

IN THE OFFICE OF THE STATE ENGINEER

IN THE MATTER OF APPLICATION 48140)
FILED TO CHANGE THE POINT OF)
DIVERSION OF THE WATERS OF AN)
UNDERGROUND SOURCE HERETOFORE)
APPROPRIATED UNDER PERMIT 44403 IN)
BUFFALO VALLEY, LANDER COUNTY,))
NEVADA.)

RULING

GENERAL

I.

Application 48140 was filed on June 27, 1984, by Duval Corporation to change the point of diversion of 3.33 c.f.s. of water from an underground source heretofore appropriated under Permit 44403 for mining, milling and domestic purposes within Sections 21, 22, 27, 28, 33 and 34, T.31N., R.43E., M.D.B.&M., and Sections 9 and 10, T.30N., R.43E., M.D.B.&M. The proposed point of diversion is described as being within the NE1/4 NE1/4 Section 21, T.31N., R.43E., M.D.B.&M. The existing point of diversion is described as being within the NW1/4 NW1/4 Section 8, T.30N., R.43E., M.D.B.&M.¹

II.

Application 48140 was timely protested on January 22, 1985, by Frank Lewis on the following grounds:¹

"Duval Corporation constructed the Fortitude Well into the hydrologic system which is the source of water to the protestants Galena Spring (Permit No. 22759, Certificate No. 7592) and Shiloh Shaft (Permit No. 22990, Certificate No. 7593) water rights. Pumping by Duval since late November, 1984 from the proposed point of diversion caused Galena Spring to dry up on or about December 20, 1984 and caused the Shiloh Shaft to cease flowing on or about January 15, 1985. As a

¹ Public record in the office of the State Engineer.

result, the protestant is no longer able to exercise his certificated water rights."

Application 48140 was timely protested on January 25, 1985, by Hart Resources, Inc., on the following grounds:¹

"Duval Corporation drilled the Fortitude Well in the hydrologic system which is the source of water for the Galena Spring (Permit No. 22759, Certificate No. 7592) and Shiloh Shaft (Permit No. 22990, Certificate No. 7593) water rights, which are under lease to Hart Venture, Ltd. Pumping by Duval since late November, 1984 from the proposed point of diversion caused Galena Spring to dry up on or about December 20, 1984 and caused the Shiloh Shaft to cease flowing on or about January 15, 1985. As a result, the protestant is no longer able to develop its certificated water rights and conduct drilling operations."

III.

A public administrative hearing was held on June 3, 1985, and continued on June 27, 1985.² A record of extensive testimony and evidence was developed in support of and in opposition to Application 48140.

FINDINGS OF FACT

I.

The Fortitude Well was originally drilled as a mineral exploratory hole, probably prior to 1982.³ Expert witnesses testified that the exploratory hole penetrated several geologic formations, however, water was not encountered until penetrating the Edna

² NRS 533.365.

³ Transcript of public administrative hearing, June 27, 1985, pp. 49-51, p. 55 and p. 59. Applicant's Exhibits "E", "F" and "G".

Mountain Formation and the Antler Peak Formation.⁴ Testimony further established that in 1984, the exploratory hole was enlarged, cased to 420 feet and made a water production well.⁵ The well was pumped intermittently during the fall of 1984 and then started pumping on a regular basis on December 14, 1984.⁶ The State Engineer finds that these facts are undisputed by the record.

II.

The flow of Galena Spring started to decline a few days prior to December 20, 1984, but finally dried up completely on December 20, 1984.⁷

Testimony establishes that the free flow from the mouth of Shiloh Shaft ceased about January 4, 1985,⁸ although the record indicates that water in the shaft could have continued to be used through pumping because the water level stood at 26 feet.⁹

III.

The State Engineer makes no finding on the issue of abandonment or forfeiture.¹⁰

⁴ Transcript of public administrative hearing, June 27, 1985, p. 41. Applicant's Exhibit "D".

⁵ Transcript of public administrative hearing, June 27, 1985, pp. 41 and 84.

⁶ Transcript of public administrative hearing, June 27, 1985, pp. 159-160. Protestants' Exhibit "19".

⁷ Transcript of public administrative hearing, June 27, 1985, pp. 8-9. Protestants' Exhibit "8".

⁸ Transcript of public administrative hearing, June 27, 1985, p. 9. Protestants' Exhibit "9".

⁹ Transcript of public administrative hearing, June 27, 1985, p. 22; pp. 202-203. Protestants' Exhibits "10" and "23".

¹⁰ Transcript of public administrative hearing, June 3, 1985, pp. 9-60. State of Nevada Exhibit "1". The administrative hearing was not noticed on the issue of abandonment or forfeiture. In the absence of any finding of hydraulic connection between the sources of water set forth and described herein, the issue of abandonment or forfeiture of Permit 22759, Certificate 7592, and Permit 22990, Certificate 7593, is not relevant to action on Application to change 48140. Any potential effect on existing rights by the granting of Application 48140 is simply factual.

IV.

There was direct conflicting testimony and evidence with regard to: Galena Spring's location with respect to the Virgin Fault;¹¹ the hydraulic connection between Galena Spring, Shiloh Shaft and Fortitude Well;¹² the hydrostatic gradient among the three sources;¹³ the geo-chemistry similarity and dissimilarity of the three sources and the similarity with respect to transmissivity and storativity.¹⁴

In order to use the standard non-equilibrium ground water hydraulic equations developed by Theis (1935) and Jacob (1940), the following certain assumptions to predict conical radial flow rates must be made:¹⁵

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

¹¹ Transcript of public administrative hearing, June 3, 1985, pp. 70-72; pp. 100-104. Transcript of public administrative hearing, June 27, 1985, pp. 36-37; pp. 79-82; pp. 100-104. Protestants Exhibits "6", "7", "8", "11" and "12".

¹² Transcript of public administrative hearing, June 3, 1985, pp. 79-106; pp. 116-118. Transcript of public administrative hearing, June 27, 1985, pp. 65-69.

¹³ Transcript of public administrative hearing, June 3, 1985, pp. 90-100. Transcript of public administrative hearing, June 27, 1985, pp. 54-58. Applicant's Exhibit "H".

¹⁴ Transcript of public administrative hearing, June 3, 1985, pp. 106-117. Transcript of public administrative hearing, June 27, 1985, pp. 70-73. Protestants Exhibits "13" and "14".

¹⁵ See attached Appendix of References.

Fortitude Well, Galena Spring and Shiloh Shaft are high in the mountain canyons of Buffalo Valley and Reese River Valley. Testimony and evidence indicates that the area is broken by ridges, faults and fractured rock.¹⁶ The State Engineer finds that transmissivity and storage coefficients cannot be used to predict similar aquifer characteristics under the geologic and hydrologic conditions and circumstances set forth in this record.

Additionally, the record does not establish that pump tests or recovery tests were performed on either the observation well (BVD-59) or Shiloh Shaft to identify hydraulic characteristics.¹⁷

The record establishes that the prepumping level of Shiloh Shaft was 1.7 feet higher than Galena Spring, that the protestants attempted to establish Fortitude Well, Galena Spring and Shiloh Shaft are all hydraulically interconnected,¹⁸ and that the hydraulic gradient slopes from Shiloh Shaft to Galena Spring and from Fortitude Well to Galena Spring.¹⁹ However, the record establishes that, historically, mining activity in the Galena area first occurred in 1863 and was active from World War I through most of the 1920's and during World War II and again in the late 1960's.²⁰ The record further establishes the fact that Shiloh Shaft is 160 feet deep²¹ and that it can be reasonably concluded that the shaft was dewatered in order to mine the ore, therefore, the State Engineer finds that the record supports no hydraulic connection between Shiloh Shaft and

¹⁶ See Protestants' Exhibits "6", "7", "11" and "12", and Applicant's Exhibit "D".

¹⁷ Transcript of public administrative hearing, June 3, 1985, p. 139.

¹⁸ See Protestants' Exhibit "11" and transcript of public administrative hearing, June 3, 1985, p. 116.

¹⁹ Id.

²⁰ Transcript of public administrative hearing, June 3, 1985, pp. 122-123. Protestants' Exhibit "16".

²¹ Transcript of public administrative hearing, June 3, 1985, p. 124. Protestants' Exhibit "15".

Galena Spring in the absence of any historic evidence that Galena Spring either dried up or was affected by water usage associated with historic mining activity.²²

The record establishes that Fortitude Well began pumping in December 1984, Galena Spring went dry in December 1984 and Fortitude Well ceased pumping on either January 31, 1985, or February 12, 1985.²³ The record establishes that the water level in observation well BVD-59 (near Galena Spring) continued to decline through June of 1985.²⁴ After a slight recovery in April, the water level in Shiloh Shaft continued to decline through June 1985.²⁵ On his own investigation, the State Engineer found that no water was flowing from Galena Spring on November 5, 1985.²⁶

The State Engineer finds no conclusive evidence of hydraulic interconnection between Fortitude Well, Shiloh Shaft and Galena Spring.

V.

The record of testimony indicates that the protestants have drilled approximately 150 exploratory holes in and around Galena Spring and Shiloh Shaft.²⁷ The record also establishes that in some of the holes, water was encountered in fractures and faults.²⁸ The State Engineer finds that although the evidence is inconclusive, at least the possibility exists that the protestants may have intercepted or interfered with the water that fed Galena Spring and Shiloh Shaft with their own exploratory drilling activity.

²² Transcript of public administrative hearing, June 3, 1985, pp. 127-129. Protestant Exhibits "8" and "9".

²³ Transcript of public administrative hearing, June 3, 1985, pp. 80-82. Protestants' Exhibit 19.

²⁴ Protestants' Exhibits "10" and "23".

²⁵ Id.

²⁶ See report of field investigation filed under Application 48140, public record in the office of the State Engineer.

²⁷ Transcript of public administrative hearing, June 3, 1985, pp. 47-48.

²⁸ Transcript of public administrative hearing, June 27, 1985, p. 185.

CONCLUSIONS

I.

The State Engineer has jurisdiction of the parties and the subject matter of this action and determination.²⁹

II.

The State Engineer is prohibited by law from granting a permit under an application to change the public waters where:³⁰

- A. The proposed use conflicts with existing rights, or
- B. The proposed use threatens to prove detrimental to the public interest.

III.

The State Engineer concludes that the Fortitude Well is in the Buffalo Valley Ground Water Basin and that Galena Spring and Shilo Shaft are in the Lower Reese River Valley.

IV.

The record of evidence establishes that Galena Spring dried up and never recovered, even after non-use of the Fortitude Well for nearly a year. After investigating climatic conditions, geologic conditions (siesmic activity) and other factors, there is no conclusive evidence as to why.

V.

The record of evidence fails to establish that the approval of Application 48140 will conflict with or impair the value of existing rights.

VII.

The record establishes that Application 48140 to change the point of diversion of existing underground rights will not be detrimental to the public interest.

²⁹ NRS 533.325.

³⁰ NRS 533.370(3).

RULING

The protests to the granting of Application 48140 are hereby overruled and Application 48140 is hereby granted subject to existing rights.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Peter G. Morros", written over a horizontal line.

PETER G. MORROS
State Engineer

PGM/MT/bl

Dated this 14th day of
April, 1986.

APPENDIX OF REFERENCES

Ground Water and Wells, Johnson Divn., UOP, Inc., 4th printing 1975.

Ground Water Resources Evaluation, Wm. C. Walton, 1970.

Hydrology for Engineers, Ray K. Linsley, Jr.; Max A. Kohler; Joseph L. H. Paulhas, 1958.