



New Mexico Energy, Minerals and Natural Resources Department

Bill Richardson
Governor

Joanna Prukop
Cabinet Secretary
Reese Fullerton
Deputy Cabinet Secretary

Mark Fesmire
Division Director
Oil Conservation Division



October 1, 2008

Mr. Steve Brown
Raser Power System, LLC
5152 North Edgewood Drive, Suite 375
Provo, Utah 84604

801 - ~~765-1000~~ 374-3314

Re: Lightning Dock Geothermal HI-01 Discharge Permit Application (GT-1)
Public Hearing December 1, 2008 9:00 a.m.
Special Events Center
502 W 2nd Street
Lordsburg, NM 88045
(575) 542-8844 (call for directions)

Dear Mr. Brown:

The Oil Conservation Division (OCD) of the New Mexico Energy Minerals and Natural Resources Department (EMNRD) has determined that there is a substantial public interest in the geothermal discharge permit application filed on behalf of Raser Power System, LLC, which warrants a public hearing under 20.6.2 NMAC.

A letter from Americulture, Inc. letter (letter), dated July 11, 2008, included issues under the Water Quality Act. A copy of the letter is attached. The OCD was delegated authority by the Water Quality Control Commission for the protection of surface and ground water on July 21, 1989. The hearing will focus specifically on Water Quality Act issues. If it is determined that there are OCD-regulated high temperature (>250 °F) geothermal reservoir issues that fall under the authority of the OCD, a separate hearing may be required under OCD Geothermal Regulations.

Pursuant to Subsection K of 20.6.2.3108 NMAC, the OCD shall give notice of the hearing at least 30 days prior to the hearing in accordance with Subsection H of 20.6.2.3108 NMAC. A copy of the notice of public hearing is attached.

Please contact Carl Chavez of my staff at (505)-476-3491 or E-mail CarlJ.Chavez@state.nm.us if you have any questions.

Oil Conservation Division * 1220 South St. Francis Drive
* Santa Fe, New Mexico 87505

* Phone: (505) 476-3440 * Fax (505) 476-3462* <http://www.emnrd.state.nm.us>



October 1, 2008

Page 2

Sincerely:

Wayne Price
Environmental Bureau Chief

cc: Mr. Damon Seawright, Americulture, Inc., 25 Tilapia Trail, Animas, NM 88020
Persons on Facility-Specific Mailing List

Enclosures: Americulture, Inc. Letter
Notice of Public Hearing

NOTICE OF PUBLIC HEARING

State of New Mexico
Energy, Minerals and Natural Resources Department,
Oil Conservation Division

Discharge permit for the Lightning Dock Geothermal No. 1 (GT-001)

The State of New Mexico, through its Oil Conservation Division, hereby gives notice that the division will conduct a public hearing on **Monday, December 1, 2008** beginning at 9:00 a.m. at the Special Events Center, 502 W. 2nd Street, in Lordsburg, New Mexico to consider the application for a discharge permit for the Lightning Dock Geothermal No. 1 geothermal power plant. The application was filed by Raser Power System, LLC, 5152 North Edgewood Drive, Suite 375, Provo, Utah 84604.

The Lightning Dock Geothermal No. 1 (HI-01) "Binary Cycle" 15 MWe geothermal power plant (5 production/development wells & 3 Class V geothermal injection wells) will be located in the NW/4, SW/4 of Section 7, Township 25 South, Range 19 West, NMPM, Hidalgo County, New Mexico. The plant will be within the Animas River Valley approximately 10 miles south of I-10 on CR 338 (east side of Geothermal Road). Development wells are located within the SW/4; NW/4; and NE/4 of Section 7. Class V injection wells will be located within the NE/4 and NW/4 of Section 18. Development wells will produce approximately 15,000 gpm of 250-300 °F geothermal water with a total dissolved solids (TDS) concentration of approximately 1,300 mg/L from the Horquilla Formation (geothermal carbonate reservoir) at a depth of about 3,400 feet below ground level. High temperature geothermal water from development wells will be routed in parallel into 50 portable self-contained (with heat exchanger, evaporator & condenser) binary cycle power generation units. Approximately 350 gpm of shallow low temperature geothermal reservoir water with a TDS concentration of approximately 300 mg/L will be mixed with cooling tower chemical additives and cycled through the cooling tower unit. All of the cooling tower blow-down effluent (180~225 °F) will be injected into the Class V injection wells with the exception of effluent that is routed back into a lined evaporation pond during operation or cessation of operation. Each Class V well will have a maximum injection rate of between 4,000 to 5,000 gpm at an average pressure of about 75 psig. The flow rate of each development or Class V well may be subject to the correlative rights of any future geothermal operators in the high temperature geothermal reservoir. Lined evaporation ponds at the surface will temporarily store any excess development or well test water for injection into the high temperature geothermal reservoir. Groundwater most likely to be affected by a spill, leak, or accidental discharge to the surface is at a depth of approximately 50 feet with a TDS of approximately 300 mg/L. The discharge plan addresses well construction, operation, monitoring, testing of the wells, associated



10. In the Notice of Publication, the Horquilla Formation is listed as having a TDS of 1,300 mg/L. To our knowledge, no one has determined the water chemistry of this interval. All geothermal chemistry reported or measured to date came from Tertiary volcanics or basin fill deposits.
11. With reference to 20.6.2.3106 NMAC, the following deficiencies exist: 1) there is no plan submitted for evaporative ponds, design, and location, 2) there is no monitoring plan with sampling protocol, monitor locations, or monitor well design, and 3) no geotechnical data is presented or referenced for evaluation of site subsurface conditions and hydrogeology.
12. The AmeriCulture shallow geothermal wells are in direct communication with deep-seated geothermal waters. AmeriCulture also has a geothermal well whose production zone lies between 1,400 feet and 2,100 feet below ground level. AmeriCulture's fish are grown in a mixture of cold ground water and geothermal water. Therefore, injected chemicals should be limited to those approved for potable water. The anti-scaling chemicals listed in the application do not meet this description.

Based on the foregoing, AmeriCulture requests a public hearing. If you have further comments or questions please feel free to contact me at (505)670-5220.

Sincerely Yours,



Damon E. Seawright, Ph.D.
Vice President