GTHT - _____1_____

GENERAL CORRESPONDENCE

2014

From: Nick Goodman [mailto:nick.goodman@cyrqenergy.com]
Sent: Monday, September 08, 2014 2:09 PM
To: Chavez, Carl J, EMNRD
Cc: Dawson, Scott, EMNRD; Griswold, Jim, EMNRD; David Janney (dwjanney160@gmail.com); Michelle Henrie
Subject: RE: Designated Agent Lightning Dock Geothermal HI-01, LLC Dale Burgett Geothermal Power Plant (GTHT-001)

Mr. Chavez,

Further to my email last week, Mr. Janney will continue to represent LDG as its designated agent. Mr. Janney's new contact information is as follows:
332 Hollywood Blvd. Corrales, NM 87048
Office: 505.508.5327
Cell: 1-505-449-8457
Email: dwjanney160@gmail.com

Please let me know if you require any additional information.

Regards,

Nicholas Goodman
Cyrq Energy, Inc.

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Wednesday, September 03, 2014 12:10 PM
To: Nick Goodman (Nick.Goodman@cyrqenergy.com)
Cc: Dawson, Scott, EMNRD; Griswold, Jim, EMNRD
Subject: Designated Agent Lightning Dock Geothermal HI-01, LLC Dale Burgett Geothermal Power Plant (GTHT-001)

Mr. Goodman:

Re: DESIGNATED AGENT shall mean that person designated by the owner or operator of any geothermal resources well to be his agent in all matters concerning the keeping of records within the state.

The New Mexico Oil Conservation Division (OCD) recently learned that Mr. David Janney is no longer employed by AMEC. At the request of Mr. Janney, OCD has continued to communicate with Mr. Janney on Lightning Dock Geothermal HI-01, LLC (LDG) affairs.

For OCD's Administrative Record, OCD hereby requests written confirmation from LDG that it has retained Mr. Janney to continue serving as the Designated Agent for the above subject facility in Hidalgo County. If so, OCD hereby requests Mr. Janney's official contact information including mail address, phone, e-mail and company affiliation.

If not, OCD requests information for the newly appointed Designated Agent for LDG living in New Mexico. OCD would appreciate a reply on/or before September 12, 2014.

Thank you.

Carl J. Chavez, Esq. CHMM
New Mexico Energy, Minerals & Natural Resources Department
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Drive, Santa Fe, New Mexico 87505
O: (505) 476-3490
E-mail: CarlJ.Chavez@State.NM.US
Web: 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

Chavez, Carl J, EMNRD

From: Kacie Peterson <kacie.peterson@cyrqenergy.com>
Sent: Thursday, August 21, 2014 3:07 PM
To: Chavez, Carl J, EMNRD
Cc: Dawson, Scott, EMNRD; Griswold, Jim, EMNRD; Nick Goodman; Steve Brown; David Janney (david.janney@amec.com); michelle@mhenrie.com
Subject: Lightning Dock Geothermal Flow Meter Calibration Status & Specs
Attachments: Affidavit-DavidRamirez_8.20.14.pdf; Cal Cert SO408447 (1).pdf; FLow Meter Callibration Status_LDG_8.21.14.pdf; GE Sensing AT 868 Specification.pdf

Mr. Chavez,

Attached you will find a letter intended to supplement our recent July G-108, G-109, and G-110 submittals for the Lightning Dock Geothermal project. Also attached are calibration sheets for the two GE AT868 flow meters, a meter specification sheet, and an affidavit from Plant Manager, David Ramirez.

Thank you,

Kacie Peterson

Lightning Dock Geothermal HI-01, LLC
(p) 575.548.0301 | (c) 505.469.4025 | (f) 575.548.0304
18 Greenhouse Drive | Animas, NM 88020 |www.cyrqenergy.com

Cyrq
Lightning Dock
geothermal

21 August 2014

Mr. Carl J. Chavez
New Mexico Energy, Minerals & Natural Resources Department
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

RE: G-108, G-109 and G-110 Submittals

Dear Carl:

This letter is intended to supplement our recent July G-108, G-109 and G-110 submittals for the Lightning Dock Geothermal Project. We have been working to improve the calibration of our flow meters to ensure as much accuracy as possible on our reporting of monthly production and injection data.

Attached are calibration sheets for the two GE AT868 flow meters. The flow meters continuously record flows from Well 45-7 and into Well 55-7. The meters were re-calibrated on July 7, 2014 by Instruments Direct, an independent technical representative for GE Sensing. Also attached is the meter specification sheet for the two meters. As you will note, each meter has an accuracy of ±2%.

Due to changes in liquid volumes associated with significant temperature changes, 311.6° f to 221.7° f, the flow readings between the two meters will of course be different. When adjusting for this temperature change, the injection flow should be 94% of the production flow. The average injection flow for the month of July was 886 gpm and the average production flow was 975 gpm. This reflects a decrease in injection volume caused by the decrease in temperature. There were no surface discharges at the plant during the month of July, therefore the difference between the calculated (expected) reduction to 94% and the recorded reduction of 91% is the result of the tolerances of the recording meters.

The 3.4% difference between the two meters is within the allowable tolerances of the flow meters, which is 2% for each meter (see attached specification sheet). Precise reconciliation of production and injections flows with flow meters is a common problem facing U.S. geothermal operators. For example, at our Thermo No. 1 power plant located in southern Utah, after considerable effort and cost over several years, the flow meters typically experience a 1% variance on a monthly basis. Based on our experience at Thermo reducing the tolerance to 1%, Lightning Dock is scheduling a GE Sensing technical representative to re-calibrate the meters for a second time in an effort to increase the accuracy between the flow meters.

136 South Main Street Suite 600 Salt Lake City, UT 84101
(p) 801.875.4200 info@cyrqenergy.com (f) 801.374.3314

Should you wish to discuss this issue or have any further questions, please do not hesitate to contact David Janney at AMEC.

Sincerely,

Lightning Dock Geothermal HI-01, LLC

By:

Manager, Permitting and Community Relations

Cc: S. Dawson, NMOCD
J. Griswold, NMOCD
N. Goodman, Cyrq Energy
S. Brown, Cyrq Energy
D. Janney, AMEC
M. Henrie, Land Water Law

136 South Main Street Suite 600 Salt Lake City, UT 84101
(p) 801.875.4200 info@cyrqenergy.com (f) 801.374.3314

Affidavit of David Ramirez

I, David Ramirez, a resident of New Mexico being duly sworn, attest:

1. I am employed by Lightning Dock Geothermal HI-01, LLC ("LDG") at its geothermal power plant facility in Hidalgo County, New Mexico;

2. I am the Plant Manager of LDG's Dale Burgett Geothermal Power Plant;

3. During the month of July 2014, there were no surface discharges at the Dale Burgett Geothermal Power Plant.

Further affiant sayeth naught.

David Ramirez

STATE OF NEW MEXICO)

ss.)

COUNTY OF Hidalgo)

OFFICIAL SEAL
KACIE L. PETERSON
Notary Public
State of New Mexico
My Comm. Expires 6/15/17

The foregoing Affidavit was subscribed and sworn to before me by David Ramirez on this 20th day of August, 2014.

Notary Public

My Commission expires: June 15, 2017

Instruments Direct — Ultrasonic Flow Meter Rental & Sales

www.instrumentsdirect.com 888.722.5543

Calibration Information Sheet

Customer Name:	Lightning Dock Geothermal	Test Date:	7/7/2014
SO Number:	SO408447	Calibration Number:	29501.01
Job Site:		Test Meter:	PT878
Address:	18 Greenhouse Dr	Serial No:	8914
Address:	Animas NM 88020	Additional Details	
Contact:	David Ramirez	Pipe Size OD:	16.000
Ph:	575-494-4531	Pipe Wall :	0.375
		Pipe Material:	CS
Site Details		Liquid:	Water
Meter MFR:	GE	Temp:	300F
Model No:	AT868-1-1-1	PSIG:	
Serial No:	13520	Transducer spacing:	10.843
Model No: #116	C-PT-10-H-B 00-0	Hydraulics:	Good
Serial No:	6130320/06130319		

Test Number	Site Meter original GPM	Ref Meter	Adj	Site Meter Final
1.0	926.0	922.5	-	926.0

Calibration Statement

Test equipment is calibrated and meets all published specifications per manufacturer. Field testing procedures emulate industry standards and are performed by an experienced technician. It is recommended that to maintain optimum performance of this type of equipment, field calibration should be scheduled every year from the date of last calibration.

Comments:

Test Performed by: _____ on the Date of 7/7/14

Instruments Direct
2130 Barrett Park NW, Ste 103 Kennesaw GA 30144
(888)722-5543 sales@instrumentsdirect.com www.instrumentsdirect.com

Instruments Direct — Ultrasonic Flow Meter Rental & Sales

www.instrumentsdirect.com 888.722.5543

Calibration Information Sheet

Customer Name:	Lightning Dock Geothermal	Test Date:	7/7/2014
SO Number:	SO408447	Calibration Number:	29501.02
Job Site:		Test Meter:	PT878
Address:	18 Greenhouse Dr	Serial No:	8914
Address:	Animas NM 88020	Additional Details	
Contact:	David Ramirez	Pipe Size OD:	16.000
Ph:	575-494-4531	Pipe Wall :	0.375
		Pipe Material:	CS
Site Details		Liquid:	Water
Meter MFR:	GE	Temp:	300 F
Model No:	AT868-1-1-1	PSIG:	
Serial No:	13653	Transducer spacing:	10.843
Model No: #116	C-PT-10-H-B 00-0	Hydraulics:	Good
Serial No:	08132717 /08132732		

Test Number	Site Meter original GPM	Ref Meter GPM	Adj	Site Meter Final
1.0	1049.0	1049.0	-	1049.0

Calibration Statement

Test equipment is calibrated and meets all published specifications per manufacturer. Field testing procedures emulate industry standards and are performed by an experienced technician. It is recommended that to maintain optimum performance of this type of equipment, field calibration should be scheduled every year from the date of last calibration.

Comments:

Test Performed by: _____ on the Date of 7/7/14

Instruments Direct
2130 Barrett Park NW, Ste 103 Kennesaw GA 30144
(888)722-5543 sales@instrumentsdirect.com www.instrumentsdirect.com

GE
Sensing

AT868 Specifications

Operation and Performance

Fluid Types
Acoustically conductive fluids, including most clean liquids, and many liquids with entrained solids or gas bubbles. Maximum void fraction depends on transducer, interrogation carrier frequency, path length and pipe configuration.

Pipe Sizes
- Clamp-on transducers: 0.5 to 300 in. (12.7 mm to 7.6m) and larger
- Wetted transducers: 1 in to 200 in (25.4 mm to 5 m) and larger

Pipe-Wall Thickness
Up to 3 in (76.2 mm)

Pipe Materials
All metals and most plastics. Consult GE for concrete, composite materials, and highly corroded or lined pipes.

Clamp-On Flow Accuracy (Velocity)
- Pipe ID>6 in (150 mm): ±1% to 2% of reading typical
- Pipe ID<6 in (150 mm): ±2% to 5% of reading typical

Wetted Flow Accuracy (Velocity)
±1% of reading typical

Accuracy depends on pipe size and whether measurement is one-path or two-path. Accuracy to ±0.5% of reading may be achievable with process calibration.

Repeatability
±0.1% to 0.3% of reading

Range (Bidirectional)
–40 to 40 ft/s (–12.2 to 12.2 m/s)

Rangeability (Overall)
400:1

Specifications assume a fully developed flow profile (typically 10 diameters upstream and 5 diameters downstream of straight pipe run) and flow velocity greater than 1 ft/s (0.3 m/s).

Measurement Parameters
Volumetric flow, totalized flow and flow velocity

Electronics

Flow Measurement
Patented Correlation Transit-Time mode

Enclosure
Epoxy-coated aluminum weatherproof Type 4X/IP66

Dimensions
Standard: Weight 2 lb (0.9 kg),
size (h x w x d) 7.25 in x 5.9 in x 3.5 in
(184 mm x 150 mm x 89 mm)

Channels
- Standard: One channel
- Optional: Two channels (for two pipes or two-path averaging)

Display
2-line x 16 character backlit LCD display, configurable to display up to four measurement parameters in sequence

Keypad
Six-button internal keypad

Power Supplies
- Standard: 85 to 265 VAC, 50/60 Hz
- Optional: 12 to 28 VDC, ± 5%

Power Consumption
20W maximum

Operating Temperature
14°F to 131°F (–10°C to 55°C)

Storage Temperature
–40°F to 158°F (–40°C to 70°C)

Standard Inputs/Outputs
- One 0/4 to 20 mA isolated output per channel, 600 Ω maximum load
- One frequency/pulse rate/totalizer output per channel, optically isolated, 3A maximum, 100 VDC maximum, 1W maximum, from 0.1 to 10 kHz

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Tuesday, July 15, 2014 9:26 AM
To: 'Janney, David'
Cc: Griswold, Jim, EMNRD; Dade, Randy, EMNRD; Shapard, Craig, EMNRD; Nick Goodman; Kacie Peterson
Subject: RE: OCD letter to LDG dated June 20, 2014

David:

Good morning. The New Mexico Oil Conservation Division (OCD) is in receipt of the operator's 7/14 request below for an extension to sampling at LDGs: 47-7 and 63-7 based on OCD's letter (letter) dated June 20, 2014. The letter specifies an August 1, 2014 deadline to complete specified ground water sampling.

The operator explains the basis for a request for extension to the above deadline and proposes an alternate sampling schedule for the week of August 11, 2014 with lab results to be received by OCD within 12 days of sample delivery to the environmental lab. Based on the request, OCD shall receive the environmental laboratory data on or before 8/29.

OCD hereby **approves** the request for extension. 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
O: (505) 476-3490
E-mail: CarlJ.Chavez@State.NM.US
Web: 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: Janney, David [mailto:david.janney@amec.com]
Sent: Monday, July 14, 2014 1:04 PM
To: Chavez, Carl J, EMNRD
Cc: Griswold, Jim, EMNRD; Dade, Randy, EMNRD; Shapard, Craig, EMNRD; Nick Goodman; Kacie Peterson
Subject: FW: OCD letter to LDG dated June 20, 2014

Greetings Mr. Chavez:

I am in receipt of the above referenced letter regarding additional sampling of LDG wells 47-7 and 63-7.

As I indicated in our telephone conversation about this issue on June 9, LDG thinks that the organic constituents detected in these samples were the result of contamination on the wire line sampling equipment used by Well Analysis Co (Welaco). Please note that these are the only wells with detections of these constituents and they are the only wells sampled by Welaco.

LDG wishes to comply with the request but will need additional time to do so.

As we have discussed previously, it is not a simple task to collect a samples from these deep hot wells. LDG has suffered through a couple attempts previously with different vendors that resulted in failure and continues to search for a good solution. LDG has been in negotiation with QED about using QED equipment to sample these wells and as of late last week we appear to have reached an agreement with them to supply the additional equipment and have at least one field representative on-site to oversee the use of QED equipment. We have to work around QED's field schedule to coordinate this sampling event. We are tentatively scheduled to have QED on site the week of August 11th. This is the soonest they can send a field representative. With this date in mind, we propose to collect the samples the week of August 11th and submit the lab results to you within 12 working days of submitting the samples to the lab.

LDG respectfully requests this time extension to accomplish this task.

Sincerely,

David W. Janney, PG
AMEC E&I
8519 Jefferson NE
Albuquerque, NM 87113
505.821.1801 Main
505.796.7276 Direct

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

David Martin
Cabinet Secretary Designate

Brett F. Woods, Ph.D.
Deputy Cabinet Secretary

Jami Bailey
Division Director
Oil Conservation Division

JUNE 20, 2014

Lightning Dock Geothermal HI-01, LLC
c/o Mr. David Janney
AMEC
8519 Jefferson, NE
Albuquerque, NM 87113

RE: Water Quality Monitoring at Lightning Dock Geothermal Project (GTHT-001), Hidalgo County, New Mexico

Mr. Janney:

The Oil Conservation Division (OCD) reviewed the Water Quality Monitoring results submitted in the Annual Water Quality Monitoring Report and Annual Geothermal Well Report both dated January 31, 2013. After review of the reports, OCD provides some introduction, observations, recommendations and/or requirements.

Organics compounds were detected in LDG 63-7 (i.e., 370 ug/L PCE) and MW 47-7 (i.e., 14 mg/L Phenol) during pre-start-up of operations in December of 2013. OCD has determined these wells need to be retested to confirm the presence or lack of organic compounds in ground water, which were detected above the Water Quality Control Commission (WQCC) standards. OCD believes the method of sample procurement (wire-line versus bladder pump with drop tubing) used could explain the detections.

The operator should utilize environmental sampling equipment to procure environmental water quality samples representative of ground water at the facility. Furthermore, the operator shall run EPA Methods 8260 (full-suite) and 8310 on both wells. The operator shall complete the environmental sampling, lab testing, and provide the results no later than August 1, 2014.

If you have any questions, please contact me. Thank you.

Respectfully,

Carl Chavez
Environmental Engineer

cc: OCD Artesia Office

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, March 27, 2014 9:36 AM
To: Janney, David (david.janney@amec.com)
Cc: Dawson, Scott, EMNRD; Sanchez, Daniel J., EMNRD; VonGonten, Glenn, EMNRD; Dade, Randy, EMNRD; Shapard, Craig, EMNRD
Subject: Monitor Well 47-7 G-103s (Casing Integrity Test & Cement Bond Log)
Attachments: OCD CBL CA Letter 3-27-2014.pdf; LDG 47-7 CIT Approval G-103.pdf

Mr. Janney:

Please find attached the New Mexico Oil Conservation Division (OCD) documents related to the above subject.

Hard copies will be sent U.S. Mail today.

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
O: (505) 476-3490
E-mail: CarlJ.Chavez@State.NM.US
Web: http://www.emnrd.state.nm.us/ocd/
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State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

David Martin
Cabinet Secretary

Brett F. Woods, Ph.D.
Deputy Cabinet Secretary

Jami Bailey
Division Director
Oil Conservation Division

MARCH 27, 2014

Mr. David W. Janney, PG
AMEC (Agent for Lightning Dock Geothermal (HI-01), LLC)
8519 Jefferson NE
Albuquerque, New Mexico 87113

Re: "G-103" LDG 47-07 Cement Bond Log Lighting Dock Geothermal Power Project (Order No. R-13675-B) Hidalgo County, New Mexico

Dear Mr. Janney:

The New Mexico Oil Conservation Division (OCD) is in receipt of the G-103 Form and attached Halliburton Cement Bond Log (CBL) associated with the above subject well and signed by the operator on March 3, 2014.

After careful review of the CBL, OCD has determined that the cement behind pipe is not sufficient and requires corrective action (CA). The CBL "Sectors Track" (ST) exhibits a blue color image (void/lack of cement) at depths specified below. An 80% or greater volume of cement in well annular space is acceptable to the OCD.

OCD CBL review comments are:

1) Lack of cement (free-standing pipe) is observed from surface to ~ 200 ft. depth from ST (left to right image), which clearly exhibits 0% coverage in well annular space by 100% large blue color image;
2) A "channel feature" is noticed from 200 ~ 650 ft. depth from ST (left to right image), which clearly exhibits 30 - 40% coverage in well annular space by the large blue color image;
3) CA is required to repair the cement problem from surface to ~ 650 ft. Please submit a G-103 Form with operator proposed CA on the well for OCD review and approval.

The operator must complete the above CA within 90 days of receipt of this letter. Please contact Carl Chávez of my staff if you have any questions at (505) 476-3490, U.S. Mail at the address below, or email at CarlJ.Chavez@state.nm.us.

Sincerely,

Daniel Sanchez
UIC Director

Attachment: G-103 Form "Cement Bond Log"

DS/cjc

cc: Mr. Scott Dawson, OCD Santa Fe
Mr. Glenn von Gonten, OCD Santa Fe
OCD Artesia Office

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-103
Adopted 10-1-74
Revised 10-1-78

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U. S. G. S		
Operator		
Land Office		

SUNDRY NOTICES AND REPORTS ON GEOTHERMAL RESOURCES WELLS

5. Indicate Type of Lease: State ☐ Federal ☑ Fee ☐

5.a State Lease No.: Federal NM34790

Do Not Use This Form for Proposals to Drill or to Deepen or Plug Back to a Different Reservoir. Use "Application For Permit –" (Form G-101) for Such Proposals.)

1. Type of well: Geothermal Producer ☑ Temp. Observation ☐ Low-Temp Thermal ☐ Injection/Disposal ☐

7. Unit Agreement Name:

2. Name of Operator: Lightning Dock Geothermal HI-01, LLC

8. Farm or Lease Name: Federal NM 34790

3. Address of Operator: 136 South Main Street, Ste. 600, Salt Lake City, Utah 84101

9. Well No.: LDG 47-7

4. Location of Well
Unit Letter ____ 1555 Feet From The South Line and 2266 Feet From The West Line, Section 7 Township 25S Range 19W NMPM.

10. Field and Pool, or Wildcat: Lightning Dock Geothermal

15. Elevation (Show whether DF, RT, GR, etc.): 4198 GR

12. County: Hidalgo

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐			COMMENCE DRILLING OPNS.	☐	PLUG & ABANDONMENT	☐
PULL OR ALTER CASING	☐	CHANGE PLANS	☐	CASING TEST AND CEMENT JOB	☐		
OTHER	☐			OTHER Cement bond log conducted			☑

17. Describe Proposed or completed Operations (Clearly state all pertinent details, and give pertinenet dates, including estimated date of starting any proposed work) SEE RULE 203.

Subsequent notice of a cement bond log.

Halliburton performed a cement bond log on LDG 55-7 on October 10, 2013 and the cement bond appeared to be in good condition.
Please find a copy of this cement bond log attached.

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED David W Janney, PG TITLE Agent for Lightning Dock Geothermal HI-01, LLC DATE March 3, 2014

APPROVED BY _____ TITLE _____ DATE _____

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-103
Adopted 10-1-74
Revised 10-1-78

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U. S. G. S		
Operator		
Land Office		

SUNDRY NOTICES AND REPORTS ON GEOTHERMAL RESOURCES WELLS

5. Indicate Type of Lease: State ☐ Fee ☐
5.a State Lease No.: Federal NM34790

Do Not Use This Form for Proposals to Drill or to Deepen or Plug Back to a Different Reservoir. Use "Application For Permit —" (Form G-101) for Such Proposals.)

1. Type of well: Geothermal Producer ☐ Temp. Observation ☐ Monitoring ☑ Low-Temp Thermal ☐ Injection/Disposal ☐
7. Unit Agreement Name:
2. Name of Operator: Lightning Dock Geothermal Power HI-01, LLC
8. Farm or Lease Name:
3. Address of Operator: 136 South Main Street, Ste. 600, Salt Lake City, Utah 84101
9. Well No.: LDG 47-7
4. Location of Well: Unit Letter 1155 Feet From The South Line and 2266 Feet From The West Line, Section 7 Township 25S Range 19W NMPM.
10. Field and Pool, or Wildcat: Lightning Dock Geothermal
15. Elevation (Show whether DF, RT, GR, etc.): 4199 GR
12. County: Hidalgo

16. Check Appropriate Box To Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐		COMMENCE DRILLING OPNS. ☐	PLUG & ABANDONMENT ☐
PULL OR ALTER CASING ☐	CHANGE PLANS ☐	CASING TEST AND CEMENT JOB ☐	
OTHER ☐		OTHER Casing integrity test ☑	

17. Describe Proposed or completed Operations (Clearly state all pertinent details, and give pertinenet dates, including estimated date of starting any proposed work) SEE RULE 203.

On January 20, 2012, Trinity Drilling conducted choke, annular, and pipe ram tests on well LDG 47-7.
The tests were monitored and recorded by Prospect Geotech, the mud logging firm.
Each test pressurized the casing and the results indicated the casing will hold a bottom hole pressure of at least 921 pounds per square inch (psi) for 30 minutes.
The maximum well pressure drop observed in the 30 minute tests was 46 psi, from 997 psi to 951 psi, thereby passing the test.
Please find attached the Prospect Geotech graphs and raw test data.

18. I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNED David W Jaramillo, PG TITLE Agent for Lightning Dock Geothermal Power HI-01, LLC DATE March 14, 2014

APPROVED BY Carl J. Chavez TITLE Environmental Engineer DATE 3/19/2014

CONDITIONS OF APPROVAL, IF ANY:

Commercial geothermal pla

Tapping hot water for electricity, Cyrq works on energy frontier

By Lauren Villagran
Journal Staff Writer

ANIMAS — A hot water resource tapped first for growing roses, then for raising fish, is now supplying New Mexico's first commercial-scale geothermal electricity.

Cyrq Energy Inc. has turned the key on its $43 million geothermal power plant Lightning Dock. Chief Executive Nick Goodman, Gov. Susana Martinez and electricity provider Public Service Company of New Mexico are touting the project today as a way to diversify the state's renewable energy resources.

"Renewable energy has its issues, like fossil fuels, but geothermal overcomes a lot of the challenges," Goodman said.

Unlike wind and solar, a geothermal plant can supply energy nonstop.

Still, the project has rattled some locals — including farmers, members of the Lordsburg Soil and Water Conservation board and the local owner of one of the country's largest tilapia hatcheries — who worry that the project could upset water quality or availability. Cyrq says its process of pumping and re-injecting water will neither contaminate nor deplete the shallow aquifer — "zero pollution, zero emissions," it said in a statement.

State officials charged with regulating the project say that while the precise underground water flow is not fully understood, the company assumes some entrepreneurial risk. As it ramps up, Cyrq is required to monitor water levels and quality and submit that data to the Oil Conservation Division of the Energy, Minerals and Natural Resources Department.

"Not all of the questions are answered," said Carl Chavez, an OCD environmental engineer, following a November visit to the plant. "They are

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Still, the project has rattled some locals — including farmers, members of the Lordsburg Soil and Water Conservation board and the local owner of one of the country's largest tilapia hatcheries — who worry that the project could upset water quality or availability. Cyrq says its process of pumping and re-injecting water will neither contaminate nor deplete the shallow aquifer — "zero pollution, zero emissions," it said in a statement.

State officials charged with regulating the project say that while the precise underground water flow is not fully understood, the company assumes some entrepreneurial risk. As it ramps up, Cyrq is required to monitor water levels and quality and submit that data to the Oil Conservation Division of the Energy, Minerals and Natural Resources Department.

"Not all of the questions are answered," said Carl Chavez, an OCD environmental engineer, following a November visit to the plant. "They are proceeding at some risk if there are any water quality issues, any water drawdown issues. The state is authorized and empowered to modify the permit as needed (or) to terminate the permit if things go completely wrong out there."

Near the intersection of Geothermal and Hot Water roads, Cyrq has built a power plant where a different outfit once used the warm water near the surface to grow roses. The company is tapping what is known as a "hydrogeologic window," in which 300-degree water flows upward through faults and fractures.

Cyrq pumps hot water from 1,200 feet to 3,000 feet below ground at estimated flow rates of 2,200 gallons per minute, pulls it to the desert surface to heat a secondary fluid, which in turn spins turbines to generate electricity. The company re-injects the somewhat cooled geothermal water back into the ground nearby. The water

See **COMMERCIAL** *on* **PAGE C2**

Commercial geothermal plant is NM's

from **PAGE C1**

never sees the light of day and, Goodman says, it is not spent or wasted.

Cyrq launched production Dec. 24 and is generating about 4 megawatts of electricty.

With economics more akin to the mining industry than to wind or solar, geothermal producers know that "the more you learn about the resource, the better off you will be in the long run," said Ben Matek, analyst with the Washington, D.C.-based Geothermal Energy Association. "This is the first project in New Mexico, so we'll learn a lot."

The project has garnered high-level political support since its inception in 2009, when the company spearheading the effort was known as Raser Technologies Inc. That company declared bankruptcy in 2011 and later re-emerged as Cyrq Energy.

Not a half mile from the plant, AmeriCulture Inc. raises tilapia fingerlings in geothermally heated pools. Owner Damon Seawright has been a vocal opponent of the project. In letters to the OCD and at public hearings, Seawright has said his studies suggest the company's injection well will not protect shallow groundwater.

"If we see water levels going down, we're going to have to act," Chavez told a full house at a public meeting in Lordsburg in November, where Seawright voiced his concerns.

Is geothermal water an energy resource, water or both?

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Is geothermal water an energy resource, water or both?

The state Legislature in 2012 settled that question by deciding that the use of water over 250 degrees should be regulated as an energy resource by the OCD, while water below that temperature remains under the purview of the Office of the State Engineer, which oversees water rights.

"The state engineer is the creed we have always abided by in our area since 1912," said David Ramos of Ramos Farms. "Pardon the pun, but it's unchartered water."

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, January 23, 2014 12:07 PM
To: Chuck Smiley (Chuck.Smiley@cyrqenergy.com)
Cc: Dawson, Scott, EMNRD; VonGonten, Glenn, EMNRD; Wade, Gabriel, EMNRD
Subject: Lighting Dock Geothermal Project (GTHT-001) and OCD Clarifications on G-108, G-109 and G-110 Form Submittals for 2013 (Hidalgo County)

Chuck:

Good afternoon.

OCD is in receipt of the above subject forms with operator information for 2013. Please find below follow-up information from our telephone call this morning on the above subject and OCD hopes that it will assist you in future reporting on project wells at the facility. The intent of the forms is to provide an accurate accounting record per project well for flow volume, water diversion, geothermal fluid temperature, well pressure, etc. throughout the life of the geothermal project.

OCD comments/recommendations by G-Form are provided below.

G-108 (Mo. Geothermal Production Report) for the months in the year:

1) The UL: is missing.
2) The "Totals" values are not recorded near the bottom of the form.
3) The volume values from the G-109 are used herein, but could change depending the number of production wells.
4) There is one form per production well that must be completed, and in the case of multiple production wells, a form must be submitted for a well even if the well was idle for the month and values are carried over from the previous month onto the form for tracking purposes. OCD notices that there is only one month of production/injection from Dec. 2013; therefore, reporting is complete for 2013.

G-109 (Mo. Geothermal Purchaser's Report) for the months in the year:

1) Complete form location information is required, for example the UL: is K for this well.
2) Total Mass (Lbs x 10^6): OCD requests the water density conversion based on the production fluid temperature used to derive the total mass volume value of 91.8 for December 2013. Perhaps there are special calculations for thermal fluids that the operator used, if so, please provide as the basis for the volume values entered into the form. OCD notices similar volume values are used in the other forms; therefore, the operator needs to make sure the values are accurate for reporting to OCD. In addition, the number of forms with individual well volumes are well specific and may change depending on the number of wells and form type.
3) The "Residual Water" field is very important because it documents the volume of any water diversion from the geothermal flow process for tracking purposes with the OSE. The volume values entered for the production well should not include any residual water, this must be reported separately on the form each month.
4) There is one form per production well that must be completed. OCD notices that there is only one month of production/injection from Dec. 2013; therefore, reporting is complete for 2013.

G-110 (Mo. Geothermal Injection Report) for the month and cumulative for the year:

1) The monthly and cumulative "Total" values are not recorded near the bottom of the form.
2) There should be one form per injection well that must be completed, even if an injection well is idle for the month. If an injection well was idle for the month, the values should indicate this, and the cumulative value from the prior month should be reported on the form for tracking purposes for the year. OCD notices that there is only one month of production/injection from Dec. 2013; therefore, reporting is complete for 2013. Therefore, OCD requires 3 G-110 Forms (one for each injection well).
3) Each G-110 Form should reflect well specific information, i.e., volumes, temperatures, etc. per well. Therefore, the operator should have proper metering per well in place to record accurate data in any forms submitted to OCD.

OCD requests that revised and any additional forms from the month of December 2013 be submitted within 15-days of receipt of this message. Please contact OCD if you cannot meet this deadline and/or if you have questions.

Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Department
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"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