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OIL CONSERVATION DIVISION # 0. 804 2488 SANTA FE, NEW MEXICO 87501

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b. Type of Well	Geothermal Producer Low-Temp Thermal	☐ Core Hole 🛛	Temp Observation Injection/Disposal		None None	HSSP-(d-Shroubout *
2 Name of Operator Lightning Doc	k Geothermal HI-01, L	LC			9 Well No. CH-1	
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CH-1 will be drilled utilizing conventional mud rotary and coring drilling methods. Before the mud rotary rig arrives on location, a 10-5/8" hole will be drilled to 50'and 7" conductor pipe will be set to 50' and cemented. A 5-7/8" mud rotary hole will be drilled from 50' to 750'± utilizing a 5-7/8" tricone bit. 4.5" casing (PQ core rod) will be installed into the bore hole from surface to 750'±. Cement will be gravity fed down the annular space between the conductor pipe and 4.5" casing. This cement will stabilize the casing and secure the bore hole. The cement will extend from surface to 150'±. The casing will be cemented to only 150' because the casing will be removed from the bore hole prior to abandonment. After the 4.5" casing is set in place the core rig will begin coring utilizing HQ core rods and bits (3.782") from 750'± to 3000'±. If formation or down hole environment warrants the reduction of hole size, then the rig will core with NQ rod and bit (2.98"). Once core is drilled and retrieved from 3000', the rig will pull out of the hole and a temperature/pressure/survey (PTS) will be run on the bore hole. The PQ casing will be removed following the PTS survey and within 30 days the bore hole will be plugged and abandoned from the bottom up with cement according to Federal and State regulations and requirements.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM. If proposel 5 to everyon or prog back, give data on pretent productive zone and proposed new productive cone; Give plouvous preventer program, if any.	ive.
t hereby certify that the information above is true and complete to the best of my knowledge and belief.	-
Agent for Lightning Dock Genthermal, HI-01, LLC 09/24/2014	
(Dut there for State Cm)	ж
LONDITIONS OF APPROVAL, IF ANY: See Attached COAS,	side/

OIL CONSERVATION DIVISION P O BOX 1688 SANTA FE, NEW MEXICO 87801

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ta. Type of Work	Drul 🔯	Deepen 🗍	Plug Back	Nor	Agreement Name
b. Type of Well	Geothermal Producer Low Temp Thermal	Core Hole 🛛	Temp Observation Injection/Disposal		or Lease Name . NM-34790
2 Name of Operator Lightning Doc	k Geothermal HI-01, L	LLC	and distribution to the second se	के अद्भार	CH-2
). Address of Operat Kearns Bldg. 1		. 600, Salt Lake City, U	T 84104		and Food, or Wilgest htning Dock KGRA
4. Location of Well		LOCATED 5132FE			
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			3000 feet	Tertiary volcanics Paleozoic lime	20. Rotary or C.T. Rotary/Core
21. Elevations (Show 4200	Whether DF, RT, etc.)	DIA SING & Status 1948 Bu	Americ	an Drilling Corp.	10/01/2014
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CH-2 will be drilled utilizing conventional mud rotary and coring drilling methods. Before the mud rotary rig arrives on location, a 10-5/8" hole will be drilled to 50'and 7" conductor pipe will be set to 50' and cemented. A 5-7/8" mud rotary hole will be drilled from 50' to 750'± utilizing a 5-7/8" tricone bit. 4.5" casing (PQ core rod) will be installed into the bore hole from surface to 750'±. Cement will be gravity fed down the annular space between the conductor pipe and 4.5" casing. This cement will stabilize the casing and secure the bore hole. The cement will extend from surface to 150'±. The casing will be cemented to only 150' because the casing will be removed from the bore hole prior to abandonment. After the 4.5" casing is set in place the core rig will begin coring utilizing HQ core rods and bits (3.782") from 750'± to 3000'±. If formation or down hole environment warrants the reduction of hole size, then the rig will core with NQ rod and bit (2.98"). Once core is drilled and retrieved from 3000', the rig will pull out of the hole and a temperature/pressure/survey (PTS) will be run on the bore hole. The PQ casing will be removed following the PTS survey and within 30 days the bore hole will be plugged and abandoned from the bottom up with cement according to Federal and State regulations and requirements.

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t hereby certify that the information above to true and so	omplete to the best of my knowledge and brief.	
ance David W Janney, PG	Agent for Lightning Dock Geothermal HI-01, LLC	09/24/2014
This space for State Use;		
LONDITIONS OF APPROVAL, IF ANY See AH	tached COAs.	DATE 10/7/2014

OIL CONSERVATION DIVISION F O. BOX 1988

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3. Address of Operation Kearns Bldg. 1		600, Salt Lake City, UT	84104		ng Dock KGRA
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CH-3 will be drilled utilizing conventional mud rotary and coring drilling methods. Before the mud rotary rig arrives on location, a 10-5/8" hole will be drilled to 50'and 7" conductor pipe will be set to 50' and cemented. A 5-7/8" mud rotary hole will be drilled from 50' to 750'± utilizing a 5-7/8" tricone bit. 4.5" casing (PQ core rod) will be installed into the bore hole from surface to 750'±. Cement will be gravity fed down the annular space between the conductor pipe and 4.5" casing. This cement will stabilize the casing and secure the bore hole. The cement will extend from surface to 150'±. The casing will be cemented to only 150' because the casing will be removed from the bore hole prior to abandonment. After the 4.5" casing is set in place the core rig will begin coring utilizing HQ core rods and bits (3.782") from 750'± to 3000'±. If formation or down hole environment warrants the reduction of hole size, then the rig will core with NQ rod and bit (2.98"). Once core is drilled and retrieved from 3000', the rig will pull out of the hole and a temperature/pressure/survey (PTS) will be run on the bore hole. The PQ casing will be removed following the PTS survey and within 30 days the bore hole will be plugged and abandoned from the bottom up with cement according to Federal and State regulations and requirements.

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i hereby certify that the information above is true and complete to	the best of my knowledge and belief.
me David W. Janney, PG Tile	Agent for Lightning Dock Geothermal, HI-01, LLC 09/24/2014
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CONDITIONS OF APPROVAL, IF ANY See Attached	Environmental Engineer DAVE 10/7/2014 COAS.

OIL CONSERVATION DIVISION P 0. 80A 2988 SAMTA PE NEW MEXICO 87801

Form 6-10) Acutted 10-1-14 Boulsed 10-1-28

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5,87	5"	4.5"	11.7#	750),	0.5 cubic	yards	GR
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CH-4 will be drilled utilizing conventional mud rotary and coring drilling methods. Before the mud rotary rig arrives on location, a 10-5/8" hole will be drilled to 50' and 7" conductor pipe will be set to 50' and cemented. A 5-7/8" mud rotary hole will be drilled from 50' to 750'± utilizing a 5-7/8" tri-cone bit. 4.5" casing (PQ core rod) will be installed into the bore hole from surface to 750'±. Cement will be gravity fed down the annular space between the conductor pipe and 4.5" casing. This cement will stabilize the casing and secure the bore hole. The cement will extend from surface to 150'±. The casing will be cemented to only 150' because the casing will be removed from the bore hole prior to abandonment. After the 4.5" casing is set in place the core rig will begin coring utilizing HQ core rods and bits (3.782") from 750'± to 3000'±. If formation or down hole environment warrants the reduction of hole size, then the rig will core with NQ rod and bit (2.98"). Once core is drilled and retrieved from 3000', the rig will pull out of the hole and a temperature/pressure/survey (PTS) will be run on the bore hole. All drilling fluids and cutting will be managed according to Federal and State regulations. The PQ casing will be removed following the PTS survey and within 30 days the bore hole will be plugged and abandoned from the bottom up with cement according to Federal and State regulations and requirements.

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David James, 76	Agent for Lightning Dock Geothermal, HI-01, LLC	09/27/2014
(Phis space for State Use)		F Comments of the Comments of
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Lightning Dock Geothermal (HI-01) LLC Project (GTHT-001) Proposed Core Holes 1 - 4 (CHs: 1-4)

G-101 Form OCD Artesia District Office Conditions of Approval (10/7/2014)

 The operator shall plug and abandon all core holes following the New Mexico Office of State Engineer requirements within 30 days of core hole completion or by extension request approval of the OCD.

Please be advised that OCD approval does not relieve Lightning Dock Geothermal HI-01, L.L.C. from responsibility should its operations pose a threat to ground water, subsurface trespass, water supply/diversion, surface water, human health or the environment. In such event, OCD may order the operator to plug and abandon its core holes pursuant to the geothermal regulations. In addition, OCD approval does not relieve Lightning Dock Geothermal HI-01, L.L.C. of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Chavez, Carl J, EMNRD

From:

Chavez, Carl J, EMNRD

Friday, June 29, 2012 11:45 AM Sent:

To: Bailey, Jami, EMNRD

Cc: Brooks, David K., EMNRD; Sanchez, Daniel J., EMNRD; VonGonten, Glenn, EMNRD; Dade,

Randy, EMNRD; Shapard, Craig, EMNRD

FW: Lightning Dock/Los Lobos Well 63-7 Subject:

OCD G-101 Amended Conditions of Approval 6-29-2012.pdf **Attachments:**

Jami:

Please find below in the highlighted yellow text message (see "G-101(C)") the basis for the attached OCD G-101 Amended Conditions of Approval (COA) stemming from Los Lobo's concerns about the "3,723 feet" Well 63-7 casing and cement depth cited in the original G-101 issued by the OCD.

The G-101 Amended COA for Well 63-7 reflects the confirmed casing and cement depth requirement (requirement) of 2,200 feet after receipt from The Office of the State Engineer of the AmeriCulture State Well No. 2 total well depth record of 2,100 feet. The AmeriCulture well depth determination was required after the OCD Attorney Mr. David Brooks excluded any geothermal permit and project related fresh water supply wells within ½ mile of Well 63-7 from OCD discharge permit (GTHT-001) and the minimum injection well casing and cement requirement. The OCD later issued approval of the G-112 with COA that reflected the confirmed casing and cement depth of 2,200 feet.

By receipt of this OCD issued G-101 Amended COA (6/29/2012), the original G-101 has been amended.

Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Department

Oil Conservation Division, Environmental Bureau

1220 South St. Francis Drive, Santa Fe, New Mexico 87505

Office: (505) 476-3490

E-mail: CarlJ.Chavez@State.NM.US

Website: http://www.emnrd.state.nm.us/ocd/

"Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the

Nation?" To see how, please go to: "Pollution Prevention & Waste Minimization" at

http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental

From: Michelle Henrie [mailto:michelle@mhenrie.com]

Sent: Wednesday, June 20, 2012 6:20 PM

To: Chavez, Carl J, EMNRD; Brooks, David K., EMNRD; Dade, Randy, EMNRD

Cc: 'Cotter, Jeff'; 'Michael Hayter'; 'Janney, David'; 'Ben Barker'; Sanchez, Daniel J., EMNRD; VonGonten, Glenn, EMNRD;

Shapard, Craig, EMNRD

Subject: RE: Lightning Dock/Los Lobos Well 63-7

Carl,

Regarding the G-101, issue A below, please see attached well logs and records that were filed with OCD regarding AmeriCulture's State Well #2—the well that you are concerned about. The attachment contains a cover page and pages 40-48 of the file. They logs and records verify that the depth of this well is 910'.

I think OCD needs to rely on the records that operators file with OCD. I do not understand why OCD would put aside these records and embark on "due diligence", potentially delaying the processing of this paperwork. Please, let's get this done.

Michelle

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]

Sent: Wednesday, June 20, 2012 4:40 PM

To: Michelle Henrie; Brooks, David K., EMNRD; Dade, Randy, EMNRD

Cc: Cotter, Jeff; Michael Hayter; Janney, David; Ben Barker; Sanchez, Daniel J., EMNRD; VonGonten, Glenn, EMNRD;

Shapard, Craig, EMNRD

Subject: RE: Lightning Dock/Los Lobos Well 63-7

Michelle:

Good afternoon. Please see the OCD responses to Los Lobos inquiries below in red text.

Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM

New Mexico Energy, Minerals & Natural Resources Department

Oil Conservation Division, Environmental Bureau

1220 South St. Francis Drive, Santa Fe, New Mexico 87505

Office: (505) 476-3490

E-mail: CarlJ.Chavez@State.NM.US

Website: http://www.emnrd.state.nm.us/ocd/

"Why Not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward With the Rest of the

Nation?" To see how, please go to: "Pollution Prevention & Waste Minimization" at

http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental

From: Michelle Henrie [mailto:michelle@mhenrie.com]

Sent: Tuesday, June 19, 2012 11:10 AM

To: Brooks, David K., EMNRD; Chavez, Carl J, EMNRD; Dade, Randy, EMNRD

Cc: Cotter, Jeff; Michael Hayter; Janney, David; Ben Barker

Subject: Lightning Dock/Los Lobos Well 63-7

Good morning everyone.

I wanted to regroup on Well 63-7 and make sure we are all in the loop.

G-101.

- A. We all discussed the 6/6/12 Conditions of Approval for Form G-101 via teleconference 6/8/12. After that call, David Janney forwarded by email on 6/11/12 follow-up information relating to Condition 2(a) (depth of casing). OCD received OSE drill permit and is currently working to verify and confirm the actual total depth (TD) of the well from the well owner and the OSE, while reviewing OCD well files. The TD will help to finalize the OCD's G-112 review. In addition, it may also apply to the more recent G-112 for Well 45-7, for which the OCD has recently received G-104 and other associated forms from Los Lobos. Los Lobos should realize that similar to Injection Well 63-7 where public notice was required, Well 45-7 will also require public notice and Los Lobos needs to evaluate the deepest fresh water supply well TD within ½ mile from Well 45-7 and provide the information, logs, etc. to the OCD to confirm similar to the Injection Well 63-7.
- B. My "to do" list shows that you still need information relating to Condition 4 (the timing of MIT testing). Our team is working on this and I will try to get you something by the end of the day. Contrary to the last telephone discussion of deferral of the MIT procedure to another date, the OCD now requests the procedure ASAP is Los

Lobos is seeking an alternative MIT method than the standard EPA 5-Year MIT. This issue was raised by Ben Barker in the past and after discussion with the OCD UIC Director and Engineering Bureau Staff was rejected. Therefore, the OCD requests the alternative MIT procedure up front in order to avoid any confusion on the MIT process for any/all injection wells in the future. The OCD requires the MIT within a specified timeframe from well completion.

C. Our understanding is that Amended Conditions of Approval would be considered after your office received the items mentioned above. Yes, the QCD can amend the COAs and/or proceed with a G-112 approval that could modify conditions of the G-101. Either way, the OCD will communicate with Los Lobos to resolve this.

G-112.

- A. The 20-day waiting period for Form G-112 closed on 6/14/12. Did your office receive any requests for hearing? No.
- B. Last week my office hand delivered to your office (addressed to Carl) a rider changing the coverage of Los Lobos' bond to include 63-7. Yes, the OCD received it and is currently processing the bond rider.
- C. Also on my "to do" list, I will send you a letter today stating how the application meets the requirements of NMAC 19.14.93.8(C). Ok, David Brooks is the lead on this.
- D. Do you need anything more before you can issue the G-112? We are planning to provide Forms G-104 through -107 for 63-7 after the well has been drilled. Yes, this makes sense and the G-104 with associated G-Forms must be approved by the OCD before any injection can occur into the well.

What am I missing? We are looking forward to getting everything finalized so we can move forward with this well. I can't think of anything right now, but public notices for any injection wells should be completed similar to well 63-7. Los Lobos should research well logs for deepest fresh water supply well TDs for the ½ mile AOR associated with any/all injection well applications. The OCD is tasked with "Due Diligence" to ensure that any/all injection wells meet the 100 ft. deeper than the deepest fresh water well TD within ½ mile from an injection well is accordance with the OCD Discharge Permit (GTHT-001). If well 45-7 G-112 satisfies the above TD condition, then there should not be an issue similar to well 63-7 near AmeriCulture's State Well No. 2.

Thank you.

Thanks! Michelle



Michelle Henrie | Attorney | LEED AP

MHenrie | Land ' Water ' Law

P.O. Box 7035 . Albuquerque, New Mexico . 87194-7035

426 E. DeVargas . Santa Fe, New Mexico . 87501 . Please note new street address effective June 1, 2012: 225 E.

DeVargas . Santa Fe, New Mexico . 87501

505-842-1800 | fax 505-842-0033

michelle@mhenrie.com

This email and any attachments are privileged and confidential. If you have received this email in error, please destroy it immediately.

Lightning Dock Geothermal (HI-01) LLC Project Class V Injection Well 63-07 (GTHT-001)

G-101 Form OCD Artesia District Office Amended Conditions of Approval (6/29/2012)

- 1) The operator shall obtain an OCD well bond approval letter in advance of any well drilling activity.
- 2) The injection well construction design as proposed shall be modified to comply with the terms and conditions of the OCD Discharge Permit, which shall include the following:
 - a) The operator shall construct the well with casing and cement to a minimum depth of 2,200 feet to comply with the OCD Discharge Permit requirement(s) based on the proximity and confirmed total depth of the AmeriCulture State Well No. 2 Total Depth of 2,100 feet.
 - b) OCD may approve intermediate strings, which shall be cemented solid to surface. Production casing shall be either cemented solid to surface or lapped into intermediate casing, if run. If production casing is lapped into an intermediate string, the casing overlap shall be at least 50 feet. The lap shall be cemented solid and it shall be pressure tested to ensure integrity.
- 3) A G-104 and G-112 submittal is required in advance of any injection into this well for well testing purposes only and to assess plans for well testing involving any injection into the well.
- 4) A G-103 Sundry shall be submitted to the OCD- EB for approval in advance of any well mechanical integrity testing (MIT) to be conducted within 72-hours after well completion. A 30 minute EPA casing MIT is required with pressure chart recorder (meter with calibration sheet with calibration conducted within the past 90 days of MIT date) and chart (spring <= 1000 lb.) on maximum 1-hour chart. The final original test chart with witness signatures, date, time and pass/fail (+/- 10 %) of the starting test pressure (Minimum 500 psig) shall be hand delivered and/or mailed to the OCD-EB with copy to the Artesia District Office for the OCD Administrative Record.
- 5) Geothermal exempt well workover wastes must be disposed at an OCD approved waste disposal facility in accordance with 19.15.35.8(D) NMAC or OCD permitted treatment, storage or disposal facility (19.15.36 et seq. NMAC). Non-oilfield related wastes or RCRA wastes shall be handled under RCRA by authority of the New Mexico Environment Department.
- 6) All water quality sampling and laboratory methods must be in accordance with the terms and conditions of the OCD discharge permit and the American Standard for Testing and Materials (ASTM) Methods: E-947-83 (Standard Specification for Sampling Single-Phase Geothermal Liquid or Steam for Purposes of Chemical Analysis) and/or E-1675-95a (Standard Practice for Sampling Two-Phase Geothermal Fluid for Purposes of Chemical Analysis).
- 7) Additional tanks (or large hydraulic fracking storage tank) will be necessary to circulate the hole for clean sampling representative of the formation to satisfy Condition 6 above. The OCD may require water quality sample collection and environmental analytical laboratory analyses for specified

parameters when well deepening is requested, and/or as required under the OCD Discharge Permit. If the operator is unable to document that the ground water produced during the test is adequately "fresh," then it must immediately stop the test and contact OCD-EB.

- 8) All applicable OCD G-Forms associated with G-104 and G-112 Forms documenting all applicable well construction, lithology, well testing, etc. and request for approval to inject or begin development of the well and geothermal resource(s) shall be submitted to OCD-EB for approval.
- 9) The "Smith Corp" Geothermal Data Log from Well TFD-55-7 within the project area indicates that there is stratigraphic or formation variability with depth, i.e., alluvium to ~ 150 feet; ash/tuff to ~ 1950 feet; siltstone to ~ 2300 feet; limestone ~ 2950 feet; intrusive dike ~ 3200 feet; limestone ~ 3400 feet; and intrusive dike w/ chert ~ 3600 feet, etc. The project work is within- 3500 feet of surface and the operator believes there is natural hydrogeologic connection between water bearing formations due to natural fault systems and associated rock formation fracturing in the project area. The operator shall implement well completion measures that protect fresh water in accordance with the OCD discharge permit.
- 10) All field work and well completions must comply with the terms and conditions of the discharge permit and associated Geothermal Regulations (Chapter 71, Article 5 NMSA 1978 and Title 19, Chapter 14 NMAC). All Underground Injection Control (UIC) Class V Geothermal Injection Wells must comply with the applicable sections of Water Quality Control Commission Regulations (20.6.2.5000 5006, et seq. NMAC). All geothermal field activities must comply with 20.6.2 et seq. NMAC and 20.6.4 et seq. NMAC).

Please be advised that OCD approval does not relieve Los Lobos Renewable Power, L.L.C. from responsibility should their operations pose a threat to ground water, subsurface trespass, water supply/diversion, surface water, human health or the environment. In such event, a well may be ordered plugged and abandoned and/or used in accordance with the geothermal regulations. In addition, OCD approval does not relieve Los Lobos Renewable Power, L.L.C. of responsibility for compliance with any other federal, state, or local laws and/or regulations.

STATE OF NEW MEXICO.

OIL CONSERVATION DIVISION P. O. BOX 2016 SANTA FE, NEW MEXICO 87501

Form G-101 Adopted 10-1-74 Revised 10-1-78

DISTRIBUTION File N.M.B.M. U.S.G.S. Operator Land Office ia. Type of Work Drill	1	CATION FOR PERMIT	TO DRILL DEEPEN	1 r	e Type of Lease Federal
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b. Type of Well Geotherm	al Producer 🗹	Ten	np Observation 🔲	8. Farm or	Lease Name
Low Temp		Injec	ction/Disposal	1	2.
		· · · · · · · · · · · · · · · · · · ·	Charles and the second speciments of the second	9, Well No	
2. Name of Operator				4.	LDG 63-7
Los Lobos Renewable Power	LLC			TO Relate	and Pool, or Wildcat
3, Address of Operator 136 South Main Street, Suite	600 Sali Laka City I	Hab 84101			ma root, or whorm
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AND 1420 FEET FROM T	HE East LINE OF	SEC. 7 TWP. 25 S	RGE 19W	NMPM 12. Count	7717/ /////////////////////////////////
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21. Elevations (Show whether DF)	RT etc. 21A Kin	I & Status Plug, Hond 21	H Duilling Contractor	22 Ann	rox. Date Work will start
4209 GR		175	Trinity Exploratio		May 30, 2012
			The state of the s		
ŧ	ę.	ROPOSED CASING AND	CEMENT PROGRAM		
		1			-
SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
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17.5"	13.375"	54.5#	1500'	915	GL
12.25"	9.625" (liner)	36#	3400'	None	1400'
his is a revised submittal/form for the well constrcution casing school 63' as initially proposed.		· T	•		istalled to a depth of 150
form G-102 is attached.			•		-
		and the second of			
levised LDG 63-7 Drilling Handb	book by Capuano Eng	ineering Consultants is	attached.		
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igney Daniel War	ney, P6	Title Agent for Los L	obos Renewable Powe	Date May	116
igned Chief that the information	ney, P6	Title Agent for Los L	obos Renewable Powe	LLC Dute May	6/6/2017
one. Give blowout preventer progra- fiereby certify that the information weet home by fant	ney, P6	Title Agent for Los L	OSIST	Date May	6/6/2012

Chavez, Carl J, EMNRD

From:

Shapard, Craig, EMNRD

Sent:

Friday, June 08, 2012 7:35 AM

To:

Jąnney, David

Cc:

Sanchez, Daniel J., EMNRD; Brooks, David K., EMNRD; Chavez, Carl J, EMNRD

Attachments:

OCD G-101Approval w Conditions 5-31-2012.doc

David.

Please find the attached OCD conditions of approval for the G-101, OCD approval of June 6, 2012. Please note this condition of approval shall expire June 6, 2014. Contact me if you have any questions.

T.C. Shapard EMNRD-Oil Conservation Division Geologist District II 811 S. First St. Artesia, New Mexico 88210 Office: (575) 748-1283-Ext. 103

email: craig.shapard@state.nm.us

Lightning Dock Geothermal (HI-01) LLC Project Class V Injection Well 63-07 (GTHT-001)

G-101 Form OCD Artesia District Office Conditions of Approval (6/6/2012)

- 1) The operator shall obtain an OCD well bond approval letter in advance of any well drilling activity.
- 2) The injection well construction design as proposed shall be modified to comply with the terms and conditions of the OCD Discharge Permit, which shall include the following:
 - a) Surface casing to a depth of at least 100 feet greater than the deepest "fresh water well" (~3,723 feet) inclusive of any associated open borehole and/or liner hung below casing shoe within ½ mile from the well. Liners used in injection wells present well construction, integrity and longevity issues especially in high-temperature thermal fluid conditions and are not acceptable to the OCD. Injected fluids may also migrate up the backside of non-cemented liners and contaminate fresh water bearing zones.
 - OCD notices the following well depth information from POD Numbers: 00036 AS20 at 2,349 feet TD, 00608 at 2,349 feet TD, 00758 POD4 Artesian at 2,618 feet TD, 00758 POD5 Artesian at 2,900 feet TD, 00758 POD6 Artesian at 3,623 feet TD, and AmeriCulture No. 2 Well at ~ 2,100 feet TD (from notes, but confirmation is needed).
 - b) OCD may approve intermediate strings, which shall be cemented solid to surface. Production casing shall be either cemented solid to surface or lapped into intermediate casing, if run. If production casing is lapped into an intermediate string, the casing overlap shall be at least 50 feet. The lap shall be cemented solid and it shall be pressure tested to ensure integrity.
- 3) A G-104 and G-112 submittal is required in advance of any injection into this well for well testing purposes only and to assess plans for well testing involving any injection into the well.
- A G-103 Sundry shall be submitted to the OCD- EB for approval in advance of any well mechanical integrity testing (MIT) to be conducted within 72-hours after well completion. A 30 minute EPA casing MIT is required with pressure chart recorder (meter with calibration sheet with calibration conducted within the past 90 days of MIT date) and chart (spring <= 1000 lb.) on maximum 1-hour chart. The final original test chart with witness signatures, date, time and pass/fail (+/- 10 %) of the starting test pressure (Minimum 500 psig) shall be hand delivered and/or mailed to the OCD-EB with copy to the Artesia District Office for the OCD Administrative Record.
- 5) Geothermal exempt well workover wastes must be disposed at an OCD approved waste disposal facility in accordance with 19.15.35.8(D) NMAC or OCD permitted treatment, storage or disposal facility (19.15.36 et seq. NMAC). Non-oilfield related wastes or RCRA wastes shall be handled under RCRA by authority of the New Mexico Environment Department.
- 6) All water quality sampling and laboratory methods must be in accordance with the terms and conditions of the OCD discharge permit and the American Standard for Testing and Materials (ASTM) Methods: E-947-83 (Standard Specification for Sampling Single-Phase Geothermal Liquid or

Steam for Purposes of Chemical Analysis) and/or **E-1675-95a** (Standard Practice for Sampling Two-Phase Geothermal Fluid for Purposes of Chemical Analysis).

- 7) Additional tanks (or large hydraulic fracking storage tank) will be necessary to circulate the hole for clean sampling representative of the formation to satisfy Condition 6 above. The OCD may require water quality sample collection and environmental analytical laboratory analyses for specified parameters when well deepening is requested, and/or as required under the OCD Discharge Permit. If the operator is unable to document that the ground water produced during the test is adequately "fresh," then it must immediately stop the test and contact OCD-EB.
- 8) All applicable OCD G-Forms associated with G-104 and G-112 Forms documenting all applicable well construction, lithology, well testing, etc. and request for approval to inject or begin development of the well and geothermal resource(s) shall be submitted to OCD-EB for approval.
- 9) The "Smith Corp" Geothermal Data Log from Well TFD-55-7 within the project area indicates that there is stratigraphic or formation variability with depth, i.e., alluvium to ~ 150feet; ash/tuff to ~1950 feet; siltstone to ~ 2300 feet; limestone ~ 2950 feet; intrusive dike ~ 3200 feet; limestone ~ 3400 feet; and intrusive dike w/ chert ~ 3600 feet, etc. The project work is within- 3500 feet of surface and the operator believes there is natural hydrogeologic connection between water bearing formations due to natural fault systems and associated rock formation fracturing in the project area. The operator shall implement well completion measures that protect fresh water in accordance with the OCD discharge permit.
- 10) All field work and well completions must comply with the terms and conditions of the discharge permit and associated Geothermal Regulations (Chapter 71, Article 5 NMSA 1978 and Title 19, Chapter 14 NMAC). All Underground Injection Control (UIC) Class V Geothermal Injection Wells must comply with the applicable sections of Water Quality Control Commission Regulations (20.6.2.5000 5006, et seq. NMAC). All geothermal field activities must comply with 20.6.2 et seq. NMAC and 20.6.4 et seq. NMAC).

Please be advised that OCD approval does not relieve Los Lobos Renewable Power, L.L.C. from responsibility should their operations pose a threat to ground water, subsurface trespass, water supply/diversion, surface water, human health or the environment. In such event, a well may be ordered plugged and abandoned and/or used in accordance with the geothermal regulations. In addition, OCD approval does not relieve Los Lobos Renewable Power, L.L.C. of responsibility for compliance with any other federal, state, or local laws and/or regulations.

United 1
1625 N. French Dr., Hobba, NM 88240
District H
1301 W. Grand Avenue, Artesta, 1881 88210
District H
1000 Rio Brazas Road, Aztec N81 87410
District IV

State of New Mexico Energy Minerals and Natural Resources

Form C-10 Nov. 11, 200

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit to appropriate District Offic

☐ AMENDED REPOR

APPLICAT				MARIEL		Fe, NM 87 35D - WE1					
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			Operator Name Lobus Renewat						² GGRID Numb 261071	er	
*			Sorth Edgewood	Drive Suite 37:	5				Alf Number		
			Provo, Utah	84604					30 023-20020		
¹ Property C	ode			Lighteri	Property No.					* Well No 51-07	
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44 Multipl See Plan of Operation			15 Proposed Dept 3,400 feet	h	" Form Herqi		12,411	15 Contractor arvan Drilling Company	,	¹⁸ Sped Date May 2008	
Depth to Groundw									n nearest surface	water - None	
Liner Syr	ntheric 🗵 _	_45 mils	thick Clay [Pit Volume	45,904bbl	,	Dritting N Fresh V	lethod ater	Diesel/Od-based	I □ Gas/Air □	
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E-mail Address			Phone: @			Conditions	Canorosal	Augustent 1712			
Date: Nor 17	2018		Phone: 801	765.120	0	v.comanions c	estilitazai	CATALOGUE PER			

G-101 Lightning Dock Geothermal HI-01 LLC Project Class V Injection Well 51-07 (GTHT-001)

OCD G-101 Conditions of Approval (11/03/2010)

- 1) Geothermal exempt work over wastes must be disposed at an OCD approved waste disposal facility in accordance with 19.15.35.8(D) NMAC or OCD permitted treatment or disposal facility (19.15.36 et seq. NMAC).
- 2) All water quality sampling and laboratory methods must be in accordance with the terms and conditions of the discharge permit (GTHT-001). The operator must document the back annulus quality of the ground water to OCD's satisfaction.
- 3) Additional tanks (or large frac tank) will be necessary to circulate the hole for clean sampling representative of the formation to satisfy Condition 2 above. If the operator is unable to document that the ground water produced during the test is adequately "fresh," then it must immediately stop the test and contact OCD-EB.
- 4) All applicable OCD G-Forms documenting all applicable well construction, lithology, testing, etc. and request for approval to inject or begin development of the well and geothermal resource(s) shall be submitted to OCD-EB for approval.
- 5) The "Smith Corp" Geothermal Data Log from Well TFD-55-7 within the project area indicates that there is stratigraphic or formation variation with depth, i.e., alluvium to ~ 150 ft; ash/tuff to ~1950 ft; siltstone to ~2300 ft; limestone ~ 2950 ft; intrusive dike ~ 3200 ft; limestone ~ 3400 ft; intrusive dike w/ chert ~ 3600 ft; and so on. The project work is within ~ 3500 ft. of surface and the operator believes there is natural hydrogeologic connection between water bearing formations due to fault systems and associated natural rock fracturing in the area. The operator shall implement well completion measures that protect fresh water in accordance with the discharge permit.
- 6) All field work and well completions must comply with the terms and conditions of the discharge permit and associated Geothermal Regulations (Chapter 71, Article 5 NMSA 1978 and Title 19, Chapter 14 NMAC). All Underground Injection Control (UIC) Class V Geothermal Injection Wells must comply with the applicable sections of Water Quality Control Commission Regulations (20.6.2 et seq. NMAC and 20.6.4 et seq. NMAC).

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State of New Mexico Energy Minerals and Natural Resources

Form C+19 May 27, 20 s

Oil Conservation Division 1220 South St. Francis Dr. Souta Fa, NM 87505 Subtent to appropriate Destruct Quic

APPLICATION FOR PERMIT TO DRILL. RE-ENTER, DIEPEN, PLUCHACK, OR ADD A ZONE Consider Fame and Address Consider	0,8991Y 12043 N.Fr	andes Dr. 36	ran Ke. 104	87593			20 South St Santa Fe, N				LJA	MENOED REPOR		
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G-101 Lightning Dock Geothermal HI-01 LLC Project Class V Injection Well 53-12 (GTHT-001)

OCD G-101 Conditions of Approval (11/03/2010)

- 1) Geothermal exempt work over wastes must be disposed at an OCD approved waste disposal facility in accordance with 19.15.35.8(D) NMAC or OCD permitted treatment or disposal facility (19.15.36 et seq. NMAC).
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District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV

1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources

Submit to appropriate District ()

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

AMENDED	REP(

Form C-

May 27.

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN,

		Lo	Operator Name						² OGRID Numb	er
				od Drive Suite 375				30 -	³ API Number	
³ Prope	erty Code	T		5 F	Property Name Dock No 1, HI-0	LLC		130-		ell No. 2-18
		9 F	Proposed Pool 1	Ligitumg	DOCK 110 1,111 0	T		¹⁰ Prop	osed Pool 2	
7 Curfage	Lasati									
Surface UL or lot no.	Section	On Township	Range	Lot Idn	Feet from the	North/S	South line	Feet from the	East/West line	County
	18	25S	19W		1307.0	Ne	orth	2123.1	West	Hidalgo
	1	Hole Locati	on If Differer	nt From Surface						
UL or lot no. Same	Section	Township	Range	Lot Idn	Feet from the	North/S	South line	Feet from the	East/West line	County
Addition	al Well	Informati	on							
	Type Code N		12 Well Type Co (I) Injection W		13 Cable/Rotary R			Lease Type Code BLM - Geothermal	15 Gro	ound Level Elevation 4100
16 N See Plan of Op			18 Formation		Layne	19 Contractor Christensen Compan	у	²⁰ Spud Date May 2008		
Depth to Grou	h to Groundwater 40 feet Distance from nearest f				arest fresh water	well .4 r			n nearest surface v	vater - None
Pit: Liner Close	: Synthetic	stem 🛮 45 mi	ls thick Clay	Pit Volume:4	45,000bbls		Orilling Me esh Water	thod: ☐ Brine ☑ Die	esel/Oil-based	Gas/Air
Propos	ed Casi	ng and Ce	ement Prog	ram						
Hole S			ng Size	Casing weight/f	foot	Setting D	epth	Sacks of Ce	ement	Estimated TO
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17.7	7"	13.	375"	54.5 lb/ft		1,500)'	750 Sa		
12.2	5''		525"	36.0 lb/fi	lb/ft 3,4)'	980 Sa	cks	
		7" Li	ner (If)	23.0 lb/fi	t					
Describe the	blowout pr	revention prog	this application gram, if any. Us	is to DEEPEN or Ple additional sheets in	LUG BACK, gir f necessary.	ve the dat	a on the pr	resent productive z	one and proposed	new productive
SEE PLAN C	F OPERA	TION								
23 I hereby certify that the information given above is true and complete to the pest of my knowledge and belief. I further certify that the drilling pit will be							OIL C	ONSERVAT	TION DIVIS	ION
				general permit 🗌						
n (attached)) alternati	ve OCD-appr 2	oved plan .		Appro	eved by:	1 1	1		
-	- C	2				that	1. W	5		
rinted name	te	wen B	ron		Title:	Compete contempt conglineer				
Title:	ula	Notoun			Appro	Approval Date: 6/11/2010 Expiration Date: 6/11/2012				
E-mail Addre		cre-Ba	une for							
Date: 4	21/02		Phone: 80	1.765.120	Condi	Conditions of Approval Attached				

G-101 Lightning Dock Geothermal HI-01 LLC Project Class V Injection Well 42-18 (GTHT-001)

OCD G-101 Conditions of Approval (06/11/2010)

- 1) Geothermal exempt work over wastes must be disposed at an OCD approved waste disposal facility in accordance with 19.15.35.8(D) NMAC or OCD permitted treatment or disposal facility (19.15.36 et seq. NMAC).
- 2) All water quality sampling and laboratory methods must be in accordance with the terms and conditions of the discharge permit (GTHT-001). The operator must document the back annulus quality of the ground water to OCD's satisfaction.
- 3) Additional tanks (or large frac tank) will be necessary to circulate the hole for clean sampling representative of the formation to satisfy Condition 2 above. If the operator is unable to document that the ground water produced during the test is adequately "fresh," then it must immediately stop the test and contact OCD-EB.
- 4) All applicable OCD G-Forms documenting all applicable well construction, lithology, testing, etc. and request for approval to inject or begin development of the well and geothermal resource(s) shall be submitted to OCD-EB for approval.
- 5) The "Smith Corp" Geothermal Data Log from Well TFD-55-7 within the project area indicates that there is stratigraphic or formation variation with depth, i.e., alluvium to ~ 150 ft; ash/tuff to ~1950 ft; siltstone to ~2300 ft; limestone ~ 2950 ft; intrusive dike ~ 3200 ft; limestone ~ 3400 ft; intrusive dike w/ chert ~ 3600 ft; and so on. The project work is within ~ 3500 ft. of surface and the operator believes there is natural hydrogeologic connection between water bearing formations due to fault systems and associated natural rock fracturing in the area. The operator shall implement well completion measures that protect fresh water in accordance with the discharge permit.
- 6) All field work and well completions must comply with the terms and conditions of the discharge permit and associated Geothermal Regulations (Chapter 71, Article 5 NMSA 1978 and Title 19, Chapter 14 NMAC). All Underground Injection Control (UIC) Class V Geothermal Injection Wells must comply with the applicable sections of Water Quality Control Commission Regulations (20.6.2 et seq. NMAC and 20.6.4 et seq. NMAC).

District I 1625 N. French Dr., Hobbs, NM 88240 District II 1301 W. Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV

1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources

Submit to appropriate District ()

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

AMENDED	REPO

Form C-

May 27.]

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGRACK OR ADD A ZONE

	¹ Operator Name and Address Los Lobos Renewable Power, LLC										² OGRID N	umber	
				North Edgewood	od Drive Sui						³ API Nur	nber	
1				Provo, Utal	h 84604					30 -		6	
Prope	erty Code				Li	⁵ Property ghtning Dock N		LLC				6 Well 1 13-0	
			9 F	Proposed Pool 1						10 Prop	osed Pool 2		
⁷ Surface	Locatio	on								*			
UL or lot no.	Section 07	Towns 255		Range 19W	Lot lo		om the 31.0		South line outh	Feet from the 530.1	East/West l West	ine	County Hidalgo
⁸ Proposed	Bottom I	Hole L	ocati	on If Differer	nt From Si	urface							
UL or lot no. Same	Section	Towns	ship	Range	Lot lo	dn Feet fi	om the	North/S	South line	Feet from the	East/West I	ine	County
Additiona	al Well	Inform	mati	on									
	Type Code N			12 Well Type Co (P) Production W			le/Rotary R			Lease Type Code BLM – Geothermal	1	5 Ground	Level Elevation 4100
	fultiple				¹* Fo	rmation		Layne	19 Contractor Christensen Company	,		Spud Date 1ay 2008	
	Groundwater 40 feet Distance from nearest fr				from nearest fre	sh water v	vell .2 r		Distance from				
Pit: Liner:	t: Liner: Synthetic \(\textstyle 45\text{ mils thick} \) Clay \(\textstyle \text{ Pit Volume:} \) 45,0001					ume: 45.000bb	ols	D	rilling Me	thod:			
Closed-Loop System 🖂							esh Water		esel/Oil-based	☐ G	as/Air		
²¹ Propos	ed Casi	ng an	d Ce	ement Prog	ram								
Hole S	ALCOHOLD STATE OF THE PARTY OF	Ī		Casing Size Casing weight/foot		weight/foot	S	etting D	epth	Sacks of Cement		E	stimated TOC
26'	,		2	20"	3/8" Wall			63°		150 Sac	cks		
17.7	7''		13.	54.5 lb/ft			1,500) ?	750 Sac	oke			
	711			.5 10/11		1,000	<u>, </u>	150 54	CAS				
12.2:	5"			525"	36.	.0 lb/ft		3,400		980 Sac			
			"' Li	525" ner (If)	36. 23.	.0 lb/ft .0 lb/ft		3,400)'	980 Sac	cks		
Describe the	he proposed blowout pr	d progra revention	''' Li	525" ner (If)	36. 23.	.0 lb/ft .0 lb/ft PEN or PLUG B.		3,400)'		cks	osed ne	w productive
Describe the Describe the SEE PLAN Of Describe the SEE PLAN Of Describe the SEE PLAN Of Description of the Describe the Describe the Description of the Description of the Describe the Description of the Description of the Description of the Describe the Description of the Des	he proposed blowout pro	d prograde de prograde de informad belief to NMC ve OCD	mation for I full	given above is to the certify the guidelines, a coved plan	36. 23. is to DEEP e additional at the drillingeneral positions.	.0 lb/ft .0 lb/ft EN or PLUG B. sheets if necess	Approx	3,400 e the dat	a on the p	ONSERVAT	one and prop	VISIC	
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G-101 Lightning Dock Geothermal HI-01 LLC Project Production/Development Well 13-07 (GTHT-001)

OCD G-101 Conditions of Approval (06/11/2010)

- 1) Geothermal exempt work over wastes must be disposed at an OCD approved waste disposal facility in accordance with 19.15.35.8(D) NMAC or OCD permitted treatment or disposal facility (19.15.36 et seq. NMAC).
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- 4) All applicable G-Forms documenting well construction, lithology, tests, etc. and request for approval to produce or develop the well and the geothermal resource(s) shall be submitted to OCD-EB for approval.
- 5) The "Smith Corp" Geothermal Data Log from Well TFD-55-7 within the project area indicates that there is stratigraphic or formation variation with depth, i.e., alluvium to ~ 150 ft; ash/tuff to ~1950 ft; siltstone to ~2300 ft; limestone ~ 2950 ft; intrusive dike ~ 3200 ft; limestone ~ 3400 ft; intrusive dike w/ chert ~ 3600 ft; and so on. The project work is within ~ 3500 ft. of surface and the operator believes there is natural hydrogeologic connection between water bearing formations due to fault systems and associated natural rock fracturing in the area. The operator shall implement well completion measures that protect fresh water in accordance with the discharge permit.
- 6) All field work and well completions must comply with the terms and conditions of the discharge permit and associated Geothermal Regulations (Chapter 71, Article 5 NMSA 1978 and Title 19, Chapter 14 NMAC).

District I 1625 N. French Dr., Hobbs, NM 88240 District II 1301 W. Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources

Submit to appropriate District Of

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

☐ AMENDED REPO

Form C-

May 27. I

AP	PLICATION	FOR	PE	RMIT TO	DRILL,	RE-ENTER,	DEEPEN,
PI	HCRACK O	DAD	DA	ZONE			

			ERMIT TO A ZONE) DRII	LL, RE-E	NTER,	DEE	PEN,			
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			Operator Name s Lobos Renewa							² OGRID Numb	er
			North Edgewoo	d Drive Su						³ API Number	
3 p	1 6 1		Provo, Utal	1 84604	\$ 6				30 -	6.11	
Prope	erty Code			Li	⁵ Property ightning Dock N		LLC				ell No. 3-07
		9 F	Proposed Pool 1	******					10 Prop	osed Pool 2	
Surface	Location	1					J		A-41		
UL or lot no.	Section 07	Township	Range	Lot l		from the		South line	Feet from the	East/West line	County
8 Duamagad		25S	19W	· F C	1	721.2	1.2 South 1789.4		1789.4	West	Hidalgo
UL or lot no. Same	Section 10	Township	Range	ferent From Surface Lot Idn Feet fr			North/	South line	Feet from the	East/West line	County
Addition	al Well Ir	nformati									
	Type Code N		12 Well Type Code (P) Production Well						Lease Type Code BLM - Geothermal	15 Gro	und Level Elevation 4100
16 N See Plan of Ope	Iultiple eration		¹⁷ Proposed Dep 3,400 feet	th	¹⁸ Fc	ormation		Layne	¹⁹ Contractor Christensen Company	,	²⁰ Spud Date May 2008
Depth to Grou	undwater 4	10 feet				esh water	well .4	miles	Distance from	n nearest surface v	vater - None
	iner: Synthetic 45 mils thick Clay Pit Volume: 45,000t				obls		Drilling Met resh Water	hod: Brine Die	esel/Oil-based	Gas/Air	
²¹ Propos	ed Casing	g and Ce	ement Prog	ram							
Hole S			ng Size		weight/foot	5	etting D	Pepth	Sacks of Ce	ment	Estimated TOC
26'			0"	3/8	" Wall		63'		150 Sac	cks	
17.7			375"		.5 lb/ft		1,500'		750 Sac		
12.2	5"	The second secon	525" ner (If)		.0 lb/ft	-	3,400'		980 Sac	cks	
		/ LI	ner (II)	23.	.0 lb/ft	+					
	blowout prev	ention prog	this application ram, if any. Uso				e the da	ta on the pr	esent productive zo	one and proposed	new productive ze
²³ I hereby cer	rtify that the i	ntormation	given above is t	rue and co	mplete to the						
best of my kn	owledge and	belief. I fur	ther certify tha	t the drilli	ng pit will be			OIL C	ONSERVAT	TION DIVIS	ION
an (attached) Signature:	alternative	OCD-appr	oved plan .			Appro	ved by:				
	343	-					lar	LA	Chiven		
Printed name:	Stev	en Br	ain			Title:	Envi	inshert	I Englineer		11.1
Title:	Mann	eun	0 1	_ 1		Approval Date: 6/11/2010 Expiration Date: 6/11/2012					0/11/2012
E-mail Addre		6-500				Conditions of Approval Attached					
Date: 41-	11/02		Phone: Eco	7651	w	Condit	ions of P	Appiovai At	acrica 🗀		

G-101 Lightning Dock Geothermal HI-01 LLC Project Production/Development Well 33-07 (GTHT-001)

OCD G-101 Conditions of Approval (06/11/2010)

- 1) Geothermal exempt work over wastes must be disposed at an OCD approved waste disposal facility in accordance with 19.15.35.8(D) NMAC or OCD permitted treatment or disposal facility (19.15.36 et seq. NMAC).
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- 4) All applicable G-Forms documenting well construction, lithology, tests, etc. and request for approval to produce or develop the well and the geothermal resource(s) shall be submitted to OCD-EB for approval.
- 5) The "Smith Corp" Geothermal Data Log from Well TFD-55-7 within the project area indicates that there is stratigraphic or formation variation with depth, i.e., alluvium to ~ 150 ft; ash/tuff to ~ 1950 ft; siltstone to ~ 2300 ft; limestone ~ 2950 ft; intrusive dike ~ 3200 ft; limestone ~ 3400 ft; intrusive dike w/ chert ~ 3600 ft; and so on. The project work is within ~ 3500 ft. of surface and the operator believes there is natural hydrogeologic connection between water bearing formations due to fault systems and associated natural rock fracturing in the area. The operator shall implement well completion measures that protect fresh water in accordance with the discharge permit.
- 6) All field work and well completions must comply with the terms and conditions of the discharge permit and associated Geothermal Regulations (Chapter 71, Article 5 NMSA 1978 and Title 19, Chapter 14 NMAC).

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State of New Mexico Energy Minerals and Natural Resources

May 27. [Submit to appropriate District ()

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

AMENDED REP

Form C-

APPLICATION FOR PERMIT TO	DRILL, RE-ENTER, DEEPEN,
PLUGRACK OR ADD A ZONE	

		R ADD	A ZONE							7		
			Operator Name s Lobos Renewa							² OGRID Nu	mber	
			North Edgewoo	d Drive Suite 37:	5					³ API Num	ber	
1			Provo, Utal	1 84604	-				30 -			
³ Prope	erty Code			Lightni	⁵ Property ng Dock No		1 LLC				Well No. 45-07	
		" F	Proposed Pool 1						" Prop	posed Pool 2		
⁷ Surface	Locatio	n										
UL or lot no.	Section 07	Township 25S	Range 19W	Lot Idn	Feet fre 236			South line outh	Feet from the 2278.3	East/West lii West	ne	County Hidalgo
⁸ Proposed	Bottom H	Iole Locati	on If Differen	t From Surfac	ce					-		
UL or lot no. Same	Section	Township	Range	Lot Idn	om the	North/S	South line	Feet from the	East/West lii	ne	County	
		Informati										
	Type Code N					e/Rotary R			Lease Type Code BLM - Geothermal		Ground Le 41	vel Elevation 00
See Plan of Ope	fultiple eration		¹⁷ Proposed Dep 3,400 feet					Layne	¹⁹ Contractor Christensen Compan	у	²⁰ Spuc May	
Depth to Grou	undwater	40 feet		Distance from	nearest fres	sh water	well .4 r	niles	Distance from	n nearest surfac	e water -	None
Pit: Liner: Synthetic \(\subseteq 45\) mils thick Clay \(\subseteq \) Pit Volume: 45,000 \(\subseteq 15\) Closed-Loop System \(\subseteq \)					45,000bl	ols		Orilling Me resh Water		esel/Oil-based	☐ Gas/A	xir 🗌
²¹ Propos	ed Casir	ng and Ce	ement Progr	ram								
Hole S			ng Size	Casing weig	ht/foot		Setting D	epth	Sacks of Ce	ement	Estin	nated TOC
26'	,	2	.0"	3/8" W	all		63'		150 Sa	cks		
17.7	7''	13.	375"	54.5 lb	The last last last last last last last last		1,500)'	750 Sa			
12.2	5"		525"	36.0 lb	o/ft	3,400'		980 Sa	cks			
		7" Li	ner (If)	23.0 lb	o/ft							
22 D 3									esent productive z			
SEE PLAN C			ram, if any. Use	additional shee	ts if necess	ary.						
23 I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify that the drilling pit will be constructed according to NMOCD guidelines, a general permit, or an (attached) alternative OCD-approved plan Signature:					t will be	OIL CONSERVATION DIVISION Approved by:						
Printed name:	Stew	an B	ound			Title:	Envi	Johnst	l'agui	u		
Title:	Wland	Denon				Approval Date: 6/11/2010 Expiration Date: 6/11/2012						
E-mail Addre	ss: Ste	ve. Brown	ue roserta	h. com								
Date: 4/2	168		Phone: Ecs	765 1700		Conditions of Approval Attached						

G-101 Lightning Dock Geothermal HI-01 LLC Project Production/Development Well 45-07 (GTHT-001)

OCD G-101 Conditions of Approval (06/11/2010)

- 1) Geothermal exempt work over wastes must be disposed at an OCD approved waste disposal facility in accordance with 19.15.35.8(D) NMAC or OCD permitted treatment or disposal facility (19.15.36 et seq. NMAC).
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District I 1625 N. French Dr., Hobbs, NM 88240 District II 1301 W. Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV

1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources

May 27, 20 Submit to appropriate District Offi

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

☐ AMENDED REPOR

Form C-11

APPLICATION FOR PERMIT TO DRILL, RE-ENTER DEEPEN

			Operator Name Los Lobos Renewal 25 North Edgewoo Provo, Utal	ble Power, LLC d Drive Suite 375					² OGRID Number 262071 ³ API Number 30 - 023- 200	г
³ Prope	erty Code				⁵ Property Name ag Dock No 1, HI-0) LLC	The second secon	manakan sarah sarah sarah sarah sarah sarah sarah sarah	6 W	/ell No. 477
-			° Proposed Pool 1			T		10 Prop	posed Pool 2	
Surface	Locatio	n					***************************************	***************************************		
L or lot no.	Section 07	Township 25S	Range 19W	Lot Idn	Feet from the		South line outh	Feet from the 2266'	East/West line West	County Hidalgo
Proposed	Bottom I	Tole Loca	ation If Differen	t From Surfac	e					
JL or lot no. Same	Section	Township	Range	Lot Idn	Feet from the	North/S	South line	Feet from the	East/West line	County
	al Well	Informa	ation						1	
11 Work	Type Code		12 Well Type Co		13 Cable/Rotary			Lease Type Code		round Level Elevation
The second secon	N		(P) Production W		R		P - Land	BLM - Geothermal		4100
	16 Multiple 17 Proposed Depth 18 Fe Plan of Operation 3,400 feet			18 Formation		Layne	¹⁹ Contractor Christensen Compan	y	²⁰ Spud Date May 2008	
epth to Gro	th to Groundwater 40 feet Distance from nearest fr				nearest fresh water	well .4	miles	Distance from	m nearest surface	water - None
it: Liner: Synthetic 45 mils thick Clay Pit Volume: 45,000				45,000bbls		Drilling Me	thod:			
	ed-Loop Sys							☐ Brine ☑ Di	esel/Oil-based	Gas/Air
Propos	sed Casi	ng and	Cement Prog	ram						THE RESERVE THE PROPERTY OF THE PARTY OF THE
Hole S			asing Size	Casing weig	ht/foot	Setting I	Depth	Sacks of Cement		Estimated TO
26	>>		20"			63	,	150 Sa	cks	
17.	the second secon	1	3.375"	54.5 lb		1,50		750 Sa		
12.2	25"		9.625"	36.0 lb	/ft	3,400'		980 Sacks		
		7"	Liner (If)	23.0 lb	/ft					
² Describe	the propose	d program	If this application	is to DEEPEN o	r PLUG BACK o	ive the da	ita on the ni	resent productive :	zone and propose	d new productive
Describe the	e blowout pr	revention p	If this application rogram, if any. Us	is to DEEPEN o e additional shee	r PLUG BACK, g	ive the da	ata on the pr	Lesent productive a	zone and propose	d new productive
Describe the SEE PLAN (3 I hereby copest of my knoonstructed an (attached Signature:	ertify that the nowledge at according d) alternation	revention p TION TION TION TO NMOC TO NMOC TO NMOC	ion given above is further certify th D guidelines ., pproved plan	e additional shee	e to the it will be	roved by:		CONSERVA		
3 I hereby copest of my knonstructed in (attached Signature:	ertify that the nowledge at according d) alternation:	revention p TION TION TION TO NMOC TO NMOC TO NMOC	ion given above is further certify the D guidelines ,	e additional shee	e to the it will be to proper the large of t	roved by:	OIL C	ONSERVA"	TION DIVI	SION
Describe the SEE PLAN (ectify that the nowledge at according d) alternation:	revention p TION TION THE information of the info	ion given above is further certify the D guidelines , pproved plan .	e additional shee	e to the it will be to proper the large of t	roved by:	OIL C	ONSERVA"		SION

Submit 3 Copies To Appropriate District Office	State of New Mexico ergy, Minerals and Natural Resources	Form C-103 June 19, 2008
District 1 1625 N. French Dr., Hobbs, NM 88240	ergy, Willierais and Natural Resources	WELL API NO.
District II	IL CONSERVATION DIVISION	30-0230-20016
1301 W. Grand Ave., Artesia, NM 88210 District III	1220 South St. Francis Dr.	5. Indicate Type of Lease
1000 Rio Brazos Rd., Aztec, NM 87410		STATE FEE x
District IV 1220 S. St. Francis Dr., Santa Fe, NM	Santa Fe, NM 87505	6. State Oil & Gas Lease No.
87505		
(DO NOT USE THIS FORM FOR PROPOSALS TO DIFFERENT RESERVOIR. USE "APPLICATION F		7. Lease Name or Unit Agreement Name
PROPOSALS.) 1. Type of Well: Oil Well Gas We	II x Other	8. Well Number 477
2. Name of Operator	National Control of the Control of t	9. OGRID Number
Los Lobos Renewable Power, LLC		262071
3. Address of Operator	uro Utoh	10. Pool name or Wildcat
5125 North Edgewood Drive, Suite 375 Pro	ovo, Otan	
4. Well Location		
	reet from the South line and 2266'	
Section 07	Township 25S Range 19W	NMPM County Hidalgo
	evation (Show whether DR, RKB, RT, GR, etc.	
4100 i	eet	
10 01 1		
12. Check Appropri	riate Box to Indicate Nature of Notice	, Report or Other Data
NOTICE OF INTENT	ION TO:	SSEQUENT REPORT OF:
	AND ABANDON REMEDIAL WOR	
A ROSE TO CESTOCK OF THE PROPERTY OF THE PROPE		RILLING OPNS.X P AND A
CONSTRUCTION OF STREET OF STREET OF STREET OF STREET OF STREET	IPLE COMPL CASING/CEMEN	
DOWNHOLE COMMINGLE	22 JOHN 2 JOHN OF CEMEN	
OTHER:	x ☐ OTHER:	
Describe proposed or completed open	erations. (Clearly state all pertinent details, an	nd give pertinent dates, including estimated date
	E RULE 1103. For Multiple Completions: A	ttach wellbore diagram of proposed completion
or recompletion.		
Move location of Well 477 (See attached For	rm 102)	
wove location of well 4// (See attached Fol	111 (02)	
Spud Date:	Rig Release Date:	
I hereby certify that the information above is	true and complete to the best of my knowled	ge and belief.
010MATURE 27/2	MA A	
SIUNATURE	TITLE Manacon	DATE DIE/09
Type or print name Str. Pro	E mail addresses to the box	LE MARL LELL CPHONE: BU 765 1200
For State Use Only	E-man address;	PHONE: BO 162 160
of State Ost Only		
APPROVED BY:	TITLE	DATE
Conditions of Approval (if any):		KALLE LINE

G-101 Lightning Dock Geothermal HI-01 LLC Project Production/Development Well 47-07 (GTHT-001)

OCD G-101 Conditions of Approval (06/11/2010)

- 1) Geothermal exempt work over wastes must be disposed at an OCD approved waste disposal facility in accordance with 19.15.35.8(D) NMAC or OCD permitted treatment or disposal facility (19.15.36 et seq. NMAC).
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- 5) The "Smith Corp" Geothermal Data Log from Well TFD-55-7 within the project area indicates that there is stratigraphic or formation variation with depth, i.e., alluvium to ~ 150 ft; ash/tuff to ~1950 ft; siltstone to ~2300 ft; limestone ~ 2950 ft; intrusive dike ~ 3200 ft; limestone ~ 3400 ft; intrusive dike w/ chert ~ 3600 ft; and so on. The project work is within ~ 3500 ft. of surface and the operator believes there is natural hydrogeologic connection between water bearing formations due to fault systems and associated natural rock fracturing in the area. The operator shall implement well completion measures that protect fresh water in accordance with the discharge permit.
- 6) All field work and well completions must comply with the terms and conditions of the discharge permit and associated Geothermal Regulations (Chapter 71, Article 5 NMSA 1978 and Title 19, Chapter 14 NMAC).

<u>District I</u> 1625 N. French Dr., Hobbs, NM 88240 District II 1301 W. Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV

1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resources

May 27. 1 Submit to appropriate District ()!

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

	AMENDED	REP(

Form C-

A	P	PI		CA	T	Ю	N	F	0	R	P	EI	2	MI	T	T	O	DRILL,	RE-	EN'	ΓER,	DEEPE	EN,
DI	r	T T d	OID			7			A 1	1		A	-	0	B.TI	F.							

			Operator Name						² OGRID N	Number	
			os Lobos Renewa 5 North Edgewoo	od Drive Suite 37:	5	³ API Number					
			Provo, Uta			30 -					
³ Proper	erty Code			Lightni	⁵ Property Name ng Dock No 1, HI-0	LLIC				⁶ Well 53-0	
-		0	Proposed Pool 1	Ligituti	ing Dock No 1, Til-0	T		¹⁰ Prop	osed Pool 2	33-0	,
,								1100	0,000 1 001 2		
Surface						-				av i e	
JL or lot no.	Section 07	Township 25S	Range 19W	Lot Idn	Feet from the 3775.3	North/So Sou		Feet from the 3052.1	East/West line West		County Hidalgo
				nt From Surfac					T = 21/		
L or lot no. Same	Section	Township	Range	Lot Idn	Feet from the	North/So	uth line	Feet from the	East/West	line	County
		Informat									
]	Type Code N		12 Well Type Co (P) Production V	Vell	13 Cable/Rotary R			Lease Type Code BLM - Geothermal			d Level Elevation 4100
ee Plan of Ope			¹⁷ Proposed Dep 3,400 feet	oth	18 Formation		Layne	¹⁹ Contractor Christensen Company	The state of the s		
Depth to Grou	ındwater	40 feet		Distance from	nearest fresh water	well .4 mi	iles	Distance from	n nearest sur	face water	er - None
	Synthetic d-Loop Sys		ls thick Clay	Pit Volume:	45,000bbls		rilling <u>Met</u> sh Water	hod: Brine Die	esel/Oil-base	d \square G	as/Air
Propose	ed Casi	ng and C	ement Prog	ram							
Hole S			ing Size	Casing weig	ht/foot	Setting Dep	pth	Sacks of Ce	ement	Е	stimated TOC
26"	26" 20"		20"	3/8" W	/all	63'		150 Sacks			
17.7	" 13.375"		54.5 lt	o/ft	1,500	,	750 Sac	cks			
12.25	5"	9.	625"	36.0 lb		3,400	,	980 Sag	cks		
12.2											
12.23		7" L:	iner (If)	23.0 18	o/ft						
Describe th	he proposed	d program T	f this application		or PLUG BACK, gi	ve the data	on the pro	esent productive z	one and prop	posed ne	w productive 7
² Describe the Describe the	he proposec blowout pr	d program Trevention pro	f this application	is to DEEPEN c	or PLUG BACK, gi	ve the data	on the pro	esent productive z	one and prop	posed ne	w productive
Describe the Descr	tify that the owledge an according to	d program I's evention program I's evention program is evention program in the program is eventional belief. I furth NMOCD	this application gram, if any. Us n given above is rther certify th	is to DEEPEN c	e to the it will be			ONSERVAT			
Describe the Descr	tify that the owledge an according to	d program I's evention program I's evention program is evention program in the program is eventional belief. I furth NMOCD	ithis application gram, if any. Us n given above is rther certify the guidelines, a	is to DEEPEN ce additional shee	e to the it will be : Appro	oved by:		ONSERVAT	TION DI	VISIO	
Describe the Descr	the proposed blowout pr	d program I evention pro	ithis application gram, if any. Us n given above is rther certify the guidelines, a	is to DEEPEN ce additional shee	e to the it will be : Appro			ONSERVAT		VISIO	

G-101 Lightning Dock Geothermal HI-01 LLC Project Production/Development Well 53-07 (GTHT-001)

OCD G-101 Conditions of Approval

(06/11/2010)

- 1) Geothermal exempt work over wastes must be disposed at an OCD approved waste disposal facility in accordance with 19.15.35.8(D) NMAC or OCD permitted treatment or disposal facility (19.15.36 et seq. NMAC).
- 2) All water quality sampling and laboratory methods must be in accordance with the terms and conditions of the discharge permit (GTHT-001). The operator must document the back annulus quality of the ground water to OCD's satisfaction.
- 3) Additional tanks (or large frac tank) will be necessary to circulate the hole for clean sampling representative of the formation to satisfy Condition 2 above. If the operator is unable to document that the ground water produced during the test is adequately "fresh," then it must immediately stop the test and contact OCD-EB.
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OIL CONSERVATION DIVISION P. O. BOX 2088 SANTA FE, NEW MEXICO 87501

Form G-101 Adopted 10-1-74 Revised 10-1-78

NO. OF COPIES RECEIVED									
DISTRIBUTION				7			5. Indicate	Type of Lease	
File	APPLICATION FOR PERMIT TO DRILL, DEEPEN,								
N.M.8.M.		OR PLU		5.a State Lease No.					
U.S.G.S.				F best how from	Feder	al NM-34790			
Operator							MILLE		
Land Office			essa sumanana de catas de essa se es es esta esta esta esta esta		TO SEE SO THE ST TO THE SECOND AND ADMINISTRATION OF THE SECOND ADMINISTRATION OF THE SECON				
1a. Type of Work Drill	*	[Deepen []		Plug Back [7. Unit Agr	regient Name	
	mal Produc mp Thermal	400000			np Observation ction/Disposal		8. Farm or	Lease Name N/A	
2. Name of Operator Lightr	ing Do	ck Geo	thermal HI-0)1	, LLC		9. Well No. TFD 5	5-7	
3. Address of Operator 5152	Edgewo	ood Dr	ive, Provo,	Ut	tah 84604		4	d Poot, or Wildcat Wildcat	
4. Location of Well	TED	LOCAT	ED 2411.9EET	50	OM THE East	LINE	111111		
9						LINE			
AND 2329.1 FEET FROM	THE Sou	thne of	$_{\text{SEC.}}$ 7 $_{\text{TWP.}}$ 2!	5	S RGE. 19 W	NMPM			
							12. County		
	444	4444	<i>\</i>	7			Hidalg		
//////////////////////////////////////	4444	<i>}}}}!</i>		19	Proposed Depth	19A Formati	7777777	20. Rotary or C.F.	
					3400'	open Ho	le	Rotary	
21. Elevations (Show whether DF 4201 GR	RT, etc.)	21A. Kind Irre	& Sams Fig. Bords	21	Beveretting:	Burgett	22. Appro	x. Date Work will start 5/1/10	
LITTER CONTRACTOR OF THE PROPERTY OF THE PROPE				1	***************************************	***************************************	mos.	J/ I/ IV	
		P	ROPOSED CASING A	ND	CEMENT PROGRAM				
SIZE OF HOLE	SIZE OF O	CASING	WEIGHT PER FOOT		T cerrine pears	100000	~ ~~~~~		
	10122		WEIGHT FEN FOOT	·	SETTING DEPTH	SACKS O	FCEMENT	EST. TOP	
			***************************************	~~~~	The state of the s	****		and the contract of the contra	

1. MIRU drill r	_								
2. Drill out ce	ment pl	ug fro	om 1450' to	15	550' approx.				
Drill out ce	ment pl	ug fro	om 1890' to	20	90' approx.				
4. RIH to locat	e cemer	it plug	g at 5400' a	pp	prox.				
5. Set bridge p	lug in	3000'-	-3400' inter	Vā	al.				
6. Collect wate						mental a	analvsis	5.	
7. Set producti			-	-					
-	on punt	ac of	approx.						
8. Release rig.	_	and the same of th							
9. Hook up well	_	_		נדו	ion system.				
10. Run pump tes	t for u	ip to f	four weeks.				,*		
11. Secure well.			2	1					
Please see attach	ed Prop	osed (Operations a	inc	d Drilling P	lan for	details	3.	
IN ABOVE SPACE DESCRIBE PR	OPOSED PRO								
i hereby certify that the information	AND THE PARTY OF T	ue and com	plete to the best of my	kn	towledge and belief	an a			
rigned - Bengarry & Barke					ce Managemen	ıt	Apri	1 12, 2010	
(This space for S	tate Usej	Mill valle madder from annother and a feet from the second and a secon			A CONTROL OF THE PARTY OF THE P	and the state of t	The American September 1999 of the Sept	And the state of t	
APPROVED BY COL	2. Chow	-	TITLE Engion	im	ental Ergin	u- I	DATE MA	n 26, 2010	
CONDITIONS OF APPROVAL, IF	ANY:	0	*		1		***************************************	1	