GL01671

Item 14 C... of

AREA NM Los Alamos Baca #12 field trip

GEORGE W. BERRY
Consulting Geologist
600 SPRUCE STREET
BOULDER, COLORADO 80302
303-444-3033

Baca Location No. 1, New Mexico. Field trip lead by Union Oil Co. September 29, 1978.

R. O. Engebretsen of Union

STOP 1. Baca No. 12. Southernmost and deepest well in Redondo Cr. reservoir. TD 9312. Top of Abo fm, red beds "just above 9000." This hole has plenty of heat but poor yield and will be used for injection.

Now 12 wells in Redondo Cr. reservoir; 4 production holes (Baca 4, 11, 13, 15) and 3 injection holes ready. Wells located along west side of generally N-S graben of Redondo Cr. Producing formation is Bandelier tuff. Fractures are "necessary." Reservoir temp. is 500-600 degrees F. Reservoir takes water poured in; it is underpressured. Relatively dry steam possible to the northwest. Wells No. 11 and 15 have steam zones.

Average well (if there is one): TD 6000 in fractured Bandelier tuff. Drilling time 55 days. Cost $850,000. Expensive corrosion program in drilling. Noncondensable gas 3.5% (99% CO2). Water 7000-8000 ppm.

STOP 2. Plant site. Single-flash 50Mw plant on 5-acre tract in Redondo Cr. valley. Will have cooling towers and H2S abatement system. Turbine inlet pressure 114psi. Will need 984,000 lb/hr of steam. Supply system projected to be ready in early 1982. Before then 13 additional wells must be completed. Plant will be served by gathering system with 4 satellite separators, with 3-4 wells per separator. Transmission line capacity will be 250Mw.

STOP 3. Baca No. 17. Loffland Bros. no. 5 now drilling here. Depth now about 3000, temp. 350 degrees F, cementing 9 5/8-in. surface casing. Expect producing zone just below pipe. Hope to finish this hole, drill one more, and move out for the winter. Three wells projected for 1979. Reserve estimates: With minimum 20-yr plant life, 400Mw now proved. With injection and second flash projection is 1000-1200Mw.

Average well: Slotted liner with tie-back to 9 5/8-in. surface casing from producing zone. Lost circulation problems bad from 300 all the way down. Mass production 240,000 lb/hr, 30% (80,000 lb/hr) steam.

Additional wells in Sulphur Cr. area not now in production condition.

GEORGE W. BERRY
Consulting Geologist
600 SPRUCE STREET
BOULDER, COLORADO 80302
303-444-3033

Baca Location No. 1, New Mexico. Field trip lead by Union Oil Co. September 29, 1978.

R. O. Engebretsen of Union

STOP 1. Baca No. 12. Southernmost and deepest well in Redondo Cr. reservoir. TD 9312. Top of Abo fm, red beds "just above 9000." This hole has plenty of heat but poor yield and will be used for injection.

Now 12 wells in Redondo Cr. reservoir; 4 production holes (Baca 4, 11, 13, 15) and 3 injection holes ready. Wells located along west side of generally N-S graben of Redondo Cr. Producing formation is Bandelier tuff. Fractures are "necessary." Reservoir temp. is 500-600 degrees F. Reservoir takes water poured in; it is underpressured. Relatively dry steam possible to the northwest. Wells No. 11 and 15 have steam zones.

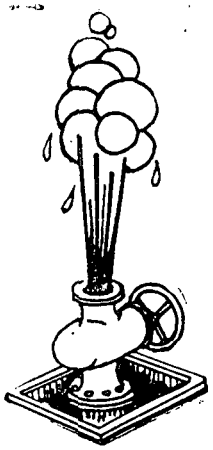
Average well (if there is one): TD 6000 in fractured Bandelier tuff. Drilling time 55 days. Cost $850,000. Expensive corrosion program in drilling. Noncondensable gas 3.5% (99% CO_2). Water 7000-8000 ppm.

STOP 2. Plant site. Single-flash 50Mw plant on 5-acre tract in Redondo Cr. valley. Will have cooling towers and H_2S abatement system. Turbine inlet pressure 114psi. Will need 984,000 lb/hr of steam. Supply system projected to be ready in early 1982. Before then 13 additional wells must be completed. Plant will be served by gathering system with 4 satellite separators, with 3-4 wells per separator. Transmission line capacity will be 250Mw.

STOP 3. Baca No. 17. Loffland Bros. no. 5 now drilling here. Depth now about 3000, temp. 350 degrees F, cementing 9 5/8-in. surface casing. Expect producing zone just below pipe. Hope to finish this hole, drill one more, and move out for the winter. Three wells projected for 1979. Reserve estimates: With minimum 20-yr plant life, 400Mw now proved. With injection and second flash projection is 1000-1200Mw.

Average well: Slotted liner with tie-back to 9 5/8-in. surface casing from producing zone. Lost circulation problems bad from 300 all the way down. Mass production 240,000 lb/hr, 30% (80,000 lb/hr) steam.

Additional wells in Sulphur Cr. area not now in production condition.



GEOTHERMAL RESOURCES COUNCIL
ROCKY MOUNTAIN SECTION

Denver, Colorado

1978 Fall Field Trip
September 27-29, 1978

GEOTHERMAL PROSPECTS IN THE JEMEZ MOUNTAINS, NEW MEXICO

WEDNESDAY, September 27, 1978	Ar.	Lv.
Denver Hilton (16th & Court Place)		7:00 am
Dakota Hogback (Point of Geological Interest, northeast parking lot)	7:45	7:55
Mt. Princeton & Hortense Hot Springs (115 mi.) speaker: Jay D. Dick, Chaffee Geothermal, Ltd.	10:30	11:15
Sand Dunes Ranch (aquaculture) (79 mi.) speaker: Burley Jenkins, owner	1:00 pm	2:00
Los Alamos, New Mexico Los Alamos Inn	5:30	6:30
Banquet, Old Los Alamos Lodge speaker, Roland A. Pettitt, LASL	6:45	

THURSDAY, September 28, 1978		
Los Alamos Inn		8:30 am
Technical sessions, Los Alamos Scientific Laboratory P-Division Auditorium	8:45	
Presentation by Sandia Laboratories Geothermal Technical Division speaker: A.F. Veneruso	8:45	10:00
Coffee Break	10:00	10:30
Presentation by LASL Hot Dry Rock staff	10:30	12:00
Valles Caldera (17 mi.) speaker: Grant Heiken, LASL -LUNCH-	12:50 pm	1:30

THURSDAY (continued)	Ar.	Lv.
Fenton Hill hot dry rock drilling site (18 mi.) speaker: LASL Hot Dry Rock staff	2:00	3:30
Jemez Hot Springs (Soda Dam) (11 mi.) speaker: Fraser Goff, LASL	4:00	4:30
Los Alamos, New Mexico	5:15	

FRIDAY, September 29, 1978		
Los Alamos Inn		7:30 am
Union Oil Company, Baca Location No. 1 (32 mi.) speaker: R.O. Engebretsen and Union Oil staff	8:30	10:30
Los Alamos, New Mexico (32 mi.) -LUNCH-	11:30	1:00 pm
Los Alamos Airport (1 mi.)	1:10	1:30
Dakota Hogback (Denver) (341 mi.)	9:00	9:15
Denver Hilton	9:45	

SCHEDULED ACTIVITIES AND SPEAKERS FOR

Thursday, September 28, 1978

LOS ALAMOS SCIENTIFIC LABORATORY

Technical Session at P-Division Auditorium	8:40 - 12:00 noon
Welcome: Ken Joy	8:40
Sandia Laboratories, Albuquerque, N.M. presentation Geothermal Technical Division A.F. Veneruso	8:45 - 10:00
-COFFEE BREAK-	10:00 - 10:30
Session on LASL Hot Dry Rock Activities	10:30 - 12:00 noon
Overview: Greg Nunz	10:30
Drilling tools: Ed Williams	10:45
Logging tools: Jake Archuleta	11:00
Test loop: Jim Albright	11:15
Fenton Hill future: Bert Dennis	11:30
Future sites: A. William Laughlin	11:45
Fenton Hill Hot Dry Rock Drilling Site	2:00 - 3:30
Drill holes: R.H. Hendron	
Chem trailer: C. Grigsby	
CDA trailer: E.H. Horton	
Heat exchangers: J.E. Skalski	
Logging tool display: B.E. Todd	
Geology exhibit: F. West	

Andrew G. ALPHA
Consulting Geologist
1101 Monaco Pkwy.
Denver, Colorado 80220
(303) 333-4142

David J. ATKINSON
Hydrothermal Energy Corporation
2519 Horseshoe Canyon Road
Los Angeles, California 90046
(213) 654-6397

George W. BERRY
Consulting Geologist
600 Spruce Street
Boulder, Colorado 80302
(303) 444-3033

B. E. BYINGTON
Brown & Root, Inc.
P.O. Box 3
Houston, Texas 77001
(713) 676-8186

Judith C. CAIN
Helmerich & Payne, Inc.
4560 Montview
Denver, Colorado 80207
(303) 399-9060

Glen E. CAMPBELL
Gulf Mineral Resources Company
1720 South Bellaire Street
Denver, Colorado 80222
(303) 758-1700, x-372

Ray CHANTLER
McCulloch Geothermal Corporation
29515 Bernice Drive
San Pedro, California 90732
(213) 879-5252

Lou DE LEON
Thermal Power Company
601 California Street
San Francisco, California 94108
(415) 981-5700

Jay D. DICK
Chaffee Geothermal, Ltd.
1361 South Glencoe
Denver, Colorado 80222
(303) 759-3309 or 534-4470

Michael J. DWYER
Cooper, Clark & Associates
826 Grant Avenue
Novato, California 94947
(415) 897-2144

Louis H. EILERS
Dowell - Dow Chemical USA
P.O. Box 21
Tulsa, Oklahoma 74102
(918) 582-0101, x-351

Gene FRITZLER
Coury & Associates, Inc.
7400 West 14th Avenue
Lakewood, Colorado 80215
(303) 232-3823

L. Trobe GROSE
Colorado School of Mines
Dept. of Geology
Golden, Colorado 80401
(303) 279-0300, x-806

John E. HOWARD
VTN Consolidated, Inc.
P.O. Box C-19529
Irvine, California 92713
(714) 833-2450

Anders F. JEPSEN
Eureka Resource Associates
23 Dos Posos
Orinda, California 94563
(415) 845-3800

W. E. JOHNSON
Westec Services, Inc.
3211 Fifth Avenue
San Diego, California 92103
(714) 233-7572

P. J. KARNOSKI
Brown & Root, Inc.
P.O. Box 3
Houston, Texas 77001
(713) 676-8186

Leonard A. LESCHACK
LeSchack Associates, Ltd.
1111 University Blvd. West
Silver Spring, Maryland 20902
(301) 649-1670

Richard NOSKER
Thermogenics, Inc.
2300 County Center Dr., Suite 250
Santa Rosa, California 95401
(707) 546-7301

D. L. PARKINSON
Westec Services, Inc.
3211 Fifth Avenue
San Diego, California 92103
(714) 294-9770

Joel J. PIPPERT
UTEX Industries
5200 Clinton Drive
Houston, Texas 77020
(713) 672-8321

Bob QUILLIN
Micro Geophysics Corporation
P.O. Box 1106
Golden, Colorado 80401
(303) 279-0226

Kenton RIGGS
Devon Corporation
1624 Market Street, Suite 400
Denver, Colorado 80202
(303) 534-0166

Russ H. ROBINSON
Mono Power Company
P.O. Box 800
Rosemead, California 91770
(213) 572-2992

John L. "Bill" SMITH
Republic Geothermal, Inc.
11823 E. Slauson Ave., Suite One
Santa Fe Springs, California 90670
(213) 945-3661

Pat A. SMITH
Chevron Resources Company
P.O. Box 3722
San Francisco, California 94119
(415) 894-2301

Ray SNOW
UTEX Industries
5200 Clinton Drive
Houston, Texas 77020
(713) 672-8321

Robert J. SPERANDIO
Hydro-Search, Inc.
333 Flint Street
Reno, Nevada 89501
(702) 322-4173

D. Roger & Jannette WALL
Aminoil USA
P.O. Box 11279
Santa Rosa, California 95406
(707) 527-5332

Dwight E. WALTERS
R. F. Smith Corporation
P.O. Box 666
Cobb, California 95426
(707) 928-5772

Larry E. WELLS
Scientific Software Corporation
633 17th Street, Suite 1800
Denver, Colorado 80202
(303) 571-1111

Richard B. WELLS
Law Engineering Testing Company
2749 Delk Road
Marietta, Georgia 30067
(404) 952-9005