravel, Decomposed Granite.

4. METHOD DRILLED Rotary Air Hydraulic Reverse rotary Cable Dug Other

5. WELL CONSTRUCTION Casing schedule: Steel Concrete Other Thickness Diameter From To Was casing drive shoe used? Was a packer or seal used? Perforated? How perforated? Size of perforation Well screen installed? Manufacturer's name Type Diameter Slot size Set from Diameter Slot size Set from Gravel packed? Placed from Surface seal depth Material used in seal: Sealing procedure used: Method of joining casing: Describe access port

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6. LOCATION OF WELL Sketch map location must agree with written location. Subdivision Name Lot No. 11 Block No. County Kootenai S.W. 1/4 Sec. 36 T. 53 N. R. 5 W.

10. Work started 12/30/85 finished 1/3/86 11. DRILLERS CERTIFICATION I/We certify that all minimum well construction standards were complied with at the time the rig was removed. Firm Name Flanigan & Flanigan Firm No. 433 Address P.O. Box 320 Ruth Drain Id. Date 1/13/86 Signed by (Firm Official) James H. Flanigan and (Operator) James H. Flanigan

# WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

<p><b>1. WELL OWNER</b></p> <p>Name <u>UPPER TWIN LAKES WATER CO. INC.</u></p> <p>Address <u>Twin Lakes, Id. 83858</u></p> <p>Owner's Permit No. <u>95-89-N-16</u></p>	<p><b>7. WATER LEVEL</b></p> <p>Static water level <u>37</u> feet below land surface.</p> <p>Flowing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No G.P.M. flow _____</p> <p>Artesian closed-in pressure _____ p.s.i.</p> <p>Controlled by: <input type="checkbox"/> Valve <input type="checkbox"/> Cap <input type="checkbox"/> Plug</p> <p>Temperature _____ °F. Quality _____</p> <p><small>Describe artesian or temperature zones below.</small></p>																																														
<p><b>2. NATURE OF WORK</b></p> <p><input checked="" type="checkbox"/> New well <input type="checkbox"/> Deepened <input type="checkbox"/> Replacement</p> <p><input type="checkbox"/> Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)</p>	<p><b>8. WELL TEST DATA</b></p> <p><input type="checkbox"/> Pump <input checked="" type="checkbox"/> Bailer <input type="checkbox"/> Air <input type="checkbox"/> Other _____</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Discharge G.P.M.</th> <th>Pumping Level</th> <th>Hours Pumped</th> </tr> <tr> <td style="text-align: center;"><u>20</u></td> <td style="text-align: center;"><u>42</u></td> <td style="text-align: center;"><u>2</u></td> </tr> </table>	Discharge G.P.M.	Pumping Level	Hours Pumped	<u>20</u>	<u>42</u>	<u>2</u>																																								
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<p><b>3. PROPOSED USE</b></p> <p><input type="checkbox"/> Domestic <input type="checkbox"/> Irrigation <input type="checkbox"/> Test <input checked="" type="checkbox"/> Municipal</p> <p><input type="checkbox"/> Industrial <input type="checkbox"/> Stock <input type="checkbox"/> Waste Disposal or Injection</p> <p><input type="checkbox"/> Other _____ (specify type)</p>	<p><b>9. LITHOLOGIC LOG</b></p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Bore Diam.</th> <th colspan="2">Depth</th> <th rowspan="2">Material</th> <th colspan="2">Water</th> </tr> <tr> <th>From</th> <th>To</th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>10"</td> <td>0'</td> <td>6'</td> <td>SILT &amp; SAND</td> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td>10"</td> <td>6'</td> <td>18'</td> <td>SILT &amp; SAND</td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td>6"</td> <td>18'</td> <td>28'</td> <td>SILT &amp; SAND</td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td>6"</td> <td>28'</td> <td>38'</td> <td>SAND, SILT, &amp; GRAVEL</td> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td>6"</td> <td>38'</td> <td>57'</td> <td>SAND, SILT &amp; GRAVEL</td> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td>6"</td> <td>57'</td> <td>62'</td> <td>DECOMPOSED GRANITE</td> <td></td> <td style="text-align: center;">X</td> </tr> </tbody> </table>	Bore Diam.	Depth		Material	Water		From	To	Yes	No	10"	0'	6'	SILT & SAND	X		10"	6'	18'	SILT & SAND		X	6"	18'	28'	SILT & SAND		X	6"	28'	38'	SAND, SILT, & GRAVEL		X	6"	38'	57'	SAND, SILT & GRAVEL	X		6"	57'	62'	DECOMPOSED GRANITE		X
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<p><b>4. METHOD DRILLED</b></p> <p><input type="checkbox"/> Rotary <input type="checkbox"/> Air <input type="checkbox"/> Hydraulic <input type="checkbox"/> Reverse rotary</p> <p><input checked="" type="checkbox"/> Cable <input type="checkbox"/> Dug <input type="checkbox"/> Other _____</p>	<div style="border: 2px solid black; padding: 10px; font-size: 2em; font-weight: bold; transform: rotate(-2deg);">             RECEIVED              JUL 14 1989              Department of Water Resources           </div>																																														
<p><b>5. WELL CONSTRUCTION</b></p> <p>Casing schedule: <input checked="" type="checkbox"/> Steel <input type="checkbox"/> Concrete <input type="checkbox"/> Other _____</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Thickness</th> <th>Diameter</th> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td><u>.312</u> inches</td> <td><u>6</u> inches</td> <td><u>2</u> feet</td> <td><u>51</u> feet</td> </tr> <tr> <td><u>.250</u> inches</td> <td><u>5</u> inches</td> <td><u>30</u> feet</td> <td><u>52</u> feet</td> </tr> <tr> <td><u>.250</u> inches</td> <td><u>5</u> inches</td> <td><u>57</u> feet</td> <td><u>62</u> feet</td> </tr> </tbody> </table> <p>Was casing drive shoe used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Was a packer or seal used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Perforated? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>How perforated? <input type="checkbox"/> Factory <input type="checkbox"/> Knife <input type="checkbox"/> Torch</p> <p>Size of perforation _____ inches by _____ inches</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Number</th> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td>_____ perforations</td> <td>_____ feet</td> <td>_____ feet</td> </tr> <tr> <td>_____ perforations</td> <td>_____ feet</td> <td>_____ feet</td> </tr> <tr> <td>_____ perforations</td> <td>_____ feet</td> <td>_____ feet</td> </tr> </tbody> </table> <p>Well screen installed? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Manufacturer's name <u>COOK</u></p> <p>Type _____ Model No. _____</p> <p>Diameter <u>6"</u> Slot size <u>50</u> Set from <u>52</u> feet to <u>57</u> feet</p> <p>Diameter _____ Slot size _____ Set from _____ feet to _____ feet</p> <p>Gravel packed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Size of gravel _____</p> <p>Placed from _____ feet to _____ feet</p> <p>Surface seal depth <u>18"</u> Material used in seal: <input type="checkbox"/> Cement grout</p> <p><input checked="" type="checkbox"/> Bentonite <input type="checkbox"/> Puddling clay <input type="checkbox"/> _____</p> <p>Sealing procedure used: <input type="checkbox"/> Slurry pit <input checked="" type="checkbox"/> Temp. surface casing</p> <p><input type="checkbox"/> Overbore to seal depth</p> <p>Method of joining casing: <input type="checkbox"/> Threaded <input checked="" type="checkbox"/> Welded <input type="checkbox"/> Solvent</p> <p><input type="checkbox"/> Weld</p> <p><input type="checkbox"/> Cemented between strata</p> <p>Describe access port <u>6" WELL CAP</u></p>		Thickness	Diameter	From	To	<u>.312</u> inches	<u>6</u> inches	<u>2</u> feet	<u>51</u> feet	<u>.250</u> inches	<u>5</u> inches	<u>30</u> feet	<u>52</u> feet	<u>.250</u> inches	<u>5</u> inches	<u>57</u> feet	<u>62</u> feet	Number	From	To	_____ perforations	_____ feet	_____ feet	_____ perforations	_____ feet	_____ feet	_____ perforations	_____ feet	_____ feet																		
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<p><b>6. LOCATION OF WELL</b></p> <p>Sketch map location <u>must</u> agree with written location.</p> <div style="text-align: center;"> </div> <p>Subdivision Name _____</p> <p>Lot No. _____ Block No. _____</p> <p>County <u>KEOUCHE</u></p> <p><u>N. 1/4 S. 1/4 Sec. 36, T. 53 N. 1/4 R. 5 E. 1/4</u></p>	<p><b>10.</b> Work started <u>5/4/89</u> finished <u>5/11/89</u></p> <p><b>11. DRILLERS CERTIFICATION</b></p> <p>I/We certify that all minimum well construction standards were complied with at the time the rig was removed.</p> <p>Firm Name <u>Flanigan &amp; Flanigan</u> Firm No. <u>433</u></p> <p>Address <u>P.O. Box 320 Pullman ID</u> Date <u>5/11/89</u></p> <p>Signed by (Firm Official) <u>James H. Flanigan</u></p> <p>and</p> <p>(Operator) <u>James H. Flanigan</u></p>																																														

# WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

RECEIVED  
MAY 9 1990  
NORTHWEST REGION

1. WELL OWNER

Name MICHAEL D. WATKINS

Address W. 530 Twin Lakes Rd.

Owner's Permit No. 4590-N1

7. WATER LEVEL

Static water level 149' feet below land surface

Flowing?  Yes  No G.P.M. flow \_\_\_\_\_

Artesian closed-in pressure \_\_\_\_\_ p.s.i.

Controlled by:  Valve  Cap  Plug

Temperature \_\_\_\_\_ of. Quality \_\_\_\_\_

*Describe artesian or temperature zones below.*

2. NATURE OF WORK

New well  Deepened  Replacement

Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

8. WELL TEST DATA

Pump  Bailer  Air  Other \_\_\_\_\_

Discharge G.P.M.	Pumping Level	Hours Pumped
<u>22</u>	<u>149</u>	<u>1</u>

3. PROPOSED USE

Domestic  Irrigation  Test  Municipal

Industrial  Stock  Waste Disposal or Injection

Other \_\_\_\_\_ (specify type)

9. LITHOLOGIC LOG

Bore Diam.	Depth		Material	Water Yes No
	From	To		
10"	0	18'	SAND, SILT & GRAVEL	X
6"	18'	29'	SAND, SILT & GRAVEL	X
6"	29'	144'	GRAVEL & SAND	X
6"	144'	149'	SAND & GRAVEL	X
6"	149'	192'	SAND & GRAVEL	X

4. METHOD DRILLED

Rotary  Air  Hydraulic  Reverse rotary

Cable  Dug  Other \_\_\_\_\_

5. WELL CONSTRUCTION

Casing schedule:  Steel  Concrete  Other

Thickness	Diameter	From	To
<u>2.50</u> inches	<u>6</u> inches	<u>5</u> feet	<u>187</u> feet
<u>2.50</u> inches	<u>5</u> inches	<u>187</u> feet	<u>187</u> feet

Was casing drive shoe used?  Yes  No

Was a packer or seal used?  Yes  No

Perforated?  Yes  No

How perforated?  Factory  Knife  Torch

Size of perforation \_\_\_\_\_ inches by \_\_\_\_\_ inches

Number \_\_\_\_\_ From \_\_\_\_\_ To \_\_\_\_\_

\_\_\_\_\_ perforations \_\_\_\_\_ feet \_\_\_\_\_ feet

\_\_\_\_\_ perforations \_\_\_\_\_ feet \_\_\_\_\_ feet

\_\_\_\_\_ perforations \_\_\_\_\_ feet \_\_\_\_\_ feet

Well screen installed?  Yes  No

Manufacturer's name COOK (STAINLESS STEEL)

Type TELESCOPING Model No. \_\_\_\_\_

Diameter 6 Slot size 50 Set from 187 feet to 192 feet

Diameter \_\_\_\_\_ Slot size \_\_\_\_\_ Set from \_\_\_\_\_ feet to \_\_\_\_\_ feet

Gravel packed?  Yes  No  Size of gravel \_\_\_\_\_

Placed from \_\_\_\_\_ feet to \_\_\_\_\_ feet

Surface seal depth 18' Material used in seal:  Cement grout

Bentonite  Puddling clay  \_\_\_\_\_

Sealing procedure used:  Slurry pit  Temp. surface casing

Overbore to seal depth

Method of joining casing:  Threaded  Welded  Solvent

Weld \_\_\_\_\_

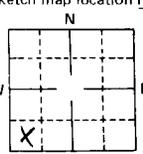
Cemented between strata

Describe access port 6" WELL CAP

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MAY 24 1990  
Department of Water Resources

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name LAKE PARK

ACREAGE

Lot No. 36 Block No. \_\_\_\_\_

County KOOTENAI

S.W. 1/4 S.W. 1/4 Sec. 36 T. 53 N. R. 5 W.

10. Work started 2/19/90 finished 3/15/90

11. DRILLERS CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name FLANIGAN FLANIGAN Firm No. 433

Address P.O. Box 320 Path Down ID Date 3/20/90

Signed by (Firm Official) James H. Flanigan

and (Operator) James H. Flanigan

STATE OF IDAHO  
DEPARTMENT OF WATER RESOURCES  
**WELL DRILLER'S REPORT**

USE TYPEWRITER OR  
BALLPOINT PEN

Well #14

State law requires that this report be filed with the Director, Department of Water Resources  
within 30 days after the completion or abandonment of the well.

**1. WELL OWNER**  
Name UPPER TWIN WATER ASSN. 40 DAN McHEWERS  
Address TWIN LAKES RD. RATHDRUM IDAHO  
Drilling Permit No. 95-92-N-24  
Water Right Permit No. \_\_\_\_\_

**7. WATER LEVEL**  
Static water level 220 feet below land surface.  
Flowing?  Yes  No G.P.M. flow \_\_\_\_\_  
Artesian closed-in pressure \_\_\_\_\_ p.s.i.  
Controlled by:  Valve  Cap  Plug  
Temperature \_\_\_\_\_ OF. Quality \_\_\_\_\_  
*Describe artesian or temperature zones below*

**2. NATURE OF WORK**  
 New well  Deepened  Replacement  
 Well diameter increase  
 Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

**8. WELL TEST DATA**  
 Pump  Bailer  Air  Other \_\_\_\_\_

Discharge G.P.M.	Pumping Level	Hours Pumped
<u>22</u>	<u>220</u>	<u>2</u>

**3. PROPOSED USE**  
 Domestic  Irrigation  Test  Municipal  
 Industrial  Stock  Waste Disposal or Injection  
 Other \_\_\_\_\_ (specify type)

**9. LITHOLOGIC LOG**

Bore Diam.	Depth		Material	Water	
	From	To		Yes	No
8"	0	20'	SAND, GRAVEL & SILT		X
6"	20'	79'	SAND, GRAVEL & SILT		X
	79'	147'	GRAVEL SAND & SILT		X
	147'	150'	BOLDER		X
	150'	310'	GRAVEL SAND & SILT		X
	210'	360'	GRAVEL SAND & SILT	X	X

**4. METHOD DRILLED**  
 Rotary  Air  Hydraulic  Reverse rotary  
 Cable  Dug  Other \_\_\_\_\_

**5. WELL CONSTRUCTION**  
Casing schedule:  Steel  Concrete  Other \_\_\_\_\_

Thickness	Diameter	From	To
<u>2.50</u> inches	<u>6</u> inches	<u>3</u> feet	<u>210</u> feet
<u>3.12</u> inches	<u>6</u> inches	<u>210</u> feet	<u>250</u> feet

Was casing drive shoe used?  Yes  No  
Was a packer or seal used?  Yes  No  
Perforated?  Yes  No  
How perforated?  Factory  Knife  Torch  Gun  
Size of perforation \_\_\_\_\_ inches by \_\_\_\_\_ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed?  Yes  No  
Manufacturer's name HOWARD SMITH SCREEN CO.  
Type STAINLESS STEEL Model NOT TELESCOPING  
Diameter 6" Slot size 50 Set from 238 feet to 360 feet  
Diameter \_\_\_\_\_ Slot size \_\_\_\_\_ Set from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
Gravel packed?  Yes  No  Size of gravel \_\_\_\_\_  
Placed from \_\_\_\_\_ feet to \_\_\_\_\_ feet

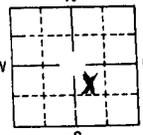
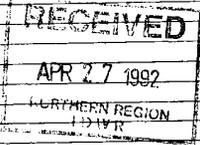
Surface seal depth 30' Material used in seal:  Cement grout  
 Bentonite  Puddling clay  \_\_\_\_\_  
Sealing procedure used:  Slurry pit  Temp. surface casing  
 Overbore to seal depth  
Method of joining casing:  Threaded  Welded  Solvent Weld  
 Cemented between strata

Describe access port 1" PLUG IN 6" CAP

**6. LOCATION OF WELL**  
Sketch map location must agree with written location.  
Subdivision Name 2ND  
Address ADDITION TO LAKE PARK  
Lot No. 6 Block No. F  
County KOOTENAI  
N.W. 1/4 S.E. 1/4 Sec. 36, T. 53 N. R. 5 W.

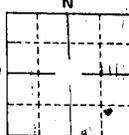
**10. Work started** 3/12/92 finished 4/7/92

**11. DRILLERS CERTIFICATION**  
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.  
Firm Name Flanigan & Flanigan Firm No. 433  
Address PO Box 320 Rathdrum ID Date 4/22/92  
Signed by (Firm Official) James H. Flanigan  
and  
(Operator) James H. Flanigan



**WELL DRILLER'S REPORT**

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

<p><b>1. WELL OWNER</b></p> <p>Name <u>DAVID CONRAD</u></p> <p>Address <u>W. 355 TWIN LAKES RD. RATH DRUM ID.</u></p> <p>Owner's Permit No. <u>95-87-N-94</u></p>	<p><b>7. WATER LEVEL</b></p> <p>Static water level <u>201</u> feet below land surface.</p> <p>Flowing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No G.P.M. flow _____</p> <p>Artesian closed-in pressure _____ p.s.i.</p> <p>Controlled by: <input type="checkbox"/> Valve <input type="checkbox"/> Cap <input type="checkbox"/> Plug</p> <p>Temperature _____ of. Quality _____</p> <p><i>Describe artesian or temperature zones below</i></p>																																					
<p><b>2. NATURE OF WORK</b></p> <p><u>47, 89227</u> <u>116, 89360</u></p> <p><input checked="" type="checkbox"/> New well <input type="checkbox"/> Deepened <input type="checkbox"/> Replacement</p> <p><input type="checkbox"/> Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)</p>	<p><b>8. WELL TEST DATA</b></p> <p><input checked="" type="checkbox"/> Pump <input type="checkbox"/> Bailor <input type="checkbox"/> Air <input type="checkbox"/> Other _____</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Discharge G.P.M.</th> <th>Pumping Level</th> <th>Hours Pumped</th> </tr> <tr> <td style="text-align: center;"><u>10</u></td> <td style="text-align: center;"><u>203'</u></td> <td style="text-align: center;"><u>4</u></td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	Discharge G.P.M.	Pumping Level	Hours Pumped	<u>10</u>	<u>203'</u>	<u>4</u>																															
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<p><b>3. PROPOSED USE</b></p> <p><input checked="" type="checkbox"/> Domestic <input type="checkbox"/> Irrigation <input type="checkbox"/> Test <input type="checkbox"/> Municipal</p> <p><input type="checkbox"/> Industrial <input type="checkbox"/> Stock <input type="checkbox"/> Waste Disposal or Injection</p> <p><input type="checkbox"/> Other _____ (specify type)</p>	<p><b>9. LITHOLOGIC LOG</b></p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Bore Diam.</th> <th colspan="2">Depth</th> <th rowspan="2">Material</th> <th rowspan="2">Water Yes/No</th> </tr> <tr> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td>10"</td> <td>0</td> <td>20'</td> <td>SILT &amp; SAND</td> <td style="text-align: center;">X</td> </tr> <tr> <td>6"</td> <td>20'</td> <td>73'</td> <td>SAND, SILTY GRAVEL</td> <td style="text-align: center;">X</td> </tr> <tr> <td>6"</td> <td>73'</td> <td>87'</td> <td>GRAVEL &amp; SAND</td> <td style="text-align: center;">X</td> </tr> <tr> <td>6"</td> <td>87'</td> <td>224'</td> <td>CEMENTED SAND &amp; GRAVEL</td> <td style="text-align: center;">X</td> </tr> <tr> <td>6"</td> <td>224'</td> <td>225'</td> <td>GRAVEL &amp; SAND</td> <td style="text-align: center;">X</td> </tr> <tr> <td colspan="5" style="text-align: center;"><i>Top of Gravel</i></td> </tr> </tbody> </table>	Bore Diam.	Depth		Material	Water Yes/No	From	To	10"	0	20'	SILT & SAND	X	6"	20'	73'	SAND, SILTY GRAVEL	X	6"	73'	87'	GRAVEL & SAND	X	6"	87'	224'	CEMENTED SAND & GRAVEL	X	6"	224'	225'	GRAVEL & SAND	X	<i>Top of Gravel</i>				
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<p><b>4. METHOD DRILLED</b></p> <p><input type="checkbox"/> Rotary <input type="checkbox"/> Air <input type="checkbox"/> Hydraulic <input type="checkbox"/> Reverse rotary</p> <p><input checked="" type="checkbox"/> Cable <input type="checkbox"/> Dug <input type="checkbox"/> Other _____</p>	<p><b>10.</b></p> <p>Work started <u>JUNE 4, 1987</u> finished <u>JUNE 12, 1987</u></p>																																					
<p><b>5. WELL CONSTRUCTION</b></p> <p>Casing schedule: <input checked="" type="checkbox"/> Steel <input type="checkbox"/> Concrete <input type="checkbox"/> Other _____</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Thickness</th> <th>Diameter</th> <th>From</th> <th>To</th> </tr> <tr> <td><u>1.250</u> inches</td> <td><u>6-ID</u> inches</td> <td><u>2</u> feet</td> <td><u>235</u> feet</td> </tr> <tr> <td>_____ inches</td> <td>_____ inches</td> <td>_____ feet</td> <td>_____ feet</td> </tr> <tr> <td>_____ inches</td> <td>_____ inches</td> <td>_____ feet</td> <td>_____ feet</td> </tr> <tr> <td>_____ inches</td> <td>_____ inches</td> <td>_____ feet</td> <td>_____ feet</td> </tr> </table> <p>Was casing drive shoe used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Was a packer or seal used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Perforated? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>How perforated? <input type="checkbox"/> Factory <input type="checkbox"/> Knife <input type="checkbox"/> Torch</p> <p>Size of perforation _____ inches by _____ inches</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Number</th> <th>From</th> <th>To</th> </tr> <tr> <td>_____ perforations</td> <td>_____ feet</td> <td>_____ feet</td> </tr> <tr> <td>_____ perforations</td> <td>_____ feet</td> <td>_____ feet</td> </tr> <tr> <td>_____ perforations</td> <td>_____ feet</td> <td>_____ feet</td> </tr> </table> <p>Well screen installed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Manufacturer's name _____</p> <p>Type _____ Model No. _____</p> <p>Diameter _____ Slot size _____ Set from _____ feet to _____ feet</p> <p>Diameter _____ Slot size _____ Set from _____ feet to _____ feet</p> <p>Gravel packed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Size of gravel _____</p> <p>Placed from _____ feet to _____ feet</p> <p>Surface seal depth <u>20'</u> Material used in seal: <input type="checkbox"/> Cement grout</p> <p><input checked="" type="checkbox"/> Bentonite <input type="checkbox"/> Puddling clay <input type="checkbox"/> _____</p> <p>Sealing procedure used: <input type="checkbox"/> Slurry pit <input checked="" type="checkbox"/> Temp. surface casing</p> <p><input type="checkbox"/> Overbore to seal depth</p> <p>Method of joining casing: <input type="checkbox"/> Threaded <input checked="" type="checkbox"/> Welded <input type="checkbox"/> Solvent Weld</p> <p><input type="checkbox"/> Cemented between strata</p> <p>Describe access port <u>6" WELL CAP</u></p>	Thickness	Diameter	From	To	<u>1.250</u> inches	<u>6-ID</u> inches	<u>2</u> feet	<u>235</u> feet	_____ inches	_____ inches	_____ feet	_____ feet	_____ inches	_____ inches	_____ feet	_____ feet	_____ inches	_____ inches	_____ feet	_____ feet	Number	From	To	_____ perforations	_____ feet	_____ feet	_____ perforations	_____ feet	_____ feet	_____ perforations	_____ feet	_____ feet	<p><b>11. DRILLERS CERTIFICATION</b></p> <p>I/We certify that all minimum well construction standards were complied with at the time the rig was removed.</p> <p>Firm Name <u>FLANIGAN &amp; FLANIGAN</u> Firm No. <u>433</u></p> <p>Address <u>P.O. Box 220 RATH DRUM ID.</u> Date <u>6/24/87</u></p> <p>Signed by (Firm Official) <u>James K. Flanigan</u></p> <p>and</p> <p>(Operator) <u>James H. Flanigan</u></p>					
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<p><b>6. LOCATION OF WELL</b></p> <p>Sketch map location <u>must</u> agree with written location.</p> <div style="display: flex; align-items: center;">  <div style="margin-left: 20px;"> <p>Subdivision Name <u>LAKE PARK</u></p> <p><u>7</u> SECOND ADDITION</p> <p>Lot No. <u>3</u> Block No. <u>F</u></p> </div> </div> <p>County <u>KOOTENAI</u></p> <p><u>S.E. 1/4 S.E. 1/4 Sec. 36 T. 53 N. R. 5 W.</u></p>																																						

**1. WELL OWNER**

Name MARTIN C. FRAKER  
 Address N. 9605 FJORD RD. PATH DRUM ID  
 Owner's Permit No. 95-90-N-34

**7. WATER LEVEL**

Static water level 16 feet below land surface.  
 Flowing?  Yes  No G.P.M. flow \_\_\_\_\_  
 Artesian closed-in pressure \_\_\_\_\_ p.s.i.  
 Controlled by:  Valve  Cap  Plug  
 Temperature \_\_\_\_\_ °F. Quality \_\_\_\_\_  
Describe artesian or temperature zones below.

**2. NATURE OF WORK**

New well  Deepened  Replacement  
 Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

**8. WELL TEST DATA**

Pump  Bailer  Air  Other \_\_\_\_\_

Discharge G.P.M.	Pumping Level	Hours Pumped
<u>14</u>	<u>101'</u>	<u>1</u>

**3. PROPOSED USE**

Domestic  Irrigation  Test  Municipal  
 Industrial  Stock  Waste Disposal or Injection  
 Other \_\_\_\_\_ (specify type)

**9. LITHOLOGIC LOG**

Bore Diam.	Depth		Material	Water	
	From	To		Yes	No
8"	0'	18'	SILT & SAND		X
6"	18'	20'	SAND & SILT		X
	20'	25'	SAND & SILT	X	
	25'	40'	DECOMPOSED GRANITE		X
	40'	78'	MED. HARD GRANITE	X	
	78'	101'	MED. HARD GRANITE		X

**4. METHOD DRILLED**

Rotary  Air  Hydraulic  Reverse rotary  
 Cable  Dug  Other \_\_\_\_\_

**5. WELL CONSTRUCTION**

Casing schedule:  Steel  Concrete  Other \_\_\_\_\_

Thickness	Diameter	From	To
<u>250</u> inches	<u>6</u> inches	<u>15</u> feet	<u>41</u> feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was casing drive shoe used?  Yes  No  
 Was a packer or seal used?  Yes  No  
 Perforated?  Yes  No  
 How perforated?  Factory  Knife  Torch  
 Size of perforation \_\_\_\_\_ inches by \_\_\_\_\_ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed?  Yes  No  
 Manufacturer's name \_\_\_\_\_  
 Type \_\_\_\_\_ Model No. \_\_\_\_\_  
 Diameter \_\_\_\_\_ Slot size \_\_\_\_\_ Set from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
 Diameter \_\_\_\_\_ Slot size \_\_\_\_\_ Set from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
 Gravel packed?  Yes  No  Size of gravel \_\_\_\_\_  
 Placed from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
 Surface seal depth 18' Material used in seal:  Cement grout  
 Bentonite  Pudding clay  \_\_\_\_\_  
 Sealing procedure used:  Slurry pit  Temp. surface casing  
 Overbore to seal depth  
 Method of joining casing:  Threaded  Welded  Solvent Weld  
 Cemented between strata  
 Describe access port 3/4" PLUG IN WELL SEAL

**6. LOCATION OF WELL**

Sketch map location must agree with written location.

Subdivision Name \_\_\_\_\_  
 Lot No. \_\_\_\_\_ Block No. \_\_\_\_\_

County KOOTENAI  
NE 1/4 NE 1/4 Sec. 36, T. 53 N., R. 5 W.

**10.** Work started May 18 1990 finished May 23 1990

**11. DRILLERS CERTIFICATION**

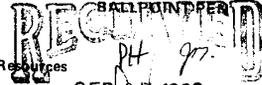
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Flanigan & Flanigan Firm No. 433  
 Address P.O. Box 320 Path Drum ID Date May 29 1990  
 Signed by (Firm Official) James H. Flanigan  
 and  
 (Operator) James H. Flanigan

STATE OF IDAHO  
DEPARTMENT OF WATER RESOURCES  
**WELL DRILLER'S REPORT**

State law requires that this report be filed with the Director, Department of Water Resources  
within 30 days after the completion or abandonment of the well.

USE TYPEWRITER OR  
BALLPOINT PEN



1. WELL OWNER  
Name LARRY MESHAW  
Address 9025 N. FJORD RD. PATH DRUM ID.  
Owner's Permit No. 95-88-N-38

7. WATER LEVEL  
Static water level 227 feet below land surface.  
Flowing?  Yes  No G.P.M. flow \_\_\_\_\_  
Artesian closed-in pressure \_\_\_\_\_ p.s.i.  
Controlled by:  Valve  Cap  Plug  
Temperature \_\_\_\_\_ °F. Quality \_\_\_\_\_  
*Describe artesian or temperature zones below:*

2. NATURE OF WORK  
 New well  Deepened  Replacement  
 Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

8. WELL TEST DATA  
 Pump  Bailer  Air  Other \_\_\_\_\_  
Discharge G.P.M. 20 Pumping Level 229 Hours Pumped 3

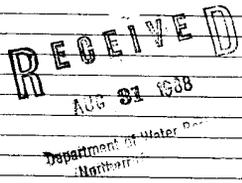
3. PROPOSED USE  
 Domestic  Irrigation  Test  Municipal  
 Industrial  Stock  Waste Disposal or Injection  
 Other \_\_\_\_\_ (specify type)

9. LITHOLOGIC LOG

Bore Diam.	Depth		Material	Water	
	From	To		Yes	No
1 1/4"	0	5'	SANDY SILT		X
6"	5'	15'	SAND & SILT		X
6"	15'	28'	GRAVEL & SAND		X
	28'	88'	SANDY SILT		X
	88'	95'	GRAVEL SANDY SILT		X
	95'	97'	GRAVEL BOLDER		X
	97'	165'	GRAVEL SANDY SILT		X
	165'	260'	SAND, GRAVEL, SILT		X
	260'	262'	DECOMPOSED GRANITE	X	

4. METHOD DRILLED  
 Rotary  Air  Hydraulic  Reverse rotary  
 Cable  Dug  Other \_\_\_\_\_

5. WELL CONSTRUCTION  
Casing schedule:  Steel  Concrete  Other \_\_\_\_\_  
Thickness \_\_\_\_\_ Diameter \_\_\_\_\_ From \_\_\_\_\_ To \_\_\_\_\_  
250 inches 6 inches + 25 feet 260 feet  
\_\_\_\_\_ inches \_\_\_\_\_ inches \_\_\_\_\_ feet \_\_\_\_\_ feet  
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Was casing drive shoe used?  Yes  No  
Was a packer or seal used?  Yes  No  
Perforated?  Yes  No  
How perforated?  Factory  Knife  Torch  
Size of perforation \_\_\_\_\_ inches by \_\_\_\_\_ inches  
Number \_\_\_\_\_ From \_\_\_\_\_ To \_\_\_\_\_  
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Well screen installed?  Yes  No  
Manufacturer's name \_\_\_\_\_  
Type \_\_\_\_\_ Model No. \_\_\_\_\_  
Diameter \_\_\_\_\_ Slot size \_\_\_\_\_ Set from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
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Gravel packed?  Yes  No  Size of gravel \_\_\_\_\_  
Placed from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
Surface seal depth \_\_\_\_\_ Material used in seal:  Cement grout  
 Bentonite  Puddling clay  \_\_\_\_\_  
Sealing procedure used:  Slurry pit  Temp. surface casing  
 Overbore to seal depth  
Method of joining casing:  Threaded  Welded  Solvent  
Weld \_\_\_\_\_  
 Cemented between strata  
Describe access port 5" PLUG IN WELL SEAL



6. LOCATION OF WELL  
Sketch map location must agree with written location.  
N  
W E  
S  
Subdivision Name \_\_\_\_\_  
Lot No. \_\_\_\_\_ Block No. \_\_\_\_\_  
County KOOTENAI  
E. 1/4 NE. 1/4 Sec. 36, T. 53 N., R. 5 W.

10. Work started July 18, 88 finished July 25, 88

11. DRILLERS CERTIFICATION  
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.  
Firm Name FLANIGAN FLANIGAN Firm No. 433  
Address P.O. Box 320 Path Drum ID. Date 8/29/88  
Signed by (Firm Official) James N. Flanigan  
and  
(Operator) James N. Flanigan

# WELL DRILLER'S REPORT

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within 30 days after the completion or abandonment of the well.

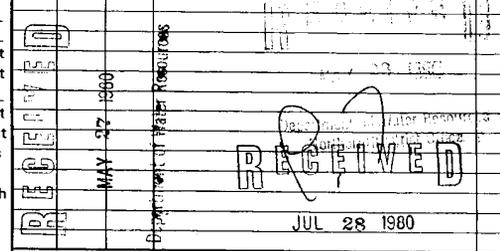
<p><b>1. WELL OWNER</b></p> <p>Name <u>Willis L. Vestal, Jr.</u>  <u>Route 4, Box 327</u>          Address <u>Rathdrum, Idaho 83858</u>          Owner's Permit No. <u>95-80-N-81</u></p>	<p><b>7. WATER LEVEL</b></p> <p>Static water level <u>32'</u> feet below land surface.          Flowing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No G.P.M. flow _____          Artesian closed-in pressure _____ p.s.i.          Controlled by: <input type="checkbox"/> Valve <input type="checkbox"/> Cap <input type="checkbox"/> Plug          Temperature _____ °F. Quality _____</p>																																																																																		
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6"	20	29	Sand, Gravel, Boulders		X																																																																														
	29	58	Granite		X																																																																														
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USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE COPY TO THE DEPARTMENT

STATE OF IDAHO  
DEPARTMENT OF WATER RESOURCES  
**WELL DRILLER'S REPORT**

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

<p><b>1. WELL OWNER</b></p> <p>Name <u>Martin C. Fraker</u></p> <p>Address <u>Route 4, Box 323, Rathdrum, Id. 83858</u></p> <p>Owner's Permit No. <u>95-80-N-21</u></p>	<p><b>7. WATER LEVEL</b></p> <p>Static water level <u>10'</u> feet below land surface.</p> <p>Flowing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No G.P.M. flow _____</p> <p>Artesian closed-in pressure _____ p.s.i.</p> <p>Controlled by: <input type="checkbox"/> Valve <input type="checkbox"/> Cap <input type="checkbox"/> Plug</p> <p>Temperature _____ OF. Quality _____</p>																																											
<p><b>2. NATURE OF WORK</b></p> <p><input checked="" type="checkbox"/> New well <input type="checkbox"/> Deepened <input type="checkbox"/> Replacement</p> <p><input type="checkbox"/> Abandoned (describe method of abandoning) _____</p>	<p><b>8. WELL TEST DATA</b></p> <p><input type="checkbox"/> Pump <input type="checkbox"/> Bailer <input type="checkbox"/> Air <input type="checkbox"/> Other _____</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Discharge G.P.M.</th> <th>Pumping Level</th> <th>Hours Pumped</th> </tr> </thead> <tbody> <tr> <td>1 - G.P.M.</td> <td></td> <td></td> </tr> </tbody> </table>	Discharge G.P.M.	Pumping Level	Hours Pumped	1 - G.P.M.																																							
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Form 238-7  
9/82

STATE OF IDAHO  
DEPARTMENT OF WATER RESOURCES  
**WELL DRILLER'S REPORT**

USE TYPEWRITER  
BALLPOINT PEN

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

(21)  
N/95

**1. WELL OWNER**  
Name Bob Husband  
Address R.O. Box 756 Spirit Lake  
Owner's Permit No. 95-87-N-76

**7. WATER LEVEL**  
Static water level 95' feet below land surface.  
Flowing?  Yes  No G.P.M. flow \_\_\_\_\_  
Artesian closed-in pressure \_\_\_\_\_ p.s.i.  
Controlled by:  Valve  Cap  Plug  
Temperature \_\_\_\_\_ OF. Quality Good  
*Describe artesian or temperature zones below.*

**2. NATURE OF WORK**  
 New well  Deepened  Replacement  
 Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

**8. WELL TEST DATA**  
 Pump  Baller  Air  Other \_\_\_\_\_

Discharge G.P.M.	Pumping Level	Hours Pumped
<u>174</u>	<u>130'</u>	<u>4</u>

**3. PROPOSED USE**  
 Domestic  Irrigation  Test  Municipal  
 Industrial  Stock  Waste Disposal or Injection  
 Other \_\_\_\_\_ (specify type)

**9. LITHOLOGIC LOG**

**4. METHOD DRILLED**  
 Rotary  Air  Hydraulic  Reverse rotary  
 Cable  Dug  Other \_\_\_\_\_

Bore Diam.	Depth		Material	V
	From	To		
8"	0	2	Topsoil	
	2	23	Solid + Gravel	
6"	23	440	Granite	X
	440	155	Clay	
	155	185	White sand	

618674

RECEIVED

JUL 10 1987

Department of Water Resources

**5. WELL CONSTRUCTION**  
Casing schedule:  Steel  Concrete  Other \_\_\_\_\_

Thickness	Diameter	From	To
<u>250</u> inches	<u>6"</u> inches	<u>1</u> feet	<u>73</u> feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was casing drive shoe used?  Yes  No  
Was a packer or seal used?  Yes  No  
Perforated?  Yes  No  
How perforated?  Factory  Knife  Torch  
Size of perforation \_\_\_\_\_ inches by \_\_\_\_\_ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed?  Yes  No  
Manufacturer's name \_\_\_\_\_  
Type \_\_\_\_\_ Model No. \_\_\_\_\_  
Diameter \_\_\_\_\_ Slot size \_\_\_\_\_ Set from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
Diameter \_\_\_\_\_ Slot size \_\_\_\_\_ Set from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
Gravel packed?  Yes  No  Size of gravel \_\_\_\_\_  
Placed from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
Surface seal depth 20' Material used in seal:  Cement grout  
 Bentonite  Pudding clay  \_\_\_\_\_  
Sealing procedure used:  Slurry pit  Temp. surface casing  
 Overbore to seal depth

53N 09W SEC 31 SWNN



STATE OF IDAHO  
DEPARTMENT OF WATER RESOURCES  
**WELL DRILLER'S REPORT**

USE TYPEWRITER OR  
BALLPOINT PEN

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

**1. WELL OWNER**

Name RAY VAUDREUIL  
 Address 1410 LINCOLN WAY CD'A ID 83814  
 Drilling Permit No. 95-93-N-95-000  
 Water Right Permit No. \_\_\_\_\_

**7. WATER LEVEL**

Static water level 180 feet below land surface.  
 Flowing?  Yes  No G.P.M. flow \_\_\_\_\_  
 Artesian closed-in pressure \_\_\_\_\_ p.s.i.  
 Controlled by:  Valve  Cap  Plug  
 Temperature COLD °F. Quality GOOD  
Describe artesian or temperature zones below.

**2. NATURE OF WORK**

New well  Deepened  Replacement  
 Well diameter increase  Modification  
 Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. in lithologic log, section 9.)

**8. WELL TEST DATA**

Pump  Bailer  Air  Other \_\_\_\_\_

Discharge G.P.M.	Pumping Level	Hours Pumped
40 GPM	380	1HR

**3. PROPOSED USE**

Domestic  Irrigation  Monitor  
 Industrial  Stock  Waste Disposal or Injection  
 Other \_\_\_\_\_ (specify type)

**9. LITHOLOGIC LOG**

Bore Diam.	Depth		Material	Water	
	From	To		Yes	No
10"	0	1	SOIL		X
	1	55	SAND & GRAVEL		X
	55	65	COBBLES & BOLDERS		X
	65	120	SAND & GRAVEL		X
	120	135	COBBLES BOULDERS		X
	135	145	SAND & GRAVEL		X
	145	155	SAND COARSE 1-2 GPM	X	
	155	180	DEC GRANITE		X
	180	198	GRANITE BLACK & WHITE		X
	198	240	GRANITE BLACK & WHITE SOFT / MED		X
	240	280	GRANITE BLACK & WHITE MED		X
	280	300	GRANITE BLACK & WHITE MOSTLY BLACK MED		X
	300	355	GRANITE BLACK & WHITE MED		X
	355	357	GRANITE BLACK & WHITE MED	X	
	357	380	GRANITE BLACK & WHITE MED		X

**4. METHOD DRILLED**

Rotary  Air  Auger  Reverse rotary  
 Cable  Mud  Other \_\_\_\_\_ (backhoe, hydraulic, etc.)

**5. WELL CONSTRUCTION**

Casing schedule:  Steel  Concrete  Other PVC  
 Thickness \_\_\_\_\_ Diameter \_\_\_\_\_ From \_\_\_\_\_ To \_\_\_\_\_  
2.50 Inches 8 inches + 2 feet 190 feet  
40 Inches 6 inches 140 feet 380 feet  
 \_\_\_\_\_ Inches \_\_\_\_\_ Inches \_\_\_\_\_ feet \_\_\_\_\_ feet

Was casing drive shoe used?  Yes  No  
 Was a packer or seal used?  Yes  No  
 Perforated?  Yes  No DRILL  
 How perforated?  Factory  Knife  Torch  Gun  
 Size of perforation? \_\_\_\_\_ Inches by \_\_\_\_\_ Inches  
 Number \_\_\_\_\_ From \_\_\_\_\_ To \_\_\_\_\_  
360 perforations 320 feet 380 feet  
 \_\_\_\_\_ perforations \_\_\_\_\_ feet \_\_\_\_\_ feet  
 \_\_\_\_\_ perforations \_\_\_\_\_ feet \_\_\_\_\_ feet

Well screen installed?  Yes  No  
 Manufacturer \_\_\_\_\_ Type \_\_\_\_\_  
 Top Packer or Headpipe \_\_\_\_\_  
 Bottom of Tailpipe \_\_\_\_\_

Diameter \_\_\_\_\_ Slot size \_\_\_\_\_ Set from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
 Diameter \_\_\_\_\_ Slot size \_\_\_\_\_ Set from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
 Gravel packed?  Yes  No  Size of gravel \_\_\_\_\_  
 Placed from \_\_\_\_\_ feet to \_\_\_\_\_ feet

Surface seal depth 55 Material used in seal:  Cement grout  
 Bentonite  Pudding clay  \_\_\_\_\_  
 Sealing procedure used:  Slurry pit  
 Temp. surface casing  Overbore to seal depth  
 Method of joining casing:  Threaded  Welded  
 Solvent Weld  Cemented between strata

Describe access port N/A

**6. LOCATION OF WELL**

Sketch map location must agree with written location.

Subdivision Name \_\_\_\_\_  
 Lot No. \_\_\_\_\_ Block No. \_\_\_\_\_  
 County KOOTENAI  
 Address of Well Site TWIN LAKE RD TWIN LAKE ID  
 (give at least name of road)  
 T. 53 N  or S   
SN ¼ SN ¼ Sec. 30, R. 4 E  or W

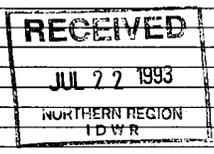
**10.**

Work started 6-14-93 finished 6-19-93

**11. DRILLER'S CERTIFICATION**

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name UNITED DRILLING INC. Firm No. 414  
 Address P. O. BOX 1690 HAYDEN LK ID 83835  
 Signed by Drilling Supervisor [Signature]  
 and  
 (Operator) Larry Vaudreuil JR.  
 (If different than the Drilling Supervisor)







Form 238-7  
11/97

05 2001  
DWR/North

IDAHO DEPARTMENT OF WATER RESOURCES  
WELL DRILLER'S REPORT

Office Use Only  
Inspected by \_\_\_\_\_  
Twp \_\_\_\_\_ Rge \_\_\_\_\_ Sec \_\_\_\_\_  
1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_  
Lat: \_\_\_\_\_ Long: \_\_\_\_\_  
 Air  Flowing Artesian

1. WELL TAG NO. D 0017826  
DRILLING PERMIT NO. \_\_\_\_\_  
Other IDWR No. 771168  
2. OWNER: Pine Ridge Development LLC  
Name \_\_\_\_\_  
Address P.O. Box 572  
City Athol State ID Zip 83801

POSTED

11. WELL TESTS:  
 Pump  Bailor

Yield gal/min.	Drawdown	Pumping Level	Time
50+	Air		4 hrs
37.5	Pump	373'	8 hrs

3. LOCATION OF WELL by legal description:  
Sketch map location must agree with written location.

N				
	X			
S				

Twp. 53 North  or South   
Rge. 4 East  or West   
Sec. 31 1/4 SE 1/4 NW 1/4  
Gov't Lot \_\_\_\_\_ County Kootenai  
Lat: \_\_\_\_\_ Long: \_\_\_\_\_  
Address of Well Site Wendler Loop Rd.  
City Twin Lakes

Water Temp. \_\_\_\_\_ Bottom hole temp. \_\_\_\_\_  
Water Quality test or comments: \_\_\_\_\_

12. LITHOLOGIC LOG: (Describe repairs or abandonment) Depth first Water Encounter: 415'

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temperature	Water	Y	N
12	0	2	Silt, brown, gravel, coarse			X
	2	9	Gravel, cobbles, silt			X
	9	18	Gravel, cobbles			X
8	18	19	Gravel, boulders, silt			X
	19	20	Boulder			X
	20	38	Silt, sand, gravel			X
	38	64	Silt, sand			X
	64	89	Gravel, sand			X
	89	116	Silt, sand, gravel			X
	116	143	Gravel, sand, silt			X
	143	180	Sand, silt			X
	180	216	Gravel, cobbles			X
	216	218	Boulder			X
	218	265	Gravel, sand			X
	265	291	Sand, gravel			X
	291	315	Cobbles, gravel			X
	315	326	Silt, gravel, sand			X
	326	345	Sand, gravel			X
	345	348	Silt, brown			X
	348	365	Gravel, medium			X
	365	367	Silt, orange			X
	367	369	Gravel, silt			X
	369	380	Gravel, sand			X
	380	383	Gravel, fine			X
	383	390	Gravel, fine, sand, coarse			X
	390	395	Sand, coarse			X
	395	403	Sand, medium, 30 slot			X
	403	405	Sand, medium, gravel, fine			X
	405	415	Gravel, sand			X
	415	418	Gravel, clean			X
	418	420	Gravel, angular, medium, clear			X
	420	423	Gravel, angular, medium, clear			X
			developed w/air 1 hour			

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MAR - 1 2012  
Department of Water Resources

4. USE:  
 Domestic  Municipal  Monitor  Irrigation  
 Thermal  Injection  Other

5. TYPE OF WORK check all that apply (Replacement etc.)  
 New Well  Modify  Abandonment  Other

6. DRILL METHOD  
 Air Rotary  Cable  Mud Rotary  Other

7. SEALING PROCEDURES

SEAL/FILTER PACK	AMOUNT		METHOD
Material	From	To	Sacks or Pounds
Bentonite	0	32	650#
			Overbore

Was drive shoe used?  Y  N Shoe Depth(s) ring bit  
Was drive shoe seal tested?  Y  N How? \_\_\_\_\_

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2	423	280	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe \_\_\_\_\_ Length of Tailpipe \_\_\_\_\_

9. PERFORATIONS/SCREENS

Perforations Method \_\_\_\_\_  
Screens Screen Type \_\_\_\_\_

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

373 ft. below ground Artesian pressure \_\_\_\_\_ lb.  
Depth flow encountered \_\_\_\_\_ ft. Describe access port or control devices: \_\_\_\_\_

Completed Depth 423' (Measurable)  
Date: Started 09/26/01 Completed 09/28/01

13. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name McCarty Drilling & Pump Inc. Firm No. 586

Firm Office [Signature] Date 10/3/01

and \_\_\_\_\_  
Driller or Operator \_\_\_\_\_ Date \_\_\_\_\_

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Form 2307  
3/95

IDAHO DEPARTMENT OF WATER RESOURCES

AUG 14 1997



WELL DRILLER'S REPORT

Use Typewriter or Ballpoint Pen

097248

Office Use Only  
 Inspected by TDK  
 Twp 53N Rge 4W Sec 31  
1/4 SW 1/4 NW 1/4  
 Lat: \_\_\_\_\_ Long: \_\_\_\_\_

1. DRILLER'S PERMIT NO. 95-97-N-60  
Other IDWR No. 00000004

2. OWNER:  
Name BILL HERBERT  
Address 725 E. TWINKLOW RD.  
City RATHBURN State ID Zip 83858

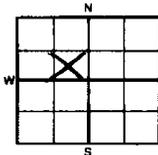
11. WELL TESTS:

Pump  Bailor  Air  Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
5 to 8 GPM	100%	000	3 hrs.
not tested			

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.



Twp. 53N North  or South   
Rge. 4W East  or West   
Sec. 31 1/4 SW 1/4 NW 1/4  
Gov't Lot \_\_\_\_\_ County Keeshona  
Lat: \_\_\_\_\_ Long: \_\_\_\_\_  
Address of Well Site 725 E. Twinklow road  
City Rathburn

City Rathburn  
Lt. \_\_\_\_\_ Blk. \_\_\_\_\_ Sub. Name \_\_\_\_\_

4. USE:

- Domestic  Municipal  Monitor  Irrigation
- Thermal  Injection  Other \_\_\_\_\_

5. TYPE OF WORK check all that apply (Replacement etc.)

- New Well  Modify  Abandonment  Other \_\_\_\_\_

6. DRILL METHOD

- Air Rotary  Cable  Mud Rotary  Other \_\_\_\_\_

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	
Bentonite	0	20	14 sacks	dry

Was drive shoe used?  Y  N Shoe Depth(s) \_\_\_\_\_  
Was drive shoe seal tested?  Y  N How? \_\_\_\_\_

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
8"	0	79	.250	steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6"	0	340	.250	steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe \_\_\_\_\_ Length of Tailpipe \_\_\_\_\_

9. PERFORATIONS/SCREENS

- Perforations Method \_\_\_\_\_
- Screens Screen Type \_\_\_\_\_

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						<input type="checkbox"/>	<input type="checkbox"/>

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

300 ft. below ground Artesian pressure \_\_\_\_\_ lb.  
Depth flow encountered \_\_\_\_\_ ft. Describe access port or control devices: cap welded

12. LITHOLOGIC LOG: (Describe repairs or abandonment) Wa

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y
10"	0	20	Sand	
8"	20	79	Sand & clay mixed	
8"	79	162	Rock - hard - broken	
8"	162	210	Clay with sand mix	
8"	210	240	Sand, gravel & heavy clay	
8"	240	500	Hard black & white granite	
8"	500	572	Red broken quartz	X
			5 to 8 GPM - air test	
8"	572	600	Hard black granite	

Completed Depth 600' (Measurab \_\_\_\_\_)  
Date: Started 7/01/97 Completed 7/18/97

13. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with the time the rig was removed.

Firm Name United Drilling Inc. Firm No. 414

Firm Official [Signature] Date 7/31/97

and Supervisor or Operator Jason C. Beckham Date 7/31/97

(Sign once if Firm Official & Operator)

**SE NW 31 53N 4W**

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Form 238-7  
11/97

MAR 05 2002

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

IDWR/North

Office Use Only		
Inspected by		
Twp	Rge	Sec
1/4	1/4	1/4
Lat	Long	

1. WELL TAG NO. D0022132

DRILLING PERMIT N 773281

Other IDWR No

2. OWNER:

Name Greg Hiatt

Address 3579 W Seasons Road

City Rathdrum State ID \_\_\_\_\_ Zip 83858

3. LOCATION OF WELL by legal description:

N		Twp	53N	North	<input checked="" type="checkbox"/>	or	South
Rge		04W	East	or	West	<input checked="" type="checkbox"/>	
Sec		30	1/4	NW	1/4	SE	1/4
Gov't Lot		County		Kootenai			
Lat		Long					

Address of Well Site: (see next line)

City \_\_\_\_\_

Lot \_\_\_\_\_ Blk \_\_\_\_\_ Sub. Name (see next line) \_\_\_\_\_

4. USE:

- Domestic    Municipal  Monitor  Irrigation
- Thermal    Injection  Other \_\_\_\_\_

5. TYPE OF WORK check all that apply (Replacement etc.)

- New Well    Modify  Abandonment    Other \_\_\_\_\_

6. DRILL METHOD

- Air Rotary    Cable  Mud Rotary  Other \_\_\_\_\_

7. SEALING PROCEDURES

SEAL/FILTER PACK			Amount	Method
Material	From	To	Sacks/Lbs	
Bentonite	0	19	8 sacks	dry pour

Drive Shoe Used?  Y    N Shoe Depth(s) 19 feet

Drive Shoe Seal Tested?  Y  N How? \_\_\_\_\_

8. CASING/LINER

Diam	From	To	Gauge	Material	Casng	Liner	Weld	Thrded
6	+1	19	0.250	Steel	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	-10	240	0.165	PVC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Length Headpipe \_\_\_\_\_ Length Tailpipe \_\_\_\_\_

9. PERFORATIONS/SCREENS

Perforations? Method \_\_\_\_\_

Screens? Screen Type PVC

From	To	Slot	Nmbr	Diam	Material	Casng	Liner
200	240	.40		4"	PVC	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

10. STATIC WATER LEVEL or ARTESIAN PRESSURE

20 ft. below ground. Artesian pressure \_\_\_\_\_ lb.

Depth flow encountered 218 ft. Describe access port or control devices: Cap welded

53N 4W 30 FORWARD WHITE COPY TO WATER RESOURCES

11. WELL TESTS:

Yield gal./min.	Drawdown	Pump Level	Time
17 GPM	100%	240	1 hr.

Water Temp. \_\_\_\_\_ cold \_\_\_\_\_ Bottom hole temp. \_\_\_\_\_ cold  
Water Quality test or comments: (below) Depth first Water Encountered 218 clear

12. LITHOLOGIC LOG (Describe repairs or abandonment)

Bore Diam	From	To	Lithology, Water Quality and Temperature	Remarks	
				Y	N
8	0	4	Top Soil	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8	4	16	Sand & gravel	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8	16	19	Decomposed granite	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6	19	142	Decomposed granite	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6	142	240	Black & white granite	<input checked="" type="checkbox"/>	<input type="checkbox"/>
			17 GPM @ 218' to 224'		

Completed Depth 240 (Measurable)  
Date: Started 1/31/02 Completed 2/1/02

13. DRILLERS CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name United Drilling Inc. Firm No 414

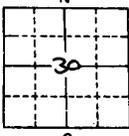
Firm Official [Signature] Date 2/5/02

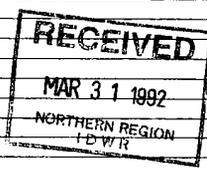
Supervisor or Operator Timothy R. Volking Date 2/5/02

495

# WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

<p><b>1. WELL OWNER</b>                  Name <u>Mike Dietrich</u>                  Address <u>Timber Ridge, Spirit Lake Id</u>                  Drilling Permit No. <u>96-92-N-32</u>                  Water Right Permit No. _____</p>	<p><b>7. WATER LEVEL</b>                  Static water level _____ feet below land surface.                  Flowing? <input type="checkbox"/> Yes <input type="checkbox"/> No G.P.M. flow _____                  Artesian closed-in pressure _____ p.s.i.                  Controlled by: <input type="checkbox"/> Valve <input type="checkbox"/> Cap <input type="checkbox"/> Plug                  Temperature _____ of. Quality _____  <i>Describe artesian or temperature zones below.</i></p>																																																																																	
<p><b>2. NATURE OF WORK</b>  <input checked="" type="checkbox"/> New well <input type="checkbox"/> Deepened <input type="checkbox"/> Replacement  <input type="checkbox"/> Well diameter increase  <input type="checkbox"/> Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)</p>	<p><b>8. WELL TEST DATA</b>  <input type="checkbox"/> Pump <input type="checkbox"/> Bailor <input checked="" type="checkbox"/> Air <input type="checkbox"/> Other _____</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Discharge G.P.M.</th> <th>Pumping Level</th> <th>Hours Pumped</th> </tr> <tr> <td style="text-align: center;"><u>5+</u></td> <td style="text-align: center;"><u>665</u></td> <td style="text-align: center;"><u>2</u></td> </tr> </table>	Discharge G.P.M.	Pumping Level	Hours Pumped	<u>5+</u>	<u>665</u>	<u>2</u>																																																																											
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<p><b>3. PROPOSED USE</b>  <input checked="" type="checkbox"/> Domestic <input type="checkbox"/> Irrigation <input type="checkbox"/> Test <input type="checkbox"/> Municipal  <input type="checkbox"/> Industrial <input type="checkbox"/> Stock <input type="checkbox"/> Waste Disposal or Injection  <input type="checkbox"/> Other _____ (specify type)</p>	<p><b>9. LITHOLOGIC LOG</b></p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Bore Diam.</th> <th colspan="2">Depth</th> <th rowspan="2">Material</th> <th rowspan="2">Water Yes No</th> </tr> <tr> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td>8"</td> <td>0</td> <td>27</td> <td>SAND, GRAVEL, Boulders</td> <td>X</td> </tr> <tr> <td rowspan="16">6"</td> <td>27</td> <td>42</td> <td>Decomposed Granite</td> <td>X</td> </tr> <tr> <td>42</td> <td>45</td> <td>Decomposed Granite @ 19gr</td> <td>X</td> </tr> <tr> <td>45</td> <td>180</td> <td>Granite - gray - soft</td> <td>X</td> </tr> <tr> <td>180</td> <td>284</td> <td>Granite - gray - med</td> <td>X</td> </tr> <tr> <td>284</td> <td>285</td> <td>Granite - gray - fine</td> <td>X</td> </tr> <tr> <td>285</td> <td>302</td> <td>Granite - gray - med</td> <td>X</td> </tr> <tr> <td>302</td> <td>304</td> <td>Granite - gray - fine</td> <td>X</td> </tr> <tr> <td>304</td> <td>320</td> <td>Granite - gray - med</td> <td>X</td> </tr> <tr> <td>320</td> <td>326</td> <td>Granite - gray - med</td> <td>X</td> </tr> <tr> <td>326</td> <td>390</td> <td>Granite - gray - med</td> <td>X</td> </tr> <tr> <td>390</td> <td>391</td> <td>Granite - gray - med</td> <td>X</td> </tr> <tr> <td>391</td> <td>430</td> <td>Granite - gray - med</td> <td>X</td> </tr> <tr> <td>430</td> <td>450</td> <td>Granite - gray - med</td> <td>X</td> </tr> <tr> <td>450</td> <td>554</td> <td>Granite - gray - med</td> <td>X</td> </tr> <tr> <td>554</td> <td>620</td> <td>Granite - gray - fine @ 29gr</td> <td>X</td> </tr> <tr> <td>620</td> <td>624</td> <td>Granite - gray - soft @ 29gr</td> <td>X</td> </tr> <tr> <td>624</td> <td>665</td> <td>Granite - gray - med</td> <td>X</td> </tr> </tbody> </table>	Bore Diam.	Depth		Material	Water Yes No	From	To	8"	0	27	SAND, GRAVEL, Boulders	X	6"	27	42	Decomposed Granite	X	42	45	Decomposed Granite @ 19gr	X	45	180	Granite - gray - soft	X	180	284	Granite - gray - med	X	284	285	Granite - gray - fine	X	285	302	Granite - gray - med	X	302	304	Granite - gray - fine	X	304	320	Granite - gray - med	X	320	326	Granite - gray - med	X	326	390	Granite - gray - med	X	390	391	Granite - gray - med	X	391	430	Granite - gray - med	X	430	450	Granite - gray - med	X	450	554	Granite - gray - med	X	554	620	Granite - gray - fine @ 29gr	X	620	624	Granite - gray - soft @ 29gr	X	624	665	Granite - gray - med	X
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<p><b>4. METHOD DRILLED</b>  <input checked="" type="checkbox"/> Rotary <input checked="" type="checkbox"/> Air <input type="checkbox"/> Hydraulic <input type="checkbox"/> Reverse rotary  <input type="checkbox"/> Cable <input type="checkbox"/> Dug <input type="checkbox"/> Other _____</p>	<p><b>10.</b>                  Work started <u>3-20-92</u> finished <u>3-26-92</u></p>																																																																																	
<p><b>5. WELL CONSTRUCTION</b> <u>OVC 658'</u>                  Casing schedule: <input checked="" type="checkbox"/> Steel <input type="checkbox"/> Concrete <input type="checkbox"/> Other _____                  Thickness _____ Diameter _____ From _____ To _____  <u>250</u> inches <u>6</u> inches + <u>2</u> feet <u>27</u> feet  <u>OVC</u> inches <u>4</u> inches - <u>7</u> feet <u>665</u> feet                  Was casing drive shoe used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No                  Was a packer or seal used? <input type="checkbox"/> Yes <input type="checkbox"/> No                  Perforated? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <u>1 saw</u>                  How perforated? <input type="checkbox"/> Factory <input type="checkbox"/> Knife <input type="checkbox"/> Torch <input type="checkbox"/> Gun                  Size of perforation <u>1/8</u> inches by <u>4</u> inches                  Number _____ From _____ To _____  <u>100</u> perforations <u>605</u> feet <u>665</u> feet                  _____ perforations _____ feet _____ feet                  _____ perforations _____ feet _____ feet                  Well screen installed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                  Manufacturer's name _____                  Type _____ Model No. _____                  Diameter _____ Slot size _____ Set from _____ feet to _____ feet                  Diameter _____ Slot size _____ Set from _____ feet to _____ feet                  Gravel packed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Size of gravel _____                  Placed from _____ feet to _____ feet                  Surface seal depth <u>19</u> Material used in seal: <input type="checkbox"/> Cement grout  <input checked="" type="checkbox"/> Bentonite <input type="checkbox"/> Puddling clay <input type="checkbox"/> _____                  Sealing procedure used: <input type="checkbox"/> Slurry pit <input type="checkbox"/> Temp. surface casing  <input checked="" type="checkbox"/> Overbore to seal depth                  Method of joining casing: <input type="checkbox"/> Threaded <input checked="" type="checkbox"/> Welded <input type="checkbox"/> Solvent  <input type="checkbox"/> Weld  <input type="checkbox"/> Cemented between strata                  Describe access port _____</p>	<p><b>11. DRILLERS CERTIFICATION</b>                  I/We certify that all minimum well construction standards were complied with at the time the rig was removed.                  Firm Name <u>H2O Well Svc</u> Firm No. <u>448</u>                  Address <u>Hayden Lk, Id</u> Date <u>3-26-92</u>                  Signed by (Firm Official) <u>Brett J. [Signature]</u>                  and                  (Operator) <u>[Signature]</u></p>																																																																																	
<p><b>6. LOCATION OF WELL</b>                  Sketch map location <u>must</u> agree with written location.                    Subdivision Name <u>Timber</u>  <u>Ridge Estates</u>                  Lot No. _____ Block No. _____                  County <u>Kootenai</u>  <u>NE 1/4 NW 1/4 Sec. 30, T. 53 N, R. 4 E</u></p>	<p><b>USE ADDITIONAL SHEETS NECESSARY. FORWARD THE WHOLE COPY TO THE DEPARTMENT.</b></p>																																																																																	



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Form 238-7 JUN 25 2001 11/97

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

IDWR/North

Office Use Only  
 Inspected by \_\_\_\_\_  
 Twp \_\_\_\_\_ Rge \_\_\_\_\_ Sec \_\_\_\_\_  
 1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_  
 Lat: \_\_\_\_\_ Long: \_\_\_\_\_

1. WELL TAG NO. D 0017233

DRILLING PERMIT NO. \_\_\_\_\_

Other IDWR No. 769217

2. OWNER:

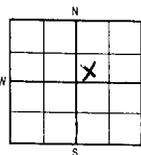
Name Clair Hooten

Address P.O. 745

City Rathdrum, State ID Zip 83858

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.



Twp. 53 North  or South   
 Rge. 4 East  or West   
 Sec. 30 1/4 SW 1/4 NE 1/4  
 Gov't Lot \_\_\_\_\_ County Kootenai  
 Lat: \_\_\_\_\_ Long: \_\_\_\_\_

Address of Well Site Timber Ridge Road

City Twin Lakes

(Give at least name of road + Distance to Road or (Landmark))

Lt. \_\_\_\_\_ Blk. \_\_\_\_\_ Sub. Name \_\_\_\_\_

4. USE:

- Domestic  Municipal  Monitor  Irrigation  
 Thermal  Injection  Other

5. TYPE OF WORK check all that apply (Replacement etc.)

- New Well  Modify  Abandonment  Other

6. DRILL METHOD

- Air Rotary  Cable  Mud Rotary  Other

7. SEALING PROCEDURES

SEAL/FILTER PACK	AMOUNT		METHOD
	From	To	
Bentonite	0	18	200# overbore

Was drive shoe used?  Y  N Shoe Depth(s) ring bit  
 Was drive shoe seal tested?  Y  N How?

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2	223	250	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4"	205	605	160	PVC	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe \_\_\_\_\_ Length of Tailpipe \_\_\_\_\_

9. PERFORATIONS/SCREENS

Perforations Method saw cut 1/8"x5"  
 Screens Screen Type \_\_\_\_\_

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
585	605		60		PVC	<input type="checkbox"/>	<input checked="" type="checkbox"/>

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

316 ft. below ground Artesian pressure \_\_\_\_\_ lb.  
 Depth flow encountered \_\_\_\_\_ ft. Describe access port or control devices:

5.3N 4W 30

11. WELL TESTS:

- Pump  Bailor  Air  Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
5gpm			

Water Temp. \_\_\_\_\_ Bottom hole temp. \_\_\_\_\_

Water Quality test or comments: \_\_\_\_\_

Depth first Water Encounter 223

12. LITHOLOGIC LOG: (Describe repairs or abandonment) Water

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
8"	0	1	Topsoil, gravel		X
	1	3	Boulder, granite		X
	3	18	Gravel, sand, silt		X
	18	40	Gravel, cobbles		X
	40	46	Gravel, cobbles, large		X
	46	79	Gravel, sand		X
	79	127	Sand, gravel, coarse		X
	127	132	Sand, gravel		X
	132	137	Boulder, granite, hard		X
	137	140	Sand, med. to coarse		X
	140	148	Boulder, shale, brown		X
	148	187	Gravel, fine, clean		X
	187	206	Gravel, cobbles		X
	206	223	Shale, tan, decomposed		X
6"	223	240	Shale, grey w/blk & wht 1 gpm	X	
	240	248	Shale, rose, soft		
	248	253	Shale, grey, green w/ blk & wht		
	253	266	Shale, rose, soft		
	266	296	Shale, lenses of grey, rose		
	296	298	Shale, white		
	298	330	Shale, grey, grn, rose, wht lens		
	330	343	Shale, rose, broken		
	343	529	Shale, grey, grn, rose, wht lens		
	529	532	Shale, white, hard		
	532	548	Shale, rose, Quartz, fract. 4gpm	X	
	548	568	Shale, brown		
	568	580	Shale, grey, hard		
	580	601	Shale, brn, grn, hard		
	601	605	Shale, grey, grn, hard		

Completed Depth 605' (Measurable)  
 Date: Started 06/04/01 Completed 06/13/01

13. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name McCarty Drilling & Pump Inc Firm No. 586

Firm Official *[Signature]* Date 6/19/01

Driller or Operator \_\_\_\_\_ Date \_\_\_\_\_

(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

STATE OF IDAHO  
DEPARTMENT OF WATER RESOURCES  
**WELL DRILLER'S REPORT**

USE TYPEWRITER OR  
BALLPOINT PEN

Well #30

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

<p><b>1. WELL OWNER</b></p> <p>Name <u>Thurman Gibson</u></p> <p>Address <u>Quinn Lakes, ID</u></p> <p>Owner's Permit No. <u>96-86-N-131</u></p>	<p><b>7. WATER LEVEL</b></p> <p>Static water level <u>50</u> feet below land surface.</p> <p>Flowing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No G.P.M. flow _____</p> <p>Artesian closed-in pressure _____ p.s.i.</p> <p>Controlled by: <input type="checkbox"/> Valve <input type="checkbox"/> Cap <input type="checkbox"/> Plug</p> <p>Temperature <u>Cold</u> °F. Quality _____</p> <p><i>Describe artesian or temperature zones below.</i></p>																																																										
<p><b>2. NATURE OF WORK</b></p> <p><input checked="" type="checkbox"/> New well <input type="checkbox"/> Deepened <input type="checkbox"/> Replacement</p> <p><input type="checkbox"/> Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)</p>	<p><b>8. WELL TEST DATA</b></p> <p><input type="checkbox"/> Pump <input type="checkbox"/> Bailor <input checked="" type="checkbox"/> Air <input type="checkbox"/> Other _____</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Discharge G.P.M.</th> <th>Pumping Level</th> <th>Hours Pumped</th> </tr> <tr> <td><u>APPROX. 25</u></td> <td></td> <td></td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	Discharge G.P.M.	Pumping Level	Hours Pumped	<u>APPROX. 25</u>																																																						
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<p><b>3. PROPOSED USE</b></p> <p><input checked="" type="checkbox"/> Domestic <input type="checkbox"/> Irrigation <input type="checkbox"/> Test <input type="checkbox"/> Municipal</p> <p><input type="checkbox"/> Industrial <input type="checkbox"/> Stock <input type="checkbox"/> Waste Disposal or Injection</p> <p><input type="checkbox"/> Other _____ (specify type)</p>	<p><b>9. LITHOLOGIC LOG</b></p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Bore Diam.</th> <th colspan="2">Depth</th> <th rowspan="2">Material</th> <th colspan="2">Water</th> </tr> <tr> <th>From</th> <th>To</th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>8</td> <td>0</td> <td>44</td> <td>GRAVEL Boulders</td> <td></td> <td>✓</td> </tr> <tr> <td>6</td> <td>44</td> <td>55</td> <td>GRANITE (Brown Soft)</td> <td>✓</td> <td></td> </tr> <tr> <td>6</td> <td>55</td> <td>103</td> <td>GRANITE</td> <td>✓</td> <td></td> </tr> <tr> <td>6</td> <td>103</td> <td>125</td> <td>GRANITE (Soft decomposed)</td> <td>✓</td> <td></td> </tr> <tr> <td>6</td> <td>125</td> <td>250</td> <td>GRANITE Hard</td> <td></td> <td></td> </tr> <tr> <td>6</td> <td>250</td> <td>360</td> <td>Granite some Quartz</td> <td></td> <td></td> </tr> <tr> <td></td> <td>360</td> <td>390</td> <td>Granite (Soft Brown)</td> <td>✓</td> <td></td> </tr> <tr> <td></td> <td>390</td> <td>425</td> <td>Granite Soft Broken</td> <td>✓</td> <td></td> </tr> </tbody> </table>	Bore Diam.	Depth		Material	Water		From	To	Yes	No	8	0	44	GRAVEL Boulders		✓	6	44	55	GRANITE (Brown Soft)	✓		6	55	103	GRANITE	✓		6	103	125	GRANITE (Soft decomposed)	✓		6	125	250	GRANITE Hard			6	250	360	Granite some Quartz				360	390	Granite (Soft Brown)	✓			390	425	Granite Soft Broken	✓	
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<p><b>4. METHOD DRILLED</b></p> <p><input checked="" type="checkbox"/> Rotary <input type="checkbox"/> Air <input type="checkbox"/> Hydraulic <input type="checkbox"/> Reverse rotary</p> <p><input type="checkbox"/> Cable <input type="checkbox"/> Dug <input type="checkbox"/> Other _____</p>	<p><b>5. WELL CONSTRUCTION</b></p> <p>Casing schedule: <input checked="" type="checkbox"/> Steel <input type="checkbox"/> Concrete <input type="checkbox"/> Other <u>LINEP H2O PVC</u></p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Thickness</th> <th>Diameter</th> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td><u>.250</u> inches</td> <td><u>6</u> inches</td> <td><u>1 1/4</u> feet</td> <td><u>44</u> feet</td> </tr> <tr> <td>_____ inches</td> <td>_____ inches</td> <td>_____ feet</td> <td>_____ feet</td> </tr> <tr> <td>_____ inches</td> <td>_____ inches</td> <td>_____ feet</td> <td>_____ feet</td> </tr> <tr> <td>_____ inches</td> <td>_____ inches</td> <td>_____ feet</td> <td>_____ feet</td> </tr> </tbody> </table> <p>Was casing drive shoe used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Was a packer or seal used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Perforated? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>How perforated? <input type="checkbox"/> Factory <input type="checkbox"/> Knife <input type="checkbox"/> Torch</p> <p>Size of perforation _____ inches by _____ inches</p> <p>Number _____ perforations _____ feet _____ feet</p> <p>_____ perforations _____ feet _____ feet</p> <p>_____ perforations _____ feet _____ feet</p> <p>Well screen installed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Manufacturer's name _____</p> <p>Type _____ Model No. _____</p> <p>Diameter _____ Slot size _____ Set from _____ feet to _____ feet</p> <p>Diameter _____ Slot size _____ Set from _____ feet to _____ feet</p> <p>Gravel packed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Size of gravel _____</p> <p>Placed from _____ feet to _____ feet</p> <p>Surface seal depth <u>44</u> Material used in seal: <input type="checkbox"/> Cement grout</p> <p><input checked="" type="checkbox"/> Bentonite <input type="checkbox"/> Puddling clay <input type="checkbox"/> _____</p> <p>Sealing procedure used: <input type="checkbox"/> Slurry pit <input checked="" type="checkbox"/> Temp. surface casing</p> <p><input checked="" type="checkbox"/> Overbore to seal depth</p> <p>Method of joining casing: <input type="checkbox"/> Threaded <input checked="" type="checkbox"/> Welded <input type="checkbox"/> Solvent</p> <p><input type="checkbox"/> Cemented between strata</p> <p>Describe access port _____</p>	Thickness	Diameter	From	To	<u>.250</u> inches	<u>6</u> inches	<u>1 1/4</u> feet	<u>44</u> feet	_____ inches	_____ inches	_____ feet	_____ feet	_____ inches	_____ inches	_____ feet	_____ feet	_____ inches	_____ inches	_____ feet	_____ feet																																						
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<p><b>6. LOCATION OF WELL</b></p> <p>Sketch map location <u>must</u> agree with written location.</p> <div style="text-align: center;"> </div> <p>Subdivision Name _____</p> <p>Lot No. _____ Block No. _____</p> <p>County <u>Kootenai</u></p> <p><u>S/E</u> 1/4 <u>N/E</u> 1/4 Sec. <u>30</u>, T. <u>53</u> (N), R. <u>4</u> (W)</p>	<p><b>10.</b></p> <p>Work started <u>2-18-86</u> finished <u>2-25-86</u></p> <p><b>11. DRILLERS CERTIFICATION</b></p> <p>I/We certify that all minimum well construction standards were complied with at the time the rig was removed.</p> <p>Firm Name <u>H2O Well Service Firm No. 448</u></p> <p>Address <u>582 W Hayden Ave</u> Date <u>2-26-86</u></p> <p><u>H. J. Salvo</u></p> <p>Signed by (Firm Official) <u>John Wheeler</u></p> <p>and (Operator) <u>Glennice Phibbs</u></p>																																																										

RECEIVED  
FEB 23 1986

RECEIVED  
MAR 6 1986

Department of Water Resources  
District Office

Form 238-7  
11/97

IDAHO DEPARTMENT OF WATER RESOURCES  
WELL DRILLER'S REPORT

RECEIVED

APR 22 1999

1. WELL TAG NO. D0005845  
 DRILLING IDWR North 96-99-N-52  
 Other IDWR No \_\_\_\_\_  
 2. OWNER:  
 Name Clair Hooten  
 Address P.O. Box 745  
 City Rathdrum State ID \_\_\_\_\_ Zip 83858

11. WELL TESTS:  
 Pump  Bailor  Air  Flowing Artesian

Yield gal./min	Drawdown	Pump Level	Time
1 to 2 est	100%	815	1 hr.

Office Use Only  
 Inspected by \_\_\_\_\_  
 Twp \_\_\_\_\_ Rge \_\_\_\_\_ Sec \_\_\_\_\_  
 1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_  
 Lat. : : Long. : : :

3. LOCATION OF WELL by legal description:  
 N  

	X	

 S  
 Twp 53N North  or South   
 Rge 04W East  or West   
 Sec 30 1/4 SW 1/4 NE 1/4  
 Gov't Lot \_\_\_\_\_ County Kootenai  
 Lat \_\_\_\_\_ Long \_\_\_\_\_  
 Address of Well Site: (see next line)

Water Temp \_\_\_\_\_ cold Bottom hole temp. \_\_\_\_\_ cold  
 Water Quality test or comments: (below) Depth first Water Encountered 320  
 clear, cold, no smell

Timber Lane, Twin Lakes all most to end on right City \_\_\_\_\_  
 Lot \_\_\_\_\_ Blk \_\_\_\_\_ Sub. Name (see next line) \_\_\_\_\_

12. LITHOLOGIC LOG (Describe repairs or abandonment)

Bore Diam	From	To	Lithology, Water Quality and Temperature	Remarks:	
				Y	N
8	0	1	Topsoil	<input type="checkbox"/>	<input type="checkbox"/>
8	1	18	Sand & Gravel - 3/4 minus	<input type="checkbox"/>	<input type="checkbox"/>
6	18	140	Sand & gravel - 3/4 minus	<input type="checkbox"/>	<input type="checkbox"/>
6	140	143	Decomposed granite	<input type="checkbox"/>	<input type="checkbox"/>
6	143	145	Granite	<input type="checkbox"/>	<input type="checkbox"/>
6	145	240	Purple/Black/White granite - hard	<input type="checkbox"/>	<input type="checkbox"/>
6	240	320	Purple/Black/White granite - medium	<input type="checkbox"/>	<input type="checkbox"/>
6	320	321	Purple/Black/White granite - soft	<input type="checkbox"/>	<input type="checkbox"/>
			water - 1 gpm	<input type="checkbox"/>	<input type="checkbox"/>
6	321	395	Purple/Black/White granite - hard	<input type="checkbox"/>	<input type="checkbox"/>
6	395	405	Green & white granite - soft	<input type="checkbox"/>	<input type="checkbox"/>
6	405	815	Purple/black/white granite - hard	<input type="checkbox"/>	<input type="checkbox"/>

4. USE:  
 Domestic  Municipal  Monitor  Irrigation  
 Thermal  Injection  Other \_\_\_\_\_

5. TYPE OF WORK check all that apply (Replacement etc.)  
 New Well  Modify  Abandonment  Other \_\_\_\_\_

6. DRILL METHOD  
 Air Rotary  Cable  Mud Rotary  Other \_\_\_\_\_

7. SEALING PROCEDURES

SEAL/FILTER PACK			Amount	Method
Material	From	To	Sacks/Lbs	
Bentonite	0	18	11 sacks	pour in

Drive Shoe Used?  Y  N Shoe Depth(s) 145  
 Drive Shoe Seal Tested?  Y  N How? \_\_\_\_\_

8. CASING/LINER

Diam	From	To	Gauge	Material	Casng	Liner	Weld	Thrded
6	1	-145	0.025	Steel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Length Headpipe \_\_\_\_\_ Length Tailpipe \_\_\_\_\_

9. PERFORATIONS/SCREENS  
 Perforations? Method \_\_\_\_\_  
 Screens? Screen Type \_\_\_\_\_

From	To	Slot	Nmbr	Diam	Material	Casng	Liner
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>

10. STATIC WATER LEVEL or ARTESIAN PRESSURE  
300 ft. below ground Artesian pressure \_\_\_\_\_ lb  
 Depth flow encountered 320 ft. Describe access port or control devices Steel cap welded

Completed Depth 815 (Measurable)  
 Date: Started 4/5/99 Completed 4/8/99

13. DRILLERS CERTIFICATION  
 I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm UNITED DRILLING INC. Firm No 414  
 Name \_\_\_\_\_  
 Firm Official Timothy R. Volking Date 4/21/99  
 and \_\_\_\_\_  
 Supervisor or Operator Timothy R. Volking Date 4/21/99

53N 4W 30

FORWARD WHITE COPY TO WATER RESOURCES



STATE OF IDAHO  
DEPARTMENT OF WATER RESOURCES  
**WELL DRILLER'S REPORT**

RECEIVED  
USE TYPEWRITER OR  
BALLPOINT PEN

State law requires that this report be filed with the Director, Department of Water Resources  
within 30 days after the completion or abandonment of the well.

DEC 07 1988

Department of Water Resources

**1. WELL OWNER**  
Name MIKE HARPER  
Address P.O. BOX 1312 HAYDEN LAKE ID 83435  
Owner's Permit No. 96-88-N-93

**2. NATURE OF WORK**  
 New well  Deepened  Replacement  
 Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

**3. PROPOSED USE**  
 Domestic  Irrigation  Test  Municipal  
 Industrial  Stock  Waste Disposal or Injection  
 Other \_\_\_\_\_ (specify type)

**4. METHOD DRILLED**  
 Rotary  Air  Hydraulic  Reverse rotary  
 Cable  Dug  Other \_\_\_\_\_

**5. WELL CONSTRUCTION**  
Casing schedule:  Steel  Concrete  Other \_\_\_\_\_  
Thickness \_\_\_\_\_ inches Diameter \_\_\_\_\_ inches From \_\_\_\_\_ feet To \_\_\_\_\_ feet  
\_\_\_\_\_ inches \_\_\_\_\_ inches \_\_\_\_\_ feet \_\_\_\_\_ feet  
\_\_\_\_\_ inches \_\_\_\_\_ inches \_\_\_\_\_ feet \_\_\_\_\_ feet  
\_\_\_\_\_ inches \_\_\_\_\_ inches \_\_\_\_\_ feet \_\_\_\_\_ feet  
Was casing drive shoe used?  Yes  No  
Was a packer or seal used?  Yes  No  
Perforated?  Yes  No  
How perforated?  Factory  Knife  Torch  
Size of perforation 3/16 inches by 4 inches  
Number \_\_\_\_\_ From \_\_\_\_\_ feet To \_\_\_\_\_ feet  
12 perforations 53 feet 50 feet  
\_\_\_\_\_ perforations \_\_\_\_\_ feet \_\_\_\_\_ feet  
\_\_\_\_\_ perforations \_\_\_\_\_ feet \_\_\_\_\_ feet  
Well screen installed?  Yes  No  
Manufacturer's name \_\_\_\_\_  
Type \_\_\_\_\_ Model No. \_\_\_\_\_  
Diameter \_\_\_\_\_ Slot size \_\_\_\_\_ Set from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
Diameter \_\_\_\_\_ Slot size \_\_\_\_\_ Set from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
Gravel packed?  Yes  No  Size of gravel \_\_\_\_\_  
Placed from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
Surface seal depth 20 Material used in seal:  Cement grout  
 Bentonite  Puddling clay  \_\_\_\_\_  
Sealing procedure used:  Slurry pit  Temp. surface casing  
 Overbore to seal depth  
Method of joining casing:  Threaded  Welded  Solvent  
Weld \_\_\_\_\_  
 Cemented between strata  
Describe access port \_\_\_\_\_

**6. LOCATION OF WELL**  
Sketch map location must agree with written location.  
Subdivision Name \_\_\_\_\_  
Lot No. \_\_\_\_\_ Block No. \_\_\_\_\_  
County Kootenai  
NW  $\frac{1}{4}$  SE  $\frac{1}{4}$  Sec. 30, T. 53 N. R. 4 W.

**7. WATER LEVEL**  
Static water level 60' feet below land surface.  
Flowing?  Yes  No G.P.M. flow \_\_\_\_\_  
Artesian closed-in pressure \_\_\_\_\_ p.s.i.  
Controlled by:  Valve  Cap  Plug  
Temperature \_\_\_\_\_ of. Quality \_\_\_\_\_  
Describe artesian or temperature zones below.

**8. WELL TEST DATA**  
 Pump  Bailor  Air  Other \_\_\_\_\_  
Discharge G.P.M. 1.5 Gpm Pumping Level 200' Hours Pumped 1.5 hr

**9. LITHOLOGIC LOG**

Bore Diam.	Depth		Material	Water	
	From	To		Yes	No
6	0	11	SAND, SILT & CLAY		X
	11	46	" GRAVEL "		X
	46	54	LARGE GRAVEL		X
	54	200	Bentonite with clumps spots	X	

**10.** Work started 9-24-88 finished 10-3-88

**11. DRILLERS CERTIFICATION**  
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.  
Firm Name Brand X WATERWELL Firm No. 289  
Address Rathbun WA Date \_\_\_\_\_  
Signed by (Firm Official) Linda  
and Cordell  
(Operator)

IDAHO DEPARTMENT OF WATER RESOURCES

Consulting and Management Services

2/6/01  
1/30/01  
WELL-DRILLER'S REPORT

Office Use Only  
 Inspected by \_\_\_\_\_  
 Twp. \_\_\_\_\_ Rge. \_\_\_\_\_ Sec. \_\_\_\_\_  
 1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_  
 Lat. \_\_\_\_\_ Long. \_\_\_\_\_

1. WELL TAG NO. D0013988 JAN 19 2001  
 Drilling Permit No: \_\_\_\_\_  
 Other IDWR No. 767595 IDWR/North

2. OWNER  
 Name Robert Harrington Well Number: 170  
 Address 8501 E Dancing Wind Lane  
 City St. Maries State ID Zip 83861

3. LOCATION OF WELL by legal description  
 sketch map location must agree with written location


Twp. 53 North or South  
 Rge. 04 East or West  
 Sec. 30 1/4 NE 1/4 SE 1/4  
 Gov't Lot \_\_\_\_\_ County KOOTENAI  
 Lat. \_\_\_\_\_ Long. \_\_\_\_\_

Address of Well Site Timber Ridge  
 City Twin Lakes  
 (Give at least name of road + Distance to Road or Landmark)  
 Lt. \_\_\_\_\_ Blk. \_\_\_\_\_ Sub. Name \_\_\_\_\_

4. USE:  
 Domestic  Municipal  Monitor  Irrigation  
 Thermal  Injection  Other \_\_\_\_\_

5. TYPE OF WORK check all that apply (Replacement, etc.)  
 New Well  Modify  Abandonment  Other \_\_\_\_\_

6. DRILL METHOD  
 Air Rotary  Cable  Mud Rotary  Other \_\_\_\_\_

7. SEALING PROCEDURES

SEAL/FILTER PACK		AMOUNT		METHOD
Material	From	To	Sacks or Pounds	
BENTONITE	0	18	11 sacks	overbore

Was drive shoe used?  Y  N Shoe Depth(s) \_\_\_\_\_  
 Was drive shoe seal tested?  Y  N How? \_\_\_\_\_

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+2	-340	.250	steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	-320	460	.160	pvc	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe \_\_\_\_\_ Length of Tailpipe \_\_\_\_\_

9. PERFORATIONS/SCREENS  
 Perforations Method \_\_\_\_\_ Skill saw \_\_\_\_\_  
 Screens Screen Type \_\_\_\_\_

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
-420	-460	1/4x8	84	4	pvc	<input type="checkbox"/>	<input checked="" type="checkbox"/>

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:  
275 ft. below ground Artesian pressure \_\_\_\_\_ lb.  
 Depth flow encountered \_\_\_\_\_ ft. Describe access port or control devices: \_\_\_\_\_

53N 4W 30

11. WELL TESTS:  
 Pump  Bailer  Air  Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
estimate 6			

Water Temp. cold Bottom Hole Temp. cold  
 Water Quality test or comments: \_\_\_\_\_  
 Depth first Water encountered 330

12. LITHOLOGIC LOG:(Describe repairs or abandonment)

Bore Diam	From	To	Remarks: Lithology, Water Quality, Temperature	Water	
				Y	N
10	0	2	Topsoil	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10	2	18	Gravels small multi-colored	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	18	155	Gravels small multi-colored	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	155	195	Sand w/clay brown	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	195	255	Gravels 3/4	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	255	310	Sand tan clay	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	310	330	Granite soft decomposed	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	330	340	Granite gray w/H2O apx 1 gpm	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	340	440	Granite black & white medium	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	440	460	Granite rose fractured w/H2O	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Completed Depth 460 (Measurable)  
 Date: Started 1/9/01 Completed 1/11/01

13. DRILLER'S CERTIFICATION  
 I/We certify that all minimum well construction standards were complied with at the time the rig was removed.  
 Firm Name H2O Well Service, Inc. Firm No. 448  
 Firm Official Jim McLeslie Date 2-5-01  
 and  
 Supervisor or Operator Jim McLeslie Date 1-11-01  
 (Sign Once if Firm Official and Operator)  
 Jim McLeslie

**WELL DRILLER'S REPORT**

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

RECEIVED  
MAY 4 1977  
Department of Water Resources  
Northern District Office

**1. WELL OWNER**  
 Name Sylte Ranch Inc  
 Address RT 1 Box 670  
RATHDRUM IDAHO  
 Owner's Permit No. \_\_\_\_\_

**7. WATER LEVEL**  
 Static water level 216 feet below land surface  
 Flowing?  Yes  No G.P.M. flow \_\_\_\_\_  
 Temperature \_\_\_\_\_ ° F. Quality \_\_\_\_\_  
 Artesian closed-in pressure \_\_\_\_\_ p.s.i.  
 Controlled by  Valve  Cap  Plug

**2. NATURE OF WORK** 96-77-N-5  
 New well  Deepened  Replacement  
 Abandoned (describe method of abandoning)

**8. WELL TEST DATA**  
 Pump  Bailer  Other  

Discharge G.P.M.	Draw Down	Hours Pumped
<u>35</u>	<u>0</u>	<u>4</u>

**3. PROPOSED USE**  
 Domestic  Irrigation  Test  Other (specify type)  
 Municipal  Industrial  Stock  Waste Disposal or Injection

**9. LITHOLOGIC LOG**

Hole Diam.	Depth		Material	Water	
	From	To		Yes	No
8"	0	1	TOP SOIL		X
	1	19	LARGE GRAVEL		X
	19	28	MEDIUM "		X
	28	31	BOULDER		X
	31	39	MEDIUM GRAVEL		X
	39	44	BOULDERS		X
	44	71	BOULDERS		X
	71	136	CLAY + GRAVEL		X
	136	154	SAND GRAVEL + CLAY		X
	154	167	BOULDERS + CLAY		X
	167	228	SAND GRAVEL + CLAY	X	
	228	231	DECOMPOSED GRANITE		X
	231	272	SAND GRAVEL + CLAY	X	
	272	286	SAND + GRAVEL	X	
	286	296	SAND VERY LITTLE WATER	X	

**4. METHOD DRILLED**  
 Cable  Rotary  Dug  Other

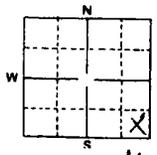
**5. WELL CONSTRUCTION**  
 Diameter of hole 8" inches Total depth 296 feet  
 Casing schedule:  Steel  Concrete  

Thickness	Diameter	From	To
<u>380</u> inches	<u>8"</u> inches	<u>256</u> feet	<u>296</u> feet
<u>380</u> inches	<u>8"</u> inches	<u>256</u> feet	<u>296</u> feet

 Was casing drive shoe used?  Yes  No  
 Was a packer or seal used?  Yes  No  
 Perforated?  Yes  No  
 How perforated?  Factory  Knife  Torch  
 Size of perforation 1 1/2 inches by 5/8 inches  

Number	From	To
<u>42</u> perforations	<u>271</u> feet	<u>291</u> feet

 Well screen installed?  Yes  No  
 Manufacturer's name \_\_\_\_\_  
 Type \_\_\_\_\_ Model No. \_\_\_\_\_  
 Diameter \_\_\_\_\_ Slot size \_\_\_\_\_ Set from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
 Diameter \_\_\_\_\_ Slot size \_\_\_\_\_ Set from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
 Gravel packed?  Yes  No Size of gravel \_\_\_\_\_  
 Placed from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
 Surface seal depth 20 Material used in seal  Cement grout  
 Pudding clay  Well cuttings  
 Sealing procedure used  Shurry pit  Temporary surface casing  
 Overbore to seal depth

**6. LOCATION OF WELL** 95  
 Sketch map location must agree with written location.  
  
 Subdivision Name \_\_\_\_\_  
 Lot No. \_\_\_\_\_ Block No. \_\_\_\_\_  
 County KOOTENAI  
SE 1/4 SE 1/4 Sec. 30, T. 53 N. R. 4 E. W.

**10.** Work started APRIL finished MAY 3-77

**11. DRILLERS CERTIFICATION**  
 Firm Name BRAND X WATER WELLS Firm No. 289  
 Address RATHDRUM IDA Date 5-3-77  
 Signed by (Firm Official) London Cordon  
 and  
 (Operator) London Cordon

Form 238-7  
11/97

IDAHO DEPARTMENT OF WATER RESOURCES  
**WELL DRILLER'S REPORT**

Office Use Only  
Inspected by \_\_\_\_\_  
Twp \_\_\_\_\_ Rge \_\_\_\_\_ Sec \_\_\_\_\_  
1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_  
Lat: : : Long: : :  
 Air  Flowing Artesian

1. WELL TAG NO. D 0017948  
DRILLING PERMIT NO. 772067  
Other IDWR No. \_\_\_\_\_

2. OWNER:  
Name Dustin Payge  
Address 1318 S Westcliff Pl#98  
City Spokane State WA Zip 99224

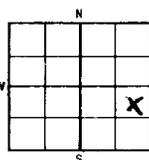


11. WELL TESTS:

<input type="checkbox"/> Pump	<input type="checkbox"/> Bailor	<input checked="" type="checkbox"/> Air	<input type="checkbox"/> Flowing Artesian
Yield gal./min.	Drawdown	Pumping Level	Time
10		435	2hrs

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.



Twp. 53 North  or South   
Rge. 4 East  or West   
Sec. 31 1/4 NE 1/4 SE 1/4  
Gov't Lot \_\_\_\_\_ County Kootenai  
Lat: : : Long: : :  
Address of Well Site Windler Rd  
City Twin Lake

(Give at least name of road + Distance to Road or Landmark)

Lt. \_\_\_\_\_ Blk. \_\_\_\_\_ Sub. Name \_\_\_\_\_

4. USE:

- Domestic  Municipal  Monitor  Irrigation  
 Thermal  Injection  Other \_\_\_\_\_

5. TYPE OF WORK check all that apply (Replacement etc.)

- New Well  Modify  Abandonment  Other \_\_\_\_\_

6. DRILL METHOD

- Air Rotary  Cable  Mud Rotary  Other \_\_\_\_\_

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	
bentonite	0	20	5	surface pipe

Was drive shoe used?  N Shoe Depth(s) \_\_\_\_\_  
Was drive shoe seal tested?  Y  N How? \_\_\_\_\_

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+1 1/2	436	.250	steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe \_\_\_\_\_ Length of Tailpipe \_\_\_\_\_

9. PERFORATIONS/SCREENS

Perforations \_\_\_\_\_ Method \_\_\_\_\_  
Screens \_\_\_\_\_ Screen Type \_\_\_\_\_

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						<input type="checkbox"/>	<input type="checkbox"/>

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

393 ft. below ground Artesian pressure \_\_\_\_\_ lb.  
Depth flow encountered \_\_\_\_\_ ft. Describe access port or control devices: \_\_\_\_\_

Water Temp. cold Bottom hole temp. \_\_\_\_\_  
Water Quality test or comments: clear

Depth first Water Encounter 39

12. LITHOLOGIC LOG: (Describe repairs or abandonment) Water

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water
8	0	20	sand&gravel	
6	20	43	sand&gravel	
	43	70	sand&gravel some small boulders	
	70	437	sand&gravel	x

RECEIVED  
IAN 23 2002  
DWR/North

Completed \_\_\_\_\_ Depth 437ft (Measurable)  
Date: Started 11-12 Completed 11-16-01

13. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Bronson Water Wells Firm No. 360

Firm Official Clint Bronson Date 11-19-01

and  
Driller or Operator \_\_\_\_\_ Date \_\_\_\_\_

Form 238-7  
7/98  
Starships Consulting and  
Management Services

IDAHO DEPARTMENT OF WATER RESOURCES

**WELL DRILLER'S REPORT**

Office Use Only		
Inspected by		
Twp	Rge	Sec
1/4	1/4	1/4
Lat	Long	

OCT 16 2000

1. WELL TAG NO. D0013795  
 Drilling Permit No: \_\_\_\_\_  
 Other IDWR No. 766871 IDWR/North  
 2. OWNER Gary & Julie Hall Well Number: 122  
 Address 1520 E 3rd Avenue  
 City Post Falls State ID Zip 83854

3. LOCATION OF WELL by legal description  
 sketch map location must agree with written location

N		Twp. 53 <input checked="" type="checkbox"/> North or <input type="checkbox"/> South	
		Rge. 04 <input type="checkbox"/> East or <input checked="" type="checkbox"/> West	
E		Sec. 32 <u>1/4 NE 1/4 SE 1/4</u>	
7		Gov't Lot _____ County <u>KOOTENAI</u>	
S		Lat: _____ Long: _____	

Address of Well Site Grouse & Graf Road  
 City Twin Lakes

(Give at least name of road + Distance to Road or Landmark)

Lt. \_\_\_\_\_ Blk. \_\_\_\_\_ Sub. Name \_\_\_\_\_

4. USE:  
 Domestic  Municipal  Monitor  Irrigation  
 Thermal  Injection  Other \_\_\_\_\_  
 5. TYPE OF WORK check all that apply (Replacement, etc.)  
 New Well  Modify  Abandonment  Other \_\_\_\_\_  
 6. DRILL METHOD  
 Air Rotary  Cable  Mud Rotary  Other \_\_\_\_\_

7. SEALING PROCEDURES

SEAL/FILTER PACK		AMOUNT		METHOD
Material	From	To	Sacks or Pounds	
BENTONITE	0	18	5 sacks	Overbore

Was drive shoe used?  Y  N Shoe Depth(s) \_\_\_\_\_  
 Was drive shoe seal tested?  Y  N How? \_\_\_\_\_

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Linear	Welded	Threaded
6	+2	-442	.250	steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe \_\_\_\_\_ Length of Tailpipe \_\_\_\_\_

9. PERFORATIONS/SCREENS

Perforations Method \_\_\_\_\_  
 Screens Screen Type \_\_\_\_\_

From	To	Slot Size	Number	Diameter	Material	Casing	Linear

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:  
405 ft. below ground Artesian pressure \_\_\_\_\_ lb.  
 Depth flow encountered \_\_\_\_\_ ft. Describe access port or control devices: Weld on cap

53N 4W 3E

11. WELL TESTS:  
 Pump  Bailor  Air  Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
estimate 10			1 hour

Water Temp. cold Bottom Hole Temp. cold  
 Water Quality test or comments: clear  
 Depth first Water encountered 405

12. LITHOLOGIC LOG:(Describe repairs or abandonment)

Well Depth	From	To	Remarks: Lithology, Water Quality, Temperature	Water	
				Y	N
10	0	2	Topsoil	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10	2	18	Gravels w/sand & soil	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	18	236	Sand & gravels	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	236	243	Boulders	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	243	405	Sand & gravels	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	405	436	Sand & gravels	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8	436	445	Boulders	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Completed Depth 445 (Measurable)  
 Date Started 10/2/00 Completed 10/4/00

13. DRILLER'S CERTIFICATION  
 I/We certify that all minimum well construction standards were completed with at the time the rig was removed.  
 Firm Name H2O Well Service, Inc. Firm No. 448  
 Firm Official Todd Morgan Date 10-10  
 and  
 Supervisor or Operator Todd Morgan Date 10-9-00  
(Sign Once if Firm Official and Operator)  
 Todd Morgan

Form 238-7  
8/90

RECEIVED

MAR 15 1993

STATE OF IDAHO  
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER  
BALLPOINT



WELL DRILLER'S REPORT

Department of Water Resources requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

<p><b>1. WELL OWNER</b></p> <p>Name <u>Thomas E. Brozie</u></p> <p>Address <u>P.O. Box 132 Post Falls, Id 33854</u> <u>E. 1690 Twin Lakes Loop Rd.</u></p> <p>Drilling Permt No. <del>95-91-N-115</del></p> <p>Water Right Permt No. <u>95-91-N-200</u></p>	<p><b>7. WATER LEVEL</b></p> <p>Static water level <u>399'</u> feet below land surface.</p> <p>Flowing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No G.P.M. flow _____</p> <p>Artesian closed-in pressure _____ p.s.i.</p> <p>Controlled by: <input type="checkbox"/> Valve <input type="checkbox"/> Cap <input type="checkbox"/> Plug</p> <p>Temperature <u>49</u> OF. Quality _____</p> <p><i>Describe artesian or temperature zones below.</i></p>																																																																																																																		
<p><b>2. NATURE OF WORK</b></p> <p><input checked="" type="checkbox"/> New well <input type="checkbox"/> Deepened <input type="checkbox"/> Replacement</p> <p><input type="checkbox"/> Well diameter increase</p> <p><input type="checkbox"/> Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)</p>	<p><b>8. WELL TEST DATA</b></p> <p><input checked="" type="checkbox"/> Pump <input type="checkbox"/> Bailor <input type="checkbox"/> Air <input type="checkbox"/> Other _____</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Discharge G.P.M.</th> <th>Pumping Level</th> <th>Hours Pt</th> </tr> </thead> <tbody> <tr> <td>15</td> <td>399'</td> <td>2</td> </tr> <tr> <td>30</td> <td>399'</td> <td>2</td> </tr> <tr> <td>36</td> <td>399'</td> <td>5</td> </tr> </tbody> </table>	Discharge G.P.M.	Pumping Level	Hours Pt	15	399'	2	30	399'	2	36	399'	5																																																																																																						
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<p><b>3. PROPOSED USE</b></p> <p><input checked="" type="checkbox"/> Domestic <input type="checkbox"/> Irrigation <input type="checkbox"/> Test <input type="checkbox"/> Municipal</p> <p><input type="checkbox"/> Industrial <input type="checkbox"/> Stock <input type="checkbox"/> Waste Disposal or Injection</p> <p><input type="checkbox"/> Other _____ (specify type)</p>	<p><b>9. LITHOLOGIC LOG</b></p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Bore Diam.</th> <th colspan="2">Depth</th> <th rowspan="2">Material</th> </tr> <tr> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr><td>8</td><td>0</td><td>3</td><td>topsoil</td></tr> <tr><td>8</td><td>3</td><td>10</td><td>gravel 3" minus 80%</td></tr> <tr><td>8</td><td></td><td></td><td>gravel 1" minus 10%</td></tr> <tr><td>8</td><td></td><td>10</td><td>topsoil 10%</td></tr> <tr><td>8</td><td>10</td><td>27</td><td>gravel &amp; boulders</td></tr> <tr><td>8</td><td>27</td><td>51</td><td>grav. 4" min. grav. 2" min 4</td></tr> <tr><td></td><td></td><td>51</td><td>sand 20%</td></tr> <tr><td>6</td><td>51</td><td>62</td><td>grav. 3" min. 40% grav 1" mi</td></tr> <tr><td>6</td><td>62</td><td>68</td><td>Gravel &amp; boulders</td></tr> <tr><td>6</td><td>68</td><td>105</td><td>grav. 3" min 40% grav. 1" min</td></tr> <tr><td>6</td><td>105</td><td></td><td>grav 3" min 10% grav 1" min 60%</td></tr> <tr><td>6</td><td></td><td>156</td><td>grav 3/4 min 30% &amp; clay</td></tr> <tr><td>6</td><td>156</td><td>190</td><td>Grav 2" min 80% Clay lite b</td></tr> <tr><td>6</td><td>190</td><td>201</td><td>Grav 6" min 80% sand med 20%</td></tr> <tr><td>6</td><td>201</td><td></td><td>Grav 2" min 60% Grav 1" min 30%</td></tr> <tr><td>6</td><td></td><td>249</td><td>Sand coarse 16%</td></tr> <tr><td>6</td><td>249</td><td>278</td><td>Boulders</td></tr> <tr><td>6</td><td>278</td><td></td><td>Cemented Gravel &amp; bould</td></tr> <tr><td>6</td><td></td><td>408</td><td>Slow Going</td></tr> <tr><td>6</td><td>408</td><td></td><td>Grav 4" min 20% Sand coars</td></tr> <tr><td>6</td><td></td><td>412</td><td>40% Sand Med 30% Sand fine 1</td></tr> <tr><td>6</td><td>417</td><td></td><td>Grav 2" min 30% sand coarse 4</td></tr> <tr><td>6</td><td></td><td>425</td><td>sand fine 30%</td></tr> <tr><td>6</td><td>425</td><td></td><td>Grav 2 min 30% sand coarse 4</td></tr> <tr><td>6</td><td></td><td>427</td><td>sand fine 30% cemented</td></tr> <tr><td>6</td><td>427</td><td>430</td><td>Gravel cemented with cl</td></tr> <tr><td>6</td><td>430</td><td>434</td><td>&amp; silt laid thru it</td></tr> </tbody> </table>	Bore Diam.	Depth		Material	From	To	8	0	3	topsoil	8	3	10	gravel 3" minus 80%	8			gravel 1" minus 10%	8		10	topsoil 10%	8	10	27	gravel & boulders	8	27	51	grav. 4" min. grav. 2" min 4			51	sand 20%	6	51	62	grav. 3" min. 40% grav 1" mi	6	62	68	Gravel & boulders	6	68	105	grav. 3" min 40% grav. 1" min	6	105		grav 3" min 10% grav 1" min 60%	6		156	grav 3/4 min 30% & clay	6	156	190	Grav 2" min 80% Clay lite b	6	190	201	Grav 6" min 80% sand med 20%	6	201		Grav 2" min 60% Grav 1" min 30%	6		249	Sand coarse 16%	6	249	278	Boulders	6	278		Cemented Gravel & bould	6		408	Slow Going	6	408		Grav 4" min 20% Sand coars	6		412	40% Sand Med 30% Sand fine 1	6	417		Grav 2" min 30% sand coarse 4	6		425	sand fine 30%	6	425		Grav 2 min 30% sand coarse 4	6		427	sand fine 30% cemented	6	427	430	Gravel cemented with cl	6	430	434	& silt laid thru it
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53N 04W SEC 31 SE SE

RECEIVED  
MAR 15 1993  
COUNTY COMMISSION



Well Log Form 1  
4M - 5/62

WELL LOG AND REPORT OF THE  
STATE RECLAMATION ENGINEER OF IDAHO

95-64-N-3

Permit No. G-30778 Well No. \_\_\_\_\_ County Kootenai

Owner Charles T. Howard

**North Kootenai Water District Echo Beach**

Address Rathdrum, Idaho

Driller E.A. Holman

Address 601 S Pines, Spokane 66, Washington

Well location NE 1/4 NE 1/4 Sec. 6, T. 52 N/R. 4 E/W

Size of drilled hole 8"

Total depth of well 355'

Locate well in section

NW 1/4	NE 1/4
SW 1/4	SE 1/4

Give depth to standing water from the ground 322' Water temp. \_\_\_\_\_ °Fahr.

On "Pumping Test" delivery was \_\_\_\_\_ g.p.m. or \_\_\_\_\_ c.f.s. Drawdown was \_\_\_\_\_ feet.

Size of pump and motor used to make test. \_\_\_\_\_

Length of time of test \_\_\_\_\_ hours \_\_\_\_\_ minutes.

If flowing well, give flow \_\_\_\_\_ c.f.s. or \_\_\_\_\_ g.p.m. and of shut off pressure \_\_\_\_\_

If flowing well, described control works \_\_\_\_\_

(TYPE AND SIZE OF VALVE, ETC.)

Water will be used for \_\_\_\_\_ Weight of casing per lineal foot \_\_\_\_\_

Thickness of casing \_\_\_\_\_ Casing material \_\_\_\_\_

(STEEL, CONCRETE, WOOD, ETC.)

Diameter, length and location of casing \_\_\_\_\_

(CASING 12" IN DIAMETER OR LESS, GIVE INSIDE DIAMETER;  
CASING OVER 12" IN DIAMETER, GIVE OUTSIDE DIAMETER)

CASING RECORD

Diam. Casing	From Feet	To Feet	Length	Remarks—seals, grouting, etc.

Number and size of perforations \_\_\_\_\_ located 339' feet to 351' feet from ground

Date of commencement of well \_\_\_\_\_ Date of completion of well \_\_\_\_\_

*57 6 50 N 4 W*

*W.H.H.*



USE TYPEWRITER OR BALL POINT PEN

State of Idaho  
Department of Water Resources

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

**1. WELL OWNER**

Name Paul White

Address Spokane, Wn. 99204

Owner's Permit No. 95-78-N-134

**7. WATER LEVEL**

Static water level 359' feet below land surface

Flowing?  Yes  No G.P.M. flow 4.2

Temperature 54 ° F. Quality \_\_\_\_\_

Artesian closed-in pressure \_\_\_\_\_ p.s.i.

Controlled by  Valve  Cap  Plug

**2. NATURE OF WORK**

New well  Deepened  Replacement

Abandoned (describe method of abandoning)

**8. WELL TEST DATA**

Pump  Bailor  Other

Discharge G.P.M.	Draw Down	Hours Pumped
<u>4.2 gpm</u>	<u>359'</u>	<u>2 Hrs.</u>

**3. PROPOSED USE**

Domestic  Irrigation  Test  Other (specify type)

Municipal  Industrial  Stock  Waste Disposal or Injection

**9. LITHOLOGIC LOG**

Hole Diam.	Depth		Material	Write Val.
	From	To		
8	0	3	Sand - Top soil	
	3	12	Sand, gravel, cl. Boulders	
	12	12.3	sand gravel	
	12.3	16.2	silty sand	
	16.2	16.8	sand gravel	
	16.8	18.0	sandy clay, gravel	
	18.0	18.2	sand, gravel	
	18.8	19.0	GRAY clay	
	19.0	21.2	sand, gravel	
	21.2	21.8	sand, gravel	
	21.8	23.7	sand, gravel	
	23.7	24.3	sand, gravel	
	24.3	26.3	sand, gravel	
	26.3	29.8	COBBLE stones	
	29.8	30.1	sand, gravel	
	30.1	30.9	sand, gravel, boulders	
	30.9	31.4	sand, gravel	
	31.4	31.7	sand, gravel, large rocks	
	31.7	32.1	sand, gravel	
	32.1	33.9	sand, gravel, boulders	
	33.9	401	sand	

**4. METHOD DRILLED**

Cable  Rotary  Dug  Other

**5. WELL CONSTRUCTION**

Diameter of hole 8 inches Total depth 401 feet

Casing schedule:  Steel  Concrete

Thickness	Diameter	From	To
<u>1.350</u> inches	<u>8</u> inches	<u>+ 1</u> feet	<u>401</u> feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

Was casing drive shoe used?  Yes  No

Was a packer or seal used?  Yes  No

Perforated?  Yes  No

How perforated?  Factory  Knife  Torch

Size of perforation \_\_\_\_\_ inches by \_\_\_\_\_ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

Well screen installed?  Yes  No

Manufacturer's name \_\_\_\_\_

Type \_\_\_\_\_ Model No. \_\_\_\_\_

Diameter \_\_\_\_\_ Slot size \_\_\_\_\_ Set from \_\_\_\_\_ feet to \_\_\_\_\_ feet

Diameter \_\_\_\_\_ Slot size \_\_\_\_\_ Set from \_\_\_\_\_ feet to \_\_\_\_\_ feet

Gravel packed?  Yes  No Size of gravel \_\_\_\_\_

Placed from \_\_\_\_\_ feet to \_\_\_\_\_ feet

Surface seal depth 54 Material used in seal  Cement grout  Pudding clay  Well cuttings

Securing procedure used  Shurry pit  Temporary surface casing  Overbore to seal depth

**6. LOCATION OF WELL**

Sketch map location must agree with written location. 95

Subdivision Name Etico Beach

Lot No. 1 Block No. 1

County Kootenai

**10.** Work started 7-6-78 finished 8-4-78

**11. DRILLERS CERTIFICATION**

Firm Name E.A. Holman Drilling Co. Firm No. 105

Address S. 401 Pines Spokane, Wn. 99204

Signed by (Firm Official) William Gray

and Ubin Butler (Operator)

Form 238-7  
11/97

IDAHO DEPARTMENT OF WATER RESOURCES  
**WELL DRILLER'S REPORT  
RECEIVED**

Office Use Only	
Inspected by _____	
Twp _____ Rge _____ Sec _____	
1/4 _____ 1/4 _____ 1/4 _____	
Lat: : : Long: : :	

1. WELL TAG NO. D0005335  
 DRILLING PERMIT N \_\_\_\_\_ OCT 14 1998  
 Other IDWR No 95-98-N-185

11. WELL TESTS:  
 Pump  Bailor  Air  Flowing Artesian

2. OWNER: NORTHERN REGION IDWR  
 Name Phil Henry  
 Address P O Box 559  
 City Rathdrum State ID Zip 83858

Yield gal./min.	Drawdown	Pump Level	Time
20	100%	435	2 hrs.

3. LOCATION OF WELL by legal description:

N	Twp	52N	North	<input checked="" type="checkbox"/> or	South	<input type="checkbox"/>
	Rge	04W	East	<input type="checkbox"/> or	West	<input checked="" type="checkbox"/>
	Sec	05	1/4 NW 1/4 NW 1/4			
			10 Ac	40 Ac	160 Ac	
	Gov't Lot		County	Kootenai		
	Lat		Long			

Water Temp. cold Bottom hole temp cold  
 Water Quality test or comments: (below) Depth first Water Encountered 405  
 slightly turbid, no smell

41 to Twin Lakes L. 7 on right City \_\_\_\_\_  
 Lot \_\_\_\_\_ Blk \_\_\_\_\_ Sub. Name (see next line) \_\_\_\_\_

12. LITHOLOGIC LOG (Describe repairs or abandonment)

Bore Diam	From	To	Lithology, Water Quality and Temperature	Remarks:	
				Water	Y N
8	0	3	Topsoil	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	3	18	Sand & gravel - 3/4 minus	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6	18	180	Sand & gravel - 1/2 minus	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6	180	360	Sand & gravel - 3/8 minus	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6	360	400	Sand & gravel - 1/2 minus	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6	400	439	Sand & gravel - 3/4 minus	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4. USE:  
 Domestic  Municipal  Monitor  Irrigation  
 Thermal  Injection  Other \_\_\_\_\_

5. TYPE OF WORK check all that apply (Replacement etc.)  
 New Well  Modify  Abandonment  Other \_\_\_\_\_

6. DRILL METHOD  
 Air Rotary  Cable  Mud Rotary  Other \_\_\_\_\_

7. SEALING PROCEDURES

SEAL/FILTER PACK			Amount	Method
Material	From	To	Sacks/Lbs	
Bentonite	0	18	10 sacks	pour in

Drive Shoe Used?  Y  N Shoe Depth(s) \_\_\_\_\_  
 Drive Shoe Seal Tested?  Y  N How? \_\_\_\_\_

8. CASING/LINER

Diam	From	To	Gauge	Material	Casng	Liner	Weld	Thrded
6"	1	439	0.025	steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Length Headpipe \_\_\_\_\_ Length Tailpipe \_\_\_\_\_

9. PERFORATIONS/SCREENS  
 Perforations? Method air perforator \_\_\_\_\_  
 Screens? Screen Type \_\_\_\_\_

From	To	Slot	Nmbr	Diam	Material	Casng	Liner
420	438	1"	400		steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>

10. STATIC WATER LEVEL or ARTESIAN PRESSURE  
405 ft. below ground. Artesian pressure \_\_\_\_\_ lb  
 Depth flow encountered 405 ft. Describe access port or control devices: steel cap welded

Completed Depth 439 (Measurable)  
 Date: Started 10/7/98 Completed 10/12/98

13. DRILLERS CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name United Drilling Inc. Firm No 414  
 Firm Official [Signature] Date 10/12/98  
 Supervisor or Operator Jason C. Beckham Date 10/12/98

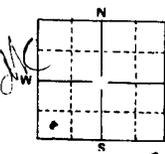
FORWARD WHITE COPY TO WATER RESOURCES

52N 4W 5

**WELL DRILLER'S REPORT**

State law requires that this report be filed with the Director, Department of Water Administration within 30 days after the completion or abandonment of the well.

RECEIVED  
OCT 13 1974  
DEPARTMENT OF WATER ADMINISTRATION  
NORTHWEST DISTRICT OFFICE

<p><b>1. WELL OWNER</b></p> <p>Name <u>VAI KOHLER</u></p> <p>Address <u>SPIRIT LAKE IDAHO</u></p> <p>Owner's Permit No. <u>96-74-N-68</u></p>	<p><b>7. WATER LEVEL</b></p> <p>Static water level <u>NO</u> feet below land surface</p> <p>Flowing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No G.P.M. flow <u>NO</u></p> <p>Temperature _____ ° F. Quality _____</p> <p>Artesian closed-in pressure _____ p.s.i.</p> <p>Controlled by <input type="checkbox"/> Valve <input type="checkbox"/> Cap <input type="checkbox"/> Plug</p>																																																																
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<p><b>6. LOCATION OF WELL</b></p> <p>Sketch map location must agree with written location.</p>  <p>Subdivision Name _____</p> <p>Lot No. _____ Block No. _____</p> <p>County <u>BONNER</u></p> <p><u>SW 1/4 SW 1/4 Sec. 29, T. 53 N1/2 R. 4 W</u></p>	<p><b>10.</b> Work started <u>Aug 26-74</u> finished <u>SEPT 21-74</u></p> <p><b>11. DRILLERS CERTIFICATION</b></p> <p>Firm Name <u>BRAND X WATER WELLS</u> Firm No. <u>289</u></p> <p>Address <u>RATHDRUM IDA</u> Date <u>10-14-74</u></p> <p>Signed by (Firm Official) <u>Landon Gordon</u></p> <p>and</p> <p>(Operator) <u>Landon O. Brown</u></p>																																																																

USE TYPEWRITER OR BALL POINT PEN

State of Idaho  
Department of Water Resources

RECEIVED

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

<p><b>1. WELL OWNER</b></p> <p>Name <u>VAL KAHIER</u></p> <p>Address <u>SPIRIT LAKE Idaho</u></p> <p>Owner's Permit No. <u>96-74-N-68-001</u></p>	<p><b>7. WATER LEVEL</b></p> <p style="text-align: right;">Department of Water Resources Northern District Office (DU)</p> <p>Static water level <u>403</u> feet below land surface</p> <p>Flowing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No G.P.M. flow _____</p> <p>Temperature _____ ° F. Quality _____</p> <p>Artesian closed-in pressure _____ p.s.i.</p> <p>Controlled by <input type="checkbox"/> Valve <input type="checkbox"/> Cap <input type="checkbox"/> Plug</p>																																								
<p><b>2. NATURE OF WORK</b></p> <p><input type="checkbox"/> New well <input checked="" type="checkbox"/> Deepened <input type="checkbox"/> Replacement</p> <p><input type="checkbox"/> Abandoned (describe method of abandoning)</p>	<p><b>8. WELL TEST DATA</b></p> <p><input type="checkbox"/> Pump <input type="checkbox"/> Bailer <input type="checkbox"/> Other</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Discharge G.P.M.</th> <th>Draw Down</th> <th>Hours Pumped</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"><u>15</u></td> <td style="text-align: center;"><u>0</u></td> <td style="text-align: center;"><u>2</u></td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Discharge G.P.M.	Draw Down	Hours Pumped	<u>15</u>	<u>0</u>	<u>2</u>																																		
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<p><b>3. PROPOSED USE</b></p> <p><input checked="" type="checkbox"/> Domestic <input type="checkbox"/> Irrigation <input type="checkbox"/> Test <input type="checkbox"/> Other (specify type)</p> <p><input type="checkbox"/> Municipal <input type="checkbox"/> Industrial <input type="checkbox"/> Stock <input type="checkbox"/> Waste Disposal or Injection</p>	<p><b>9. LITHOLOGIC LOG</b></p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Hole Diam.</th> <th colspan="2">Depth</th> <th rowspan="2">Material</th> <th colspan="2">Water</th> </tr> <tr> <th>From</th> <th>To</th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td></td> <td style="text-align: center;"><u>300</u></td> <td style="text-align: center;"><u>382</u></td> <td style="text-align: center;"><u>SAND &amp; GRAVEL</u></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td></td> <td style="text-align: center;"><u>382</u></td> <td style="text-align: center;"><u>401</u></td> <td style="text-align: center;"><u>Basaltes</u></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td></td> <td style="text-align: center;"><u>401</u></td> <td style="text-align: center;"><u>445</u></td> <td style="text-align: center;"><u>SAND &amp; GRAVEL</u></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Hole Diam.	Depth		Material	Water		From	To	Yes	No		<u>300</u>	<u>382</u>	<u>SAND &amp; GRAVEL</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<u>382</u>	<u>401</u>	<u>Basaltes</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<u>401</u>	<u>445</u>	<u>SAND &amp; GRAVEL</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>												
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<p><b>4. METHOD DRILLED</b></p> <p><input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rotary <input type="checkbox"/> Dug <input type="checkbox"/> Other</p>	<p><b>10.</b></p> <p>Work started <u>May 15, 75</u> finished <u>July 6, 75</u></p>																																								
<p><b>5. WELL CONSTRUCTION</b></p> <p>Diameter of hole <u>8</u> inches Total depth <u>445</u> feet</p> <p>Casing schedule: <input checked="" type="checkbox"/> Steel <input type="checkbox"/> Concrete</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Thickness</th> <th>Diameter</th> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"><u>200</u> inches</td> <td style="text-align: center;"><u>8</u> inches</td> <td style="text-align: center;"><u>300</u> feet</td> <td style="text-align: center;"><u>445</u> feet</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> <p>Was casing drive shoe used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Was a packer or seal used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Perforated? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>How perforated? <input type="checkbox"/> Factory <input type="checkbox"/> Knife <input type="checkbox"/> Torch</p> <p>Size of perforation _____ inches by _____ inches</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Number</th> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> <p>Well screen installed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Manufacturer's name _____</p> <p>Type _____ Model No. _____</p> <p>Diameter _____ Slot size _____ Set from _____ feet to _____ feet</p> <p>Diameter _____ Slot size _____ Set from _____ feet to _____ feet</p> <p>Gravel packed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Size of gravel _____</p> <p>Placed from _____ feet to _____ feet</p> <p>Surface seal depth <u>2</u> Material used in seal <input type="checkbox"/> Cement grout</p> <p><input type="checkbox"/> Pudding clay <input type="checkbox"/> Well cuttings</p> <p>Sealing procedure used <input type="checkbox"/> Slurry pit <input type="checkbox"/> Temporary surface casing</p> <p><input type="checkbox"/> Overbore to seal depth</p>	Thickness	Diameter	From	To	<u>200</u> inches	<u>8</u> inches	<u>300</u> feet	<u>445</u> feet																	Number	From	To										<p><b>11. DRILLERS CERTIFICATION</b></p> <p>Firm Name <u>Brand X water wells</u> Firm No <u>289</u></p> <p>Address <u>Rathdrum Idaho</u> Date <u>7-31-75</u></p> <p>Signed by (Firm Official) <u>Lendon Gordon</u></p> <p>and (Operator) <u>Lendon Gordon</u></p>				
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<p><b>6. LOCATION OF WELL</b></p> <p>Sketch map location must agree with written location.</p> <p><u>96</u></p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">N</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">W</td> <td style="text-align: center;">+</td> <td style="text-align: center;">E</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: center;">S</td> </tr> </table> <p>Subdivision Name _____</p> <p>Lot No. _____ Block No. _____</p> <p>County <u>BOONELL</u></p> <p><u>SW 1/4 Sec 29 T. 53 N. R. 4 W</u></p>	N				W	+	E					S	<p>USE ADDITIONAL SHEETS IF NECESSARY</p>																												
N																																									
W	+	E																																							
			S																																						

Form 238-7  
3/95 NOV 18 1997 IDAHO DEPARTMENT OF WATER RESOURCES  
**WELL DRILLER'S REPORT**  
Use Typewriter or Ballpoint Pen

Office Use Only  
Inspected by \_\_\_\_\_  
Twp \_\_\_\_\_ Rge \_\_\_\_\_ Sec \_\_\_\_\_  
1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_  
Lat: \_\_\_\_\_ Long: \_\_\_\_\_

NORTHERN REGION  
IDWR  
1. DRILLING PERMIT NO. 95-91-N-130  
Other IDWR No. Tag # D0003473

11. WELL TESTS:  
 Pump  Beller  Air  Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
30			4 Hours

2. OWNER:  
Name MARVIN LAYSON  
Address P.O. Box 925  
City Rathdrum State ID Zip 83858

Water Temp. \_\_\_\_\_ Bottom hole temp. \_\_\_\_\_  
Water Quality test or comments: Start Pumping Steadily  
Depth first Water Encountered \_\_\_\_\_

3. LOCATION OF WELL by legal description:  
Sketch map location must agree with written location.

Twp. 53 North  or South   
Rge. 4 East  or West   
Sec. 32 NW 1/4 SE 1/4 SW 1/4  
Gov't Lot \_\_\_\_\_ County KOOTENAI 100 acres  
Lat: \_\_\_\_\_ Long: \_\_\_\_\_  
Address of Well Site 5835  
GREY EAGLE RD City TWIN LAKES  
(Give at least name of road - Distance to Road or Landmark)

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y
10	0	13	SAND and GRAVEL	
10	13	19	LARGE GRAVEL	
10	19	53	SAND and GRAVEL	
10	53	57	BOLDER	
10	57	95	SAND and GRAVEL	
10	95	97	BOLDER	
10	97	137	SAND and GRAVEL	
10	137	208	LARGE GRAVEL	
10	208	213	FIN GRAVEL	
10	213	320	SAND and GRAVEL	
10	320	375	SAND and GRAVEL	
10	375	460	SAND	X
10	460	460	LARGE GRAVEL	X

Lt. \_\_\_\_\_ Blk. \_\_\_\_\_ Sub. Name \_\_\_\_\_

4. USE:  
 Domestic  Municipal  Monitor  Irrigation  
 Thermal  Injection  Other \_\_\_\_\_

5. TYPE OF WORK check all that apply (Replacement etc.)  
 New Well  Modify  Abandonment  Other \_\_\_\_\_

6. DRILL METHOD  
 Air Rotary  Cable  Mud Rotary  Other \_\_\_\_\_

7. SEALING PROCEDURES

BEAL/FILTER PACK		AMOUNT		METHOD
Material	From	To	Feet or Pounds	
Bentonite	0	20	5	overbored

Was drive shoe used?  Y  N Shoe Depth(s) 460 (over)  
Was drive shoe seal tested?  Y  N How? \_\_\_\_\_

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
8 1/2	0	460	20	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe \_\_\_\_\_ Length of Tailpipe \_\_\_\_\_

9. PERFORATIONS/SCREENS  
 Perforations Method N/A  
 Screens Screen Type \_\_\_\_\_

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						<input type="checkbox"/>	<input type="checkbox"/>

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:  
320 ft. below ground Artesian pressure \_\_\_\_\_ lb.  
Depth flow encountered \_\_\_\_\_ ft. Describe access port or control devices: \_\_\_\_\_

Completed Depth 460 (Measure)  
Date: Started 11-4-97 Completed 11-13-97

13. DRILLER'S CERTIFICATION  
I/We certify that all minimum well construction standards were complied with the time the rig was removed.  
Firm Name Hester Well Drilling Inc. Firm No. 52  
Firm Official [Signature] Date 11-13  
and  
Supervisor of Operator [Signature] Date 11-13  
(Sign once if Firm Official & Operator)

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3/95  
NOV 18 1997

IDAHO DEPARTMENT OF WATER RESOURCES



WELL DRILLER'S REPORT

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 Inspected by \_\_\_\_\_  
 Twp \_\_\_\_\_ Rge \_\_\_\_\_ Sec \_\_\_\_\_  
 1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_  
 Lat: \_\_\_\_\_ Long: \_\_\_\_\_  
 Pump  Bailer  Air  Flowing Artesian

1. DRILLING PERMIT NO. 95-97-N-128  
 Other IDWR No. 1997 D0003467

2. OWNER: Marvin Layson  
 Name \_\_\_\_\_  
 Address P.O. Box 925  
 City Rathdrum State Id Zip 83850

3. LOCATION OF WELL by legal description:  
 Sketch map location must agree with written location.

Twp. 53 North  or South   
 Rge. 4 East  or West   
 Sec. 32 NW 1/4 SE 1/4 SW 1/4  
 Gov't Lot \_\_\_\_\_ County Kootenai  
 Lat: \_\_\_\_\_ Long: \_\_\_\_\_  
 Address of Well Site 5835 Gray  
Eagle Rd City TWIN LAKES  
 (Give nearest name of road - Distance to Road or Landmark)

Lt. \_\_\_\_\_ Blk. \_\_\_\_\_ Sub. Name \_\_\_\_\_

4. USE:  
 Domestic  Municipal  Monitor  Irrigation  
 Thermal  Injection  Other \_\_\_\_\_

5. TYPE OF WORK check all that apply (Replacement etc.)  
 New Well  Modify  Abandonment  Other \_\_\_\_\_

6. DRILL METHOD  
 Air Rotary  Cable  Mud Rotary  Other \_\_\_\_\_

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT Bags or Pounds	METHOD
Material	From	To		
Bentonite	0	20	5	overboard

Was drive shoe used?  Y  N Shoe Depth(s) 300' (Orex)  
 Was drive shoe seal tested?  Y  N How? \_\_\_\_\_

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6 + 1	300	250		Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe \_\_\_\_\_ Length of Tailpipe \_\_\_\_\_

9. PERFORATIONS/SCREENS  
 Perforations Method N/A  
 Screens Screen Type \_\_\_\_\_

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						<input type="checkbox"/>	<input type="checkbox"/>

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:  
 \_\_\_\_\_ ft. below ground Artesian pressure \_\_\_\_\_ lb.  
 Depth flow encountered \_\_\_\_\_ ft. Describe access port or control devices: \_\_\_\_\_

11. WELL TESTS:

Yield gal./min.	Drawdown	Pumping Level	Time

Water Temp. \_\_\_\_\_ Bottom hole temp. \_\_\_\_\_  
 Water Quality test or comments: Could not keep pipe screens  
Couldn't pull casing Depth first Water Encountered No

12. LITHOLOGIC LOG: (Describe repairs or abandonment) Wa

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y
8	0	13	SAND AND GRAVEL	
	13	18	Large SAND GRAVEL	
	18	53	SAND AND GRAVEL	
	53	67	Boulder	
	67	95	SAND AND GRAVEL	
	95	98	Boulder	
	98	135	SAND AND GRAVEL	
	135	215	Large GRAVEL	
	215	300	SAND	

Completed Depth 300 (Measurable)  
 Date: Started 10-30-97 Completed 11-2-97

13. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with the time the rig was removed.

Firm Name Heater Well Drilling, Inc. Firm No. 52

Firm Official [Signature] Date 11-17-97

and  
 Supervisor or Operator [Signature] Date 11-19-97

(Sign once if Firm Official & Operator)

NWSE SW 32 53N 4W

Form 238-7  
7/98  
Starships Consulting and  
Management Services

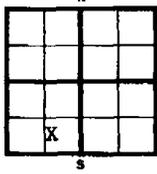
IDAHO DEPARTMENT OF WATER RESOURCES  
**WELL DRILLER'S REPORT**

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Twp. \_\_\_\_\_ Rge. \_\_\_\_\_ Sec. \_\_\_\_\_  
1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_  
Lat. : : Long. : :

1. WELL TAG NO. D10892  
Drilling Permit No: \_\_\_\_\_  
Other IDWR No. 263216  
2. OWNER FLETCHER, HERMAN Well Number: 991  
Name FLETCHER, HERMAN  
Address 1901 SELTICE #815  
City POST FALLS State ID Zip 83854



3. LOCATION OF WELL by legal description  
sketch map location must agree with written location



Twp. 53  North or  South  
Rge. 04  East or  West  
Sec. 32 1/4 SE 1/4 SW 1/4  
Gov't Lot \_\_\_\_\_ County KOOTENAI  
Lat. : : Long. : :  
Address of Well Site 5950 GREY EAGLE R.  
City TWIN LAKES

(Give at least name of road + Distance to Road or Landmark)  
Lt. \_\_\_\_\_ Blk. \_\_\_\_\_ Sub. Name \_\_\_\_\_

4. USE:  
 Domestic  Municipal  Monitor  Irrigation  
 Thermal  Injection  Other \_\_\_\_\_  
5. TYPE OF WORK check all that apply (Replacement, etc.)  
 New Well  Modify  Abandonment  Other \_\_\_\_\_  
6. DRILL METHOD  
 Air Rotary  Cable  Mud Rotary  Other \_\_\_\_\_

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sections or Pounds	
BENTONITE	0	18	3 SACKS	WICK GEL /SLURRY

Was drive shoe used?  Y  N Shoe Depth(s) \_\_\_\_\_  
Was drive shoe seal tested?  Y  N How? \_\_\_\_\_

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Treaded
6	+3	441	.250	STEEL	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe \_\_\_\_\_ Length of Tailpipe \_\_\_\_\_

9. PERFORATIONS/SCREENS

Perforations Method  
 Screens Screen Type \_\_\_\_\_

From	To	Shot Size	Number	Diameter	Material	Casing	Liner

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:  
385 ft. below ground Artesian pressure \_\_\_\_\_ lb.  
Depth flow encountered 440 ft. Describe access port or control devices: \_\_\_\_\_

11. WELL TESTS:  
 Pump  Bailor  Air  Flowing Artesia

Yield gal./min.	Drawdown	Pumping Level	Time
15		430	1.5 HR

Water Temp. COLD Bottom Hole Temp COLD  
Water Quality test or comments: \_\_\_\_\_  
Depth first Water encountered 440'

12. LITHOLOGIC LOG:(Describe repairs or abandonment)

Bore Depth	From	To	Remarks: Lithology, Water Quality, Temperature	Water	
				Y	N
0	0	0		<input type="checkbox"/>	<input type="checkbox"/>
10	0	18	TOPSOIL	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10	18	46	Gravels W/Sand	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	18	46	Sand & Gravel	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	46	49	Boulder	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	49	260	Sand & Gravel	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	260	317	Coarse & Sand	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	317	385	Sand & Gravel	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	385	441	Sand & Gravel W/Water	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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IDWR/North

Completed Depth 441' (Measurable)  
Date: Started 2/3/2000 Completed 2/9/2000

13. DRILLER'S CERTIFICATION  
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name H2O Well Services, Inc. Firm No. 448  
Firm Official Todd Morgan Date 02/09/00  
and  
Supervisor or Operator Todd Morgan Date 02/09/00  
(Sign Once if Firm Official and Operator)  
(Todd Morgan)

# WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

<p><b>1. WELL OWNER</b></p> <p>Name <u>Aqua Enterprises Inc</u>  <u>P.O. Box 1499</u>  <u>Cook's Dale Idaho 83814</u>          Owner's Permit No. <u>95-78-N-70</u></p>	<p><b>7. WATER LEVEL</b></p> <p>Static water level <u>425</u> feet below land surface.          Flowing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No G.P.M. flow _____          Artesian closed-in pressure _____ p.s.i.          Controlled by: <input type="checkbox"/> Valve <input type="checkbox"/> Cap <input type="checkbox"/> Plug          Temperature _____ °F. Quality _____  <i>Describe artesian or temperature zones below</i></p>																																														
<p><b>2. NATURE OF WORK</b></p> <p><input checked="" type="checkbox"/> New well <input type="checkbox"/> Deepened <input type="checkbox"/> Replacement  <input type="checkbox"/> Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)</p>	<p><b>8. WELL TEST DATA</b></p> <p><input type="checkbox"/> Pump <input type="checkbox"/> Bailor <input checked="" type="checkbox"/> Air <input type="checkbox"/> Other _____</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width:33%;">Discharge G.P.M.</th> <th style="width:33%;">Pumping Level</th> <th style="width:33%;">Hours Pumped</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	Discharge G.P.M.	Pumping Level	Hours Pumped																																											
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<p><b>3. PROPOSED USE</b></p> <p><input checked="" type="checkbox"/> Domestic <input type="checkbox"/> Irrigation <input type="checkbox"/> Test <input type="checkbox"/> Municipal  <input type="checkbox"/> Industrial <input type="checkbox"/> Stock <input type="checkbox"/> Waste Disposal or Injection  <input type="checkbox"/> Other _____ (specify type)</p>	<p><b>9. LITHOLOGIC LOG</b></p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Bore Diam.</th> <th colspan="2">Depth</th> <th rowspan="2">Material</th> <th colspan="2">Water</th> </tr> <tr> <th>From</th> <th>To</th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>16"</td> <td>0</td> <td>5"</td> <td>SAND GRAVEL + TOP SOIL</td> <td></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>16"</td> <td>5</td> <td>16</td> <td>SHAD + GRAVEL</td> <td></td> <td></td> </tr> <tr> <td>12"</td> <td>16</td> <td>25</td> <td>BOULDER</td> <td></td> <td></td> </tr> <tr> <td></td> <td>25</td> <td>68</td> <td>SAND GRAVEL</td> <td></td> <td></td> </tr> <tr> <td></td> <td>68</td> <td>88</td> <td>GRAVEL + BOULDER</td> <td></td> <td></td> </tr> <tr> <td></td> <td>88</td> <td>462</td> <td>SAND GRAVEL + COBBLES</td> <td></td> <td><input checked="" type="checkbox"/></td> </tr> </tbody> </table> <p>16" Hole to 20'          12" Hole to 230'          10" Hole to 290'          8" Hole to 462'</p> <p>Water initiated at 425'</p> <p>Hole in 8" casing at about the 442' level probably about 1 to 2 1/2' long</p>	Bore Diam.	Depth		Material	Water		From	To	Yes	No	16"	0	5"	SAND GRAVEL + TOP SOIL		<input checked="" type="checkbox"/>	16"	5	16	SHAD + GRAVEL			12"	16	25	BOULDER				25	68	SAND GRAVEL				68	88	GRAVEL + BOULDER				88	462	SAND GRAVEL + COBBLES		<input checked="" type="checkbox"/>
Bore Diam.	Depth		Material	Water																																											
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<p><b>4. METHOD DRILLED</b></p> <p><input checked="" type="checkbox"/> Rotary <input checked="" type="checkbox"/> Air <input type="checkbox"/> Hydraulic <input type="checkbox"/> Reverse rotary  <input type="checkbox"/> Cable <input type="checkbox"/> Dug <input type="checkbox"/> Other _____</p>	<p><b>10.</b></p> <p>Work started <u>2-9-78</u> finished <u>4-8-78</u></p>																																														
<p><b>5. WELL CONSTRUCTION</b></p> <p>Casing schedule: <input type="checkbox"/> Steel <input type="checkbox"/> Concrete <input type="checkbox"/> Other _____</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Thickness</th> <th>Diameter</th> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td>_____ inches</td> <td>16" inches</td> <td>_____ feet</td> <td>_____ feet</td> </tr> <tr> <td>_____ inches</td> <td>12" inches</td> <td>1 feet</td> <td>230 feet</td> </tr> <tr> <td>_____ inches</td> <td>10" inches</td> <td>1 feet</td> <td>290 feet</td> </tr> <tr> <td>_____ inches</td> <td>8" inches</td> <td>1 feet</td> <td>462 feet</td> </tr> </tbody> </table> <p>Was casing drive shoe used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <u>12" 10" 8"</u>          Was a packer or seal used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No          Perforated? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No          How perforated? <input type="checkbox"/> Factory <input type="checkbox"/> Knife <input checked="" type="checkbox"/> Torch          Size of perforation <u>1/8</u> inches by <u>4</u> inches          Number <u>90</u> perforations From <u>157</u> feet To <u>462</u> feet  <u>Note - 6 perforations DRAMMATIC FROM 4" LONG</u>          Well screen installed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No          Manufacturer's name _____          Type _____ Model No. _____          Diameter _____ Slot size _____ Set from _____ feet to _____ feet          Diameter _____ Slot size _____ Set from _____ feet to _____ feet          Gravel packed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Size of gravel _____          Placed from _____ feet to _____ feet          Surface seal depth <u>20'</u> Material used in seal: <input type="checkbox"/> Cement grout  <input checked="" type="checkbox"/> Bentonite <input checked="" type="checkbox"/> Puddling clay <input type="checkbox"/>          Sealing procedure used: <input type="checkbox"/> Slurry pit <input type="checkbox"/> Temp. surface casing  <input checked="" type="checkbox"/> Overbore to seal depth          Method of joining casing: <input type="checkbox"/> Threaded <input checked="" type="checkbox"/> Welded <input type="checkbox"/> Solvent Weld  <input type="checkbox"/> Cemented between strata          Describe access port _____</p>	Thickness	Diameter	From	To	_____ inches	16" inches	_____ feet	_____ feet	_____ inches	12" inches	1 feet	230 feet	_____ inches	10" inches	1 feet	290 feet	_____ inches	8" inches	1 feet	462 feet	<p><b>11. DRILLERS CERTIFICATION</b></p> <p>I/We certify that all minimum well construction standards were complied with at the time the rig was removed.</p> <p>Firm Name <u>Aqua Enterprises Inc</u> Firm No. <u>163</u>  <u>CDA</u>          Address <u>P.O. Box 1499 IDA</u> Date <u>4-8-78</u>          Signed by (Firm Official) <u>Richard N. Brown RLLT</u>          and _____          (Operator) <u>  </u> <u>  </u></p>																										
Thickness	Diameter	From	To																																												
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<p><b>6. LOCATION OF WELL</b></p> <p>Sketch map location <u>must</u> agree with written location.</p> <div style="text-align: center;"> </div> <p>Subdivision Name <u>  </u>          Lot No. <u>10</u> Block No. _____          County <u>Kootenai</u>  <u>NW 1/4 SE 1/4 Sec. 5, T. 52 N/S, R. 4 EW</u></p>	<p><b>Department of Water Resources</b></p> <p>RECEIVED MAR 12 1981</p>																																														



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Form 238-7 11/97 **MAY 20 2002** IDAHO DEPARTMENT OF WATER RESOURCES

**WELL DRILLER'S REPORT**

Office Use Only  
 Inspected by \_\_\_\_\_  
 Twp \_\_\_\_\_ Rge \_\_\_\_\_ Sec \_\_\_\_\_  
 \_\_\_\_\_ 1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_ 1/4  
 Lat: \_\_\_\_\_ Long: \_\_\_\_\_

IDWR/North

1. WELL TAG NO. D 0022061  
 DRILLING PERMIT NO. 774496  
 Other IDWR No. \_\_\_\_\_

2. OWNER:  
 Name Don Davis/Alvin Landsgaard  
 Address 15500 Windsong Lane  
 City Rathdrum State ID Zip 83858



3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N				
		X		
S				

Twp. 53 North  or South   
 Rge. 4 East  or West   
 Sec. 32 1/4 NE 1/4 SW 1/4  
 Gov't Lot \_\_\_\_\_ County Kootenai  
 Lat: \_\_\_\_\_ Long: \_\_\_\_\_

Address of Well Site Winter Hawk Dr  
off Windler Loop Rd City Twinlakes  
(Give at least name of road + Distance to Road or Landmark)

Lt. \_\_\_\_\_ Blk. \_\_\_\_\_ Sub. Name \_\_\_\_\_

4. USE:

- Domestic  Municipal  Monitor  Irrigation  
 Thermal  Injection  Other

5. TYPE OF WORK check all that apply (Replacement etc.)

- New Well  Modify  Abandonment  Other

6. DRILL METHOD

- Air Rotary  Cable  Mud Rotary  Other

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	
<u>bentonite</u>	<u>0</u>	<u>18</u>	<u>11</u>	<u>surface pipe</u>

Was drive shoe used?  Y  N Shoe Depth(s) \_\_\_\_\_  
 Was drive shoe seal tested?  Y  N How? \_\_\_\_\_

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
<u>8</u>	<u>+2</u>	<u>443</u>	<u>250</u>	<u>steel</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe \_\_\_\_\_ Length of Tailpipe 2ft6inches

9. PERFORATIONS/SCREENS

Perforations \_\_\_\_\_ Method \_\_\_\_\_  
 Screens \_\_\_\_\_ Screen Type telescoping stainless steel

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
<u>443</u>	<u>448</u>	<u>60</u>		<u>8</u>		<input type="checkbox"/>	<input type="checkbox"/>

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

393 ft. below ground Artesian pressure \_\_\_\_\_ lb.  
 Depth flow encountered \_\_\_\_\_ ft. Describe access port or control devices: cap

11. WELL TESTS:

- Pump  Bailor  Air  Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
<u>10</u>		<u>440</u>	

Water Temp. cold Bottom hole temp. \_\_\_\_\_

Water Quality test or comments: clear

Depth first Water Encounter 39

12. LITHOLOGIC LOG: (Describe repairs or abandonment) Water

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y
	<u>10</u>	<u>0</u>	<u>18 sand&amp;large gravel</u>	
	<u>8</u>	<u>18</u>	<u>265 sand&amp;large gravel</u>	
	<u>265</u>	<u>362</u>	<u>sand&amp;pea gravel</u>	
	<u>362</u>	<u>424</u>	<u>sand</u>	<input checked="" type="checkbox"/>
	<u>424</u>	<u>450</u>	<u>sand&amp;gravel</u>	<input checked="" type="checkbox"/>

Completed \_\_\_\_\_ Depth 450ft (Measurable)  
 Date: Started 3/1 Completed 5-2-02

13. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Bronson Water Wells Firm No. 360

Firm Official Clint Bronson Date 5/6/02

and \_\_\_\_\_  
 Driller or Operator \_\_\_\_\_ Date \_\_\_\_\_



Form 238-7  
7/98  
Starships Consulting and  
Management Services

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

Office Use Only		
Inspected by _____	_____	
Twp. _____	Rge. _____	Sec. _____
Lat. 1/4 _____	1/4 _____	1/4 _____
Long. _____	_____	

1. WELL TAG NO. D0017018 FEB 13 2001

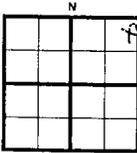
Drilling Permit No: \_\_\_\_\_ IDWR/North  
Other IDWR No. 767887

2. OWNER **Well Number:**

Name Bill & Tami Lewis 178

Address 14621 S Ross Road  
City Cheney State WA Zip 99004

3. LOCATION OF WELL by legal description  
sketch map location must agree with written location



Twp. 53 North or South  
Rge. 4 East or West  
Sec. 29 N2 1/4 NE 1/4 NE 1/4

Gov't Lot \_\_\_\_\_ County KOOTENAI  
Lat. \_\_\_\_\_ Long. \_\_\_\_\_

Address of Well Site Ghost Rider Road  
City Twin Lakes

(Give at least name of road + Distance to Road or Landmark)

Lt. \_\_\_\_\_ Blk. \_\_\_\_\_ Sub. Name \_\_\_\_\_

4. USE:

Domestic  Municipal  Monitor  Irrigation  
 Thermal  Injection  Other \_\_\_\_\_

5. TYPE OF WORK check all that apply (Replacement, etc.)

New Well  Modify  Abandonment  Other \_\_\_\_\_

6. DRILL METHOD

Air Rotary  Cable  Mud Rotary  Other \_\_\_\_\_

7. SEALING PROCEDURES

SEAL/FILTER PACK		AMOUNT		METHOD
Material	From	To	Sacks or Pounds	
BENTONITE	0	20	7 bags	overbore

Was drive shoe used?  Y  N Shoe Depth(s) \_\_\_\_\_

Was drive shoe seal tested?  Y  N How? \_\_\_\_\_

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+2	-700	.250	steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe \_\_\_\_\_ Length of Tailpipe \_\_\_\_\_

9. PERFORATIONS/SCREENS

Perforations Method \_\_\_\_\_

Screens Screen Type \_\_\_\_\_

From	To	Slot Size	Number	Diameter	Material	Casing	Liner

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

600 ft. below ground Artesian pressure \_\_\_\_\_ lb.

Depth flow encountered \_\_\_\_\_ ft. Describe access port or control devices: \_\_\_\_\_

53N 4W 29

11. WELL TESTS:

Pump  Bailer  Air  Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
estimate 20			

Water Temp. cold Bottom Hole Temp. cold

Water Quality test or comments: \_\_\_\_\_

Depth first Water encountered 640

12. LITHOLOGIC LOG:(Describe repairs or abandonment)

Bore Diam	From	To	Remarks: Lithology, Water Quality, Temperature	Water	
				Y	N
10	0	18	Gravels, small cobbles	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	18	28	Gravels, sand, cobbles	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	28	29	Boulder	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	29	58	Gravels, sand	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	58	59	Boulder	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	59	82	Gravels, sand	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	82	84	Boulders	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	84	165	Sands, gravels	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	165	166	Boulder	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	166	220	Gravels, sand	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	220	221	Boulder	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	221	340	Gravels, sand	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	340	341	Boulder	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	341	465	Gravels, sand, tan clay	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	465	466	Boulder	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	466	570	Gravels sand	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	570	571	Boulder	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	571	621	Gravels sand	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	621	622	Boulder	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	622	640	Gravels, sand	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	640	700	Gravels, sand	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Completed Depth 700 (Measurable)

Date: Started 1/30/01 Completed 2/6/01

13. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name H2O Well Service, Inc. Firm No. 448

Firm Official Jim McLeslie Date 2-12-01

and Supervisor or Operator Jim McLeslie Date 2-6-01

(Sign Once if Firm Official and Operator)  
Jim McLeslie

Form 138-7  
7/94

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MAR 24 1995

POSTED

IDAHO DEPARTMENT OF WATER RESOURCES  
WELL DRILLER'S REPORT

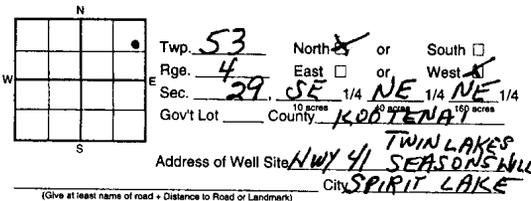
Use Typewriter  
or  
Ball Point Pen  
Dec 18 7 28  
8 25 3/21/95

1. DRILLING PERMIT NO: 95-95-N-20  
Other IDWR No. \_\_\_\_\_

2. OWNER: Shawn Monte  
Name \_\_\_\_\_  
Address 610 W HUBBARD SUITE 126  
City CDA State ID Zip 83814

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.



Lt. \_\_\_\_\_ Blk. \_\_\_\_\_ Sub. Name \_\_\_\_\_

4. PROPOSED USE:

- Domestic  Municipal  Monitor  Irrigation  
 Thermal  Injection  Other \_\_\_\_\_

5. TYPE OF WORK

- New Well  Modify or Repair  Replacement  Abandonment

6. DRILL METHOD

- Mud Rotary  Air Rotary  Cable  Other \_\_\_\_\_

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	
Bentonite	0	20	6	OVERHOLE

Was drive shoe used?  Y  N Shoe Depth(s) 680'  
Was drive shoe seal tested? Y  N  How? \_\_\_\_\_

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
8"	1 1/2'	440'	1250	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6"	420'	680'	1250	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe \_\_\_\_\_ Length of Tailpipe \_\_\_\_\_

9. PERFORATIONS/SCREENS

- Perforations Method N/A  
 Screens Screen Type \_\_\_\_\_

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						<input type="checkbox"/>	<input type="checkbox"/>

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

630 ft. below ground Artesian pressure \_\_\_\_\_ lb.  
Depth flow encountered \_\_\_\_\_ ft. Describe access port or control devices:  
SE NE 29 5.21 411

11. WELL TESTS:

- Pump  Bailor  Air  Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
30			6 Hours

Water Temp. \_\_\_\_\_ Bottom hole temp. \_\_\_\_\_

Water Quality test or comments: \_\_\_\_\_

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
10	0	3	TOP SOIL		
10	3	60	LARGE GRAVEL		
10	60	67	GRANITE BOLDER		
10	67	104	LARGE GRAVEL		
10	104	124	GRANITE BOLDER		
10	124	176	LARGE GRAVEL		
10	176	184	GRANITE BOLDER		
10	184	380	LARGE GRAVEL		
10	380	385	BENTONITE BOLDER		
10	385	410	LARGE GRAVEL		
10	410	416	GRANITE BOLDER		
10	416	430	LARGE GRAVEL		
10	430	435	GRANITE BOLDER		
8	435	480	LARGE GRAVEL		
8	480	484	GRANITE BOLDER		
8	484	627	LARGE GRAVEL		
8	627	680	LARGE GRAVEL		X

FIRST ATTEMPT WITH  
6" CASING BROKE IN  
BOULDER HAD TO PULL  
6" AND START OVER  
WITH 8"

Completed Depth 680' (Measurable)  
Date: Started 2-2-95 Completed 2-13-95

13. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Hester Well Drilling Inc. Firm No. 528

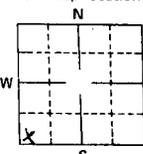
Firm Official [Signature] Date 2-13-95

and Supervisor or Operator C. Mark Hanchey Date 2-13-95

(Sign once if Firm Official & Operator)

STATE OF IDAHO  
DEPARTMENT OF WATER RESOURCES  
**WELL DRILLER'S REPORT**

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

<p><b>1. WELL OWNER</b></p> <p>Name <u>RICHARD HOLMAN</u></p> <p>Address <u>RATHDRUM IDA</u></p> <p>Owner's Permit No. <u>96-78-N-135</u></p>	<p><b>7. WATER LEVEL</b></p> <p>Static water level <u>244</u> feet below land surface.</p> <p>Flowing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No G.P.M. flow _____</p> <p>Artesian closed-in pressure _____ p.s.i.</p> <p>Controlled by: <input type="checkbox"/> Valve <input type="checkbox"/> Cap <input type="checkbox"/> Plug</p> <p>Temperature _____ °F. Quality _____</p>																																																																																								
<p><b>2. NATURE OF WORK</b></p> <p><input checked="" type="checkbox"/> New well <input type="checkbox"/> Deepened <input type="checkbox"/> Replacement</p> <p><input type="checkbox"/> Abandoned (describe method of abandoning) _____</p>	<p><b>8. WELL TEST DATA</b></p> <p><input type="checkbox"/> Pump <input checked="" type="checkbox"/> Bailer <input type="checkbox"/> Air <input type="checkbox"/> Other _____</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Discharge G.P.M.</th> <th>Pumping Level</th> <th>Hours Pumped</th> </tr> <tr> <td><u>10 GPM</u></td> <td><u>244</u></td> <td><u>1 hr</u></td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	Discharge G.P.M.	Pumping Level	Hours Pumped	<u>10 GPM</u>	<u>244</u>	<u>1 hr</u>																																																																																		
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<p><b>3. PROPOSED USE</b></p> <p><input checked="" type="checkbox"/> Domestic <input type="checkbox"/> Irrigation <input type="checkbox"/> Test <input type="checkbox"/> Municipal</p> <p><input type="checkbox"/> Industrial <input type="checkbox"/> Stock <input type="checkbox"/> Waste Disposal or Injection</p> <p><input type="checkbox"/> Other _____ (specify type)</p>	<p><b>9. LITHOLOGIC LOG</b></p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Hole Diam.</th> <th colspan="2">Depth</th> <th rowspan="2">Material</th> <th colspan="2">Water</th> </tr> <tr> <th>From</th> <th>To</th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>6"</td> <td>0</td> <td>8</td> <td>TOP SOIL &amp; GRAVEL</td> <td></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td></td> <td>8</td> <td>21</td> <td>BOULDERS</td> <td></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td></td> <td>21</td> <td>86</td> <td>LARGE GRAVEL</td> <td></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td></td> <td>86</td> <td>93</td> <td>" " &amp; CLAY</td> <td></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td></td> <td>93</td> <td>123</td> <td>GRAVEL &amp; CLAY</td> <td></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td></td> <td>123</td> <td>139</td> <td>BOULDERS</td> <td></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td></td> <td>139</td> <td>153</td> <td>GRAVEL &amp; CLAY</td> <td></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td></td> <td>153</td> <td>168</td> <td>BOULDERS</td> <td></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td></td> <td>168</td> <td>192</td> <td>SAND &amp; GRAVEL</td> <td></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td></td> <td>192</td> <td>200</td> <td>BOULDERS</td> <td></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td></td> <td>200</td> <td>244</td> <td>SAND &amp; GRAVEL</td> <td></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td></td> <td>244</td> <td>262</td> <td>" "</td> <td></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td></td> <td>262</td> <td>272</td> <td>COARSE "</td> <td></td> <td><input checked="" type="checkbox"/></td> </tr> </tbody> </table>	Hole Diam.	Depth		Material	Water		From	To	Yes	No	6"	0	8	TOP SOIL & GRAVEL		<input checked="" type="checkbox"/>		8	21	BOULDERS		<input checked="" type="checkbox"/>		21	86	LARGE GRAVEL		<input checked="" type="checkbox"/>		86	93	" " & CLAY		<input checked="" type="checkbox"/>		93	123	GRAVEL & CLAY		<input checked="" type="checkbox"/>		123	139	BOULDERS		<input checked="" type="checkbox"/>		139	153	GRAVEL & CLAY		<input checked="" type="checkbox"/>		153	168	BOULDERS		<input checked="" type="checkbox"/>		168	192	SAND & GRAVEL		<input checked="" type="checkbox"/>		192	200	BOULDERS		<input checked="" type="checkbox"/>		200	244	SAND & GRAVEL		<input checked="" type="checkbox"/>		244	262	" "		<input checked="" type="checkbox"/>		262	272	COARSE "		<input checked="" type="checkbox"/>
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<p><b>4. METHOD DRILLED</b></p> <p><input checked="" type="checkbox"/> Rotary <input type="checkbox"/> Air <input type="checkbox"/> Hydraulic <input type="checkbox"/> Reverse rotary</p> <p><input checked="" type="checkbox"/> Cable <input type="checkbox"/> Dug <input type="checkbox"/> Other _____</p>	<p><b>10.</b></p> <p>Work started <u>5-15-78</u> finished <u>6-15-78</u></p>																																																																																								
<p><b>5. WELL CONSTRUCTION</b></p> <p>Casing schedule: <input checked="" type="checkbox"/> Steel <input type="checkbox"/> Concrete <input type="checkbox"/> Other _____</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Thickness</th> <th>Diameter</th> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td><u>.280</u> inches</td> <td><u>6</u> inches</td> <td><u>1'</u> feet</td> <td><u>272</u> feet</td> </tr> <tr> <td>_____ inches</td> <td>_____ inches</td> <td>_____ feet</td> <td>_____ feet</td> </tr> <tr> <td>_____ inches</td> <td>_____ inches</td> <td>_____ feet</td> <td>_____ feet</td> </tr> <tr> <td>_____ inches</td> <td>_____ inches</td> <td>_____ feet</td> <td>_____ feet</td> </tr> </tbody> </table> <p>Was casing drive shoe used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Was a packer or seal used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Perforated? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>How perforated? <input type="checkbox"/> Factory <input type="checkbox"/> Knife <input type="checkbox"/> Torch</p> <p>Size of perforation _____ inches by _____ inches</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Number</th> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td>_____ perforations</td> <td>_____ feet</td> <td>_____ feet</td> </tr> <tr> <td>_____ perforations</td> <td>_____ feet</td> <td>_____ feet</td> </tr> <tr> <td>_____ perforations</td> <td>_____ feet</td> <td>_____ feet</td> </tr> </tbody> </table> <p>Well screen installed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Manufacturer's name _____</p> <p>Type _____ Model No. _____</p> <p>Diameter _____ Slot size _____ Set from _____ feet to _____ feet</p> <p>Diameter _____ Slot size _____ Set from _____ feet to _____ feet</p> <p>Gravel packed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Size of gravel _____</p> <p>Placed from _____ feet to _____ feet</p> <p>Surface seal depth <u>18</u> Material used in seal: <input type="checkbox"/> Cement grout</p> <p><input checked="" type="checkbox"/> Puddling clay <input checked="" type="checkbox"/> Well cuttings</p> <p>Sealing procedure used: <input type="checkbox"/> Slurry pit <input checked="" type="checkbox"/> Temp. surface casing</p> <p><input type="checkbox"/> Overbore to seal depth</p> <p>Method of joining casing: <input type="checkbox"/> Threaded <input checked="" type="checkbox"/> Welded <input type="checkbox"/> Solvent Weld</p> <p><input type="checkbox"/> Cemented between strata</p> <p>Describe access port _____</p>	Thickness	Diameter	From	To	<u>.280</u> inches	<u>6</u> inches	<u>1'</u> feet	<u>272</u> feet	_____ inches	_____ inches	_____ feet	_____ feet	_____ inches	_____ inches	_____ feet	_____ feet	_____ inches	_____ inches	_____ feet	_____ feet	Number	From	To	_____ perforations	_____ feet	_____ feet	_____ perforations	_____ feet	_____ feet	_____ perforations	_____ feet	_____ feet	<p><b>11. DRILLERS CERTIFICATION</b></p> <p>I/We certify that all minimum well construction standards were complied with at the time the rig was removed.</p> <p>Firm Name <u>BRAND X WATER WELLS</u> Firm No. <u>289</u></p> <p>Address <u>RATHDRUM IDA</u> Date <u>8-15-78</u></p> <p>Signed by (Firm Official) <u>Landon Gordon</u></p> <p>and (Operator) <u>Jerry Gordon</u></p>																																																								
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<p><b>6. LOCATION OF WELL</b></p> <p>Sketch map location must agree with written location.</p>  <p>Subdivision Name _____</p> <p>Lot No. _____ Block No. _____</p> <p>County <u>KOOTENAI</u></p> <p><u>-SW 1/4 SW 1/4 Sec. 28, T. 63 N, R. 4 E.W.</u></p>																																																																																									

RECEIVED  
AUG 17 1978

Department of Water Resources  
Northern District Office

Form 238-7  
11/97

IDAHO DEPARTMENT OF WATER RESOURCES  
**WELL DRILLER'S REPORT**

SEP 24 2001

Office Use Only  
Inspected by \_\_\_\_\_  
Twp \_\_\_\_\_ Rge \_\_\_\_\_ Sec \_\_\_\_\_  
1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_  
Lat. : : Long. : :

1. WELL TAG NO. D0017730

DRILLING PERMIT N \_\_\_\_\_

Other IDWR No 770865

2. OWNER:

Name Bob Johnson

Address 5306 W Broken Tee Rd

City Rathdrum State ID \_\_\_\_\_ Zip 83858

3. LOCATION OF WELL by legal description:

N		Twp 53N North <input checked="" type="checkbox"/> or South	
Rge 04W East <input type="checkbox"/> or West <input checked="" type="checkbox"/>		Sec 33 1/4 SW 1/4 NW 1/4	
10 Ac		40 Ac 160 Ac	
Gov't Lot _____		County <u>Kootenai</u>	
Lat _____		Long _____	

Address of Well Site: (see next line)

41 to Gray Eagle 2nd r to right 3rd h on left City \_\_\_\_\_  
Lot \_\_\_\_\_ Blk \_\_\_\_\_ Sub. Name (see next line) \_\_\_\_\_

4. USE:

- Domestic  Municipal  Monitor  Irrigation  
 Thermal  Injection  Other \_\_\_\_\_

5. TYPE OF WORK check all that apply (Replacement etc.)

- New Well  Modify  Abandonment  Other \_\_\_\_\_

6. DRILL METHOD

- Air Rotary  Cable  Mud Rotary  Other \_\_\_\_\_

7. SEALING PROCEDURES

SEAL/FILTER PACK			Amount	Method
Material	From	To	Sacks/Lbs	
Bentonite	0	18	8 sacks	dry pour

Drive Shoe Used?  Y  N Shoe Depth(s) \_\_\_\_\_

Drive Shoe Seal Tested?  Y  N How? \_\_\_\_\_

8. CASING/LINER

Diam	From	To	Gauge	Material	Casng	Liner	Weld	Thrded
6	2	438	0.250	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Length Headpipe \_\_\_\_\_ Length Tailpipe \_\_\_\_\_

9. PERFORATIONS/SCREENS

- Perforations? Method air perforator  
 Screens? Screen Type \_\_\_\_\_

From	To	Slot	Nmbr	Diam	Material	Casng	Liner
415	435	1"	400		Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>

10. STATIC WATER LEVEL or ARTESIAN PRESSURE

395 ft. below ground. Artesian pressure \_\_\_\_\_ lb.  
Depth flow encountered 395 ft. Describe access port or control devices: steel cap welded

53N 04W Sec 33 SWNW

11. WELL TESTS:

Yield gal./min.	Drawdown	Pump Level	Time
20	100%	435	1 hr.

Water Temp. \_\_\_\_\_ cold Bottom hole temp. \_\_\_\_\_ cold  
Water Quality test or comments: (below) Depth first Water Encountered 3'  
clear, cold, no smell

12. LITHOLOGIC LOG (Describe repairs or abandonment)

Bore Diam	From	To	Lithology, Water Quality and Temperature	Remarks	W	Y
8	0	1	Topsoil			
8	1	18	Sand & gravel - 3/4" minus			
6	18	165	Sand & gravel - 3/4" minus			
6	165	285	Sand - fine			
6	285	360	Sand & gravel - 1/4" minus			
6	360	368	Sand & gravel - fine			
6	368	405	Sand & gravel - 1/4" minus			<input checked="" type="checkbox"/>
6	405	435	Sand & gravel - 3/4" minus			<input checked="" type="checkbox"/>
6	435	438	Boulder			

RECEIVED

SEP 19 2001

Completed Depth 438 (Measur. \_\_\_\_\_)  
Date: Started 9/17/01 Completed 9/20/01

13. DRILLERS CERTIFICATION

I/We certify that all minimum well construction standards were complied with the time the rig was removed.

Firm United Drilling Inc. Firm No \_\_\_\_\_  
Name \_\_\_\_\_ Date \_\_\_\_\_  
Firm Official Timothy Walker  
and \_\_\_\_\_  
Supervisor or Operator Jason C. Beckham Date \_\_\_\_\_

Form 238-7  
3/95

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POSTED

IDAHO DEPARTMENT OF WATER RESOURCES  
**WELL DRILLER'S REPORT**

Use Typewriter or Ballpoint Pen

SEP 15 1997

Office Use Only  
Inspected by TDK  
Twp 53N Rge 4W Sec 28  
1/4 NE 1/4 SE 1/4  
Lat: : : Long: : :

1. DRILLING PERMIT NO. 96-97-N-92

Other Northern Region \_\_\_\_\_

2. OWNER:  
Name David E Cudde  
Address 9725 Gleason RD  
City Hayden Lake State ID Zip 83315

3. LOCATION OF WELL by legal description:  
Sketch map location must agree with written location.

Tw. 53N North  or South   
Rge. 4 East  or West   
Sec. 28 1/4 NW 1/4 NW 1/4  
Gov't Lot \_\_\_\_\_ County Kootenai 10 acres \_\_\_\_\_ 160 acres \_\_\_\_\_  
Lat: : : Long: : :  
Address of Well Site Hillsdale RD  
at end of Road City \_\_\_\_\_  
(Give at least name of road or distance to Road or Landmark)

4. USE:  
 Domestic  Municipal  Monitor  Irrigation  
 Thermal  Injection  Other \_\_\_\_\_

5. TYPE OF WORK check all that apply (Replacement etc.)  
 New Well  Modify  Abandonment  Other \_\_\_\_\_

6. DRILL METHOD  
 Air Rotary  Cable  Mud Rotary  Other \_\_\_\_\_

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT		METHOD
Material	From	To	Sacks or Pounds		
<u>Bentonite</u>	<u>0</u>	<u>40</u>	<u>100#</u>	<u>Overdone</u>	

Was drive shoe used?  Y  N Shoe Depth(s) \_\_\_\_\_  
Was drive shoe seal tested?  Y  N How? \_\_\_\_\_

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
<u>6</u>	<u>0</u>	<u>427</u>	<u>250</u>	<u>Steel</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe \_\_\_\_\_ Length of Tailpipe \_\_\_\_\_  
9. PERFORATIONS/SCREENS  
 Perforations Method \_\_\_\_\_  
 Screens Screen Type \_\_\_\_\_

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						<input type="checkbox"/>	<input type="checkbox"/>

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:  
390 ft. below ground Artesian pressure \_\_\_\_\_ lb.  
Depth flow encountered \_\_\_\_\_ ft. Describe access port or control devices: \_\_\_\_\_

11. WELL TESTS:  
 Pump  Bailor  Air  Flowing Artesian

Yield gal/min	Drawdown	Pumping Level	Time
<u>35 GPM</u>			

Water Temp. \_\_\_\_\_ Bottom hole temp. \_\_\_\_\_  
Water Quality test or comments: \_\_\_\_\_

12. LITHOLOGIC LOG: (Describe repairs or abandonment) \_\_\_\_\_ Depth first Water Encountered \_\_\_\_\_

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
<u>8</u>	<u>0</u>	<u>3</u>	<u>Brown top soil</u>		<input checked="" type="checkbox"/>
<u>8</u>	<u>3</u>	<u>40</u>	<u>Sand and Gravel</u>		<input checked="" type="checkbox"/>
<u>6</u>	<u>40</u>	<u>135</u>	<u>Sand Very little Gravel</u>		<input checked="" type="checkbox"/>
<u>6</u>	<u>135</u>	<u>186</u>	<u>Large Boulders</u>		<input checked="" type="checkbox"/>
<u>6</u>	<u>186</u>	<u>380</u>	<u>Sand and Large Gravel</u>		<input checked="" type="checkbox"/>
<u>6</u>	<u>380</u>	<u>400</u>	<u>Large Gravel Boulders</u>		<input checked="" type="checkbox"/>
<u>6</u>	<u>400</u>	<u>427</u>	<u>Gravel</u>		<input checked="" type="checkbox"/>

Completed Depth 427 (Measurable)  
Date: Started 6 21 97 Completed 8 19 97

13. DRILLER'S CERTIFICATION  
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.  
Firm Name MC Quality Drilling DBA Blue Water Drilling Firm No. 452  
Firm Official John Cannon Date 9 10 97  
and  
Supervisor or Operator \_\_\_\_\_ Date \_\_\_\_\_  
(Sign once if Firm Official & Operator)

11/11/98 53N 4W

Form 238-7  
3/95



IDAHO DEPARTMENT OF WATER RESOURCES  
**WELL DRILLER'S REPORT**  
Use Typewriter or Ballpoint Pen

Office Use Only  
Inspected by \_\_\_\_\_  
Twp. \_\_\_\_\_ Rge. \_\_\_\_\_ Sec. \_\_\_\_\_  
1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_  
Lat: \_\_\_\_\_ Long: \_\_\_\_\_

1. DRILLING PERMIT NO. 96-96-N-143-000  
Other IDWR No. 96-28428

2. OWNER:  
Name BOB VAN ZILE  
Address 601 W. Riverside, Suite 1970  
City SPOKANE State WA Zip 99201

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N		Twp. <u>53N</u>		North <input checked="" type="checkbox"/>	or	South <input type="checkbox"/>
W		Rge. <u>4W</u>		East <input type="checkbox"/>	or	West <input checked="" type="checkbox"/>
E		Sec. <u>28</u>		1/4 <u>NE</u> 1/4 <u>NW</u> 1/4		
S		Gov't Lot _____		County <u>Kootenai</u> 10 acres 1/4 160 acres		
		Lat: _____		Long: _____		
		Address of Well Site <u>HWY 41</u>		City _____		

(Give at least name of road + Distance to Road or Landmark)

Lt. \_\_\_\_\_ Blk. \_\_\_\_\_ Sub. Name \_\_\_\_\_

4. USE:  
 Domestic  Municipal  Monitor  Irrigation  
 Thermal  Injection  Other HOMES & IRRIG.

5. TYPE OF WORK check all that apply (Replacement etc.)  
 New Well  Modify  Abandonment  Other \_\_\_\_\_

6. DRILL METHOD  
 Air Rotary  Cable  Mud Rotary  Other \_\_\_\_\_

7. SEALING PROCEDURES

SEA/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	
<u>Bentonite</u>	<u>0</u>	<u>20</u>	<u>10 sacks</u>	<u>dry - 50 lbs</u>

Was drive shoe used?  Y  N Shoe Depth(s) 540'  
Was drive shoe seal tested?  Y  N How? \_\_\_\_\_

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
<u>6"</u>	<u>+2</u>	<u>540</u>	<u>.250</u>	<u>Steel</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe \_\_\_\_\_ Length of Tailpipe \_\_\_\_\_

9. PERFORATIONS/SCREENS  
 Perforations Method air knife  
 Screens Screen Type \_\_\_\_\_

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
<u>525</u>	<u>535</u>	<u>1/8"</u>	<u>250</u>	<u>1/8"</u>	<u>STEEL</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:  
479 ft. below ground Artesian pressure \_\_\_\_\_ lb.  
Depth flow encountered CAF ft. Describe access port or control devices: \_\_\_\_\_  
MEAN 78 531 4.1

11. WELL TESTS:  
 Pump  Bailor  Air  Flowing Artesian

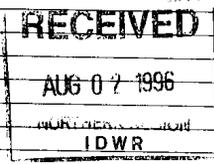
Yield gal./min.	Drawdown	Pumping Level	Time
<u>30 EST.</u>	<u>100%</u>	<u>520</u>	<u>4 HRS.</u>

Water Temp. COLD Bottom hole temp. COLD  
Water Quality test or comments: CLEAR & COLD

12. LITHOLOGIC LOG: (Describe repairs or abandonment) Water

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
<u>8"</u>	<u>0</u>	<u>125</u>	<u>Sand &amp; gravel / cobbles</u>		<input checked="" type="checkbox"/>
<u>6"</u>	<u>125'</u>	<u>250</u>	<u>Sandy Gravel - 3/4 minus - clay mix</u>		<input checked="" type="checkbox"/>
<u>6"</u>	<u>250</u>	<u>275</u>	<u>Sand &amp; gravel - 3/4 minus - heavy cobbles</u>		<input checked="" type="checkbox"/>
<u>6"</u>	<u>275</u>	<u>294</u>	<u>Granite boulder</u>		<input checked="" type="checkbox"/>
<u>6"</u>	<u>294</u>	<u>410</u>	<u>Sand &amp; gravel - clay - 1/2 minus</u>		<input checked="" type="checkbox"/>
<u>6"</u>	<u>410</u>	<u>429</u>	<u>Heavy boulders</u>		<input checked="" type="checkbox"/>
<u>6"</u>	<u>429</u>	<u>481</u>	<u>Sand &amp; gravel - 1/4 minus - heavy sand &amp; clay</u>		<input checked="" type="checkbox"/>
<u>6"</u>	<u>481</u>	<u>510</u>	<u>Heavy clay/sand mix</u>	<input checked="" type="checkbox"/>	
<u>6"</u>	<u>510</u>	<u>540</u>	<u>Sand, gravel &amp; clay mix - 3/4 to 1" minus</u>	<input checked="" type="checkbox"/>	
			<u>4 hrs. development - clean &amp; clear</u>		

Completed Depth 540 (Measurable)  
Date: Started 6/26/96 Completed 7/05/96



13. DRILLER'S CERTIFICATION  
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name United Drilling Inc. Firm No. 414  
Firm Official Jason C. Beckham Date 7/08/96  
and Supervisor or Operator Jason C. Beckham Date 7/08/96  
(Signature of Firm Official & Operator)

TYPewriter OR BALL POINT PEN

State of Idaho Department of Reclamation

WELL DRILLER'S REPORT

State law requires that this report be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well.

RECEIVED SEP 7 1971

**1. WELL OWNER** Contract # 14-08-0001-12581  
 Name U.S. Geological Survey  
 Room 365 Federal Bldg.  
 Address 550 West Fort St. Boise, Idaho  
 Owner's Permit No. 96-71-N-1-1

**7. WATER LEVEL**  
 Department of Water Administration  
 Static water level 408 feet below land surface  
 Flowing?  Yes  No G.P.M. flow \_\_\_\_\_  
 Temperature \_\_\_\_\_ ° F. Quality \_\_\_\_\_  
 Artesian closed-in pressure \_\_\_\_\_ p.s.i.  
 Controlled by  Valve  Cap  Plug

**2. NATURE OF WORK**  
 New well  Deepened  Replacement  
 Abandoned (describe method of abandoning)

**8. WELL TEST DATA**  
 Pump  Bailer  Other Air Test  

Discharge G.P.M.	Draw Down	Hours Pumped
15		16

**3. PROPOSED USE**  
 Domestic  Irrigation  Test  
 Municipal  Industrial  Stock

**4. METHOD DRILLED**  
 Cable &  Rotary  Dug  Other

**5. WELL CONSTRUCTION**  
 Diameter of hole 6 3/8 inches Total depth 449 feet  
 Casing schedule:  Steel  Concrete  

Thickness	Diameter	From	To
<u>280</u> inches	<u>10" ID</u> inches	<u>0</u> feet	<u>18</u> feet
<u>250</u> inches	<u>8" ID</u> inches	<u>0</u> feet	<u>81</u> feet
<u>312</u> inches	<u>7" OD</u> inches	<u>2</u> feet	<u>440</u> feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

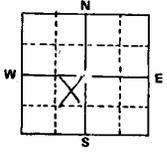
 Was a packer or seal used?  Yes  No  
 Perforated?  Yes  No  
 How perforated?  Factory  Knife  Torch  
 Size of perforation \_\_\_\_\_ inches by \_\_\_\_\_ inches  

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

 Well screen installed?  Yes  No  
 Manufacturer's name Houston Well Screen  
 Type 20 Model No. \_\_\_\_\_  
 Diameter 6 Slot size 0.375 Set from 438 feet to 448 feet  
 Diameter \_\_\_\_\_ Slot size \_\_\_\_\_ Set from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
 Gravel packed?  Yes  No Size of gravel \_\_\_\_\_  
 Placed from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
 Surface seal?  Yes  No To what depth 80 feet  
 Material used in seal  Cement grout  Puddling clay  
Bentonite

**9. LITHOLOGIC LOG**  

Hole Diam.	Depth		Material	Water	
	From	To		Yes	No
	1	57	Sand & Gravel		x
	57	60	Boulders		x
	60	195	Clay, Sand and Gravel (Gray)		x
	195	210	Big Boulders		x
	210	281	Clay (Gray color)		x
	281	291	Boulders		x
	291	331	Sand, Gravel & Clay (Gray)		x
	331	334	Boulders		x
	334	336	Boulders		x
	336	375	Sand, Gravel, Clay (L. Gray)		x
	375	377	Boulders		x
	377	430	Sand & Gravel		x
	430	435	Boulders		x
	435	437	Fine Sand		x
<u>6 3/8</u>	<u>437</u>	<u>449</u>	Boulders and Sand		x

**6. LOCATION OF WELL**  
 Sketch map location must agree with written location.  
  
 County BOOTENAI  
NE 1/4 SW 1/4 Sec. 28, T. 53, N.W. R. 4 NW

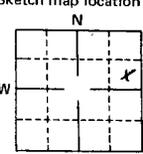
**10.** Work started 12-28-70 finished 6-21-71

**11. DRILLER'S CERTIFICATION**  
 This well was drilled under my supervision and this report is true to the best of my knowledge.  
 M.M. & H Well Drilling 115  
 Driller's or Firm's Name Number  
 Route 1, Newman Lake, Wash  
 Address  
 Signed By [Signature] Date 8/6/71

STATE OF IDAHO  
DEPARTMENT OF WATER RESOURCES  
**WELL DRILLER'S REPORT**

USE TYPEWRITER OR  
BALLPOINT PEN

State law requires that this report be filed with the Director, Department of Water Resources  
within 30 days after the completion or abandonment of the well.

<p><b>1. WELL OWNER</b></p> <p>Name <u>EARL HANSEN</u></p> <p>Address <u>RATHDRUM IDA</u></p> <p>Owner's Permit No. <u>96-78-N-185</u></p>	<p><b>7. WATER LEVEL</b></p> <p>Static water level <u>419</u> feet below land surface.</p> <p>Flowing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No G.P.M. flow _____</p> <p>Artesian closed-in pressure _____ p.s.i.</p> <p>Controlled by: <input type="checkbox"/> Valve <input type="checkbox"/> Cap <input type="checkbox"/> Plug</p> <p>Temperature _____ °F. Quality _____</p>																																																																																																																																																										
<p><b>2. NATURE OF WORK</b></p> <p><input checked="" type="checkbox"/> New well <input type="checkbox"/> Deepened <input type="checkbox"/> Replacement</p> <p><input type="checkbox"/> Abandoned (describe method of abandoning) _____</p>	<p><b>8. WELL TEST DATA</b></p> <p><input type="checkbox"/> Pump <input checked="" type="checkbox"/> Bailor <input type="checkbox"/> Air <input type="checkbox"/> Other _____</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="width:33%;">Discharge G.P.M.</th> <th style="width:33%;">Pumping Level</th> <th style="width:33%;">Hours Pumped</th> </tr> <tr> <td style="text-align:center;"><u>10</u></td> <td style="text-align:center;"><u>419</u></td> <td style="text-align:center;"><u>4</u></td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	Discharge G.P.M.	Pumping Level	Hours Pumped	<u>10</u>	<u>419</u>	<u>4</u>																																																																																																																																																				
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<p><b>4. METHOD DRILLED</b></p> <p><input type="checkbox"/> Rotary <input type="checkbox"/> Air <input type="checkbox"/> Hydraulic <input type="checkbox"/> Reverse rotary</p> <p><input checked="" type="checkbox"/> Cable <input type="checkbox"/> Dug <input type="checkbox"/> Other _____</p>	<p><b>10.</b></p> <p>Work started <u>6-20-78</u> finished <u>7-30-78</u></p>																																																																																																																																																										
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<p><b>6. LOCATION OF WELL</b></p> <p>Sketch map location must agree with written location. <u>96</u></p>  <p>Subdivision Name _____</p> <p>Lot No. _____ Block No. _____</p> <p>County <u>KOOTENAI</u></p> <p><u>SE 1/4 NE 1/4</u> Sec. <u>28</u> T. <u>53</u> N. R. <u>4</u> E.W.</p>	<p><b>RECEIVED</b></p> <p>AUG 17 1978</p> <p>Department of Water Resources Northern District Office</p> <p><i>[Signature]</i></p>																																																																																																																																																										





Form 238-7  
9/82

STATE OF IDAHO  
DEPARTMENT OF WATER RESOURCES  
**WELL DRILLER'S REPORT**

USE TYPEWRITER  
BALLPOINT PEN



*N* State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

**1. WELL OWNER**  
 Name JAMES E OR SUE K. CRAWFORD  
 Address Box 327 Kingston Id. 83839  
 Owner's Permit No. 96-84-N-12

**7. WATER LEVEL**  
 Static water level 540 feet below land surface.  
 Flowing?  Yes  No G.P.M. flow \_\_\_\_\_  
 Artesian closed-in pressure \_\_\_\_\_ p.s.i.  
 Controlled by:  Valve  Cap  Plug  
 Temperature COLD OF. Quality CARD  
*Describe artesian or temperature zones below.*

**2. NATURE OF WORK**  
 New well  Deepened  Replacement  
 Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

**8. WELL TEST DATA**  
 Pump  Baller  Air  Other \_\_\_\_\_

Discharge G.P.M.	Pumping Level	Hours Pumped
<u>8 GPM</u>	<u>—</u>	<u>1 hr.</u>

**3. PROPOSED USE**  
 Domestic  Irrigation  Test  Municipal  
 Industrial  Stock  Waste Disposal or Injection  
 Other \_\_\_\_\_ (specify type)

**9. LITHOLOGIC LOG**

Bore Diam.	Depth		Material	W Y
	From	To		
<u>8</u>	<u>0</u>	<u>200</u>	<u>Gravel</u>	
	<u>200</u>	<u>225</u>	<u>Clay</u>	
	<u>225</u>	<u>229</u>	<u>Granite</u>	
<u>6</u>	<u>229</u>	<u>700</u>	<u>Granite</u>	<u>Y</u>

**4. METHOD DRILLED**  
 Rotary  Air  Hydraulic  Reverse rotary  
 Cable  Dug  Other \_\_\_\_\_

**5. WELL CONSTRUCTION**  
 Casing schedule:  Steel  Concrete  Other \_\_\_\_\_  
 Thickness .250 inches Diameter 6 inches From 2 feet To 229 feet  
 \_\_\_\_\_ inches \_\_\_\_\_ inches \_\_\_\_\_ feet \_\_\_\_\_ feet  
 \_\_\_\_\_ inches \_\_\_\_\_ inches \_\_\_\_\_ feet \_\_\_\_\_ feet  
 \_\_\_\_\_ inches \_\_\_\_\_ inches \_\_\_\_\_ feet \_\_\_\_\_ feet  
 Was casing drive shoe used?  Yes  No  
 Was a packer or seal used?  Yes  No  
 Perforated?  Yes  No  
 How perforated?  Factory  Knife  Torch  
 Size of perforation \_\_\_\_\_ inches by \_\_\_\_\_ inches  
 Number \_\_\_\_\_ From \_\_\_\_\_ To \_\_\_\_\_  
 \_\_\_\_\_ perforations \_\_\_\_\_ feet \_\_\_\_\_ feet  
 \_\_\_\_\_ perforations \_\_\_\_\_ feet \_\_\_\_\_ feet  
 \_\_\_\_\_ perforations \_\_\_\_\_ feet \_\_\_\_\_ feet  
 Well screen installed?  Yes  No  
 Manufacturer's name \_\_\_\_\_  
 Type \_\_\_\_\_ Model No. \_\_\_\_\_  
 Diameter \_\_\_\_\_ Slot size \_\_\_\_\_ Set from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
 Diameter \_\_\_\_\_ Slot size \_\_\_\_\_ Set from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
 Gravel packed?  Yes  No  Size of gravel \_\_\_\_\_  
 Placed from \_\_\_\_\_ feet to \_\_\_\_\_ feet  
 Surface seal depth 25 Material used in seal:  Cement grout  
 Bentonite  Puddling clay  Cuttings  
 Sealing procedure used:  Slurry pit  Temp. surface casing  
 Overbore to seal depth

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OCT 29 1984

Department of Water Resources

RECEIVED  
OCT 26 1984

Department of Water Resources  
Northern District Office

004254

53N 04W SEC 35 NE5C



Form 238-7  
9/82

STATE OF IDAHO  
DEPARTMENT OF WATER RESOURCES  
**WELL DRILLER'S REPORT**



USE TYPEWRITER  
BALLPOINT PEN

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

**1. WELL OWNER**

Name TOM BRUNNER

Address E 7900 BRUNNER RD RAILLEIGH ME

Owner's Permit No. 9685-N-7

**7. WATER LEVEL**

Static water level        feet below land surface.

Flowing?  Yes  No G.P.M. flow       

Artesian closed-in pressure        p.s.i.

Controlled by:  Valve  Cap  Plug

Temperature        OF. Quality       

*Describe artesian or temperature zones below.*

**2. NATURE OF WORK**

New well  Deepened  Replacement

Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

**8. WELL TEST DATA**

Pump  Bailor  Air  Other

Discharge G.P.M.	Pumping Level	Hours Pump
NONE		

**3. PROPOSED USE**

Domestic  Irrigation  Test  Municipal

Industrial  Stock  Waste Disposal or Injection

Other        (specify type)

**9. LITHOLOGIC LOG**

Bore Diam.	Depth		Material	V Y
	From	To		
8"	0	144	SAND & GRAVEL	
	144	163	HARD GRANITE	
	163	169	GRAVEL	
6"	169	176	BROKEN GRANITE (WET)	
	176	204	MEDIUM GRAVEL	
	204	222	LARGE "	
	222	242	SAND & "	
	242	273	GRANITE BOULDERS	
	273	311	SAND & GRAVEL	
	311	338	MIXED ROCK MOSTLY GRANITE 95%	
4"	338	373	" " " 95%	
	373	396	DECOMPOSED GRANITE	
	396	415	FIRM "	
WAS WET BUT NO WATER AT 169-176.				
OWNER STOPPED WORK AFTER WE HAD LOST BIT & 546 IN BOTTOM OF HOLE. SAID NOT TO WORRY ABOUT FISHING IT OUT. PULLED 56 OF 8" CASING WILL NOT COME ANY MORE				
RECEIVED RECEIVED MAR 5 1985 MAR 6 1985				

**4. METHOD DRILLED**

Rotary  Air  Hydraulic  Reverse rotary

Cable  Dug  Other       

**5. WELL CONSTRUCTION**

Casing schedule:  Steel  Concrete  Other

Thickness	Diameter	From	To
264 inches	8 inches	1 feet	145 feet
250 inches	6 inches	2 feet	316 feet
247 inches	4 inches	232 feet	400 feet

Was casing drive shoe used?  Yes  No

Was a packer or seal used?  Yes  No

Perforated?  Yes  No

How perforated?  Factory  Knife  Torch

Size of perforation 6 inches by 14 inches

4" casing Number 64 perforations From 370 feet To 390 feet

Well screen installed?  Yes  No

Manufacturer's name        Type        Model No.       

Diameter        Slot size        Set from        feet to        feet

Gravel packed?  Yes  No  Size of gravel       

Placed from        feet to        feet

Surface seal depth 20 Material used in seal:  Cement grout  Bentonite  Puddling clay

Sealing procedure used:  Slurry pit  Temp. surface casing  Overbore to seal depth

53N 04W SEC 36 NE SW

RECEIVED  
AUG 13 2001

IDAHO DEPARTMENT OF WATER RESOURCES  
WELL DRILLER'S REPORT

Office Use Only  
Inspected by \_\_\_\_\_  
Twp \_\_\_\_\_ Rge \_\_\_\_\_ Sec \_\_\_\_\_  
1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_  
Lat: \_\_\_\_\_ Long: \_\_\_\_\_  
 Air  Flowing Artesian

1. WELL TAG NO. 0017349  
DRILLING PERMIT NO. \_\_\_\_\_  
Other IDWR No. 769787



2. OWNER:  
Name Frank Ellis  
Address 805 Brunner Road  
City Athol State ID Zip 83801

3. LOCATION OF WELL by legal description:  
Sketch map location must agree with written location.

Map grid showing location with 'X' in the SW 1/4 of Section 25, Township 53 North, Range 4 East, Kootenai County.  
Twp. 53 North  or South   
Rge. 4 East  or West   
Sec. 25 1/4 SW 1/4 SE 1/4  
Gov't Lot \_\_\_\_\_ County Kootenai  
Lat: \_\_\_\_\_ Long: \_\_\_\_\_  
Address of Well Site 805 Brunner Road  
City Athol

Lt. \_\_\_\_\_ Blk. \_\_\_\_\_ Sub. Name \_\_\_\_\_

4. USE:  
 Domestic  Municipal  Monitor  Irrigation  
 Thermal  Injection  Other \_\_\_\_\_

5. TYPE OF WORK check all that apply (Replacement etc.)  
 New Well  Modify  Abandonment  Other \_\_\_\_\_

6. DRILL METHOD  
 Air Rotary  Cable  Mud Rotary  Other \_\_\_\_\_

7. SEALING PROCEDURES

SEAL/FILTER PACK		AMOUNT		METHOD
Material	From To	Sacks or Pounds		
Bentonite	0 20	5		overbore

Was drive shoe used?  Y  N Shoe Depth(s) ring bit  
Was drive shoe seal tested?  Y  N How? \_\_\_\_\_

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2	613	250	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe \_\_\_\_\_ Length of Tailpipe \_\_\_\_\_

9. PERFORATIONS/SCREENS  
Perforations Method \_\_\_\_\_  
Screens Screen Type \_\_\_\_\_

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						<input type="checkbox"/>	<input type="checkbox"/>

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:  
\_\_\_\_\_ ft. below ground Artesian pressure \_\_\_\_\_ lb.  
Depth flow encountered \_\_\_\_\_ ft. Describe access port or control devices: \_\_\_\_\_

53 N 4 W 25

11. WELL TESTS:

Yield gal/min	Drawdown	Pumping Level	Time
0			

Water Temp. \_\_\_\_\_ Bottom hole temp. \_\_\_\_\_  
Water Quality test or comments: \_\_\_\_\_

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water
8"	0	2	Topsoil, gravel	
	2	36	Gravel, sand	X
	36	42	Sand, coarse	
	42	46	Cobbles, gravel, sand	
	46	48	Boulder	
	48	58	Cobbles, gravel	
	58	80	Gravel, coarse	
	80	98	Gravel, sand	
	98	120	Sand, coarse	
	120	129	Sand, medium	
	129	148	Gravel, sand, silt	
	148	180	Gravel, cobbles, sand, silt	
	180	241	Gravel, big cobbles	
	241	290	Gravel, sand, coarse	
	290	343	Gravel, sand, medium	
	343	383	Gravel, sand, fine	
	383	403	Sand, silt, reddish brn, wet	
	403	410	Clay, tan, sand, coarse	
	410	423	Gravel, angular, cemented, dry	
	423	443	Clay, grey, sand	
	443	455	Clay, green, grey	
	455	468	Clay, brown, white, tan	
	468	489	Clay, tan, grey, brown	
	489	510	Clay, dark brown	
	510	580	Clay, dark green, grey	
	580	613	Clay, bright green	

Completed Depth 611' (Measurable)  
Date: Started 7-03-01 Completed 7-19-01

13. DRILLER'S CERTIFICATION  
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.  
Company Name McCarty Drilling & Pump Inc. Firm No. 586  
Firm Official Burt McCarty Date 8-3-01  
and \_\_\_\_\_  
Driller or Operator \_\_\_\_\_ Date \_\_\_\_\_  
(Sign once if Firm Official & Operator)

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AUG 13 2001

IDAHO DEPARTMENT OF WATER RESOURCES  
WELL DRILLER'S REPORT

Office Use Only  
Inspected by \_\_\_\_\_  
Twp \_\_\_\_\_ Rge \_\_\_\_\_ Sec \_\_\_\_\_  
1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_  
Lat: \_\_\_\_\_ Long: \_\_\_\_\_

1. WELL TAG NO. 0017350  
DRILLER'S PERMIT NO. \_\_\_\_\_  
Other DWR No. 770051  
2. OWNER:  
Name Frank Ellis  
Address 805 Brunner Road  
City Athol, ID State \_\_\_\_\_ Zip 83858

11. WELL TESTS:

Pump  Bailer  Air  Flowing Artesian

Yield gal/min	Drawdown	Pumping Level	Time
<u>40 GPM</u>			

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

Tw. 53 North  or South   
Rge. 4 East  or West   
Sec. 25 1/4 SW 1/4 SE 1/4  
Gov't Lot \_\_\_\_\_ County Kootenai  
Lat: \_\_\_\_\_ Long: \_\_\_\_\_  
Address of Well Site 805 Brunner Road  
City Athol

Water Temp. \_\_\_\_\_ Bottom hole temp. \_\_\_\_\_  
Water Quality test or comments: \_\_\_\_\_

12. LITHOLOGIC LOG: (Describe repairs or abandonment) Depth first Water Encounter 403'

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temperature	Water
8"	0	2	Topsoil, gravel	X
	2	18	Gravel, sand	X
	18	21	Cobbles, gravel	X
	21	46	Gravel, cobbles, sand	X
	46	51	Cobbles, gravel	X
	51	78	Sand, gravel	X
	78	79	Boulder	X
	79	136	Gravel, sand	X
	136	170	Gravel, sand, coarse, silt	X
	170	235	Sand, coarse w/silt, brown	X
	235	270	Cobbles, gravel	X
	270	276	Boulders, cobbles (no returns)	X
	276	290	Cobbles, gravel	X
	290	349	Gravel, sand, coarse	X
	349	355	Sand, coarse	X
	355	370	Gravel, coarse	X
	370	379	Gravel, sand, coarse	X
	379	383	Sand, coarse w/silt, red brn	X
	383	390	Gravel, sand, medium	X
	390	405	Sand, coarse w/gravel;	X
	405	421	Gravel, medium to fine	X
	421	428	Clay, tan (no water)	X

NOTE: Pulled casing back to 421' and developed.

Completed Depth 421' (Measurable)  
Date: Started 7/19/01 Completed 7/24/01

4. USE:  
 Domestic  Municipal  Monitor  Irrigation  
 Thermal  Injection  Other \_\_\_\_\_  
5. TYPE OF WORK check all that apply (Replacement etc.)  
 New Well  Modify  Abandonment  Other \_\_\_\_\_  
6. DRILL METHOD  
 Air Rotary  Cable  Mud Rotary  Other \_\_\_\_\_

7. SEALING PROCEDURES

SEAL/FILTER PACK	AMOUNT		METHOD
Material	From	To	Sacks or Pounds
Bentonite	0	20	3 sacks
			overbore

Was drive shoe used?  Y  N Shoe Depth(s) ring bit  
Was drive shoe seal tested?  Y  N How? \_\_\_\_\_

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2	421	250	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. PERFORATIONS/SCREENS  
Perforations \_\_\_\_\_ Method \_\_\_\_\_  
Screens \_\_\_\_\_ Screen Type \_\_\_\_\_

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:  
386 ft. below ground Artesian pressure \_\_\_\_\_ lb.  
Depth flow encountered \_\_\_\_\_ ft. Describe access port or control devices: \_\_\_\_\_

13. DRILLER'S CERTIFICATION  
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.  
Company Name McCarty Drilling & Pump Inc. No. 586  
Firm Official Scott McCarty Date 8-3-01  
and \_\_\_\_\_  
Driller or Operator \_\_\_\_\_ Date \_\_\_\_\_  
(Sign once if Firm Official & Operator)

53N 41.1 25 FORWARD WHITE COPY TO WATER RESOURCES

Form 238-7  
11/97

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MAY 07 2001

IDAHO DEPARTMENT OF WATER RESOURCES  
WELL DRILLER'S REPORT

Office Use Only	
Inspected by	_____
Twp	Rge Sec
1/4	1/4 1/4
Lat	Long

IDWR/North

1. WELL TAG NO. D0017120

DRILLING PERMIT N \_\_\_\_\_

Other IDWR No 768458

2. OWNER:

Name Chastity Bates

Address E 887 Brunner RD

City Athol State ID \_\_\_\_\_ Zip 83801

3. LOCATION OF WELL by legal description:

N		Twp	53N	North	<input checked="" type="checkbox"/>	or	South
W		Rge	04W	East		or	West <input checked="" type="checkbox"/>
E		Sec	25	1/4 SW 1/4 SE 1/4			
S		Gov't Lot	10 Ac	40 Ac	160 Ac		
		County	Kootenai				
		Lat	Long				

Address of Well Site: (see next line) \_\_\_\_\_

BRUNNER RD City \_\_\_\_\_  
Lot \_\_\_\_\_ Bk \_\_\_\_\_ Sub. Name (see next line) \_\_\_\_\_

4. USE:

- Domestic
- Municipal
- Monitor
- Irrigation
- Thermal
- Injection
- Other \_\_\_\_\_

5. TYPE OF WORK check all that apply (Replacement etc.)

- New Well
- Modify
- Abandonment
- Other \_\_\_\_\_

6. DRILL METHOD

- Air Rotary
- Cable
- Mud Rotary
- Other \_\_\_\_\_

7. SEALING PROCEDURES

SEAL/FILTER PACK			Amount	Method
Material	From	To	Sacks/Lbs	
Bentonite	0	18	12 sacks	pour in

Drive Shoe Used? Y  N Shoe Depth(s) \_\_\_\_\_

Drive Shoe Seal Tested? Y  N How? \_\_\_\_\_

8. CASING/LINER

Diam	From	To	Gauge	Material	Casng	Liner	Weld	Thrded
6	2	438	0.250	steel	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	

Length Headpipe \_\_\_\_\_ Length Tailpipe \_\_\_\_\_

9. PERFORATIONS/SCREENS

- Perforations? Method air perforator
- Screens? Screen Type \_\_\_\_\_

From	To	Slot	Nmbr	Diam	Material	Casng	Liner
415	4	1"	400		Steel	<input checked="" type="checkbox"/>	

10. STATIC WATER LEVEL or ARTESIAN PRESSURE

408 ft. below ground. Artesian pressure \_\_\_\_\_ lb.  
Depth flow encountered 408 ft. Describe access port or control devices: Steel cap welded

11. WELL TESTS:

Pump	Bailer	<input checked="" type="checkbox"/> Air	Flowing Artesian
Yield gal./min.	Drawdown	Pump Level	Time
20+	100%	435	2 hrs

Water Temp \_\_\_\_\_ cold Bottom hole temp \_\_\_\_\_ cold  
Water Quality test or comments: (below) Depth first Water Encountered 408  
clear, cold, no smell

12. LITHOLOGIC LOG (Describe repairs or abandonment)

Bore Diam	From	To	Lithology, Water Quality and Temperature	Remarks	
				Water	Y N
8	0	1	Topsoil		
8	1	18	Sand & gravel - 1/2" minus		<input checked="" type="checkbox"/>
6	18	240	Sand & gravel - 3/4" minus		<input checked="" type="checkbox"/>
6	240	260	Boulder & cobbles		<input checked="" type="checkbox"/>
6	260	438	Sand & gravel - 3/4" minus		<input checked="" type="checkbox"/>

Completed Depth 438 (Measurable)  
Date: Started 4/2/01 Completed 4/4/01

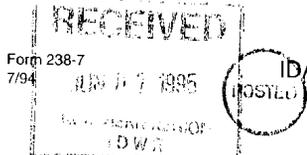
13. DRILLERS CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name United Drilling Inc. Firm No 414  
Firm Official Jason C. Beckham Date 4/4/01  
Supervisor or Operator Jason C. Beckham Date 4/4/01

FORWARD WHITE COPY TO WATER RESOURCES

53N 4W 25



Form 238-7  
7/94

IDAHO DEPARTMENT OF WATER RESOURCES  
**WELL DRILLER'S REPORT**

Use Typewriter  
OR  
Ball Point Pen

**1. DRILLING PERMIT NO.** 96- -9 - 5 - N- - 126  
Other IDWR No. \_\_\_\_\_

**2. OWNER:**  
Name CHRIS ZIMMERMAN  
Address 4348 SEQUOIA DRIVE.  
City OAKLEY State CA Zip 94561

**3. LOCATION OF WELL by legal description:**  
Sketch map location must agree with written location.

N		Twp. <u>53</u>		North <input checked="" type="checkbox"/> or South <input type="checkbox"/>	
E		Rge. <u>4</u>		East <input type="checkbox"/> or West <input checked="" type="checkbox"/>	
S		Sec. <u>25</u>		N/W <input type="checkbox"/> or S/E <input type="checkbox"/>	
W		Gov'l Lot _____		County <u>Kootenai</u> 1/4 1/4 1/4 1/4	

Address of Well Site BRUNNER RD.  
City \_\_\_\_\_  
(Give at least name of road + Distance to Road or Landmark)

Lt. \_\_\_\_\_ Blk. \_\_\_\_\_ Sub. Name \_\_\_\_\_

**4. PROPOSED USE:**  
 Domestic  Municipal  Monitor  Irrigation  
 Thermal  Injection  Other \_\_\_\_\_

**5. TYPE OF WORK**  
 New Well  Modify or Repair  Replacement  Abandonment

**6. DRILL METHOD**  
 Mud Rotary  Air Rotary  Cable  Other \_\_\_\_\_

**7. SEALING PROCEDURES**

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	
<u>Bentonite</u>	<u>0</u>	<u>118</u>	<u>12</u>	<u>Overbore</u>

Was drive shoe used?  Y  N Shoe Depth(s) \_\_\_\_\_  
Was drive shoe seal tested? Y  N  How? \_\_\_\_\_

**8. CASING/LINER:**

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
<u>8</u>	<u>+2</u>	<u>118</u>	<u>.250</u>	<u>Steel</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<u>105</u>	<u>485</u>	<u>.250</u>	<u>Steel</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe \_\_\_\_\_ Length of Tailpipe \_\_\_\_\_

**9. PERFORATIONS/SCREENS**  
 Perforations Method Downhole Perforator Air  
 Screens Screen Type \_\_\_\_\_

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
<u>480</u>	<u>485</u>	<u>1"</u>	<u>350</u>	<u>1/4</u>	<u>Steel</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:**  
410 ft. below ground Artesian pressure \_\_\_\_\_ lb.  
Depth flow encountered \_\_\_\_\_ ft. Describe access port or control devices: CAP

**11. WELL TESTS:**  
 Pump  Bailor  Air  Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
<u>30 Est</u>	<u>N/A</u>	<u>N/A</u>	<u>2 hrs</u>

Water Temp Cold Bottom hole temp Cold  
Water Quality test or comments: Clear, no odor

**12. LITHOLOGIC LOG: (Describe repairs or abandonment)** Water

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
<u>10</u>	<u>0</u>	<u>1</u>	<u>Soil</u>		<input checked="" type="checkbox"/>
	<u>1</u>	<u>118</u>	<u>Sand, gravel 3/4 minus</u>		<input checked="" type="checkbox"/>
<u>7 1/2</u>	<u>118</u>	<u>140</u>	<u>Sand, gravel 3/4 minus</u>		<input checked="" type="checkbox"/>
	<u>140</u>	<u>165</u>	<u>Boulder granite</u>		<input checked="" type="checkbox"/>
	<u>165</u>	<u>210</u>	<u>Sand, gravel 3/4 minus</u>		<input checked="" type="checkbox"/>
	<u>210</u>	<u>235</u>	<u>Cobbles gravel</u>		<input checked="" type="checkbox"/>
	<u>235</u>	<u>410</u>	<u>Sand, gravel 3/4 minus</u>		<input checked="" type="checkbox"/>
	<u>410</u>	<u>412</u>	<u>Clay, gray</u>		<input checked="" type="checkbox"/>
	<u>412</u>	<u>450</u>	<u>Sand, coarse</u>		<input checked="" type="checkbox"/>
	<u>450</u>	<u>485</u>	<u>Sand, gravel 1 1/2 minus</u>		<input checked="" type="checkbox"/>

Completed Depth 485' (Measurable)  
Date: Started 5/16/95 Completed 5/24/95

**13. DRILLER'S CERTIFICATION**  
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name United Drilling Inc. Firm No. 414  
Firm Official Tim R. Volz pres. Date 5/26/95  
and  
Supervisor or Operator Larry Van der Linden 5/26/95

Form 238-7  
3/95  
Starships Consulting and  
Management Services

RECEIVED

IDAHO DEPARTMENT OF WATER RESOURCES

NO. 04 1997

**WELL DRILLER'S REPORT**

Use Typewriter or Ballpoint Pen

Office Use Only			
Inspected by			
Twp	Rge	Sec	
1/4	1/4	1/4	
Lat:		Long:	

1. DRILLING PERMIT NO. 96-97-N-024-000  
Other IDWR No. \_\_\_\_\_

2. OWNER ALLEN, JOE Well Number: 554  
Address 917 10TH  
City CLARKSTON State WA Zip 99403

3. LOCATION OF WELL by legal description  
sketch map location must agree with written location

N					
		X			
S					

Twp. 53  North or  South  
Rge. 04  East or  West  
Sec. 25 1/4 NW 1/4 SE 1/4  
Gov't Lot \_\_\_\_\_ County KOOTENAI  
Lat: \_\_\_\_\_ Long: \_\_\_\_\_  
Address of Well Site BRUNNER RD  
City ATHOL

(Give at least name of road + Distance to Road or Landmark)  
Blk. \_\_\_\_\_ Sub. Name \_\_\_\_\_

4. USE:  
 Domestic  Municipal  Monitor  Irrigation  
 Thermal  Injection  Other \_\_\_\_\_

5. TYPE OF WORK check all that apply (Replacement, etc.)  
 New Well  Modify  Abandonment  Other \_\_\_\_\_

6. DRILL METHOD  
 Air Rotary  Cable  Mud Rotary  Other \_\_\_\_\_

7. SEALING PROCEDURES

SEAL/FILTER PACK		AMOUNT		METHOD
Material	From	To	Sacks or Pounds	
BENTONITE	0	18	400 LBS	OVERBORE

Was drive shoe used?  Y  N Shoe Depth(s) 445  
Was drive shoe seal tested?  Y  N How? AIR

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+2	445	.250	STEEL	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe \_\_\_\_\_ Length of Tailpipe \_\_\_\_\_

9. PERFORATIONS/SCREENS  
 Perforations Method \_\_\_\_\_  
 Screens Screen Type \_\_\_\_\_

From	To	Slot Size	Number	Diameter	Material	Casing	Liner

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:  
415 ft. below ground Artesian pressure \_\_\_\_\_ lb.  
Depth flow encountered \_\_\_\_\_ ft. Describe access port or control devices: \_\_\_\_\_

11. WELL TESTS:  
 Pump  Bailer  Air  Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
20		240	1 HR

Water Temp. COLD Bottom Hole Temp COLD  
Water Quality test or comments: GOOD  
Depth first Water encountered 215

12. LITHOLOGIC LOG:(Describe repairs or abandonment)

Bore Diam	From	To	Remarks: Lithology, Water Quality, Temperature	Water	
				Y	N
8	0	18	Sand Gravels		<input checked="" type="checkbox"/>
6	18	122	Gravel & Sand		<input checked="" type="checkbox"/>
6	122	144	Granite		<input checked="" type="checkbox"/>
6	144	235	Gravel & Sand		<input checked="" type="checkbox"/>
6	235	260	Cobbles & Gravels		<input checked="" type="checkbox"/>
6	260	400	Gravels & Sand		<input checked="" type="checkbox"/>
6	400	415	Boulders & Gravels		<input checked="" type="checkbox"/>
6	415	445	Gravels & Cobbles	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Completed Depth 445' (Measurable)  
Date: Started 5/19/97 Completed 5/27/97

13. DRILLER'S CERTIFICATION  
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.  
Firm Name H2O Well Service, Inc. Firm No. 448  
Firm Official Roger Kelly Date 5/27/97  
and \_\_\_\_\_ Date 5/27/97  
Supervisor or Operator Roger Kelly Date \_\_\_\_\_  
(Sign Once if Firm Official and Operator)  
(ROGER KELLY)

**MUSE 75 ERN 111**

Form 238-7  
11/97

IDAHO DEPARTMENT OF WATER RESOURCES  
WELL DRILLER'S REPORT

Office Use Only		
Inspected by		
Twp	Rge	Sec
1/4	1/4	1/4
Lat	Long	

RECEIVED  
OCT 16 2000  
IDWR/NORTH

1. WELL TAG NO. D0013766  
DRILLING PERMIT N \_\_\_\_\_  
Other IDWR No 766974  
2. OWNER: \_\_\_\_\_  
Name Marcus Valentine  
Address 3520 N 15th / Apt F2  
City Coeur d'Alene State ID \_\_\_\_\_ Zip 83815

11. WELL TESTS:

Pump	Bailer	<input checked="" type="checkbox"/> Air	Flowing Artesian
Yield gal./min.	Drawdown	Pump Level	Time
20	100%	455	1 hr

3. LOCATION OF WELL by legal description:  
N Twp 53N North  or South  
Rge 04W East or West   
Sec 25 1/4 SW 1/4 NE 1/4  
Gov't Lot \_\_\_\_\_ County Kootenai  
Lat \_\_\_\_\_ Long \_\_\_\_\_  
Address of Well Site: (see next line)  
W on Brunner to Warren, go N to Jackaloo Rd to 90 go City  
Lot \_\_\_\_\_ Blk \_\_\_\_\_ Sub. Name (see next line)

Water Temp. \_\_\_\_\_ cold Bottom hole temp. \_\_\_\_\_ cold  
Water Quality test or comments: (below) Depth first Water Encountered 410  
clear, cold, no smell

4. USE:  
 Domestic  Municipal  Monitor  Irrigation  
 Thermal  Injection  Other \_\_\_\_\_  
5. TYPE OF WORK check all that apply (Replacement etc.)  
 New Well  Modify  Abandonment  Other \_\_\_\_\_  
6. DRILL METHOD  
 Air Rotary  Cable  Mud Rotary  Other \_\_\_\_\_

12. LITHOLOGIC LOG (Describe repairs or abandonment)

Bore Diam	From	To	Lithology, Water Quality and Temperature	Remarks:	
				Y	N
8	0	1	Topsoil		<input checked="" type="checkbox"/>
8	1	18	Sand & gravel - 3/4" minus		<input checked="" type="checkbox"/>
6	18	240	Sand & gravel - 3/4" minus		<input checked="" type="checkbox"/>
6	240	290	Sand & gravel - 1/2" minus		<input checked="" type="checkbox"/>
6	290	360	Sand & gravel - 1/4" minus		<input checked="" type="checkbox"/>
6	360	458	Sand & gravel - 1/2" minus		<input checked="" type="checkbox"/>

7. SEALING PROCEDURES

SEAL/FILTER PACK			Amount	Method
Material	From	To	Sacks/Lbs	
Bentonite	0	18	10 sacks	pour in

Drive Shoe Used?  Y  N Shoe Depth(s) \_\_\_\_\_  
Drive Shoe Seal Tested?  Y  N How? \_\_\_\_\_

8. CASING/LINER

Diam	From	To	Gauge	Material	Casng	Liner	Weld	Thrded
6	2	458	0.250	Steel	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	

Length Headpipe \_\_\_\_\_ Length Tailpipe \_\_\_\_\_

9. PERFORATIONS/SCREENS

Perforations? Method air perforator  
Screens? Screen Type \_\_\_\_\_

From	To	Slot	Nmbr	Diam	Material	Casng	Liner
435	455	1"	400		Steel	<input checked="" type="checkbox"/>	

10. STATIC WATER LEVEL or ARTESIAN PRESSURE  
410 ft. below ground. Artesian pressure \_\_\_\_\_ lb.  
Depth flow encountered 410 ft. Describe access port or control devices: Steel cap welded

Completed Depth 458 (Measurable)  
Date. Started 10/9/00 Completed 10/11/00

13. DRILLERS CERTIFICATION  
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.  
Firm Name United Drilling Inc. Firm No 414  
Firm Official [Signature] Date 10/12/00  
Supervisor or Operator Jason C. Beckham Date 10/12/00

53N 4W 25 FORWARD WHITE COPY TO WATER RESOURCES 348

Form 238-7  
3/95  
Starships Consulting  
Management Services

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

Use Typewriter or Ballpoint Pen

NOV 13 1997

Office Use Only			
Inspected by			
Twp	Rge	Sec	
1/4	1/4	1/4	
Lat	Long		

1. DRILLING PERMIT NO. TAG#D0003396  
Other IDWR No. 96-97-N-210 NORTHERN REGION  
2. OWNER STEVE THOMPSON & ASSOC. Well Number: 623  
Address 1173 E LANCASTER  
City HAYDEN State ID Zip 83835

3. LOCATION OF WELL by legal description  
sketch map location must agree with written location

N		Twp. 53		<input checked="" type="checkbox"/> North or <input type="checkbox"/> South	
		Rge. 04		<input type="checkbox"/> East or <input checked="" type="checkbox"/> West	
		E. Sec. 25		1/4 SE 1/4 NE 1/4	
		Gov't Lot		County KOOTENAI	
		Lat: : : Long: : :		Address of Well Site WARREN RD	
		City ATHOL			

(Give at least name of road + Distance to Road or Landmark)  
Blk. Sub. Name

4. USE:  
 Domestic  Municipal  Monitor  Irrigation  
 Thermal  Injection  Other

5. TYPE OF WORK check all that apply (Replacement, etc.)  
 New Well  Modify  Abandonment  Other

6. DRILL METHOD  
 Air Rotary  Cable  Mud Rotary  Other

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	
BENTONITE	0	20	2 SACKS	SLURRY

Was drive shoe used?  Y  N Shoe Depth(s)  
Was drive shoe seal tested?  Y  N How?

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+1	443	.250	STEEL	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe Length of Tailpipe

9. PERFORATIONS/SCREENS  
 Perforations Method  
 Screens Screen Type

From	To	Slot Size	Number	Diameter	Material	Casing	Liner

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:  
400 ft. below ground Artesian pressure lb.  
Depth flow encountered ft. Describe access port or control devices:

SENE 25 53N14W

11. WELL TESTS:  
 Pump  Bailer  Air  Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
5			1
10 gpm	Pump Test		4 Hrs

Water Temp. COLD Bottom Hole Temp  
Water Quality test or comments: CLEAR  
Depth first Water encountered

12. LITHOLOGIC LOG:(Describe repairs or abandonment)

Bore Diam	From	To	Remarks: Lithology, Water Quality, Temperature	Water	
				Y	N
10	0	18	Gravel W/Sand	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	18	22	Gravel W/Sand	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	22	236	Sand Coarse	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	236	443	Gravel W/Coarse Sand	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Completed Depth 443' (Measurable)  
Date: Started 10/30/97 Completed 11/3/97

13. DRILLER'S CERTIFICATION  
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.  
Firm Name H2O Well Service, Inc. Firm No. 448  
Firm Official [Signature] Date 11/3/97  
and  
Supervisor or Operator [Signature] Date 11/3/97  
(Sign Once if Firm Official and Operator)  
(Todd Morgan)



**APPENDIX C**  
**Analytical Laboratory Reports**

08/05/2003

# ANALYTICAL SCIENCES LABORATORY

University of Idaho  
Holm Research Center  
Moscow, Idaho 83844-2203  
Phone: (208) 885-7081 Fax: (208) 885-8937

## CERTIFICATE OF ANALYSIS

**Submitted by:**

Gary R Stevens  
Idaho Water Resources  
University of Idaho  
205 Morrill Hall  
Moscow

ID

83844-3011

UIASL Case #: WJUL03-18

Submitter Case #: KE-K125

Group: WATER

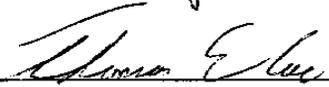
Date Received: 07/11/2003

Report Status: Final

---

Laboratory Comments:

1st Level QC: \_\_\_\_\_  \_\_\_\_\_ Date: 8/5/03

2nd Level QC: \_\_\_\_\_  \_\_\_\_\_ Date: 8/6/03

# ANALYTICAL SCIENCES LABORATORY

## CERTIFICATE OF ANALYSIS

Owner: \_\_\_\_\_ Project Name: \_\_\_\_\_  
 Submitter ID: UTL #3  
 UIASL #: W0301234-1  
 Samp. Type: Water  
 Test: EPA 300.0 - Inorg. Anions by Ion Chrom.  
 Ref: 07/15/2003 04:20:48 PM

EPA 300.0	Results	MDL	Units
Fluoride	BDL	0.15	mg/L
Chloride	0.86	0.20	mg/L
Nitrite-N	ND	0.050	mg/L
Bromide	ND	0.10	mg/L
Nitrate-N	0.091	0.050	mg/L
o-Phosphate-P	ND	0.10	mg/L
Sulfate	2.90	0.20	mg/L
Comments	None		

Owner: \_\_\_\_\_ Project Name: \_\_\_\_\_  
 Submitter ID: UTL #3  
 UIASL #: W0301234-1  
 Samp. Type: Water  
 Test: Arsenic - ICP, Hydride  
 Ref: 07/28/2003 08:32:13 AM

ICP, Hydride	Results	MDL	Units
Arsenic	2.7	1.8	µg/L

Owner: \_\_\_\_\_ Project Name: \_\_\_\_\_  
 Submitter ID: UTL #3  
 UIASL #: W0301234-1  
 Samp. Type: Water  
 Test: EPA 180.1 - Turbidity  
 Ref: 07/15/2003 04:14:54 PM

EPA 180.1	Results	MDL	Units
Turbidity	0.36	0.10	NTU

Owner: \_\_\_\_\_ Project Name: \_\_\_\_\_  
 Submitter ID: UTL #3  
 UIASL #: W0301234-1  
 Samp. Type: Water  
 Test: EPA 120.1 - Conductance  
 Ref: 07/15/2003 08:19:25 AM

EPA 120.1	Results	Units
Conductance	57	µmhos/cm

# ANALYTICAL SCIENCES LABORATORY

## CERTIFICATE OF ANALYSIS

Owner: \_\_\_\_\_ Project Name: \_\_\_\_\_  
 Submitter ID: UTL #3  
 UIASL #: W0301234-1  
 Samp. Type: Water  
 Test: EPA 310.1 - Alkalinity, HCO<sub>3</sub>, CO<sub>3</sub>, OH  
 Ref: 07/15/2003 08:17:13 AM

EPA 310.1 Alkalinity	Results	MDL	Units
Hydroxide Alkalinity	ND	3	mg CaCO <sub>3</sub> /L
Carbonate Alkalinity	ND	3	mg CaCO <sub>3</sub> /L
Bicarbonate Alkal.	23	3	mg CaCO <sub>3</sub> /L
Total Alkalinity	23	3	mg CaCO <sub>3</sub> /L
pH	5.8		

Owner: \_\_\_\_\_ Project Name: \_\_\_\_\_  
 Submitter ID: UTL #3  
 UIASL #: W0301234-1  
 Samp. Type: Water  
 Test: Arsenic Speciation  
 Ref: 08/05/2003 02:40:57 PM

Arsenic Speciation	Results	MDL	Units
Arsenite	BDL	2.0	µg/L
Arsenate	BDL	2.0	µg/L

Owner: \_\_\_\_\_ Project Name: \_\_\_\_\_  
 Submitter ID: UTL #3  
 UIASL #: W0301234-2  
 Samp. Type: Ground Water with HNO<sub>3</sub> preservation  
 Test: EPA 200.7 - Dissolved Metal Screen  
 Ref: 07/23/2003 01:50:29 PM

EPA 200.7 -Dissolved	Results	MDL	Units
Barium	0.020	0.010	mg/L
Beryllium	BDL	0.0050	mg/L
Calcium	5.400	0.050	mg/L
Cadmium	BDL	0.0050	mg/L
Cobalt	BDL	0.050	mg/L
Chromium	BDL	0.020	mg/L
Copper	BDL	0.020	mg/L
Iron	0.042	0.020	mg/L
Potassium	1.10	0.50	mg/L
Magnesium	1.200	0.020	mg/L
Manganese	BDL	0.0050	mg/L
Molybdenum	BDL	0.10	mg/L
Sodium	BDL	10	mg/L

ND - None Detected    QNS - Quantity Not Sufficient for Analysis    NA - Not Applicable    NQA - Non-quantifiable Area  
 EDL - Estimated Detection Limit    MDL - Method Detection Limit    BDL - Below Detection Limit

# ANALYTICAL SCIENCES LABORATORY

## CERTIFICATE OF ANALYSIS

EPA 200.7 -Dissolved	Results	MDL	Units
Nickel	BDL	0.050	mg/L
Vanadium	BDL	0.020	mg/L
Zinc	0.140	0.010	mg/L

Owner: Project Name:  
 Submitter ID: UTL North  
 UIASL #: W0301235-1  
 Samp. Type: Water  
 Test: EPA 300.0 - Inorg. Anions by Ion Chrom.  
 Ref: 07/15/2003 04:24:01 PM

EPA 300.0	Results	MDL	Units
Fluoride	BDL	0.15	mg/L
Chloride	0.85	0.20	mg/L
Nitrite-N	ND	0.050	mg/L
Bromide	ND	0.10	mg/L
Nitrate-N	0.100	0.050	mg/L
o-Phosphate-P	ND	0.10	mg/L
Sulfate	2.80	0.20	mg/L
Comments	None		

Owner: Project Name:  
 Submitter ID: UTL North  
 UIASL #: W0301235-1  
 Samp. Type: Water  
 Test: Arsenic - ICP, Hydride  
 Ref: 07/28/2003 08:32:19 AM

ICP, Hydride	Results	MDL	Units
Arsenic	2.3	1.8	µg/L

Owner: Project Name:  
 Submitter ID: UTL North  
 UIASL #: W0301235-1  
 Samp. Type: Water  
 Test: EPA 180.1 - Turbidity  
 Ref: 07/15/2003 04:15:16 PM

EPA 180.1	Results	MDL	Units
Turbidity	BDL	0.10	NTU

# ANALYTICAL SCIENCES LABORATORY

## CERTIFICATE OF ANALYSIS

Owner: Project Name:

Submitter ID: UTL North  
 UIASL #: W0301235-1  
 Samp. Type: Water  
 Test: EPA 120.1 - Conductance  
 Ref: 07/15/2003 08:19:28 AM

EPA 120.1	Results	Units
Conductance	50	μmhos/cm

Owner: Project Name:

Submitter ID: UTL North  
 UIASL #: W0301235-1  
 Samp. Type: Water  
 Test: EPA 310.1 - Alkalinity, HCO<sub>3</sub>, CO<sub>3</sub>, OH  
 Ref: 07/15/2003 08:17:21 AM

EPA 310.1 Alkalinity	Results	MDL	Units
Hydroxide Alkalinity	ND	3	mg CaCO <sub>3</sub> /L
Carbonate Alkalinity	ND	3	mg CaCO <sub>3</sub> /L
Bicarbonate Alkal.	17	3	mg CaCO <sub>3</sub> /L
Total Alkalinity	17	3	mg CaCO <sub>3</sub> /L
pH	5.9		

Owner: Project Name:

Submitter ID: UTL North  
 UIASL #: W0301235-1  
 Samp. Type: Water  
 Test: Arsenic Speciation  
 Ref: 08/05/2003 02:41:00 PM

Arsenic Speciation	Results	MDL	Units
Arsenite	BDL	2.0	μg/L
Arsenate	BDL	2.0	μg/L

Owner: Project Name:

Submitter ID: UTL North  
 UIASL #: W0301235-2  
 Samp. Type: Ground Water with HNO<sub>3</sub> preservation  
 Test: EPA 200.7 - Dissolved Metal Screen  
 Ref: 07/23/2003 01:50:02 PM

EPA 200.7 -Dissolved	Results	MDL	Units
Barium	0.065	0.010	mg/L
Beryllium	BDL	0.0050	mg/L
Calcium	4.900	0.050	mg/L
Cadmium	BDL	0.0050	mg/L

# ANALYTICAL SCIENCES LABORATORY

## CERTIFICATE OF ANALYSIS

EPA 200.7 -Dissolved	Results	MDL	Units
Cobalt	BDL	0.050	mg/L
Chromium	BDL	0.020	mg/L
Copper	BDL	0.020	mg/L
Iron	BDL	0.020	mg/L
Potassium	0.93	0.50	mg/L
Magnesium	1.200	0.020	mg/L
Manganese	BDL	0.0050	mg/L
Molybdenum	BDL	0.10	mg/L
Sodium	BDL	10	mg/L
Nickel	BDL	0.050	mg/L
Vanadium	BDL	0.020	mg/L
Zinc	0.036	0.010	mg/L

Owner: Project Name:  
 Submitter ID: Watkins Well  
 UIASL #: W0301236-1  
 Samp. Type: D1 Well  
 Test: EPA 300.0 - Inorg. Anions by Ion Chrom.  
 Ref: 07/15/2003 04:24:14 PM

EPA 300.0	Results	MDL	Units
Fluoride	BDL	0.15	mg/L
Chloride	1.00	0.20	mg/L
Nitrite-N	ND	0.050	mg/L
Bromide	ND	0.10	mg/L
Nitrate-N	0.200	0.050	mg/L
o-Phosphate-P	BDL	0.10	mg/L
Sulfate	2.10	0.20	mg/L
Comments	None		

Owner: Project Name:  
 Submitter ID: Watkins Well  
 UIASL #: W0301236-1  
 Samp. Type: Water  
 Test: D1 Well Hydride  
 Ref: 02:24 AM

ICP, Hydride	Results	MDL	Units
Arsenic	16.0	1.8	µg/L

# ANALYTICAL SCIENCES LABORATORY

## CERTIFICATE OF ANALYSIS

Owner: Project Name:

Submitter ID: **D1 Well**

UIASL #:

Samp. Type: Water

Test: EPA 180.1 - Turbidity

Ref: 07/15/2003 04:15:19 PM

EPA 180.1	Results	MDL	Units
Turbidity	BDL	0.10	NTU

Owner: Project Name:

Submitter ID: Watkins Well

UIASL #:

Samp. Type: **D1 Well**

Test: EPA 120.1 - Conductance

Ref: 07/15/2003 08:19:32 AM

EPA 120.1	Results	Units
Conductance	220	$\mu$ mhos/cm

Owner: Project Name:

Submitter ID: Watkins Well

UIASL #: W0301236-1

Samp. Type: **D1 Well**Test: EPA 310.1 - Alkalinity, HCO<sub>3</sub>, CO<sub>3</sub>, OH

Ref: 07/15/2003 08:17:31 AM

EPA 310.1 Alkalinity	Results	MDL	Units
Hydroxide Alkalinity	ND	3	mg CaCO <sub>3</sub> /L
Carbonate Alkalinity	ND	3	mg CaCO <sub>3</sub> /L
Bicarbonate Alkal.	99	3	mg CaCO <sub>3</sub> /L
Total Alkalinity	99	3	mg CaCO <sub>3</sub> /L
pH	7.9		

Owner: Project Name:

Submitter ID: Watkins Well

UIASL #: W0301236-1

Samp. Type: Water

Test: **D1 Well** ion

Ref: 07/15/2003 04:06 PM

Arsenic Speciation	Results	MDL	Units
Arsenite	BDL	2.0	$\mu$ g/L
Arsenate	15	2.0	$\mu$ g/L

# ANALYTICAL SCIENCES LABORATORY

## CERTIFICATE OF ANALYSIS

Owner: \_\_\_\_\_ Project Name: \_\_\_\_\_

 Submitter ID: **D1 Well**  
 UIASL #: \_\_\_\_\_  
 Samp. Type: Ground Water with HNO<sub>3</sub> preservation  
 Test: EPA 200.7 - Dissolved Metal Screen  
 Ref: 07/23/2003 01:49:37 PM

EPA 200.7 -Dissolved	Results	MDL	Units
Barium	0.088	0.010	mg/L
Beryllium	BDL	0.0050	mg/L
Calcium	33.000	0.050	mg/L
Cadmium	BDL	0.0050	mg/L
Cobalt	BDL	0.050	mg/L
Chromium	BDL	0.020	mg/L
Copper	BDL	0.020	mg/L
Iron	BDL	0.020	mg/L
Potassium	1.50	0.50	mg/L
Magnesium	5.200	0.020	mg/L
Manganese	BDL	0.0050	mg/L
Molybdenum	BDL	0.10	mg/L
Sodium	BDL	10	mg/L
Nickel	BDL	0.050	mg/L
Vanadium	BDL	0.020	mg/L
Zinc	0.049	0.010	mg/L

Owner: \_\_\_\_\_ Project Name: \_\_\_\_\_

 Submitter ID: **HIAT Well**  
 UIASL #: **W0301237-1**  
 Samp. Type: **Water**  
 Test: **D2 Well** org. Anions by Ion Chrom.  
 Ref: 07/15/2003 04:24:24 PM

EPA 300.0	Results	MDL	Units
Fluoride	0.17	0.15	mg/L
Chloride	0.42	0.20	mg/L
Nitrite-N	ND	0.050	mg/L
Bromide	ND	0.10	mg/L
Nitrate-N	BDL	0.050	mg/L
o-Phosphate-P	ND	0.10	mg/L
Sulfate	15.00	0.20	mg/L
Comments	None		

# ANALYTICAL SCIENCES LABORATORY

## CERTIFICATE OF ANALYSIS

Owner: \_\_\_\_\_ Project Name: \_\_\_\_\_

 Submitter ID: \_\_\_\_\_  
 UIASL #: **D2 Well**  
 Samp. Type: **Water**  
 Test: **Arsenic - ICP, Hydride**  
 Ref: **07/28/2003 08:43:08 AM**

ICP, Hydride	Results	MDL	Units
Arsenic	BDL	1.8	µg/L

Owner: \_\_\_\_\_ Project Name: \_\_\_\_\_

 Submitter ID: **HIAT Well**  
 UIASL #: **W0301237-1**  
 Samp. Type: **D2 Well**  
 Test: **EPA 180.1 - Turbidity**  
 Ref: **07/15/2003 04:15:20 PM**

EPA 180.1	Results	MDL	Units
Turbidity	BDL	0.10	NTU

Owner: \_\_\_\_\_ Project Name: \_\_\_\_\_

 Submitter ID: **HIAT Well**  
 UIASL #: **W0301237-1**  
 Samp. Type: **Water**  
 Test: **D2 Well Conductance**  
 Ref: **07/28/2003 09:37 AM**

EPA 120.1	Results	Units
Conductance	140	µmhos/cm

Owner: \_\_\_\_\_ Project Name: \_\_\_\_\_

 Submitter ID: **HIAT Well**  
 UIASL #: **W0301237-1**  
 Samp. Type: **Water**  
 Test: **EPA 310.1 - Alkalinity, HCO<sub>3</sub>, CO<sub>3</sub>, OH**  
 Ref: **07/28/2003 17:37 AM**

<b>D2 Well</b>	EPA 310.1 Alkalinity	Results	MDL	Units
	Hydroxide Alkalinity	ND	3	mg CaCO <sub>3</sub> /L
	Carbonate Alkalinity	ND	3	mg CaCO <sub>3</sub> /L
	Bicarbonate Alkal.	48	3	mg CaCO <sub>3</sub> /L
	Total Alkalinity	48	3	mg CaCO <sub>3</sub> /L
	pH	6.8		

# ANALYTICAL SCIENCES LABORATORY

## CERTIFICATE OF ANALYSIS

Owner: \_\_\_\_\_ Project Name: \_\_\_\_\_

Submitter ID: **D2 Well**  
 UIASL #: \_\_\_\_\_  
 Samp. Type: Ground Water with HNO3 preservation  
 Test: EPA 200.7 - Dissolved Metal Screen  
 Ref: 07/23/2003 01:49:17 PM

EPA 200.7 -Dissolved	Results	MDL	Units
Barium	BDL	0.010	mg/L
Beryllium	BDL	0.0050	mg/L
Calcium	17.000	0.050	mg/L
Cadmium	BDL	0.0050	mg/L
Cobalt	BDL	0.050	mg/L
Chromium	BDL	0.020	mg/L
Copper	BDL	0.020	mg/L
Iron	BDL	0.020	mg/L
Potassium	1.40	0.50	mg/L
Magnesium	2.300	0.020	mg/L
Manganese	0.0260	0.0050	mg/L
Molybdenum	BDL	0.10	mg/L
Sodium	BDL	10	mg/L
Nickel	BDL	0.050	mg/L
Vanadium	BDL	0.020	mg/L
Zinc	0.900	0.010	mg/L

Owner: \_\_\_\_\_ Project Name: \_\_\_\_\_

Submitter ID: Lake Forest Park  
 UIASL #: W0301238-1  
 Samp. Type: Water  
 Test: EPA 300.0 - Inorg. Anions by Ion Chrom.  
 Ref: 07/15/2003 04:24:35 PM

EPA 300.0	Results	MDL	Units
Fluoride	BDL	0.15	mg/L
Chloride	2.90	0.20	mg/L
Nitrite-N	ND	0.050	mg/L
Bromide	ND	0.10	mg/L
Nitrate-N	0.560	0.050	mg/L
o-Phosphate-P	ND	0.10	mg/L
Sulfate	2.90	0.20	mg/L
Comments	None		

# ANALYTICAL SCIENCES LABORATORY

## CERTIFICATE OF ANALYSIS

Owner: \_\_\_\_\_ Project Name: \_\_\_\_\_

 Submitter ID: Lake Forest Park  
 UIASL #: W0301238-1  
 Samp. Type: Water  
 Test: Arsenic - ICP, Hydride  
 Ref: 07/28/2003 08:32:33 AM

ICP, Hydride	Results	MDL	Units
Arsenic	BDL	1.8	µg/L

Owner: \_\_\_\_\_ Project Name: \_\_\_\_\_

 Submitter ID: Lake Forest Park  
 UIASL #: W0301238-1  
 Samp. Type: Water  
 Test: EPA 120.1 - Conductance  
 Ref: 07/15/2003 08:19:40 AM

EPA 120.1	Results	Units
Conductance	78	µmhos/cm

Owner: \_\_\_\_\_ Project Name: \_\_\_\_\_

 Submitter ID: Lake Forest Park  
 UIASL #: W0301238-1  
 Samp. Type: Water  
 Test: EPA 310.1 - Alkalinity, HCO<sub>3</sub>, CO<sub>3</sub>, OH  
 Ref: 07/15/2003 08:18:24 AM

EPA 310.1 Alkalinity	Results	MDL	Units
Hydroxide Alkalinity	ND	3	mg CaCO <sub>3</sub> /L
Carbonate Alkalinity	ND	3	mg CaCO <sub>3</sub> /L
Bicarbonate Alkal.	27	3	mg CaCO <sub>3</sub> /L
Total Alkalinity	27	3	mg CaCO <sub>3</sub> /L
pH	6.3		

Owner: \_\_\_\_\_ Project Name: \_\_\_\_\_

 Submitter ID: Lake Forest Park  
 UIASL #: W0301238-1  
 Samp. Type: Water  
 Test: EPA 180.1 - Turbidity  
 Ref: 07/15/2003 04:17:52 PM

EPA 180.1	Results	MDL	Units
Turbidity	BDL	0.10	NTU

# ANALYTICAL SCIENCES LABORATORY

## CERTIFICATE OF ANALYSIS

Owner: Project Name:  
 Submitter ID: Lake Forest Park  
 UIASL #: W0301238-2  
 Samp. Type: Ground Water with HNO3 preservation  
 Test: EPA 200.7 - Dissolved Metal Screen  
 Ref: 07/23/2003 01:48:47 PM

EPA 200.7 -Dissolved	Results	MDL	Units
Barium	0.061	0.010	mg/L
Beryllium	BDL	0.0050	mg/L
Calcium	7.100	0.050	mg/L
Cadmium	BDL	0.0050	mg/L
Cobalt	BDL	0.050	mg/L
Chromium	BDL	0.020	mg/L
Copper	BDL	0.020	mg/L
Iron	BDL	0.020	mg/L
Potassium	1.30	0.50	mg/L
Magnesium	2.100	0.020	mg/L
Manganese	BDL	0.0050	mg/L
Molybdenum	BDL	0.10	mg/L
Sodium	BDL	10	mg/L
Nickel	BDL	0.050	mg/L
Vanadium	BDL	0.020	mg/L
Zinc	0.044	0.010	mg/L

Owner: Project Name:  
 Submitter ID: NKWD Twin Low Well  
 UIASL #: W0301239-1  
 Samp. Type: Water  
 Test: EPA 300.0 - Inorg. Anions by Ion Chrom.  
 Ref: 07/15/2003 04:24:46 PM

EPA 300.0	Results	MDL	Units
Fluoride	BDL	0.15	mg/L
Chloride	0.47	0.20	mg/L
Nitrite-N	ND	0.050	mg/L
Bromide	ND	0.10	mg/L
Nitrate-N	0.200	0.050	mg/L
o-Phosphate-P	ND	0.10	mg/L
Sulfate	1.30	0.20	mg/L
Comments	None		

# ANALYTICAL SCIENCES LABORATORY

## CERTIFICATE OF ANALYSIS

Owner: Project Name:

Submitter ID: NKWD Twin Low Well  
 UIASL #: W0301239-1  
 Samp. Type: Water  
 Test: Arsenic - ICP, Hydride  
 Ref: 07/28/2003 08:32:37 AM

ICP, Hydride	Results	MDL	Units
Arsenic	BDL	1.8	µg/L

Owner: Project Name:

Submitter ID: NKWD Twin Low Well  
 UIASL #: W0301239-1  
 Samp. Type: Water  
 Test: EPA 180.1 - Turbidity  
 Ref: 07/29/2003 11:16:01 AM

EPA 180.1	Results	MDL	Units
Turbidity	0.23	0.10	NTU

Owner: Project Name:

Submitter ID: NKWD Twin Low Well  
 UIASL #: W0301239-1  
 Samp. Type: Water  
 Test: EPA 120.1 - Conductance  
 Ref: 07/15/2003 08:19:44 AM

EPA 120.1	Results	Units
Conductance	52	µmhos/cm

Owner: Project Name:

Submitter ID: NKWD Twin Low Well  
 UIASL #: W0301239-1  
 Samp. Type: Water  
 Test: EPA 310.1 - Alkalinity, HCO<sub>3</sub>, CO<sub>3</sub>, OH  
 Ref: 07/15/2003 08:18:32 AM

EPA 310.1 Alkalinity	Results	MDL	Units
Hydroxide Alkalinity	ND	3	mg CaCO <sub>3</sub> /L
Carbonate Alkalinity	ND	3	mg CaCO <sub>3</sub> /L
Bicarbonate Alkal.	23	3	mg CaCO <sub>3</sub> /L
Total Alkalinity	23	3	mg CaCO <sub>3</sub> /L
pH	6.9		

# ANALYTICAL SCIENCES LABORATORY

## CERTIFICATE OF ANALYSIS

Owner: Project Name:

Submitter ID: NKWD Twin Low Well  
 UIASL #: W0301239-2  
 Samp. Type: Ground Water with HNO<sub>3</sub> preservation  
 Test: EPA 200.7 - Dissolved Metal Screen  
 Ref: 07/23/2003 01:48:12 PM

EPA 200.7 -Dissolved	Results	MDL	Units
Barium	0.053	0.010	mg/L
Beryllium	BDL	0.0050	mg/L
Calcium	5.900	0.050	mg/L
Cadmium	BDL	0.0050	mg/L
Cobalt	BDL	0.050	mg/L
Chromium	BDL	0.020	mg/L
Copper	BDL	0.020	mg/L
Iron	BDL	0.020	mg/L
Potassium	0.81	0.50	mg/L
Magnesium	1.100	0.020	mg/L
Manganese	BDL	0.0050	mg/L
Molybdenum	BDL	0.10	mg/L
Sodium	BDL	10	mg/L
Nickel	BDL	0.050	mg/L
Vanadium	BDL	0.020	mg/L
Zinc	0.045	0.010	mg/L

Samples will be discarded one month after date of final report, unless otherwise requested.  
 All samples classified as hazardous waste will be returned to the submitter after analysis.

09/29/2003

## ANALYTICAL SCIENCES LABORATORY

University of Idaho  
Holm Research Center  
Moscow, Idaho 83844-2203  
Phone: (208) 885-7081 Fax: (208) 885-8937

### CERTIFICATE OF ANALYSIS

**Submitted by:**

Gary R. Stevens  
Idaho Water Resource Research  
University of Idaho  
205 Morrill Hall  
Moscow ID 83844-3011

**UIASL Case #: WAUG03-01R2**

**Submitter Case #: KE-K125**

**Group: WATER**

**Date Received: 09/18/2003**

**Report Status: Addendum**

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Laboratory Comments:

1st Level QC: \_\_\_\_\_ *ij* \_\_\_\_\_ Date: 9/24/03

2nd Level QC: \_\_\_\_\_ *At McKeel* \_\_\_\_\_ Date: 9-29-03

ANALYTICAL SCIENCES LABORATORY  
CERTIFICATE OF ANALYSIS

Owner: Project Name:

Submitter ID: **D3 Well** :r

UIASL #: W0301725A

Samp. Type: Water

Test: EPA 200.8 - Heavy Metal Screen-Dissolved

Ref: 09/29/2003 02:49:30 PM

EPA 200.8 Dissolved	Results	MDL	Units
Chromium	NA	0.50	µg/L
Nickel	NA	0.50	µg/L
Arsenic	BDL	0.50	µg/L
Selenium	NA	1.0	µg/L
Molybdenum	NA	1.0	µg/L
Silver	NA	0.25	µg/L
Cadmium	NA	0.25	µg/L
Barium	NA	0.50	µg/L
Lead	NA	0.25	µg/L

Samples will be discarded one month after date of final report, unless otherwise requested.  
All samples classified as hazardous waste will be returned to the submitter after analysis.

09/03/2003

# ANALYTICAL SCIENCES LABORATORY

University of Idaho  
Holm Research Center  
Moscow, ID 83844-2203  
PHONE (208) 885-7081 FAX (208) 885-8937

## CERTIFICATE OF ANALYSIS

**Submitted by:**

Gary R. Stevens  
Idaho Water Resource Research  
University of Idaho  
205 Morrill Hall  
Moscow ID 83844-3011

**UIASL Case #: WAUG03-01**  
**Submitter Case #: KE-K125**  
**Group: WATER**  
**Date Received: 08/01/2003**  
**Report Status: Final**

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Laboratory Comments:

1st Level QC: \_\_\_\_\_ Date: 9-3-03

2nd Level QC: St. Michael \_\_\_\_\_ Date: 9-4-03

# ANALYTICAL SCIENCES LABORATORY

## CERTIFICATE OF ANALYSIS

Owner:

Project Name:

Submitter ID **D3 Well**  
 UIASL #: W0301125-1  
 Sample Type Water - Well  
 TEST: EPA 180.1 - Turbidity  
 Ref: 08/04/2003 09:24:24 AM

EPA 180.1	Results	MDL	Units
Turbidity	0.10	0.10	NTU

Owner:

Project Name:

Submitter ID **D3 Well**  
 UIASL #: **D3 Well**  
 Sample Type Water - Well  
 TEST: EPA 300.0 - Inorg. Anions by Ion Chrom.  
 Ref: 08/05/2003 03:29:33 PM

EPA 300.0	Results	MDL	Units
Fluoride	0.40	0.15	mg/L
Chloride	0.27	0.20	mg/L
Nitrite-N	ND	0.050	mg/L
Bromide	ND	0.10	mg/L
Nitrate-N	BDL	0.050	mg/L
o-Phosphate-P	ND	0.10	mg/L
Sulfate	14.00	0.20	mg/L
Comments	None		

**ANALYTICAL SCIENCES LABORATORY**  
**CERTIFICATE OF ANALYSIS**

Owner:

Project Name:

Submitter ID **D3 Well - Filtered**  
 UIASL #: **W0301125-2**  
 Sample Type **Ground Water with HNO3 preservation**  
 TEST: EPA 200.7 - Dissolved Metal Screen  
 Ref: 08/05/2003 02:52:21 PM

EPA 200.7 -Dissolved	Results	MDL	Units
Barium	0.024	0.010	mg/L
Beryllium	BDL	0.0050	mg/L
Calcium	23.000	0.050	mg/L
Cadmium	BDL	0.0050	mg/L
Cobalt	BDL	0.050	mg/L
Chromium	BDL	0.020	mg/L
Copper	BDL	0.020	mg/L
Iron	BDL	0.020	mg/L
Potassium	0.79	0.50	mg/L
Magnesium	1.500	0.020	mg/L
Manganese	0.0130	0.0050	mg/L
Molybdenum	BDL	0.10	mg/L
Sodium	12	10	mg/L
Nickel	BDL	0.050	mg/L
Vanadium	BDL	0.020	mg/L
Zinc	0.400	0.010	mg/L

# ANALYTICAL SCIENCES LABORATORY

## CERTIFICATE OF ANALYSIS

Owner: \_\_\_\_\_ Project Name: \_\_\_\_\_

Submitter ID **D3 Well**  
 UIASL #: W0301/23-3  
 Sample Type Ground Water with HNO<sub>3</sub> preservation  
 TEST: Arsenic - ICP, Hydride  
 Ref: 09/02/2003 02:49:00 PM

ICP, Hydride	Results	MDL	Units
Arsenic	BDL	1.8	µg/L

Owner: \_\_\_\_\_ Project Name: \_\_\_\_\_

Submitter ID **D3 Well**  
 UIASL #: W0301/23-4  
 Sample Type Water - Well  
 TEST: EPA 310.1 - Alkalinity, HCO<sub>3</sub>, CO<sub>3</sub>, OH  
 Ref: 08/04/2003 09:25:06 AM

EPA 310.1 Alkalinity	Results	MDL	Units
Hydroxide Alkalinity	ND	3	mg CaCO <sub>3</sub> /L
Carbonate Alkalinity	ND	3	mg CaCO <sub>3</sub> /L
Bicarbonate Alkal.	74	3	mg CaCO <sub>3</sub> /L
Total Alkalinity	74	3	mg CaCO <sub>3</sub> /L
pH	7.6		

Owner: \_\_\_\_\_ Project Name: \_\_\_\_\_

Submitter ID **D3 Well**  
 UIASL #: **D3 Well**  
 Sample Type Water - Well  
 TEST: EPA 120.1 - Conductance  
 Ref: 08/04/2003 09:22:45 AM

EPA 120.1	Results	Units
Conductance	190	µmhos/cm

Samples will be discarded one month after date of final report, unless otherwise requested.  
 All samples classified as hazardous waste will be returned to the submitter after analysis.

## APPENDIX

### DEFINITIONS

ppt - part per thousand = mg/ml, g/kg

ppm - part per million = ug/g, mg/kg, mg/L

ppb - part per billion = ug/kg, ug/l

pptr - part per trillion = ng/kg - ng/l

kg - kilogram = 1000 g

g - gram

mg - milligram =  $1 \times 10^{-3}$  g

ug - microgram =  $1 \times 10^{-6}$  g

ng - nanogram =  $1 \times 10^{-9}$  g

pg - picogram =  $1 \times 10^{-12}$  g