



STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1410 North Hilton • Boise, Idaho 83706-1255 • (208) 373-0502

Dirk Kempthorne, Governor
Toni Hardesty, Director

May 26, 2006

Certified Mail No. 7005 1160 0000 1550 4137

Douglas J. Glaspey
Chief Operating Officer
Raft River Energy I, LLC
1509 Tyrell Lane, Suite B
Boise ID 83706

RE: Facility ID No. 031-00030, Raft River Energy I, LLC, South of Malta
Final Permit Letter

Dear Mr. Glaspey:

The Idaho Department of Environmental Quality (DEQ) is issuing Permit to Construct (PTC) No. P-060403 to Raft River Energy I, LLC for the Raft River Geothermal Power Plant – Unit 1, in accordance with IDAPA 58.01.01.200 through 228 (Rules for the Control of Air Pollution in Idaho).

This permit is based on your permit application received on February 01, 2006. This permit is effective immediately. This permit does not release Raft River Energy I, LLC from compliance with all other applicable federal, state, or local laws, regulations, permits, or ordinances.

A representative of the Twin Falls Regional Office will contact you regarding a meeting with DEQ to discuss the permit terms and requirements. DEQ recommends the following representatives attend the meeting: your facility's plant manager, responsible official, environmental contact, and any operations staff responsible for day-to-day compliance with permit conditions.

Pursuant to IDAPA 58.01.23, you, as well as any other entity, may have the right to appeal this final agency action within 35 days of the date of this decision. However, prior to filing a petition for a contested case, I encourage you to call Bill Rogers at (208) 373-0502 to address any questions or concerns you may have with the enclosed permit.

Sincerely,

Martin Bauer, Administrator
Air Quality Division

MB/SYC/bf

Permit No. P-060403

Enclosures

c: Bill Allred, Twin Falls Regional Office
Bill Rogers, Permit Coordinator
Shawnee Chen, P.E.
Marilyn Seymore/ Pat Rayne, Air Quality Division
Laurie Kral, US EPA Region 10
Permit Binder
Source File
Phyllis Heitman (Ltr Only)
Reading File (Ltr Only)



Air Quality
PERMIT TO CONSTRUCT
State of Idaho
Department of Environmental Quality

PERMIT No.: P-060403
FACILITY ID No.: 031-00030
AQCR: 63 **CLASS:** B
SIC: 4911 **ZONE:** 12
UTM COORDINATES (km): 303, 4663.5

1. **PERMITTEE**
Raft River Energy I LLC

2. **PROJECT**
Initial Permit to Construct for the Raft River Geothermal Power Plant – Unit1

3. MAILING ADDRESS 1509 Tyrell Lane, Suite B	CITY Boise	STATE ID	ZIP 83706
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4. FACILITY CONTACT Kevin Kitz	TITLE VP Project Development	TELEPHONE (208) 424-1027
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5. RESPONSIBLE OFFICIAL Douglas J. Glaspey	TITLE Chief Operating Officer	TELEPHONE (208) 424-1027
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6. EXACT PLANT LOCATION 15 Miles South of Malta, Idaho, Township 15 South Range 26 East Sections 22 and 23	COUNTY Cassia
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7. **GENERAL NATURE OF BUSINESS & KINDS OF PRODUCTS**
Geothermal Energy Production (i.e. Electricity Production) and Sale of Electricity

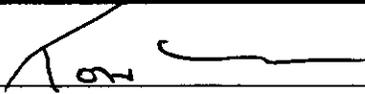
8. **GENERAL CONDITIONS**

This permit is issued according to IDAPA 58.01.01.200, Rules for the Control of Air Pollution in Idaho, and pertains only to emissions of air contaminants regulated by the state of Idaho and to the sources specifically allowed to be constructed or modified by this permit.

This permit (a) does not affect the title of the premises upon which the equipment is to be located; (b) does not release the permittee from any liability for any loss due to damage to person or property caused by, resulting from, or arising out of the design, installation, maintenance, or operation of the proposed equipment; (c) does not release the permittee from compliance with other applicable federal, state, tribal, or local laws, regulations, or ordinances; (d) in no manner implies or suggests that the Department of Environmental Quality (DEQ) or its officers, agents, or employees, assume any liability, directly or indirectly, for any loss due to damage to person or property caused by, resulting from, or arising out of design, installation, maintenance, or operation of the proposed equipment.

This permit will expire if construction has not begun within two years of its issue date or if construction is suspended for one year.

This permit has been granted on the basis of design information presented with its application. Changes of design or equipment may require DEQ approval pursuant to the Rules for the Control of Air Pollution in Idaho, IDAPA 58.01.01.200, et seq.



TONI HARDESTY, DIRECTOR
DEPARTMENT OF ENVIRONMENTAL QUALITY

DATE ISSUED: May 26, 2006

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Acronyms, Units, and Chemical Nomenclature

acfm	actual cubic feet per minute
AQCR	Air Quality Control Region
DEQ	Department of Environmental Quality
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
km	kilometer
PM ₁₀	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
ppm	parts per million
PTC	permit to construct
SIC	Standard Industrial Classification
TDS	total dissolved solids
UTM	Universal Transverse Mercator

AIR QUALITY PERMIT TO CONSTRUCT NUMBER: P-060403

Permittee:	Raft River Energy I, LLC	Facility ID No. 031-00030	Date Issued:	May 26, 2006
Location:	Malta, Idaho			

1. PERMIT TO CONSTRUCT SCOPE

Purpose

- 1.1 This is the initial permit to construct (PTC) for a new geothermal energy production (i.e. electricity production) plant.

Regulated Sources

- 1.2 Table 1.1 lists all sources of regulated emissions in this PTC.

Table 1.1 SUMMARY OF REGULATED SOURCES

Permit Section	Source Description	Emissions Control(s)
2	Cooling tower	None
3	Piping components transferring the working fluid - iso-pentane	None

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2. COOLING TOWER

2.1 Process Description

Hot water is pumped from the geothermal reservoir located about one mile beneath the ground surface, below both an upper and intermediate aquifer, to the power plant using existing wells that were drilled as part of the former Department of Energy facility. The hot geothermal fluid will be delivered to the power plant at a temperature of approximately 280 degrees Fahrenheit (°F), where it will flow through heat exchangers that are used to transfer heat to a "working" fluid that has a lower boiling point. For this project, the working fluid will be iso-pentane. The heated iso-pentane vaporizes and is sent through two turbines and a single generator to generate power, much like a steam turbine. The vapor discharging from the turbines is then condensed in water-cooled condensers, and pumped back to the pre-heaters and vaporizers for reuse. The working fluid is in a closed loop system, and thus continually cycles through the system. After the heat is extracted from the geothermal fluid, the geothermal fluid is injected back into the geothermal reservoir, forming another closed loop system.

The cooling water for water-cooled condensers is provided by a counter flow cooling tower, with a circulating water flow rate of approximately 48,000 gallons per minute. The cooling tower make-up water source comes from groundwater wells and/or surface water, but brine water (i.e. geothermal fluid) may also be used.

Cooling Tower

Manufacturer:	To be determined
Type:	Induced Draft
Maximum recirculating rate capacity:	48,000 gallons per minute
Liquid draft	0.005%
Total number of cells:	4 or 6

Stack information of each cooling tower cell

Stack height:	40 feet
Stack diameter:	15 feet
Stack flowrate:	1,095,000 acfm per cell
Stack temperature:	77 °F

Cooling tower dimensions

Height:	25 feet
Width:	55 feet
Length:	240 feet

2.2 Emissions Control Description

The cooling tower drift eliminators remove liquid droplets from the cooling tower air flow. They reduce particulate matter emissions.

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Emissions Limits

2.3 Emissions Limits

- The total PM₁₀ emissions from the stacks of the cooling tower cells shall not exceed 144 pounds per day.
- The total PM₁₀ emissions from the stacks of the cooling tower cells shall not exceed 26.3 tons per any consecutive 12-month period.

2.4 Opacity Limit

Emissions from each cooling tower cell stack, or any other stack, vent, or functionally equivalent opening associated with the cooling tower, shall not exceed 20% opacity for a period or periods aggregating more than three minutes in any 60-minute period as required by IDAPA 58.01.01.625. Opacity shall be determined by the procedures contained in IDAPA 58.01.01.625.

Operating Requirements

2.5 TDS Limit in Recirculation Water

The total dissolved solids (TDS) in the recirculation water shall not exceed 5,000 ppm.

Monitoring and Recordkeeping Requirements

2.6 Recordkeeping of TDS in Recirculation Water

The calculation of the TDS in the recirculation water shall be kept on site and made available to DEQ representatives upon request.

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3. PERMIT TO CONSTRUCT GENERAL PROVISIONS

1. The permittee has a continuing duty to comply with all terms and conditions of this permit. All emissions authorized herein shall be consistent with the terms and conditions of this permit and the Rules for the Control of Air Pollution in Idaho. The emissions of any pollutant in excess of the limitations specified herein, or noncompliance with any other condition or limitation contained in this permit, shall constitute a violation of this permit and the Rules for the Control of Air Pollution in Idaho, and the Environmental Protection and Health Act, Idaho Code §39-101, et seq.
2. The permittee shall at all times (except as provided in the Rules for the Control of Air Pollution in Idaho) maintain in good working order and operate as efficiently as practicable, all treatment or control facilities or systems installed or used to achieve compliance with the terms and conditions of this permit and other applicable Idaho laws for the control of air pollution.
3. The permittee shall allow the Director, and/or the authorized representative(s), upon the presentation of credentials:
 - To enter, at reasonable times, upon the premises where an emissions source is located, or in which any records are required to be kept under the terms and conditions of this permit.
 - At reasonable times, to have access to and copy any records required to be kept under the terms and conditions of this permit, to inspect any monitoring methods required in this permit, and require stack compliance testing in conformance with IDAPA 58.01.01.157 when deemed appropriate by the Director.
4. Nothing in this permit is intended to relieve or exempt the permittee from compliance with any applicable federal, state, or local law or regulation, except as specifically provided herein.
5. The permittee shall furnish DEQ written notifications as follows in accordance with IDAPA 58.01.01.211.01 and 211.03:
 - A notification of the date of initiation of construction, within five working days after occurrence;
 - A notification of the date of completion/cessation of construction, within five working days after occurrence;
 - A notification of the anticipated date of initial start-up of the stationary source or facility not more than sixty days or less than thirty days prior to such date;
 - A notification of the actual date of initial start-up of the stationary source or facility within fifteen days after such date; and
 - A notification of the initial date of achieving the maximum production rate, within five working days after occurrence - production rate and date
6. If performance testing (air emissions source test) is required by this permit, the permittee shall provide notice of intent to test to DEQ at least 15 days prior to the scheduled test date or shorter time period as approved by DEQ. DEQ may, at its option, have an observer present at any emissions tests conducted on a source. DEQ requests that such testing not be performed on weekends or state holidays.

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All performance testing shall be conducted in accordance with the procedures in IDAPA 58.01.01.157. Without prior DEQ approval, any alternative testing is conducted solely at the permittee's risk. If the permittee fails to obtain prior written approval by DEQ for any testing deviations, DEQ may determine that the testing does not satisfy the testing requirements. Therefore, at least 30 days prior to conducting any performance test, the permittee is encouraged to submit a performance test protocol to DEQ for approval. The written protocol shall include a description of the test method(s) to be used, an explanation of any or unusual circumstances regarding the proposed test, and the proposed test schedule for conducting and reporting the test.

Within 30 days following the date in which a performance test required by this permit is concluded, the permittee shall submit to DEQ a performance test report. The written report shall include a description of the process, identification of the test method(s) used, equipment used, all process operating data collected during the test period, and test results, as well as raw test data and associated documentation, including any approved test protocol.

7. The provisions of this permit are severable, and if any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

8. In accordance with IDAPA 58.01.01.123, all documents submitted to DEQ, including, but not limited to, records, monitoring data, supporting information, requests for confidential treatment, testing reports, or compliance certification shall contain a certification by a responsible official. The certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document(s) are true, accurate, and complete.