

BEFORE THE DEPARTMENT OF WATER RESOURCES

OF THE

STATE OF IDAHO

IN THE MATTER OF THE BOISE FRONT)
LOW TEMPERATURE GEOTHERMAL)
RESOURCE GROUND WATER)
MANAGEMENT AREA)
FINAL ORDER
EXTENDING MORATORIUM

On June 15, 1987, the Director (“Director”) of the Idaho Department of Water Resources (“IDWR”) designated the Boise Front Low Temperature Geothermal Resource Ground Water Management Area in Ada County, Idaho, due to reported declines in aquifer water levels and water pressure.

On June 10, 1988, IDWR issued an order establishing a five (5) year moratorium to prevent further development or additional use of the low temperature geothermal water resource.

On June 11, 1993, September 1, 1998, and November 25, 2003, the Director of IDWR issued orders each extending the moratorium for a period of five years.

On April 14, 2009, the Director of IDWR issued a *Final Order Extending Moratorium*, extending the moratorium through May 5, 2014. The extension prohibited appropriation of low temperature geothermal water, including the appropriation of low temperature geothermal ground water for domestic purposes under Idaho Code § 42-111.

FINDINGS OF FACT

1. Recent studies of the Boise Front Low Temperature Geothermal Resource, including IDWR’s annual review of Boise Front geothermal monitoring data, focus on three areas within the geothermal system: the Downtown Boise-East Boise area, the Stewart Gulch area (Water District 63-S), and the Harris Ranch area. Wells in these areas generally encounter the warmest low temperature geothermal (“LTG”) water, share common uses, and have more available data than LTG wells in other areas along the Boise Front. Water users in these three areas have historically expressed concern about possible effects associated with proposed increases in LTG water withdrawals from the system.

Downtown Boise-East Boise Area

2. The Downtown Boise-East Boise area defines a sub-region within the Boise Front Low Temperature Geothermal Resource Ground Water Management Area, which is comprised of four separate LTG heating systems including the Boise Warm Springs Water District system, the State of Idaho Capitol Mall system, the City of Boise system, and the Veterans Administration

system. The document “Review of Boise Front Low Temperature Geothermal Monitoring Data for Water Year 2013”¹ prepared by IDWR, concludes that gross withdrawals for the four Downtown Boise-East Boise area heating systems increased 7%, while net withdrawals declined 4% compared to the previous water year. Since Water Year 2009, gross withdrawals have generally increased from a low of 633 million gallons to 781 million gallons. Net withdrawals have generally increased from 229 to 275 million gallons.

3. IDWR reviews LTG monitoring data, including depth to water recorded either as shut-in pressure for flowing wells, or distance from measuring point at land surface to water surface for non-flowing wells, from the following wells in the Downtown Boise-East Boise area: the BLM well; Boise Warm Springs Water District’s (BWSWD) #1 (East supply), #2 (West supply), and #3 (monitoring) wells; the Kanta well; Boise Geothermal, Ltd. (BGL) #1, #2, #3, and #4 wells; and the Veteran’s Administration production well. The non-pumping wells (BLM, Kanta, BGL #1, and BWSWD #3) are the most useful wells for determining trends in this area. These wells show fairly stable water levels from Water Year 2009 to Water Year 2013, which follows a distinct increasing water level trend from Water Year 2000 to Water Year 2009.

4. IDWR reviews geothermal monitoring data, including water supply temperature, from the Capitol Mall, BWSWD, and City of Boise systems in the Downtown Boise-East Boise area. The water supply temperatures in these systems have remained fairly stable for the past several years.

5. IDWR authorized additional use under existing permits 63-9138 and 63-9139 in the name of the City of Boise for Water Years 2011, 2012 and 2013. The orders permitting the additional use increased the maximum allowable annual pumping volume of the geothermal resource by the City of Boise from 230 million gallons per year to 267 million gallons per year.

6. The City of Boise has increased pumped volumes since Water Year 2009 from 191.22 million gallons per year to 266.50 million gallons per year in Water Year 2013. IDWR has authorized the City of Boise to increase use to 290 million gallons per year for Water Year 2014.

Stewart Gulch Area (Water District 63-S)

7. IDWR formed Water District 63-S to administer low temperature geothermal ground water rights in the Stewart Gulch area. IDWR reviews geothermal monitoring data, including well head pressure (in flowing wells) and depth (distance) from top of well casing to the water surface within the well (in non flowing wells), from the following wells in Water District 63-S: the Edwards well; the TTCI 36th Street Silkey (shed), Tiegs (triangle), and Office (house) wells; Quail Hollow Upper (Tee Ltd.) and Lower (Nibbler) wells; the Terteling Ranch “windsock” and “pool” wells, and the Stralow (Niznik) well. As evident in the “Review of Boise Front Low Temperature Geothermal Monitoring Data for Water Year 2013” withdrawals generally increased since Water Year 2009 with the largest increase (11%) in Water Year 2013.

8. Ground water levels increased slightly from Water Year 2008 to Water Year 2012 in

¹ *Water Year 2013 started on October 1, 2012 and ended on September 30, 2013*

Water District 63-S in several of the wells. Withdrawals declined sharply from Water Year 2008 to 2009, then remained fairly constant through Water Year 2012. Withdrawals increased 11% in Water Year 2013 due to higher-than-usual pumpage at Quail Hollow. Water levels declined significantly in the Edwards and Tiegs wells in the last quarter of Water Year 2013, and continued to decline in the beginning of Water Year 2014. These observations demonstrate that aquifer pressures/water levels in Water District 63-S respond quickly to changes in withdrawal. Water levels may remain stable if annual withdrawals are maintained at 170 to 180 million gallons. Continued monitoring and self-regulation of withdrawals by the district water users is very important to confirm and maintain stability of the LTG resource in this area.

9. Water levels in Water District 63-S do not appear to respond to withdrawal changes in the Downtown Boise-East Boise wells.

Harris Ranch Area

10. The “Review of Boise Front Low Temperature Geothermal Monitoring Data for Water Year 2013” indicates that water surface elevations in the Harris Ranch West and East wells showed slight decreasing trends in Water Year 2013. Overall, water surface elevations in both wells had been steadily increasing since 2003.

11. The document “Investigation of Hydrogeologic Conditions and Ground Water Flow in the Boise Front Geothermal Aquifer (Executive Summary)”, prepared by the Idaho Water Resources Research Institute in October of 2003, concluded that low temperature geothermal water in the Downtown Boise-East Boise area and the Harris Ranch area are hydraulically connected. The conclusion implies that trends in water surface elevations in the Harris Ranch area likely reflect the pumping and recharge activity in the Downtown Boise-East Boise area. However, the IDWR report in 2013 states “The Harris Ranch wells have distinctly different water level signatures than the Downtown Boise-East Boise wells.” There is an offset of up to several months in the maximum and minimum values between the two areas.

Domestic Wells

12. IDWR has issued drilling permits for domestic uses, as defined by Idaho Code § 42-111, within the Boise Front Low Temperature Geothermal Resource Ground Water Management Area. Low temperature geothermal water may be diverted from some of the wells constructed under these domestic drilling permits.

13. On April 14, 2009, the Director of IDWR issued the *Final Order Extending Moratorium*, to be effective on May 5, 2009. The extension prohibited appropriation of low temperature geothermal water, including the appropriation of low temperature geothermal ground water for domestic purposes under Idaho Code § 42-111. The extension also provided that IDWR shall process and consider, and may approve, applications to appropriate water for domestic use of low temperature geothermal ground water underlying the Boise Front Low Temperature Geothermal Resource Ground Water Management Area from owners of existing domestic wells whose use satisfied the limitations of Idaho Code § 42-111, if the well was constructed and used prior to the date of the extension.

CONCLUSIONS OF LAW

1. Idaho Code § 42-233 states, in part:

(1) The right to the use of low temperature geothermal resources of this state shall be acquired by appropriation. The appropriation may be perfected by means of the application, permit and license procedure as provided in this chapter for ground water, provided that low temperature geothermal resources shall be utilized primarily for heat value and secondarily for the value as water. Usage of a low temperature geothermal resource primarily for reasons other than heat value is not a beneficial use of the resource, unless the director of the department of water resources exempts the proposed use. The director may exempt a proposed use if the director finds that the proposed use satisfies the following criteria: (i) there is no feasible alternative use of the resource; (ii) there is no economically viable source of water having a bottom hole temperature of eighty-five (85) degrees or less in a well available; (iii) the exemption is in the public interest.

2. Idaho Code § 42-226 states, in part:

Prior appropriators of underground water shall be protected in the maintenance of reasonable ground water pumping levels as may be established by the director of the department as herein provided. In determining a reasonable ground water pumping level or levels, the director of the department shall consider and protect the thermal and/or artesian pressure values for low temperature geothermal resources and for geothermal resources to the extent that he determines such protection is in the public interest.

3. Idaho Code § 42-1805(7) authorizes the Director to suspend the issuance or further action on permits or applications to appropriate water as necessary to protect existing water rights.

4. IDAPA Rule 37.03.08055 (Water Appropriation Rule 55) authorizes the Director to cease approvals of applications and undeveloped permits in a designated geographical area upon finding a need to protect existing water rights.

5. Without the full allowable stress to the aquifer system having yet occurred in the Downtown Boise-East Boise area, it is unknown how this resource, and the likely hydraulically connected Harris Ranch area, will respond to the maximum potential diversion withdrawal of 290 million gallons per year by the City of Boise. It is in the public interest to protect the low temperature geothermal resource in both of these areas and to continue to monitor the effects of increased withdrawals.

6. The direct response of well head pressures and water levels to changes in withdrawals is well documented in the Stewart Gulch area, where increases in withdrawal rates leads to an almost immediate decline in well head pressures or water levels within monitored flowing and non-flowing wells. It is in the public interest to protect the low temperature geothermal resource in this area.

7. The legislature has instructed the Director, when determining reasonable pumping levels, to protect artesian pressures of low temperature geothermal aquifers if protection is found to be in the public interest.

8. It is in the public interest to protect the existing low temperature geothermal aquifer pressures.

9. Extension of the moratorium is appropriate.

The Effect of the Moratorium on Domestic Uses

10. Idaho Code § 42-233 separately and specifically requires a prospective appropriator to file an application for and obtain a water right prior to beneficially using low temperature geothermal water in the state of Idaho.

11. Idaho Code § 42-227 does not exempt prospective appropriators of low temperature geothermal water for domestic uses, as defined by Idaho Code § 42-111, from the application and water right requirements of Idaho Code § 42-233.

12. A domestic ground water right from low temperature geothermal water cannot be perfected by beneficial use, but must be established by the filing of an application with IDWR and subsequent approval by IDWR as a water right.

13. Idaho Code § 42-1805 (7) authorizes the Director to suspend the issuance of permits or actions on applications to appropriate water as necessary to protect existing water rights. Low temperature geothermal ground water rights must be established by an approved permit, and the Director has the authority to suspend action on applications to appropriate low temperature geothermal water for domestic use.

14. Idaho Code § 42-235 states in part:

Prior to beginning construction of any well or changing the construction of any well, the driller or well owner shall obtain a permit from the director of the department of water resources to protect the public health, safety and welfare and the environment . . .

15. Idaho Code § 42-231 states, in part:

It shall likewise be the duty of the director of the department of water resources to control the appropriation and use of the ground water of this state as in this act provided and to do all things reasonably necessary or appropriate to protect the people of the state from depletion of ground water resources contrary to the public policy expressed in this act.

16. To protect the artesian pressures of the low temperature geothermal aquifer

underlying the Boise Front Low Temperature Geothermal Resource Ground Water Management Area, the Director should not approve drilling permits for any purpose in the Boise Front Low Temperature Geothermal Ground Water Management Area, including domestic use, unless the applicant for a drilling permit holds a water right authorizing diversion of low temperature geothermal water from a point of diversion at the proposed well site.

17. Owners of domestic wells diverting water from the low temperature geothermal aquifer that were constructed prior to May 5, 2009 without a water right should be entitled to seek a water right for the existing domestic use as defined by Idaho Code § 42-111.

ORDER

IT IS HEREBY ORDERED, pursuant to Idaho Code § 42-1805(7) and IDAPA Rule 37.03.08055 (Water Appropriation Rule 55), that the order dated June 10, 1988, establishing a moratorium on further development, and additional use of the low temperature geothermal water resource in the Boise Front Low Temperature Geothermal Resource Ground Water Management Area is **extended for five (5) years, from May 5, 2014**, unless rescinded or modified by order of the Director or a court of competent jurisdiction.

IT IS FURTHER ORDERED that the moratorium prohibits appropriation of low temperature geothermal water, including the appropriation of low temperature geothermal ground water for “domestic purposes” under Idaho Code § 42-111.

IT IS FURTHER ORDERED that IDWR shall not issue drilling permits for domestic purposes as defined by Idaho Code § 42-111, or for any other purpose, to construct or modify a well proposing, or resulting in, a production zone within the low temperature geothermal aquifer underlying the Boise Front Low Temperature Resource Ground Water Management Area unless the proposed construction is for a well described as a point of diversion by a valid water right or water right permit authorizing the appropriation of low temperature geothermal ground water.

IT IS FURTHER ORDERED that further development of additional use pursuant to undeveloped or partially developed permits is prohibited until the permit holder shows to the satisfaction of the Director that further development or additional use: a) will not increase depletions from the aquifer; b) will not increase pumping lift or decrease pressure or existing prior users; and c) will not reduce temperature to existing users causing systems operating at reasonable efficiency to no longer operate.

IT IS FURTHER ORDERED that pending and future applications will be rejected unless information is provided to demonstrate the use: a) will not increase depletions from the aquifer; b) will not increase pumping lift or decrease pressure or existing prior users; and c) will not reduce temperature to existing users causing systems operating at reasonable efficiency to no longer operate.

IT IS FURTHER ORDERED that IDWR shall process and consider, and may approve, application to appropriate water for domestic use of low temperature geothermal ground water underlying the Boise Front Low Temperature Geothermal Resource Ground Water Management

Area from owners of existing domestic wells whose use satisfies the limitations of Idaho Code § 42-111, if the well was constructed and used prior to May 5, 2009.

IT IS FURTHER ORDERED that IDWR shall serve a copy of this order by certified mail upon holders of applications and undeveloped permits proposing appropriation in the Boise Front Low Temperature Geothermal Resource Ground Water Management Area and shall publish notice of this order for three consecutive weeks as required by IDAPA Rule 37.03.08.055 (Water Appropriation Rule 55).

IT IS FURTHER ORDERED that this order shall be effective on May 5, 2014. Remedies following issuance of a final order are explained in the enclosure with this order.

Dated this 29th day of April 2014.


GARY SPACKMAN
Director

EXPLANATORY INFORMATION TO ACCOMPANY A FINAL ORDER

(To be used in connection with actions when a hearing was **not** held)

(Required by Rule of Procedure 740.02)

The accompanying order is a "Final Order" issued by the department pursuant to section 67-5246, Idaho Code.

PETITION FOR RECONSIDERATION

Any party may file a petition for reconsideration of a final order within fourteen (14) days of the service date of this order as shown on the certificate of service. **Note: The petition must be received by the Department within this fourteen (14) day period.** The department will act on a petition for reconsideration within twenty-one (21) days of its receipt, or the petition will be considered denied by operation of law. See section 67-5246(4), Idaho Code.

REQUEST FOR HEARING

Unless the right to a hearing before the director or the water resource board is otherwise provided by statute, any person who is aggrieved by the action of the director, and who has not previously been afforded an opportunity for a hearing on the matter shall be entitled to a hearing before the director to contest the action. The person shall file with the director, within fifteen (15) days after receipt of written notice of the action issued by the director, or receipt of actual notice, a written petition stating the grounds for contesting the action by the director and requesting a hearing. See section 42-1701A(3), Idaho Code. **Note: The request must be received by the Department within this fifteen (15) day period.**

APPEAL OF FINAL ORDER TO DISTRICT COURT

Pursuant to sections 67-5270 and 67-5272, Idaho Code, any party aggrieved by a final order or orders previously issued in a matter before the department may appeal the final order and all previously issued orders in the matter to district court by filing a petition in the district court of the county in which:

- i. A hearing was held,
- ii. The final agency action was taken,
- iii. The party seeking review of the order resides, or
- iv. The real property or personal property that was the subject of the agency action is located.

The appeal must be filed within twenty-eight (28) days of: a) the service date of the final order, b) the service date of an order denying petition for reconsideration, or c) the failure within twenty-one (21) days to grant or deny a petition for reconsideration, whichever is later. See section 67-5273, Idaho Code. The filing of an appeal to district court does not in itself stay the effectiveness or enforcement of the order under appeal.