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Boise, Idaho 83702
Telephone: (208) 424-7800
Facsimile: (208) 424-8774

Attorney for Basin and Range
Resource Company, LLC, Petitioner

RECEIVED
FEB 25 2011
DEPARTMENT OF
WATER RESOURCES

BEFORE THE DEPARTMENT OF WATER RESOURCES
OF THE STATE OF IDAHO

In the Matter of License No. 63-7533

)
)
)
)
AFFIDAVIT OF STEVE HANNULA

STATE OF IDAHO)
) ss.
COUNTY OF ADA)

Steve Hannula, being first duly sworn upon oath, deposes and says:

1. I am over the age of 18 years and make this affidavit based upon personal information.
2. I am a licensed professional engineer in the State of Idaho, and am employed by the water resources consulting firm of ERO Resources, Inc., in Boise, Idaho. My credentials and experience are set forth in the Curriculum Vitae attached as Exhibit A.
3. Attached hereto as Exhibit B is a true and correct copy of the Idaho Department of Water Resources ("IDWR") Field Report for Water Right License No. 63-7533 that I obtained from the IDWR Internet website. Page 2 of Exhibit B indicates that the original field examiner recommended quantities of 1.0 cubic feet per second ("cfs") and 80 acre feet per annum ("AFA")

for this right which was used for "stockwater and also to sprinkle feedlot and cattle during hot weather." However, a subsequent reviewer apparently crossed out and revised these quantities to 0.45 cfs and 27 AFA based on calculations that only covered the stock water use and did not include the other documented uses for feedlot and cattle sprinkling.

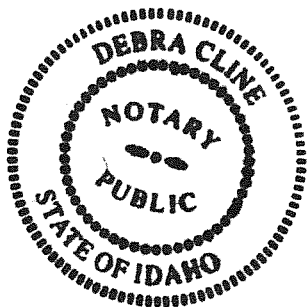
4. Attached hereto as Exhibit C is a true and correct copy of License No. 63-7533 that I obtained from the IDWR Internet website. License No. 63-7533 provides for total quantities of 0.45 cfs and 27 AFA apparently based on the reviewer's incomplete calculations. The licensed quantities of 0.45 cfs and 27 AFA appear to be in error as they do not account for all of the documented uses and the associated quantities of 1.0 cfs and 80 AFA from the original field examination.

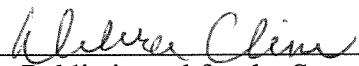
FURTHER YOUR AFFIANT SAYETH NAUGHT.

DATED this 18 day of February 2011.


Steve Hannula

SUBSCRIBED AND SWORN to before me this 18th day of February 2011.




Notary Public in and for the State of Idaho
Residing at: Caldwell, ID
My Commission Expires: 2/17/2016

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on the 25th day of February, 2011, I caused a true copy of the foregoing AFFIDAVIT OF STEVE HANNULA to be served by the method(s) indicated on the following:

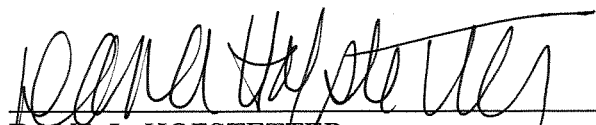
Original to:

Director
Idaho Department of Water Resources
322 East Front Street
Boise, Idaho 83702
☐ U.S. Mail ☐ Fed Ex ☒ Hand ☐ Fax

Copies to:

Jeff Peppersack
Idaho Department of Water Resources
322 East Front Street
Boise, Idaho 83702
☐ U.S. Mail ☐ Fed Ex ☒ Hand ☐ Fax

Shelley Keen
Idaho Department of Water Resources
322 East Front Street
Boise, Idaho 83702
☐ U.S. Mail ☐ Fed Ex ☒ Hand ☐ Fax



DANA L. HOFSTETTER

STEVEN R. HANNULA
PROFESSIONAL ENGINEER, HYDROGEOLOGIST

SUMMARY

Mr. Hannula is the project manager for a variety of projects that involve the many aspects of water resources, including water rights, water quality, surface water/groundwater interactions, and expert testimony. As a professional engineer and professional geologist his responsibilities often include the conceptualization of groundwater flow systems or establishing the technical basis for litigation support of hydrologic problems. His areas of expertise include hydrologic evaluation, site characterization, and design of wells and well-monitoring networks.

EDUCATION

Professional Engineer, Idaho license number 11805
Professional Geologist, Idaho license number 1098

Master of Engineering - Geological Engineer: Colorado School of Mines. Emphasis in groundwater/surface water interaction. Graduated May 5, 1995. GPA 4.0/4.0.

Bachelor of Science - Geology: University of Wisconsin Oshkosh. Graduated Cum Laude 1989. GPA 3.54/4.0.

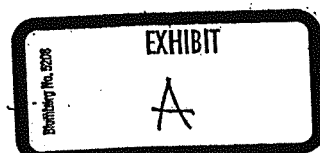
WORK EXPERIENCE

ERO Resources Corporation - Boise, Idaho. August 2000 to present.

Hydrogeologist: Responsible for providing technical expertise to the investigation of water resource projects, including water rights, characterizing groundwater flow systems in support of water rights applications and disputes. Project work is primarily assisting clients in the evaluation, understanding, and management of their water rights and resource.

Shepherd Miller, Inc. - Fort Collins, Colorado. June 1995 to July 2000.

Hydrogeologist: Primary responsibility was to supply technical expertise to the investigation of groundwater flow systems. Project work has included hydrogeological characterization, groundwater monitoring, groundwater sampling, aquifer testing, groundwater numerical modeling, and report writing. Data management through database technology has been a growing responsibility.



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Colorado School of Mines - Golden, Colorado. August 1993 to May 1995.

Teaching Assistant: Responsible for senior level hydrogeology laboratory instruction for four semesters. Instructed one semester of Earth Science Systems Lab course.

Graduate Research Assistant: Research in characterization of stream/aquifer interaction. Included development of an improved method of in-situ measurement of hydraulic conductivity of a streambed.

U.S.G.S. Project Office - Idaho National Engineering Lab. February 1992 to August 1993.

Hydrologic Technician: Project experiences include: monitoring well installation including air rotary drilling, construction, and completion; assisted in equipment maintenance, operation, and in-field repairs; programmed an Oracle database to manage lithologic core data; facilitated groundwater sampling activities; assisted in geophysical wellbore logging, including neutron, natural gamma, resistivity, borehole deviation, caliper, and video logging. Performed technical review of U.S.G.S. Open File Reports. Certified as a CPN neutron gauge operator to conduct moisture profile surveys.

U.S. Navy Commissioned Ensign - April 6, 1990.

Graduated from Naval Nuclear Power School, which is an intense 24-week course in reactor power theory. Stationed at the Naval Nuclear Power Training Unit-Idaho. Duties included training for all operations of a nuclear propulsion plant and associated systems. Honorable Discharge - September 30, 1997.

U.S.G.S. Geological Division - Menlo Park, California. Summer 1989.

Laboratory Technician: Duties included preparing rock samples for x-ray analysis, digitizing maps, and assisting in field mapping of volcanic rocks in central Nevada.

University of Wisconsin - Oshkosh Geology Department. January to June 1989.

Geologist: Received a National Science Foundation grant to explore a block-in-mélange structure in Zacatecas, Mexico. Results were presented at the 1990 Geological Society of America Cordilleran Sectional Meeting.

University of Wisconsin - Oshkosh Geophysics Department. June 1987 to May 1989.

Computer Programmer: Programmed FORTRAN graphics utilities for plotting seismic reflection survey and aero-magnetic survey data.

Morgantown Energy Technology Center - Morgantown, West Virginia. June to December 1986.

Computer Programmer: Programmed a Drillstem Pressure Build-up Analysis routine and wrote the accompanying user's guide.

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PUBLICATIONS

- Steven R. Hannula, Kenneth J. Esposito, John A. Chermak, Donald D. Runnells, David C. Kieth, and Larry Hall, 2003, "Estimating Ground Water Discharge by Hydrograph Separation", *Ground Water*, Vol. 41, No. 3, May-June, pages 368-375.
- David C. Keith, Donald D. Runnells, Kenneth J. Esposito, John A. Chermak, David B. Levy, Steven R. Hannula, Malcolm Watts, and Larry Hall, 2001, "Geochemical models of the impact of acidic groundwater and evaporative salts on Boulder Creek at Iron Mountain, California", *Applied Geochemistry*, Pergamon, Volume 16, pages 947 – 961.
- Hannula, S.R., D.C. Keith, K.J. Esposito, J.A. Chermak, and D.D. Runnells, 1999, "Estimating groundwater discharge by hydrograph separation, Iron Mountain, CA", *Proceedings of the sixth International Conference on Tailings and Mine Waste*, 1999, A.A. Balkema, Rotterdam, Netherlands.
- Keith, D.C., D.D. Runnells, K.J. Esposito, J.A. Chermak, and S.R. Hannula, 1999, "Efflorescent sulfate salts – chemistry, mineralogy, and effects on ARD streams", *Proceedings of the sixth International Conference on Tailings and Mine Waste*, 1999, A.A. Balkema, Rotterdam, Netherlands.
- Davis, L.C., S.R. Hannula, B. Bowers, 1997, "Procedures for Use of, and Drill Cores and Cuttings Available for Study at, the Lithologic Core Storage Library, Idaho National Engineering Laboratory, Idaho", U.S. Geological Survey Open File Report 97-124.
- Hannula, S.R., 1995, "Temporal and Spatial Variations of Hydraulic Conductivity in a Streambed in Golden, Colorado", Master of Engineering Report, Colorado School of Mines, Golden, Colorado.
- Hannula, S.R., and E.P. Poeter, 1995, "Temporal and Spatial Variations of Hydraulic Conductivity in a Streambed in Golden, Colorado", Colorado Water Resources Research Institute, Colorado State University, Open File Report No. 9, report dated April 1995.
- Klein, R.T., S.R. Hannula, N.W. Jones, J.W. McKee, T.H. Anderson, 1990, "Cerro el Pedernal: Block-in-Mélange Features in Northern Zacatecas, Mexico", *Geological Society of America Abstracts with Programs*, February 1990, Vol. 22, No. 3.

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PROFESSIONAL DEVELOPMENT

Hannula, S.R., "Use of Hydrograph Separation Techniques to Determine Groundwater Contribution to Boulder Creek, Iron Mountain, California", AGU Annual Fall Meeting in San Francisco, Abstracts with Programs, 1997.

Chermak, J., K. Esposito, S. Hannula, D. Keith, D. Runnells, M. Watts, L. Hall, "Determination of Metals Loading in Mining Impacted Areas Using Simulated Rainfall Experiments, Iron Mountain, California", GSA Annual Meeting in Salt Lake City, Utah, Abstracts with Programs, 1997.

AWARDS

- Outstanding Teaching Assistant - 1994 - Geology and Geological Engineering Department, Colorado School of Mines.
- Superior Performance Award - U.S.G.S. Idaho District, Water Resources Division.
- Recipient of National Association of Geology Teachers Summer Internship with the U.S. Geological Survey.
- Recipient of the University of Wisconsin Oshkosh Scholars Program Scholarship.

Person to contact _____ Phone _____

Tributary to _____

Other uses: _____

Other Points of Diversions: _____

Measuring device required: yes ☐ no ☒

RECEIVED

TOTAL ACREAGE

Memorandum No. 5208

EXHIBIT

B

DATE OF EXAM 24 March 77

ACREAGE

Found _____

Recommended _____

Irrigation Requirement _____ Ac Ft/Ac

USE

Irrigation Q = 1.0 c.f.s. V = 20 AF/Ann. from 1-1 to 12-21

Domestic Q = _____ c.f.s. V = _____ AF/Ann. from _____ to _____

Livestock Q = _____ c.f.s. V = _____ AF/Ann. from _____ to _____

Is water co-mingled? yes _____ no ☒

Name source: _____

twp. _____ N/S, Rge _____ E/W, B.M., Sec. _____, Sub. _____ 1/4 _____ 1/4 _____

County _____

Exchange? yes _____ no ☒

Name source exchanged with: _____

twp. _____ N/S, Rge _____ E/W, B.M., Sec. _____, Sub. _____ 1/4 _____ 1/4 _____

County _____

Point of injection:

twp. _____ N/S, Rge _____ E/W, B.M., Sec. _____, Sub. _____ 1/4 _____ 1/4 _____

County _____

Point of exchange:

twp. _____ N/S, Rge _____ E/W, B.M., Sec. _____, Sub. _____ 1/4 _____ 1/4 _____

County _____

Total Q measured 1.0 cfs Method of measurement Estimated from test pump information

Total Q recommended 1.45 cfs Meter No. _____ Type _____ Condition _____

Total V recommended 20 AF/Ann $\rightarrow$ 27 AF

Recommended Amendments:

$$Q = 2000 \text{ gal} \times 12 \frac{\text{gal}}{\text{day}} \div 120 \text{ min} = 200 \text{ gpm} = .45 \text{ cfs}$$

$$V = 2000 \text{ gal} \times 12 \frac{\text{gal}}{\text{day}} \div 365 \div 325900 = 27 \text{ AF}$$

P.D. OK

Place of Use OK

Other _____

None ☒

W/Hm 1-31-78

MEASUREMENT CALCULATION:

Water is used for stockwater and also to sprinkle
paul lot & cattle during dry hot weather - well tested
at 50" diversion rate into ditch. Field lot is being
expanded in size now (at time of insp)

SYSTEM DESCRIPTION:

10" well 500' deep w/ 50 HP Peerless pump Ser # 2636215
and 30 HP General Electric pump motor and 54624 BX/H/A
Ser # 883210476 nicherson into 3-4" mains to water tank
storage for stock (see above)

REMARKS:

system in operation at time of exam

Examiner's Signature Paul S. Ballou

Date 24 March 77

Checked by _____

Date _____

Approved by _____

Date _____

State of Idaho
Department of Water Resources

WATER RIGHT LICENSE

License of Water Right No. 63-7533 Priority December 17, 1971 Amount 0.45 cfs ^{1.0 cfs} ~~1.0 cfs~~

THIS IS TO CERTIFY, that RAY OBENDORF
of Parma, Idaho, has complied with the terms and conditions of Permit
No. 63-7533 issued pursuant to Application for Permit dated December 17, 1971,
and has submitted proof to the Department of Water Resources on November 4, 1976,
that he has applied water to a beneficial use; an examination by the Department indicates that the works have a
capacity for the diversion of 1.0 cfs of water from a groundwater source,
tributary to _____, and that the permit holder has applied to a beneficial use and
established a right to use water as follows:

Beneficial Use	Period of Use	Rate of Diversion	Annual Volume
Stockwater	from <u>January 1</u> to <u>December 31</u>	at <u>0.45</u> cfs and	<u>27</u> acre feet
	from _____ to _____	at _____ cfs and	_____
	from _____ to _____	at _____ cfs and	_____

(both dates inclusive)

Subject, however, to the condition that no more than 0.45 cfs of water be diverted at any one time, and
that the amount of water so diverted and to which such right is entitled and confirmed is for the purpose
aforementioned and is limited to the amount which can actually be beneficially used and shall not exceed
27 acre feet per year, said waters to be diverted within the NE $\frac{1}{4}$ SE $\frac{1}{4}$, Sec. 23,
Twp. 6N, Rge. 5W, B.M. in the County of Payette

Description and location of place of use:

Twp.	Range	Sec.	NE $\frac{1}{4}$				NW $\frac{1}{4}$				SW $\frac{1}{4}$				SE $\frac{1}{4}$				Totals
			NE $\frac{1}{4}$	NW $\frac{1}{4}$	SW $\frac{1}{4}$	SE $\frac{1}{4}$	NE $\frac{1}{4}$	NW $\frac{1}{4}$	SW $\frac{1}{4}$	SE $\frac{1}{4}$	NE $\frac{1}{4}$	NW $\frac{1}{4}$	SW $\frac{1}{4}$	SE $\frac{1}{4}$	NE $\frac{1}{4}$	NW $\frac{1}{4}$	SW $\frac{1}{4}$	SE $\frac{1}{4}$	
6N	5W	23													X				
		24									X								

Total number of acres irrigated _____

NOTE: Modifications to or variance from this license must be made within the limits of Section 42-222, Idaho Code, or the applicable Idaho Law. This right may be forfeited by five years of non-use.

The right to the use of the water hereby confirmed is restricted and appurtenant to the lands or place of use herein described, as provided by the laws of Idaho.

Witness the seal and signature of the Director, affixed at Boise, Idaho, this 21 day of
February, 19 78.


Director

Blumberg No. 5208
EXHIBIT
C