



IDAHO DEPARTMENT  
OF HEALTH AND WELFARE  
DIVISION OF  
ENVIRONMENTAL QUALITY

1410 North Hilton, Boise, ID 83706-1255, (208) 334-0502

Philip E. Batt, Governor

January 14, 1998

Bob J Muffley  
Middle Snake Regional Water Resource Commission  
122 5th Ave W  
Gooding Id 83330

Dear Mr. Muffley:

Thank you for your interest in the development of the Idaho Source Water Assessment Plan. I am pleased to inform you that the recently appointed Source Water Assessment Advisory Committee is scheduled to meet on January 26, 1998 in Boise. There is much work ahead in addressing this important challenge and success depends on public input. Committee meetings are open to the public and there will be time to give oral comments. If you are unable to attend but would still like to provide written comments, please mail them to the following address:

Donna Rodman  
Source Water Assessment Advisory Committee  
Division of Environmental Quality  
1410 N Hilton  
Boise, Idaho 83706-1256

Enclosed is a list of the committee members and the draft agenda. Meeting highlights and future agendas will be mailed to interested parties to keep them informed of progress. If you would prefer not to receive this information, please contact Marcie Young at (208) 373-0444 so that your name can be removed from the list.

Again, thank you for your interest in Idaho's Source Water Assessment Program.

Sincerely,

Donna Rodman, Chief  
Watershed & Aquifer Protection Bureau

DR:my

cc: Larry L. Koenig, Assistant Administrator  
DEQ Regional Administrators  
Source Water Assessment Team  
Source Water Assessment Advisory Committee Members

h:\...swainfo2.loo

*Draft Agenda*  
**Source Water Assessment Advisory Committee Meeting**  
**January 26, 1998**  
**Division of Environmental Quality**  
**1410 North Hilton, Boise**  
**Conference Rooms C and D**  
**9:00 a.m. - 4:00 p.m.**

- 8:30            Coffee
- 9:00            Welcome and Opening Remarks
- 9:15            Introductions  
—            Participant Introductions
- 10:15           Review of Agenda and Goals of the Meeting
- 10:30           Break
- 10:45           Background  
—           Idaho's Drinking Water Program  
—           Question and Answer Session
- 11:45           Break and Lunch Set-up (video)
- 12:00           Lunch (provided)  
Background Continued  
—           1996 SDWA Amendment  
—           Question and Answer Session
- 1:00            Source Water Assessment and Water Quality  
—           Scope of Source Water Assessment  
—           Responsibilities of Source Water Assessment Advisory Committee  
—           Source Water Assessment Milestones  
—           Operating Procedures  
—           Question and Answer Session
- 2:30            Break
- 2:45            EPA's Role  
—           Expectations  
—           Tribal Issues  
—           Question and Answer Session
- 3:15            Summary  
—           Review of Meeting Goals  
—           February Agenda  
—           Long Range Schedule Development  
—           Public Comments  
—           Closing Remarks
- 4:00            Meeting Adjournment

Name	Affiliation	Location	Phone Number
<b>Professional Organization (1 representative)</b>			
Alex LaBeau	Idaho Assoc of Realtors	Boise	(208) 342-3585
<b>City Government (1 representative)</b>			
Darrell Wilburn	Southeast Idaho Council of Governments	Pocatello	(208) 233-4032
<b>County Government (1 representative)</b>			
Arthur Brown	Planning & Zoning Admin	Jerome County	(208) 324-8811
<b>Federal Government (1 representative)</b>			
Ann Puffer	US Forest Service Region IV	Montana	(406) 329-3447
<b>Nonvoting Technical Advisory Group (14 representatives)</b>			
Donna Rodman	DEQ	Boise	(208) 373-0502
Maryann Helferty	EPA Region 10	Seattle	(206) 553-1901
Paul Castelin	IDWR	Boise	(208) 327-7894
Brenda Zehr	Mountain Home AFB	Mountain Home	(208) 828-1684
Amy Owen	Nez Perce Tribe	Lapwai	(208) 843 7368
Liz Cody	City of Boise\Assoc. Id Cities	Boise	(208) 384-3982
Suzanne Buntrock	US Forest Service Region I	Utah	(801) 625-5454
Deb Parliman	US Geological Survey	Boise	(208) 387-1326
John Welhan	ID Geological Survey, ISU	Pocatello	(208) 236-4254
Ron Golus	US Bureau of Reclamation	Boise	(208) 334-1751
Jan P. Blickenstaff	Idaho Dept of Commerce	Boise	(208) 334-2470
Gary Bahr	ISDA	Boise	(208) 332-8597
Terril Stevenson	NRCS - State Geologist	Boise	(208) 378-5721
Kirk Miller	Maxim Technologies	Boise	(208) 389-1030



November 10, 1997

Dear Interested Party:

The US Congress recently passed an amendment to the Safe Drinking Water Act requiring the Idaho Division of Environmental Quality (DEQ) to conduct source water assessments of all public water systems in the state. In order to more effectively meet this goal, DEQ will establish a citizen advisory committee to guide the development of Idaho's Source Water Assessment Plan. The Source Water Assessment Plan developed by this committee will become the foundation for Idaho's local communities to build their source water protection programs upon and will be needed to qualify for future drinking water monitoring waivers.

I am soliciting your agencies interest in providing a staff member to serve on this important planning committee. We are seeking representatives that have experience with land management or water quality issues and will help ensure that the plan is supportable at both the state and federal government level. State and federal government both have an important role in ensuring that our citizens have safe drinking water available to them.

The committee will also include representatives from: regulated drinking water systems; medical and health professionals; consumer and citizen action groups; minority groups, environmental and conservation organizations; agriculture and non-agriculture industry; engineers and consultants; local government agencies, and the general public.

The committee will be responsible for developing a plan outlining the process Idaho will use to: identify areas in the state that supply drinking water to the citizens; inventory possible or existing sources of contamination within identified areas that could pose threats to drinking water supplies; evaluate how susceptible the drinking water systems are to the identified contaminants sources; and inform the general public of water quality issues that may affect their drinking water supplies. A fact sheet providing more information on source water assessment has been enclosed for your use and distribution to other interested parties.

Participation in the committee will require a significant time commitment. The committee members will meet monthly in Boise from January 1998 until January 1999. The first meeting is anticipated to occur on January 14, 1998. Funding for the committee expenses is unavailable. Lunches may be provided, but associated travel and lodging cannot be reimbursed.

November 10, 1997

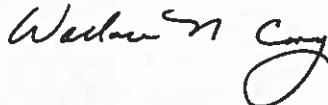
Page 2

In order to keep the committee membership to a manageable number, not all of those who indicate an interest to be on the committee will be appointed to serve. However, opportunities will be provided for those parties not on the committee to provide input in the development of the Plan.

We will need the names of any recommended nominees by November 30, 1997. Please use the enclosed post card to indicate your interest.

Thank you for your assistance and input regarding this issue. If you have questions or need additional information, please contact Donna Rodman at (208) 373-0502. We look forward to hearing from you.

Sincerely,



Wallace N. Cory, P.E.  
Administrator, Division of Environmental Quality

WNC/DR/acf

Enclosures

cc: Larry L. Koenig  
Donna Rodman  
DEQ Regional Administrators  
Source Water Assessment File

## What are the requirements of a source water assessment?

Idaho must conduct the following activities for the assessment program:

### 1 Delineate the source water assessment area

Identify the land area surrounding a surface or ground water drinking water source through which contaminants could move and reach the well (ground water systems) or intake (surface water systems). The size and shape of the source water assessment area for a ground water-based system depends on the delineation method used, local hydrogeology, and volume of water pumped from the well. The drainage area (watershed) upstream of a surface water intake is considered the source area for that supply.

### 2 Inventory potential contaminants

Identify and locate land uses and activities within the source water assessment area that could add contaminants to the drinking water source. This allows an evaluation of the potential threats to the drinking water supply.

### 3 Conduct susceptibility analysis

The data generated during the first two steps must be evaluated to estimate the likelihood of the public water system becoming contaminated by sources located within the source water assessment area.

### 4 Inform the public

Completed source water assessments must be made available to the public. Maps must be developed showing the source water assessment areas, the locations of potential sources of contamination, and the results of the susceptibility analysis.

## Are source water assessments mandatory?

The 1996 Amendments to the SDWA mandates that source water assessments be completed on all public water systems.

### Source water assessment milestones:

#### December 1997

Form an advisory committee of volunteers to guide development of Idaho's source water assessment plan.

#### Fall 1998

Provide draft source water assessment plan to general public for review and comment.

#### February 1999

Submit source water assessment plan to the EPA describing how source water assessments will be implemented. EPA has 9 months to review and approve or disapprove the plan.

#### November 2001

Complete assessments for all public water systems within 2 years after EPA approves the source water assessment plan.

## Reference

State Source Water Assessment and Protection Program Guidance, EPA 816-R-97-009

State of Idaho Division of Environmental Quality Point of Contact - Ed Hagan 373-0502

Memorandum

To: All commission members

From: Bob Muffley, Acting Executive Director

Date: 11/10/99

Your previous Executive Director, Roxy Reed, has a new employer and, because of this, is unable to spend the time necessary to continue with her duties on behalf of the Commission. Your Chairman and I discussed the situation and I told him I would take over her duties until the Commission has completed phase II of the ground water planning process and until a permanent replacement can be found.

Most of you are aware that I was a member of the Commission until my second term expired in 1998. Because of this I feel I am up to speed on the work of the Commission and have a good knowledge of all the players in the ground water planning effort. Most important, I am available to you, your chairman and others during the day. I am usually at my office between 9:00 AM and 5:00 PM and if not my staff knows how to reach me. I am hoping that this alone will be a benefit during the phase II process.

About the Agenda:

I'm afraid that my wife and I have previously planned a vacation to Mexico so I will be unable to attend your November meeting. This is, however, a very important meeting and I urge you all to attend.

The first item on the agenda is phase II. Tony Morse of the IDWR is the lead man from that department for their part of phase II. Your chairman wants to have an open discussion with Tony on this issue and see how the effort will be coordinated between the Department and the USGS.

The second item is something that just came up. A group of people are concerned that the public really doesn't understand the ground water situation in our area which is very evident from the letters to the editor in the Times News. The public appears to have some misconceptions concerning the ground water issues, particularly what it does and does not mean to have increasing nutrients in the ground water. This group wants to create a factual and unemotional video on the subject and has asked if our commission would contribute toward the effort and be the sponsor for the production. The production cost will range between \$8,000 and \$10,000. They are hoping that we will contribute \$3,000 and the balance will be raise through private sources. The Wood River Resource Area Counsel has agreed to handle the funds. This request is in line with items (c) and (g) under paragraph 5 of the commissions authorization section of the

Coordinated Water Resource Management Plan. My only recommendation on this is that the Commission has final approval before the video is released to the public and that you are involved in determining the content of the film.

The third Primary agenda item is a general discussion of beginning the process of creating the Ground Water Quality Plan for the 6 counties. Dr. Allen feels that there is no reason for not beginning the planning process. The Commission would need to develop an outline of the plan by creating situation statements along with goals and objectives. You would then need to work with various agencies and private sources to develop actual strategies to meet the goals. This is the same tact the commission took in developing the water quality and quantity portion of the plan. One thing we would need to do right away is to find out the various categories of ground water susceptibility we will need to deal with and how the USGS defines these area. I assume that the Commission will need to address the different categories in different ways.

Once again I urge you to attend this very important meeting and I look forward to working with all of you.



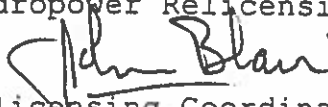
FEDERAL ENERGY REGULATORY COMMISSION

WASHINGTON, D. C. 20426

OFFICE OF HYDROPOWER LICENSING

REF: Shoshone Falls, No. 2778  
Upper Salmon, No. 2777  
Lower Salmon, No. 2061  
Bliss No. 1975  
C.J. Strike No. 2055  
Idaho Power Company, Boise, ID

TO : All Interested Parties  
Snake River Hydropower Relicensing

FROM : John Blair   
Snake River Relicensing Coordinator

SUBJECT : Notice of Meeting

On August 12 & 13, 1999, Federal Energy Regulatory Contractor Staff (Berger & Associates) will meet with staff of Idaho Power Company, Environmental Protection Agency, Idaho Division of Environmental Quality and other parties to discuss Idaho Power's modeling of water quality for: Shoshone, Upper Salmon, Lower Salmon, Bliss and C.J. Strike hydropower projects located on the Snake River.

The meeting is an informal exchange of information covering water quality modeling Idaho Power has completed to date. The purpose of the meeting is to give FERC staff an understanding of the modeling assumptions, any differences in approach or assumptions between the parties, and what are the limitations of the various modeling tools. A discussion of the Total Maximum Daily Load (TMDL) studies underway in the basin is also envisioned. The information will serve as background to best help staff prepare Environmental Impact Statements for the project license applications filed with the Commission.

The relationship between operations modeling including flow scenarios and water quality modeling will be discussed and new windows interfaces under development for water quality modeling will be presented. This is not a scoping meeting and new information is not being solicited.

The meetings will be held 9:30 a.m. to 5:00 p.m. on the 12<sup>th</sup> and

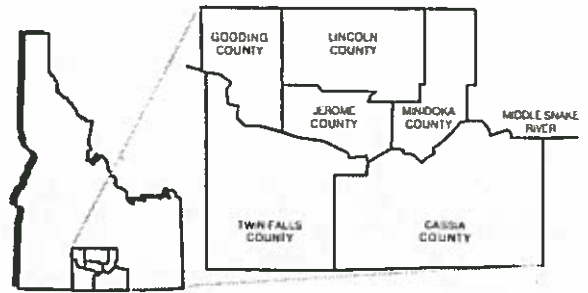
8:30 a.m. to 3:30 p.m. on the 13th at Northwest Irrigation & Soils Research Laboratory, 3793 North 3600 East, Kimberly, Idaho (telephone 208/423-4691). Participants may wish to bring a brown bag lunch since lunch will be from 12:30 p.m. to 1:00 p.m.

Intervenors and interested parties in these licensing proceedings may attend if they so desire. These meetings will be technical and limited to the subject of modeling of the aforementioned projects and cumulative effects associated with water quality in the Snake River Basin from Milner Dam to Asotin Creek. If you plan to attend, please notify Lewis Wardle, Relicensing Project Manager, Idaho Power Company, 208/388-2964.

If you have any questions, feel free to call me, John Blair, Federal Energy Regulatory Commission, 202/219-2845.

# MIDDLE SNAKE REGIONAL WATER RESOURCE COMMISSION

Roxi Reed, Executive Director  
208-934-5983  
1703 South 2200 East  
Gooding, Idaho 83330



July 18, 1999

Mitch Arkoosh  
Gooding County Commissioner  
624 Main  
Gooding, Id 83330

*One to  
each county  
Lincoln \$1150-*

Dear Mr. Arkoosh,

At our regular meeting held June 16, 1999 this commission approved our year 1999-2000 budget request in the amount of \$2,270.00. This amount is the same as past few years.

Also please find two draft copies of support statements. We need each of these statements on your county letterhead and signed by each county commissioner of our member counties. These statements need to be in our files as supporting documents, and available if requested by any funding source we may apply with.

If you or any of your commission members have any questions feel free to call our Chairman, Dr. Richard Allen at work (208) 324-2591 or at home (208) 324-3488.

Sincerely,

A handwritten signature in black ink, appearing to read 'Roxi Reed', written over a circular stamp.

Roxi Reed  
Executive Director

Cc: Gooding County Clerk

DRAFT

The Middle Snake River Study Group was formed in 1989 as a joint effort among the counties of Gooding, Jerome, Lincoln and Twin Falls to address water quality problems within the four county area and ultimately enhance the water quality in the Middle Snake River. The planning document now known as the Coordinated Water Resource Management Plan was adopted by Gooding, Jerome and Lincoln Counties in 1992 and the Middle Snake Regional Water Resource Commission was then formed. Twin Falls, Minidoka and Cassia Counties joined the effort and adopted the plan in 1996.

The County Commissioners of Cassia, Lincoln, Minidoka, Gooding, Jerome and Twin Falls Counties have directed the Middle Snake Water Resource Commission to develop a regional ground water protection plan that would contain adequate technical data to support zoning and other land use decisions. This plan is entitled "Strategy Plan for the Middle Snake Ground Water Protection Planning Process". This Plan would evaluate and provide management recommendations for all possible contamination sources in the region. The ground water protection plan was divided into three phases.

Phase I was to collect data on groundwater nitrate levels and has been completed.

Phase II will be to compile and develop the data files needed to produce a map showing the current nitrate contamination in ground water (depth of ground water, land use, soil type, and nitrogen input is also included).

Phase III will be to develop a nitrate vulnerability map using the data collected in the Phases I and II to help portray the potential for contamination of the ground water in these counties.

We, as county commissioners of \_\_\_\_\_ County, have a need for this information to protect the citizens of our county and support the "Strategy Plan for the Middle Snake Ground Water Protection Planning Process".

\_\_\_\_\_  
Chairman

\_\_\_\_\_  
Commissioner

\_\_\_\_\_  
Commissioner

DRAFT

The County Commissioners of Cassia, Lincoln, Minidoka, Gooding, Jerome and Twin Falls Counties have directed the Middle Snake Water Resource Commission to develop a regional ground water protection plan that would contain adequate technical data to support zoning and other land use decisions. This plan is entitled "Strategy Plan for the Middle Snake Ground Water Protection Planning Process". This Plan would evaluate and provide management recommendations for all possible contamination sources in the region. The ground water protection plan was divided into three phases.

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Phase III will be to develop a nitrate vulnerability map using the data collected in the Phases I and II to help portray the potential for contamination of the ground water in these counties.

In order to complete this process we, as county commissioners of \_\_\_\_\_ County, have authorized the Middle Snake Regional Water Resource Commission to apply for supplemental 319 funding through the EPA.

\_\_\_\_\_  
Chairman

\_\_\_\_\_  
Commissioner

\_\_\_\_\_  
Commissioner

State of Idaho

# DEPARTMENT OF WATER RESOURCES



P.O. Box 83720 Boise, Idaho 83720-9098  
1301 North Orchard Street, Boise, Idaho 83706  
Phone: (208) 327-7900 FAX: (208) 327-7866



DIRK KEMPTHORNE  
GOVERNOR

KARL J. DREHER  
DIRECTOR

## FAX COVER SHEET

Date: 16 June 1999

To: Dr. R. Allen / Roxy Reed

From: Lin Campbell / RDA

**Document description:**

This is what the legislature appropriated for IDWR. Not sure if this is what you are looking for. Call me if you need more.

Cover sheet + 3 pages

Please contact 208-327-7965 if there is a problem with the transmittal.

934-5983  
934-9013 FAX

**Benefits to Local Government**

With the use of GIS technology, particularly with the use of ArcView, the Water Resources Commission and county planners and government will have a powerful and effective tool for the decision-making required. It allows the organization, maintenance, visualization, analysis, and dissemination of maps and spatial information. It is capable of linking data from a variety of sources, such as tables, images, text files, spreadsheets, and graphics, to be brought into a graphical environment and to display results in map or tabular form, which highlight the effects of management alternatives. Once the alternatives are explored, the decision-making can be focussed on the policy issues. An important aspect to keep in mind is that not only are you able to maintain local control over the decision-making process, ArcView allows you to continually improve your data sources without requiring costly or time-intensive revisions of maps.

**PROPOSAL BUDGET**

Idaho Department of Water Resources	FY2000	FY2001
Salary - GIS Analyst (.50 FTE)	\$ 17,680	\$ 18,120
Fringe benefits (annual salary x 22.53% + \$3269) x % FTE	\$ 7,250	\$ 7,350
<b>Subtotal: Personnel Costs</b>	<b>\$ 24,930</b>	<b>\$ 25,470</b>
<b>Subtotal: Indirect Costs (32.3% of personnel costs)</b>	<b>\$ 8,052</b>	<b>\$ 8,227</b>
<b>Operating Expense Items:</b>		
- SCS Soil Surveys		
- Supplies	\$ 300	
- Travel	\$ 750	\$ 750
- Miscellaneous	\$ 1,500	\$ 1,500
- Training materials	\$ 1,000	\$ 1,000
	\$ 1,000	\$ 1,000
<b>Subtotal: Operating Expense</b>	<b>\$ 4,550</b>	<b>\$ 4,250</b>
<b>Total: (Personnel, Operating Expense, Indirect)</b>	<b>\$ 37,532</b>	<b>\$ 37,947</b>

The GIS Analyst is not a single person. A variety of GIS analysts with specific areas of expertise would be responsible for coordination and research of appropriate GIS data, arranging, and conducting training. Efforts would include locating and obtaining data from outside IDWR sources and bringing the data into a format usable by ARC/View. Also, would compile new field data for use by ARC/View. Perform overlay of coverages to build needed map products. Coordinate other GIS product development with the U.S. Geological Survey's proposal.

could be used to extract demographic information potentially important to planners.

#### Needs of County Planners

Data from other sources, such as other State, federal, and local agencies, the universities, and private enterprise could be obtained to meet the needs of county planners, such as fertilizer and pesticide application rates and locations, census data, canal and lateral seepage losses, facilities using or housing hazardous materials, and the like. The data coverages, once developed, could be used by local government to better determine the possible impacts of landuse and other development decisions and particularly, to assist in determining the general susceptibility of the aquifer to contamination; a tool that county planners and other officials have indicated that they need.

Data which may need to be created or converted for use include:

- USDA-NRCS 1:24,000 scale soils
- City limits
- Urban growth impact area
- Depth to ground water
- Character of vadose zone
- Dumps
- Feedlots
- Septic density
- Land application sites
- Injection wells
- Sewer districts

Data needing to be created for use in the GIS (such as depth to water, vadose zone characterization, crop acreages) may need to be collected by entities outside IDWR, but with some IDWR coordination. The IDWR portion of the project budget takes into account only the time estimated to be actually spent to build those coverages anticipated to be most needed for the six-county area. Other coverages may need to be built that haven't yet been anticipated, and the costs to develop those coverages would be in addition to those budgeted.

#### Use of GIS Technology

IDWR will coordinate Geographic Information System (GIS) activities pertinent to the six-county area of interest. In order for the GIS to be usable at the local level, however, the six counties must commit to purchasing the GIS software capable of using the coverages, as well as receiving training on ARC/View. An alternative could include initially contracting for the use of facilities, such as at the College of Southern Idaho. It is also important that the six counties participate in the Idaho Geographic Information Advisory Committee (IGIAC), which coordinates spatial data activities within the State. A Mid-Snake IGIAC workgroup would help ensure that agency spatial data activities are focussed, efficient, and prioritized.



**Proposal for GIS Services to  
Mid-Snake Regional Water Resources Commission  
by Idaho Department of Water Resources**

**Introduction**

This proposal extends the products available to county and other planners beyond what is proposed by the U.S. Geological Survey in their proposal for nitrate susceptibility mapping. It also honors the partnership between local and state government. As lead State agency for GIS technology, IDWR maintains databases relating to depth to water, recharge, landuse, soils, topography, crops, ground- and surface-water quality, well locations, water rights and a large variety of other themes. IDWR also has on file specific data in the eastern portion of the 6-county area relating to aerial applicator sites, feedlots, land application sites, injection well locations, and septic tanks. Although not all the databases are at the scale most useful to the Water Resources Commission, the data could be gathered to produce coverages (digital map elements linked to the databases mentioned above).

IDWR proposes to assist the counties in identifying, prioritizing, and assisting in the development of datasets, coverages, and map products which would be of assistance to them within the limits of the proposed budget. IDWR will assist in the procurement of hardware and software required to successfully operate a GIS operation. IDWR will provide introductory training in ArcView software use.

**Existing Resources**

Data at a map scale of 1:100,000 which the IDWR maintains that encompasses the entire 6-county area of interest include:

- Hydrography
- STATSGO soils data
- Transportation
- Public Land Survey System (PLSS)
- Selected well locations
- Ownership
- Reserve Boundaries - land management areas of various State and Federal agencies
- School Districts
- Ground Water Management Areas
- County boundaries
- Watershed boundaries
- 100K Quadrangle Boundaries
- 24K Quadrangle Boundaries
- Irrigation points of diversion and return (1:24,000)

Data which cover part of the study area include landuse classification (categories are irrigated, urban, range, barren, dryland farm, wetland, water, clouds). Statewide coverages from the Idaho Gap Analysis may be suitable and are available. TIGER (census) files also exist for the state, which

Middle Snake Regional Water  
Resource Commission  
Roxi Reed, Executive Director  
1703 South 2200 East  
Gooding, Idaho 83330  
Phone: (208)934-5983  
Fax: (208)934-9013  
E-mail: Rxireed@magicklink.com

facsimile transmittal

*To all  
executive  
Members  
Commission*

To: John Rensberg Fax: 436-5272

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From: Roxi Reed Date: 02/21/99

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Re: Pages: 1

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CC:

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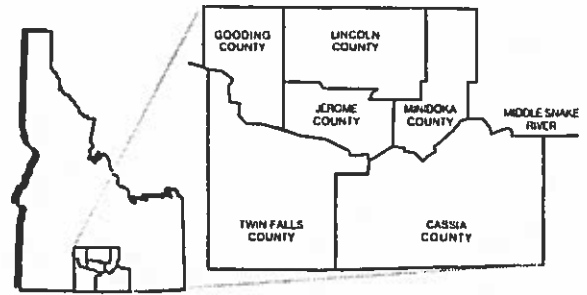
Urgent     For Review     Please Comment     Please Reply     Please Recycle

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**Wow do I have egg on my face! The date for the Middle Snake Regional Water Resource Commission meeting is Wednesday February 24, 1999 at 7:00 p.m. Twin Falls County Meeting Room (246 3<sup>rd</sup> Ave East).**

# MIDDLE SNAKE REGIONAL WATER RESOURCE COMMISSION

Roxi Reed, Executive Director  
208-934-5983  
1703 South 2200 East  
Gooding, Idaho 83330



February 18, 1999

Marvin Hempleman  
Twin Falls County Commissioner  
P.O. Box 126  
Twin Falls, Idaho 83301

*To Executive Committee*

URGENT

We need you to attend a special meeting February 25, 1999 in the Twin Falls County Meeting Room at 7:00 p.m. (246 3<sup>rd</sup> Ave. East, Twin Falls). We must have your input and direction in regards to the ground water protection plan. As a commission we are here to provide you with information and tools to protect the water for our six county region. To do this we must have your guidance. Only you, as a regional group of county commissioners, can put political pressure in the right places to get the funding to continue the work you have assigned us to do. Again we are here to do the work you have asked us to. **We need you here to tell us how to proceed and/or if you want this commission to proceed at all or if you want to disband this commission.** Please attend this important meeting and represent your county.

Sincerely,

Richard Allen D.V.M.  
Chairman

RA/rf

Sent without signature to speed mailing

## Middle Snake Regional Water Commission

February 18, 1999

### **Phase II - Groundwater Data GIS Formatting Project Description and Funding Request**

#### **I. Background**

Nothing is more important than Water! Residents of South Central Idaho require clean water in sufficient quantities for their very livelihood; for uses such as agriculture, aquaculture, commercial and residential. While the need for water may not be unique, in Southern Idaho, where rainfall averages only about 10 inches per year, clean and available water means groundwater from the massive Snake River Plain Aquifer.

With this concern and true regional planning in mind, the Middle Snake Regional Water Commission was formed in 1989 as a joint effort initially among Jerome, Gooding, Lincoln and Twin Falls counties. Minidoka and Cassia counties joined the Commission in 1996 due to their shared interest in water protection for the region. The Commission's primary mission is to understand and develop management recommendations for the region's surface and groundwater. The uniqueness of this effort is the solid partnership developed among the six county organizations, in a collaborative proactive approach to regional management of the groundwater resource. Products from this effort will be used regularly by all entities and organizations charged with the management of water and related resources in the region.

As an initial effort, the Commission researched and developed a surface water protection plan for the region that was subsequently adopted by the State of Idaho (DEQ and IDWR) into the formal Water Protection for the area. To the Commission's credit, during this process, the Commission has developed a working relationship with virtually all the local, state and federal environmental and planning organizations with any relationship to the study and management of groundwater.

With the surface water plan in place, the focus moved to groundwater. The groundwater protection strategy was designed to study, evaluate and implement measures which enhance protection of groundwater throughout the region. The process is divided into three phases.

*Phase I is completed* and included data collection from monitoring wells placed at random commercial, agricultural and residential locations throughout the six county region. Phase II is the focus of this proposal, which is described below, and involves formatting of Phase I data into GIS (Geographic Information System) format to develop maps of data layers. Phase III will be devoted to statistical evaluation of the GIS information developed in Phase II with the specific objective of producing a probability mapping model. This model will form the basis for effective and collaborative management of groundwater resources throughout the six county area.

#### **II. Project Narrative**

As described above in the Background section, this project is Phase II of an overall three Phase groundwater evaluation and management planning process. Specifically, this project is a critical step in the overall process and will involve a year-long procedure to organize and format the data collected in Phase I into a standard GIS format. From this format, initial mapping of data layers will be developed which will provide immediate usable groundwater data and as well as preliminary information for the detailed evaluation and modeling that will occur in Phase III. The project is proactive, cross jurisdictional and demonstrates broad regional partnerships. Most importantly, the results will provide the next layer of detailed groundwater information to help guide the region's Planning and Zoning and related management entities in appropriate management of the region's groundwater resources.

**II.a Ability of project to support overall advancement of groundwater / source water protection efforts:**

The bottom-line emphasis of this project, including the overall effort to study and implement a groundwater protection program, is centered on immediate and long-range groundwater protection. The results of this project will provide excellent data to support the region's groundwater protection efforts and set the stage for more detailed evaluation and mapping in Phase III.

**II.b Innovation and transferability of project outcomes to multiple state, Tribal, or local source water initiatives.**

The data gathered and refined as part of this process is specific to this region and the Snake River Aquifer. However, the collaborative process used to develop the information and the model of groundwater mapping can be shared as an excellent example of cooperation, partnerships and use of technical information in regional groundwater management.

**II.c Past experience that demonstrates an ability to manage complex projects**

The Commission has successfully completed Phase I, the complex process of gathering data from monitoring wells and meters placed throughout the region. Phase II will be managed by the same organization and individuals who managed Phase I of the project. It was completed with no real difficulties and clearly demonstrates technical expertise, effective coordination and broad support for the next step in the overall groundwater management strategy.

**III. Project Activities**

1. Organize the data gathered as part of Phase I
2. Enter the data into the GIS format for enhancement and future applications
3. Develop preliminary GIS mapping of data layers to better understand the Aquifer environment and specific water quality conditions

**IV. Budget Narrative**

The overall cost for Phase II is \$134,856. However, this is a true collaborative project, and local governments, have committed \$65,624 in cash and in-kind support to assist the project. (Due to limited space, a breakdown of those expenses is not shown here, but is available upon request) Our request is for the remaining amount of \$69,232. A breakdown of those specific costs is shown below.

USGS GIS Data input -	\$31,700
Idaho Dept of Water Resources	
□ Personnel Salaries	
- GIS Analyst (.50 FTE)	\$17,680
- Fringe Benefits	\$ 7,250
- Indirect Costs (32.3% of salaries and fringe)	\$ 8,052
□ Operating Expenses	
- Soil Surveys (Soil Conservation Service)	\$ 300
- Supplies	\$ 750
- Travel	\$ 1,500
- Miscellaneous	\$ 1,000
- Training materials	\$ 1,000
<b>Total Funding Request</b>	<b>\$ 69,232</b>

## Memorandum

---

Middle Snake Regional Water Resource Commission

Richard D. Allen, D.V.M., chairman

Date: January 05, 1999  
To: Leon Smith

Subject: Coordinated Plan

---

*Enclosed please find a copy of our revised Coordinated Water Resources Management Plan for our six county region. Please review. If you have any questions feel free to call me at 324-2591. We are sorry you were not able to attend our meeting January 4, 1999. We hope you will be able to support our request for funding the ground water study. (Copy of request also enclosed).*

## Memorandum

---

### Middle Snake Regional Water Resource Commission

---

Richard D. Allen, D.V.M., chairman

Date: January 05, 1999

To: Randy Hansen

Subject: Coordinated Plan

---

*Enclosed please find a copy of our revised Coordinated Water Resources Management Plan for our six county region. Please review. If you have any questions feel free to call me at 324-2591. Thank you for attending our meeting January 4, 1999. We hope you will be able to support our request for funding the ground water study.*

## Memorandum

### Middle Snake Regional Water Resource Commission

Richard D. Allen, D.V.M., chairman

Date: December 31, 1998  
To: Roy Prescott, Executive Board Chairman  
Subject: Request support at meeting with Legislators January 4, 1999

*As many of you may know, we met with Governor Batt, Oct. 6, 1998 to request an amendment to the governor's budget. This request was met favorably, but now we need your support. We have scheduled a meeting with the Legislators in conjunction with the soil district meeting. This will be held in the CSI Taylor Building (second floor) January 4, 1999 immediately following the soil district meeting. (Our meeting should begin approximately 1:30 p.m. and last approximately one hour.) We must receive state funding for Phase II and Phase III or the counties will continue to struggle to pay for the studies needed to produce the vulnerability maps for our region. Our multi county study has the potential to benefit the entire state and therefore should be supplemented by State funds. We as counties, have tried every way we can to fund this. The only way left is for State support. We need representation from every county. If you, the executive board member, are not able to attend, please send another county commissioner to represent your county.*

*Faxed to County  
& Mailed to home*

*Also -*

*Jerry Nance  
Dennis Maughn  
John Remsburg  
Lyle Woodbury  
Mitch Arkosh*



December 22, 1998

Honorable Maxine T. Bell  
State Representative  
194 South 300 East  
Jerome, Idaho 83338

Dear Madam:

We would like to request the honor of your presence for a meeting on January 4, 1999 at the Taylor Building (second floor) on the College of Southern Idaho campus. Knowing how busy your schedule is we have planned this meeting to immediately follow the Soil Conservation District luncheon held the same day and place.

We hope you are able to attend both meetings and support our plan. At this meeting we will present our proposal for a ground water study to provide data for our counties to use in developing a vulnerability map for our six county region. As you may remember our commission has been struggling to get enough funding to properly complete this study for the past three or four years.

We look forward to discussing our proposal with you on January 4, 1999. Have a happy holiday season.

Sincerely,

Roy Prescott  
Executive Board Chairman

RP/tr

Hon. 'Bert' Stevenson  
400 West 1100 N  
Norland, Idaho 83350

Hon. Denton Darrington  
Idaho State Senator  
Rt. 1  
Declo, Idaho 83323

Honorable Maxine T. Bell  
Idaho State Representative  
194 South 300 East  
Jerome, Idaho 83338

Honorable Jim Kempton  
Idaho State Representative  
Star Route Box 28  
Aldion, Idaho 83311

Honorable Bruce Newcomb  
Idaho State Representative  
1626 Monroe  
Burley, Idaho 83318

Honorable Randy Hansen  
State Representative  
1888 Candleridge Road  
Twin Falls, Idaho 83301

Honorable Leon Smith  
State Representative  
671 Monte Vista  
Twin Falls, Idaho 83301

Honorable Celia Gould  
State Representative  
4406 North 1400 East  
Buhl, Idaho 83316

Honorable Douglas Jones  
State Representative  
3515 North 2300 East  
Filer, Idaho 83328

Honorable Wendy Jaquet  
510 Mesquite Lane  
Ketchum, Idaho 83340

Honorable Dean Cameron  
State Senator  
1101 Ruby Dr.  
Rupert, Idaho 83350

Honorable Tim Ridinger  
Idaho State Representative  
P.O. Box 110  
Shoshone, Idaho 83352

Senator Clint Stennett  
State Senator  
220 Sabala  
Ketchum, Idaho 83340

Senator John Sandy  
3104 South 1200 East  
Hagerman, Idaho 83332

Senator Laird Noh  
Rt. 1  
Kimberly, Idaho 83341

MIDDLE SNAKE REGIONAL  
WATER RESOURCE COMMISSION

Roxi Reed, Executive Director  
208-934-5983  
1703 South 2200 East  
Gooding, Idaho 83330

Chairman  
Dr. Richard Allen

Fax Transmittal  
~~5~~---Page (s) including cover

DATE--December 16, 1998

--TELEFAX NUMBER--324-2591

TO--Dr. Allen

FROM--Roxi Reed

SUBJECT--Budget funding request

NOTES-- Paul Castelin called and asked me to send this information to Larry Schlicht. I am sending a copy to you so if he calls you will have this info at hand. See you this afternoon. Call me if I can do anything else this morning.

Budget	Phase II	Phase III
USGS	31,700.00	150,000.00
Idaho Dept. Water Resources		
Salaries:		
GIS Analyst .50 FTE	17,680.00	18,120.00
Fringe Benefits	7,250.00	7,350.00
Indirect Costs (32.3% of salaries & fringes)	8,052.00	8,227.00
Operating:		
SCS Soil Surveys	300.00	
Supplies	750.00	750.00
Travel	1,500.00	1,500.00
Miscellaneous	1,000.00	1,000.00
Training materials	<u>1,000.00</u>	<u>1,000.00</u>
Subtotal	37,532.00	37,947.00
<b>Total Funding Request</b>	<b>69,232.00</b>	<b>187,947.00</b>
<b>State Percentage of Total Project</b>	<b>51.34 %</b>	<b>74.12 %</b>
Ongoing Local Government Costs		
Salaries	14,400.00	14,400.00
Fringe benefits (26%)	3,744.00	3,744.00
Indirect Costs (14%)	<u>2,540.00</u>	<u>2,540.00</u>
Subtotal	20,684.00	20,684.00
Cost to Local Government for Duration of Project		
Capital Costs (Computer & software)	10,000.00	10,000.00
Salaries	3,960.00	3,960.00
Meetings & Events	2,500.00	2,500.00
Postage	800.00	800.00
Legal	1,500.00	1,500.00
Phone	1,000.00	1,000.00
Soft Costs (coordination & troubleshooting)		
Value of local volunteer man hours for duration of project	<u>17,680.00</u>	<u>17,680.00</u>
Subtotal	37,440.00	37,440.00
<b>Total Cost Paid by 6 County Region</b>	<b>58,124.00</b>	<b>58,124.00</b>
<b>County Percentage of Total Project</b>	<b>43.10 %</b>	<b>22.92 %</b>
Federal Match:		
Wood River RC&D Project Coordinator	7,500.00	7,500.00
Federal Percentage of Total Project	5.56 %	2.96 %
<b>Overall Project Total</b>	<b>134,856.00</b>	<b>253,571.00</b>

County	Acres	Full Market Value	Value of Exemptions	Net Taxable
<b>Irrigated Agricultural Land</b>				
Cassia	264,525	381,341,611	247,537,538	133,804,073
Gooding	114,100	316,283,916	249,557,351	66,726,565
Lincoln	78,014	46,403,194	19,580,537	26,822,657
Minidoka	188,196	273,514,222	147,470,802	126,043,420
Twin Falls	267,611	505,095,734	298,934,210	206,161,524
Jerome	<u>158,827</u>	<u>277,535,884</u>	<u>187,133,316</u>	<u>90,402,568</u>
Total	1,071,273	1,800,174,561	1,149,213,754	649,960,802
<b>Irrigated Pasture Land</b>				
Cassia	16,006	15,510,104	10,067,963	5,442,141
Gooding	11,164	16,378,932	12,779,167	3,599,765
Lincoln	12,145	4,622,668	1,950,606	2,672,062
Minidoka	469	44,703	272,133	175,570
Twin Falls	20,965	12,578,562	7,444,455	5,134,107
Jerome	<u>8,699</u>	<u>2,226,073</u>	<u>0</u>	<u>2,226,073</u>
Total	69,448	51,764,042	32,514,324	19,249,718
<b>Non-Irrigated Agricultural Land</b>				
Cassia	102,431	44,373,225	28,803,673	15,569,552
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Jerome	0	0	0	0
Lincoln	0	0	0	0
Minidoka	1,315	401,821	287,015	114,806
Twin Falls	<u>11,885</u>	<u>6,464,717</u>	<u>3,826,057</u>	<u>2,638,660</u>
Total	115,631	51,239,763	32,916,745	18,323,018
<b>Meadow Lands</b>				
Cassia	0	0	0	0
Gooding	3,005	3,058,977	2,761,989	296,988
Jerome	0	0	0	0
Lincoln	0	0	0	0
Minidoka	0	0	0	0
Twin Falls	<u>595</u>	<u>221,350</u>	<u>131,003</u>	<u>90,347</u>
Total	3,600	3,280,327	2,892,992	387,335
<b>Dry Grazing Lands</b>				
Cassia	393,147	26,735,041	17,354,326	9,380,715
Gooding	48,142	15,980,800	14,968,075	1,012,725
Jerome	45,517	11,790,209	10,652,158	1,138,051
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Minidoka	15,799	1,566,935	1,061,472	505,463
Twin Falls	<u>228,352</u>	<u>16,683,927</u>	<u>9,874,162</u>	<u>6,809,765</u>
Total	793,103	75,659,256	55,134,881	20,524,375
<b>LAND USES</b>				
Irrigated Ag. Land	1,071,273	1,800,174,561	1,149,213,754	649,960,802
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Total	2,063,055	1,981,817,949	1,272,672,696	708,445,248

**BLM Lands**

Cassia	516,356
Gooding	244,008
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Lincoln	574,669
Twin Falls	546,467

\*\* Other than BLM lands totals do not reflect State and Federal Lands or land in Urban uses.

The Middle Snake River Study Group was first formed in 1989 as a joint effort among Jerome, Gooding, Lincoln and Twin Falls Counties. During the first six years the group's primary interest was in protection and study of surface water, giving advice and producing a surface water protection plan for our area. After 1992 the Study Group's plan was adopted by Jerome, Lincoln and Gooding Counties and the Middle Snake Regional Water Resource Commission was formed. During 1996 Minidoka, Cassia and Twin Falls Counties also adopted the plan and joined the regional effort. The County Commissioners of the aforementioned counties instructed the Commission in late 1995 to begin studying the protection of ground water, as there was a strong belief that our counties were not prepared to protect this resource with available information. The ground water protection plan emerged during the course of many meetings with local, state and federal agencies during 1996.

The ground water protection study was to provide current information on contamination as well as the potential for contamination in the future. The plan was divided into three phases, the first being to collect data on groundwater nitrate levels (Phase I already completed using county funds), the second to compile and develop the data files needed to produce a map showing the current nitrate contamination in ground water (this would also include depth of ground water, land use, soil type, and nitrogen input), and the third was to develop a nitrate vulnerability map using the aforementioned data to help portray the potential for nitrate contamination (and potentially others) of the ground water in these counties.

The counties have to date paid for Phase I of the project, which is completed. The counties at present have exhausted their financial resources to finish Phase II and III, we have applied to all known grant organizations (both Federal and private) and at present have not received any other financial support on this study. We feel that this planned study and mapping is in hand with the State's objective (as well as Federal) on protecting ground water. We also feel that it is imperative that our Planning and Zoning Boards have this tool to help with future growth in our area, while still protecting our agricultural base.

**Benefits and Uses of the Ground Water Vulnerability Map**

Ground water depth, land use, soil composition, and nitrogen input vary widely throughout the Mid-Snake region. Data from these four categories will be gathered and brought together in an easily usable form. The ground-water vulnerability map produced by this program will be used by county planning and zoning staff and other resource management agencies to make land use decisions and to help address nitrate contamination problems in the six county area. The ground-water vulnerability map will be a valuable tool. It will greatly benefit all the residents of Cassia, Jerome, Gooding, Lincoln, Minidoka and Twin Falls Counties by: 1) determining areas of highest and lowest probability for nitrate leaching into ground-water, 2) assisting planning and zoning commissions with land use planning decisions, 3) providing a tool for prioritizing Best Management Plan (BMP) programs, 4) providing tools that can be used for public information, 5) helping to prioritize areas in need of ground-water quality monitoring, and 6) assisting Wellhead Protection and Public Drinking Water programs by highlighting potential problem areas.

Counties have paid for Phase I at a cost of \$37,000

Members have donated 656+ hours equal to \$9,840

Members come from all walks of life -- 2 from each county, Plus 1 county commissioner from each county serves as an executive member

**MIDDLE SNAKE REGIONAL  
WATER RESOURCE COMMISSION**

Roxi Reed, Executive Director  
208-934-5983  
1703 South 2200 East  
Gooding, Idaho 83330

Chairman  
Dr. Richard Allen

Fax Transmittal  
--4--Page (s) including cover

DATE--December 16, 1998

--TELEFAX NUMBER--327-7866

TO--Paul Castelin

FROM--Roxi Reed

SUBJECT--Budget request

NOTES-- Here is the budget request and supporting info. Thanks again for all your help.



State of Idaho

## Governor-Elect Transition Office

---

**DIRK KEMPTHORNE**  
Governor-Elect

**GREG CASEY**  
Transition Director

**MICHAEL BOGERT**  
Deputy Transition Director

700 West Jefferson, Room 121  
P.O. Box 83720  
Boise, Idaho 83720-0032  
(208) 334-3131  
FAX (208) 334-2438

December 10, 1998

Richard Allen  
Chairman  
1703 South 2200 East  
Gooding, ID 83330

Dear Richard :

Thank you for your correspondence recently received by our Transition Office.

My Transition Team will be examining the various functions of state government and will very soon advise me of their recommendations on policy issues, governance, budgets and personnel. Input from concerned citizens like you is helpful and greatly appreciated. Please be assured that my Transition Team will take your comments into consideration.

Thank you.

Sincerely,

A handwritten signature in cursive script that reads "Dirk".

Dirk Kempthorne  
Governor-Elect



10400

Cassia County  
Auditors Office  
Courthouse  
Burley, ID 83318

December 7, 1998

MIDDLE SNAKE REGIONAL  
WATER RESOURCE COMM.  
1703 SOUTH 2200 EAST  
GOODING ID 83330


We have been asked to request additional information from you for reporting purposes. Please find enclosed the federal W-9 form, complete the information and return immediately.

Your time and consideration in this matter is greatly appreciated.

Return IMMEDIATELY to:

Cassia County  
Auditors Office  
Courthouse  
Burley, ID 83318

Sincerely,

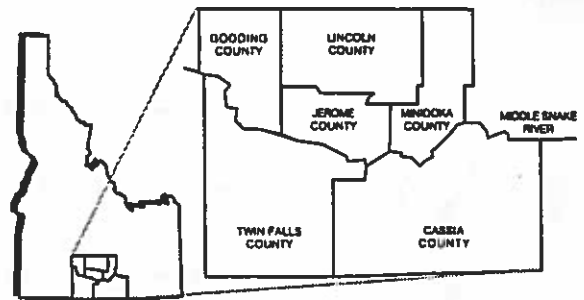


Darrell M. Roskelley  
Cassia County Clerk, Auditor

Mailed  
1-4-99

# MIDDLE SNAKE REGIONAL WATER RESOURCE COMMISSION

Roxi Reed, Executive Director  
208-934-5983  
1703 South 2200 East  
Gooding, Idaho 83330



November 12, 1998

Governor-elect Dirk Kempthorne  
% Governor Phil Batt  
Transition Team  
P.O. Box 83720  
Boise, Idaho 83720

Dear Governor-elect Kempthorne:

Congratulations, you now lead Idaho into the 21st Century! As I am sure you will be getting a lot of correspondence and request for money and time, I will keep this brief and to the point. I am the chairman of the Middle Snake Regional Water Resource Commission, comprised of the counties of Cassia, Gooding, Jerome, Lincoln, Minidoka and Twin Falls. Our Commission met with Governor Batt in October to discuss funding for a ground water vulnerability study, which is one-third completed. At our meeting we were given an endorsement by Governor Batt for our project for the next fiscal year (1999). Our counties are involved in this project to protect our water source while still providing for economic growth. We sincerely hope that we can continue to work with departments such as IDWR and Karl Dehrer in the future as they have been a tremendous resource. Enclosed is the proposal that we presented to Governor Batt and IDWR, for your staff's review. If you have any questions or concerns please contact me (work (208)324-2591, home (208)324-3488). Our Commission will be conducting a meeting for legislators on January 4, 1999 in Twin Falls to acquaint them with our request, and we would welcome you or one of your staff to this meeting. (Invitation with exact time and place to follow).

Sincerely,

Richard D. Allen, D.V.M.  
Chairman

RDA/tr  
enclosure

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The counties have to date paid for Phase I of the project, which is completed. The counties at present have exhausted their financial resources to finish Phase II and III, we have applied to all known grant organizations (both Federal and private) and at present have not received any other financial support on this study. We feel that this planned study and mapping is in hand with the State's objective (as well as Federal) on protecting ground water. We also feel that it is imperative that our Planning and Zoning Boards have this tool to help with future growth in our area, while still protecting our agricultural base.

**Benefits and Uses of the Ground Water Vulnerability Map**

Ground water depth, land use, soil composition, and nitrogen input vary widely throughout the Mid-Snake region. Data from these four categories will be gathered and brought together in an easily usable form. The ground-water vulnerability map produced by this program will be used by county planning and zoning staff and other resource management agencies to make land use decisions and to help address nitrate contamination problems in the six county area. The ground-water vulnerability map will be a valuable tool. It will greatly benefit all the residents of Cassia, Jerome, Gooding, Lincoln, Minidoka and Twin Falls Counties by: 1) determining areas of highest and lowest probability for nitrate leaching into ground-water, 2) assisting planning and zoning commissions with land use planning decisions, 3) providing a tool for prioritizing Best Management Plan (BMP) programs, 4) providing tools that can be used for public information, 5) helping to prioritize areas in need of ground-water quality monitoring, and 6) assisting Wellhead Protection and Public Drinking Water programs by highlighting potential problem areas.

Counties have paid for Phase I at a cost of \$37,000

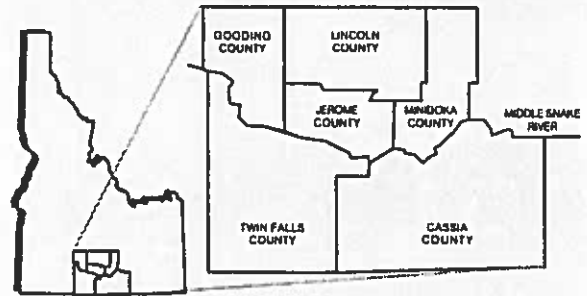
Members have donated 656+ hours equal to \$9,840

Members come from all walks of life -- 2 from each county, Plus 1 county commissioner from each county serves as an executive member

<b>Budget</b>	<b>Phase II</b>	<b>Phase III</b>
USGS	31,700.00	150,000.00
<b>Idaho Dept. Water Resources</b>		
<b>Salaries:</b>		
GIS Analyst .50 FTE	17,680.00	18,120.00
Fringe Benefits	7,250.00	7,350.00
Indirect Costs (32.3% of salaries & fringes)	8,052.00	8,227.00
<b>Operating:</b>		
SCS Soil Surveys	300.00	
Supplies	750.00	750.00
Travel	1,500.00	1,500.00
Miscellaneous	1,000.00	1,000.00
Training materials	<u>1,000.00</u>	<u>1,000.00</u>
Subtotal	37,532.00	37,947.00
<b>Total Funding Request</b>	<b>69,232.00</b>	<b>187,947.00</b>
<b>State Percentage of Total Project</b>	<b>51.34 %</b>	<b>74.12 %</b>
<b>Ongoing Local Government Costs</b>		
Salaries	14,400.00	14,400.00
Fringe benefits (26%)	3,744.00	3,744.00
Indirect Costs (14%)	<u>2,540.00</u>	<u>2,540.00</u>
Subtotal	20,684.00	20,684.00
<b>Cost to Local Government for Duration of Project</b>		
Capital Costs (Computer & software)	10,000.00	10,000.00
Salaries	3,960.00	3,960.00
Meetings & Events	2,500.00	2,500.00
Postage	800.00	800.00
Legal	1,500.00	1,500.00
Phone	1,000.00	1,000.00
<b>Soft Costs (coordination &amp; troubleshooting)</b>		
Value of local volunteer man hours for duration of project	<u>17,680.00</u>	<u>17,680.00</u>
Subtotal	37,440.00	37,440.00
<b>Total Cost Paid by 6 County Region</b>	<b>58,124.00</b>	<b>58,124.00</b>
<b>County Percentage of Total Project</b>	<b>43.10 %</b>	<b>22.92 %</b>
<b>Federal Match:</b>		
Wood River RC&D Project Coordinator	7,500.00	7,500.00
Federal Percentage of Total Project	5.56 %	2.96 %
<b>Overall Project Total</b>	<b>134,856.00</b>	<b>253,571.00</b>

# MIDDLE SNAKE REGIONAL WATER RESOURCE COMMISSION

Roxi Reed, Executive Director  
208-934-5983  
1703 South 2200 East  
Gooding, Idaho 83330



October 27, 1998

Mike Trabert  
% Twin Falls City  
P.O. Box 1907  
Twin Falls, Idaho 83301

Re: Public representative as voting member on W.A.G. executive committee

Dear Mr. Trabert:

It has come to our attention that due to time constraints our representative, Gary Grindstaff, is sometimes unable to attend the W.A.G. meetings. Therefore we are appointing Mark Daily as an alternate representative for the times Mr. Grindstaff is unable to attend your meetings as our representative.

We hope you will work with either of these two qualified men as professionally as you have worked with our past representatives. If you have some problem or concern with this arrangement please feel free to contact me at (208) 324-2719 (work) or (208) 324-3488 (home).

Sincerely,

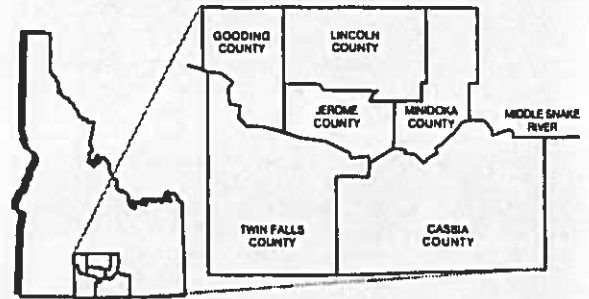
A handwritten signature in black ink that reads "Richard D. Allen, D.V.M." The signature is written in a cursive style.

Richard D. Allen, D.V.M.  
Chairman

RDA/tr

# MIDDLE SNAKE REGIONAL WATER RESOURCE COMMISSION

Roxi Reed, Executive Director  
208-934-5983  
1703 South 2200 East  
Gooding, Idaho 83330



October 27, 1998

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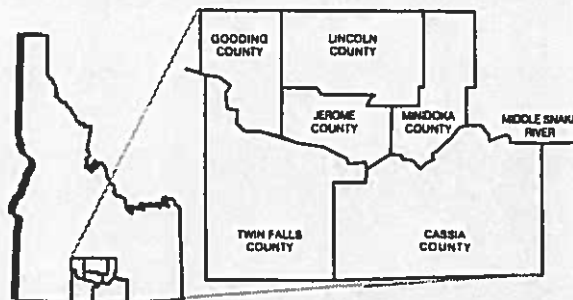
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Richard D. Allen, D.V.M.  
Chairman

RDA/tr

# MIDDLE SNAKE REGIONAL WATER RESOURCE COMMISSION

Roxi Reed, Executive Director  
208-934-5983  
1703 South 2200 East  
Gooding, Idaho 83330



October 26, 1998

Idaho Department of Water Resources  
Karl J. Dehrer, Director  
1301 N. Orchard  
Statehouse Mail  
Boise, Idaho 83720-9000

Dear Karl:

On behalf of the Counties of Cassia, Gooding, Jerome, Lincoln, Minidoka and Twin Falls, as well as the Middle Snake Regional Water Resource Commission, I want to thank you for your attention during our meeting and proposal with you and your staff. Our counties also want to thank you, for your support during the meeting with the Governor and the commitment you and your staff have given us for Phase II. We are also very encouraged by your statement to help our coalition of counties attempt to re-enter the process of grant applications for Phase III of our ground water vulnerability mapping project. To your end, I do believe our meeting was a success at both levels. We are trying to convince our respective boards to pay closer attention to the application and approval of individual developments and septic systems. Dialog on these and other concerns of IDWR will only further the improvements of the Mid-Snake River.

Sincerely,

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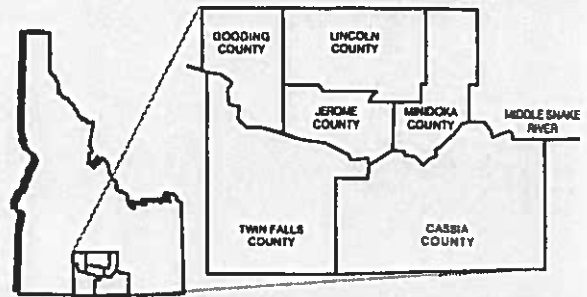
Richard D. Allen, D.V.M.  
Chairman

RDA/tr



# MIDDLE SNAKE REGIONAL WATER RESOURCE COMMISSION

Roxi Reed, Executive Director  
208-934-5983  
1703 South 2200 East  
Gooding, Idaho 83330



October 26, 1998

Paul Castelin  
IDWR  
1301 N. Orchard  
Statehouse Mail  
Boise, Idaho 83720-9000

Dear Paul:

On behalf of the Counties of Cassia, Gooding, Jerome, Lincoln, Minidoka and Twin Falls, as well as the Middle Snake Regional Water Resource Commission, I want to thank you for your help and advice in preparation of budgetary figures for our meeting and proposal with IDWR and the Governor. You were most prompt and helpful, even to the extent of interrupting your weekend. It is refreshing to find people in our State Departments who, like you, will go beyond their call of duty. Our counties also want to thank you, for your support during the meeting with the Governor. We are also very encouraged by the support of IDWR to help our coalition of counties attempt to re-enter the process of grant applications for Phase III of our ground water vulnerability mapping project. Thanks again for your help and support to further improvements of the Mid-Snake River.

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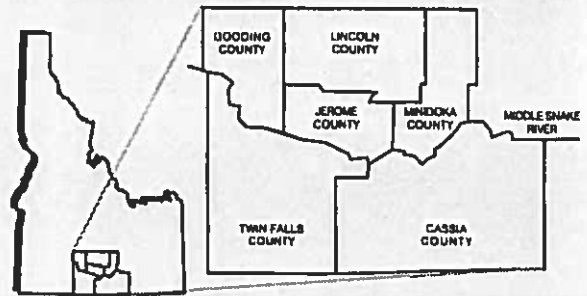
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Richard D. Allen, D.V.M.  
Chairman

RDA/tr

# MIDDLE SNAKE REGIONAL WATER RESOURCE COMMISSION

Roxi Reed, Executive Director  
208-934-5983  
1703 South 2200 East  
Gooding, Idaho 83330



October 26, 1998

Governor Phil Batt  
Statehouse Mail  
Boise, Idaho 83720

Dear Governor Batt:

The Middle Snake Regional Water Resource Commission (Counties of Cassia, Gooding, Jerome, Lincoln, Minidoka and Twin Falls) extends our gratitude for our meeting with you on October 6, 1998. We have deeply appreciated the concern and concerted effort that the IDWR and Karl Dehrer's staff have shown our counties' concern and proposal. It is refreshing to know that a state department is there to work for the people of Idaho, not just regulate them. We look forward to our study and your further support in our endeavor to protect our water and way of life. The availability of GIS mapping to our respective counties planning and zoning boards will be a tremendous tool. If you or any of the Department's staff have any questions concerning the study, please let us know.

Gratefully yours,

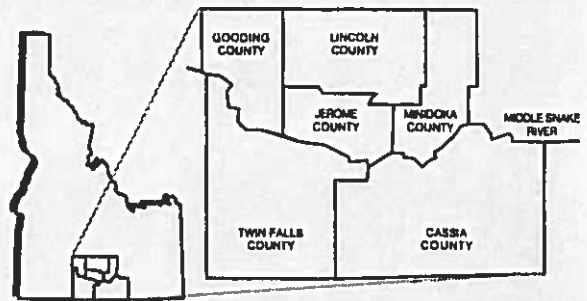
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Richard D. Allen, D.V.M.  
Chairman

RDA/r  
cc: Dirk Kempthorn  
Karl Dehrer  
Robert Huntley

# MIDDLE SNAKE REGIONAL WATER RESOURCE COMMISSION

Roxi Reed, Executive Director  
208-934-5983  
1703 South 2200 East  
Gooding, Idaho 83330



October 26, 1998

Idaho Department of Water Resources  
Karl J. Dehrer, Director  
1301 N. Orchard  
Statehouse Mail  
Boise, Idaho 83720-9000

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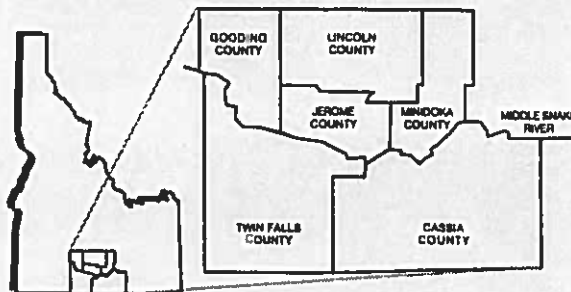
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Richard D. Allen, D.V.M.  
Chairman

RDA/tr

# MIDDLE SNAKE REGIONAL WATER RESOURCE COMMISSION

Roxi Reed, Executive Director  
208-934-5983  
1703 South 2200 East  
Gooding, Idaho 83330



October 26, 1998

Paul Castelin  
IDWR  
1301 N. Orchard  
Statehouse Mail  
Boise, Idaho 83720-9000

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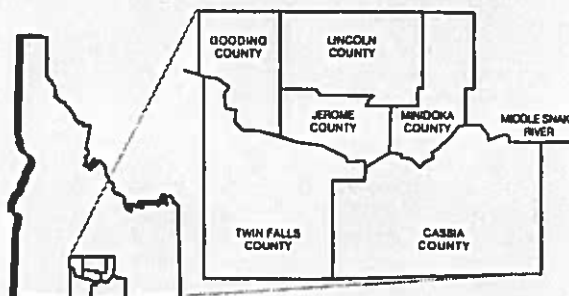
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Richard D. Allen, D.V.M.  
Chairman

RDA/tr

# MIDDLE SNAKE REGIONAL WATER RESOURCE COMMISSION

Roxi Reed, Executive Director  
208-934-5983  
1703 South 2200 East  
Gooding, Idaho 83330



October 16, 1998

Division of Environmental Quality  
601 Pole Line Road, Suite 2  
Twin Falls, Idaho 83301

Dear Sirs:

Please change the mailing address for the Middle Snake Regional Water Resource Commission to reflect our new chairman's address. Address label should read: Dr. Richard Allen, DMV, 32 East 400 North, Jerome Idaho 83338.

Thank-you

A handwritten signature in black ink, appearing to read 'Roxi Reed', written over a horizontal line.

Roxi Reed  
Executive Director

FEDERAL ENERGY REGULATORY COMMISSION

WASHINGTON, D. C. 20426

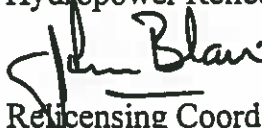
OFFICE OF HYDROPOWER LICENSING

**SEP 23 1999**

Idaho Power Company  
Boise, ID

Project No. 2778  
Shoshone Falls  
Project No. 2777  
Upper Salmon Falls  
Project No. 2061  
Lower Salmon Falls  
Project No. 1975  
Bliss  
Project No. 2055  
C.J. Strike

TO : All Interested Parties  
Snake River Hydropower Relicensing

FROM : John Blair   
Snake River Relicensing Coordinator

SUBJECT : NOTICE OF MEETING

On October 27 & 28, 1999, Federal Energy Regulatory Commission Contractor Staff (Louis Berger & Associates) will meet with staff of Idaho Power Company, Duke Engineering, and any other interested parties to discuss Idaho Power's CHEOPS Model used by Idaho Power for modeling project operations for the Shoshone Falls, Upper Salmon Falls, Lower Salmon Falls, Bliss and C.J. Strike hydropower projects located on the Snake River.

The meeting is an informal exchange of information covering operations modeling Idaho Power has completed to date. The purpose of the meeting is to discuss potential technical refinements to the model that the staff may request to enhance staff's ability to assess project-specific and cumulative impacts in the Environmental Impact Statements for these projects.

The relationship between operations modeling including flow scenarios and water quality modeling may also be discussed (primarily the interface). This is not a scoping meeting and new information is not being solicited.

The meetings will be held 9:30 a.m. to 5:00 p.m. on October 27<sup>th</sup> and 8:30 a.m. to 3:30 p.m. on October 28<sup>th</sup> at Duke Engineering Services, Suite 225, 22121 17th Avenue SE, Bothell, Washington 98021 (telephone 425/485-5668). Duke Engineering has indicated the Sierra Suites hotel is adjacent to their office at 22122 17th Avenue SE, Bothell, Washington (telephone 425/482-2900), if you require lodging.

Intervenors and interested parties in these licensing proceedings may attend if they so desire. These meetings will be technical and limited to the subject of modeling of the aforementioned projects and cumulative effects associated with the projects in the Snake River Basin from Milner Dam to Asotin Creek. If you plan to attend, please notify Lewis Wardle, Relicensing Project Manager, Idaho Power Company, 208/388-2964.

If you have any questions, feel free to call me, John Blair, Federal Energy Regulatory Commission, 202/219-2845.

**From:** Mark Daily <trout@northrim.net>  
**To:** roxreed@magiclink.com <roxreed@magiclink.com>  
**Date:** Wednesday, September 16, 1998 11:25 PM  
**Subject:** Benefits and Uses of the Ground-Water Vulnerability Map

---

Roxi,

Here is a first draft of my contribution to the executive summary. Let me know what you think. Can you get this to Rick? If we need anything else, let me know. I would be glad to proof read the compiled version.

Mark

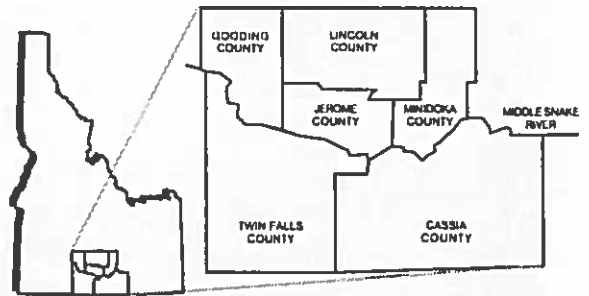
#### Benefits and Uses of the Ground-Water Vulnerability Map

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# MIDDLE SNAKE REGIONAL WATER RESOURCE COMMISSION

Roxi Reed, Executive Director  
208-934-5983  
1703 South 2200 East  
Gooding, Idaho 83330



September 15, 1998

Division of Environmental Quality  
1410 North Hilton  
Boise, Idaho 83706-1255

Dear Sirs:

Please change the mailing address for the Middle Snake Regional Water Resource Commission to reflect our new chairman's address. Address label should read: Dr. Richard Allen, DMV, 32 East 400 North, Jerome, Idaho 83338.

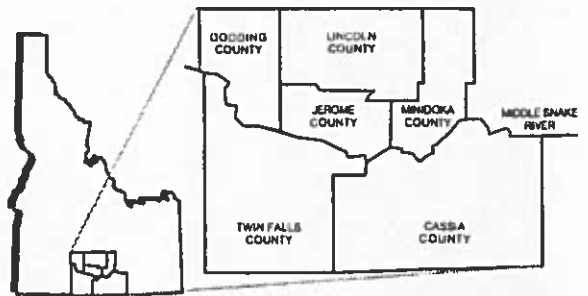
Thank-you.

A handwritten signature in black ink, appearing to read 'Roxi Reed'.

Roxi Reed,  
Executive Director

# MIDDLE SNAKE REGIONAL WATER RESOURCE COMMISSION

Roxi Reed, Executive Director  
208-934-5983  
1703 South 2200 East  
Gooding, Idaho 83330



September 15, 1998

US Army Corps of Engineers  
Walla Walla District  
201 North 3rd.  
Walla Walla, WA 99362,1876

Dear Sirs:

Please change the mailing address for the Middle Snake Regional Water Resource Commission to reflect our new chairman's address. Address label should read: Dr. Richard Allen, DMV, 32 East 400 North, Jerome, Idaho 83338.

Thank-you.

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Roxi Reed,  
Executive Director



**DEPARTMENT OF THE ARMY  
WALLA WALLA DISTRICT, CORPS OF ENGINEERS  
201 NORTH THIRD AVENUE  
WALLA WALLA, WASHINGTON 99362-1878**

Reply To  
Attention Of:

September 15, 1998

Planning Division

Dear Interested Party:

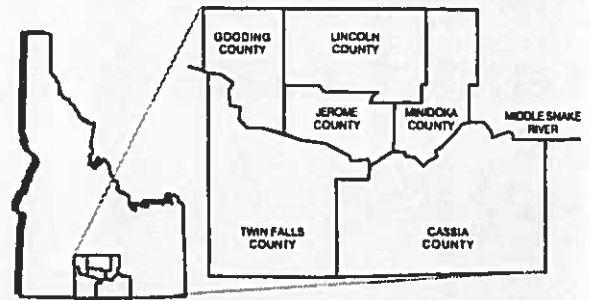
The Walla Walla District Corps of Engineers will be holding two public scoping meetings/workshops this month to ask for public and agency input for the Corps' upcoming Dredged Material Management Study (DMMS) and Environmental Impact Statement (EIS). The purpose of the DMMS is to identify ways the Corps can maintain the navigation channel, recreational access, and flood protection that is provided by some or all of the reservoirs behind the four lower Snake River dams (Ice Harbor, Lower Monumental, Little Goose, Lower Granite) and Lake Wallula behind McNary Dam on the Columbia River. The DMMS will be addressing how to provide for these needs for the next 20 years. The purpose of the scoping meetings is to obtain public and agency input on two main topics: (1) alternatives the Corps should evaluate, including dredging and dredged material disposal; and (2) issues or concerns the Corps should consider in the EIS.

The meeting format will be as follows:

- a. Introduction and overview of the study
  - Purpose of the study
  - Alternatives identified so far
  - Issues/concerns identified so far
  - EIS schedule
- b. Questions and answers
- c. Workshop session - break into discussion groups
- d. Reconvene to summarize public input

# MIDDLE SNAKE REGIONAL WATER RESOURCE COMMISSION

Roxi Reed, Executive Director  
208-934-5983  
1703 South 2200 East  
Gooding, Idaho 83330



August 13, 1998

Commission Members  
Executive Commission Members

Re: August Commission Meeting

I want all of the commission members to know that we are still active and are not drying up and blowing away! At the present Mike Rupert of the USGS has revised his budgets for Phase 2 & 3. Bob Muffley, Roxi and myself are in the process of writing a cover/information sheet for our county commissioners to accompany the budgetary request to DWR. I discussed this matter with Commissioner Prescott today and the county commissioners will put our requests on their letterheads and take a contingent to Carl Dryer's office at DWR. We should contact each of our commissioners to review any pertinent information or questions, before they go to DWR. It is imperative that this be done with speed and efficiency as the budgets for all state departments are submitted in **OCTOBER** and are usually written in semi-final form in **September**. We must have legislative funding for this study and mapping to implement some of our goals for protection.

At present we don't have anything imperative to discuss, each of us can review the enclosed letter or correspondence and if there are questions or need for discussion you can call me at home (324-3488) or at work (324-2591). I do not believe in wasting anyone's time and don't think an August meeting is really necessary, just to sit and discuss a few letters.

Sincerely,

Richard D. Allen, D.V.M.  
RDA/r

*Sent without signature to speed mailing*

**BUDGET  
MIDDLE SNAKE GROUND WATER  
PLANNING EFFORT**

Budget is based on a 6 county plan (Jerome, Lincoln, Gooding, Minidoka, Cassia and Twin Falls)

Idaho Water Resource Research Institute University of Idaho	Year 1	Year 2
<b>Salaries:</b>		
Principal investigators .46 FTE	\$27,600	\$27,600
Graduate assistants	12,000	12,000
Irregular help	4,800	3,600
Secretarial/administrative	6,000	4,800
<b>Fringe benefits:</b>		
PE, IH, S/A 27.5 %	10,560	9,900
GA 1.0 %	120	120
<b>Travel:</b>		
Five trips/year to project area	4,200	3,600
<b>Operating:</b>		
GIS computer software & use	6,000	6,000
Printing, office supplies, etc.	1,200	3,600
<b>Subcontracting:</b>		
Idaho Geological Survey task-production of reconnaissance map for 6 counties	20,000	20,000
<b>Indirect costs:</b>		
	<u>14,496</u>	<u>14,244</u>
<b>Subtotal</b>	<b>\$106,976</b>	<b>\$105,464</b>

**Idaho Department of Water Resources:**

<b>Salaries:</b>		
GIS analyst .33 FTE	16,597	16,597
Remote sensing analyst .15 FTE	6,140	
Fringe benefits (annual salaries x 22.39% + 2,974) x % FTE	8,065	5,712
Indirect costs (29.8% of salaries & fringes)	11,366	7,724
<b>Operating:</b>		
Twin Falls County landsat scene	5,000	
SCS soil surveys	250	
Supplies	400	400
Travel	300	300
DP (software/hardware/maintenance/upgrades)	<u>3,000</u>	<u>3,000</u>
<b>Subtotal</b>	<b>\$51,118</b>	<b>\$33,733</b>

**BUDGET  
MIDDLE SNAKE GROUND WATER  
PLANNING EFFORT**

**USGS:**

Contract for monitoring additional sites	\$36,200	
Administration	<u>1,800</u>	
Subtotal	\$38,000	

**Local Government**

Ongoing salaries	14,400	14,400
Fringe benefits	3,744	3,744
Indirect costs 14%	<u>2,540</u>	<u>2,540</u>
Subtotal	\$20,684	\$20,684

**Local Government project costs:**

Capital cost (computer)	\$10,000	\$10,000
Salaries	3,000	3,000
Meetings & events	2,500	2,500
Postage	800	800
Legal	1,500	1,500
Phone	1,000	1,000
Soft costs (coordination & trouble shooting) value of volunteer man hours for duration of project	<u>17,680</u>	<u>17,680</u>
Subtotal	\$36,480	\$36,480

<b>Total Project Cost</b>	<b>\$253,258</b>	<b>\$196,361</b>
---------------------------	------------------	------------------

**Funding:**

Local Government	\$57,164	\$57,164
EPA funds for USGS monitoring	38,000	
Funding need from Legislature includes: contract costs for the Idaho Water Resource Institute of the U.of I. and the Idaho Dept. of Water Resources	<b>\$158,094</b>	<b>\$139,197</b>



# United States Department of the Interior

U.S. GEOLOGICAL SURVEY  
Water Resources Division  
230 Collins Road  
Boise, Idaho 83702-4520

August 5, 1998

Dr. Rick Allen  
Middle Snake Regional Water  
Resources Commission  
1025 North Lincoln  
Jerome, Idaho 83338

Dear Dr. Allen:

As per your request, I have included revised proposals for both Phase 2 and Phase 3 for mapping the probability of nitrate contamination in the ground-water of Cassia, Jerome, Gooding, Lincoln, Minidoka, and Twin Falls Counties. Phase 2 will develop the GIS data layers needed to develop the probability maps. Phase 3 will develop the actual ground-water probability maps by combining those GIS data layers into a probability map, and then calibrating the map to the nitrate ground-water monitoring data that was collected in Phase 1.

The costs for Phase 2 have been reduced significantly since the last revision. These lower costs are because land use and soils data no longer have to be developed by this project. The Bureau of Reclamation has recently completed a land use data layer for the area. This data layer should serve this project well, so it is no longer required to develop a new data layer. The Natural Resources Conservation Service (NRCS) is in the process of completing soils data layers for the area. Those soils data should be available for use by this project in the summer of 1999, so it is no longer necessary to provide funding to complete those data layers. With the exception of more accurate cost estimates, the Phase 3 proposal has not been significantly modified.

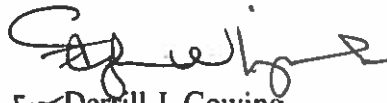
The earliest possible starting date for Phase 2 is July 1999. It is difficult to accurately estimate costs that far into the future, so please consider these cost estimates as preliminary.

We have planned two final products from this project: a book report with a 24-by-30 inch color probability map, and a GIS data layer of the probability map. The final products can be changed or adapted to suit your needs.

The Idaho Department of Agriculture (IDA) is also interested in working with the U.S. Geological Survey to develop ground-water pesticide probability maps in the Magic Valley to support the State Pesticide Management Plan. We will continue to coordinate with IDA and, where possible, combine resources for probability mapping in this area in order to design the most cost-effective approach.

Please contact myself or Michael Rupert of my staff (208) 387-1323; Email, mgrupert@usgs.gov) if we can provide additional information.

Sincerely,

A handwritten signature in black ink, appearing to read "D. Cowing", written over a horizontal line.

F Derrill J. Cowing  
District Chief

Enclosures

Copy to: Gary Bahr  
Idaho Department of Agriculture  
P.O. Box 790  
Boise, ID 83701



## **PROPOSAL—PHASE 2**

# **Mapping the Probability of Elevated Nitrate Concentrations in Ground Water of the Mid-Snake Region, South-Central Idaho**

### **PROBLEM**

Elevated nitrate concentrations in ground water underlying Cassia, Jerome, Gooding, Lincoln, Minidoka, and Twin Falls Counties (fig. 1) were reported in numerous studies (Young, Parlman, and Jones, 1987; Young, Parlman, and O'Dell, 1987; Parlman and Young, 1987; Rupert, 1994; Clark and Ott, 1996; Rupert and others, 1996; Rupert, 1997). After one year of meeting with local, state, and federal resource agencies, the Middle Snake Regional Water Resources Commission issued a strategy plan (1995) to address the problem of elevated nitrate concentrations in ground water underlying those counties. The Strategy Plan proposes, among 8 tasks, to develop a ground-water vulnerability map. This ground-water vulnerability map will be used by county planning and zoning staff and other resource management agencies to make land-use decisions in the six-county area to help address nitrate-contamination problems.

A statistically-valid method to calibrate nitrate ground-water vulnerability maps was developed recently by the U.S. Geological Survey National Water-Quality Assessment Program (NAWQA) in the upper Snake River Basin, southeastern Idaho (Rupert, in press; Rupert, 1997). These maps, developed at approximately 1:100,000 scale, were called probability maps instead of vulnerability maps because they were calibrated with actual ground-water quality data. This proposed project will use information and procedures developed as part of the NAWQA program to produce a finer-scale (approximately 1:24,000 scale) probability map for Cassia, Jerome, Gooding, Lincoln, Minidoka, and Twin Falls Counties.

### **OVERALL PROJECT DESIGN**

This proposal is the second phase of a three-phase program for mapping the probability of elevated nitrate concentrations in ground water underlying Cassia, Jerome, Gooding, Lincoln, Minidoka, and Twin Falls Counties. In the first phase (already completed in the summer of 1997) nitrate ground-water monitoring data were collected from wells located in Cassia and Twin Falls counties. These nitrate data will be used to calibrate the probability maps. The second Phase (this proposal) will compile Geographic Information System (GIS) data layers on depth to ground water, soils, land use, and nitrogen input. The third phase will develop the actual ground-water probability map by combining the GIS data layers compiled during Phase 2, and then calibrating the probability ratings using the nitrate ground-water monitoring data collected during Phase 1. These calibration techniques are described by Rupert (1997) and Rupert (in press).

### **OBJECTIVES**

The objective of Phase 2 is to compile and/or develop the Geographic Information System (GIS) data files needed to produce a map showing the probability of nitrate contamination in ground

water underlying Cassia, Jerome, Gooding, Lincoln, Minidoka, and Twin Falls counties (Fig. 1). GIS data include depth to ground water, land use, soils, and nitrogen input. Some data are already available. Other data need to be converted to GIS format, modified for use by this project, or developed from scratch.

### **APPROACH**

GIS data from four main categories (depth to ground water, land use, soils, and nitrogen input) will be compiled, modified and/or developed from scratch during Phase 2:

1. **DEPTH TO GROUND WATER:** Depth to ground water (fig. 2) was mapped in much of the six-county study area by Maupin (1992). Maupin (1992) mapped depth to ground water in all of Jerome, Gooding, Lincoln, and Minidoka counties, but mapped only the northern part of Cassia and Twin Falls counties. This project will take water level data collected during Phase 1 of this project and combine it with all available data in the USGS data base to extend depth to ground water mapping into Cassia and Twin Falls counties (fig. 2). All of Cassia and Twin Falls counties will not be mapped; only the areas within the boundary of the Snake River Plain aquifer (Lindholm and others, 1988) will be mapped.
2. **LAND USE:** Land use data were developed by Dewayne McAndrews of the U.S. Bureau of Reclamation (BOR), who mapped land cover from 1987 1:40,000-scale high altitude aerial photography and field-checked the data in 1992 (McAndrews, 1997). These data provide the most accurate land use classifications available in the study area because they have been field-checked and have accurate designations of sprinkler and gravity irrigation. These data will be incorporated by this project in an unmodified form, so no additional funding is required for land use data.
3. **SOILS:** Soils GIS data layers in the six-county area are in various stages of completion by the U.S. Natural Resource Conservation Service (NRCS). Earlier versions of this Phase 2 proposal included funding for the NRCS to complete soils mapping. Since then, the NRCS has found other funding sources; soils mapping should be completed by the summer of 1999. No funding for additional development of soils GIS data layers will be required by this project.
4. **NITROGEN INPUT:** Major sources of nitrogen to ground water in the study area are: cattle manure, fertilizers, legume crops, precipitation, and domestic septic systems. Nitrogen input from these sources will be estimated using established techniques (Rupert, 1996). Rupert (1996) could only estimate nitrogen input at county-level; this project will compile all pre-existing and readily-accessible data at finer scales. Nitrogen input from other sources such as land application facilities will also be estimated if those data can be located.

### **COORDINATION WITH OTHER PROGRAMS**

The Idaho Department of Agriculture (IDA) is also interested in developing ground-water probability maps in Cassia, Jerome, Gooding, Lincoln, Minidoka, and Twin Falls counties. Their interests lie in developing pesticide ground-water probability maps to support their State Pesticide Management Plan (SMP). Many of the same GIS data layers are required to map pesticide

probability as nitrate probability. This project will work closely with IDA to share data and resources to achieve the most cost-effective and efficient results.

### **REPORTS**

No reports will be developed during this phase. All GIS data will be compiled and archived for use in Phase 3. Phase 3 will include a reporting step which describes the techniques used in all three Phases.

### **QUARTERLY STATUS REPORTS**

Quarterly status letters will be sent to agencies that provided funding and resources to the project. Meetings also can be arranged on an as-needed basis.

### **PERSONNEL**

The project chief is a hydrologist who has extensive experience in ground-water vulnerability/probability mapping. He was the former project chief for the Idaho Ground-Water Vulnerability Mapping Project in 1990-91 (Rupert and others, 1991). He has recently developed a calibrated nitrate ground-water probability map for the Eastern Snake River Plain at approximately 1:100,000 scale (Rupert, 1997), and is completing a map which predicts the probability of atrazine detections in ground water of the Eastern Snake River Plain (Rupert, in press).

### **BENEFITS**

This proposal will greatly benefit all residents of Cassia, Jerome, Gooding, Lincoln, Minidoka, and Twin Falls Counties by: 1) determining areas of highest and lowest probability for nitrate leaching, 2) assisting planning and zoning commissions with land use planning decisions, 3) providing a tool for prioritizing Best Management Plan (BMP) programs, 4) providing tools that can be used for public information, 5) helping to prioritize areas in need of ground-water quality monitoring, and 6) assisting Wellhead Protection and Public Drinking Water programs by highlighting potential problem areas. In the future, the probability map and related GIS data can also be made available to the public via the internet to further enhance public education and outreach.

### **BUDGET**

Depth to ground water mapping	\$9,600
Nitrogen input	\$21,600
Supplies	\$500

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TOTAL      \$31,700

**REFERENCES**

- Clark and Ott, 1996, Spring flow effects on chemical loads in the Snake River, South-central Idaho: *Journal of the American Water Resources Association*, v. 32, no. 3, June 1996, p. 553-563.
- Lindholm, G.F., Garabedian, S.P., Newton, G.D., and Whitehead, R.L., 1988 [1987], Configuration of the water table and depth to water, spring 1980, water-level fluctuations, and water movement in the Snake River Plain regional aquifer system, Idaho and eastern Oregon: U.S. Geological Survey Hydrologic Investigations Atlas HA-703, 1 sheet, scale 1:500,000.
- Maupin M.A., 1992, Depth to water in the Eastern Snake River Plain and surrounding tributary valleys, Southeastern Idaho, calculated using water levels from 1980-88: U.S. Geological Survey Water-Resources Investigations Report 90-4193, 1:100,000, 1 sheet.
- McAndrews, D., 1997, Agricultural land cover of the Snake River Plain: Idaho Department of Water Resources, unpublished Geographic Information System data, Boise, Idaho.
- Parliman, D.J., and Young, H.W., 1987, Selected water-quality data for the Murtaugh Lake area, south-central Idaho, June 1987: U.S. Geological Survey Open-File Report 87-466, 1 sheet, scale 1:37,250.
- Rupert, M.G., 1994, Analysis of data on nutrients and organic compounds in ground water in the upper Snake River Basin, Idaho and western Wyoming, 1980-91: U.S. Geological Survey Water-Resources Investigations Report 94-4135, 40p.
- Rupert, M.G., 1996, Major sources of nitrogen input and loss in the upper Snake River Basin, Idaho and Western Wyoming, 1990: U.S. Geological Survey Water-Resources Investigations Report 96-4008, 15 p.
- Rupert, 1997, Nitrate ( $\text{NO}^2 + \text{NO}^3 - \text{N}$ ) in ground water of the upper Snake River Basin, Idaho and Western Wyoming, 1991-95: U.S. Geological Survey Water-Resources Investigations Report 97-4174, 47 p.
- Rupert, M.G., in press, Probability of detecting atrazine/desethyl-atrazine and elevated nitrate concentrations in ground water of the upper Snake River Basin, Idaho: U.S. Geological Survey Water-Resources Investigations Report 98-XXXX.
- Rupert, M.G., Dace, T., Maupin, M.A., and Wicherski, B., 1991, Ground-water vulnerability assessment, Snake River Plain, southern Idaho: Boise, Idaho Department of Health and Welfare, Division of Environmental Quality, 25 p.
- Rupert, M.G., Stone, M.A.J., and Ott, D.S., 1996, National Water-Quality Assessment Program—nitrate and pesticides in ground water: Blaine, Cassia, Lincoln, and Minidoka counties, South-central Idaho: U.S. Geological Survey Fact Sheet FS-246-95
- Young, H.W., Parliman, D.J., and Jones, M.L., 1987, Selected water quality data for the Burley Irrigation District, south-central Idaho, March-April, 1987: U.S. Geological Survey Open-File Report 87-240, 1 sheet, scale 1:100,000.

Young, H.W., Parliman, D.J., and O'Dell, I., 1987, Selected water-quality data for the Minidoka Irrigation District, south-central Idaho, June 1987: U.S. Geological Survey Open-File Report 87-465, 1 sheet, scale 1:100,000.

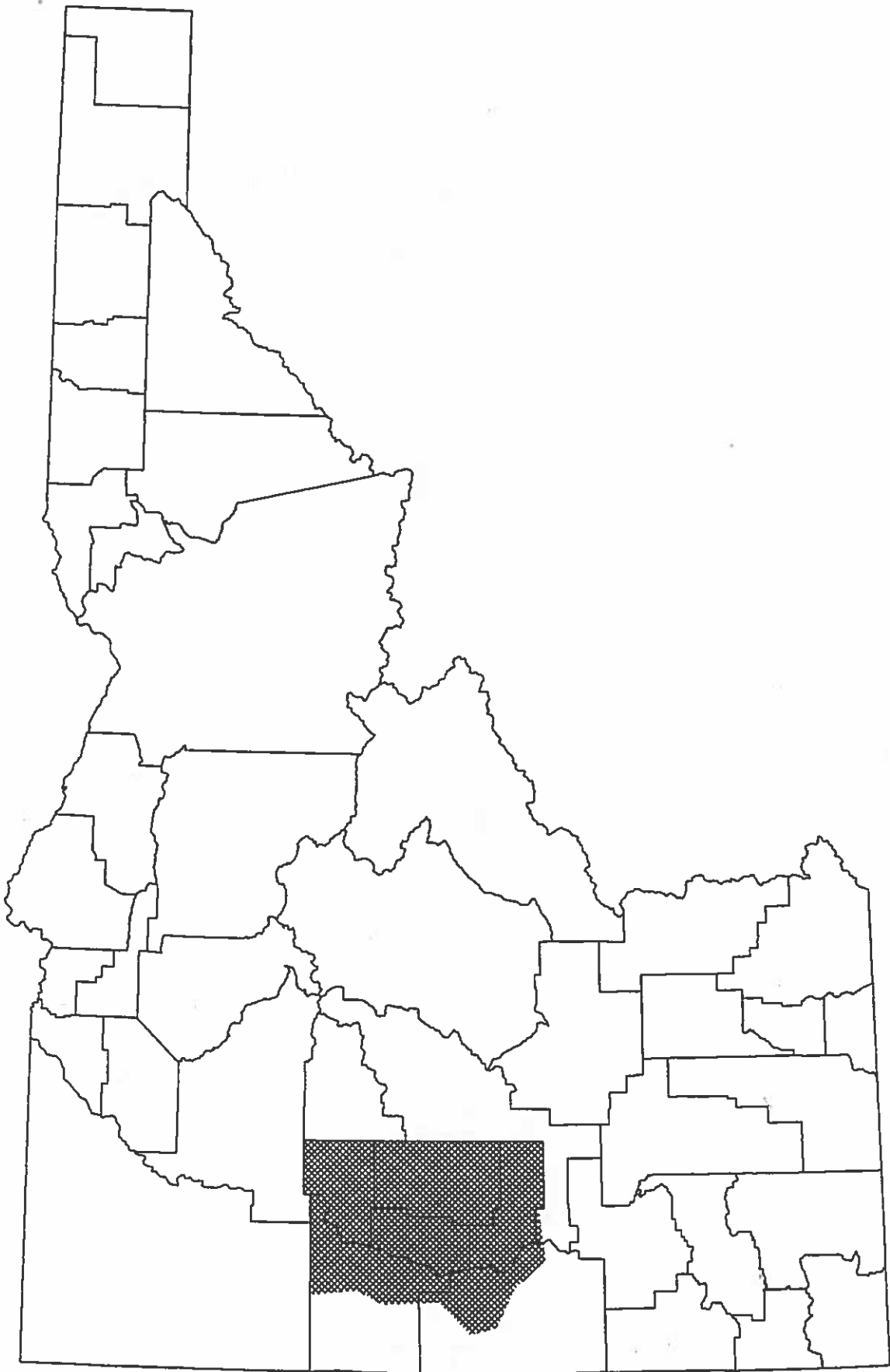


Figure 1. Study area location

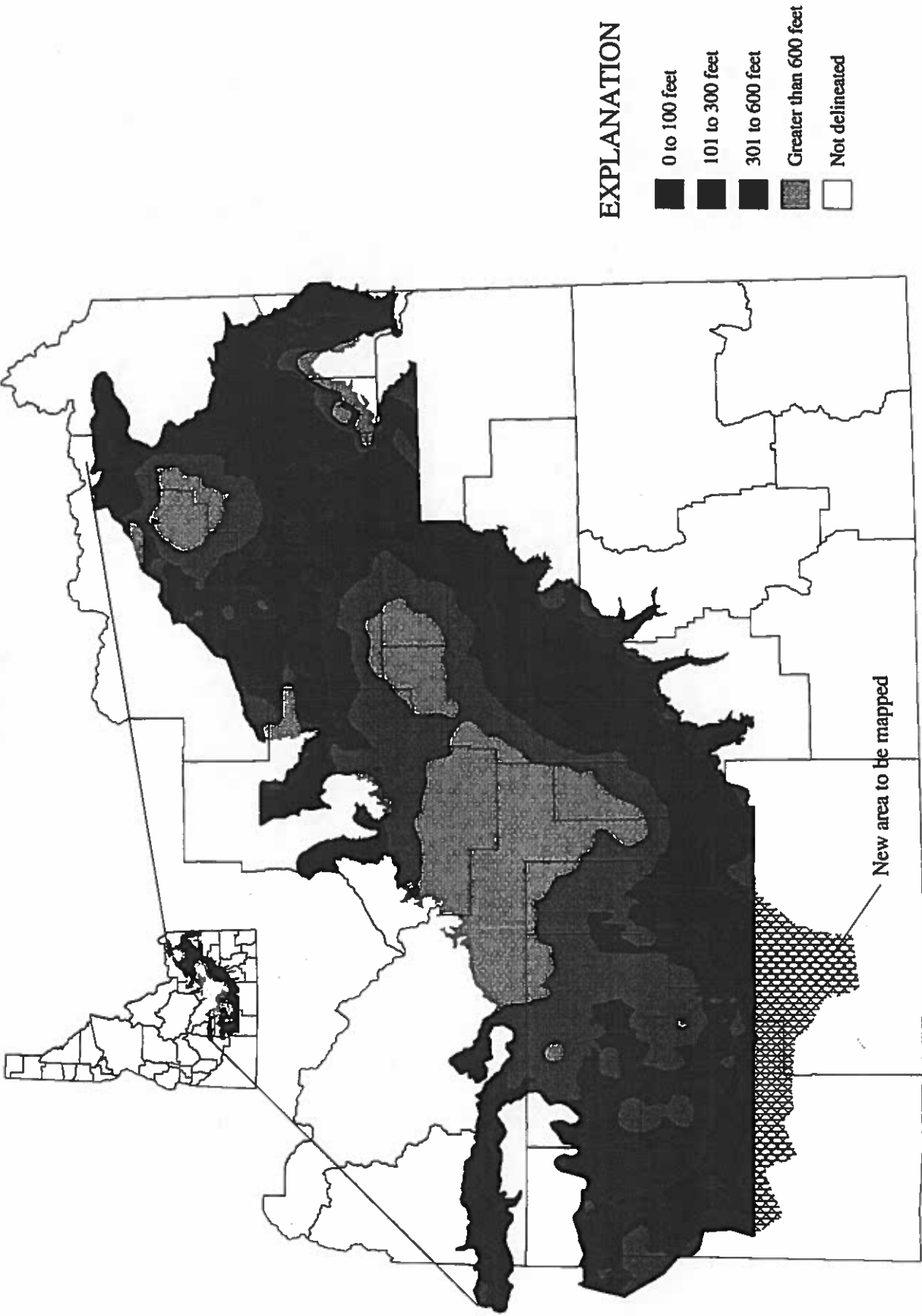


Figure 2. Depth to ground water in the eastern Snake River Plain (Maupin, 1992).  
 Area to be mapped by this project is also highlighted.

## **PROPOSAL—PHASE 3**

# **Mapping the Probability of Elevated Nitrate Concentrations in Ground Water of the Mid-Snake Region, South-Central Idaho**

### **PROBLEM**

Elevated nitrate concentrations in ground water underlying Cassia, Jerome, Gooding, Lincoln, Minidoka, and Twin Falls Counties (fig. 1) were reported in numerous studies (Young, Parliman, and Jones, 1987; Young, Parliman, and O'Dell, 1987; Parliman and Young, 1987; Rupert, 1994; Clark and Ott, 1996; Rupert and others, 1996; Rupert, 1997). After one year of meeting with local, state, and federal resource agencies, the Middle Snake Regional Water Resources Commission issued a strategy plan (1995) to address the problem of elevated nitrate concentrations in ground water underlying those counties. The Strategy Plan proposes, among 8 tasks, to develop a ground-water vulnerability map. This ground-water vulnerability map will be used by county planning and zoning staff and other resource management agencies to make land-use decisions in the six-county area to help address nitrate-contamination problems.

A statistically-valid method to calibrate nitrate ground-water vulnerability maps was developed recently by the U.S. Geological Survey National Water-Quality Assessment Program (NAWQA) in the upper Snake River Basin, southeastern Idaho (Rupert, in press; Rupert, 1997). These maps, developed at approximately 1:100,000 scale, were called probability maps instead of vulnerability maps because they were calibrated with actual ground-water quality data. This proposed project will use information and procedures developed as part of the NAWQA program to produce a finer-scale (approximately 1:24,000 scale) probability map for Cassia, Jerome, Gooding, Lincoln, Minidoka, and Twin Falls Counties.

### **OVERALL PROJECT DESIGN**

This proposal is the third phase of a three-phase program for mapping the probability of nitrate contamination in ground water in Cassia, Jerome, Gooding, Lincoln, Minidoka, and Twin Falls Counties. In the first phase (already completed in the summer of 1997) nitrate ground-water monitoring data were collected from wells located in Cassia and Twin Falls counties. These nitrate data will be used to calibrate the probability maps. The second phase, to be initiated during 1999, will compile Geographic Information System (GIS) data layers on depth to ground water, soils, land use, and nitrogen input. The third phase (this proposal) will develop the actual ground-water probability map by combining the GIS data layers compiled during Phase 2, and then calibrating the probability ratings using the nitrate ground-water monitoring data collected during Phase 1. These calibration techniques are described by Rupert (1997) and Rupert (in press).



## **OBJECTIVE**

The objective of Phase 3 is to develop a map at approximately 1:24,000 scale which portrays the probability of nitrate contamination in ground water underlying Cassia, Jerome, Gooding, Lincoln, Minidoka, and Twin Falls counties (Fig. 1).

## **APPROACH**

The objective will be met by compiling data on nitrate concentrations in ground water of the study area, making statistical correlations between those nitrate concentrations and land use and geohydrologic data, and then creating a probability map based upon those statistical correlations.

### **Nitrate ground-water quality data:**

Nitrate ground-water quality data from three sources will be used for calibration of the probability map. The first source is data collected by Phase 1 of this project during the summer of 1997 from wells in Cassia and Twin Falls Counties. The second source is data collected by the U.S. Geological Survey National Water Quality Assessment Program (NAWQA) during the summers of 1993-95 from wells located in Jerome, Gooding, Lincoln, and Minidoka Counties. The third source is data collected by USGS for the Idaho Statewide Ground Water Monitoring Program from 1991-97 from wells widely distributed throughout the study area. Data collected by these three programs are ideal for calibration of the ground-water probability map because the wells were randomly selected. These data will be converted to Geographic Information System (GIS) format by this project.

### **Statistical Correlations between nitrate data and GIS data:**

Using a GIS, nitrate ground-water quality data will be overlaid with the depth to ground water, land use, nitrogen input, and soils data that was compiled in Phase 2. Statistical correlations between nitrate concentrations and depth to ground water, land use, nitrogen input, and soils data will be quantified using statistical tests such as logistic regression, principal component analysis, and/or wilcoxon rank-sum tests.

### **Development of Probability map:**

Probability point ratings will be assigned to depth to ground water, land use, nitrogen input, and soils data based upon the results of the statistical comparisons. All data layers then will be combined, using GIS, and the point ratings will be added together. A nitrate-specific ground-water probability map will then be developed from the resulting additive point ratings.

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## **PRODUCTS**

Two products will be developed by this proposed project:

- (1) A book report with a 24-by-30 inch probability map included as a plate. This report is designed to provide documentation of the mapping and calibration procedures, and is intended for distribution to the general public, regulatory agencies, scientific community, and local governments.
- (2) GIS data layer of the nitrate-specific ground-water probability map. This GIS data layer

is particularly useful for county planning and zoning personnel, who can interactively examine the probability map and associated GIS data of any area of interest using GIS software such as ARC/INFO or ARCVIEW. In the future, this GIS data layer also can be incorporated into an interactive internet web page that all members of the public can access.

### **COLLEAGUE REVIEW**

All products will be reviewed by other USGS specialists who also are working on ground-water vulnerability/probability mapping projects in other parts of the country. This review process will help ensure the validity of the approach and statistical methods used to create the map. Agencies/organizations providing funding and resources to the project also will be included in the review process.

### **QUARTERLY STATUS REPORTS**

Quarterly status letters will be sent to agencies that provided funding and resources to the project. Meetings also can be arranged on an as-needed basis.

### **BENEFITS**

This proposal will greatly benefit all residents of Cassia, Jerome, Gooding, Lincoln, Minidoka, and Twin Falls Counties by: 1) determining areas of highest and lowest probability for nitrate leaching, 2) assisting planning and zoning commissions with land use planning decisions, 3) providing a tool for prioritizing Best Management Plan (BMP) programs, 4) providing tools that can be used for public information, 5) helping to prioritize areas in need of ground-water quality monitoring, and 6) assisting Wellhead Protection and Public Drinking Water programs by highlighting potential problem areas. In the future, the probability map and related GIS data can also be made available to the public via the internet to further enhance public education and outreach.

### **COORDINATION WITH OTHER PROGRAMS**

The Idaho Department of Agriculture (IDA) is also interested in developing ground-water probability maps in Cassia, Jerome, Gooding, Lincoln, Minidoka, and Twin Falls counties. Their interests lie in developing atrazine-specific ground-water probability maps to support their State Pesticide Management Plan (SMP). Many of the same GIS data layers are required to map atrazine probability as nitrate probability. This project will work closely with IDA to share data and resources to achieve the most cost-effective and efficient results

### **PERSONNEL**

The project chief is a hydrologist who has extensive experience in ground-water vulnerability/probability mapping. He was the former project chief for the Idaho Ground-Water Vulnerability Mapping Project in 1990-91 (Rupert and others, 1991). He has recently developed a calibrated nitrate ground-water probability map for the Eastern Snake River Plain at approximately 1:100,000 scale (Rupert, 1997), and is completing a map which predicts the probability of atrazine detections in ground water of the Eastern Snake River Plain (Rupert, in press).

**BUDGET**

Labor & report costs

\$122,200

Supplies

\$800

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TOTAL \$123,000

**REFERENCES**

- Clark and Ott, 1996, Spring flow effects on chemical loads in the Snake River, South-central Idaho: *Journal of the American Water Resources Association*, v. 32, no. 3, June 1996, p. 553-563.
- Parlman, D.J., and Young, H.W., 1987, Selected water-quality data for the Murtaugh Lake area, south-central Idaho, June 1987: U.S. Geological Survey Open-File Report 87-466, 1 sheet, scale 1:37,250.
- Rupert, M.G., 1994, Analysis of data on nutrients and organic compounds in ground water in the upper Snake River Basin, Idaho and western Wyoming, 1980-91: U.S. Geological Survey Water-Resources Investigations Report 94-4135, 40p.
- Rupert, M.G., 1996, Major sources of nitrogen input and loss in the upper Snake River Basin, Idaho and Western Wyoming, 1990: U.S. Geological Survey Water-Resources Investigations Report 96-4008, 15 p.
- Rupert, 1997, Nitrate ( $\text{NO}^2 + \text{NO}^3\text{-N}$ ) in ground water of the upper Snake River Basin, Idaho and Western Wyoming, 1991-95: U.S. Geological Survey Water-Resources Investigations Report 97-4174, 47 p.
- Rupert, M.G., in press, Probability of detecting atrazine/desethyl-atrazine and elevated nitrate concentrations in ground water of the upper Snake River Basin, Idaho: U.S. Geological Survey Water-Resources Investigations Report 98-XXXX.
- Rupert, M.G., Dace, T., Maupin, M.A., and Wicherski, B., 1991, Ground-water vulnerability assessment, Snake River Plain, southern Idaho: Boise, Idaho Department of Health and Welfare, Division of Environmental Quality, 25 p.
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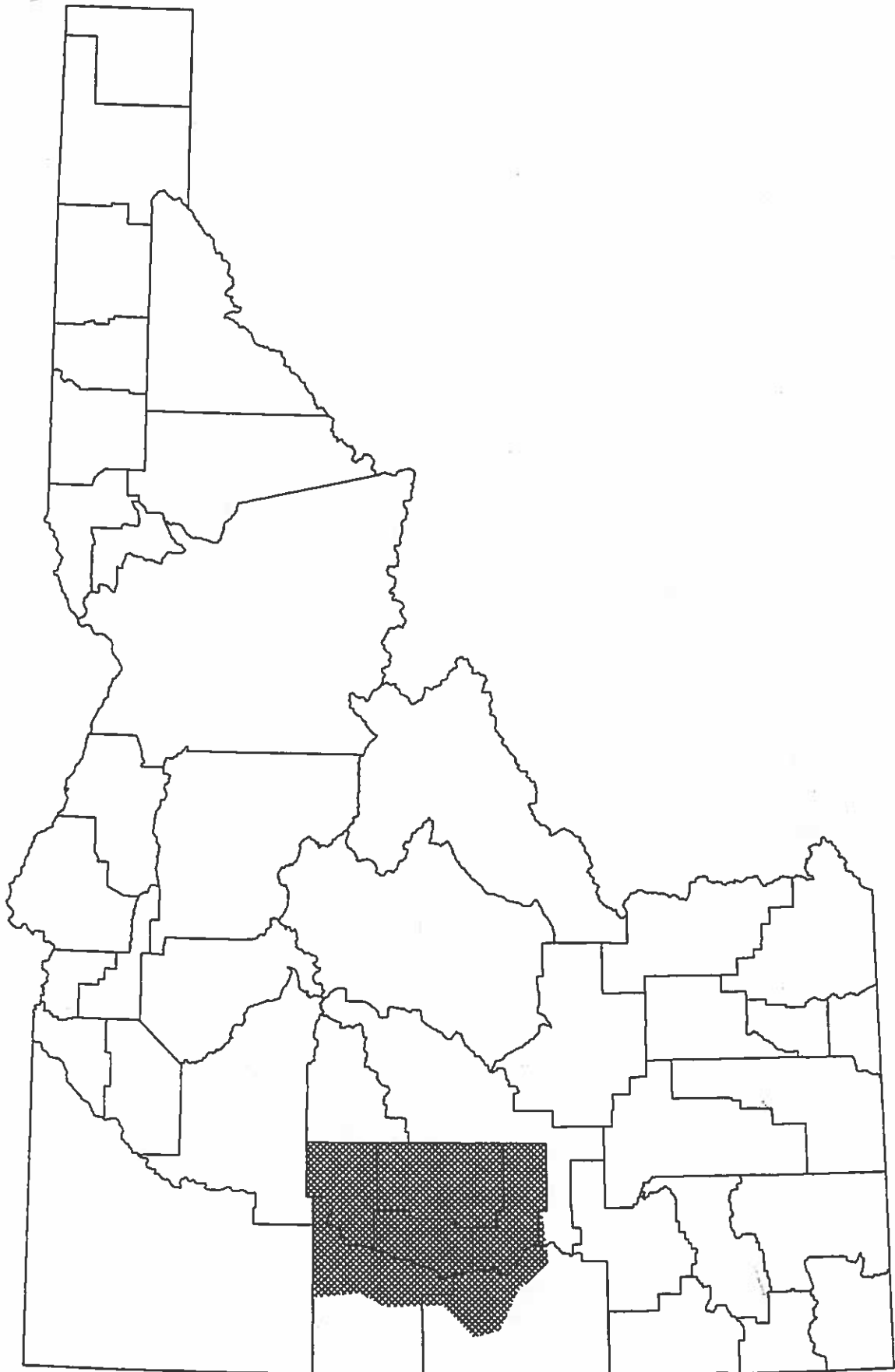
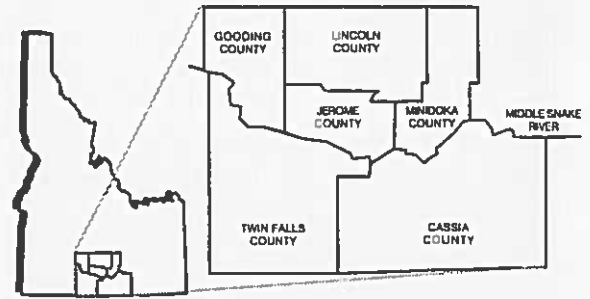


Figure 1. Study area location

# MIDDLE SNAKE REGIONAL WATER RESOURCE COMMISSION

Roxi Reed, Executive Director  
208-934-5983  
1703 South 2200 East  
Gooding, Idaho 83330



August 13, 1998

Commission Members  
Executive Commission Members

Re: August Commission Meeting

I want all of the commission members to know that we are still active and are not drying up and blowing away! At the present Mike Rupert of the USGS has revised his budgets for Phase 2 & 3. Bob Muffley, Roxi and myself are in the process of writing a cover/information sheet for our county commissioners to accompany the budgetary request to DWR. I discussed this matter with Commissioner Prescott today and the county commissioners will put our requests on their letterheads and take a contingent to Carl Dryer's office at DWR. We should contact each of our commissioners to review any pertinent information or questions, before they go to DWR. It is imperative that this be done with speed and efficiency as the budgets for all state departments are submitted in **OCTOBER** and are usually written in semi-final form in **September**. We must have legislative funding for this study and mapping to implement some of our goals for protection.

At present we don't have anything imperative to discuss, each of us can review the enclosed letter or correspondence and if there are questions or need for discussion you can call me at home (324-3488) or at work (324-2591). I do not believe in wasting anyone's time and don't think an August meeting is really necessary, just to sit and discuss a few letters.

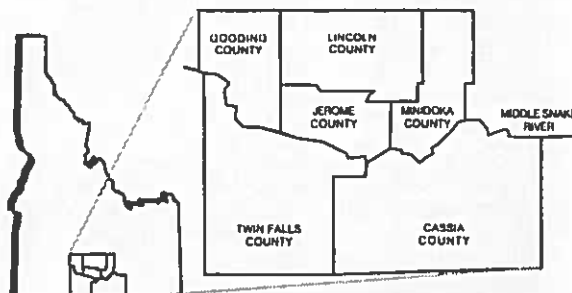
Sincerely,

Richard D. Allen, D.V.M.  
RDA/tr

Sent without signature to speed mailing

# MIDDLE SNAKE REGIONAL WATER RESOURCE COMMISSION

Roxi Reed, Executive Director  
208-934-5983  
1703 South 2200 East  
Gooding, Idaho 83330



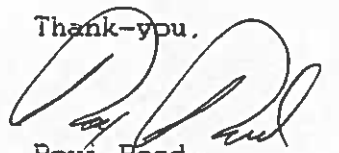
September 15, 1998

University of Idaho  
Water Quality Beyond 2000  
IWRI  
205 Morrill Hall  
Moscow, Idaho 83844-3011

Dear Sirs:

Please change the mailing address for the Middle Snake Regional Water Resource Commission to reflect our new chairman's address. Address label should read: Dr. Richard Allen, DMV, 32 East 400 North, Jerome, Idaho 83338.

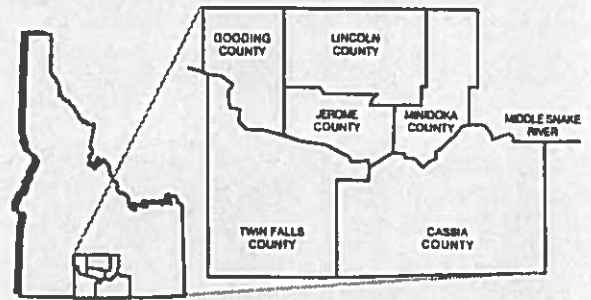
Thank-you.



Roxi Reed,  
Executive Director

# MIDDLE SNAKE REGIONAL WATER RESOURCE COMMISSION

Roxi Reed, Executive Director  
208-934-5983  
1703 South 2200 East  
Gooding, Idaho 83330



July 8, 1998

Carla Fromm  
EPA Region 10, Idaho Office  
1435 North Orchard Street  
Boise, ID 83706

Dear Ms. Fromm:

The Middle Snake Regional Water Resource Commission (MSRWRC) provides information and technical assistance to the county commissioners of Gooding, Jerome, Lincoln, Cassia, Minidoka and Twin Falls counties. We appreciate this opportunity to comment on the draft Idaho aquaculture NPDES permit. The MSRWRC suggests the changes listed in this letter be made to the permit.

Compliance testing for total phosphorous (TP) and total suspended solids (TSS) as well as effluent characterization studies, sediment studies and WET testing should be done by the EPA or DEQ, not the fish farmer. Gathering this data and insuring the quality of the waters of the state are the responsibility of these agencies. The people of the counties we represent entrust these agencies to monitor compliance, gather data and analyze it. The fish farmers should not be responsible for collecting samples and having them tested. Since they are not professionally trained lab technicians, the data they collect could always be questioned. The people expect the EPA and DEQ to do this monitoring.

The requirement to monitor settleable solids (SS) should be removed from the permit, since total suspended solids (TSS) are being monitored. Settleable solids are a part of total suspended solids. Testing for TSS automatically tests for SS.

The effluent characterization study is not needed. We understand research from the University of Idaho and various industry sources already exists that allow the EPA to well characterize inherent variation and total loads from facilities. The extra data collection the EPA has proposed is redundant and a poor expenditure of limited resources. The proposed sediment study would be of little or no use



since it cannot be controlled to provide useful data. WET testing is not needed since the drugs and chemicals used by the aquaculture industry are well regulated by the US Food and Drug Administration and rainbow trout are already one of the best indicators of clean water

The permit requires the fish farmer to provide the EPA with the amount of fish harvested, processed or released, and the amounts and types of feed fed. The fish farmer is also required to maintain operating procedures and management practices for inspection and approval by the EPA and DEQ. The EPA and DEQ should not be concerned with any of this information. If the fish farmer is meeting the effluent limitations, it should be the fish farmers business how the limits are met. Providing and maintaining this information puts an unnecessary burden upon the fish farmer and could serve to stifle innovation. All requirements to maintain or report this type of data should be removed from the permit.

The size of the permit is alarming. It would be better for the aquaculture industry, the citizens of the Mid-Snake region and those administering this permit if it were not as all encompassing. By removing the excessive monitoring and reporting requirements and the intrusive information gathering requirements as suggested above, the permit could simply focus on setting limits for those nutrients requiring a TMDL. The citizens of the Mid-Snake region want improved water quality in our streams and rivers. They expect the regulatory agencies to monitor compliance with established limits, collect and analyze data and provide impartial, factual reports on the status of our streams and rivers. The draft NPDES permit for aquaculture falls short of these expectations.

Sincerely,

Rick Allen  
Chairman

Recharge Projects Tour Agenda  
Tuesday, June 23, 1998

Tour Route

Starting Point

We will meet at the PETRO Truck Stop just north of Interstate 80 and Highway 75 junction north of Twin Falls on the road to Shoshone. The tour will take a full day so we will plan to leave promptly at 9:00 a.m. Lunch and transportation from PETRO will be provided.

1<sup>st</sup> Stop

Mile Post 31 on Milner-Gooding Canal - up to 1200 cfs potential.

Roy Prescott, Jerome County Commissioner, Gary Young and Brad Gilmore, Twin Falls City Engineers, and Lynn Harmon, Manager, Milner Gooding Canal will be tour guides for Mile Post 31.

2<sup>nd</sup> Stop

Shoshone Recharge Site - Active since early 80's - capacity approximately 400 cfs - Important for both recharge and flood control.

Tour guides will be Dan McFaddan, L.S.R.A.R.D., Gary Burkett, E.H.M. Engineers, and Jerry Nance, Milner Gooding Canal Board of Directors.

3<sup>rd</sup> Stop

Devils Headgate - Big Wood (Richfield) Canal - potential for at least 100 cfs.

Tour guides will be Lynn Harmon, Dennis Heaps, Northside Canal Company, and Bill Hazen, University of Idaho Extension Agent.

4<sup>th</sup> Stop

Carey Recharge Site - Little Wood River - active site with 150 to 200 cfs capacity - Important for both recharge and flood control.

Tour guide will be Bob Simpson, Water Master for Little Wood Irrigation District.

Every attempt will be made to return to PETRO by 5:00 p.m.

Idaho Water Alliance  
Recharge Site Tour  
Invitation

The efforts of many people to identify and establish recharge sites are producing very promising results on the west end of the Eastern Snake Plain Aquifer. Three sites have been identified which can be completed and operational in 1998. These sites are Mile Post 31 on the Milner Gooding Canal, Devil's Headgate on the Big Wood River (Richfield Canal), and Simpson Drop on the Little Wood River. Each site is physically practical and inexpensive to build.

Some of the issues which must be considered include the NEPA process, land ownership, water rights and availability, monitoring, and funding. These projects have broad-based support and good location to assist water levels in the Twin Falls to Hagerman area.

Please join us on this recharge site tour on Tuesday, June 23<sup>rd</sup>, 1998. Everyone involved in aquifer recharge issues needs to be familiar with these sites.

For planning of food and transportation, please RSVP:

Terry Huddleston 543-3456  
Dan McFadden 837-6649



# United States Department of the Interior

BUREAU OF RECLAMATION  
Pacific Northwest Region  
1150 North Curtis Road, Suite 100  
Boise, Idaho 83706-1234

IN REPLY  
REFER TO:  
PN-6540  
ENV-7.00

**JUN 22 1998**

Subject: Biological Assessment - Bureau of Reclamation Operations and Maintenance in the Snake River Basin Above Lower Granite Dam

Dear Interested Party:

The Bureau of Reclamation (Reclamation) has written the subject biological assessment (BA) evaluating the effects of its water project operations and maintenance activities throughout the Snake River basin above Lower Granite Reservoir on Endangered Species Act (ESA) candidate, proposed, and listed species. As a result of completing the BA, Reclamation has requested that formal consultation be initiated with the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) under ESA Section 7 provisions. Of the 21 species of plants and animals that were initially considered to be potentially impacted, only localized populations of three species (bull trout, Utah valvata snail, and Snake River basin steelhead) were judged by Reclamation to be adversely affected by its operations or maintenance activities. Reclamation has sent the BA to FWS and NMFS for their use in issuing biological opinions.

Reclamation believes that you may have an interest in the BA and has created a CD-ROM version of the BA and its three supporting reports which contain extensive information on the ESA species evaluated, water project facilities, the historical hydrological record utilized, and dam/reservoir operations. The CD-ROM version includes Adobe Acrobat Reader software which can be downloaded on a computer to view and print the various document files.

If you would like to receive the CD-ROM version of the BA, please contact Ms. Connie Clapsadle in Reclamation's Pacific Northwest Regional Office in Boise at (208) 378-5038.

Sincerely,

Steven R. Clark  
Acting Regional Director



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 10  
IDAHO OPERATIONS OFFICE  
1435 N. Orchard St.  
Boise, Idaho 83706

June 11, 1998

Mr. Bob Muffley  
Chairperson, Middle Snake Regional  
Water Resources Commission  
1703 South 2200 East  
Gooding, Idaho 83330

Dear Mr. Muffley:

Thank you for submitting a preapplication for funding under the 1998 Community Based Environmental Protection (CBEP) grants initiative. This correspondence is to inform you that your project, GIS Development, was not selected for a 1998 CBEP grant. The Environmental Protection Agency received twenty-five (25) preapplications from throughout Idaho. Due to the limited funds available, we were able to support only five of the twenty-five projects.

Attached for your information is Appendix C: Summary of Community Grant Programs from EPA Region 10's 1997 Community Based Environmental Protection Strategy. It provides detailed information on other funding sources that may be available to you. If I can be of further assistance, please contact me at (208) 378-5761.

Sincerely,

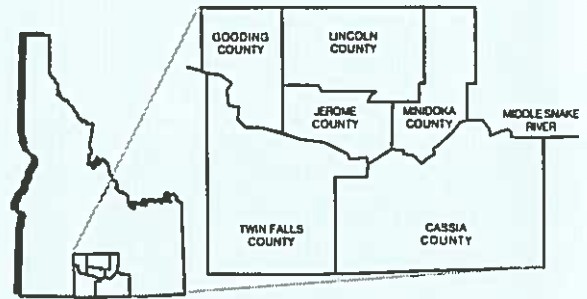
A handwritten signature in cursive script that reads "Mark T. Masarik".

Mark T. Masarik

Attachment

# MIDDLE SNAKE REGIONAL WATER RESOURCE COMMISSION

Roxi Reed, Executive Director  
208-934-5983  
1703 South 2200 East  
Gooding, Idaho 83330



June 11, 1998

Dear Members,

Our chairman, Rick Allen, has cancelled the June meeting. We could not find anything of importance to put on the agenda so we will wait until July to meet again.

We hope to have the legislators available at the July 15th meeting so please mark your calendar now. We need each and every member available for this important meeting.

Sincerely,

A handwritten signature in blue ink, appearing to be 'Roxi Reed', written over a large, stylized blue oval.

Roxi Reed