GTLT - 4

AmeriCulture
No. A-568
UL: A 7-25S-19W
Hidalgo County

DRILLED: ~7/2/1996

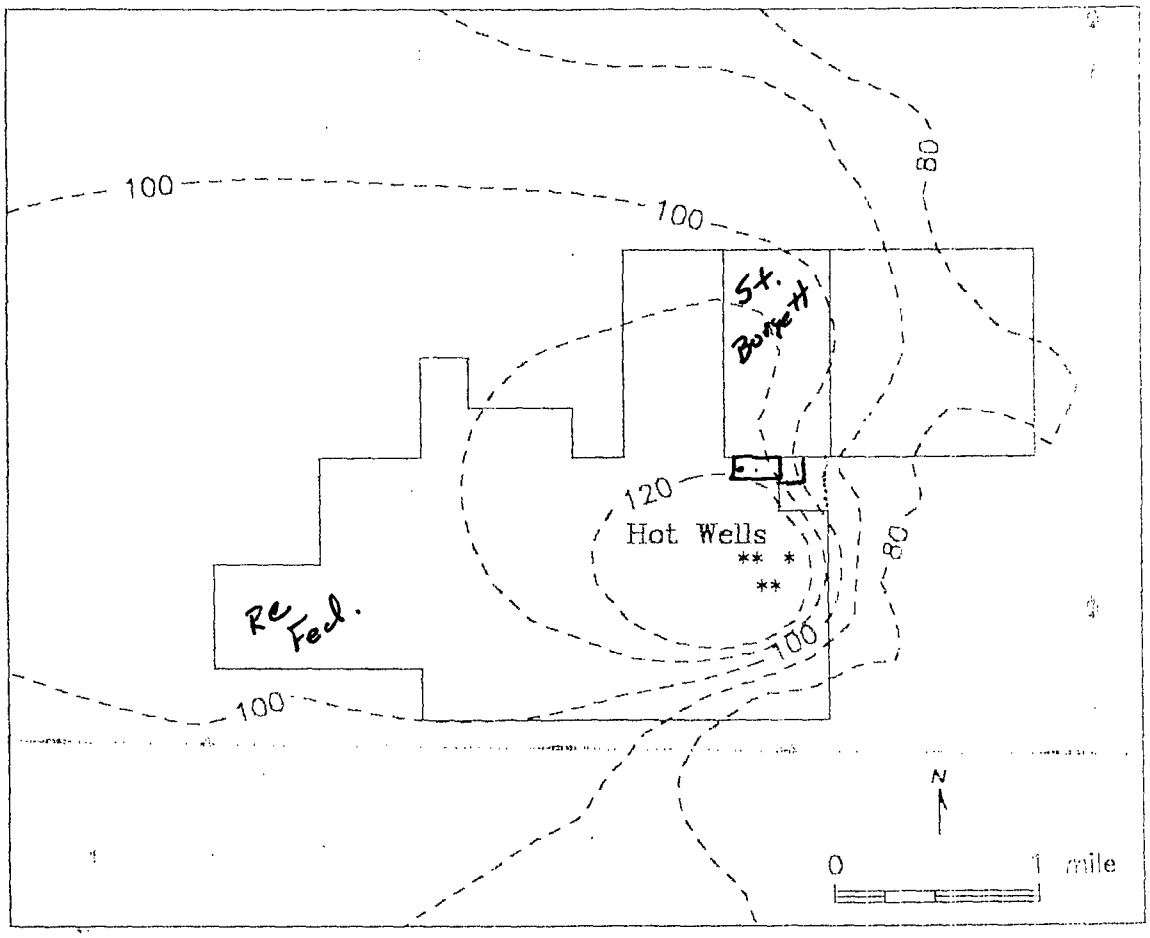

Figure 3. Contoured isotherms (°F) at a depth of 100 feet (30 m).

Burgett on RC lease: surf to 1000' on 200 Acre's
operating agreement

Damon E. Seawright
AmeriCulture, Inc.
HC 65 Box 260C
Animas, NM 88020
Phone: (505)548-2328
Fax: (505)548-2631

AUG - 5 1996

August 2, 1996

Roy Johnson
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

Dear Roy:

Enclosed herewith are five copies each of Forms G-101 and G-102 for the new geothermal well location on State Lease No. GTR-304-1. The well location was moved 50 feet NNW of the previous well site in accordance with the verbal approval you gave AmeriCulture, Inc. on June 20, 1996. The other necessary forms will follow shortly.

Sincerely,

Damon E. Seawright

cc: Gary L. Seawright
Garrett P. Seawright

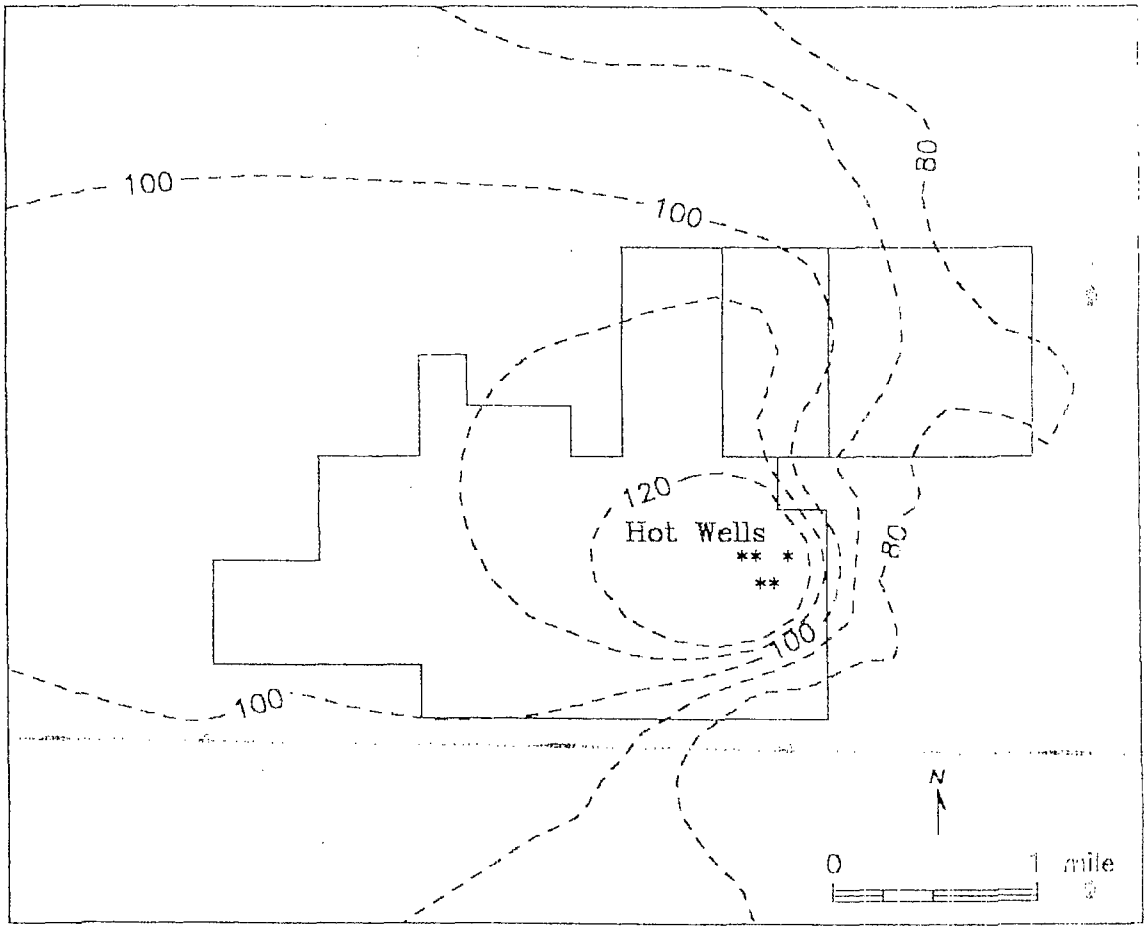

Figure 3. Contoured isotherms (°F) at a depth of 100 feet (30 m).

James C. Witcher
Witcher and Associates
Geothermal Resources Evaluation and Exploration
P. O. Box 3142
Las Cruces, NM 88003
505/522-6148 or 505/646-3949
505/649-4893 (cell)

22 May 2001

Mr. Roy E. Johnson
Oil Conservation Division
New Mexico Energy, Minerals, and
Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

Dear Roy,

I beg your forgiveness on the lack of prior notice for a pump test on a geothermal well at Lightning Dock and tardiness in submission of a Sundry Notice. Enclosed is a Sundry Notice and Report on Geothermal Resources Wells (Form G-103). The Americulture 1 State well (A-568) was pumped for 48 hours from 7 October 2000 until 9 October 2000 at a steady rate of 1,000 gpm. Discharge was to the surface in drainage to the west across Americulture surface property. Discharge did not flow beyond the Americulture lands. A chemical analysis of the discharge is attached to the Sundry Notice. The chemical quality of the discharge is typical of local ground water. No arsenic was present in the discharge. However, fluoride was 10.1 mg/L and typical of a Lightning Dock geothermal water.

During the test water levels were monitored in a Burgett well 825 north of the producing Americulture well. A "best estimate" of the transmissivity is 62,392 gpd/ft and storativity is 1.17 10^{-4}. Temperature of discharge remained steady at about 111 °C.

Sincerely,

James C. Witcher
Project Geologist

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

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

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

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File		
N. M. B. M.		
U. S. G. S		
Operator		
Land Office		

SUNDRY NOTICES AND REPORTS ON GEOTHERMAL RESOURCES WELLS

5. Indicate Type of Lease
State [XX] Fee [ ]

5.a State Lease No.
GTR-304-1

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 [XX] Injection/Disposal [ ]

7. Unit Agreement Name

2. Name of Operator
Americulture, Inc.

8. Farm or Lease Name
Americulture

3. Address of Operator
HC Box 260 C, Animas, NM 88020

9. Well No.
A-568

4. Location of Well
Unit Letter A 579 Feet From The north Line and 971 Feet From The east Line, Section 7 Township 25S Range 19W NMPM.

10. Field and Pool, or Wildcat
Lightning Dock

15. Elevation *(Show whether DF, RT, GR, etc.)*
4256 RT

12. County
Hidalgo

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

NOTICE OF INTENTION TO:
PERFORM REMEDIAL WORK [ ] PLUG AND ABANDON [ ]
TEMPORARILY ABANDON [ ]
PULL OR ALTER CASING [ ] CHANGE PLANS [ ]
OTHER [ ]

SUBSEQUENT REPORT OF:
REMEDIAL WORK [ ] ALTERING CASING
COMMENCE DRILLING OPNS. [ ] PLUG & ABANDONMENT
CASING TEST AND CEMENT JOB [ ]
OTHER 48 hour pump 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.

SEE ATTACHED REPORT

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

SIGNED James C. Witcher TITLE Geologist DATE 5/22/2001

APPROVED BY [signature] TITLE DISTRICT SUPERVISOR DATE 6/2/2001

CONDITIONS OF APPROVAL, IF ANY:

SWAT Laboratory
New Mexico State University
Agronomy & Horticulture Department
Box 30003, Department 3Q
Las Cruces, NM 88003-8003

January 29, 2001

James C. Witcher
SWTDI/NMSU
Las Cruces, NM 88003
646-3949

Dear James Witcher:

Below are the results of analysis of 1 sample received for examination on October 30, 2000:

Sample I.D. AB18968 Client Code: WITCHER
Sample Description: Seawright Geothermal Well
Sample collector: JAMES WITCHER
Sample collection date: 10/30/00 Time: 10:00
Lab submittal date: 10/30/00 Time: 10:21

TEST PARAMETER	UNITS	TEST RESULT	DETECTION LIMIT
pH of water		8.11	
Total Dissolved Solids	mg/L	1071	1
Bicarbonate	meq/L	2.27	0.01
Sodium by ICP-	mg/L	319	10
Calcium by ICP-	mg/L	22.7	0.2
Magnesium by ICP-	mg/L	0.1	0.1
Potassium by ICP-	mg/L	14.7	0.2
Chloride by Autoanalyzer	mg/L	80	5
Sulfate	mg/L	462	10
Fluoride by electrode	mg/L	10.10	0.25
Bromide by Ion Chrom-	mg/L	Not detected	0.1
Arsenic by ICP-	mg/L	Not detected	0.05
Silica by ICP 89.9 as SiO_2	mg/L	42.0	0.5
Strontium by ICP	mg/L	0.45	0.01
Lithium by ICP-	mg/L	0.49	0.05
Boron by ICP-	mg/L	0.37	0.01
Iron by ICP-	mg/L	1.14	0.01

Please advise should you have questions concerning these data.

Respectfully submitted,

Andrew Lee Bristol

Andrew Lee Bristol
Laboratory Manager
(505)646-4422

EXECUTIVE SUMMARY

A PRELIMINARY ANALYSIS OF THE SHALLOW RESERVOIR CHARACTERISTICS OF THE LIGHTNING DOCK GEOTHERMAL SYSTEM AS DETERMINED FROM PUMP TEST OF AMERICULTURE PRODUCTION WELL

Prepared by

JAMES C WITCHER

LAS CRUCES, NEW MEXICO

Submitted to

AMERICULTURE

COTTON CITY, NEW MEXICO

APRIL 2001

EXECUTIVE SUMMARY

This report provides the first analysis of the productivity of the shallow Lighting Dock Geothermal System reservoir. The results of this study should be considered as preliminary. However, several important constraints and properties of the reservoir are identified. A description of the shallow reservoir geology of the Lightning Dock Geothermal system, and an analysis of a pump test of the Americulture well, and estimates of reservoir transmissivity and storativity are presented. Estimated Theis model drawdown for a conservative confined reservoir are presented and discussed for a production of 1,000 gpm over a twenty year period at various distances from the production well. Recommendations for production and injection wells and a program of reservoir monitoring are also included in this report.

The Lightning Dock geothermal system is contained in an intrabasin or rift accommodation zone horst block on or adjacent to the intersection of a probable major WNW basement structure, the ring fracture zone of a large Tertiary caldera and at the southern fault tip of an incipient Pleistocene normal fault on the eastern border of the lower Animas graben. The upflow zone plumbing is not possible to detail with confidence. An unmapped fault zone or a buried mid-Tertiary ring fracture rhyolite dike or dome may play a role. Temperature logs and well lithology logs indicate that a shallow outflow plume extends across the area of this report. The outflow plume is contained in a shallow fractured reservoir of Tertiary rhyolite. Overall, the total energy output as inferred from heat flow studies indicates a total flux no greater than 10 MWt. As a result, an ultimate sustained electrical power generation capability in excess of 5 Mwe is probably not feasible.

The approach taken in this study is a very conservative interpretation and analysis of drawdown data from the Americulture and Burgett 'A' wells. The reservoir is assumed to be a confined reservoir which is the most conservative class of aquifer models. In reality, the reservoir is probably a semi-confined and leaky reservoir. There is a complete range of "leakiness" between a confined

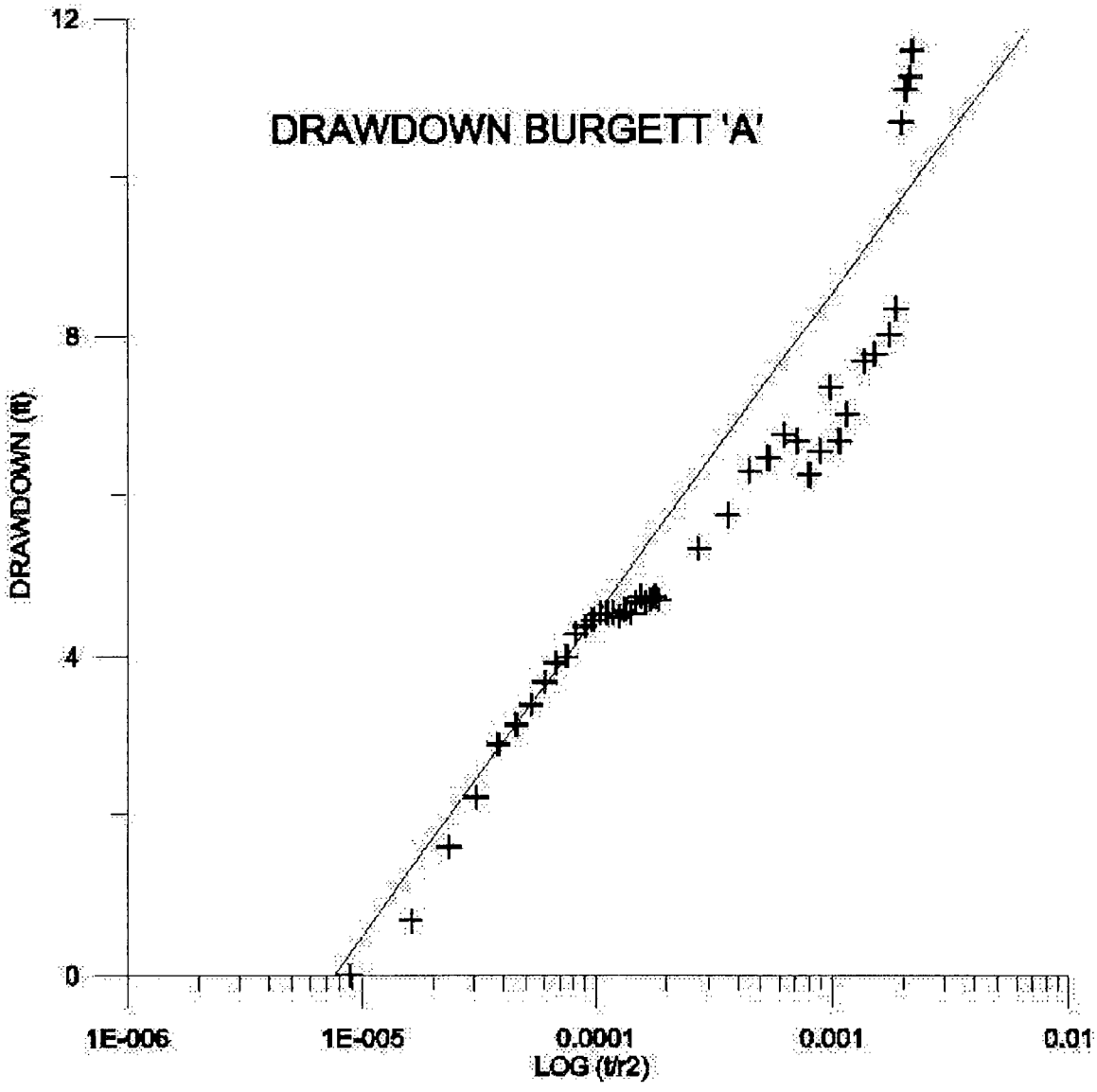
and an unconfined reservoirs in the real world for a semi-confined and leaky reservoir. The project time frame, a lack of previous detailed long-term water level information, and no previous well pump tests requires that a conservative approach be taken to evaluate the shallow Lightning Dock reservoir.

The Cooper and Jacob (straight-line) method is used to evaluate well drawdown information. This method is a practical variation of the standard Theis method to analyze confined reservoirs. Because the data collection methods have significant built in errors, the Cooper and Jacob method is very appropriate as opposed to computer or graphical curve-matching methods that are commonly applied with many other reservoir or aquifer analysis methods.

In order to predict drawdown or water-level declines in the shallow Lightning Dock Reservoir over a long period of production, the Theis model is used. This approach is also very conservative. This analysis assumes that the only production is from the Americulture well and that no injection wells are being used.

The most appropriate value for the reservoir transmissivity is calculated with the Cooper Jacob method as 62,392 gpd/ft, using drawdown data from the Burgett 'A' well. A storativity of 1.17 x 10-4 is also calculated. If the Americulture production well is produced at 1000 gpm over a period of twenty years without injection and no other production in the area, the total differential Theis drawdown in the Burgett 'A' well will be 26. 4 feet.

This study indicates that the reservoir should sustain a long-term production of fluid at 1,000 gpm with minimal drawdown and a temperature between 108 and 112 °C. However, a program of shallow reservoir monitoring should be started. Water levels, basic chemistry, and temperature should be recorded on a regular and sustained basis. Also, the Americulture 1 State well should also be modified to better sustain production. This could include deepening the well.



Twenty-Four hour drawdown for the Burgett 'A' well 825 feet from the pumping Americulture 1 State well. Pump rate was steady at 1, 000 gpm in the Americulture production well. The graphed line is the drawdown slope that was used to calculate reservoir transmissivity and storativity with the Cooper and Jacob method. The axis labeled $\log(t/r^2)$ is the log of the ratio of time (in minutes) and radial distance (in feet) from the pumping well.

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

July 5, 2001

60,000 gpd
41.66 gpm

CERTIFIED MAIL
RETURN RECEIPT NO. 5357-7775

Mr. Damon E. Seawright
AmeriCulture, Inc.
HD 65, Box 260 C
Animas, NM 88020

RE: Discharge Plan Renewal GW-223
AmeriCulture, Inc.
Geothermal Aquaculture Facility
Hidalgo County, New Mexico

Dear Mr. Seawright

The ground water discharge plan renewal application GW-223 for the AmeriCulture, Inc. Geothermal Aquaculture Facility located in the NE/4 NE/4 of Section 7, Township 25S, Range 19W, NMPM, Hidalgo County, New Mexico, is hereby approved under the conditions contained in the enclosed attachment. Enclosed are two copies of the conditions of approval. **Please sign and return one copy to the New Mexico Oil Conservation Division (OCD) Santa Fe office within thirty (30) days of receipt of this letter. Please note new mailing address below.**

The discharge plan renewal application letter, dated August 30, 2000, submitted pursuant to Section 3106 of the New Mexico Water Quality Control Commission (WQCC) Regulations includes all earlier applications and approvals and all conditions later placed on those approvals. The discharge plan is renewed pursuant to Section 3109.C. Please note Section 3109.G, which provides for possible future amendment of the plan. Please be advised that approval of this plan does not relieve AmeriCulture, Inc. of responsibility should operations result in pollution of surface water, ground water or the environment. Nor does it relieve AmeriCulture, Inc. of its responsibility to comply with any other governmental authority's rules and regulations.

Please be advised that all exposed pits, including lined pits and open tanks (exceeding 16 feet in diameter) shall be screened, netted or otherwise rendered nonhazardous to wildlife including migratory birds.

Please note that Section 3104 of the regulations provides: "When a plan has been approved, discharges must be consistent with the terms and conditions of the plan." Pursuant to Section 3107.C, AmeriCulture, Inc. is required to notify the Director of any facility expansion, production increase or process modification that would result in any change in the discharge of water quality or volume.

Pursuant to Section 3109.H.4, this renewal plan is for a period of five years. This renewal **will expire on October 23, 2005**, and AmeriCulture, Inc. should submit an application in ample time before this date. Note that under Section 3106.F of the regulations, if a discharger submits a discharge plan renewal application at least 120 days before the discharge plan expires and is in compliance with the approved plan, then the existing discharge plan will not expire until the application for renewal has been approved or disapproved

The discharge plan renewal application for the AmeriCulture, Inc. Geothermal Aquaculture Facility is subject to WQCC Regulation 3114. Every billable facility submitting a discharge plan application will be assessed a fee equal to the filing fee of $50.00. There is a renewal flat fee assessed for geothermal facilities of $690.00. The OCD has received the filing fee.

On behalf of the staff of the OCD, I wish to thank you and your staff for your cooperation during this discharge plan review.

Sincerely,

Roger C. Anderson
Chief, Environmental Bureau
Oil Conservation Division

RCA/eem
Attachment

Xc: OCD Santa Fe Office

ATTACHMENT TO THE DISCHARGE PLAN RENEWAL GW-223
AMERICULTURE, INC.
GEOTHERMAL AQUACULTURE FACILITY
DISCHARGE PLAN APPROVAL CONDITIONS
July 5, 2001

1. Payment of Discharge Plan Fees: The $50.00 filing fee has been received by the OCD. There is a required flat fee for geothermal facilities of $690.00 which may be paid in a single payment due at the time of approval, or in equal annual installments over the duration of the discharge plan, with the first payment due upon receipt of this approval. The OCD has received your first installment payment of $138.00. **All checks are to be made payable to Water Quality Management Fund** and forwarded to the OCD Santa Fe Office. Please note new mailing address on letterhead.

2. Commitments: AmeriCulture, Inc. will abide by all commitments submitted in the discharge plan renewal application letter dated August 30, 2000 and these conditions for approval.

3. Waste Disposal: All wastes will be disposed of at an OCD approved facility. Only oilfield exempt wastes shall be disposed of down Class II injection wells. Non-exempt oilfield wastes that are non-hazardous may be disposed of at an OCD approved facility upon proper waste determination per 40 CFR Part 261. Any waste stream that is not listed in the discharge plan will be approved by OCD on a case-by-case basis.

4. Drum Storage: All drums containing materials other than fresh water must be stored on an impermeable pad with curbing. All empty drums will be stored on their sides with the bungs in and lined up on a horizontal plane. Chemicals in other containers such as sacks or buckets will also be stored on an impermeable pad and curb type containment.

5. Process Areas: All process and maintenance areas which show evidence that leaks and spills are reaching the ground surface must be either paved and curbed or have some type of spill collection device incorporated into the design.

6. Above Ground Tanks: All above ground tanks which contain fluids other than fresh water must be bermed to contain a volume of one-third more than the total volume of the largest tank or of all interconnected tanks. All new tanks or existing tanks that undergo a major modification, as determined by the Division, must be placed within an impermeable bermed enclosure.

7. Above Ground Saddle Tanks: Above ground saddle tanks must have impermeable pad and curb type containment unless they contain fresh water or fluids that are gases at atmospheric temperature and pressure.

8. Labeling: All tanks, drums and containers will be clearly labeled to identify their contents and other emergency notification information.

9. Below Grade Tanks/Sumps: All below grade tanks, sumps, and pits must be approved by the OCD prior to installation or upon modification and must incorporate secondary containment and leak-detection into the design.

10. Underground Process/Wastewater Lines: All underground process/wastewater pipelines must be tested to demonstrate their mechanical integrity every five (5) years. Permittees may propose various methods for testing such as pressure testing to 3 pounds per square inch above normal operating pressure or other means acceptable to the OCD. The OCD will be notified at least 72 hours prior to all testing.

11. Class V Wells: No Class V wells that inject non-hazardous industrial wastes or a mixture of industrial wastes and domestic wastes will be closed unless it can be demonstrated that groundwater will not be impacted in the reasonably foreseeable future. Leach fields and other wastewater disposal systems at OCD regulated facilities which inject non-hazardous fluid into or above an underground source of drinking water are considered Class V injection wells under the EPA UIC program. Class V wells that inject domestic waste only must be permitted by the New Mexico Environment Department.

12. Housekeeping: All systems designed for spill collection/prevention will be inspected weekly and after each storm event to ensure proper operation and to prevent overtopping or system failure. A record of inspections will be retained on site for a period of five years.

13. Spill Reporting: All spills/releases will be reported pursuant to OCD Rule 116 and WQCC 1203 to the OCD Santa Fe District Office.

14. Transfer of Discharge Plan: The OCD will be notified prior to any transfer of ownership, control, or possession of a facility with an approved discharge plan. A written commitment to comply with the terms and conditions of the previously approved discharge plan must be submitted by the purchaser and approved by the OCD prior to transfer.

15. Storm Water Plan: The facility will have an approved storm water run-off plan.

16. Closure: The OCD will be notified when operations of the **Geothermal Aquaculture Facility** are discontinued for a period in excess of six months. Prior to closure of the **Geothermal Aquaculture Facility**, the Director will submit a closure plan for approval. Closure and waste disposal will be in accordance with the statutes, rules and regulations in effect at the time of closure.

17. Conditions accepted by: AmeriCulture, Inc., by the officer whose signature appears below, accepts this permit and agrees to comply with all terms and conditions contained herein. AmeriCulture, Inc. further acknowledges that these conditions and requirements of this permit may be changed administratively by the Division for good cause shown as necessary to protect fresh water, human health and the environment.

AmeriCulture, Inc.

Print Name: _____

Signature: _____

Title: _____

Date: _____

AUG 02 96 11:47 AM Oil Conservation Div.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

Oil Conservation Div.
2040 Pacheco St.
Santa Fe, NM 87505

Form C-102
Adopted 10-1-74
Revised 10-1-78

GEOTHERMAL RESOURCES WELL LOCATION AND ACREAGE DEDICATION PLAT

All distances must be from the outer boundaries of the section.

Operator	Lease	Well No.
AMERICULTURE	State Lease GTR-304-1	A-568

Unit Letter	Section	Township	Range	County
A	7	25 S	19 W	HIDALGO

Actual Footage Location of Well:
579 feet from the NORTH line and 971 feet from the EAST line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
4250'	RHYOLITE	LIGHTNING DOCK	10.0 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

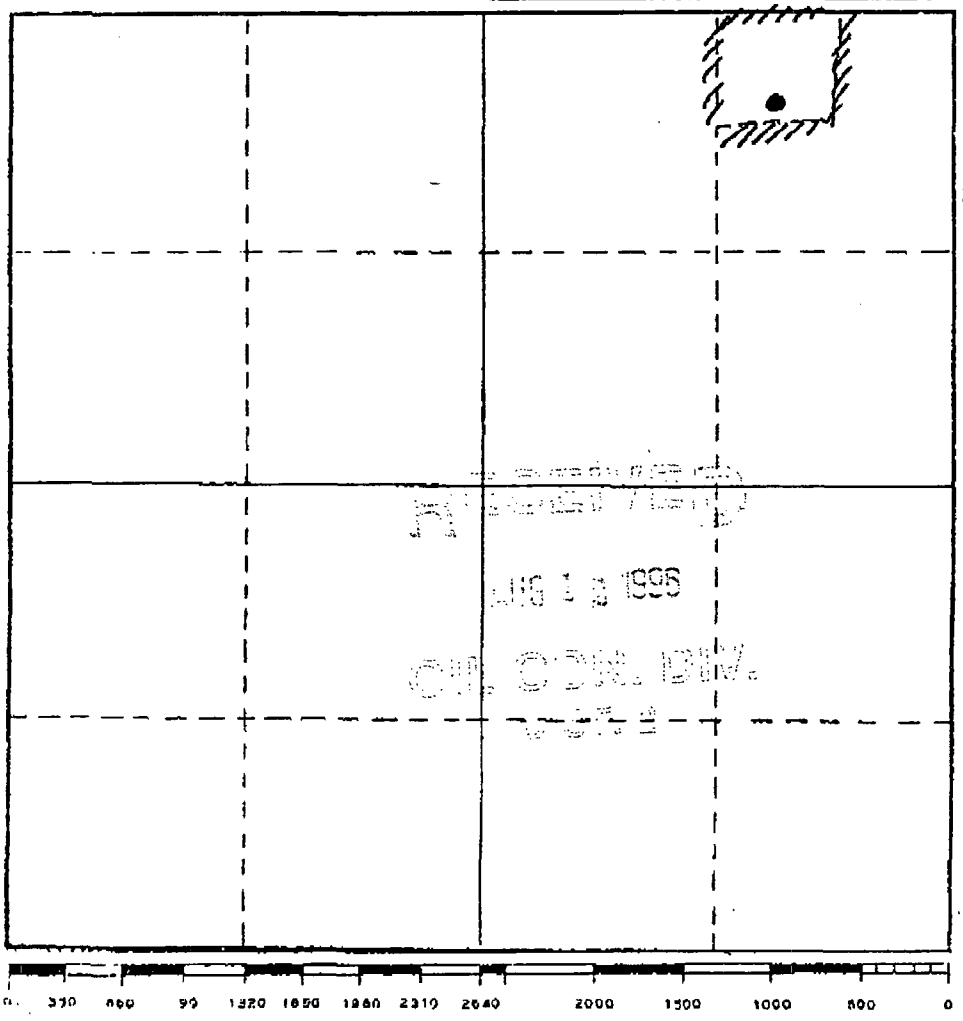
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownersip is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☒ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Division.



CERTIFICATION

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

Name: Damon Seawright

Position: Vice-President, Operations

Company: AmeriCulture, Inc

Date: 7-31-96

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

7-19-95
Date Surveyed

Frank L. Quarrell
Registered Professional Engineer and/or Land Surveyor

9829
Certificate No.

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

Oil Conservation Div
2040 Pacheco St.
Santa Fe, NM 87505

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

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U.S.G.S.		
Operator		
Land Office		

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK---GEOTHERMAL RESOURCES WELL

5. Indicate Type of Lease: STATE [X] FEE [ ]

5.a State Lease No.: GTR-304-1

1a. Type of Work: Drill [X] Deepen [ ] Plug Back [ ]

b. Type of Well: Geothermal Producer [ ] Low-Temp Thermal [X] Temp Observation [ ] Injection/Disposal [ ]

7. Unit Agreement Name:

8. Farm or Lease Name: AMERICULTURE

2. Name of Operator: AMERICULTURE, INC.

9. Well No.: A-568

3. Address of Operator: HC65 Box 260C, ANIMAS NM 88020

10. Field and Pool, or Wildcat: LIGHTNING DOCK

4. Location of Well: UNIT LETTER A LOCATED 579 FEET FROM THE NORTH LINE AND 971 FEET FROM THE EAST LINE OF SEC. 7 TWP. 25S RGE. 19W NMPM

12. County: HIDALGO

19. Proposed Depth	19A. Formation	20. Rotary or C.T.
490'	RHYOLITE	ROTARY

21. Elevations (Show whether DF, RT, etc.)	21A. Kind & Status Plug. Bond	21B. Drilling Contractor	22. Approx. Date Work will start
4256' RT		JIM McBEE	8 JULY 1996

PROPOSED CASING AND CEMENT PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
17"	10 3/4"	41.55	290' ±	135	CIRC.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. Give blowout preventer program, if any.

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

Signed [signature] Title Vice-president Date 7-31-96

(This space for State Use)

APPROVED BY [signature] TITLE DISTRICT SUPERVISOR DATE 8-8-96

CONDITIONS OF APPROVAL, IF ANY:

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

Oil Conservation Div.
2040 Pacheco St.
Santa Fe, NM 87505

Form G-102
Adopted 10-1-74
Revised 10-1-78

GEOTHERMAL RESOURCES WELL LOCATION AND ACREAGE DEDICATION PLAT

All distances must be from the outer boundaries of the Section.

Operator	Lease	Well No.
AMERICULTURE	State Lease GTR-304-1	A-568

Unit Letter	Section	Township	Range	County
A	7	25 S	19 W	HIDALGO

Actual Footage Location of Well:
579 feet from the NORTH line and 971 feet from the EAST line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
4250'	RHYOLITE	LIGHTNING DOCK	10.0 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

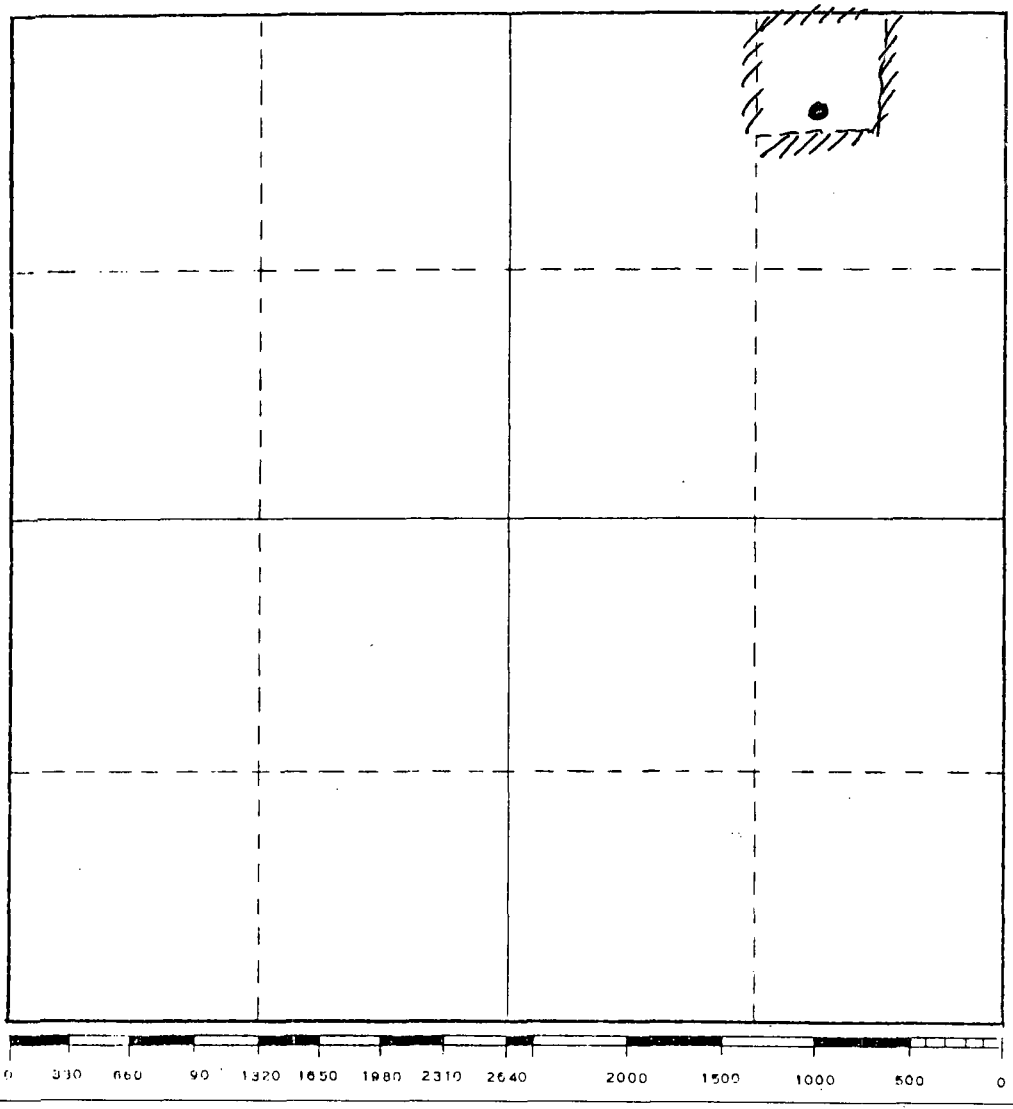
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownersip is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☒ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Division.



CERTIFICATION

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

Name: Damon Seawright

Position: Vice-president, operations

Company: AmeriCulture, Inc

Date: 7-31-96

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: 7-19-95

Frank L. Quarrell
Registered Professional Engineer and/or Land Surveyor

Certificate No. 9829

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

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U. S. G. S		
Operator		
Land Office		

Oil Conservation Div.
2040 Pacheco St.
Santa Fe, NM 87505

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

SUNDRY NOTICES AND REPORTS ON GEOTHERMAL RESOURCES WELLS

5. Indicate Type of Lease: State [X] Fee [ ]

5.a State Lease No.: GTR-304-1

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 [X] Injection/Disposal [ ]

7. Unit Agreement Name:

2. Name of Operator: AmeriCulture, Inc.

8. Farm or Lease Name: AmeriCulture

3. Address of Operator: HC 65 Box 260 C Animas, NM 88020

9. Well No.: A-568

4. Location of Well
Unit Letter A, 579 Feet From The North Line and 971 Feet From The East Line, Section 7 Township 25 S Range 19 W NMPM.

10. Field and Pool, or Wildcat: Lightning dock

15. Elevation (*Show whether DF, RT, GR, etc.*): 4256' RT

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. [X]	PLUG & ABANDONMENT [ ]
PULL OR ALTER CASING [ ]	CHANGE PLANS [ ]	CASING TEST AND CEMENT JOB [X]	
OTHER [ ]		OTHER [ ]	

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.

Well spudded on July 2, 1996. Drilled to 278' in Allavium, using 14 3/4-inch drill bit. Drilled 278' - 283' into Rhyolite (Red). Set 10 3/4-inch casing, setting depth 282', and filled casing with cement. Placed Halliburton cement plug on column of cement and forced it down hydraulically using a centrifugal mud pump. Circulated cement in annulus and verified top of cement by circulation returns. Used 135 sacks of cement.

Resumed drilling on July 8, 1996 using 9 7/8-inch drill bit. Drilled to bottom of red rhyolite at 376', encountering between 282' and 376' numerous minor lost circulation zones. At 376', major lost circulation. Used LCM and drilled blind to 400'; No returns. From penetration rate, possibly was shale. Conducted drill stem test using 1350 CFM and 350 PSI Air; Good returns. Estimated flow 1000 - 1500 gpm

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

SIGNED [signature] TITLE Vice-President DATE August 8, 1996

APPROVED BY [signature] TITLE DISTRICT SUPERVISOR DATE 8/30/96

CONDITIONS OF APPROVAL, IF ANY:

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

Oil Conservation Div.
2040 Pacheco St.
Santa Fe, NM 87505

Form G-104
Adopted 10-1-74
Revised 10-1-78

CERTIFICATE OF COMPLIANCE AND AUTHORIZATION TO PRODUCE GEOTHERMAL RESOURCES

OWNER OR OPERATOR
Name AMERICULTURE, INC
Address HC 65 BOX 260 C, ANIMAS NM 88020

TYPE OF WELL
Geothermal Producer [ ] Low-Temperature Thermal [X] Injection/Disposal [ ]

REASON FOR FILING
New Well [X] Recompletion [ ]
Change in Ownership [ ] Designation of Purchaser [ ]
Other (Please Explain) [ ]

DESCRIPTION OF WELL
Lease Name AMERICULTURE Well No. A-568 Name of Reservoir LIGHTNING DOCK
Kind of Lease (Fee, Fed. or State) STATE Lease Number GTR-304-1

LOCATION
Unit Letter A ; 579 feet from the NORTH line and
971 feet from the EAST line of
Section 7 Township 25S Range 19W
County HIDALGO

TYPE OF PRODUCT
Dry Steam [ ] Steam and Water [ ] Low Temp. Thermal Water [X]

DESIGNATION OF PURCHASER OF PRODUCT
Name of Purchaser
Address of Purchaser
Product Will Be Used For

CERTIFICATE OF COMPLIANCE
I hereby certify that all rules and regulations concerning geothermal resources wells in the State of New Mexico, as promulgated by the Oil Conservation Division of New Mexico, have been complied with, with respect to the subject well, and that the information given above is true and complete to the best of my knowledge and belief.

Signed [signature] Position Vice-President Date August 8, 1996
Approved [signature] Position DISTRICT SUPERVISOR Date 8-30-96

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

Oil Conservation Div.
2040 Pacheco St.
Santa Fe, NM 87505

Form G-107
Adopted 10-1-74
Revised 10-1-78

GEOTHERMAL RESOURCES WELL HISTORY

Operator AMERICULTURE, INC. Address HC 65, Box 260C, ANIMAS NM 88020
Lease Name GTR-304-1 Well No. A-568
Unit Letter A Sec. 7 Twp. 25 S. Rge 19W
Reservoir LIGHTNING DOCK County HIDALGO

It is of the greatest importance to have a complete history of the well. Use this form to report a full account of all important operations during the drilling and testing of the well or during re-drilling, altering of casing, plugging, or abandonment with the dates thereof. Be sure to include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests, shooting, and initial production data and zone temperature. (Attach additional sheets if necessary.)

Date

July 2, 1996 SPUDDED WELL, USING 14 3/4" DRILL BIT. DRILLED TO RHYOLITE CONTACT AT 278'

July 5, 1996 SET 10 3/4-INCH CASING TO 282'. Used cementing plug and CIRCULATED CEMENT IN ANNULUS. VERIFIED TOP OF CEMENT BY SURFACE RETURNS. USED 135 SACKS OF CEMENT.

July 8, 1996 thru July 10, 1996 RESUMED DRILLING USING 9 7/8-INCH DRILL BIT. DRILLING SLOW THROUGH RHYOLITE. NUMEROUS SMALL LOST CIRC. ZONES ENCOUNTERED TOTAL LOST CIRCULATION AT 376'. USED LCM AND DRILLED BLIND TO 400'. PENETRATION RATE MUCH FASTER THAN RHYOLITE. NO RETURNS. TERMINATED DRILLING AT 400' KB

July 12, 1996 SET DRILL STEM TO 398' AND USED 1350 CFM, 350 PSI TO AIRLIFT. INITIAL FLOW DISCOLORED; QUICKLY CLEARED UP. FLOWED SMOOTH AT 1000-1500 GPM FOR ONE HOUR. TEMPERATURE AT TOP OF DRILL STEM 195-210°F; NO TEMP. DATA ON BLOOIE LINE.

SIGN HERE

CERTIFICATION

I hereby certify that the information given above and the data and material attached hereto are true and complete to the best of my knowledge and belief.

Signed [signature] Position Vice-President Date August 8, 1996

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

Oil Conservation Div.
2040 Pacheco St.
Santa Fe, NM 87505

Form G-106
Adopted 10-1-74
Revised 10-1-78

GEOTHERMAL RESOURCES WELL SUMMARY REPORT

Operator AMERICULTURE, INC Address HC 65, BOX 260C, ANIMAS NM 88020
Lease Name GTR-304-1 Well No. A-568
Unit Letter A Sec. 7 Twp. 25S Rge 19W
Reservoir LIGHTNING DOCK County HIDALGO

Commenced drilling
Completed drilling JULY 11, 1996
Total depth 400' Plugged depth
Junk

Commenced producing
(Date)

GEOLOGICAL MARKERS	DEPTH
RED RHYOLITE	2' TO 37'

Geologic age at total depth: LWR

Date	Static test Shut-in well head		Production Test Data								
			Total Mass Flow Data					Separator Data			
	Temp. °F	Pres. Psig.	Lbs/Hr	Temp. °F	Pres. Psig.	Enthalpy	Orifice	Water cuft/Hr	Steam Lbs/Hr	Pres. Psig.	Temp. °F
JULY 12, 1996			500,000	210 ±							

CASING RECORD (Present Hole)

Size of Hole	Size of Casing	Weight of Csg/ft.	Grade of Casing	New or Used	Seamless or Lapweld	Depth of Shoe	Top of Casing	Number of Sacks Cement	Top of Cement	Cement Top Determined By
14 3/4"	10 3/4	32 lb.		USED	SEAMLESS	282'	4' AGL	135	GL	CIRC

PERFORATED CASING

(Size, top, bottom, perforated intervals, size and spacing of perforation and method.)

Was analysis of effluent made? NO Electrical log depths N/A Temperature log depths TBD.

CERTIFICATION

I hereby certify that the information given above and the data and material attached hereto are true and complete to the best of my knowledge and belief.

Signed [signature] Position Vice-President Date August 8, 1996

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

Oil Conservation Div.
2040 Pacheco St.
Santa Fe, NM 87505

Form G-105
Adopted 10-1-74
Revised 10-1-78

GEOTHERMAL RESOURCES WELL LOG

Operator AMERICULTURE, INC.
Address HC 65, BOX 260C, ANIMAS, NM 88020
Reservoir LIGHTNING DOCK
Lease Name GTR-304-1 Well No. A-568 Unit Letter A
Location: 579 feet from the NORTH line and
971 feet from the EAST line Section 7
Township 25S Range 19W County HIDALGO

FORMATIONS PENETRATED BY WELL

DEPTH TO Top of Formation	DEPTH TO Bottom of Formation	Thickness	Drilled or Cored	Recovery	DESCRIPTION
278'	376'	90'	DRILLED	CUTTINGS	FRACTURED RED RHYOLITE, VERY HARD AND DENSE WITH NUMEROUS LOST CIRCULATION ZONES
376'	400' ?	28'	DRILLED	NO RETURNS	PENETRATION RATE WAS FAST COMPARED TO RHYOLITE. NO RETURN; POSSIBLY SHALE

Attach Additional Sheets if Necessary

This form must be accompanied by copies of electric logs, directional surveys, physical or chemical logs, water analyses, tests, and temperature surveys (See Rule 205).

CERTIFICATION

I hereby certify that the information given above and the data and material attached hereto are true and complete to the best of my knowledge and belief.

Signed [signature] Position Vice-President Date August 8, 1996

Damon E. Seawright
AmeriCulture, Inc.
HC 65 Box 260C
Animas, NM 88020
Phone: (505)548-2328
Fax: (505)548-2631

August 9, 1996

Roy Johnson
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

Dear Roy:

Enclosed herewith are the required number of copies of forms G-103, G-104, G-105, G-106, and G-107 for the new geothermal well location on State Lease No. GTR-304-1. Per our conversation on August 8 1996, G-108 filing is not immediately required. If you have any questions, please call me.

Sincerely,

Damon E. Seawright

cc: Gary L. Seawright
Garrett P. Seawright

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

Oil Conservation Div.
2040 Pacheco St.
Santa Fe, NM 87505

Form C-102
Adopted 10-1-74
Revised 10-1-78

GEOTHERMAL RESOURCES WELL LOCATION AND ACREAGE DEDICATION PLAT

All distances must be from the outer boundaries of the section.

Operator	Lease	Well No.
AMERICULTURE	State Lease GTR-304-1	A-568

Unit Letter	Section	Township	Range	County
A	7	25 S	19 W	HIDALGO

Actual Footage Location of Well:
579 feet from the NORTH line and 971 feet from the EAST line

Ground Level Elev.	Producing Formation	Pool	Dedicated Acreage:
4250'	RHYOLITE	LIGHTNING Dock	10.0 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

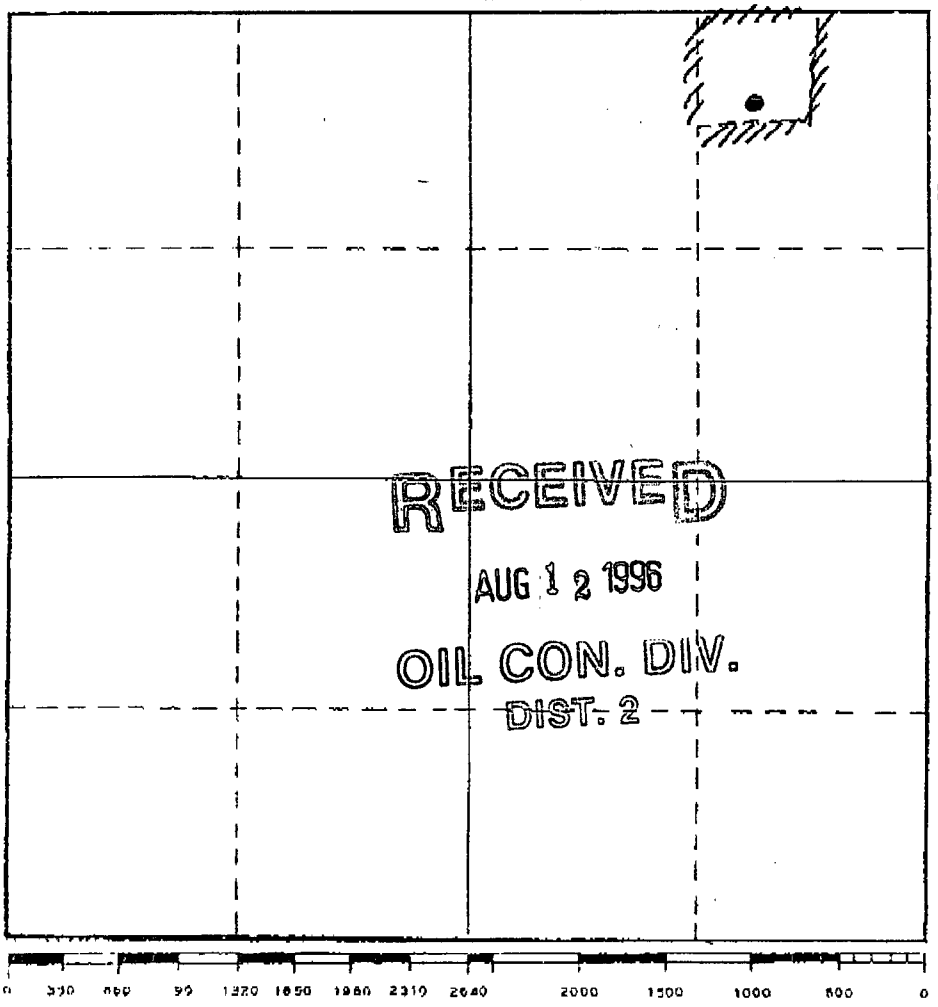
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownersip is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling, etc?

☐ Yes ☒ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Division.



RECEIVED
AUG 12 1996
OIL CON. DIV.
DIST. 2

CERTIFICATION

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

Name: Damon Seawright
Position: Vice-President, Operations
Company: AmeriCulture, Inc
Date: 7-31-96

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: 7-19-95
Registered Professional Engineer and/or Land Surveyor: Frank L. Quarrell
Certificate No.: 9829

Jim McBee

Tel. (520) 384-4570 *Drawer 1153*
Water, Oil, Gas Drilling and Production *Willcox, Arizona 85644*
"Standard of Excellence for fifty years"

Americulture Inc.
HC 65 Box 260 C
Animas, NM 88020

Operator: Americulture - Lease: State lease GTR 304-1, Well no A 568

Description: Unit Ltr- A, Section: 7, Twnshp: 25S, Range: 19N, County: Hidalgo, Actual footage location of well: 579' from the North Line and 971' from the East line, Gd level elev: 4250', Producing formation: rhyolite, Pool: Lightning dock, Dedicated acreage: 10.0

From	TO	
0'	10'	Top soil
10'	45'	Gravel and some clay
45'	278'	conglomerate (clay and gravel) cemented
278'		Rhyolite rock
		Drilled 14 3/4" hole to 283'. Set 10" pipe to 282'. Circulated cement around bottom of pipe. Brought it to the top outside pipe. When it set up it was down outside the pipe 8' from the top. We hand-filled it with cement to ground level. Let it set 72 hours and drilled out plug at the bottom of pipe. (9 7/8" bit)
330		rhyolite- lost circulation (came back)
344	346	Lost circulation (bad)
346	376	rhyolite (came back)
378	399	No more circulation (drilled blind)
		Drilled 2 to 3 minutes a foot (might cave- can't tell) Air lifted water to clean up hole.