

WM-RES  
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WM Project 10, 11, 16  
Docket No. \_\_\_\_\_  
PDR ✓  
LPDR ✓ (B, N, S)

**NUCLEAR WASTE CONSULTANTS INC.**

8341 So. Sangre de Cristo Rd., Suite 6  
Littleton, Colorado 80127  
(303) 973-7495

**WM DOCKET CONTROL CENTER**

Distribution:  
J. Pohle  
(Return to WM, 623-SS) *SAC*

March 10, 1986  
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009/PM/3.3.001  
RS-NMS-85-009  
Communication No. 36

U.S. Nuclear Regulatory Commission  
Division of Waste Management  
Geotechnical Branch  
MS 623-SS  
Washington, DC 20555

Attention: **Mr. Jeff Pohle, Project Officer**  
**Technical Assistance in Hydrogeology - Project B (RS-NMS-85-009)**

Re: **Subtask 3.3/Task 5 - Conference on Deep Sedimentary Basins**

Dear Mr. Pohle:

Please find attached a letter from Dr. Stephens of Daniel B. Stephens and Associates (DBS) to Nuclear Waste Consultants, Inc. (NWC), concerning an upcoming conference on the hydrogeology of sedimentary basins, to be held in Banff, Alberta, June 22 - 25, 1986. Note that topics for papers and discussions that are important for consideration in the evaluations of the Salt program include:

- Dating of formation waters and hydrodynamic patterns
- Integrated case studies of deep waste disposal
- Evaluation of paleohydrological systems
- Non-Darcian flow systems in sedimentary basins
- New approaches to fluid-heat-mass transport processes.

NWC concurs with Dr. Stephens that these and other topics of the meeting appear to be directly relevant to the work on the Palo Duro Basin, and we forwards this request for your consideration at this time. We would propose that Drs. Stephens and Phillips attend the meeting under either Subtask 3.3 or Task 5 of Contract RS-NMS-85-009.

If you have any questions about this matter, please contact me immediately.

Respectfully submitted,  
NUCLEAR WASTE CONSULTANTS, INC.

*Mark J. Logsdon*  
Mark J. Logsdon, Project Manager

Att: Letter of March 4, 1986 - D. Stephens (DBS) to M. Logsdon (NWC)

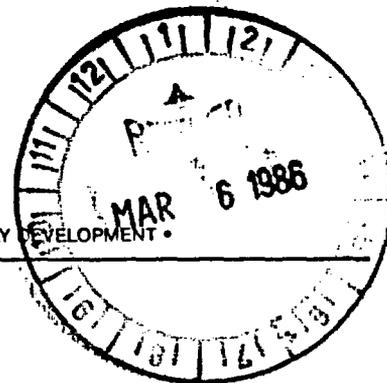
bc: D. Stephens, DBS

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**DANIEL B. STEPHENS & ASSOCIATES, INC.**  
CONSULTANTS IN GROUND-WATER HYDROLOGY

• GROUND-WATER CONTAMINATION • UNSATURATED ZONE INVESTIGATIONS • WATER SUPPLY DEVELOPMENT •



March 4, 1986

Mr. Mark Logsdon  
Nuclear Waste Consultants, Inc.  
8341 S. Sangre de Cristo Rd.  
Littleton, CO 80127

Dear Mark,

I am enclosing a brochure I received recently which advertises a conference on the regional hydrogeology of deep sedimentary basins. Many of the topics appear to be relevant to our work on the Palo Duro basin, and in fact there may well be some papers on this area. I believe the conference may be beneficial to our conceptual (and numerical) model activities on behalf of the NRC. If you feel that it appropriate, Fred Phillips and I, the principal technical personnel on our project would like to attend this conference as part of the contract. In fact, Fred is submitting an abstract. Please advise me of the appropriatness of this request. You may also want to share this with other memebers of the team.

Best regards,

Daniel B. Stephens, PhD  
President

DBS/mt

enclosure

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# Spend a few days in Paradise at the Third Annual Canadian/American Conference on Hydrogeology

Banff  
June 22-26,  
1986

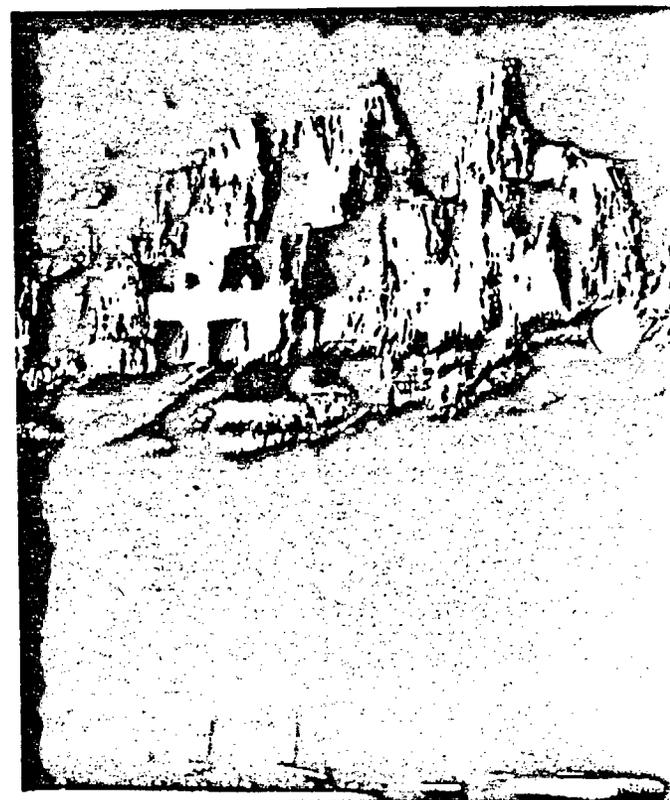
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The Alberta Research Council and The National Water Well Association Announce:

## Third Annual Canadian/American Conference on Hydrogeology: Hydrogeology of Sedimentary Basins: Application to Exploration and Exploitation

June 22-26, 1986  
The Banff Springs Hotel  
Banff, Alberta, Canada

Co-conveners: Brian Hitchon, Claude M. Sauveplane and Stefan Bachu (Basin Analysis Group, Alberta Geological Survey, Alberta Research Council)



NWWA Education Foundation  
500 W. Wilson Bridge Rd.  
Worthington, OH 43085  
Telephone: (614) 846-9355  
Telex: 241302

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DEPT OF GEO SCIENCE  
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# The Third Annual Canadian/American Conference on Hydrogeology: Hydrogeology of Sedimentary Basins: Application to Exploration and Exploitation

jointly sponsored by  
The Alberta Research Council and  
The National Water Well Association

Sedimentary basins occupy vast areas of the continents and the adjacent off-shore regions. They are the repositories of effectively all world energy resources, much of the mineral resources, and are locations for hazardous waste disposal. Extraction of resources or addition of wastes has both local and regional implications for the natural hydrogeological situation. Understanding of the regional hydrodynamics, hydrochemistry and geothermal regime can assist in maximizing opportunities for resource exploration and exploitation, and minimizing environmental damage due to deep injection of fluids. Papers that address these broad regional concerns are welcome.

In keeping with the format established at previous conferences, we shall be inviting speakers who are widely recognized as leaders in their fields to present substantial lectures on specific topics in sedimentary basin hydrogeology. A tentative list of invited speakers includes:

Dr. John Bradley, Amoco Production Co., Tulsa  
Dr. Andre Chiarelli, Elf Aquitaine, France  
Prof. Grant Garven, Johns Hopkins University, Baltimore  
Dr. Brian Hitchon, Alberta Research Council, Edmonton  
Dr. Allan Jessop, EMR, Earth Physics Branch, Ottawa  
Dr. Yousif K. Kharaka, USGS, Menlo Park  
Prof. Fred Longstaffe, University of Alberta, Edmonton  
Prof. József Tóth, University of Alberta, Edmonton

Papers of 15- to 20-minutes duration, dealing generally with regional case studies with emphasis on an integrated hydrodynamic-hydrochemical-geothermal approach, will be considered. Suggested relevant topics include:

- Integrated hydrodynamic-hydrochemical-geothermal approach to petroleum exploration
- Integrated hydrodynamic-hydrochemical-geothermal approach to the search for mineral deposits in sedimentary

basins

- Geothermal regimes and geothermal resources
- Dating of formation waters and hydrodynamic patterns
- Integrated case studies of deep waste disposal
- Effect of diagenetic process on regional flow systems
- Origin and maintenance of geopressured systems
- Evaluation of paleohydrogeological systems
- Non-Darcian flow systems in sedimentary basins
- New developments in fluid-heat-mass transport processes

## Tentative Conference Schedule

Sunday, June 22

12:00 - 18:00 Registration  
20:30 Wine and cheese get acquainted party

Monday, June 23

07:00 - 08:00 Registration and Breakfast  
08:00 - 11:00 Invited speakers  
11:00 - 15:00 Recreation and relaxation in a geologist's paradise  
15:30 - 18:30 Concurrent paper sessions  
18:30 - 19:30 Discussion groups

Tuesday, June 24

07:00 - 08:00 Breakfast  
08:00 - 11:00 Invited speakers  
11:00 - 15:30 Recreation and relaxation in a geologist's paradise  
15:30 - 18:30 Concurrent paper sessions  
18:30 - 19:30 Discussion groups

Wednesday, June 25

07:00 - 08:00 Breakfast  
08:00 - 10:00 Invited speakers  
10:30 - 12:30 Concurrent paper sessions  
12:30 - 13:30 Lunch  
13:30 - 16:00 Discussion groups and wrap-up session  
16:00 - 20:00 Recreation and relaxation in a geologist's paradise  
20:00 - 21:30 Banquet  
21:30 - 22:00 Preview slide show of field trip

Thursday, June 26

08:00 - 17:00 Optional field trip to sour gas plants to examine hydrogeological aspects of their operations.

The discussion groups are planned to deal with the most controversial topics related to deep basin hydrogeology. Specific subjects will be identified in the final program.

An optional one-day field trip to sour gas scrubbing plants in the Calgary area will be led by Tad Dabrowski, Piteau Consulting Ltd., in cooperation with PetroCanada and Shell Canada Ltd. The trip will be held on Thursday, June 26, and will demonstrate practical aspects of site characterization and monitoring for protection of air, soil and water quality in areas surrounding the gas plants. The area is an especially scenic locality in the foothills of the Canadian Rockies.

## Abstracts and Biographical Sketches

Abstracts will be accepted dealing with the previously mentioned topics. Presentations can be either oral or by poster. If your paper is accepted and we run out of oral presentation slots, we will assign you a poster to assure that we can accommodate your paper. Abstracts should not be longer than 250 words. Give the names and affiliations of all contributors. The name of the speaker should be underlined.

Biographical sketches are needed for all authors. These must accompany your abstract (no resumes will be accepted). Sketches should be 100 words or less and in paragraph form. Full mailing address and telephone number should be included with biographical sketches.

## Deadlines

Receipt of abstract and biographical sketches — March 1, 1986

Receipt of complete written manuscript — June 15, 1986

All authors will receive timely notification of the status of their papers. All papers accepted for presentation at the conference must be submitted to the conference convener by the above-mentioned date. Authors whose written papers are not received by this date will not present their papers at the meeting. All paper submissions are to be in the format of *Groundwater Journal* and are subject to peer review prior to publication in the proceedings volume.

Abstracts should be submitted to Canadian/American Conference on Hydrogeology/Brian Hitchon/Alberta Research Council/4445 Calgary Trail South/Edmonton, Alberta, Canada T6H 5R7 (Telephone 403-438-0555, extensions 262 or 275).

## SPEND A FEW DAYS IN PARADISE

Complete the registration form at the bottom of this page today.

### Registration Information

Registration fee for the conference is \$450 Canadian. The U.S. fee will be the equivalent rate in U.S. dollars at the time you register. The exchange rate on October 15, 1985, was 75 cents making the U.S. registration fee \$337.50. This fee includes the banquet, a wine and cheese party, the program book with field trip notes and published transactions. The fee for the field trip is \$30 Canadian. We kindly urge you to

reserve your place at the conference (see the following form) as soon as possible due to the fact that attendance will be limited to 300 people.

### Lodging Information

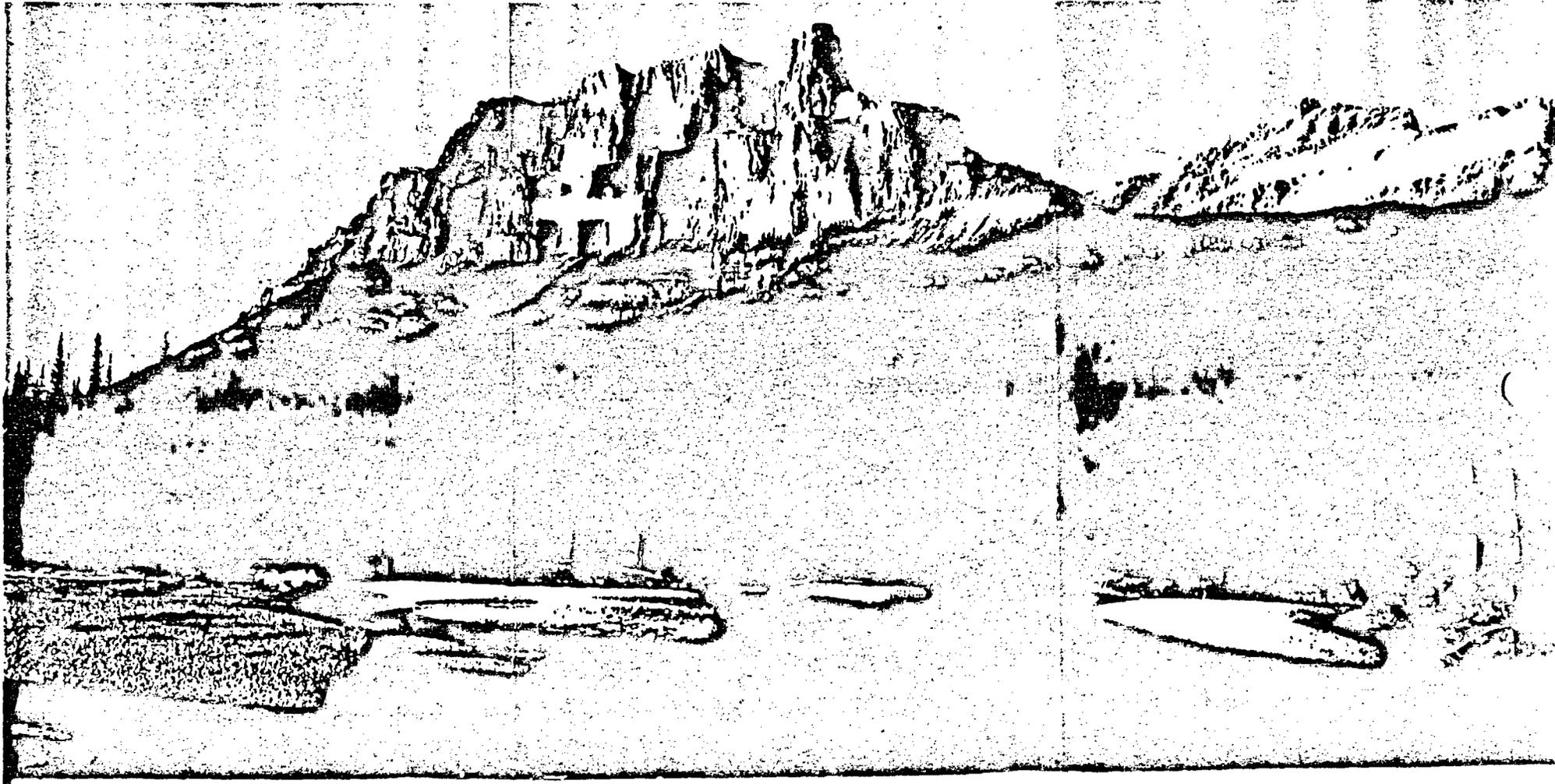
A block of rooms at the Banff Springs Hotel has been held for participants in the conference. The double occupancy rate for all rooms is \$200.50 Canadian, single is \$156.50 Canadian. These rates include breakfast and dinner daily, and there is an additional \$9.00 per day charge for gratuities. Individuals wishing to make room reservations at the Banff Springs Hotel should complete and mail the housing request form included in this brochure. Rooms will be held only until 6:00 p.m. date of arrival, unless guaranteed to a major credit card or by submitting one night's deposit. These rates are guaranteed

through 30 days prior to the conference. After that time, housing requests will be honored on a space-available basis prevailing rate structure.

Singles wishing to reduce the daily rate, may register with the conference convener up to 60 days (April 23, 1986) prior to the conference for the name of a potential roommate of similar age, sex and smoking preference. The individual is responsible for submitting hotel reservations and altering them accordingly, if and when a roommate is selected.

### Town of Banff and the Banff Springs Hotel

Banff is a town located within Canada's Banff National Park. The town and park are managed by the federal government and are considered by many to be one of the most beautiful places on earth.



The Third Annual Canadian/American Conference on Hydrogeology: Hydrogeology of Sedimentary Basins  
Application to Exploration and Exploitation

jointly sponsored by

The Alberta Research Council and The National Water Well Association

1. Please find enclosed my cheque for \$150 Canadian, made out to Alberta Research Council (Trust Fund F9666) to reserve my place at this conference. I understand I will be billed for the remaining \$300 Canadian on April 15, 1986, and the full amount will be payable prior to May 15, 1986, or I will lose my place and half of my deposit. Registration may be transferred to another individual at any time.
2. I understand the fixed rate for single accommodations at the Banff Springs Hotel is \$156.50 Canadian (room, three breakfasts and three dinners). I will complete the housing request, included in this flyer and mail directly to the hotel. I understand that rooms must be guaranteed by a major credit card or a one night's deposit if they are to be held after 6:00 p.m. on the arrival date. Rates are guaranteed only through 30 days prior to the conference. Requests for housing submitted after that time are subject to assignment on the basis of availability.
3. Please attempt to find for me a conference roommate so that on the basis of double occupancy my room and meals (room, three breakfasts and three dinners) will be \$100.20 Canadian through the conference period. I understand I must submit the housing request as it appears in this brochure to secure my room at the Banff Springs Hotel. The Council will advise me of potential roommates if this form is received 60 days (April 23, 1986) prior to the opening of the conference. I am responsible for contacting my roommate and altering the reservation from a single to a double with the Banff Springs Hotel.

Male/Female (circle one)

Approximate age \_\_\_\_\_

I smoke

I do not smoke

4. I will directly request a room reservation at a hotel other than the Banff Springs Hotel.  
 Yes  No

5. Do you plan to attend the banquet the evening of Wednesday, June 25, 1986?  
 Yes  No

Signature \_\_\_\_\_

6.  Check this box if you plan to submit a paper to this conference. List title of paper and authors.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Please print your name, address and affiliation and return to:

Dr. Brian Hitchon  
Canadian/American Conferences on Hydrogeology  
Alberta Research Council  
Alberta Geological Survey  
4445 Calgary Trail South  
Edmonton, Alberta, Canada T6H 5R7

Name \_\_\_\_\_

Affiliation \_\_\_\_\_

Street Address \_\_\_\_\_

City, Province/State \_\_\_\_\_

Postal Code/Zip Code \_\_\_\_\_

Area Code \_\_\_\_\_

Phone Number \_\_\_\_\_

Social Security # \_\_\_\_\_

Canadian/American Conference  
on Hydrogeology  
Hotel Reservation Request

Banff Springs Hotel  
June 22-26, 1986

Please Print

Name \_\_\_\_\_

Affiliation \_\_\_\_\_

Mailing address \_\_\_\_\_

City/Province/State \_\_\_\_\_

Postal Code/Zip Code \_\_\_\_\_

Area Code \_\_\_\_\_

Phone # \_\_\_\_\_

Type of accommodations requested \_\_\_\_\_

Arrival date \_\_\_\_\_

Departure date \_\_\_\_\_

Do you wish to guarantee your reservation:  Yes

If yes, how?  Major credit card

Name of credit card: \_\_\_\_\_

Account number: \_\_\_\_\_

Expiration date: \_\_\_\_\_

One night's deposit

Mail this form directly to:

Reservations Manager  
Banff Springs Hotel  
Canadian/American Conference on Hydrogeology  
P.O. Box 960  
Banff, Alberta, Canada T0L 0C0