

## Ctate of Utah DEPARTMENT OF NATURAL RESOURCES Division of Water Rights

MICHAEL R. STYLER Executive Director JERRY D. OLDS State Engineer/Division Director AUG - 7 2007

## SECOND RE-ISSUED ORDER OF THE STATE ENGINEER

For Permanent Change Application Number 05-475 (a26150)

Change Application Number 05-475 (a26150), in the name of Grand County Water Conservancy District, was filed on November 16, 2001, to change the point of diversion and place, nature, and period of use of 4.0 cfs of water as evidenced by Water Right Numbers 05-475 and 05-906. Heretofore, the water could have been diverted from as many as six wells located at the following points: (1) South 260 feet and East 965 feet from the W3 Corner, a 16-inch well up to 300 feet deep; (2) North 300 feet and West 710 feet from the S3 Corner, a 16-inch well up to 300 feet deep; both of Section 35, T25S, R22E, SLB&M,; 3) North 1125 feet and East 890 feet, a 16-inch well up to 300 feet deep; both from the SW Corner; (5) South 100 feet and West 474 feet from the N3 Corner, a 16-inch well up to 300 feet deep; all three of Section 1, T26S, R21E; (6) North 3600 feet and East 1800 feet from the SW Corner of Section 15, T26S, R22E, SLB&M, an 8-inch well 160 feet deep. The water was used for irrigation of 300.00 acres from March 15 to November 15, municipal purposes in Moab City and within the service area of the Grand County Water Conservancy District, and industrial purposes within Moab City and Spanish Valley. The annual depletion under these rights is limited to 2895.91 acre-feet.

Hereafter, Change Application Number 05-475 (a26150) proposes to divert 2895.91 acre-feet of water annually, limited to the depletion of 2895.91 acre-feet. This change application was filed in conjunction with Change Application Number 05-1062 (formerly 05-148) (a26151) for the hereafter diversion of 188.35 acre-feet of water limited to the annual diversion of 26.81 acre-feet. The two change applications total an annual diversion of 3084.26 acre-feet of water and depletion of 2922.72 acre-feet, from two existing wells located at the following points: (1) Chapman Well, North 531 feet and West 1525 feet from the E3 Corner of Section 26 (a 16-inch well 240 feet deep); and (2) Spanish Valley Well, South 1044 feet and East 4103 feet from the NW Corner of Section 36 (a 12-inch well 650 feet deep), both of T26S, R22E, SLB&M, for municipal purposes in Spanish Valley Water and Sewer Improvement District and Grand County Water Conservancy District service areas.

The change applications were advertised in The Times-Independent on December 6 and 13, 2001, and were protested by Christopher Becker, City of Moab, Stephanie Dahlstrom, Kirk De Fond, R. B. Halladay, Louis H. and Ellen G. Callister Revocable Trust, William E. Love, Steven Olschewski, Timothy L. and Barbara H. Smith, The Nature Conservancy of Utah, and Helen Sue Whitney. A hearing was held on May 16, 2002, in Moab, Utah. The applicants were represented by their legal counsel, D. Brent Rose, and Dale Pierson, Manager of the Districts. The following protestants were represented at the hearing: Gerald H. Kinghorn, legal counsel for the City of Moab, Fred Finlinson legal counsel for Louis H. and Ellen G. Callister Revocable Trust, Sue Bellagamba representing The Nature Conservancy of Utah, Christopher Becker, Stephanie

Dahlstrom, Kirk DeFond, R. B. Halladay, William E. Love, Steven Olschewski, Tim L. and Barbara H. Smith, and Helen Sue Whitney.

The State Engineer issued a memorandum decision on both changes on February 7, 2003, and reissued the decision on February 14, 2003, to correct a referenced monitoring plan that had been submitted to the State Engineer. The decision was sent to what appeared as all parties. By letter dated June 24, 2007, Steven Olschewski informed the State Engineer that he had not received the memorandum decision and that he was entitled to receive it as a party. The State Engineer has reviewed the file and is of the opinion that Steven Olschewski was a timely protestant to this change application and therefore was entitled to receive notice of the decision. The State Engineer failed to give Mr. Olschewski notice as required and, therefore, this decision is being reissued for the second time.

Speaking in behalf of the applications, Mr. Rose indicated that the applicants acknowledge the protests that have been filed and the right to do so under the law. It is the belief of the applicants that the approval of the change applications will not interfere with the rights of the protestants and that the requirements of the law have been fully met. He asked Dale Pierson, Manager of the Districts, to provide background on the proposed project. The current managing agency, Grand Water and Sewer Service Agency, was formed by inter-local agreement to consolidate the dayto-day operations of the Spanish Valley Water and Sewer Improvement District, Grand County Water Conservancy District and Grand County Special Sewer Water District. Mr. Pierson indicated that the Districts' original water and sewer systems became operational in 1981. The water is provided by the George White Wells #4 and #5, and current storage is provided in a onemillion-gallon tank. In 1997, Sunrise Engineering Inc. was retained to study the existing system and determine if any deficiencies existed. The study found capacity problems with the distribution system and insufficient storage. There was flow in excess of their demand of 395 gpm. Utah drinking water regulations require storage of 800 gpd per residential connection. Water use in Spanish Valley at that time was 1139 gpd per residential connection. The Districts' Boards recognized that these problems needed to be addressed to keep pace with the 6% annual growth rate that the area was experiencing. Therefore, a water master plan was undertaken to project the needs of the Districts into the next twenty years and determine the required volume of water, the additional storage, and the upgrading of the distribution system. The subject applications were filed as a result of that study.

Financing for the project has been obtained from the Utah Division of Drinking Water, USDA Rural Development, and the Community Impact Board. To date, a three-million-gallon storage tank has been constructed, two additional wells have been drilled and equipped, and the distribution system from the new wells to the tank is in place. The Spanish Valley Well was constructed to a depth of approximately 700 feet and is capable of producing about 220 gpm. The Chapman Well is 170 feet deep and is capable of producing approximately 2000 gpm. Mr. Pierson stated that the Chapman Well is to be equipped to pump 1350 gpm. These wells will be pumped in concert with the George White Wells #4 and #5. No additional water will be required immediately. However, both wells will be operational and used on a regular basis. As customer needs increase, additional water will be pumped from a combination of these wells.

John Chartier of Sunrise Engineering is currently the project supervisor and manager. He indicated that he was involved with the 1997 study which indicated the system would be short in source capacity by approximately 2000 gpm at the end of the twenty-year projection period. A well-siting study was undertaken to determine the best location for new wells. The Glen Canyon aquifer system appeared to be the best source because of its good water quality and high yield potential. The Districts have completed the construction of the Spanish Valley and Chapman Wells, and each of them have been involved in test-pumping programs. The Spanish Valley Well was pumped at a rate of 220 gpm for ninety-six hours which resulted in a draw down of 320 feet. Because there were no other wells in the immediate vicinity, no monitoring was done. The Chapman Well was pumped at a rate of 2000 gpm for thirteen hours with a draw down of 46 feet. If the well is equipped to pump at a rate of 1350 gpm, the draw down is expected to be 26 feet. Six wells were monitored during the Chapman Well pump test. The Whitney well, which is located closest to the test well at a distance of approximately 300 feet, was drawn down 2.7 feet. The draw down on the Corbin's and DeFond's wells was 0.2 feet. The water level in the Castellanos' field and house wells dropped 1.4 feet and 0.4 feet respectively. The George White Well #4 was also monitored during the test. It was allowed to pump at a rate of 1000 gpm during the pump test. An additional one-foot of draw down was measured at the well. Mr. Chartier indicated that the pump test met the requirements for Utah Administrative Rules for Public Drinking Water Systems, which requires at least a six-hour pump test. He said that the test at the Chapman Well would have been longer in duration; however, mechanical problems stopped the test after thirteen hours. It should be noted that each of these wells were involved in a step test before the constant rate pump tests were conducted. He is confident that the use of the two new wells and the two existing wells will not interfere with the rights of the protestants. This opinion is the result of reviewing existing reports on the valley, their well siting study, the applicants' source protection plans, and the test pumping data. Moab City's source protection plans were also reviewed.

Mr. Chartier stated that there are two major aquifers in the Moab-Spanish Valley area -- the Glen Canyon Group and the Valley Alluvium. The two aquifers are connected. The direction of flow in the Glen Canyon aquifer is generally to the west and southwest, mainly perpendicular to the eastern boundary of the valley. The groundwater flow in the alluvium is generally to the northwest, parallel to the axis of the valley. The recharge area for both aquifers is not limited to the valley itself but extends to the east into the LaSal Mountains. The recharge is flowing perpendicular to the valley and has a lateral gradient toward Moab City's sources of water. In the Downs-Kovacs Report of 2000 it is indicated that there is potentially 4200 acre-feet of water that could still be developed in the valley. Therefore, it is felt that these water rights could be developed and not interfere with the protestants' rights. The source protection plan maps for the Districts and Moab City overlap in several areas; however, this should not be construed to mean that they are competing for the same sources of water, nor that the total recharge areas are depicted by the overlapping areas. Again, recharge to the aquifers begins in the LaSal Mountains. The source protection plans do denote areas where water quality must be protected, and those areas must be managed in such a way that sources of pollution are not introduced into the water supply.

In regards to the Callister Wells, it is felt as a result of the test pumping data that no interference will occur because the wells are located 1500-2000 feet up gradient from the Chapman well. However, they are located between the Chapman and Spanish Valley wells. The other protestants who have wells in the immediate vicinity should not experience interference in a significant way based on the results of the pump tests. The inference that pumping these wells would interfere with the flow of Mill Creek does not seem plausible because Mill Creek is a losing stream, and the current groundwater level is well below the creek elevation. Mr. Chartier is also of the opinion that the development of these wells should not interfere with the water that currently enters the Matheson Preserve managed by The Nature Conservancy. These applications are moving the points of diversion primarily from the valley alluvium in reasonably close proximity to the Preserve to the upper area of the valley several miles away and pumping the water from the bedrock aquifer.

Mr. Rose indicated that if any of the protestants could evidence interference resulting from the applicants' activities, the applicants will provide replacement water for culinary and irrigation purposes. Also the Districts can provide water to Moab City through three existing interconnects. The applicants will establish a monitoring program to determine any effects these two new wells may cause, if any, on other water users.

The collective concerns of the protestants centered around interference that may occur with their individual water sources as a result of the Districts' pumping of the two new wells. Their water sources are represented by either individual or groups of wells and the Moab City springs. The Nature Conservancy is also concerned with the potential effect on the water supply to the Matheson Preserve which includes surface and ground water sources. Everyone is concerned that not enough is known about water availability in the valley and feel that additional studies should be undertaken to fill in the data gaps and provide more conclusive information that would allow for the proper management of the water resources. It was also a consensus of the applicant and the protestants that a monitoring plan should be developed to gather additional data and protect existing rights.

Gerald Kinghorn, legal counsel for Moab City, indicated that the City is very concerned that the public water supply they manage must not be impacted by the Districts' pumping of the two new wells. Currently the City is diverting water from five wells and four springs, all of which derive their water from the Glen Canyon aquifer system. He indicated that Todd Jarvis from MWH was retained to evaluate the Districts' applications and their potential impact on the City's municipal water sources. It was Mr. Jarvis' opinion that there was a possibility that interference could occur. He indicated that in 1999 the City was providing culinary water to approximately 5000 people using 1600 connections. All of the water currently being diverted by the City is produced by the navajo sandstone, which is part of the Glen Canyon Group. The navajo aquifer in the area of the City's wells and springs is fine grained and highly fractured. He believes that there is an indirect connection between the quaternary alluvial valley fill aquifer and the navajo sandstone due to valley bounding faults. Prior to the applicants change application, two of the prior points of diversion were located in the consolidated formation and the remaining points in the alluvium,

and they were all located lower in the valley. It is now the intent of the applicants to move their rights to a higher elevation in the valley and use the navajo sandstone aquifer exclusively.

Reviewing a geologic cross section of the valley, he pointed out that water obviously flows from areas of highest hydraulic head towards areas of lowest hydraulic head, which is from the upper valley to the Colorado River. The Spanish Valley and Chapman wells are located in an area with high hydraulic head up-gradient of the City's water sources. Recharge to the valley is from the east and predominantly from streams which have been entrenched into the navajo sandstone, primarily Mill Creek. Referring to the potentiometric surface map provided by Sunrise Engineering and referencing a majority of the literature that is available on the valley, it is generally believed that the flow of water in the valley is from east to west. However, recent data shows strong evidence that water moves along the margin of the valley in a southeasterly to northwesterly direction paralleling the valley. It has been the view of writers of previous reports that the aquifers in the valley are isotropic, meaning that the permeability characteristics of the aquifers are uniform and equal in all directions. In this situation the zone of contribution is typically in the direction of groundwater flow and perpendicular to the groundwater hydraulic gradient in the aquifer. Conversely in an anisotropic aquifer which is typical of a fractured bedrock aquifer, like the navajo sandstone, other contributions are oblique to the general groundwater hydraulic gradient, and generally the direction of groundwater flow is oriented in the direction of the greater permeability. Moab City's well field lies along the eastern margin of the collapsed salt diapir which is a highly fractured area along the periphery of the valley. It is his opinion that the applicant's and City's wells and springs are producing from an anisotropic aquifer.

Mr. Jarvis prepared the original and revised source water protection plans for the City which depicts the capture area for water produced at their various sources. The largest area depicts a fifteen-year travel time. This area overlaps the George White wells #4 and #5 and the Chapman and Spanish Valley wells. It is agreed that the source protection plan is developed to manage potential pollution of a portion of the recharge area. However, it also reflects how large the area of influence is for the various water sources. The City proposed a comprehensive monitoring plan that they felt would protect their springs and well field. It suggested an incremental approval of the right with trigger points established for a proposed monitoring well to be constructed approximately midway between the George White Well #4 and the City's well field and springs. Trigger points would be established to indicate potential interference, should it occur. If it did, then pumping rates would be reduced. If after a period of time there was no indication of a problem, additional water could be diverted. Mr. Kinghorn believes that the aquifer system should be managed to protect existing rights and to meet future needs of the public which will be provided by his client and the applicants. He believes the applications should not be considered for approval without an adequate monitoring program, and further that the applicants should share in the cost of that program with his client. All entities should share data that is collected which would be of mutual benefit to all concerned. He is also concerned that if the aquifer is allowed to be over- pumped, it would damage its ability to recover and provide the storage it has had in the past. Further studies would also be helpful in providing answers to many questions that are unknown at this time. He urged the State Engineer to

consider developing a groundwater management policy for the valley similar to those in other areas of the State.

Representing The Nature Conservancy, Ms. Sue Bellagamba indicated that the Matheson Preserve is a very important feature along the Colorado River in Utah and provides habitat for many species, including several that are threatened and endangered. She is concerned that there simply is not enough information available to allow this resource to be developed with any degree of confidence. A recent study by BYU Professor Dr. Wayne Downs indicates that as additional water is developed in the upper valley, there is a potential for interference on the water supply for the Preserve. She also asked that the applicants' rights not be enlarged if the applications are approved. Dr. Kip Solomon of the University of Utah has been working with The Nature Conservancy in trying to understand the hydrology of the Preserve and the impact that future water development may have. He, too, believes that there is a lack of information concerning the hydrology of the valley and further studies may offer valuable data to those who are making water resource development decisions. He is currently working on a water budget for the Preserve. It appears that the water that is feeding the Preserve is not likely from the Glen Canyon Group but from the valley alluvium. A monitoring plan should be implemented to gather additional data and protect existing rights.

Fred Finlinson, legal counsel for the Callister Family Trust, was also concerned with the impact that this additional diversion of water could have on his client's wells and indicated that a monitoring plan should be implemented if the applications were to be approved. It is his client's intent to monitor their wells located between the Chapman and Spanish Valley wells.

At the conclusion of the hearing, all parties were given thirty days to provide additional comments. During that time the results of the pump test were provided to all parties for their review and comment. The applicants and the City's legal counsels exchanged correspondence concerning their interpretation of the additional information. At the conclusion of the period of correspondence, each retained their same views and opinions as basically provided by the testimonies given at the hearing.

The State Engineer has reviewed the change applications, the protests, the information gathered at the hearing, and the subsequent correspondence, and is generally familiar with the various studies cited by the parties. He agrees that there is not a comprehensive understanding of the geology and hydrology of the valley that would allow for a precise interpretation of the extent of the water resources. However, regardless of the differing opinions on the geology and permeability of the aquifers, there has been no evidence presented by the protestants to convince the State Engineer that interference will occur if the applications are approved. He is not aware of any interference presently occurring between the applicants and any of the protestants or other water users in the area. Review of aerial photographs of the various well and spring locations for the City and the District indicates that they appear to follow a southeasterly to northwesterly trend of the valley and are basically aligned along the eastern boundary. Because of the unusually high yields of each of these wells and springs, they are likely drawing water from a highly-fractured zone in the bedrock aquifer adjacent to the fault. If the applicants were to be

allowed to proceed, they must do so cautiously. A monitoring plan must be implemented to determine the effect the pumping of the Spanish Valley and Chapman wells may have on the water resources in the vicinity of the new wells, specifically those of the protestants. The State Engineer encourages local governmental entities who provide oversight for water development in the valley to consider further studies to better understand the water resources.

It is the opinion of the State Engineer that a portion of the proposed project under these change applications can be approved without jeopardizing the rights of others, particularly those of the protestants. In review of the filings, it is found that the portion of Change Application Number 05-148 (a26151) which is evidenced by Water Right Numbers 05-148 and 05-492 cannot be included. It appears that the two wells under these rights have not diverted water for a period of time far in excess of five years; therefore, withdrawal of water under this change would result in an enlargement of these underlying rights which cannot be approved by the State Engineer. As a result, Change Application Number a26151 is reduced to 28.35 acre-feet of water based on Water Right Number 05-1062 and will be housed on that water right alone. It is believed that the applicants can be allowed to pump an additional 965.00 acre-feet of water per year under these change applications. This is in addition to the approximately 760.0 acre-feet which is currently being pumped from the George White Wells. This total volume of water can be pumped from a combination of the four wells; however, the additional 965.0 acre-feet under these change applications must be pumped from the Chapman and/or Spanish Valley wells. As the demand on the applicants' system grows and additional water is diverted, the data gathered under a monitoring plan should indicate any negative affects. As the applicants deliver additional water and find that the need will exceed this approved volume, they can approach the State Engineer with a request for an additional allocation of water under these applications. If the available data from the monitoring program indicates that an additional allocation is justified, the State Engineer will consider the request. The applicants are required to meter all of their diversions and provide this information upon request. The individual priorities and acre-feet limitations involved with the three underlying applications for these change applications will remain intact, and each right will add on the new attributes of the changes, i.e. points of diversion, places and nature of use, etc. Proof of beneficial use shall be submitted under the original applications.

It is, therefore, **ORDERED** and Change Application Number05-475 and 05-906 (a26150) are hereby **APPROVED** subject to all prior rights and according to the conditions of the current appropriation policy for the Colorado River Drainage, adopted March 7, 1990 and the following conditions:

1. The annual diversion limit approved under these change applications is 965.0 acre-feet. Under Number 05-1062 (a26151), 28.35 acre-feet is approved with a depletion of 5.67 acre-feet. The remaining 936.65 acre-feet is approved under Numbers 05-475 and 05-906 (a26150) with an equal volume of depletion, or a total diversion of 965.0 acre-feet of water and a depletion of 942.32 acre-feet. The original uses authorized under Water Application Numbers 05-475 (A35252) and 05-906 (A42139) also remain in place pending development of the municipal project in part or in whole as authorized under the change application.

- 2. The Chapman and Spanish Valley wells must be equipped with flow meters that provide an instantaneous flow reading in gallons per minute and a totalizing meter in acre-feet.
- 3. A monitoring plan has been submitted and approved by the State Engineer. The applicant is to install and place into operation the monitoring facilities in the plan within one year from the date of this approval.
- 4. Further allocations of water will be entertained upon request of the applicants when 80% of the present allocation is being diverted. If the monitoring data would justify the approval of additional water, it would be considered, subject to current administrative procedures.

As noted, this approval is granted subject to prior rights. The applicant shall be liable to mitigate or provide compensation for any impairment of or interference with prior rights as such may be stipulated among parties or decreed by a court of competent jurisdiction.

The applicant is strongly cautioned that other permits issued by entities other than the Division of Water Rights may be required before any development of this application can begin and it is the responsibility of the applicant to determine the applicability of and acquisition of such permits. Once all other permits have been acquired, this is your authority to develop the water under the above referenced application which under Sections 73-3-10 and 73-3-12, Utah Code Annotated, 1953, as amended, must be diligently prosecuted to completion. The water must be put to beneficial use and proof must be filed on or before February 28, 2008, or a request for extension of time must be acceptably filed; otherwise the application will be lapsed. This approval is limited to the rights to divert and beneficially use water and does not grant any rights of access to, or use of land, or facilities not owned by the applicant.

Proof of beneficial use is evidence to the State Engineer that the water has been placed to its full intended beneficial use. By law, it must be prepared by a registered engineer or land surveyor, who will certify to the location and uses of the extent of your water right. The applicant is advised that, under Utah law, to maintain a water right's validity, the water must be beneficially used. The filing of a change application or the holding of an approved change application does not excuse placing the water to beneficial use to protect the right from challenge of partial or total forfeiture, whether the period of nonuse may have occurred either before or after the filing of the change application.

Upon the submission of proof as required by Section 73-3-16, Utah Code, for this application, the applicant must identify every source of water used under this application and the amount of water used from that source. The proof must also show the capacity of the sources of supply and demonstrate that each source can provide the water claimed to be diverted under this right as well as all other water rights which may be approved to be diverted from those sources.

Failure on your part to comply with the requirements of the applicable statutes may result in forfeiture of this permanent change application.

It is the applicant's responsibility to maintain a current address with this office and to update ownership of their water right. Please notify this office immediately of any change of address or for assistance in updating ownership.

Your contact with this office, should you need it, is with the Southeastern Regional Office. The telephone number is 435-637-1303.

This Order is subject to the provisions of Administrative Rule R655-6-17 of the Division of Water Rights and to Sections 63-46b-13 and 73-3-14 of the Utah Code which provide for filing either a Request for Reconsideration with the State Engineer or an appeal with the appropriate District Court. A Request for Reconsideration must be filed with the State Engineer within 20 days of the date of this Order. However, a Request for Reconsideration is not a prerequisite to filing a court appeal. A court appeal must be filed within 30 days after the date of this Order, or if a Request for Reconsideration has been filed, within 30 days after the date the Request for Reconsideration is denied. A Request for Reconsideration is considered denied when no action is taken 20 days after the Request is filed.

Dated this 7th day of Ougust, 2007.

Jerry D. Olds.

Jerry D. Olds, P.E., State Engineer

Mailed a copy of the foregoing Order this

Grand County Water Conservancy District

P.O. Box 1046 Moab, UT 84532

Kirk De Fond 210 South 300 East Moab, UT 84532

Timothy L. and Barbara H. Smith 4331 Heather Lane Moab, UT 84532 City of Moab

The day of august

c/o Gerald H. Kinghorn 185 South State Street Salt Lake City, UT 84111

The Nature Conservancy of Utah c/o Dallin W. Jensen 201 South Main Street, Suite 1800 Salt Lake City, UT 84111-2218

Christopher Becker 4220 Spanish Valley Drive Moab, UT 84532

Steven B. Olschewski 4275 Heather Lane Moab, UT 84532

Louis H. and Ellen G. Callister Revocable Trust c/o Jeffrey W. Appel 36 South State Street, Suite 1400 Salt Lake City, UT 84111

R. B. Halladay 4601 Spanish Valley Moab, UT 84532 R. B. Halladay 4401 Spanish Valley Moab, UT 84532

Stephanie Dahlstrom 4451 Easy Street Moab, UT 84532

Helen Sue Whitney 3280 Roberts Drive Moab, UT 84532

William E. Love 2871 East Bench Road Moab, UT 84532

BY:

Kelly K. Horne, Appropriation Secretary