

**STAFF REPORT
C86**

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10/19/17
PRC 9245.2
V. Perez

**CONSIDER APPLICATION FOR AN EXTENSION OF STATE
GEOTHERMAL RESOURCES PROSPECTING PERMIT PRC 9245.2,
ADMINISTERED BY THE COMMISSION**

APPLICANT:

Deep Rose Development, LLC

AREA, TYPE LAND, AND LOCATION:

Approximately 640 acres of State fee-owned school land (State Parcel Number 161-006; Assessor's Parcel Number 037-500-03), comprising all of Section 16, Township 21 South, Range 38 East, MDBM, Inyo County, approximately 20 miles south of Owens Lake, near the Coso geothermal field (see Exhibits A and Exhibit B, attached).

BACKGROUND:

On October 16, 2015, the Commission issued State geothermal prospecting permit (Permit) PRC 9245.2 to Deep Rose Development, LLC (Permittee), granting an exclusive right for 2 years to prospect for geothermal resources on the State parcel ([Item C62, October 16, 2015](#)). On August 18, 2017, the Permittee applied for a 2-year extension pursuant to paragraph 1 of the Permit, PRC 9245.2 (see Exhibit C, attached). If the extension is granted, the Permittee will continue their prospecting program.

The proposed prospecting program consists of completing the construction of an access road that will lead to a drill pad, and drilling and testing of up to four geothermal wells that have been approved by Inyo County. As of October 1, 2017, Permittee has resumed completion of the drill pad access road, which crosses Bureau of Land Management (BLM) land.

PERMIT EXTENSION AND EXPLORATION RESULTS:

Based on the knowledge of the subsurface geologic structure in the region in relation to the Coso geothermal field geology to the southeast, evidence suggests that geothermal resources may exist at a similar depth. The Permittee selected a site based on regional geologic information, and drilling a deep well is the best way to determine the presence and production potential of commercially valuable geothermal resources.

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To accomplish the exploration goals, the Permittee has made the following progress:

1. Updated the water line for the right-of-way with BLM
2. Fused together 9,000 feet of 4-inch-diameter water line to provide water to the drill site
3. Enlarged the water storage pond, located on private land, which was permitted to accommodate road and well pad construction
4. Acquired a large water pump for the well at the water storage pond
5. Applied to Southern California Edison for permanent power to a water well at the water storage pond

If the extension is granted, the Permittee plans to perform the following tasks:

1. Construct the final 30 percent of the access road that will lead to the State parcel
2. Perform the mass grading of the drill pad
3. Drill the first exploratory geothermal well
4. Complete the final grading and configuration at the off-site, private water well installation

TERM OF PROPOSED PERMIT EXTENSION:

The original term of the Permit is for 2 years with an effective date of November 1, 2015, and is set to expire on October 31, 2017. If approved by the Commission, the term of this Permit extension shall be effective for an additional 2 years from November 1, 2017, thorough October 31, 2019. Pursuant to Public Resources Code section 6910, subdivision (b), the term of this Permit cannot exceed a total of 4 years.

STATE'S BEST INTERESTS ANALYSIS AND RECOMMENDATION:

Authority:

- A. Public Resources Code: division 6, parts 1 and 2; and division 13.
- B. California Code of Regulations, title 2, division 3; and title 14, chapter 3.

The issuance of this Permit is in the State's best interests because if the exploration is successful and production of clean geothermal energy follows, royalty revenue will be generated for the California State Teachers' Retirement System. Under the terms of the Permit, upon a discovery of valuable mineral deposits in commercial quantities, the Permittee may apply for a preferential lease. The Permittee believes it will be able to complete the project under the extension of this Permit and commence drilling by the spring of 2018. Staff recommends that the Commission approve the Permit extension.

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PREREQUISITE CONDITIONS, FEES, AND EXPENSES:

1. The Permittee submitted the required filing fee (\$25) and approximate expense deposit.
2. The State parcel is currently not known to contain commercially valuable mineral deposits.
3. If Permit PRC 9245.2 is extended, Permittee is required to pay an annual rent of \$25 per acre or \$16,000 for each of the third and fourth years.
4. Permittee has a preferential right to a geothermal lease upon discovery of geothermal resources in commercial quantities. The Permittee must inform the Commission, within 90 days of discovery, of its intent to exercise this right.
5. The Commission has a performance bond, or other approved security, in the amount of \$50,000.

OTHER PERTINENT INFORMATION:

1. A Mitigated Negative Declaration, State Clearinghouse No. 2005121125, was prepared by the Division of Oil, Gas, and Geothermal Resources and adopted on March 28, 2006, for this project. Commission staff has reviewed the Mitigated Negative Declaration and Mitigation Monitoring Program pursuant to the provisions of the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21081.6) and adopted by the lead agency.
2. This activity involves lands identified as possessing significant environmental values pursuant to Public Resources Code section 6370 et seq., but such activity will not affect those significant lands. Based upon staff's consultation with the persons nominating such lands and through the CEQA review process, it is staff's opinion that the project, as proposed, is consistent with its use classification.
3. The Permittee's current funding sources have acknowledged the importance and value of the Permittee's progress and accomplishments. Recent state and federal support for the development of new geothermal energy has created a more fertile environment.
4. The Permittee has a Conditional Use Permit from the Inyo County Planning Department granting permission to drill up to four geothermal wells.

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5. The Permittee has a right-of-way over adjacent BLM lands to construct a dirt road to the State parcel.
6. The Permittee obtained a Permit to conduct geothermal operations from the Division of Oil, Gas, and Geothermal Resources.
7. The Commission first issued a Permit to the Permittee in 2006 ([Item C63, April 17, 2006](#)), and since then the Permittee has kept the Permit active with allowable extensions and new permits approved by the Commission. For the last 11 years, Permittee has invested more than \$5,500,000 in this project and has paid the Commission \$75,520 in rent.
8. This action is consistent with Strategy 1.1, of the Commission's Strategic Plan, to deliver the highest levels of public health and safety in the protection, preservation and responsible economic use of the lands and resources under the Commission's jurisdiction; and Strategy 2.1, to optimize returns for the responsible development and use of State lands and resources, both onshore and offshore.

EXHIBITS:

- A. Land Description
- B. Site and Location Map
- C. Geothermal Resources Prospecting Permit

RECOMMENDED ACTION:

It is recommended that the Commission:

CEQA FINDING:

1. Find that a Mitigated Negative Declaration, State Clearinghouse No. 2005121125, and a Mitigation Monitoring Program were prepared by the Division of Oil, Gas, and Geothermal Resources and adopted on March 28, 2006, for this project and that the Commission has reviewed and considered the information contained therein; that in the Commission's independent judgment, the scope of activities to be carried out under the Permit extension to be issued by this authorization has been adequately analyzed; that none of the events specified in Public Resources Code section 21166 or the State CEQA Guidelines section 15162 resulting in any new or substantially more severe significant impact has occurred; and, therefore no additional CEQA analysis is required.
2. Re-adopt the Mitigation Monitoring Program, as contained on file in the Sacramento Office of the Commission ([Item C63, April 17, 2006](#)).

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SIGNIFICANT LANDS INVENTORY FINDING:

Find that this activity is consistent with the use classification designated by the Commission for the land pursuant to Public Resources Code section 6370 et seq.

STATE'S BEST INTERESTS:

Find that the proposed Permit extension is in the best interests of the State.

AUTHORIZATION:

Authorize the extension of a Geothermal Resources Prospecting Permit PRC 9245.2 to Deep Rose Development, LLC, from November 1, 2017, through October 31, 2019, on the State parcel described in Exhibit A and shown on Exhibit B (for reference purposes only).

EXHIBIT A

PRC 9245.2

LAND DESCRIPTION

That certain parcel of State School Land in Inyo County, State of California, more particularly described as follows:

All of Section 16, Township 21 South, Range 38 East, Mount Diablo Meridian, as shown on the Official U.S. Government Township Plat approved October 15, 1881.

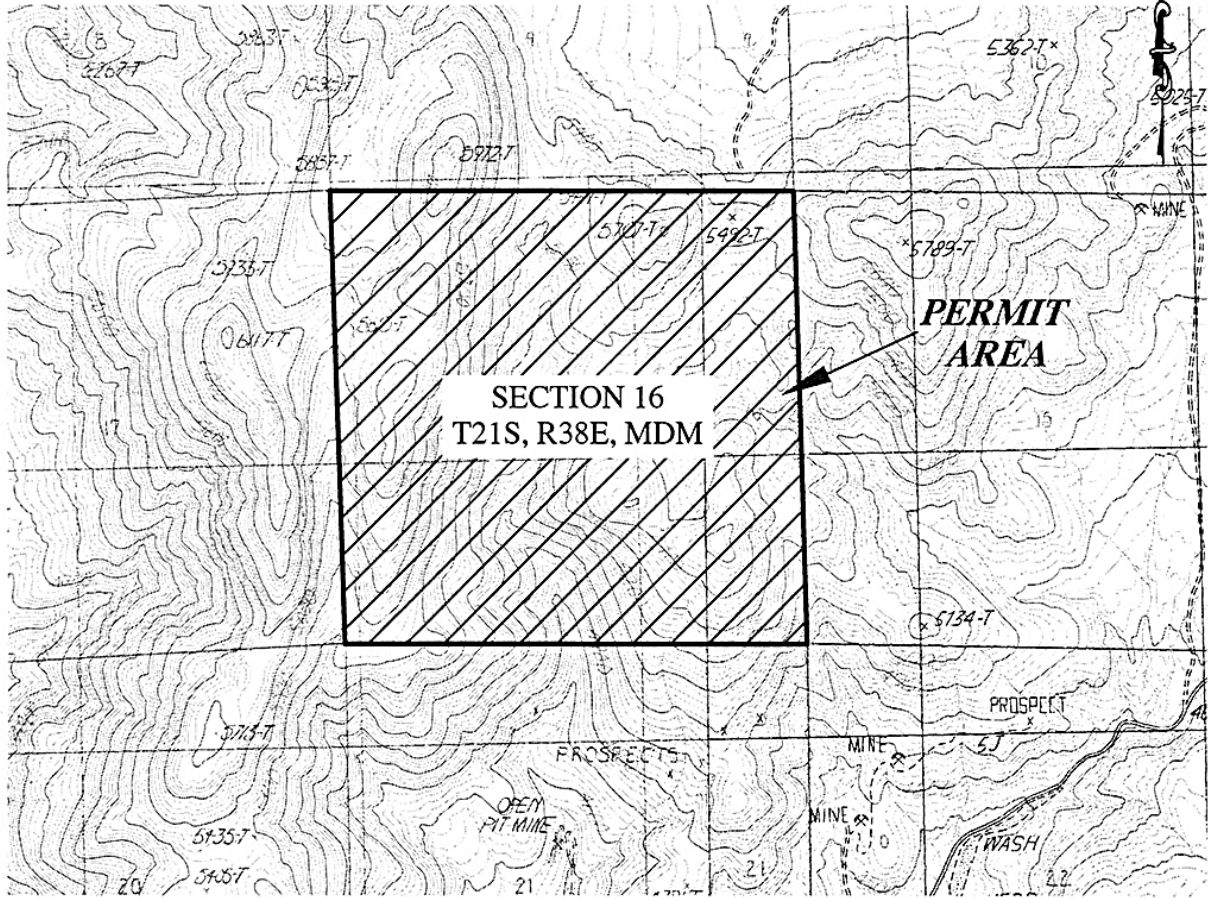
END OF DESCRIPTION

Prepared 08/11/2015 by the California State Lands Commission Boundary Unit.



NO SCALE

SITE



SECTION 16, T21S, R38E, MDM

NO SCALE

LOCATION



MAP SOURCE: USGS QUAD

This Exhibit is solely for purposes of generally defining the permit premises, is based on unverified information provided by the other parties and is not intended to be, nor shall it be construed as, a waiver or limitation of any State interest in the subject or any other property.

Exhibit B

PRC 9245.2
DEEP ROSE
DEVELOPMENT, LLC
GEOTHERMAL
PROSPECTING PERMIT
INYO COUNTY



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EXHIBIT C

PRC 9245.2

W40980

STATE LANDS COMMISSION

State of California

GEOTHERMAL RESOURCES PROSPECTING PERMIT

Pursuant to Division 6 of the California Public Resources Code ("PRC"), this geothermal resources prospecting permit is made and entered into between the California State Lands Commission (hereinafter referred to as the "State"), and Deep Rose Development, LLC ("Permittee"), effective the 1st day of November, 2015. Permittee accepts this prospecting permit, giving Permittee the exclusive right to prospect for geothermal resources upon the permitted land, pursuant the following terms and conditions.

1. TERM

This permit shall be for a term of two (2) years. The State may, in its discretion, extend the term for up to two (2) additional years.

2. PREFERENTIAL RIGHT TO LEASE

Upon discovery of geothermal resources in commercial quantities, Permittee shall have a preferential right to a lease. Permittee must inform the State, in writing, of its intention to exercise its preferential right within ninety (90) days of the discovery. Failure to so inform the State will result in an abandonment of the preferential right. No lease will be issued to Permittee until its issuance is approved by the State, acting in its discretion under section 6371 of the PRC and upon review of environmental documentation concerning production operations on the permitted land.

3. PERMITTED LAND

The land covered by this permit is situated in the County of Inyo and consists of Section 16, Township 21 South, Range 38 East, Mount Diablo Meridian, totaling 640 acres, more or less, of State fee-owned school lands.

4. GEOTHERMAL RESOURCES

The term "geothermal resources" as used in this permit shall have the meaning given to it by section 6903 of the PRC.

5. QUALIFICATION OF PERMITTEE

Permittee shall possess at all times during the term of this permit qualifications for holding a permit or lease as provided in sections 6801, 6905 and 6922 of the PRC.

 ORIGINAL

6. RENT, ROYALTY AND OTHER MONETARY CONSIDERATIONS

(a) Permittee shall pay to the State an annual rent, payable in advance, of one dollar (\$1.00) per acre or fraction thereof during the first year; five dollars (\$5.00) per acre or fraction thereof during the second year; and, should the term of this permit be extended by the State, twenty-five dollars (\$25.00) per acre or fraction thereof during each of the third and fourth years.

(b) Permittee shall pay to the State rent, royalties, and other monetary considerations for geothermal resources produced, saved and sold from the permitted land, under any subsequent preferential lease, in sums and according to the terms set forth in Exhibit "A".

7. INTEREST AND PENALTY

(a) Rent and other monetary considerations which are not paid when due shall bear interest from their due date until they are paid at the rate of one and one-half percent (1-1/2%) per month of the unpaid balance.

(b) Rent and other monetary considerations which are not paid when due shall be subject to a penalty of five percent (5%) of the past due amount.

(c) Past due rent and other monetary considerations include, but are not limited to, amounts which were not paid because of Permittee's unreasonable use of inaccurate information in computing the rent and other monetary considerations and Permittee's unreasonable errors in the computations themselves. The determination of what errors of Permittee are unreasonable rests with the State.

8. PROSPECTING PROGRAM

(a) Permittee shall abide by the prospecting program and time schedule set forth in Exhibit "B". If Permittee does not complete the prospecting program in accordance with the time schedule, this permit may be terminated by the State.

(b) Permittee shall drill at least one (1) geothermal well during the term of this permit. The term of this permit shall not be extended by the State unless Permittee has commenced the drilling or has applied for the necessary permits to drill a well and is exercising diligence and good faith to complete the acquisition of such permits.

9. OPERATIONS

(a) Operations under this permit shall be conducted in a safe and workerlike manner in accordance with generally accepted good engineering practices and with due regard for the protection of life and property, preservation of the environment and conservation of natural resources.

(b) Permittee shall not drill a geothermal well on or into the permitted land without prior approval of the State. All drilling shall be performed subject to the terms of the PRC, this permit, and the regulations of the State.

(c) Before commencing the drilling of a well, Permittee shall notify the State of its intention

to drill. The notice shall contain the location and elevation above sea level of the derrick, proposed depth, bottom hole location, casing program, proposed completion program, and proposed testing program.

(d) Before commencing drilling operations, Permittee shall submit a contingency plan for the protection of personnel and equipment while drilling in rock strata known or suspected to contain hydrogen sulfide (H_2S). Permittee shall establish a training program to promote efficient safety procedures in an H_2S contaminated environment. An H_2S indicator and alarm shall be installed in areas suspected or known by the State to contain H_2S gas which may reach levels considered to be dangerous to the health and safety of personnel. The contingency plan, training program and detection system must be approved by the State.

(e) Geothermal resources shall not be sold, utilized or otherwise disposed of without the prior approval of the State. This permit does not grant Permittee the right to produce, commercially exploit, or otherwise utilize any discovered geothermal resources; nor does it authorize Permittee to construct generating plants, building, pipelines or other facilities for the production and utilization of geothermal resources.

(f) No well shall be perforated, redrilled, plugged back or altered without the prior approval of the State.

(g) Before work is commenced to plug and abandon any well, notice shall be given to the State showing the condition of the well and the proposed method of abandonment. No well may be abandoned unless prior approval of the method of abandonment has been obtained from the State.

10. ENVIRONMENTAL IMPACT

(a) Permittee shall and hereby agrees to abide by the regulations, conditions and mitigation, and all other measures designed to restrict, limit, modify, or minimize the environmental impact of Permittee's operations under this permit as set forth in the Mitigated Negative Declaration, State Clearinghouse No. 2005121125, prepared by the California Division of Oil, Gas, and Geothermal Resources and certified by the State Oil and Gas Supervisor on March 28, 2006, on file in the office of the State, and by reference made a part hereof and hereafter sometimes referred to as the "environmental document". Further, Permittee shall comply with all modifications of equipment and plans deemed necessary by the State to achieve the objectives set forth in the environmental document.

(b) If Permittee fails to comply with the conditions, restrictions and mitigation measures imposed under the environmental document, the State shall notify Permittee or its designated representative by telephone and written communication of the noncompliance, direct Permittee to cease all operations that are not in compliance with the environmental document, except emergency mitigative or corrective measures, and order Permittee to develop a remedial plan for the noncompliance which shall be implemented as soon as reasonably possible.

(c) Upon receipt of a notice of noncompliance, Permittee shall immediately cease all activities, except emergency mitigative or corrective measures. Permittee shall not resume its activities until the State has issued a written notice that the noncompliance has been corrected.

(d) Permittee's failure to comply with the applicable environmental document or remedial plan shall be considered a breach of the permit and subject to Paragraphs 29 and 30 of this permit. Additionally, provided Permittee has been notified of and failed to cure any such breach in accordance with Paragraph 29 of this permit, the State shall have the discretion to levy against the bond or other financial security agreement required by Paragraph 28 of this permit. In such event, the State may undertake measures to remedy the matter(s) of concern specified in the notice of noncompliance.

(e) The State shall make inspections as necessary during the term of the permit to verify compliance with the environmental document. All reasonable and necessary costs for the administration and implementation of such inspections shall be paid by the Permittee through a Standard Reimbursement Agreement or other suitable instrument. All costs shall be calculated under provisions of the State Administrative Manual and shall not exceed the State's actual costs.

11. LIABILITY AND INDEMNIFICATION FOR WASTE, DAMAGE AND LOSS

Permittee shall use all reasonable precautions to prevent waste of, damage to, or loss of natural resources and reservoir energy and shall be liable to the State for any such waste, damage or loss to the extent that it is caused by the negligence of, the breach of any provision of this permit by, or the noncompliance with any applicable statutes or regulations of the State by Permittee, or its employees, agents or contractors. Nothing in this permit shall diminish any other rights or remedies which the State may have in connection with any such negligence, breach or non-compliance. With respect to any other damage or loss, Permittee shall indemnify the State, its officers, agents and employees against all claims, demands, causes of action, or liability of any kind which may be asserted against or imposed upon the State, its officers, agents, or employees, by any third person or entity arising out of or connected with the issuance of this permit, operation thereunder, or the use by Permittee, its agents, employees or contractors of the permitted lands.

12. SUSPENSION OF OPERATIONS

In the event of any disaster or of pollution resulting from operations under this permit, Permittee shall immediately suspend all drilling operations, except those which are corrective and mitigative, and promptly notify the State. Drilling operations shall not be resumed until adequate corrective measures have been taken and authorization for resumption of operations has been given by the State. Permittee shall immediately suspend any drilling operations, except those which are corrective or mitigative, if the State determines that there is a substantial likelihood that continued operations could endanger public health or safety or cause serious damage to property or to the environment. Drilling operations shall not be resumed until the State has given its approval after determining that adequate corrective measures are feasible and have been taken to eliminate the likelihood of danger and damage.

13. SUBSIDENCE

Upon receipt of any evidence of subsidence or landslide of the surface of either the permitted or adjacent land, the State may determine that some or all further operations under this permit would or might aggravate or cause subsidence or landslides that could impair or interfere with the use of the permitted land or the areas adjacent to the permitted land or could cause

damage to other properties. The State shall notify Permittee of its determination and may require Permittee to suspend all or part of its operations under this permit. Any suspension of operations shall take effect not later than thirty (30) days from the date of the State's notice. Exercise of the right to require a total or partial suspension of operations is subject to the following restrictions:

(a) The determination may be made by the State at any time during the term of this permit but only at a meeting of the State Lands Commission following at least thirty (30) days written notice to Permittee that the State has received evidence of subsidence or landslides and proposes to determine whether some or all further operations under this permit would or might aggravate or cause subsidence or landslides that could impair or interfere with the use of the permitted land or the areas adjacent to the permitted land or could cause damage to other properties. At the Commission meeting Permittee may present facts and arguments relevant to the determination regarding subsidence or landslides. The notice and hearing requirements of this paragraph are not prerequisites to the suspension of operations that may be required by the State under Paragraph 12 of this permit.

(b) At least thirty (30) days prior to the Commission meeting, the State shall make available to Permittee for study all written and graphic information and opinions that are matters of public record that have been prepared by or for the State concerning subsidence and landslides of the permitted and adjacent land.

(c) Operations under this permit which have been suspended pursuant to this paragraph may be resumed by Permittee only in the manner and to the extent provided in a program approved by the State.

(d) Notwithstanding its approval of a program for total or partial resumption of operations, the State may require Permittee again to suspend operations in accordance with the provisions of this paragraph if the State receives evidence of further subsidence or landslides of the permitted or adjacent land.

During any period of total or partial suspension of operations pursuant to this paragraph, the rent, drilling and offset obligations of Permittee shall likewise be suspended to the extent that such rent, drilling and offset obligations are rendered impracticable or unreasonable as a result of the State's notice to suspend operations.

14. ENTRY BY STATE

The State, or persons authorized by the State, shall have the right to go upon the permitted land at all reasonable times for purposes including, but not limited to, inspecting, maintaining, repairing and protecting the property and all equipment on it, placing signs upon the property, responding to a fire, taking police action and inspecting all operations of Permittee. No entry by the State, or by persons authorized by the State, shall give Permittee any right to charge for nor subject the State to liability for any loss of occupation or quiet enjoyment of the premises.

15. RECORDS AND REPORTS

Permittee shall keep accurate records of its operations and shall file with the State the following information in the time and manner specified:

Permittee shall supply to the State all physical and factual exploration results, logs, surveys and any other data in any form resulting from operations under this permit or from any surveys, tests, or experiments conducted on the permitted land by Permittee or by any person or entity acting with the consent of Permittee or with information or data provided by Permittee. Permittee shall also supply to the State the results of all geological, geophysical or chemical tests, experiments, reports and studies, interpretive or factual, including but not limited to reservoir studies and tests, experiments, reports or studies relating to reinjection or reservoir depletion, irrespective of whether the results of such tests, experiments, reports or studies contain sensitive, proprietary or confidential information or trade secrets. All of the aforementioned data and results shall be supplied to the State within thirty (30) days of completion of any recorded portion of the operation, test, experiments, report or study from which the data or results are obtained. Permittee waives any statutory or other rights or objections it might have to prevent disclosure of any tests, experiments, reports or studies. All data and documents supplied by Permittee pursuant to this paragraph shall be deemed to have been "obtained in confidence" for purpose of Government Code section 6254(e) and may be disclosed to other persons only with the written consent of Permittee or upon a determination by the State that their disclosure is in the public interest.

16. EXAMINATION OF BOOKS

Permittee waives all rights it may have to prevent the State's examination at reasonable times of the books and records of any individual, association or corporation which has transported for, or received from, Permittee any geothermal resources produced from the permitted land. Permittee waives all rights it may have to prevent the State's examination at reasonable times of the books and records of any such individual, association or corporation with respect to such individual's, association's or corporation's operations, wells, improvements, machinery and fixtures used on or in connection with the permitted land.

17. WAIVER OF USE OF DATA

Permittee waives any statutory or other right to prevent disclosure to the State, or a duly authorized employee or representative of the State, of any information, reports, data or studies of any kind filed by Permittee with any federal, state or local agency relating to the permitted land, the geothermal resources thereunder or any operations performed under this permit, irrespective of whether such information, reports, data or studies contain sensitive, proprietary or confidential information or trade secrets. All information, reports, data or studies of any kind filed by Permittee with any federal, state or local agency, including all information filed with the State as required by this permit, shall be available at all times for any use of the State or its duly authorized representatives. Any information, reports, data or studies obtained by the State from any public agency and which are not public records shall be deemed to have been "obtained in confidence" for purposes of Government Code section 6254(e) and may be disclosed to other persons only with the written consent of Permittee or upon a determination by the State that their disclosure is in the public interest.

18. NOTICES

All notices to be given under this permit shall be deemed to have been fully given when made in writing and deposited in the U.S. Mail with postage prepaid, and addressed as follows:

To the State: California State Lands Commission
Mineral Resources Management Division
200 Oceangate, 12th Floor
Long Beach, CA 90802

To Permittee: Deep Rose Development, LLC
Attention: Mr. Charles E. Harris
809 Broadway, Suite 3
Sonoma, CA 95476

The addresses to which the notices shall be mailed may be changed by written notice given by one party to the other as provided above. Nothing contained in this paragraph shall preclude the giving of any notice by personal service to Permittee or its officers or agents. All payments specified in this permit shall be made to the State at the address provided for notices to the State.

19. PRESERVATION OF PROPERTY, WASTE DISCHARGE

Permittee shall perform all work with due regard for the preservation of the permitted land and with due regard to the environmental impact of its operations in accordance with the following terms and conditions:

(a) Permittee shall remove the derrick and other equipment and facilities within sixty (60) days after Permittee has stopped using them in its operations.

(b) All permanent operating sites shall be landscaped or fenced so as to screen them from public view to the maximum extent possible. The landscaping or fencing shall be approved in advance by the State and shall be kept in good condition.

(c) All drilling operations shall be conducted in a manner that will eliminate, as far as practical, dust, noise, vibration and noxious odors. Operating sites shall be kept neat, clean and safe. Drilling dust shall be controlled to prevent its widespread deposition. Dangerous material deposited on trees and vegetation shall be removed. The determination as to what material is dangerous rests with the State.

(d) Permittee shall file with the Regional Water Quality Control Board a report on any proposed waste discharge in accordance with section 13260 of the Water Code. Water shall be discharged in accordance with requirements prescribed by the Regional Water Quality Control Board. The State Lands Commission and any other State agency having jurisdiction over the affected lands shall also approve in advance the place and manner of such waste discharge.

(e) Permittee shall notify the California Department of Fish and Wildlife before beginning any operations which may adversely affect fish and wildlife resources. Permittee shall conduct its

operations in a manner which will not interfere with the right of the public to fish upon and from the public lands of the State and which will not preclude the right of the public to reasonable use of public lands and waters.

(f) Any operations disturbing the surface of the soil, including road building, construction and movement of heavy equipment, shall be conducted in a manner that will not result in unreasonable damage to trees and plant cover, in soil erosion or in degradation of the waters of the State, including fish and aquatic life habitat.

(g) Pollution of the ocean and tidelands, rivers, lakes or other bodies of water, and any impairment of or interference with bathing, fishing, or navigation in any such body of water are prohibited. No brine, minerals or refuse of any kind from any well or works shall be permitted to be deposited on or pass into the ocean, rivers, lakes or other bodies of water without specific written authorization from the State.

(h) No permanent filled lands, piers, platforms or other fixed structures shall be constructed, used, maintained or operated on any tide and submerged lands covered by this permit without obtaining all permits required by and complying with all applicable provisions of federal, state and local law, and without securing the written authorization of the State.

(i) Permittee shall maintain existing roads and bridges on or serving the permitted land in a condition at least equal to that before Permittee's use. New roads and bridges shall be located, constructed and maintained in accordance with applicable state and local specifications.

(j) Permittee shall compensate the surface owner at market value for all timber cut from the permitted land or otherwise damaged or destroyed. Permittee shall not obtain borrow pit material from the permitted land without permission from and payment of its market value to the State.

(k) Permittee shall protect from damage and repair or replace, when damaged by Permittee, all improvements, structures, telephone lines, trails, ditches, pipelines, water developments, fences, crops and other property of other persons, including the State, which are on or near the permitted land.

(l) Permittee shall control access to drilling sites by the public to prevent accidents or injury to persons or property.

(m) Permittee shall pond drilling mud in a safe manner and place and, where required by the State, post the site with danger signs and fence it in order to protect persons, domestic animals and wildlife. Upon completion of drilling, Permittee shall dispose of the mud or allow it to dry in place and cover it with a protective layer of soil. Any drilling muds that are determined to be hazardous by any federal, state, or local agency, shall be disposed in the manner required by the applicable statute or regulation.

(n) Permittee shall keep to a reasonable number and size any areas to be cleared and graded for drilling sites. Any clearing and grading shall be subject to State approval.

(o) Permittee shall continuously monitor effluent gases at the wellhead in order to determine the emissions of hydrogen sulfide and other toxic materials. Permittee shall submit to the State Air Resources Board and to any Air Pollution Control District having jurisdiction, as required, the results of complete gas analyses, including toxic materials that would exist in vapor form at the wellhead temperature.

(p) Permittee shall keep noise levels for drilling or any other phase of operations to a minimum and at no time shall allow the noise level to exceed sixty-five (65) decibels at a distance of one-half (1/2) mile from the drill site. Permittee shall equip all internal combustion engines with mufflers and shall use mufflers or silencers during well testing and cleaning. Permittee shall make all noise level measurements in conformance with American Standards Institute Code section 1.13-1971 (Measurement of Sound Pressure Levels).

(q) The above requirements are in addition to, and shall not be construed as limitations upon, all other regulations, restrictions and measures provided in this permit which are designed to restrict, modify or minimize the environmental impact of operations under this permit.

20. EXISTING RIGHTS

This permit is issued subject to all existing rights at the effective date of this permit, and such rights shall not be affected by the issuance of this permit. If the permitted land has been sold by the State of California subject to a mineral reservation, Permittee shall comply with the conditions and limitations prescribed by the law including, but not limited to, those contained in section 6401 of the PRC.

21. RESERVATION OF RIGHTS

The State reserves whatever rights it may have to lease, sell or otherwise dispose of any part of the surface or subsurface of the permitted land which is not required by Permittee in its operations under this permit. This reservation includes the right of the State at any time during the term of this permit, or any extension thereof, to grant to persons whatever easements or rights-of-way in the permitted land the State determines to be necessary or appropriate, provided that easements which unreasonably interfere with Permittee's operations shall not be granted.

22. MULTIPLE USE

This permit and operations under it shall be consistent with the principle of multiple use of public lands and resources as provided in section 6902 of the PRC.

23. COORDINATION OF ACTIVITIES

Permittee shall coordinate activities with other State permittees or lessees for the development of geothermal resources on lands nearby or adjacent to the permitted land. Such coordination includes, but is not limited to, giving State permittees or lessees the right to use Permittee's access roads.

24. SURVEYS BY STATE

The State shall have the right to go upon the permitted land for the purpose of conducting

surveys, tests or experiments using any geological, geochemical, geophysical or other method, including core drilling, for determining the presence on or in the permitted land of any mineral resource, including, but not limited to, oil, hydrocarbon gas, other hydrocarbons, and geothermal resources, provided that such surveys, tests, or experiments do not unreasonably interfere with or endanger Permittee's operations.

25. COMPLIANCE WITH LAWS

Permittee shall comply with all valid federal, state and local laws applicable to Permittee's operations, including, but not limited to, the applicable provisions of Division 3 and 6 of the PRC and the applicable regulations adopted under the authority of these statutory provisions.

26. EMPLOYMENT PRACTICES

Permittee shall not discriminate against any person in its employment practices because of race, color, ancestry, national origin, religion, sex, age, marital status or physical disability, AIDS, AIDS-related condition, or sexual orientation. Permittee shall carry at all times full Worker's Compensation Insurance covering all employees engaged in operations under this permit.

27. TAXES

Permittee shall pay, when due, all taxes and assessments lawfully assessed and levied under the laws of the United States, the State of California or any of the State's political subdivisions against Permittee's interest in the permitted land, against improvements, property or assets of Permittee situated upon the permitted land, against the geothermal resources and other products produced from the permitted land and against all other rights of Permittee arising out of this permit.

28. BOND AND INSURANCE

(a) Within thirty (30) days of the effective date of this permit, Permittee shall furnish, and maintain until released by the State, a bond, or other security device approved by the State, in the sum of fifty thousand dollars (\$50,000.00) and in favor of the State for its exclusive use and benefit, guaranteeing the faithful performance by Permittee of the terms and conditions of this permit. This requirement shall be separate from any other bonding provisions of the PRC and the regulations of the State.

(b) At the option of the State and within thirty (30) days after written notice, Permittee shall procure and maintain public liability, property damage or other insurance for the benefit of the State in an amount satisfactory to the State.

29. CANCELLATION

At any time before the discovery of commercially valuable deposits of geothermal resources on the permitted land, the State may cancel this permit upon the failure of Permittee, after thirty (30) days written notice and demand for performance, to cure any breach or default of the terms and conditions of this Permit or to exercise due diligence and care in the prosecution of the prospecting or development work in accordance with the terms and conditions of this permit. After the discovery of commercially valuable deposits of geothermal resources on the permitted land, the

State may cancel this permit upon failure of Permittee, after ninety (90) days written notice and demand for compliance, to cure any breach or default of the terms and conditions of the permit. If the permit is cancelled, Permittee shall comply with the restoration and removal requirements of this permit, and shall have a reasonable time within which to remove any property owned or used by the Permittee in connection with its operations under the permit.

30. WAIVER OF BREACH

The waiver by the State of any breach or default shall not constitute a waiver of any other breach or default of the same or any other provision of this permit, regardless of the State's knowledge of the other breaches or defaults. The State's acceptance of monies from Permittee shall not constitute a waiver of any preceding breach or default, other than failure of Permittee to pay the particular monies accepted, regardless of the State's knowledge of the preceding breach or default at the time of its acceptance of the monies. Acceptance of monies by the State after termination of the permit shall not constitute a reinstatement, extension, or renewal of the permit or revocation of any notice or other act by the State.

31. SOLVENCY

If at any time during the term of this permit, Permittee makes a voluntary assignment of its assets for the benefit of its creditors, or an attachment is levied and permitted to remain for any unreasonable length of time upon the interest, rights or privileges of Permittee in this permit or in any geothermal resources produced from the wells drilled by Permittee upon the permitted land, the State may terminate the permit by giving written notice to Permittee of its election to do so.

32. ASSIGNMENT AND SUBLETTING

Permittee may assign or transfer this permit or any interest it may have in this permit and may sublet all or part of the permitted land as provided in sections 6804 and 6925 of the PRC. The State's written consent to an assignment, transfer or sublease may be conditioned upon, among other things, the State's participation in any consideration received by Permittee or its successors in interest for the assignment, transfer or sublease if this participation is deemed by the State Lands Commission to be in the best interests of the State. The consent to any assignment, transfer or sublease shall not be deemed a consent to any subsequent assignment, transfer or sublease. Any assignment, transfer or sublease made without the State's consent, whether voluntary or by operation of law, shall be of no effect and shall be a breach that gives to the State the right to cancel this permit. Permittee may subcontract, without State approval, parts of the work to be performed under this permit so long as Permittee remains responsible to the State for the work that is subcontracted. Upon approval by the State of any assignment, transfer or sublease, the assignee, transferee or sublease shall be bound by the terms of this permit to the same extent as if such assignee, transferee or sublessee were the original Permittee, any conditions in the assignment, transfer or sublease to the contrary notwithstanding. Permittee shall submit to the State documentation of any acquisition, merger, name change, corporate reorganization, or any other organizational restructuring that affects the entity which holds this permit.

(b) For purposes of this paragraph, any transaction or conveyance, or series of

transactions or conveyances occurring within a period of six consecutive months, regardless of form or structure, that results in the transfer of either a controlling interest in Permittee or a fifty percent (50%) or greater ownership interest in any business entity owning a controlling interest in Permittee, shall be deemed an assignment or transfer of the permit for which State approval is required. A "controlling interest" in Permittee is thirty-five percent (35%) or more of: (i) the voting stock of the Permittee if it is a corporation; (ii) the general partnership interest if the Permittee is a general or limited partnership; or (iii) the membership interest if the Permittee is a limited liability company.

33. QUITCLAIM

Permittee may file with the State at any time a written quitclaim of all its rights under this permit or of any portion of the permitted land as provided in sections 6804.1 and 6914 of the PRC.

34. SURRENDER OF PREMISES

If Permittee is not the surface owner, Permittee shall surrender possession of the permitted land at the expiration of this permit or its sooner termination with all improvements, structures and fixtures in good condition, with the exception of derricks which shall be removed completely, or the State may require Permittee to remove, within ninety (90) days, designated improvements, structures and fixtures which were put upon the permitted land by Permittee and to restore and replant the permitted land to the extent and in the manner specified by the State. All removal and restoration costs shall be paid by Permittee. At the option of the State, Permittee shall plug and abandon all wells in a manner approved in writing by the State Lands Commission and by the Division of Oil, Gas and Geothermal Resources. The wells shall be abandoned within the time specified by the State and at the expense of Permittee.

35. FORCE MAJEURE

Except for rent and/or royalties, the obligations imposed upon Permittee by this permit may be suspended during the time Permittee is prevented from complying with them by wars, strikes, riots, acute and unusual labor or material shortages, acts of God, laws, rules and regulations of any federal, state, county or municipal agency or such other unusual conditions which are beyond the control of Permittee. In order for any obligation imposed upon Permittee to be suspended, Permittee must inform the State in writing as soon as possible that a condition warranting suspension has arisen and obtain the State's concurrence that a force majeure exists. Permittee shall inform the State in writing as soon as possible when such condition ceases to exist.

36. SEVERABILITY

If any provision of this permit is judicially determined to be invalid, it shall be considered deleted from this permit and shall not invalidate the remaining provisions.

[Signatures on next page]

CALIFORNIA STATE LANDS COMMISSION

10/20/15

Date

By: Marina Voskanian
Marina Voskanian, P.E.,
Division Chief
Mineral Resources Management Division

10/12/15

9 Oct 2015

Date

PERMITTEE *

Deep Rose Development, LLC

By: Terry R. Metcalf
TERRY R. METCALF
MANAGER MEMBER

By: Charles E. Harris
CHARLES E. HARRIS
Secretary

Approved as to form:

By: Mark Meier
Mark Meier, Chief Counsel
California State Lands Commission

* In executing this document, the following are required:

Corporations:

1. Affix Corporate Seal.
2. Attach certified copy of the resolution or other document authorizing its execution on behalf of the corporation.

Individuals:

1. Attach acknowledgment of Signature.

EXHIBIT A

RENT AND ROYALTIES UNDER PREFERENTIAL LEASE

In the event a preferential lease is executed pursuant to the terms of this permit, lessee shall pay to the Commission the following rent and royalties with respect to geothermal resources produced, saved and sold from the land included within said lease:

(a) An annual rent, payable in advance, of \$10 per acre or fraction thereof for each year, or fraction of a year, until such lease is terminated.

(b) A royalty of 12.5% of the Gross Value of Geothermal Resources produced from or attributable to the leased land, which royalty shall be due and payable not later than the 25th day of the calendar month following the calendar month of production. The "Gross Value of Geothermal Resources" shall be calculated monthly as either: (i) the gross revenue received from the sale of steam, brines from which no minerals have been extracted, and associated gases at the point of delivery to the purchaser thereof, exclusive of charges made or incurred with respect to transmission or other services or processes and approved by the Commission, provided that the contract for such sale be approved in advance by the Commission; or (ii) the value determined by multiplying the gross value associated with electrical power generated from the geothermal resources by an Agreed Percentage. The "Agreed Percentage" shall be established through negotiation between the lessee and the Commission prior to issuance of the lease.

(c) A royalty of 5% of the gross revenue received from the sale of mineral products or chemical compounds recovered from geothermal fluids in the first marketable form as to each such mineral product or chemical compound, which royalty shall be due and payable not later than the 25th day of the calendar month following the calendar month of production.

(d) If, after the discovery of geothermal resources in commercial quantities, the total royalties due to the Commission during any calendar year do not equal or exceed a sum equal to \$20 per acre for each acre or fraction thereof then included in the lease, the lessee shall, within 60 days after the end of the year, pay such sum as is necessary to equal a minimum royalty of \$20 per acre.

(e) Royalty payments shall be made pursuant to the provisions of subdivisions (a) and (b) hereof for all geothermal resources used by lessee and not sold, with the gross revenue therefrom to be determined by the Commission as though said geothermal resources had been sold to a third person at the then prevailing market price in the same market area and under the same marketing conditions; provided, however, that no royalties shall be payable for steam or other produced fluids used by the lessee in the production of any geothermal mineral products or chemical compounds recovered from geothermal fluids in first marketable form subject to the payment of royalties under subdivision (a) or (b) hereof.

EXHIBIT B

PROSPECTING PROGRAM and TIME SCHEDULE

Section 6910 of the PRC requires applicants for geothermal prospecting permits submit for the Commission's approval a prospecting program and time schedule that shall be specified in the terms and conditions of the permit. A typical prospecting program would include all exploration activities, such as surveys, tests, or experiments using geological, geophysical, or other exploratory methods, and all drilling activity.

Section 6910 of the PRC further requires that, at a minimum, each prospecting permit shall require the permittee to drill one geothermal well during the term of the permit. For purposes hereof, a "geothermal well" is a well drilled to a sufficient depth to determine the presence of commercially valuable geothermal resources and to measure the production potential thereof. A shallower well, sometimes referred to as a temperature gradient hole, does not satisfy the criteria for a geothermal well. A temperature gradient hole is typically drilled to depths between 500 and 2,000 feet for the purpose of assessing the subsurface heat of an area and would be useful as a tool for selecting a site for a deeper geothermal well.

Prospecting Program:

The prospecting program for this permit shall consist of the following:

1. Drill and test one geothermal well.
2. At the option of Permittee, drill and test one or more additional geothermal wells.

Time Schedule:

The time schedule for completion of the prospecting program for this permit shall coincide with the term of this permit. The actual time required for drilling and testing a deep well is expected to be no less than 4 months, but no more than 6 months. However, a specific date for commencing drilling operations cannot be determined until arrangements have been made for drilling equipment, contractors, and site preparation.

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document, to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

ACKNOWLEDGMENT

STATE OF CALIFORNIA
COUNTY OF LOS ANGELES

}

On October 20, 2015, before me, **ALICIA SABRY**, Notary Public personally appeared **MARINA VOSKANIAN** who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her authorized capacity, and that by her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.


Signature



(Seal)

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached and not the truthfulness, accuracy, or validity of that document.

ACKNOWLEDGMENT

State of California)
County of Sonoma)

On October 9, 2015, before me, Alan L. Weinstein, a notary public, personally appeared CHARLES E. HARRIS, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed this instrument.

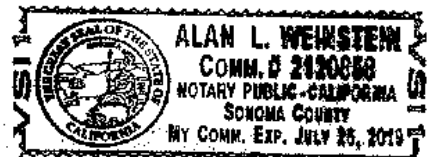
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal

Signature: _____

My Commission Expires: July 26, 2019

(SEAL)



JURAT WITH AFFIANT STATEMENT

State of Hawaii

County of HAWAII

3rd Judicial Circuit

ss.

☒ See attached document (Notary to cross out lines 1-8 below.)

☐ See statement below (Lines 1-8 to be completed only by document signer[s].)

1
2
3
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8

Signature of Signer No. 1

Signature of Signer No. 2

Document Description:

Geo Resources
prosp. Permit

Document Date: 10.12.15

No. Pages: 15

Subscribed and sworn to (or affirmed) before me

this 12 day of October, 2015

by

(1) TR METCALF
Name of Signer

and

(2) _____
Name of Signer

NOTARY CERTIFICATION	
Date: <u>10-12-15</u>	# Pages: <u>15</u>
Name: <u>Geraldine C. Cardoza</u>	Third Circuit
Doc. Description: <u>Geo Resources</u>	
<u>prosp. Permit</u>	
<u>Geraldine C Cardoza</u>	
Notary Signature	

Notary's Signature

Date

Geraldine C Cardoza
Printed Name of Notary

My commission expires: 10.15.2015

Place Notary Seal or Stamp Above