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2.6 Geology and Soils

2.6.1 Regional Geology

The Great Divide Basin (Basin) is an oval-shaped structural depression, encompassing some 3,500 square miles in south-central Wyoming. The Basin is bounded on the north by the Wind River Range and Granite Mountains, on the east by the Rawlins Uplift, on the south by the Wamsutter Arch and on the west by the Rock Springs Uplift. The regional geologic map is shown in **Figure 2.6-1**. Geologic development of the Basin began in the Late Cretaceous and continued through much of the Early Eocene.

2.6.1.1 Stratigraphy

The earliest sedimentation in the Basin was the Paleocene (Early Tertiary) Fort Union Formation, which was unconformably deposited on the Lance Formation of Late Cretaceous age. The Fort Union Formation consists mostly of lacustrine shales, siltstones, and thin sandstones, which locally contain lignite beds. The thickness of the Fort Union Formation varies from place to place in the Basin, and it is approximately 4,650 feet thick in the Permit Area.

The Fort Union Formation is unconformably overlain by sediments of Eocene age, making up about 6,200 feet of basin fill. The western and southern portions of the Basin are covered by the Wasatch Group, which consists of sandstone, siltstone, limestone, conglomerate and lignite beds. The rocks in the Wasatch Group are believed to be of fluvial-lacustrine origin. Towards the north and northeast, the Wasatch Group rapidly grades into and inter-tongues with the equally thick, fine- to coarse-grained arkosic sandstones and conglomerates of the Battle Spring Formation, a typical alluvial fan complex. The source of the Battle Spring sediments is believed to be the ancestral Granite Mountains to the north. Pliocene pediment deposits and recent alluvium cover large areas of the surface in the Basin. **Table 2.6-1** and **Figure 2.6.2a** show the general stratigraphy of the Basin.

The upper portion of the Battle Spring Formation is the host to the uranium mineralization in the Permit Area. In the Permit Area, the top 700 feet of the Battle Spring Formation is divided into at least five horizons marked from top to bottom as BC, DE, FG, HJ, and KM. These horizons are separated from one another by various thicknesses of shale, mudstone and siltstone **(Figure 2.6-2b)**.

Aquifers in the Battle Spring Formation typically consist of thick sequences of multiple, medium to coarse-grained, fluvial channel-fill sands. Mapped "sand" units (e.g., the UHJ Sand) may range from five to 50 feet in composite thickness and typically consist of multiple stacked "channel-fills". "Aquifers", in turn, typically consist of multiple stacked sand units. Sand units are commonly separated vertically by locally thick beds of mudstone, claystone, siltstone or fine-grained sands. These interbeds represent local aquitards and aquicludes which can be considered internal to the regional aquifer. Total composite thickness of an aquifer (e.g., the HJ horizon) is commonly in excess of 100 feet.

Aquicludes and aquitards (e.g., the LCS and SBS Shales) represent quiescent floodplain and overbank sedimentary environments between channel fill sequences. Generally referred to as 'shales', they are, in essence, sedimentary sequences dominated by mudstone and claystone lithology; but also may include substantial amounts of siltstone and fine-grained sands. These lithologies can exhibit considerable interfingering, and are often transitional to the aquifers above or below. As a result, dramatic thickening and thinning of the aquicludes can occur locally. In addition, their upper and lower boundaries are often gradational. Aquicludes may even exhibit localized occurrences of mineralization.

2.6.1.2 Structure

The present physiographic feature of the Basin was generated by the Laramide Orogeny. During the Late Cretaceous and Early Tertiary, the structures surrounding the Basin were either rejuvenated or were formed, transforming the area into a bowl-shaped geological structure, the Basin. During this upheaval, the Wind River Mountains and Granite Mountains were uplifted on the north side of the Basin. The Rawlins Uplift formed to the east; the Wamsutter Arch formed to the south; and the Rock Spring Uplift formed to the west. All of these highs formed a ring around the Basin, turning the Basin into a bowl-like structure with drainage being inward. The Continental Divide, extending from the south, splits into two and forms half circles on the east and west sides of the Basin, joining again as one structural high on the north side of the Basin.

The Basin is asymmetrical with its major axis trending west-northwest. Several anticlines and synclines have been mapped within the Basin, and some of these features are oil-bearing (at much deeper levels than the uranium-bearing formations). Noteworthy among these structures is the Lost Soldier anticline in the northeastern part of the Basin, approximately 15 miles northeast of the Permit Area. The Battle Spring and Fort Union Formations, as well as older rocks crop out in the anticline; and the formations on the southwestern flank of the anticline dip 20 to 25 degrees to the southwest. The dip gradually becomes gentler, and, at the Permit Area, it is merely three degrees to the west.

Contemporaneous with the uplift of the mountains surrounding the Basin, there were episodes of normal and thrust faulting within and around the Basin. Most of the major faults are located in the northern part of the Basin, with displacement ranging from a few feet to over 3,000 feet. But, toward the center of the Basin near the Permit Area, faulting seems to be only on a minor scale. For example, the displacement at the Lost Creek Fault (Fault) which traverses the mineralized area from west-southwest to east-northeast is zero to about 80 feet. More details about the Fault are given in **Section 2.6.2.2**.

2.6.2 Site Geology

The Permit Area is located near the north-central part of the Basin, where the Basin fills are predominantly the Eocene Battle Spring Formation and the Paleocene Fort Union Formation. Geological cross sections throughout the Permit Area are presented in **Plates 2.6-1a, b, c, d, e, f, and g)**. **Attachment 2.6-1** contains copies of typical geophysical logs from the Permit Area.

2.6.2.1 Stratigraphy

The entire Permit Area is covered by the upper part of the Battle Spring Formation, which is the host to uranium mineralization. Generally, in the Basin, Battle Spring and Wasatch Formations, which are time equivalent, interfinger with one another. In the Permit Area, the upper half of the lithologic units consists of Battle Spring Formation and the lower half is made up of Wasatch Formation. The total thickness of the Battle Spring and Wasatch Formations under the Permit Area is about 6,200 feet. The Fort Union Formation is 4,650 feet thick beneath the Permit Area and unconformably underlies the Battle Spring/Wasatch Formations. Deeper in the Basin and lying unconformably are various Cretaceous, Jurassic, Triassic, Paleozoic, and Precambrian basement lithologic units (**Table 2.6-1**). A schematic geologic cross section across the Permit Area is shown in **Figure 2.6-2a**, depicting the entire lithologic units that are present under the Permit Area.

The Battle Spring Formation in the Permit Area is part of a major alluvial system, consisting of thick beds of very fine- to coarse-grained arkosic sandstones separated by various layers of mudstones and siltstones. Conglomerate beds may exist locally. The uranium mineralization is associated with finer-grained sandstones and siltstones, which may contain minor organic matter in a few areas. At least five horizons with various amounts of mineralization have been identified. From the surface down, they have been named: BC, DE, FG, HJ, and KM. The two horizons with the most mineralization are HJ and KM, which have been further divided into upper, middle, and lower sub-units of sandstones (UHJ Sand, MHJ Sand, and LHJ Sand; and UKM Sand, MKM Sand, and

LKM Sand). Geological cross sections through the mineralized zones in the Permit Area are presented in **Plates 2.6-1a, b, c, d, e, f, and g)**. Thickness (isopach) maps of the HJ Horizon and UKM Sand, as well as the shales above HJ (Lost Creek Shale) and below HJ (Sage Brush Shale), are presented in **Plates 2.6-2a, b, c,** and **d**. Structural contour maps of the FG Sand, Lost Creek Shale, HJ Sand, Sagebrush Shale, and KM Sand are presented in **Plates 2.6-4a, b, c, d,** and **e**.

The HJ Horizon is 110 to 130 feet thick, averaging about 120 feet. The thinner part of HJ is generally south of the Fault. A thicker part of the HJ Horizon runs parallel to the Fault, trending in a west-southwest to east-northeasterly direction. The mineralization is mostly concentrated in the middle part of the HJ Horizon and occurs as both roll front and tabular deposits. The subdivided Sand units within the HJ Horizon are separated by discontinuous shale, siltstone and mudstones.

The UKM Sand lies under the Sage Brush Shale and is 20 to more than 60 feet thick, averaging about 40 feet. In the eastern part of the Permit Area, the unit is 20 to 50 feet thick; whereas the sand unit in the western portion of the permit area is 40 to more than 60 feet thick, indicating the development of a major paleo-channel. The mineralization occurs as both roll front and tabular deposits.

2.6.2.2 Structure

The geologic structure in the Permit Area is rather simple, as shown in **Plates 2.6-1a, b, c, d, e, f, and g**. The Battle Spring Formation dips gently to the west at three degrees and only one fault (e.g., the Fault) was recognized in the mineralized area. The Fault is a "scissor fault" that extends the length of the Permit Area from the west-southwest to the east-northeast. The maximum displacement at the west end of the Permit Area is around 45 feet, dropping down to the north; whereas the displacement on the east side of the Permit Area is about 80 feet with the down-dropped side to the south, creating the scissor fault. Near the middle of the Permit Area, the displacement is practically zero.

2.6.2.3 Ore Mineralogy and Geochemistry

The age of mineralization in the Battle Spring Formation is considered to be between 35 and 26 million years before present. Uranium mineralization in the Basin generally occurs either as tabular or C-shaped roll-front deposits. Oxygen-rich surface water, carrying dissolved uranium, entered various sandstones in the Basin. The water percolated down dip, oxidizing the sandstones on its way down dip. Upon reaching sites rich in organic matter, the water lost its oxidizing potential and deposited the uranium, forming the two types of mineralization mentioned above.

Tabular deposits may form at the interface between oxidizing and reducing conditions (the redox front), where oxidation, for all practical purposes, stops. Localized tabular deposits may also form up-dip from the redox front in an entirely oxidized zone, where carbonaceous materials have gathered and formed locally reducing conditions.

The C-shaped roll-front deposits normally form just at the redox front, where the water loses its oxidizing potential. The uranium precipitates and accumulates in a "C"-shaped deposit, with the concave side facing up-dip toward the oxidized sand. Uranium usually accumulates in finer-grained sandstones that carry various amounts of organic matter, which provides a reducing condition.

The alteration process not only changes the color, but also alters the mineralogy of the host sandstones. The color of unaltered, reduced sandstone is light to dark grey, with carbon trash, dark accessories, and traces of pyrite. Altered, oxidized, sandstone contains iron oxide staining (where former carbonaceous matter and pyrite were present), kaolinized feldspar, and has a pink to tan-buff, greenish-grey to bleached appearance. The presence of pyrite and carbonaceous material appear to be the major controlling factors for the precipitation of uranium mineralization. Thinning of sandstones and diminishing grain size probably slowed the advance of the uranium-bearing solutions and further enhanced the chances of precipitation.

The main uranium minerals are uraninite, a uranium oxide, and coffinite, a uranium silicate. Russell Honea (1979) and John V. Heyse (1979) studied several core samples by scanning electron microprobe (SEM), polished section and thin section. Their conclusions were that the host sands are fine- to coarse-grained, poorly sorted arkose. The uranium mineralization is of sub-microscopic size and can be seen only in SEM magnification. They are associated and at times intergrown with round pyrite particles. The uranium minerals identified are mostly uraninite and, possibly, coffinite. The uranium, besides occurring with pyrite, also occurs as coating around sand grains and as filling of voids between grains. It also occurs as minute particles within larger clay particles.

The most recent study of the lithology and mineralogy was conducted by Hazen Research under the guidance of Dr. Nick Ferris, Ur-Energy geologist (Ferris, 2007, company report). He concluded that the rocks, represented by a core sample from a depth of 506 to 507 feet of Hole Number LC-64C, are medium- to coarse-grained with interstitial clay and silt. Uranium occurrences are very fine-grained and micron-sized, and are mainly dispersed throughout some of the interstitial clays, and occur similarly in some of the interstitial pyrite as well. Because of the size of uranium mineral particles, it was not certain whether the uranium mineral was coffinite or uraninite. The sample tested, comes from the Upper KM Sand unit and may not be representative of the majority of the mineralization in the overlying HJ Horizon within the Permit Area.

Known mineralized intervals are found at depths ranging from near surface down to 1,150 feet below the surface in the Permit Area. It is possible that deeper mineralization may exist as well. The main mineralization horizons trend in an east-northeast direction for at least three miles, and are up to 2,000 feet wide. The thickness of individual mineralized beds at the Permit Area ranges from five to 28 feet and averages about 16 feet. The mineralization grade ranges from 0.03 percent to more than 0.20 percent equivalent uranium oxide (eU_3O_8). Four main mineralized horizons, from depths of 350 to 600 feet, have been identified. The richest mineralized zone occurs in the middle part of the HJ Horizon (MHJ Sand) and it is about 30 feet thick, 400 to 450 feet deep, and is believed to contain more than 50 percent of the total resource under the Permit Area.

2.6.2.4 Historic Uranium Exploration Activities

Historic exploration activities in the Permit Area can be summarized as follows:

- Pre-1976: Numerous companies held the property; uranium mineralization was discovered by Climax Uranium and Conoco.

- 1976: Texasgulf optioned property from Valley Development Inc.
- 1977 through 1979: Texasgulf optioned property from Valley Development Inc., delineated the main trend of the mineralization, obtained a 50-percent interest in the Conoco claims on the trend to the east, and exercised its option with Valley Development Inc.
- 1986: Power Nuclear Corporation acquired the properties.
- 2000: Power Nuclear Corporation sold its Lost Creek properties to New Frontiers Uranium, LLC.
- 2005: New Frontiers Uranium, LLC transferred its Wyoming properties and data including its Lost Creek property to NFU Wyoming, LLC. (NFU).
- 2005: Ur-Energy USA, Inc. purchased NFU from New Frontiers Uranium, LLC on terms.
- 2007: Ur-Energy USA, Inc. completes the acquisition of NFU from NFU, LLC, and maintains NFU as a wholly owned subsidiary.
- 2007: Ur-Energy USA, Inc. forms LC ISR, LLC to develop the Lost Creek property into an ISR facility and transfers the Lost Creek property from NFU to LC ISR, LLC.

At least 560 uranium exploration holes had been drilled in Permit Area prior to 2000. **Table 2.6-4** lists historic drill holes and their abandonment status, and the plates and table in **Attachment 2.6-2** present the locations and total depths of all the known historic exploration holes drilled in the Permit Area.

Historic and current uranium explorations exist in other areas of the Basin. Historic and current oil and gas exploration drilling are also in the region. There are no current oil and gas activities within the Basin that are completed in the same horizons as those discussed for ISR production in this application. The nearest significant gas fields are approximately ten miles to the southwest; therefore, no interference is anticipated between oil and gas production activities and ISR activities. There is no exploration of coal bed methane or other mineral resources within the Permit Area and the nearby region.

2.6.3 Seismology

The discussion of the seismology of the Permit Area and surrounding areas includes: an analysis of historic seismicity; an analysis of the International Building Code (IBC); a deterministic analysis of nearby faults; an analysis of the maximum credible "floating earthquake;" and a discussion of the existing short- and long-term probabilistic seismic hazard analysis. The materials presented here are mainly based on the seismologic characterization of Sweetwater, Carbon, Fremont, and Natrona Counties by James C. Case and others from the Wyoming State Geological Survey (Case, et. al., 2002a, 2002b, 2002c and 2003).

2.6.3.1 Historic Seismicity

The Permit Area is located in the north-eastern portion of the Basin, in south-central Wyoming. Historically, south-central Wyoming has had a low to moderate level of seismicity compared to the rest of the State of Wyoming. As shown in **Figure 2.6-3**, most of the historical earthquakes occurred in the west-northwest portion of Wyoming. Significant historical earthquakes adjacent to the Permit Area are described below, and are organized by areas in which they occurred.

Town of Bairoil Area

Bairoil is located about 15 miles northeast of the Permit Area. Historically, there have been only a few earthquakes that have occurred within 20 miles of Bairoil. On August 11, 1916, a non-damaging intensity III earthquake occurred approximately 17 miles northwest of Bairoil. On June 1, 1993, a non-damaging magnitude 3.8, intensity III earthquake occurred four miles north of Bairoil, and was felt by some residents. On December 10, 1996, a non-damaging magnitude 2.6 earthquake occurred approximately ten miles northwest of Bairoil. A few residents also felt that event.

Two recent earthquakes were recorded near Bairoil in 2000. On May 26, 2000, a magnitude 4.0 earthquake occurred, followed by another (magnitude 2.8) four days later, on May 30, 2000. Both earthquakes were located about 3.5 miles southwest of Bairoil. Most residents in Bairoil felt the first earthquake. No significant damage was associated with either seismic event (Cook, 2000).

City of Rawlins Area

Rawlins is approximately 38 miles southeast of the Permit Area. The first recorded earthquake that was felt and reported immediately southwest of Rawlins occurred on March 28, 1896. The intensity IV earthquake shook for about two seconds. On March 10, 1917, an earthquake (intensity IV) was recorded approximately one mile northeast of Rawlins. The earthquake was felt as a distinct shock that caused wooden buildings to noticeably vibrate. Stone buildings were not affected by the event (Rawlins Republican, 1917).

On September 10, 1964, a magnitude 4.1 earthquake occurred approximately thirty miles west of Rawlins. One Rawlins resident reported that the earthquake caused a crack in the basement of his home in Happy Hollow. No other damage was reported (Daily Times, 1964).

Small earthquakes were detected, on April 13, 1973, May 30, 1973, and June 1, 1973, approximately six miles west of Hanna. No one reported feeling this event. On July 11, 1975, Rawlins residents felt an earthquake (intensity II) event. On January 27, 1976, an earthquake (magnitude 2.3, intensity V) occurred approximately 12 miles north of Rawlins. Several people reported that they were thrown out of bed. (Daily Times, 1976). On March 3, 1977, an earthquake (intensity V) was reported approximately 18.5 miles west-northwest of Encampment. Doors and dishes were rattled in southern Carbon County homes; but no significant damage was reported (Laramie Daily Boomerang, 1977).

On April 13, 1991 and April 19, 1991, magnitude 3.2 and magnitude 2.9 earthquakes, respectively, occurred near the center of the Seminoe Reservoir. A magnitude 3.1 earthquake occurred, on December 18, 1991, southwest of the Seminoe Reservoir, approximately 15 miles northeast of Sinclair. No one reported feeling these Seminoe-Reservoir-area earthquakes. On August 6, 1998, a magnitude 3.6 earthquake occurred approximately 13 miles north of Rawlins. Residents in Rawlins reported hearing a sound and then feeling a jolt. On April, 1999, a magnitude 4.3 earthquake occurred approximately 29 miles north-northwest of Baggs. It was felt in Rawlins; and residents reported that pictures fell off the walls.

City of Rock Springs Area

Rock Springs is located approximately 80 air miles southwest of the Permit Area. The first recorded earthquake that was felt in Sweetwater County occurred on April 28, 1888. This intensity IV earthquake, which originated near Rock Springs, did not cause any appreciable damage. On July 25, 1910, an intensity V earthquake occurred at the same time that the Union Pacific Number One Mine in Rock Springs partially collapsed. On July 28, 1930, an intensity IV earthquake, with an epicenter near Rock Springs, was felt in Rock Springs and Reliance (Casper Daily Tribune, 1930). The earthquake awakened many residents; and some merchandise fell off of store shelves.

On March 21, 1942, a non-damaging, intensity III earthquake was felt in Rock Springs area. This event was followed, on September 14, 1946, by an intensity IV earthquake. On October 25, 1947, a small earthquake with no assigned intensity or magnitude occurred southeast of Rock Springs. Two intensity IV earthquakes occurred in the Rock Springs area on September 24, 1948. The events rattled dishes in parts of Rock Springs.

A magnitude 3.9 event was recorded on January 5, 1964, approximately 23 miles south of Rock Springs. The University of Utah Seismograph Stations detected a non-damaging, magnitude 2.4 earthquake on March 19, 1968. This event was centered approximately 17 miles southeast of Rock Springs.

A magnitude 3.2 event occurred on May 29, 1975, approximately 13 miles northeast of Superior. A week later, on June 6, 1975, a magnitude 3.7 earthquake was recorded in the same area. No damage was associated with any of the 1975 events.

The University of Utah Seismograph Stations recorded a non-damaging magnitude 2.7 earthquake on June 5, 1986. This event was located approximately 14 miles southwest of Green River, Wyoming.

On February 1, 1992, the University of Utah Seismograph Stations recorded a non-damaging magnitude 2.3 earthquake, approximately seven miles north of Rock Springs.

City of Lander Area

Lander is about 70 miles northwest of the Permit Area. A number of earthquakes have occurred in the Lander area. The first reported earthquake occurred on January 22, 1889, and had an intensity of III to IV. This was followed by an intensity IV event on November 21, 1895, during which houses were jarred and dishes rattled. On November 23, 1934, an intensity V earthquake was centered approximately 20 miles northwest of Lander. For a radius of ten miles around Lander, residents reported that dishes were thrown from cupboards, and that pictures fell down from the walls. Cracks were found in buildings along two business blocks; and the brick chimney of the Fremont County Courthouse was separated by two inches from the building. The earthquake was felt at Rock Springs and Green River, Wyoming (Casper Tribune-Herald, 1934).

There were a series of earthquakes in the Lander area in the 1950s that caused little damage. On August 17, 1950, there was an intensity IV earthquake that caused loose objects to rattle and buildings to creak. On January 12, 1954, there was an intensity II event; and on December 13, 1955, there was an intensity IV event near Lander, with no damage reported.

On June 14, 1973, a small earthquake was reported about eight miles east-northeast of Lander. The earthquake has been recently interpreted as a probable explosion. On January 31, 1992, a non-damaging magnitude 2.8 earthquake occurred approximately 20 miles northwest of Lander. This event was followed, on October 10, 1992, by a magnitude 4.0, intensity III earthquake centered approximately 22 miles east Lander.

City of Casper Area

Casper is located about 90 miles northeast of the Permit Area. Two of the earliest recorded earthquakes in Wyoming occurred near Casper. The first was on June 25, 1894, and had an estimated intensity of V. In residences on Casper Mountain, dishes rattled and fell on the floor and people were thrown from their beds. Water in the Platte River changed from fairly clear to reddish, and became thick with mud, due to the river banks slumping into the river during the earthquake. On November 14, 1897, an even larger event was felt. An intensity VI to VII earthquake, one of the largest recorded in central and eastern Wyoming, caused considerable damage to a few buildings. As a result of the earthquake, a portion of the Grand Central Hotel was cracked from the first to the third story. Some of the ceilings in the Grand Central Hotel were also severely damaged.

On October 25, 1922, an intensity IV earthquake was reported in the Casper area. The event was felt in Casper; at Salt Creek, 50 miles north of Casper; and at Bucknum, 22 miles west of Casper. Dishes were rattled and hanging pictures were tilted near Salt Creek. No significant damage was reported in Casper (Casper Daily Tribune, 1922). On December 11, 1942, an intensity IV earthquake was recorded north of Casper. Although no damage was reported, the event was felt in Casper, Salt Creek, and Glenrock (Casper Tribune-Herald, 1941). On August 2, 1948, another intensity IV earthquake was reported in the Casper area. No damage was reported (Casper Tribune-Herald, 1948). In the 1950s, two earthquakes caused some concern among Casper residents. On January 24, 1954, an intensity IV earthquake near Alcova did not result in any reported damage (Casper Tribune-Herald, 1954). On August 19, 1959, an intensity IV earthquake was felt in Casper. Most recently, on October 19, 1996, a magnitude 4.2 earthquake was recorded approximately 15 miles north-northeast of Casper. No damage was reported.

2.6.3.2 Uniform Building Code and International Building Code

With safety in mind, the UBC provides Seismic Zone Maps to help identify which building design factors are critical to specific areas of the country. Five UBC seismic zones are recognized, ranging from Zone 0 to Zone 4. These seismic zones are, in part, defined by the probability of having a certain level of ground shaking (horizontal acceleration) in 50 years. The criteria used for defining boundaries on the Seismic Zone Map were established by the Seismology Committee of the Structural Engineers Association of California (SEAOC, 1986). The criteria they developed are as follows:

- Zone 4: ≥ 30 percent gravity (g) effective peak acceleration;
- Zone 3: 20 to ≤ 30 percent g effective peak acceleration;
- Zone 2: 10 to ≤ 20 percent g effective peak acceleration;
- Zone 1: 5 to ≤ 10 percent g effective peak acceleration; and
- Zone 0: ≤ 5 percent g effective peak acceleration.

The Seismology Committee of the Structural Engineers Association of California assumed that there was a 90 percent probability that the above values would not be exceeded in 50 years, or a 100 percent probability that the values would be exceeded in 475 years.

Figure 2.6-4 shows the delineation of UBC seismic zones in Wyoming. The Permit Area is located in Seismic Zone 1. Since effective peak accelerations (90 percent chance of non-exceedance in 50 years) can range from five to ten percent g in Zone 1, it may be reasonable to assume that an average peak acceleration of 7.5 percent g could be applied to the design of a non-critical facility located near the center of Zone 1.

UBC has been used in Wyoming for many years. Recently, the UBC has been replaced by the International Code (IBC). Wyoming also adopted in lieu of the UBC to their regulations in late 2008 (after the submittal of this TR). While the UBC has always been based on seismic zones; the IBC is based on probabilistic analysis (involving a full evaluation of potential earthquake generating fault system of the region), and use ground motion parameters for seismic design. The following sections discuss the fault system of the project region, probabilistic seismic hazard analysis of the Permit Area and nearby region, and presented a 2,500-year probabilistic ground acceleration map used by IBC.

2.6.3.3 Deterministic Analysis of Active Fault Systems

There are two active fault systems in the vicinity of the Permit Area, the Chicken Springs Fault System and the South Granite Mountain Fault System (**Figure 2.6-5**).

The Chicken Springs Fault System, located six miles east of the Permit Area, is composed of a series of east-west trending segments. In 1996, the Wyoming State Geological Survey investigated this fault system, and determined that the most recent activity on the system appears to be Holocene in age. Reconnaissance-level studies indicated that the fault system is capable of generating a magnitude 6.5 earthquake (Case, et. al., 2002a). A magnitude 6.5 earthquake on the Chicken Springs Fault System would generate peak horizontal accelerations of approximately 4.8 percent g at Rawlins (Case, et. al., 2002a). These accelerations would be roughly equivalent to an intensity V earthquake, which may cause some light damage. Bairoil, however, would be subjected to a peak horizontal acceleration of approximately 23 percent g, or an intensity VII earthquake (Case, et. al., 2002a). Intensity VII events have the potential to cause moderate damage.

The South Granite Mountain Fault System is located about 14 miles northeast of the Permit Area. This fault system is composed of several northwest-southeast trending normal and thrust faults in southeastern Fremont County and northwestern Carbon County. The active segments of the system have been assigned a maximum magnitude of 6.75, which could generate peak horizontal accelerations of approximately 20 percent g at Bairoil and 6.1 percent g at the Rawlins (Case, et. al., 2002a). These accelerations would be roughly equivalent to an intensity VII earthquake at the Bairoil and an intensity V earthquake at Rawlins. Bairoil could sustain moderate damage; whereas minor or no damage could occur at Rawlins.

2.6.3.4 Maximum Tectonic Province Earthquake "Floating Earthquake" Seismogenic Source

Tectonic provinces are regions with a uniform potential for the occurrence of earthquakes that are tied to buried faults with no surface expression. Within a tectonic province, earthquakes associated with buried faults are assumed to occur randomly, and, as a result, can theoretically occur anywhere within that area of uniform earthquake potential. In reality, that random distribution may not be the case, as most earthquakes are associated with specific faults. If all buried faults have not been identified, however, the distribution has to be considered random. "Floating earthquakes" are earthquakes that are considered to occur randomly in a tectonic province.

The USGS identified tectonic provinces in a report titled "Probabilistic Estimates of Maximum Acceleration and Velocity in Rock in the Contiguous United States" (Algermissen et al, 1982). In that report, Sweetwater County was classified as being in a tectonic province with a "floating earthquake" maximum magnitude of 6.1. Geomatrix (1988) suggested using a more extensive regional tectonic province, called the "Wyoming Foreland Structural Province," which is approximately defined by the Idaho-Wyoming Thrust Belt on the west, 104 degrees West longitude on the east, 40 degrees North latitude on the south, and 45 degrees North latitude on the north. Geomatrix (1988) estimated that the largest "floating earthquake" in the "Wyoming Foreland Structural Province" would have a magnitude in the 6.0 to 6.5 range, with an average value of magnitude 6.25.

2.6.3.5 Probabilistic Seismic Hazard Analysis and IBC

The USGS publishes probabilistic acceleration maps for 500-; 1,000-; and 2,500-year time frames. The maps show what accelerations may be met or exceeded in those time frames by expressing the probability that the accelerations will be met or exceeded in a shorter time frame. For example, a two percent probability that acceleration may be met or exceeded in 50 years is roughly equivalent to a 100 percent probability of exceedance in 2,500 years (and thus commonly referred as the 2,500-year earthquake).

While the UBC intended that structures be designed for "life-safety" in the event of an earthquake with a 10 percent probability of being exceeded in 50 years (commonly referred to as the 475-year, or 500-year earthquake); the IBC intends design for "collapse prevention" in a much larger earthquake, i.e., the 2,500-year earthquake. **Figure 2.6-6** presents the probabilistic peak ground acceleration during a 2,500-year earthquake. The estimated acceleration in the Permit Area is 20 percent g on the 2,500-year map, which would be roughly equivalent to an intensity VII earthquake. As discussed in Section 2.6.3.3, the Chicken Springs and South Granit Mountain fault system could potentially generate an 6.5 and 6.75 earthquake, with peak ground acceleration of 20 and 23 percent (intensity VII) at the Town of Bairoil. The IBC seismic design criteria should be used for facility construction at Lost Creek.

2.6.4 Soils

The Project region had not been previously surveyed by the NRCS or Soil Conservation Service (SCS). Two empirical studies were conducted at 1:100,000 and the 1:500,000 scales (Munn and Arneson, 1998). Both data sets were established based on a simplified five-factor soil formation model. Independent variables for this model were parent material, climate, biota, topography, and time. Parent material was derived from the state geology and surficial geology maps; climate and topography were estimated using the elevation and relief; the biota was estimated using temperature regimes; and time was estimated using the elevation, surficial geology, and bedrock geology (Munn and Arneson, 1998). The 1:100,000 and 1:500,000 soil maps for the Permit Area are included as **Figures 2.6-7a** and **2.6-7b**.

The closest third-order soil survey to the Permit Area was conducted in 1994 for the permitting of the Kennecott Uranium Company's Sweetwater Mill, which, at the time, was owned by Sweetwater Syndicate Inc. This survey used soil associations as the mapping unit and described six soil associations within a 12-square-mile study area on the Sweetwater property.

2.6.4.1 Soil Survey

A soil survey was conducted according to protocols in the National Soil Survey Handbook (Soil Survey Staff, 1993), which provides major principles and practices for soil surveys.

All preexisting data were used when selecting sites for the primary soil survey, which began in June 2006. Pit locations and the density of the soil pits were determined on the basis of vegetation, landform type, and position within a landform unit. The Permit Area was relatively consistent with respect to vegetation and landforms. Therefore, 19 soil pits were excavated and described to characterize the Permit Area.

Data from the soil profiles were used to create soil map units (SMU) on the base map. SMU boundaries were refined with surface soil pits excavated to a depth of 12 inches. SMUs were numbered from north to south. Because this was the first soil survey to be completed in the Permit Area, the soils were classified to the family level instead of the series level. The descriptions of each family (in this case, each SMU), are discussed below. Prior to the survey, a work plan was presented to and approved by WDEQ.

2.6.4.2 Field Sampling

Field samples were collected from all soil pits in the Permit Area. The pits were excavated with a backhoe to a depth of at least four feet (**Figure 2.6-8**). Soil samples from nine locations in the Permit Area were selected and prepared for the laboratory. Each soil horizon present at the selected locations was analyzed independently. Sampling locations selected for laboratory analysis are shown on the soil map (**Figure 2.6-9**). Samples were analyzed in accordance with the parameters and procedures defined in WDEQ Guideline 1, Topsoil Suitability, Table I-1 (1994).

2.6.4.3 Results and Discussion

General Soil Survey

The soils within the Permit Area are typical of the semiarid areas of the western US. Most of the soil has developed from the sedimentary bedrock of the Permit Area. The precipitation of the region is not enough to leach the majority of calcium and divalent cations from the soil profile. As a result, the soil pH tends to be slightly alkaline. Vegetation is also limited by the amount of precipitation in this region. As a result, the soils tend to have low organic matter.

SMU Interpretation in the Permit Area

The vertical relief of the Permit Area is approximately 260 feet. Due to the relative lack of relief and uniform surficial geology, there are only three exposed soil types within the Permit Area. The three units are very similar in color, depth of horizons, and geomorphic surface. The primary difference between the three soils is the texture; and, therefore, the soil texture is the only difference in the three family names.

All soil units within the Permit Area support similar vegetation types. The Lowland Big Sagebrush Shrubland is present in and immediately surrounding the ephemeral channels; and the Upland Big Sagebrush Shrubland is present over the remainder of the Permit Area. The uniformity in vegetation across the Permit Area indicates that the three soil units are roughly equally productive, and that plant growth is limited by precipitation and not by soil fertility. Each soil unit is described below; and the aerial distribution of the soil units is shown on **Plate 2.6-3**.

Thirty-four percent (1,435 acres) of the Permit Area is Typic Torriorthent, loamy, mixed mesic. The soil is brown to yellowish-brown, and is typically five to 15 inches thick. It generally occurs on the lower foot-slopes, where slopes are less than ten percent, but they can be as steep as 30 percent. The dominant vegetation is low-growing sagebrush with intermittent patches of grasses. The geomorphic surface ranges from bare loamy soil to pebbles and gravel-sized particles. A typical profile of this soil is brown to yellowish-brown sandy loam; and the subsoil is a brown to pale-brown sandy loam that extends to depths greater than 30 inches.

Forty-six percent (1,941 acres) of the Permit Area is Typic Torriorthent, fine-loamy, mixed mesic. This soil is abundant in the down-slope areas of the region, where slopes are very gradual. The dominant vegetation is sagebrush, with scattered grasses and cacti. The geomorphic surface consists of bare, fine sandy loam. The upper profile contains a dark grayish-brown silt loam to loam that is about nine inches thick. The subsoil is a dark yellowish-brown to light yellowish-brown and extends to a depth of at least 27 inches.

Twenty percent (844 acres) of the Permit Area is Typic Torriorthent, fine-loamy over sandy, mixed mesic. The slopes are less than five percent and the dominant vegetation is low-growth sagebrush and scattered grasses. The geomorphic surface is bare loamy soil with approximately 25 percent gravel. The surface layer consists of a brown loam that is ten to 15 inches thick. The subsoil is a brown to a light yellowish-brown sandy loam that extends to a depth greater than 20 inches.

2.6.4.4 Soil Suitability as a Plant Growth Medium

Based on WDEQ Guideline 1 Topsoil Suitability, Table I-2 (1994), all of the Permit Area samples were within the range for suitable plant growth media for pH, conductivity, sodium adsorption ratio (SAR), texture, selenium, and boron.

Of the 28 Permit Area samples, 11 were classified as marginally suitable for topsoil because of low saturation percentages. The measured saturation percentages of these marginally suitable soils ranged from 16 to 24 percent. These 11 samples were from seven different profiles, and represented all SMUs present in the Permit Area.

One sample from the Permit Area was considered unsuitable for topsoil because the percentage of coarse fragment was 39 percent compared to a 35 percent threshold for unsuitable soil. This sample represented the B horizon of a soil profile in SMU Number Three. Therefore, only the top 11 inches of this SMU should be used as reclamation topsoil. One sample is considered marginally suitable due to a pH more than 8.5 standard units. During reclamation, the use of marginal soils as topsoil will be avoided where possible, except in areas where the undisturbed topsoil is marginally suitable.

2.6.4.5 Topsoil Protection

Disturbance to the general mining area will be surface compaction from drill rigs, trucks carrying supplies and equipment, earth-moving machinery, and light passenger vehicles. In addition, mud pits will be excavated near the location of boreholes. As protection, topsoil from these pit locations will be segregated from the rest of the excavated material. After the pit has been used, the topsoil will be replaced last.

By the nature of ISR operations, there is no need to strip the surface of the general mining area. The majority of topsoil salvage will be restricted to major roadways and building sites. During the delineation drilling, the mine unit installation, and the monitor well ring installation, the topsoil will be segregated, marked, and replaced contemporaneously. Following the delineation drilling phase, mine unit designs will be prepared that define the extraction or economic limits of the orebody. The mine unit will include injection, recovery, and monitor wells, as well as surface facilities (e.g., header houses, pipelines, and power lines). The soil disturbance caused by these activities is localized; and the topsoil resource management during the mine unit installation and operation is further discussed in **Section 4.3** of the ER.

ISR operations do not require the removal of all topsoil and overburden for mining; therefore, it is very difficult to calculate the volume of topsoil that will be affected by the disturbance. The estimated volume of salvageable topsoil required is 40,000 cubic feet for the development of Mine Unit Number 1. This number was calculated based on **Table 7.1-1**.

Topsoil removal at operations sites will be supervised by a qualified person using the soils mapping and data presented in this report. The percent of each SMU within the corresponding Permit Area is found in **Table 2.6-2**. The estimated suitability ranges for the dominant soil series within the Permit Area are presented in **Table 2.6-3**.

2.6.4.6 Prior Surface Disturbances

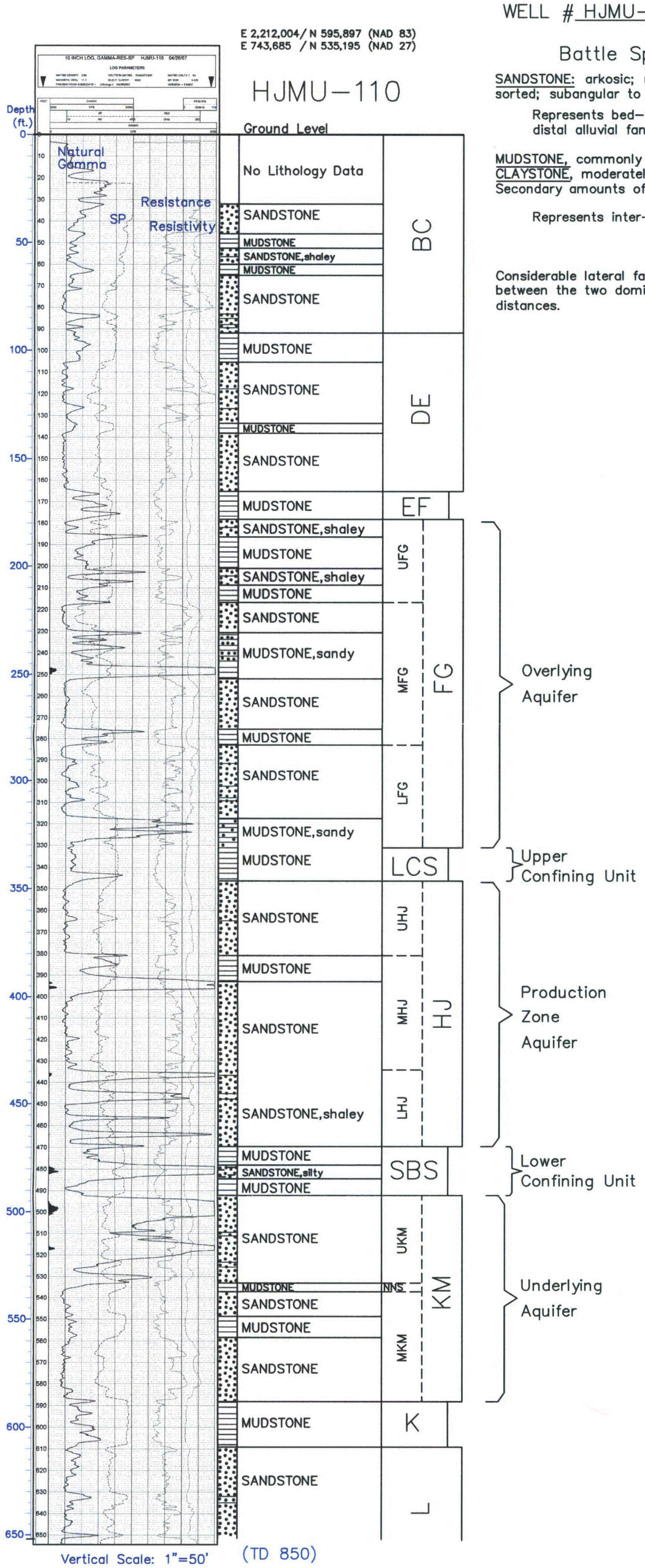
There was surface disturbance prior to LC ISR, LLC operations at the Permit Area. Most of this disturbance was due to prior exploration activities for oil and gas, as well as for uranium, and to support livestock and wildlife grazing. The primary activities included vehicle traffic, drilling activities, and stock tank usage. Approximately 26 miles of roads were delineated from 2002 aerial photography of the Permit Area (**Figure 2.6-10**). Field measurements in 2007 indicate that the roads range from 6.9 to 9.4 ft wide. A few of these roads may still be used by grazing lessees, hunters, and for on-going exploration activities. Evidence of abandoned drill sites and stock tanks is more difficult to delineate; but numerous small areas are evident on the aerial photograph.

The roads caused compaction to the soil, which limits infiltration rates and decreases the vegetation regrowth (**Figure 2.6-11**). Active road surfaces have little to no organic matter, and most of the topsoil has been eroded from the road surface.

Lost Creek ISR, LLC

TYPE LOG – LOST CREEK PROJECT

WELL # HJMU-110



Battle Springs Formation –Typical Lithology

SANDSTONE: arkosic; medium to very coarse-grained, locally fine-grain; poorly-sorted; subangular to angular; weakly to moderately consolidated, moderately firm.

Represents bed-load to mixed-load, channel-fill fluvial environments within a distal alluvial fan system.

MUDSTONE, commonly very silty and/or sandy; soft to very firm; and CLAYSTONE, moderately firm to very firm, dense, blocky. Secondary amounts of SILTSTONE, commonly very sandy, firm to very firm.

Represents inter-channel and overbank fluvial environments.

Considerable lateral facies changes, inter-tonguing, and overlapping occurs between between the two dominant lithologies. This can be very dramatic within short distances.

DE Horizon: Multiple sandstone units interbedded with mudstones Host to secondary amounts of uranium mineralization.

EF: (upper No-Name Shale): Mudstone and claystone, commonly silty and/or sandy; locally with interbedded very fine-grained sands. Does not exhibit lateral continuity throughout project area. Represents a series of overlapping shaley units.

FG Horizon: Multiple sandstone units interbedded with mudstones Host to secondary amounts of uranium mineralization.

LCS (Lost Creek Shale): Mudstone and claystone, commonly silty and/or sandy; locally with interbedded very fine-grained sands. Exhibits lateral continuity throughout project area. Commonly intertongues with upper portions of the HJ and lower portions of the FG.

HJ Horizon: Multiple sandstone units interbedded with mudstones Primary host to uranium mineralization.

SBS (Sagebrush Shale): Mudstone and claystone, commonly silty and/or sandy; locally with interbedded very fine-grained sands. Exhibits lateral continuity throughout project area. Commonly intertongues with upper portions of the KM and lower portions of the HJ.

KM Horizon: Multiple sandstone units interbedded with mudstones Host to significant uranium mineralization.

Includes NNS (No Name Shale) separating UKM from MKM. Does not exhibit regional continuity.

(Note: MKM has recently been renamed LKM).

K (K Shale): Mudstone and claystone, commonly silty and/or sandy.

Lost Creek ISR, LLC
Littleton, Colorado, USA

FIGURE 2.6-2b
Stratigraphic Column, Upper Battle Spring Formation
Lost Creek Permit Area

Issued For: WDEQ-LQD 3.0
Issued/Revised: 4.28.09 Drawn By: CVH

Figure 2.6-6 2,500-Year Probabilistic Acceleration Map of Wyoming
(Source: Case et. al., 2002)

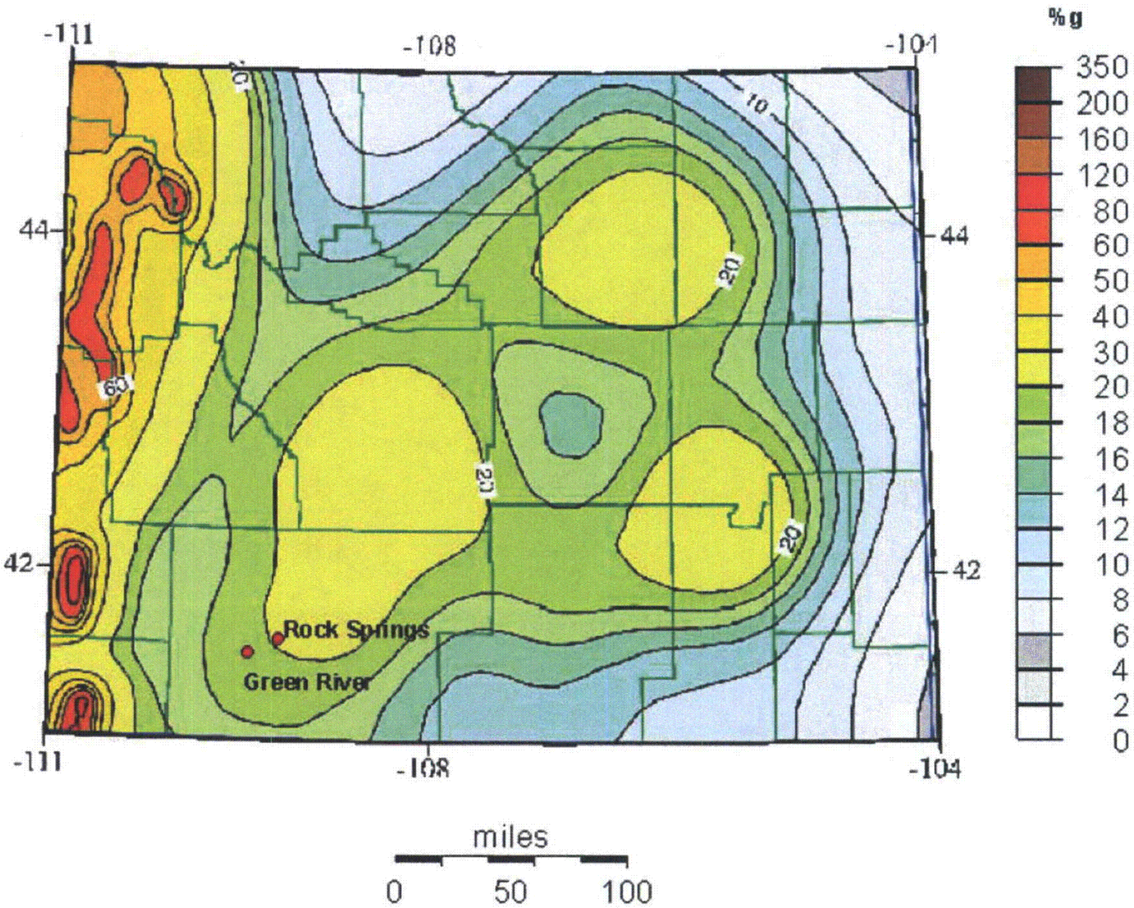


Table 2.6-4 Abandonment Information for Historic Exploration Holes (Page 1 of 15)

	Location								Exploration	Original Plug	Original Plug	1983-1984 TG Reopening, Probing & Re-Plugging Program				URE Replugging Program			
HoleID	N_nad83	E_nad83	S	T	R	Elev	TD	Year	Company	Material	Cap	Water Level (ft.)	Mud Depth (ft.)	Resealing Material	Concrete Recap	Date	Plug Depth (ft)	Replug Material	Concrete Recap
1-13	595656.1	2201396.2	13	25	93	6970	1000	1971	Conoco										
1D-17	596927.03	2214157.2	17	25	92	6965	502	1982	TG	Concrete									
1D-18	596222.05	2210916.2	18	25	92	6943	590	1982	TG	Concrete									
1D-20	595224.02	2213368.2	20	25	92	6933	530	1982	TG	Concrete									
1M-17	596928.02	2214133.2	17	25	92	6964	467	1982	TG	Concrete									
1M-18	596220.05	2210943.2	18	25	92	6943	450	1982	TG	Concrete									
1M-19	595179.06	2210943.2	19	25	92	6922	450	1982	TG	Concrete									
1M-20	595225.03	2213343.2	20	25	92	6933	440	1982	TG	Concrete									
1S-17	596929.03	2214105.2	17	25	92	6964	200	1982	TG	Concrete									
1S-18	596218.05	2210968.2	18	25	92	6943	357	1982	TG	Concrete									
1S-20	595226.02	2213318.2	20	25	92	6932	300	1982	TG	Concrete									
2M-19	595205.05	2210943.2	19	25	92	6923	680	1982	TG	Concrete									
3M-19	595229.07	2210942.2	19	25	92	6924	461	1982	TG	Concrete									
4-1	595685.1	2203263.1	13	25	93	6964	800												
13-1	597151.11	2202677.1	13	25	93	7003	800												
13-2	597126.11	2203274.1	13	25	93	7002	800												
13-3	597154.09	2203861.2	13	25	93	7002	800												
13-4	597110.09	2204605.2	13	25	93	6993	800												
19-1	594384.04	2206739.2	19	25	92	6925	800												
24-1	594952.1	2204119.1	24	25	93	6966	800												
24-2	594958.1	2204565.2	24	25	93	6949	800												
24-3	594950.1	2204989.2	24	25	93	6945	800												
24-4	594172.07	2202752.1	24	25	93	6941	800												
24-5	594173.09	2203324.1	24	25	93	6952	802												
24-6	594157.08	2203881.2	24	25	93	6943	800												
24-7	594389.06	2205338.1	24	25	93	6929	805												
24-8	594394.05	2206079.2	24	25	93	6929	802												
24-9	594961.09	2204468.2	24	25	93	6952	640												
24-10	594957.09	2204661.1	24	25	93	6947	671												
59-1	598920.08	2208938.2	18	25	92	6969	300												
72-1	595290.07	2209052.2	19	25	92	6930	800												
77-1	593497.05	2209014.2	19	25	92	6918	790												
81-1	595513.1	2204371.1	24	25	93	6969	800												
81-2	594196.09	2204301.1	24	25	93	6936	795												
82-1	593038.07	2204412.1	24	25	93	6916	731												
82-2	593032.09	2204357.1	24	25	93	6916	795												
82-3	593243.08	2204408.1	24	25	93	6918	1214												
83-1	594198.09	2204502.2	24	25	93	6932	800												
83-2	594320.09	2204551.1	24	25	93	6934	600												
83-3	595286.1	2204563.2	24	25	93	6961	650												

Table 2.6-4 **Abandonment Information for Historic Exploration Holes** (Page 2 of 15)

	Location								Exploration	Original Plug	Original Plug	1983-1984 TG Reopening, Probing & Re-Plugging Program				URE Replugging Program			
HoleID	N_nad83	E_nad83	S	T	R	Elev	TD	Year	Company	Material	Cap	Water Level (ft.)	Mud Depth (ft.)	Resealing Material	Concrete Recap	Date	Plug Depth (ft)	Replug Material	Concrete Recap
83-4	595521.1	2204570.1	24	25	93	6968	1200												
83-5	594510.08	2204496.1	24	25	93	6940	800												
84-1	593998.07	2204508.2	24	25	93	6929	800												
86-1	595611.08	2204417.2	13	25	93	6970	703												
86-2	595612.09	2204466.2	13	25	93	6970	800												
86-3	595613.08	2204371.1	13	25	93	6968	800												
86-4	597087.09	2204169.2	13	25	93	6997	800												
86-5	595719.1	2204365.2	13	25	93	6971	960												
88-1	595729.1	2204769.2	13	25	93	6967	600												
88-2	595725.1	2204565.2	13	25	93	6969	800												
131-1	595892.05	2205988.1	13	25	93	6960	800												
131-2	595620.1	2204668.2	13	25	93	6970	760												
131-3	595619.08	2204758.1	13	25	93	6968	600												
131-4	595730.09	2204769.2	13	25	93	6969	1200												
131-5	595524.09	2204770.2	24	25	93	6965	800												
135-1	594204.1	2204701.1	24	25	93	6932	1200												
139-1	593471.06	2205237.1	24	25	93	6920	780												
139-2	593493.05	2205525.1	24	25	93	6920	1200												
139-3	593493.05	2205777.1	24	24	93	6916	800												
140-1	593492.06	2206063.1	19	25	92	6910	760												
140-2	593491.05	2207525.2	19	25	92	6915	800												
140-3	593485.04	2207223.1	19	25	92	6914	1200												
557	598507.06	2211827.2	17	25	92	6985	650												
558	595807.03	2211804.2	18	25	92	6944	650												
844	591721	2212210.2	20	25	92	6864	560	1969											
A23	596854.02	2213320.2	17	25	92	6955	700	1970	Conoco										
A66	597490.06	2210635.2	18	25	92	6945	360	1970	Conoco										
A67	599898.06	2210516.2	18	25	92	7010	740	1970	Conoco										
A176	598445.08	2210978.2	18	25	92	6975	500	1970	Conoco										
A177	598464.04	2212691.2	17	25	92	6980	500	1970	Conoco										
A178	596051.03	2213327.2	17	25	92	6950	500	1970	Conoco										
A179	596451.02	2213324.2	17	25	92	6960	500	1970	Conoco										
A180	598481.99	2217895.2	16	25	92	6995	620	1970	Conoco										
A181	596250.04	2213328.2	17	25	92	6955	520	1970	Conoco										
A185	595260.01	2213348.2	20	25	92	6939	500/600	1970/1978	Conoco										
A186	598324.03	2217169.2	16	25	92	6995	620	1970	Conoco										
A187	594860.03	2213350.2	20	25	92	6935	500	1970	Conoco										
A188	595061.04	2213350.2	20	25	92	6935	500	1970	Conoco										
A189	598408.03	2216378.2	17	25	92	6995	620	1970	Conoco										
A190	595445.01	2213345.2	20	25	92	6935	500	1970	Conoco										

Table 2.6-4 Abandonment Information for Historic Exploration Holes (Page 3 of 15)

	Location								Exploration	Original Plug	Original Plug	1983-1984 TG Reopening, Probing & Re-Plugging Program				URE Replugging Program			
HoleID	N_nad83	E_nad83	S	T	R	Elev	TD	Year	Company	Material	Cap	Water Level (ft.)	Mud Depth (ft.)	Resealing Material	Concrete Recap	Date	Plug Depth (ft)	Replug Material	Concrete Recap
A191	598352.02	2215596.2	17	25	92	6985	690	1970	Conoco										
A196	598399.04	2214795.2	17	25	92	6980	640	1970	Conoco										
A228	598495.05	2213839.2	17	25	92	6983	700	1970	Conoco										
A399	598369.05	2215159.2	17	25	92	6990	520	1970	Conoco										
A400	598506.04	2212209.2	17	25	92	6980	580	1970	Conoco										
A426	598471.07	2211382.2	18	25	92	6980	600	1970	Conoco										
A442	598409.05	2213041.2	17	25	92	6985	600	1970	Conoco										
A443	598364.03	2214974.2	17	25	92	6990	520	1970	Conoco										
CG2-1	600404	2218314.2	16	25	92	7034	660	0											
D19	599857.04	2216739.2	17	25	92	7015	600	0											
D20	598325.08	2209390.2	18	25	92	6975	616	0											
D21	597485.04	2214405.2	17	25	92	6960	700	0											
D22	596360.06	2210438.2	18	25	92	6942	640	0											
D23	593865.04	2210460.2	19	25	92	6910	560	0											
D49	595115.01	2212805.2	20	25	92	6920	660	1970											
D50	595060.05	2210459.2	19	25	92	6921	600	0											
D51	592887.06	2210468.2	19	25	92	6895	780	0											
D52	593851.03	2211615.2	19	25	92	6905	540	0											
D53	599885.03	2213098.2	17	25	92	7010	600	0											
D54	599885.03	2215547.2	17	25	92	7010	600	0											
D55	597485.04	2215579.2	17	25	92	6980	780	0											
D75	597485.04	2213182.2	17	25	92	6960	600	1977											
D76	595083.02	2215205.2	20	25	92	6950	600	1977											
D96	595113.01	2214010.2	20	25	92	6935	540	1970											
D131	595100.02	2214398.2	20	25	92	6942	520	1977											
D132	596555.07	2210458.2	18	25	92	6940	640	1977											
D144	596455.05	2210449.2	18	25	92	6943	540	0											
D149	595117.01	2213688.2	20	25	92	6935	540	1970											
D150	595105.04	2214195.2	20	25	92	6937	540	1970											
D156	595125.02	2213586.2	20	25	92	6935	540	1970											
OH1	598115.02	2218381.2	16	25	92	6991	323	1968											
P1-16	595944.98	2217700.2	16	25	92	6945	680	1988	PNC	PlugGel									
P1-17	596669.02	2213891.2	17	25	92	6961	500	1987	PNC	PlugGel									
P1-18	595993.02	2211572.2	18	25	92	6939	560	1987	PNC	PlugGel							Couldn't		
P1-19	594450.06	2206714.2	19	25	92	6934	560	1987	PNC	PlugGel									
P1-20	595263.03	2212905.2	20	25	92	6927	560	1987	PNC	PlugGel									
P1-24	593705.05	2205770.1	24	25	93	6917	600	1987	PNC	PlugGel									
P2-16	596359.99	2217708.2	16	25	92	6942	600	1988	PNC	PlugGel									
P2-17	596435.04	2213125.2	17	25	92	6949	660	1988	PNC	PlugGel									
P2-18	595955.02	2211702.2	18	25	92	6949	500	1990	PNC	PlugGel							Couldn't		

Table 2.6-4 Abandonment Information for Historic Exploration Holes (Page 4 of 15)

	Location								Exploration	Original Plug	Original Plug	1983-1984 TG Reopening, Probing & Re-Plugging Program				URE Replugging Program			
HoleID	N_nad83	E_nad83	S	T	R	Elev	TD	Year	Company	Material	Cap	Water Level (ft.)	Mud Depth (ft.)	Resealing Material	Concrete Recap	Date	Plug Depth (ft)	Replug Material	Concrete Recap
P2-19	593945.04	2206898.1	19	25	92	6920	720	1988	PNC	PlugGel									
P2-20	595325.01	2213920.2	20	25	92	6935	560	1987	PNC	PlugGel									
P2-24	593578.1	2204250.1	24	25	93	6925	560	1987	PNC	PlugGel									
P3-17	595903.01	2214910.2	17	25	92	6946	640	1988	PNC	PlugGel									
P3-18	596042.04	2211702.2	18	25	92	6944	500	1990	PNC	PlugGel									
P3-19	595757.06	2210925.2	19	25	92	6931	500	1992	PNC	PlugGel									
P3-20	595415.02	2212912.2	20	25	92	6934	520	1990	PNC	PlugGel									
P3-24	593083.08	2202706.1	24	25	93	6920	730	1988	PNC	PlugGel									
P4-17	596705.02	2214320.2	17	25	92	6964	633	1988	PNC	PlugGel									
P4-18	596141.03	2211693.2	18	25	92	6942	500	1990	PNC	PlugGel									
P4-19	595632.04	2210922.2	19	25	92	6929	500	1992	PNC	PlugGel									
P4-20	595465.03	2212912.2	20	25	92	6934	520	1990	PNC	PlugGel									
P5-17	596255.03	2212964.2	17	25	92	6945	650	1988	PNC	PlugGel									
P5-18	596192.03	2211689.2	18	25	92	6940	500	1990	PNC	PlugGel									
P5-19	595456.07	2210913.2	19	25	92	6933	500	1992	PNC	PlugGel									
P5-20	595565.04	2212915.2	20	25	92	6936	520	1990	PNC	PlugGel									
P6-17	596009.03	2212119.2	17	25	92	6946	500	1990	PNC	PlugGel									
P6-18	595856.06	2210922.2	18	25	92	6935	500	1992	PNC	PlugGel									
P6-19	595359.04	2210916.2	19	25	92	6933	500	1992	PNC	PlugGel									
P6-20	595615.01	2212916.2	20	25	92	6937	520	1990	PNC	PlugGel									
P7-17	596059.04	2212118.2	17	25	92	6948	500	1990	PNC	PlugGel									
P7-19	595801.06	2211125.2	19	25	92	6933	500	1992	PNC	PlugGel									
P7-20	595652.03	2212925.2	20	25	92	6935	520	1990	PNC	PlugGel									
P8-17	596208.04	2212115.2	17	25	92	6953	500	1990	PNC	PlugGel									
P8-19	595602.05	2211118.2	19	25	92	6936	500	1992	PNC	PlugGel									
P9-17	596005.03	2211912.2	17	25	92	6947	500	1990	PNC	PlugGel									
P10-17	596207.02	2211923.2	17	25	92	6950	500	1990	PNC	PlugGel									
RD34	598491.02	2219625.2	16	25	92	6972	840	0											
RD125	595904.98	2219820.2	21	25	92	6955	480	1968											
RD131	599905.02	2219820.2	16	25	92	7005	850	1968											
RD188	596037.02	2215568.2	17	25	92	6950	800	1968											
RD189	597429.98	2217545.2	16	25	92	6975	800	1968											
RD210	596401.99	2221870.2	16	25	92	6980	600	1968											
RD301	596485.01	2218820.2	16	25	92	6945	600	1968											
RD343	594646.02	2214392.2	20	25	92	6947	650	1968											
RD345	596004.04	2214099.2	17	25	92	6950	650	1968											
RD392	595876.99	2218386.2	16	25	92	6940	600	1968											
RD393	596515	2221500.2	16	25	92	6963	200	1968											
RD404	598240	2218465.2	16	25	92	6985	550	1968											
RD412	598755.03	2214360.2	17	25	92	6997	700	1968											

Table 2.6-4 **Abandonment Information for Historic Exploration Holes** (Page 5 of 15)

	Location								Exploration	Original Plug	Original Plug	1983-1984 TG Reopening, Probing & Re-Plugging Program				URE Replugging Program			
HoleID	N_nad83	E_nad83	S	T	R	Elev	TD	Year	Company	Material	Cap	Water Level (ft.)	Mud Depth (ft.)	Resealing Material	Concrete Recap	Date	Plug Depth (ft)	Replug Material	Concrete Recap
RD436	595141.03	2211158.2	19	25	92	6925	670	1968											
RD445	598456.01	2221499.2	16	25	92	6987	600	1968											
RD446	599729.04	2217176.2	16	25	92	7015	800	1968											
RE6	585415.01	2207290.1	30	25	92	6800	800												
TE1	593316.09	2204335.1	24	25	93	6920	720	1976	TG		None	Dry			Yes				
TE2	593169.09	2204479.2	24	25	93	6918	700	1976	TG		Octoplug	188	191		Yes				
TE3	594956.1	2204613.1	24	25	93	6946	680	1976	TG		? Too Deep				Yes				
TE4	595053.1	2204676.1	24	25	93	6950	680	1976	TG		Octoplug	205	401	ShurGel & QuickGel	Yes				
TE5	594853.1	2204660.1	24	25	93	6945	680	1976	TG		Sagebrush	Dry			Yes				
TE6	595558.08	2204518.1	24	25	93	6969	700	1976	TG		Octoplug	Dry			Yes				
TE7	595409.08	2204391.1	24	25	93	6943	700	1976	TG		Octoplug	Dry			Yes				
TE8	595511.1	2204170.1	24	25	93	6967	720	1976	TG		Octoplug	Dry			Yes				
TE9	594133.09	2202533.2	24	25	93	6939	820	1976	TG		Octoplug	210	276		Yes				
TE10	594052.08	2202729.1	24	25	93	6940	820	1977	TG		Octoplug	210	221		Yes				
TE11	594240.09	2203252.1	24	25	93	6948	720	1977	TG		Octoplug	Dry			Yes				
TE12	594097.1	2203400.1	24	25	93	6949	720	1977	TG		Octoplug	215	227		Yes				
TE17	595168.1	2204405.2	24	25	93	6961	1200	1977	TG		? Too Deep				Yes				
TE18	593478.08	2204245.1	24	25	93	6923	775	1977	TG		None	Dry			Yes				
TE19	593073.08	2204571.1	24	25	93	6917	700	1977	TG		Octoplug	Dry			Yes				
TE20	593051.09	2204215.1	24	25	93	6917	800	1977	TG		Octoplug	Dry			Yes				
TE21	593969.09	2202348.2	24	25	93	6936	1200	1977	TG		Octoplug	207	238		Yes				
TE22	594260.08	2203457.1	24	25	93	6949	800	1977	TG		Octoplug	215	235		Yes				
TE23	593929.1	2203500.1	24	25	93	6945	800	1977	TG		Octoplug	210	228		Yes				
TE26	595582.1	2203010.2	24	25	93	6963	600	1977	TG		Octoplug	221	225		Yes				
TE27	595359.07	2203343.1	24	25	93	6961	600	1977	TG			*Not Located*							
TE28	595146.09	2203764.1	24	25	93	6963	640	1977	TG		Octoplug	224	444	ShurGel & QuickGel	Yes				
TE29	594657.08	2204119.1	24	25	93	6952	620	1977	TG		None	Dry			Yes				
TE30	595096.08	2204232.1	24	25	93	6962	620	1977	TG		Octoplug	Dry			Yes				
TE31	595563.1	2203635.2	24	25	93	6962	620	1977	TG			*Not Located*							
TE32	595969.1	2203437.2	13	25	93	6972	700	1977	TG			*Not Located*							
TE33	596029.08	2203969.1	13	25	93	6977	800	1977	TG		? Down Hole				Yes				
TE34	595508.04	2205700.2	24	25	93	6964	620	1977	TG		Octoplug	223	228		Yes				
TE35	595544.11	2202972.2	24	25	93	6963	620	1977	TG		Octoplug	223	235		Yes				
TE36	595398.09	2203423.1	24	25	93	6962	620	1977	TG		Octoplug	Dry			Yes				
TE37	595327.08	2203351.1	24	25	93	6957	620	1977	TG		Octoplug	219	277		Yes				
TE38	595462.07	2203643.1	24	25	93	6961	380	1977	TG										
TE39	595123.09	2204273.2	24	25	93	6962	620	1977	TG		None	216	220		Yes				
TE40	595054.08	2204202.1	24	25	93	6961	620	1977	TG			*Not Located*							

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	Location								Exploration	Original Plug	Original Plug	1983-1984 TG Reopening, Probing & Re-Plugging Program				URE Replugging Program			
HoleID	N_nad83	E_nad83	S	T	R	Elev	TD	Year	Company	Material	Cap	Water Level (ft.)	Mud Depth (ft.)	Resealing Material	Concrete Recap	Date	Plug Depth (ft)	Replug Material	Concrete Recap
TE41	595721.1	2202859.1	31	25	93	6970	620	1977	TG			*Not Located*							
TE42	595433.1	2203177.2	24	25	93	6957	620	1977	TG		Permaplug	219	228		Yes				
TE43	595201.08	2203537.2	24	25	93	6956	620	1977	TG		Permaplug	218	226		Yes				
TE44	595234.09	2204071.1	24	25	93	6963	620	1977	TG		? Down Hole								
TE45	594991.08	2204357.2	24	25	93	6954	620	1977	TG		Octoplug	211	221		Yes				
TE46	594499.09	2204304.1	24	25	93	6943	1200	1977	TG		None	Dry			Yes				
TE47	594209.09	2204194.1	24	25	93	6940	760	1977	TG		Octoplug	204	248		Yes				
TE48	594349.1	2203883.2	24	25	93	6947	600	1977	TG		None	212	225		Yes				
TE49	594361.08	2203138.1	24	25	93	6938	600	1977	TG			*Not Located*							
TE50	594311.1	2202895.1	24	25	93	6940	800	1977	TG		Octoplug	209	234		Yes				
TE51	594282.09	2202540.1	24	25	93	6941	700	1977	TG		Octoplug	Blockage at about 100 ft.			Yes				
TE52	594068.09	2201824.1	24	25	93	6936	1200	1977	TG		Octoplug	209	247		Yes				
TE53	593827.08	2201824.1	24	25	93	6935	800	1977	TG		Octoplug	210	238		Yes				
TE56	593541.08	2202141.1	24	25	93	6930	700	1977	TG		None	203	230		Yes				
TE57	593908.1	2202619.1	24	25	93	6938	1200	1977	TG		Octoplug	210	235		Yes				
TE58	593183.07	2202195.1	24	25	93	6921	1200	1977	TG			*Not Located*							
TE59	593222.08	2202557.1	24	25	93	6927	700	1977	TG			*Not Located*							
TE60	593526.09	2203012.2	24	25	93	6923	700	1977	TG			*Not Located*							
TE61	593722.08	2203363.1	24	25	93	6941	1200	1977	TG		Octoplug	209	225		Yes				
TE62	593126.07	2202936.1	24	25	93	6917	700	1977	TG			*Not Located*							
TE63	593804.08	2203657.1	24	25	93	6936	700	1977	TG		Octoplug	Dry			Yes				
TE64	593698.09	2203836.1	24	25	93	6931	680	1977	TG		None	195	224		Yes				
TE65	593638.08	2203697.1	24	25	93	6931	1203	1977	TG		Octoplug	Dry			Yes				
TE66	593619.08	2204003.2	24	25	93	6927	700	1977	TG		Octoplug	Dry			Yes				
TE67	593312.08	2204125.1	24	25	93	6921	719	1977	TG		Octoplug	191	389	ShurGel & QuickGel	Yes				
TE68	593833.09	2204381.1	24	25	93	6928	1202	1977	TG			*Not Located*							
TE69	593486.09	2204515.1	24	25	93	6922	793	1977	TG		Octoplug	191	209		Yes	2006	650	Grout	25' Cement
TE70	593246.07	2204209.1	24	25	93	6919	1202	1977	TG		Octoplug	189	252		Yes				
TE71	593393.07	2204517.1	24	25	93	6923	700	1977	TG		Octoplug	Dry			Yes	2006	650	Grout	25' Cement
TE72	593494.1	2204411.1	24	25	93	6924	700	1977	TG		Octoplug	192	211		Yes	2006	650	Grout	25' Cement
TE73	593604.09	2204522.2	24	25	93	6926	700	1977	TG		Octoplug	Dry			Yes	2006	650	Grout	25' Cement
TE74	595632.08	2202770.2	24	25	93	6969	600	1977	TG		Octoplug	227	249		Yes				
TE75	595532.1	2202655.1	24	25	93	6968	600	1977	TG		Octoplug	229	270		Yes				
TE77	593783.08	2201859.1	24	25	93	6934	640	1977	TG		None	Dry			Yes				
TE79	594306.08	2201716.1	23	25	93	6939	700	1977	TG		None	214	308		Yes				
TE80	594169.09	2201859.1	24	25	93	6937	680	1977	TG		Octoplug	Dry			Yes				
TE81	595311.1	2202715.1	24	25	93	6958	700	1977	TG		Octoplug	?	250		Yes				
TE83	593457.08	2201861.1	23	25	93	6928	640	1977	TG		Octoplug	207	326		Yes				

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	Location								Exploration	Original Plug	Original Plug	1983-1984 TG Reopening, Probing & Re-Plugging Program				URE Replugging Program			
HoleID	N_nad83	E_nad83	S	T	R	Elev	TD	Year	Company	Material	Cap	Water Level (ft.)	Mud Depth (ft.)	Resealing Material	Concrete Recap	Date	Plug Depth (ft)	Replug Material	Concrete Recap
TE84	594536.1	2202965.1	24	25	93	6944	600	1977	TG		Octoplug	212	241		Yes				
TE87	595530.09	2202265.2	23	25	93	6969	700	1977	TG		Octoplug	233	238		Yes				
TE88	594716.08	2202856.1	23	25	93	6948	700	1977	TG		Octoplug	216	219		Yes				
TE89	593597.1	2204508.2	24	25	93	6927	660	1977	TG		Octoplug	194	230		Yes	2006	650	Grout	25' Cement
TE90	593905.08	2202120.1	24	25	93	6936	700	1978	TG		Permaplug	209	243		Yes				
TE91	593304.08	2203117.2	24	25	93	6916	700	1978	TG		? Too Deep				Yes				
TE92	593305.1	2202719.1	24	25	93	6927	700	1978	TG		Permaplug	204	252		Yes				
TE93	593507.09	2202516.1	24	25	93	6933	600	1978	TG		Permaplug	205	225		Yes				
TE94	593704.1	2202120.1	24	25	93	6931	700	1978	TG		Permaplug	205	227		Yes				
TE96	593505.09	2203320.1	24	25	93	6928	700	1978	TG		Permaplug	203	207		Yes				
TE97	593505.09	2203120.1	24	25	93	6925	700	1978	TG		? Down Hole								
TE101	593305.1	2202920.1	24	25	93	6919	720	1978	TG		Permaplug	195	199		Yes				
TG1-17	595905.01	2211920.2	17	25	92	6944	500	1978	TG		Permaplug	160	238		Yes				
TG1-18	595705.05	2210720.2	18	25	92	6929	600	1978	TG		Permaplug	151	156		Yes				
TG1-19	593105	2210720.1	19	25	92	6908	600	1978	TG		Permaplug	145	223		Yes				
TG1-20	595505.03	2211920.2	20	25	92	6936	500	1978	TG										
TG1A-19(60deg)	595427.03	2211712.2	19	25	92	6940	200	1980	TG										
TG1A-19(75deg)	595427.03	2211712.2	19	25	92	6940	380	1980	TG		? Angle Hole				Yes				
TG1A-20(60deg)	595607.04	2212520.2	20	25	92	6933	200	1980	TG		? Angle Hole				Yes				
TG1A-20(75deg)	595605.04	2212520.2	20	25	92	6933	380	1980	TG										
TG2-18	595905.05	2210720.2	18	25	92	6933	600	1978	TG		Permaplug	156	242		Yes				
TG2-19	593505.02	2210720.1	19	25	92	6912	600	1978	TG		Permaplug	143	144		Yes				
TG2-20	595705.02	2211920.2	20	25	92	6940	500	1978	TG										
TG3-17	596105.04	2213720.2	17	25	92	6945	600	1978	TG		Permaplug	155	160		Yes				
TG3-18	596105.07	2210720.2	18	25	92	6939	600	1978	TG		? Too Deep				Yes				
TG3-19	593905.04	2210720.1	19	25	92	6912	600	1978	TG		Permaplug	129	139		Yes				
TG3-20	595705.02	2212320.2	20	25	92	6937	500	1978	TG										
TG4-18	596305.07	2210720.2	18	25	92	6940	600	1978	TG		Permaplug	164	176		Yes				
TG4-19	594305.06	2210720.1	19	25	92	6923	600	1978	TG		Permaplug	138	>450	ShurGel & QuickGel	Yes				
TG4-20	595505.03	2212320.2	20	25	92	6934	600	1978	TG										
TG5-17	595905.01	2212320.2	17	25	92	6939	500	1978	TG		Permaplug	151	368	ShurGel & QuickGel	Yes				
TG5-18	596505.06	2210720.2	18	25	92	6944	660	1978	TG		Permaplug	159	168		Yes				
TG5-19	594705.05	2210720.2	19	25	92	6934	600	1978	TG		Permaplug	145	215		Yes				
TG5-20	595705.02	2212720.2	20	25	92	6934	600	1978	TG										

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	Location								Exploration	Original Plug	Original Plug	1983-1984 TG Reopening, Probing & Re-Plugging Program				URE Replugging Program			
HoleID	N_nad83	E_nad83	S	T	R	Elev	TD	Year	Company	Material	Cap	Water Level (ft.)	Mud Depth (ft.)	Resealing Material	Concrete Recap	Date	Plug Depth (ft)	Replug Material	Concrete Recap
TG6-17	596105.04	2211920.2	17	25	92	6950	600	1978	TG		Permaplug	166	395	ShurGel & QuickGel	Yes				
TG6-18	596705.05	2210720.2	18	25	92	6947	660	1978	TG		Permaplug	166	306		Yes				
TG6-19	595105.07	2210720.2	19	25	92	6927	600	1978	TG		? Too Deep				Yes				
TG6-20	595505.03	2212720.2	20	25	92	6931	600	1978	TG										
TG7-17	596105.04	2212320.2	17	25	92	6945	540	1978	TG		Permaplug	157	239		Yes				
TG7-18	596905.08	2210720.2	18	25	92	6949	660	1978	TG		Permaplug	167	224		Yes				
TG7-19	595305.06	2210720.2	19	25	92	6929	600	1978	TG		? Down Hole				Yes				
TG7-20	595105.04	2213120.2	20	25	92	6932	520	1978	TG										
TG8-17	596305.03	2212320.2	17	25	92	6953	560	1978	TG		? Down Hole								
TG8-18	595914.04	2211508.2	18	25	92	6944	600	1978	TG		Permaplug	157	341		Yes				
TG8-19	595505.06	2210720.2	19	25	92	6926	600	1978	TG		Yes				Yes				
TG8-20	595505.03	2213120.2	20	25	92	6934	600	1978	TG										
TG9-17	595828.03	2212707.2	17	25	92	6936	560	1978	TG		Permaplug	151	163		Yes				
TG9-18	595905.05	2211120.2	18	25	92	6935	600	1978	TG			*Not Located*							
TG9-19	595505.06	2211120.2	19	25	92	6935	600	1978	TG		Permaplug	158	>450	ShurGel & QuickGel	Yes				
TG9-20	595305.03	2213120.2	20	25	92	6932	600	1978	TG										
TG10-17	596105.04	2212720.2	17	25	92	6941	600	1978	TG		Permaplug	153	313		Yes				
TG10-18	596305.07	2211120.2	18	25	92	6946	600	1978	TG		Permaplug	166	298		Yes				
TG10-19	595305.03	2211120.2	19	25	92	6932	500	1978	TG		Permaplug	154	283		Yes				
TG10-20	595305.03	2212720.2	20	25	92	6930	600	1978	TG										
TG11-17	596305.03	2212720.2	17	25	92	6949	600	1978	TG		Permaplug	159	186		Yes				
TG11-18	596711.06	2211120.2	18	25	92	6951	660	1978	TG			*Not Located*							
TG11-19	595705.05	2211120.2	19	25	92	6932	500	1978	TG		Permaplug	Dry			Yes				
TG11-20	595305.03	2212320.2	20	25	92	6931	600	1978	TG										
TG12-17	595826.03	2213108.2	17	25	92	6939	560	1978	TG		Permaplug	152	154		Yes				
TG12-18	597105.07	2211120.2	18	25	92	6959	660	1978	TG		Permaplug	173	206		Yes				
TG12-19	595705.02	2211520.2	19	25	92	6942	500	1978	TG		Permaplug	160	331		Yes				
TG12-20	595705.02	2213320.2	20	25	92	6938	600	1978	TG										
TG13-17	596105.04	2213120.2	17	25	92	6949	600	1978	TG		Permaplug	158	288		Yes				
TG13-18	595905.05	2211220.2	18	25	92	6936	500	1979	TG		Permaplug	154	379	ShurGel & QuickGel	Yes				
TG13-19	595305.03	2211520.2	19	25	92	6932	540	1978	TG		? Down Hole				Yes				
TG13-20	595705.02	2213720.2	20	25	92	6942	600	1978	TG										
TG14-18	597105.04	2211520.2	18	25	92	6949	600	1978	TG			*Not Located*							
TG14-19	595505.03	2211520.2	19	25	92	6941	500	1978	TG		Permaplug	159	175		Yes				
TG14-20	595505.03	2213720.2	20	25	92	6941	540	1978	TG										
TG15-17	596505.03	2213720.2	17	25	92	6961	600	1978	TG		Permaplug	167	341		Yes				
TG15-18	596116.03	2211511.2	18	25	92	6943	500	1978	TG		Permaplug	156	238		Yes				

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	Location								Exploration	Original Plug	Original Plug	1983-1984 TG Reopening, Probing & Re-Plugging Program				URE Replugging Program			
HoleID	N_nad83	E_nad83	S	T	R	Elev	TD	Year	Company	Material	Cap	Water Level (ft.)	Mud Depth (ft.)	Resealing Material	Concrete Recap	Date	Plug Depth (ft)	Replug Material	Concrete Recap
TG15-19	595305.06	2210920.2	19	25	92	6930	580	1980	TG		? Too Deep				Yes				
TG15-20	595305.03	2213720.2	20	25	92	6938	540	1978	TG										
TG16-17	596505.03	2214120.2	17	25	92	6961	600	1978	TG		Permaplug	167	241		Yes				
TG16-19	595505.06	2210920.2	19	25	92	6930	580	1980	TG			*Not Located*							
TG16-20	595305.03	2214120.2	20	25	92	6938	600	1978	TG										
TG17-17	596105.04	2214520.2	17	25	92	6949	600	1978	TG		Permaplug	160	205		Yes				
TG17-19	595705.05	2210920.2	19	25	92	6929	580	1980	TG		? Too Deep				Yes				
TG17-20	595505.03	2214120.2	20	25	92	6940	540	1978	TG										
TG18-17	596505.03	2214520.2	17	25	92	6961	600	1978	TG		Permaplug	167	190		Yes				
TG18-19	595305.03	2211320.2	19	25	92	6931	580	1980	TG		Yes				Yes				
TG18-20	595705.02	2214120.2	20	25	92	6943	600	1978	TG										
TG19-17	596105.04	2214920.2	17	25	92	6948	600	1978	TG		Permaplug	156	203		Yes				
TG19-19	595505.03	2211320.2	19	25	92	6940	580	1980	TG		? Too Deep				Yes				
TG19-20	595715.03	2214516.2	20	25	92	6948	600	1978	TG										
TG20-17	596505.03	2214920.2	17	25	92	6956	600	1978	TG		Permaplug	161	294		Yes				
TG20-18	595905.05	2210920.2	18	25	92	6935	580	1980	TG		? Too Deep				Yes				
TG20-19	595705.02	2211320.2	19	25	92	6935	580	1980	TG		? Too Deep				Yes				
TG20-20	595505.03	2214520.2	20	25	92	6941	540	1978	TG										
TG21-17	596305.03	2214120.2	17	25	92	6954	600	1978	TG		Permaplug	163	357	ShurGel & QuickGel	Yes				
TG21-18	595905.01	2211320.2	18	25	92	6933	580	1980	TG		? Too Deep				Yes				
TG21-19	595505.03	2211720.2	19	25	92	6936	580	1980	TG		? Down Hole				Yes				
TG21-20	595305.03	2214520.2	20	25	92	6949	516	1978	TG										
TG22-17	596705.02	2214120.2	17	25	92	6966	600	1978	TG		Permaplug	171	248		Yes				
TG22-18	596105.04	2211320.2	18	25	92	6938	580	1980	TG		? Down Hole				Yes				
TG22-19	595705.02	2211720.2	19	25	92	6942	580	1980	TG		? Too Deep				Yes				
TG22-20	595305.03	2214920.2	20	25	92	6947	540	1978	TG										
TG23-17	595905.01	2215320.2	17	25	92	6948	600	1978	TG		Permaplug	155	186		Yes				
TG23-18	595905.01	2211720.2	18	25	92	6942	580	1980	TG		None	Dry			Yes		Couldn't		
TG23-19	595705.05	2210520.2	19	25	92	6936	580	1980	TG		? Too Deep				Yes				
TG23-20	595505.03	2214920.2	20	25	92	6944	540	1978	TG										
TG24-17	596105.04	2215320.2	20	25	92	6944	600	1978	TG		Permaplug	157	201		Yes				
TG24-18	596119.02	2211707.2	18	25	92	6948	580	1980	TG		? Too Deep				Yes				
TG24-19	595505.06	2210520.2	19	25	92	6931	580	1980	TG										
TG24-20	595705.02	2214920.2	17	25	92	6951	600	1978	TG										
TG25-17	595905.01	2215720.2	17	25	92	6954	600	1978	TG		Permaplug	159	221		Yes				
TG25-18	596305.03	2211720.2	18	25	92	6942	580	1980	TG		? Too Deep				Yes				
TG25-19	595305.06	2210520.2	19	25	92	6931	580	1980	TG		? Too Deep				Yes				
TG25-20	595705.02	2215320.2	20	25	92	6949	600	1978	TG										
TG26-17	596105.04	2215720.2	17	25	92	6953	600	1978	TG		Permaplug	158	166		Yes				

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	Location								Exploration	Original Plug	Original Plug	1983-1984 TG Reopening, Probing & Re-Plugging Program				URE Replugging Program			
HoleID	N_nad83	E_nad83	S	T	R	Elev	TD	Year	Company	Material	Cap	Water Level (ft.)	Mud Depth (ft.)	Resealing Material	Concrete Recap	Date	Plug Depth (ft)	Replug Material	Concrete Recap
TG26-20	595505.03	2215320.2	20	25	92	6950	540	1978	TG										
TG27-17	596505.03	2215720.2	17	25	92	6960	600	1978	TG		Permaplug	163	271		Yes				
TG27-18	596005.03	2211699.2	18	25	92	6951	580	1980	TG		None	Dry			Yes				
TG27-20	595305.03	2215320.2	20	25	92	6951	540	1978	TG										
TG28-17	596505.03	2215320.2	17	25	92	6956	600	1978	TG		Permaplug	162	225		Yes				
TG28-20	595305.03	2215720.2	20	25	92	6956	540	1978	TG										
TG29-17	596305.03	2213720.2	17	25	92	6946	600	1978	TG		Permaplug	161	238		Yes				
TG29-20	595505.03	2215720.2	20	25	92	6953	540	1978	TG										
TG30-17	596705.02	2214520.2	17	25	92	6964	600	1978	TG		Permaplug	168	243		Yes				
TG30-20	595705.02	2215720.2	20	25	92	6952	600	1978	TG										
TG31-20	595705.02	2216120.2	20	25	92	6957	600	1978	TG										
TG32-17	595905.01	2216120.2	17	25	92	6956	600	1978	TG		Permaplug	160	196		Yes				
TG32-20	595505.03	2216120.2	20	25	92	6953	540	1978	TG										
TG33-17	596105.04	2216120.2	17	25	92	6957	600	1978	TG		Permaplug	161	200		Yes				
TG33-20	595305.03	2216120.2	20	25	92	6949	540	1978	TG										
TG34-17	595905.01	2216520.2	17	25	92	6958	600	1978	TG		Permaplug	158	275		Yes				
TG34-20	595705.02	2216520.2	20	25	92	6955	600	1978	TG										
TG35-17	595905.01	2216920.2	17	25	92	6954	600	1978	TG		Permaplug	152	333		Yes				
TG35-20	595505.03	2216520.2	20	25	92	6949	540	1978	TG					Resealed					
TG36-17	595905.01	2212120.2	17	25	92	6940	580	1980	TG		? Too Deep				Yes				
TG36-20	595305.03	2216520.2	20	25	92	6943	540	1978	TG										
TG37-17	596105.04	2212120.2	17	25	92	6947	580	1980	TG		Permaplug	161	317		Yes				
TG38-17	595905.01	2212520.2	17	25	92	6937	580	1980	TG		Permaplug	151	176		Yes				
TG39-17	596105.04	2212520.2	17	25	92	6941	580	1980	TG		? Too Deep				Yes				
TG39-20	595704.99	2216920.2	20	25	92	6950	600	1978	TG										
TG40-17	596305.03	2212520.2	17	25	92	6949	580	1980	TG		? Too Deep				Yes				
TG41-17	595905.01	2212920.2	17	25	92	6938	580	1980	TG		? Too Deep				Yes				
TG41-20	595504.99	2216920.2	20	25	92	6946	540	1978	TG										
TG42-17	596145.04	2212920.2	17	25	92	6942	580	1980	TG		? Too Deep				Yes				
TG42-20	595305	2216920.2	20	25	92	6941	540	1978	TG										
TG43-17	596305.03	2213120.2	17	25	92	6950	580	1980	TG		Permaplug	161	438	ShurGel & QuickGel	Yes				
TG43-20	595105.01	2216920.2	20	25	92	6939	540	1978	TG										
TG44-17	596505.03	2213520.2	17	25	92	6958	580	1980	TG		Permaplug	166	286		Yes				
TG44-20	592105	2212120.2	20	25	92	6879	460	1979	TG										
TG45-17	596505.03	2213920.2	17	25	92	6958	580	1980	TG		? Too Deep				Yes				
TG46-17	596705.02	2213920.2	17	25	92	6962	580	1980	TG		? Down Hole				Yes				
TG47-17	596505.03	2214320.2	17	25	92	6958	580	1980	TG		? Too Deep				Yes				
TG48-17	596305.03	2212120.2	17	25	92	6951	580	1980	TG		? Too Deep				Yes				
TG49-17	596005.03	2212520.2	17	25	92	6938	580	1980	TG		Permaplug	151	159		Yes				

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	Location								Exploration	Original Plug	Original Plug	1983-1984 TG Reopening, Probing & Re-Plugging Program				URE Replugging Program			
HoleID	N_nad83	E_nad83	S	T	R	Elev	TD	Year	Company	Material	Cap	Water Level (ft.)	Mud Depth (ft.)	Resealing Material	Concrete Recap	Date	Plug Depth (ft)	Replug Material	Concrete Recap
TG50-17	596205.02	2212520.2	17	25	92	6945	580	1980	TG		? Too Deep				Yes				
TG51-17	597105.04	2214720.2	17	25	92	6972	600	1981	TG		Concrete	Did Not							
TG52-17	599105.04	2215520.2	17	25	92	7001	600	1981	TG		Concrete	Did Not							
TG52-20	595305.03	2212120.2	20	25	92	6929	580	1980	TG										
TG53-20	595505.03	2212120.2	20	25	92	6933	580	1980	TG										
TG54-20	595705.02	2212120.2	20	25	92	6936	580	1980	TG										
TG55-20	595105.04	2212520.2	20	25	92	6926	580	1980	TG										
TG56-20	595305.03	2212520.2	20	25	92	6928	580	1980	TG										
TG57-20	595505.03	2212520.2	20	25	92	6932	580	1980	TG										
TG58-20	595705.02	2212520.2	20	25	92	6936	580	1980	TG										
TG59-20	595305.03	2212920.2	20	25	92	6928	580	1980	TG										
TG60-20	595505.03	2212920.2	20	25	92	6930	580	1980	TG										
TG61-20	595717.03	2212910.2	20	25	92	6939	580	1980	TG										
TG62-20	595505.03	2213320.2	20	25	92	6933	580	1980	TG										
TG63-20	595305.03	2213520.2	20	25	92	6938	580	1980	TG										
TG64-20	595505.03	2213520.2	20	25	92	6938	580	1980	TG										
TG65-20	595705.02	2213520.2	20	25	92	6936	580	1980	TG										
TG66-20	595305.03	2213920.2	20	25	92	6935	580	1980	TG										
TG67-20	595505.03	2213920.2	20	25	92	6939	580	1980	TG										
TG68-20	595705.02	2213920.2	20	25	92	6941	580	1980	TG										
TG69-20	595305.03	2214320.2	20	25	92	6937	580	1980	TG										
TG70-20	595505.03	2214320.2	20	25	92	6941	580	1980	TG										
TG71-20	595705.02	2213120.2	20	25	92	6935	580	1980	TG										
TG72-20	595405.01	2212520.2	20	25	92	6930	580	1980	TG										
TG73-20	595805.03	2212520.2	20	25	92	6935	580	1980	TG										
TGC1-19	595405.04	2210920.2	19	25	92	6932	500	1980	TG		Permaplug	154	180		Yes				
TGC1A(45	595207.05	2210920.2	19	25	92	6927	140	1980	TG		? Angle Hole				Yes				
TGC1A(60	595205.05	2210920.2	19	25	92	6927	200	1980	TG		? Angle Hole				Yes				
TGC2-19	595565.07	2210920.2	19	25	92	6935	480	1980	TG		Yes				Yes				
TGC16	595905.05	2211170.2	18	25	92	6936	475	1979	TG										
TGC17	595905.05	2211160.2	18	25	92	6935	423	1979	TG		? Too Deep				Yes				
TGC18	595905.05	2211150.2	18	25	92	6935	442	1979	TG		Permaplug	155	369	ShurGel & QuickGel	Yes				
TGC19	595905.05	2211130.2	18	25	92	6935	465	1979	TG		Permaplug	155	389		Yes				
TGC20	596005.06	2210920.2	18	25	92	6939	460	1980	TG		? Too Deep				Yes				
TGC21	595805.06	2210920.2	18	25	92	6933	477	1980	TG		? Down Hole				Yes				
TT1	594953.08	2204825.1	24	25	93	6945	680	1976	TG		None	Dry			Yes				
TT2	595475.1	2204952.2	24	25	93	6959	700	1976	TG		Octoplug	Dry			Yes				
TT3	595420.11	2204780.1	24	25	93	6962	720	1976	TG			*Not Located*							
TT4	593417.05	2205460.1	24	25	93	6919	600	1976	TG		Octoplug	Dry			Yes				

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	Location								Exploration	Original Plug	Original Plug	1983-1984 TG Reopening, Probing & Re-Plugging Program				URE Replugging Program			
HoleID	N_nad83	E_nad83	S	T	R	Elev	TD	Year	Company	Material	Cap	Water Level (ft.)	Mud Depth (ft.)	Resealing Material	Concrete Recap	Date	Plug Depth (ft)	Replug Material	Concrete Recap
TT5	593395.04	2207708.2	19	25	92	6913	580	1976	TG		Sagebrush	174	356	ShurGel & QuickGel	Yes				
TT6	593412.03	2209201.2	19	25	92	6914	600	1976	TG		Sagebrush	Dry			Yes				
TT7	594288.07	2205245.2	24	25	93	6928	820	1976	TG		Octoplug	Dry			Yes				
TT8	594331.05	2206907.2	19	25	92	6923	740	1976	TG		Sagebrush	Dry			Yes				
TT9	595215.06	2209136.2	19	25	92	6928	600	1976	TG			*Not Located*							
TT13	593270.05	2205464.1	24	25	92	6914	500	1976	TG		Octoplug	Dry			Yes				
TT14	593468.04	2207633.2	19	25	92	6914	500	1976	TG		? Too Deep				Yes				
TT15	593316.06	2207796.1	19	25	92	6912	540	1976	TG		? Down Hole				Yes				
TT16	593275.04	2209357.1	19	25	92	6907	600	1976	TG		Octoplug	165	175		Yes				
TT17	594039.08	2204966.1	24	25	93	6927	1140	1976	TG		Octoplug	Dry			Yes				
TT18	593906.06	2208235.2	19	25	92	6923	1000	1976	TG		Octoplug	163	169		Yes				
TT19	595115.05	2209294.2	19	25	92	6921	600	1976	TG		None	Dry			Yes				
TT20	599133.06	2209282.2	18	25	92	6972	1160	1977	TG		Permaplug	210	270		Yes				
TT22	596083.09	2204681.1	13	25	93	6975	700	1977	TG		Octoplug	223	270		Yes				
TT23	596043.09	2205075.1	13	25	93	6974	600	1977	TG		Octoplug	226	261		Yes				
TT24	596008.08	2205501.1	13	25	93	6972	600	1977	TG		Octoplug	Dry			Yes				
TT25	593708.04	2205143.2	13	25	93	6923	700	1977	TG		Octoplug	184	196		Yes				
TT26	593470.05	2204871.2	24	25	93	6922	700	1977	TG		Octoplug	Dry			Yes				
TT27	593695.08	2204686.2	24	25	93	6929	700	1977	TG		Octoplug	Dry			Yes	2006	650	Grout	25' Cement
TT28	593844.08	2204869.1	24	25	93	6926	700	1977	TG		None	Dry			Yes				
TT29	593677.06	2206284.1	24	25	93	6913	700	1977	TG		Octoplug	Dry			Yes				
TT30	595509.06	2205700.2	19	25	92	6919	780	1977	TG		Octoplug	187	202		Yes				
TT31	594159.05	2207422.2	19	25	92	6923	600	1977	TG			*Not Located*			Yes	10/19/08	600	Grout	8' Cement
TT32	594439.04	2208146.2	19	25	92	6930	600	1977	TG		Octoplug	180	233		Yes				
TT33	593680.05	2209018.2	23	25	93	6911	600	1977	TG		Octoplug	177	208		Yes				
TT34	594905.04	2209306.2	19	25	92	6921	600	1977	TG		None	Dry			Yes				
TT35	593362.06	2209532.2	19	25	92	6909	600	1977	TG		Octoplug	163	183		Yes				
TT36	593543.05	2209921.2	19	25	92	6910	600	1977	TG		Octoplug	164	187		Yes				
TT37	595908.06	2209670.2	19	25	92	6936	800	1977	TG			*Not Located*							
TT38	593926.04	2210194.2	19	25	92	6911	600	1977	TG		None	115	120		Yes				
TT39	595302.05	2209531.2	19	25	92	6930	600	1977	TG		Octoplug	Dry			Yes				
TT40	594804.05	2208920.2	19	25	92	6924	800	1977	TG		Octoplug	Dry			Yes				
TT41	594695.04	2209407.2	19	25	92	6916	600	1977	TG		Octoplug	151	174		Yes				
TT42	595128.04	2209429.2	19	25	92	6925	600	1977	TG			*Not Located*							
TT43	594180.05	2209901.2	19	25	92	6913	1000	1977	TG			*Not Located*							
TT44	593427.06	2209722.2	19	25	92	6912	600	1977	TG		Octoplug	Dry			Yes				
TT45	593611.04	2208653.1	19	25	92	6918	1000	1977	TG		Sagebrush	Dry			Yes				
TT46	593714.04	2208317.2	19	25	92	6920	1000	1977	TG		Octoplug	177	189		Yes				
TT47	594087.06	2208151.2	19	25	92	6921	700	1977	TG		None	156	234		Yes				

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	Location								Exploration	Original Plug	Original Plug	1983-1984 TG Reopening, Probing & Re-Plugging Program				URE Replugging Program			
HoleID	N_nad83	E_nad83	S	T	R	Elev	TD	Year	Company	Material	Cap	Water Level (ft.)	Mud Depth (ft.)	Resealing Material	Concrete Recap	Date	Plug Depth (ft)	Replug Material	Concrete Recap
TT48	593984.06	2207672.2	19	25	92	6920	1000	1977	TG		Octoplug	Dry			Yes				
TT49	593968.04	2207319.2	19	25	92	6919	1000	1977	TG		None	Dry			Yes				
TT50	594069.04	2206895.1	19	25	92	6919	900	1977	TG		Octoplug	Dry			Yes				
TT51	593748.03	2206819.2	19	25	92	6913	1000	1977	TG		? Too Deep				Yes				
TT52	593825.05	2206062.1	24	25	93	6919	1000	1977	TG		Octoplug	179	376	ShurGel & QuickGel	Yes				
TT53	593280.06	2206263.2	24	25	93	6907	1000	1977	TG		None	Dry			Yes				
TT54	593634.04	2205782.1	24	25	93	6916	700	1977	TG			*Not Located*							
TT55	593362.06	2205643.1	24	25	93	6915	700	1977	TG		Octoplug	182	210		Yes				
TT56	593488.06	2205036.1	24	25	93	6921	700	1977	TG		Octoplug	Dry			Yes				
TT57	593065.04	2204994.1	24	25	93	6916	700	1977	TG		Octoplug	184	194		Yes				
TT58	593252.07	2204765.1	24	25	93	6919	700	1977	TG			*Not Located*							
TT59	593969.09	2204722.1	24	25	93	6928	1060	1977	TG		? Too Deep				Yes				
TT60	594406.09	2204986.1	24	25	93	6933	900	1977	TG		Octoplug	189	210		Yes				
TT61	593485.07	2204631.1	24	25	93	6921	700	1977	TG		? Too Deep				Yes	2006	650	Grout	25' Cement
TT62	595246.1	2205278.1	24	25	93	6948	820	1977	TG		? Down Hole				Yes				
TT63	595435.07	2209681.2	19	25	92	6933	600	1977	TG		Octoplug	Dry			Yes				
TT64	594910.06	2209108.1	19	25	92	6923	600	1977	TG		Octoplug	155	193		Yes				
TT65	594425.06	2208538.2	19	25	92	6928	600	1977	TG		? Too Deep				Yes				
TT66	595025.04	2208968.2	19	25	92	6927	600	1977	TG			*Not Located*							
TT67	594095.06	2207861.1	19	25	92	6922	700	1977	TG			*Not Located*							
TT68	593868.06	2207115.1	19	25	92	6915	700	1977	TG		Octoplug	Dry			Yes				
TT69	593676.08	2204875.1	24	25	93	6924	700	1977	TG			*Not Located*							
TT70	595144.09	2205263.1	24	25	93	6947	760	1977	TG		Octoplug	198	199		Yes				
TT71	595268.08	2205177.1	24	25	93	6951	760	1977	TG		Octoplug	201	204		Yes				
TT72	595357.11	2205291.2	24	25	93	6951	760	1977	TG		Octoplug	199	203		Yes				
TT73	595218.05	2205380.1	24	25	93	6947	760	1977	TG		Octoplug	195	234		Yes				
TT74	595224.05	2209765.2	19	25	92	6928	600	1977	TG		Octoplug	156	170		Yes				
TT75	595342.04	2210066.2	19	25	92	6927	600	1977	TG			*Not Located*							
TT76	593612.06	2209426.2	19	25	92	6921	600	1977	TG		Sagebrush	Dry			Yes				
TT77	593343.06	2208992.2	19	25	92	6909	600	1977	TG		Octoplug	167	180		Yes				
TT78	595072.06	2209155.2	19	25	92	6925	600	1977	TG		Sagebrush	159	184		Yes				
TT79	594757.06	2208708.2	19	25	92	6931	600	1977	TG		Sagebrush	Dry			Yes				
TT80	594528.06	2208397.2	19	25	92	6933	600	1977	TG		Octoplug	180	222		Yes	10/2/08	600	Grout	8' Cement
TT81	594292.04	2208019.2	19	25	92	6926	700	1977	TG		Octoplug	175	232		Yes				
TT82	594140.05	2207810.2	19	25	92	6923	700	1977	TG		Octoplug	176	214		Yes				
TT83	593627.05	2206946.2	19	25	92	6911	700	1977	TG		None	Dry			Yes				
TT84	593492.06	2206483.1	24	25	93	6908	700	1977	TG		None	Dry			Yes				
TT85	594997.05	2209563.2	19	25	92	6921	600	1977	TG		Octoplug	153	320		Yes				
TT86	595136.05	2210060.2	19	25	92	6921	600	1977	TG			*Not Located*							

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	Location								Exploration	Original Plug	Original Plug	1983-1984 TG Reopening, Probing & Re-Plugging Program				URE Replugging Program			
HoleID	N_nad83	E_nad83	S	T	R	Elev	TD	Year	Company	Material	Cap	Water Level (ft.)	Mud Depth (ft.)	Resealing Material	Concrete Recap	Date	Plug Depth (ft)	Replug Material	Concrete Recap
TT87	595404.06	2209864.2	19	25	92	6932	600	1977	TG		Octoplug	161	190		Yes				
TT88	595437.07	2210272.2	19	25	92	6926	600	1977	TG			*Not Located*							
TT89	594598.05	2210127.2	19	25	92	6909	600	1977	TG		Octoplug	Dry			Yes				
TT90	595901.07	2210184.2	19	25	92	6937	600	1977	TG		Octoplug	Dry			Yes				
TT94	596605.07	2210420.2	18	25	92	6948	660	1978	TG		? Down Hole				Yes				
TT95	596205.05	2210420.2	18	25	92	6938	660	1978	TG		? Too Deep				Yes				
TT96	595805.06	2210420.2	18	25	92	6934	660	1978	TG		Sagebrush	Dry			Yes	9/26/08	600	Grout	8' Cement
TT97	595425.06	2210413.2	19	25	93	6927	600	1978	TG		? Down Hole				Yes				
TT98	595105.07	2208720.2	19	25	92	6912	700	1978	TG		? Down Hole				Yes				
TT99	594805.06	2208420.2	19	25	92	6916	700	1978	TG		Permaplug	Dry			Yes				
TT100	594605.04	2207820.1	19	25	92	6918	700	1978	TG		Permaplug	187	202		Yes				
TT101	594405.04	2207420.2	19	25	92	6912	700	1978	TG			*Not Located*							
TT102	593705.05	2207120.1	19	25	92	6914	660	1978	TG		Permaplug	177	203		Yes				
TT103	593705.05	2207520.2	19	25	92	6918	700	1978	TG		? Too Deep				Yes				
TT104	593705.05	2207920.1	19	25	92	6919	600	1978	TG		? Too Deep				Yes				
TT105	594305.06	2206520.2	24	25	93	6926	660	1978	TG		Permaplug	180	247		Yes				
TT106	594090.04	2206536.2	24	25	93	6924	700	1978	TG		Octoplug	178	200		Yes				
TT107	593624.04	2205535.2	24	25	93	6920	700	1978	TG		Octoplug	Dry			Yes				
TT108	594318.06	2205590.1	24	25	93	6924	700	1978	TG		Octoplug	176	182		Yes				
TT109	594105.04	2206720.2	19	25	92	6923	700	1978	TG		? Down Hole				Yes				
TT110	594768.05	2208715.2	19	25	92	6932	560	1978	TG		Octoplug	176	229		Yes				
TT111	595446.06	2210267.2	19	25	92	6928	500	1978	TG		Octoplug	155	170		Yes				
TT112	593905.04	2206520.1	24	25	93	6919	660	1978	TG		? Too Deep				Yes				
TT113	594105.04	2206320.2	24	25	93	6921	660	1978	TG		Permaplug	176	214		Yes				
TT114	593705.05	2205520.1	24	25	93	6920	660	1978	TG		Permaplug	186	197		Yes				
TT120	593905.04	2208120.2	19	25	92	6920	600	1978	TG		? Too Deep				Yes				
TT121	593905.04	2207920.1	19	25	92	6919	600	1978	TG		Permaplug	172	243		Yes				
TT122	593905.04	2207720.1	19	25	92	6919	600	1978	TG		Permaplug	Dry			Yes				
TT123	593905.04	2207520.2	19	25	92	6919	600	1978	TG		Permaplug	Dry			Yes				
TT124	594305.06	2207520.2	19	25	92	6927	620	1978	TG		? Too Deep				Yes				
TT125	593705.05	2207720.1	19	25	92	6917	600	1978	TG		Permaplug	178	251		Yes				
TT126	594305.06	2207720.1	19	25	92	6927	600	1978	TG		Permaplug	179	382	ShurGel & QuickGel	Yes				
TT127	594305.06	2207920.2	19	25	92	6926	600	1978	TG		Permaplug	176	228		Yes				
TT128	593505.06	2207720.1	19	25	92	6916	600	1978	TG		? Too Deep				Yes				
TT129	594305.06	2208120.2	19	25	92	6926	600	1978	TG		Permaplug	176	197		Yes				
TT130	593905.04	2205120.2	24	25	93	6927	700	1978	TG		Permaplug	Dry			Yes				
TT131	593905.04	2205320.1	24	25	93	6924	700	1978	TG		Permaplug	180	218		Yes				
TT132	593705.05	2205320.1	24	25	93	6920	700	1978	TG		Permaplug	184	203		Yes				
TT133	593905.08	2204920.1	24	25	93	6927	700	1978	TG		Permaplug	183	191		Yes				

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	Location								Exploration	Original Plug	Original Plug	1983-1984 TG Reopening, Probing & Re-Plugging Program				URE Replugging Program			
HoleID	N_nad83	E_nad83	S	T	R	Elev	TD	Year	Company	Material	Cap	Water Level (ft.)	Mud Depth (ft.)	Resealing Material	Concrete Recap	Date	Plug Depth (ft)	Replug Material	Concrete Recap
TT134	593905.04	2205520.1	24	25	93	6921	700	1978	TG		? Down Hole				Yes				
TT135	593505.06	2205320.1	24	25	93	6922	700	1978	TG		Permaplug	Dry			Yes				
TT136	593505.06	2205120.1	24	25	93	6920	700	1978	TG		Permaplug	187	394	ShurGel & QuickGel	Yes				
TT137	593305.06	2205320.1	24	25	93	6919	700	1978	TG		? Too Deep				Yes				
TT138	593305.06	2205120.1	24	25	93	6922	700	1978	TG		Permaplug	Dry			Yes				
TT139	593305.06	2204920.1	24	25	93	6922	630	1978	TG		? Too Deep				Yes				
TT140	594505.06	2208120.2	19	25	92	6923	600	1978	TG		? Too Deep				Yes				
TT141	594505.06	2207920.2	19	25	92	6924	600	1978	TG			*Not Located*				9/29/08	600'	Grout	8' Cement
TT142	594505.06	2207720.1	19	25	92	6922	620	1978	TG		Permaplug	184	243		Yes				
TT143	594505.06	2207520.2	19	25	92	6924	620	1978	TG		Permaplug	185	204		Yes				
TT144	594105.04	2207720.1	19	25	92	6922	620	1978	TG		Permaplug	Dry			Yes				
TT145	593905.04	2207520.2	19	25	92	6923	620	1978	TG		None	Dry			Yes				
TT146	593669.09	2204615.1	24	25	93	6929	700	1978	TG		Permaplug	191	207		Yes	2006	650	Grout	25' Cement
TT147	593620.1	2204614.1	24	25	93	6927	560	1978	TG		Permaplug	195	236		Yes	2006	650	Grout	25' Cement
TT148	593620.1	2204604.2	24	25	93	6927	560	1978	TG		Permaplug	195	236		Yes	2006	650	Grout	25' Cement
TT149	593568.09	2204613.1	24	25	93	6925	700	1978	TG		Permaplug	193	239		Yes	2006	650	Grout	25' Cement
TT150	594105.04	2207420.2	19	25	92	6925	650	1978	TG		Permaplug	176	249		Yes				
TT151	594405.04	2208020.2	19	25	92	6927	660	1978	TG		Permaplug	179	294		Yes				
TT152	594400.06	2208121.2	19	25	92	6910	520	1978	TG		Permaplug	179	236		Yes				
TT153	594005.06	2207420.2	19	25	92	6923	650	1978	TG		Permaplug	175	210		Yes				
TT154	594005.06	2207520.2	19	25	92	6924	700	1978	TG		? Down Hole				Yes				
TT155	594405.04	2208110.2	19	25	92	6924	490	1978	TG		Permaplug	179	272		Yes				
TT156	593620.1	2204594.1	24	25	93	6927	600	1978	TG		Permaplug	195	396	ShurGel & QuickGel	Yes	2006	650	Grout	25' Cement