GTLT - \_\_\_\_9\_\_\_

# (9&26)-11N-1E Sunoco Energy Development Corporation (Bernalillo County)

10-76-5 & 10-76-3

NO. OF CO	PIES RECEIVED		
DISTR	IBUTION		
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Land Office			

NEW MEXICO OIL CONSERVATION COMMISSION
P. O. Box 2088, Santa Fe 87501

UCT \_ 2 'CT

SUNDRY NOTICES AND REPORTS
ON
GEOTHERMAL RESOURCES WELLS

5. Indicate Type of Lease	
State Fee	X
5.a State Lease No.	

Do Not Use This Form for Proposals to Drill or to Deepen or Plug Back to a Different Reservoir. Use "Applic For Permit —" (Form G-101) for Such Proposals.)	cation
1. Type of well Geothermal Producer Temp. Observation	7. Unit Agreement Name
Low-Temp Thermal Injection/Disposal	NONE
2. Name of Operator	8. Farm or Lease Name
SUNOCO_ENERGY_DEVELOPMENT_CORPORATION	Alameda Grant
3. Address of Operator	9. Well No.
12700 PARK CENTRAL PLACE, SUITE 1500, DALLAS, TX 75251	5
4. Location of Well	10. Field and Pool, or Wildcat
Unit Letter C 1100 Feet From The NORTH Line and 2100 Feet	t From NONE
WEST 9 11N. 1E.  The Line, Section Township Range	_NMPM. ()
15. Elevation (Show whether DF, RT, GR, etc.) 5880' (G.L.)	12. County Bernalillo
16. Check Appropriate Box To Indicate Nature of Notice, Report or O	ther Data
NOTICE OF INTENTION TO:	SSEQUENT REPORT OF:
PERFORM REMEDIAL WORK PLUG AND ABANDON REMEDIAL WORK	· ALTERING CASING
TEMPORARILY ABANDON COMMENCE DRILLING OF	
PULL OR ALTER CASING CHANGE PLANS (X) CASING TEST AND CEME	
OTHER	
OTHER	
17. Describe Proposed or completed Operations (Clearly state all pertinent details, and give pertinenet dat	es, including estimated date of starting any

This hole location was dropped from our drilling program and will not be drilled in the near future.

PROJECT SUPERVISOR

SIGNED SUPERVISOR

TITLE GEOTHERMAL SERVICES, INC.

DATE 9-10-78

APPROVED BY Carl Way TITLE SENIOR PETROLEUM GEOLOGIST

DATE 10-3-78

proposed work) SEE RULE 203.

NO. OF COPIES RECEIVED	2	NEW MEXICO OIL CONSERVATION		Form G-103 Adupted 10/
DISTRIBUTION		P. O. Box 2088, Santa Fe	87501	TPR 22 10// []]
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N. M. B. M.		SUNDRY NOTICES AND R	EPORTS " A A A	CONTROL COMA
. s. G. s		ON		57 Indicate Type of Lease
Operator	1	GEOTHERMAL RESOURCES	S WELLS	State Fee X
Land Office				5.a State Lease No.
Do Not Use This Form for P For Permit –" (Form G-101)			leservoir. Use "Application	
1. Type of well Geothe	ermal Produce	er Temp. Observation X	•	7. Unit Agreement Name
Low-T	emp Thermal	Injection/Disposal		none
2. Name of Operator				8. Farm or Lease Name
SUNOCO ENERGY	Y DEVEL	OPMENT CORPORATION		Alameda Grant
3. Address of Operator				9. Well No.
12700 Park Co	entral 1	Place., Suite 1500, Dall	as, TX 75251	10-76-5
4. Location of Well				10. Field and Pool, or Wildcat
Unit Letter <b>C</b>	. 1	100_Feet From The North_Line an	nd 2100 Feet From	none
The West Lin	ne, Section	9 Township 11N Ran	nge <b>IE</b> NMPM.	
	HIIII	15. Elevation (Show whether DF, RT,	GR, etc.)	12. County
		5880 ft. (GL)		Bernalillo
16.	Check A	Appropriate Box To Indicate Nature of N	otice, Report or Other Da	912

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.

NOTICE OF INTENTION TO:

PLUG AND ABANDON

CHANGE PLANS

PERFORM REMEDIAL WORK

TEMPORARILY ABANDON

PULL OR ALTER CASING

The drilling of Temperature Observation Well has been postponed until Mid-1977. Anticipated start-up date will be August 1, 1977. We will notify your office approximately two weeks prior to equipment move-in; until then this project is on inactive status.

OTHER \_\_

REMEDIAL WORK

COMMENCE DRILLING OPNS.

CASING TEST AND CEMENT JOB

SUBSEQUENT REPORT OF:

ALTERING CASING

PLUG & ABANDONMENT

		4
	APPROVAL VAUID 180 DAYS UNLESS DRILLING COMMENCED  EXPIRES 10/19/77	
. I hereby certify that the information above is true and corr	plete to the best of my knowledge and belief.	
SIGNED JULY	Chief Geologist, Geothermal Services, I	DATE 4/20/77
APPROVED BY Carl Woog	TITLE SENIOR PETROLEUM GEOLOGIST	DATE 4/22/77
CONDITIONS OF APPROVAL, IF ANY:		, , , , , , , , , , , , , , , , , , ,

V		÷			-				Form G-101 Adopted 10/1/
NO. OF COPIES RECEIVED	0 4	NEW	MEXICO OIL CO	NSERV	ATION COMMISSI	ΙΟΝ	0		
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File	111		•.					·	·
N.M.	11							5: "Indicate	Type of Lease
U.S.	11	APPLIC	ATION FOR P	ERMIT	T TO DRILL, DE	EPEN	3.10	STATE L	<del></del>
Operator					MAL RESOURCE			5.a State Le	ase No.
Land Office								*******	mmm
		•			•				
					·				777777777777777777777777777777777777777
1a. Type of Work Dri	11 <b>(X</b> )	. De	epen 🗆		. Plug Back			7. Unit Agre	eement Name
C	Alicana Denderant	_		Tan	mp Observation	Xπ			one
	othermal Producer				ction/Disposal			8. Farm or	Lease Name
Lov	v-Temp Thermal	LJ 	i	mje	CHOH/Disposal				da Grant
2. Name of Operator								9. Well No.	
SUNOCO ENER	RGY DEVELOP	MENT C	ORPORATIO	ON					76 <b>–</b> 5
3. Address of Operator	<i>a</i>			ъ.	n mv r	1 F O F			d Pool, or Wildcat
	Central Pl					7525	)1	· no	one
4. Location of Well** UNIT	LETTER C	_LOCATE	D_1100_FE	ET FRO	OM THE NORT	H	_LINE		
	•								
AND 2100 FEET F	ROM THE WEST L	NE OF SE	c. 9 TWP.	11N	RGE. 1E	117	NMPM	12. County	777/11/11/11/11
				////					
<i>HHHHHH</i>	<i>HHHH</i>	<i>HH</i>	***	7777,	444444	<i>HH</i> ,	<i>HHH</i>	Bernali	110////////////////////////////////////
<i>HHHHH</i>	######	<del>/////</del> //	<i>HHHH</i>	7777	. Proposed Depth	7777	A. Formatio	777777	20. Rotary or C.T.
				111	•	.   19			1 .
21. Elevations (Show whether				777	500 ft		unkno	<del></del>	rotary
5880 ft			ote "A"		B. Drilling Contract		vices		x. Date Work will start 1, 1976:
	(u.s)	,			000110211102		<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	1 3 3 3 3	
-		PRO	DPOSED CASING	AND	CEMENT PROGRA	M			
SIZE OF HOLE	SIZE OF CAS	SING	WEIGHT PER FC	OT	SETTING DEPT	ц	SACKS OF	CEMENT	EST. TOP
5-1/8"	3/4"		1.14#		500'	··	1.		6" BGL
			10 1 1//						
	,								<u> </u>
	•	i e		•			•		•
	Progra					hal	low Te	mperatu	ıre Gradien <b>t</b>
-• <b>'</b>		Но	le Drilli	ing.	Program".				
	Note A	\ _ Tv	ne of hor	าส่ำพ	ill be #\$1	0.0	OO Mull	tinle-N	lell Low-
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		be	fore oper	rati	ons commen	ce.			
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<i>d</i> ;									•
Oxor					•	•			
$\alpha$									
•								•	•
I ABOVE SPACE DESCRIBE	E PROPOSED PROGI	RAM: If n	roposal is to deep	en or r	olug back, give data	on pre	esent produc	tive zone and	i proposed new productive
ne. Give blowout preventer p		.,						20116 8116	proposed new productive
hereby certify that the inform	nation above je true a	nd comple	te to the best of	my kn	owledge and belief.	_	_		
1/ MO-1	///	<b>T</b> /			Geot				4 4000
ned /	fine	<b>Y</b>	itle Unief (	<u>ieol</u>	ogist,Serv	<u>/1 ce</u>	$s, Inc_{D}$	sept.	. 1,1976
(This space f	for State Use)								
1.	0 1 0			יי עב. בע עב. בע	ILEUM GEOLOGIST				
PPROVED BY	Wood	т	ITLEZENIUK	Priku	PLEAN OFFICERS!		D.	ATE	27/76
ONDITIONS OF APPROVAL	, IF ANY:	•	•					7	

### Form G-102 Adopted 10/1/7

# NEW MEXICO OIL CONSERVATION COMMISSION P. O. BOX 2088 SANTA FE 87501

P. O. BOX 2088 SANTA FE 87501
GEOTHERMAL RESOURCES WELL LOCATION AND ACREAGE DEDICATION PLAT

		All distance	s must be from	the outer boundari			<u> </u>
Sunoco E	Energy Deve	lopment Co	orp.	Alamed	a Grant		Well No. 10-76-5
Letter C	Section 9	Township	11N.	Range C	County'	Berna	lillo
Actual Footage Loc 1,100	feet from the	North	line and	2,100	feet from the	West	line
Ground Level Elev. 5,880			Poo	None			Dedicated Acreage: None Acres
1. Outline	the acreage dedic	ated to the subj	ect well by co	olored pencil or h	achure marks	on the plat	· · · · · · · · · · · · · · · · · · ·
2. If more and roy		s dedicated to t	he well, outli	ine each and ider	tify the owner	rship thereo	f (both as to working interes
	e than one lease on tization, unitizat			ated to the well,	have the inte	rests of all	owners been consolidated by
☐ Yes	□ No If a	answer is "yes,"	type of cons	olidation	· 	·	
If answer inecessary.)		wners and tract	descriptions	which have actua	ally been consc	olidated. (U	se reverse side of this form i
							communitization, unitization ed by the Commission.
	. 1			1			CERTIFICATION
	1			)   		I hereby	certify that the information
				1			herein is true and complete to finy knowledge and belief.
	NE14	NWYA		1		M	H Yeut
	+				[	Name Steve	Quiett
[ ]	1					Position	Geologist
	1			1		Company	
				. 1		Date	rmal Services, In
				<u> </u>		Septem	ber 1, 1976
	 						certify that the well location this plat was plotted from field
	.					under my	actual surveys made by me or supervision, and that the same
	   				. ]		nd correct to the best of my and belief.
	1			1		Data Surrey	
	į					Date Surveye	·
	1			1		Registered Pro and/or Land S	ofessional Engineer Surveyor
,	. [	}		1			
	1				[ ]		•



### GEOTHERMAL SERVICES, INC.

7860 CONVOY COURT, SAN DIEGO, CALIFORNIA 92111 • (714) 565-4712



STANDARD SHALLOW TEMPERATURE GRADIENT HOLE DRILLING PROGRAM (500'/150m; Rubber Tired Equipment; Rotary/Mud)

- 1. Coordinate "Special Stipulations" or other unusual requirements with the Project Geologist prior to set-up and spud.
- 2. Choose location and orientation of drilling rig so as to minimize surface disturbance.
- 3. Drill 4" to 6" hole to maximum depth of 500'/150m.
  Take cuttings samples, cores, etc. at direction of Project Geologist.
- 4. If drilling with mud, use regular Bentonite drilling mud. No toxic additives are to be used in drilling fluids without permission of Project Geologist. Have supply of lost circulation material available. Use portable mud pits unless specifically directed otherwise.
- 5. Have a supply of Barite available in case of artesian flow. If artesian flow is encountered, comply with United States Geological Survey's Stipulations.
  - 6. Mud return temperature shall be measured and recorded on "Drilling History" every 10 1/3m.
    - a. If temperature reaches 120°F/50°C, STOP DRILLING and circulate for 30 minutes, monitoring mudtemperature and pit volume for possible hot artesian flow. If no flow, run pipe at this depth after logging is completed.
    - b. If there is a sudden increase in temperature of the drilling mud (several degrees in only a few feet) STOP DRILLING and circulate for 30 minutes, monitoring mud temperature and pit volume for possible hot artesian flow. If no flow, continue drilling CAUTIOUSLY, keeping a careful watch on return temperature of drilling fluid. In no case shall drilling continue after mud return temperature reaches 120°F/50°C.

- 7. Run pipe immediately after running electric logs or reaching T.D. (if hole is not logged).
  - a. Install cap on bottom of first length of pipe. (If using steel pipe, seal each joint with teflon tape to ensure watertight).
  - b. Steel pipe must be used when air temperature is 40°F or below, as PVC cement will not adhere.
  - c. Steel pipe must be used if drilling fluid temperature exceeds 100°F/40°C.
  - d. When pipe is landed, top must be 6" to 12"/ 15cm to 30cm below ground level. (Cut and thread as necessary).
  - e. Fill pipe with <u>CLEAN WATER</u> (water that is oily or contains solvents such as gasoline <u>MUST NOT</u> be used) and install cap. Do not seal.
  - f. Set paper, rag or dirt bridge down open annulus at least 10'/3m below ground level. Fill annulus with cement up to base of cap on pipe.
- 8. Clean up location THOROUGHLY.
- 9. Any excavated pits or sumps must be backfilled to conform to the original topography.
- 10. When temperature surveys are completed, fill pipe with cement from 10'/3m to top of pipe, fill excavation to original ground topography and restore location as nearly as possible to original condition.

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. G. S		1	
Operator		1	
Land Office			

NEW MEXICO OIL CONSERVATION COMMISSION P. O. Box 2088, Santa Fe 87501

007 - 2 10/0

File 2 1 V	
N. M. B. M. SUNDRY NOTICES AND REPO	RTS
ON	5. Indicate Type of Lease
Operator I GEOTHERMAL RESOURCES WE	State State Fee X
Land Office	5.a State Lease No.
Latte office	
Do Not Use This Form for Proposals to Drill or to Deepen or Plug Back to a Different Reserv For Permit —" (Form G-101) for Such Proposals.)	
1. Type of well Geothermal Producer Temp. Observation	7. Unit Agreement Name
. Low-Temp Thermal Injection/Disposal	NONE
2. Name of Operator	8. Farm or Lease Name
SUNOCO ENERGY DEVELOPMENT CORPORATION	_
3. Address of Operator	9. Well No.
12700 PARK CENTRAL PLACE, SUITE 1500, DALLAS, TX 7	75251 3
4. Location of Well	10. Field and Pool, or Wildcat
Unit Letter_ L 2200 Feet From The SOUTH Line and	700 Feet From NONE
,	
The WEST Line, Section Township Range	1E. NAMES !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
The township Range _	
11111111111111111111111111111111111111	etc.) 12. County
5850' (G.L.)	Bernalillo
16. Check Appropriate Box To Indicate Nature of Notice	e, Report or Other Data
NOTICE OF INTENTION TO:	SUBSEQUENT REPORT OF:
PERFORM REMEDIAL WORK PLUG AND ABANDON REMEDIAL	WORK ALTERING CASING
TEMPORARILY ABANDON COMMENC	E DRILLING OPNS. PLUG & ABANDONMENT
PULL OR ALTER CASING CHANGE PLANS (X) CASING TE	EST AND CEMENT JOB
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.

> This hole location was dropped from our drilling program and will not be drilled in the near future.

I hereby certify that the information above is true and com	PROJECT SUPERVISOR  TITLE GEOTHERMAL SERVICES, INC.	DATE9-10-78
Carl Ulvog. CONDITIONS OF APPROVAL, IF ANY:		DATE 10-3-78

		Form G-10 Adopted 10
NO. OF COPIES RECEIVED 2	NEW MEXICO OIL CONSERVATION COMMISSIO	the state of the s
DISTRIBUTION	P. O. Box 2088, Santa Fe 87501	APR 22 19/1
N. M. B. M.	CHNDDY MOTICES AND DEBODES	COMSERVATION COMM.
S. G. S	SUNDRY NOTICES AND REPORTS ON	5. Indicate Type of Lease
Operator	GEOTHERMAL RESOURCES WELLS	State Fee
Land Office	GEOTHERWAL RESOURCES WELLS	5.a State Lease No.
Do Not Use This Form for Proposals to Dril For Permit —" (Form G-101) for Such Prop	I or to Deepen or Plug Back to a Different Reservoir. Use osals.)	"Application
1. Type of well Geothermal Producer	Temp. Observation X	7. Unit Agreement Name
Low-Temp Thermal	Injection/Disposal	none
2. Name of Operator		8. Farm or Lease Name TOW
SUNOCO ENERGY DEVELO	PMENT CORPORATION	of Atrisco Grant
3. Address of Operator		9. Well No.
12700 Park Central P	lace., Suite 1500, Dallas, TX	75251 <b>10–76–3</b>
4. Location of Well		10. Field and Pool, or Wildcat
Unit Letter L 220	$00$ Feet From The ${ t South}$ Line and ${ t 700}$	Feet From
The West Line, Section	26Township <u>11N</u> Range <u>1E</u>	NMPM. {
	15. Elevation (Show whether DF, RT, GR, etc.)	12. County
	5850 ft. (GL)	Bernalillo
16. Check Ap	ppropriate Box To Indicate Nature of Notice, Report	t or Other Data
NOTICE OF INTENTIC	ON TO:	SUBSEQUENT REPORT OF:
PERFORM REMEDIAL WORK - P	LUG AND ABANDON  REMEDIAL WORK	ALTERING CASING
TEMPORARILY ABANDON	COMMENCE DRILL	ING OPNS. D PLUG & ABANDONME
PULL OR ALTER CASING C	HANGE PLANS CASING TEST AND	CEMENT JOB
	OTHER	
	OTHER	
OTHER	U	-, -/
17. Describe Proposed or completed Operator proposed work) SEE RULE 203.	tions (Clearly state all pertinent details, and give pertine	net dates, including estimated date of starting ar
until Mid-197 We will noti	of Temperature Observation We 77. Anticipated start-up date fy your office approximately twe-in; until then this project	will be August 1, 1977. wo weeks prior to
•		
•		
		APPROVALICA
	-	APPROVAL VALID
	, D	180 DAYS UNLESS RILLING COMMENCED
	· <del>- ·</del>	THE COMMENCED
	EXPIRE	s 10/19/77
I hereby certify that the information about	e is true and complete to the best of my knowledge and b	elief.
SIGNED SIGNED	JI S TITLE Chief Genlowist	DATE 4/20/77
	Geothermal Serv	, DATE _4/20/77 i ces, Inc
2	· -	
APPROVED BY Carl Uling	SENIOR PETROLEUM GEOL	OGIST4/22/17

CONDITIONS OF APPROVAL, IF ANY:

NO. OF COPIES RECEIVED	y nev		ERVATION COMMISSION			Form G-101 Adopted 10/1/
DISTRIBUTION (			Santa Fe 87501 SEF			
B.M.			MIT TO DRILL, DEEPE RMAL RESOURCES W	en registrosist e	-5., Nindicate	Type of Lease * * *
U.S.G.S.	APPL	ICATION FOR PER	MIT TO DRILL, DEEPE	N, 1010 C	STATE	FEE 🗓
Operator (	OR PLU	JG BACKGEOTHE	RMAL RESOURCES W	ELL	5.a State Le	ase No.
Land Office					mm	
•			,			
1a. Type of Work Drill		Deepen	Plug Back		7. Unit Agre	ement Name
		•	v		noı	ne
	nal Producer 🔲		Temp Observation  injection/Disposal		8. Farm or 1	ease Name
	p Thermal		njection/Disposal C		9. Well No.	<u> </u>
2. Name of Operator SUNOCO ENERGY	DEVELODMENT	CODDODATION	т .			7
3. Address of Operator	DEVELOPMENT	CORPORATION	<u> </u>		10-76-	-3 l Pool, or Wildcat
-	itral Pl., S	uite 1500, I	Dallas, TX 75	251	nor	
			FROM THE SOUTH	LINE	IIIII.	
AND 700 FEET FROM T	THE WEST LINE OF	sec. 26 twp. 11	IN: RGE. 1E.	NMPM		
					12. County	
					BERNAL	Trollilli
<del>}</del>			19. Proposed Depth	19A. Formatio	ou ////////	20. Rotary or C.T.
			500 ft	unknown	1	rotary
21. Elevations (Show whether DF,	RT, etc.) 21A. Kind	d & Status Plug. Bond	21B. Drilling Contractor		22. Approx	. Date Work will start
58.50 ft (GL)	see	note "A"	Geothermal S	ervices	0ct.	1, 1976
	F	PROPOSED CASING A	ND CEMENT PROGRAM			
SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF	CEMENT	EST. TOP
5-1/8"	3/4"	1.14#	500 '	1.5	CEIVICIVI	6" BGL
•						
·						· · · · · · · · · · · · · · · · · · ·
	F	Hole Drillin	0			
	*** - 5	Surface is f	ee land, miner	als are	held b	y BLM.
	ī	"Notice of I	ntent" will be	filed	with an	propriate
		BLM office.				propriate
	**					
Orad '//		Cemperature I Bond". Bond bond number I	will be "\$10, well or Geothe is in the pro will be furnis tions commence	rmal Ob cess of hed as	servati being	on Well filed: a
IN ABOVE SPACE DESCRIBE PRO zone. Give blowout preventer program	POSED PROGRAM: 1 m, if any.	f proposal is to deepen	or plug back, give data on	present produc	tive zone and	proposed new productive
I hereby certify that the information	suppre is true and com		knowledge and belief. Geothe ologist,Servic		<sub>ste</sub> Sent	1. 1976
(This space for Sta	ite Use)		<u> </u>			
1 space jor blu	,					
<u> </u>			TROLEUM GEOLOGIST			27/76

## NEW MEXICO OIL CONSERVATION COMMISSION P. O. BOX 2088 SANTA FE 87501

GEOTHERMAL RESOURCES WELL LOCATION AND ACREAGE-DEDICATION PLAT All distances must be from the outer boundaries of the Section Well No. Sunoco Energy Development Corp. 10-76-3 Section Township Range County 26 11N. 1E. Bernalillo Actual Footage Location of Well: 2,200 700 West South feet from the line line and feet from the Producing Formation Dedicated Acreage: Ground Level Elev. 5,850 ft. None None None 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? If answer is "yes," type of consolidation\_ ☐ Yes ☐ No If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if 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 Commission. CERTIFICATION I hereby certify that the information contained herein is true and complete to Steve Quiett Chief Geologist Geothermal Services, Inc September 1, 1976 I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or NW14, SW1/4 under my supervision, and that the same is true and correct to the best of my knowledge and belief. Date Surveyed Registered Professional Engineer and/or Land Surveyor

1500

Certificate No.



### GEOTHERMAL SERVICES, INC.

7860 CONVOY COURT, SAN DIEGO, CALIFORNIA 92111 • (714) 565-4712



STANDARD SHALLOW TEMPERATURE GRADIENT HOLE DRILLING PROGRAM (500'/150m; Rubber Tired Equipment; Rotary/Mud)

- 1. Coordinate "Special Stipulations" or other unusual requirements with the Project Geologist prior to set-up and spud.
- 2. Choose location and orientation of drilling rig so as to minimize surface disturbance.
- 3. Drill 4" to 6" hole to maximum depth of 500'/150m. Take cuttings samples, cores, etc. at direction of Project Geologist.
- 4. If drilling with mud, use regular Bentonite drilling mud. No toxic additives are to be used in drilling fluids without permission of Project Geologist. Have supply of lost circulation material available. Use portable mud pits unless specifically directed otherwise.
- 5. Have a supply of Barite available in case of artesian flow. If artesian flow is encountered, comply with United States Geological Survey's Stipulations.
- 6. Mud return temperature shall be measured and recorded on "Drilling History" every 10'/3m.
  - a. If temperature reaches 120°F/50°C, STOP DRILLING and circulate for 30 minutes, monitoring mud temperature and pit volume for possible hot artesian flow. If no flow, run pipe at this depth after logging is completed.
  - b. If there is a sudden increase in temperature of the drilling mud (several degrees in only a few feet) STOP DRILLING and circulate for 30 minutes, monitoring mud temperature and pit volume for possible hot artesian flow. If no flow, continue drilling CAUTIOUSLY, keeping a careful watch on return temperature of drilling fluid. In no case shall drilling continue after mud return temperature reaches 120°F/50°C.

- 7. Run pipe immediately after running electric logs or reaching T.D. (if hole is not logged).
  - a. Install cap on bottom of first length of pipe. (If using steel pipe, seal each joint with teflon tape to ensure watertight).
  - b. Steel pipe must be used when air temperature is 40°F or below, as PVC cement will not adhere.
  - c. Steel pipe must be used if drilling fluid temperature exceeds 100°F/40°C.
  - d. When pipe is landed, top must be 6" to 12"/ 15cm to 30cm below ground level. (Cut and thread as necessary).
  - e. Fill pipe with <u>CLEAN</u> <u>WATER</u> (water that is oily or contains solvents such as gasoline <u>MUST</u> <u>NOT</u> be used) and install cap. Do not seal.
  - f. Set paper, rag or dirt bridge down open annulus at least 10'/3m below ground level. Fill annulus with cement up to base of cap on pipe.
- 8. Clean up location THOROUGHLY.
- 9. Any excavated pits or sumps must be backfilled to conform to the original topography.
- 10. When temperature surveys are completed, fill pipe with cement from 10'/3m to top of pipe, fill excavation to original ground topography and restore location as nearly as possible to original condition.