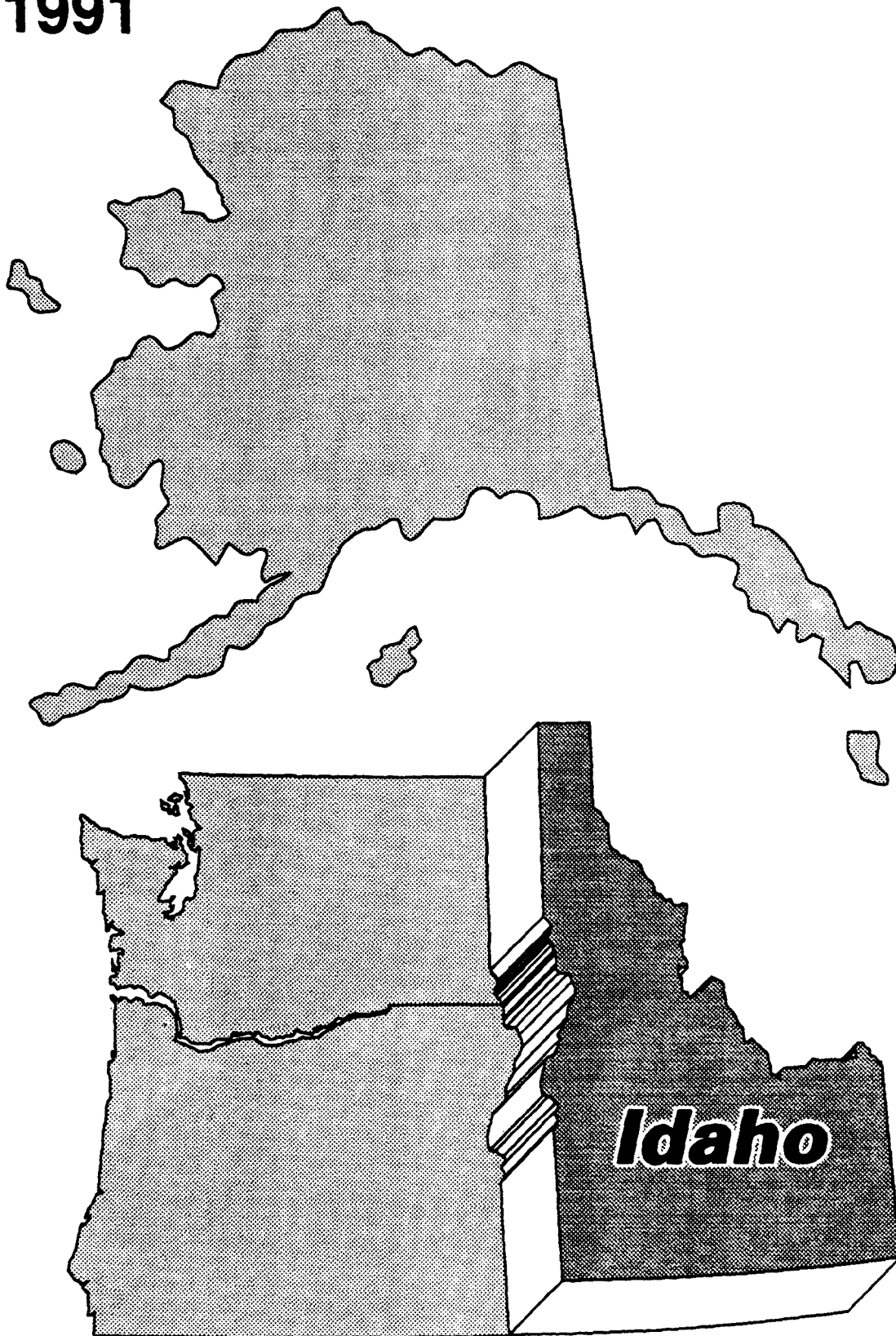




Ground Water Program Profile 1991



PROFILE OF GROUND WATER PROTECTION IN IDAHO

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LIST OF ACRONYMNS

APAP	-	Agricultural Pollution Abatement Plan
BLM	-	Bureau of Land Management
BMP	-	Best Management Practices
DOA	-	Department of Agriculture
GWQPA	-	Ground Water Quality Protection Act
IDHW	-	Idaho Department of Health and Welfare
IDWR	-	Idaho Department of Water Resources
IGIAC	-	Idaho Geographic Information Advisory Committee
IGS	-	Idaho Geologic Survey
PWS	-	Public Water Supply Program
RCRA	-	Resource Conservation and Recovery Act
SCC	-	Soil Conservation Commission
SCS	-	Soil Conservation Service
SDWA	-	Safe Drinking Water Act
UIC	-	Underground Injection Control Program
USFS	-	United States Forest Service
USGS	-	United States Geological Survey

INTRODUCTION

A. STATE HISTORY OF GROUND-WATER PROTECTION

Prior to 1983 ground-water protection in Idaho was limited to existing statutory and regulatory authorities administered by various media programs and state agencies. None of these were dedicated to a distinct focus on protection of ground water as a resource, but this was either a secondary goal or an incidental benefit of the regulation. Such program regulations were also very limited since, for example: the solid waste regulations were ten years old and out of date; state hazardous waste legislation did not exist; the underground injection control program was not delegated from EPA, etc.

Recognizing the need for a more comprehensive approach to ground-water protection the Ground-Water Quality Management Plan for Idaho was administratively adopted by the Idaho Department of Health and Welfare (IDHW) in 1983. A ground-water unit was formed in IDHW's Water Quality Bureau in 1984 when EPA's new ground-water grant program was initiated. After beginning to implement some of the recommendations, the plan was subsequently updated in 1985 to provide additional direction for ground-water quality protection. While the plan provided the framework for a good beginning, it was largely an IDHW plan and was not formally adopted by the Governor and/or the legislature. The need for a more multi-agency approach was recognized with the advent of increased scrutiny on such issues as agricultural chemicals in ground water, etc. and the state was beginning to address the need for a more comprehensive plan when other developments arose.

After the 1985 plan update IDHW began working on one of the key recommendations which was the development and adoption of ground-water standards which included an aquifer classification system. IDHW researched the various approaches taken in other states and developed several draft proposals during 1985-1987. In late 1987 formal hearings were held throughout the state. The proposed ground-water standards proved controversial and were brought to the attention of the state legislature. A special legislative committee was formed to provide guidance on ground-water protection. Public meetings were held around the state to seek additional input and IDHW was requested to delay the standards adoption process.

After seeking public input the legislature decided there was great interest in protecting the ground-water resource but that legislation was needed to guide the process. Legislation was drafted in 1988 and the proposal was introduced during the 1989 session.

The Ground-Water Quality Protection Act was enacted by the 1989 legislature and was signed by the Governor. The Act amends Idaho Code, Section 39-102 and adds new sections of Idaho Code Sections 39-120 through 39-127. Also included in the Act is an amendment to Idaho Code, Section 67-6537 requiring local governments to consider the impacts to ground water in comprehensive planning decisions.

The Act calls for creation of a Ground-Water Quality Council that is responsible for developing a Ground-Water Quality Plan. The plan is to present a strategy to protect and maintain the ground-water quality in the State by requiring components that:

1. "Describe the state's overall approach to protecting its ground water.
2. Take into account existing and future beneficial uses and existing ground-water quality.
3. Identify existing authorities and programs to protect ground-water quality.
4. Propose legislative, administrative and economic mechanisms to protect ground-water quality.
5. Review and make recommendations on plans for development and administration of a comprehensive ground water monitoring network, including point of use, point of contamination and problem assessment monitoring sites across the state and assessment of ambient ground-water quality utilizing, to the greatest extent possible, collection and coordination of existing data sources, and
6. Include programs to promote and assure public awareness of ground-water protection" (Idaho Code 39-120)

The plan was completed by June 30, 1991. A series of public meetings and hearings were held during the summer and fall of 1991 to seek input in finalizing the plan document. The Council will formally adopt the plan and submit it to the 1992 legislature. The legislature will adopt, amend, or reject the plan through passage of a statute. After action by the legislature, the plan shall have the force and effect of law.

B. LEGISLATIVE AUTHORITIES

The Ground-Water Quality Protection Act of 1989 is the primary legislation for ground-water quality in Idaho. In addition the

Statutes listed below were enacted for other purposes but have ground-water protection implications as well.

Idaho Environmental Health and Protection Act

Hazardous Waste Management Act of 1983

Hazardous Waste Siting Act

Public Records Act

Injection Wells- Protection of Ground Water as a Public Resource

Chemigation Law of 1989

I. SETTING GOALS AND DOCUMENTING PROGRESS

IA. Ground-Water Protection Goal

The Ground-Water Quality Protection Act of 1989 (Senate Bill 1269) will be the foundation for the future of Idaho's comprehensive ground-water protection program. Older waste disposal and injection well statutes (Title 42, Chapter 39, Idaho Code) also declare the ground waters of Idaho to be a public resource which must be protected against unreasonable contamination or deterioration of quality to preserve such waters for diversion to beneficial uses. Much rides on the reception the legislature gives the proposed The Ground-Water Quality Plan next session.

The Idaho Ground-Water Quality Protection Act of 1989 (GWQP) has it's general ground water goals and policies worded as follows:

"The goal of the legislature in enacting the Ground-Water Quality Protection Act of 1989 shall be to maintain the existing high quality of the state's ground water and to satisfy existing and projected future beneficial uses including drinking water, agricultural, industrial and aquacultural water supplies. All ground water shall be protected as a valuable public resource against unreasonable contamination or deterioration. The quality of degraded ground water shall be restored where feasible and appropriate to support identified beneficial uses."

The purpose of the Ground-Water Quality Plan is to protect ground-water quality for use by the public. The plan also provides guidance and direction to state agencies, local governments and citizens in preventing ground water contamination. This purpose is to be accomplished by fulfilling goals of the statute which are listed in Table 1.

TABLE 1; GOALS AND REQUIREMENTS OF THE
IDAHO GROUND-WATER PROTECTION ACT

- Prevent contamination of ground water from point and non-point sources to the maximum extent possible.
- The discovery of any contamination that poses a threat to existing or projected future beneficial uses of ground water shall require appropriate actions to prevent further contamination. These actions may consist of investigation and evaluation of enforcement actions, if necessary, to stop further contamination or clean up existing contamination as required under the Environmental Protection and Health Act.
- All persons in the state should conduct their activities so as to prevent the non-regulated release of contaminants into ground water.
- Education of the citizens of the state is necessary to preserve and restore ground-water quality.
- Make public the results of investigations concerning ground-water quality subject to the restrictions contained in Section 39-120, Idaho Code (Idaho Code 39-120)
- Develop a ground-water monitoring plan concurrently with the development of a ground-water quality plan. The ground-water monitoring network will be a dynamic ongoing program.
- Establish a system or systems within state departments and political subdivisions of the state for collecting, evaluating, and disseminating ground-water quality data and information.
- Develop and maintain a natural resource geographic information system. The system shall be accessible to the public.

IB. Evaluation Mechanism

The membership of the Ground-Water Council, currently developing the Ground-Water Quality Protection Plan, is made up of 17 voting members and 5 ex-officio nonvoting members. The Ground-Water Quality Protection Act (GWQPA) specifies the various interests to be represented on the Council including: industry, agriculture, mining, state government, local government and the general public. The Council is to exist for up to two years after legislative approval of the plan and will then be disbanded if not reauthorized by the legislature. During the two years after plan adoption, and thereafter if reauthorized, the Council is to oversee progress in implementing the plan.

Current drafts of the plan present a wide variety of proposed state policies on ground water protection issues along with recommendations for implementation that are based on Council consensus. Once the legislature approves the plan by adopting it as statute, the Council will likely prioritize the recommendations and develop an implementation schedule. During the life of the Council an annual report is also required detailing the number and concentration of contaminants discovered in the ground-water monitoring program mandated by the GWQPA.

The policies being addressed in the latest draft of the plan which each have implementation recommendations include the following:

- The broad general ground-water policy
- Existing and future beneficial uses
- Categorization of ground water
- Prevention of ground water contamination
- Public education on ground-water quality
- Ground-Water quality research
- Public participation in ground-water activities
- Local/State government interaction
- Local/State consistency
- Federal consistency
- Interstate/Interprovincial/Tribal agreements
- Artificial recharge of ground-water aquifers
- Statewide ground-water quality monitoring network
- Regional and local ground-water monitoring
- Publicly funded ground-water data standards
- Idaho ground-water data information system
- Agricultural chemical and nutrient management
- Mining
- Remediation
- Ground-water quality standards
- Agency roles
- Liability for remediation costs

It is likely that some of these policies will include recommendations for new state legislation.

IC. Public Participation

Public Involvement

In addition to specifying the makeup of the membership of the Ground-Water Council to insure representation by a broad range of interests in development of the plan, the GWQPA mandates public participation in plan development. It states that the Departments of Health and Welfare, Water Resources, and Agriculture should take actions necessary to promote and assure public confidence and public awareness of ground-water quality protection. In addition the statute specifies that the plan include programs to promote and assure public awareness of ground-water protection.

Upon completion of the plan, the GWQPA also requires that the Council publish notice after giving 20 days notice as provided in Section 60-109, Idaho Code, in one or more newspapers and shall issue statewide news releases announcing the availability of the plan for inspection by interested persons. The announcement shall indicate where and how the plan may be obtained or reviewed and shall indicate that not less than three public hearings shall be conducted at various locations in the state before formal adoption. The first public hearing shall not be held until 45 days have elapsed from the date of the notice announcing the availability of the plan. After public hearings the Council shall prepare a written summary of the comments received, provide comments on major concerns raised, make amendments to the plan as necessary and then formally adopt the plan.

When state agencies develop or revise any regulation their Legal Services Divisions will publish public notice of proposed rules or rule changes. The location of copies for review is specified and a copy will be mailed for a small fee. Written comments are invited and the deadline for submitting comments is specified.

Public Outreach and Education

Idaho currently has several ongoing outreach activities. The Idaho Department of Health and Welfare (IDHW) publishes a quarterly newsletter entitled "Idaho Clean Water" which is widely distributed and covers both ground and surface water issues and programs. The Idaho Department of Water Resources (IDWR) publishes a quarterly newsletter entitled "Injection Well Quarterly" which is aimed at the user, designer, and planner of underground injection wells. They also produce a document entitled "Idaho Currents" which provides information on energy and water news. IDWR also received demonstration grant funds under a national competition for a program called Operation Outreach and they are developing public information brochures on various types of injection wells. IDWR is pursuing education of the water well drilling community by organizing annual workshops and publishing a bi-annual newsletter for licenced drillers.

Idaho has initiated the Idaho Waste Reduction Assistance Program (IWRAP) under federal funding. A waste reduction and recycling clearing house has been established and a toll-free hot line made available. IWRAP has also linked the public with regional waste exchanges and is networking with national information exchange services. IDHW has also promoted waste reduction and recycling with a Solid Waste Awareness Week and a three year public service awareness campaign called "Let's Talk Trash". The three-R's (reduce, reuse and recycle) have also been promoted within Idaho schools.

During May 1990 IDHW's Hazardous Materials Bureau assisted Boise, Ada County and Latah County in Household Hazardous Waste Collection Day events in Boise and Moscow. People were polled on future years with 46% favoring annual events and 42% supporting them semi-annually.

The GWQPA stresses public participation and awareness and current drafts of the Ground-Water Quality Protection Plan contain policy recommendations that call for expanded efforts in a number of areas. While the plan has not been adopted, these recommendations will, in all likelihood, be retained since they are widely supported. One key recommendation is for establishment of a ground-water quality information clearing house.

II. CHARACTERIZING THE RESOURCE AND PRIORITIZING ACTIONS

IIA. Resource Assessment

Aquifer Mapping

A 1981 report entitled "Ground-Water Resources of Idaho" was developed by IDWR to identify and describe the major aquifers of the state. Because of the complex geologic makeup of the state, it was not practical or possible to identify and describe each and every aquifer. Seventy major ground-water flow systems were identified with many comprising more than one aquifer. Several major plates were developed at scale of 1:1,000,000 depicting the seventy major flow systems, the general lithologies, the potentiometric contours and the direction of ground-water movement.

Although seventy aquifers were identified, many are limited in extent and yield. There are three major aquifer types in Idaho, each depicted by their geology as shown in Figure 1.

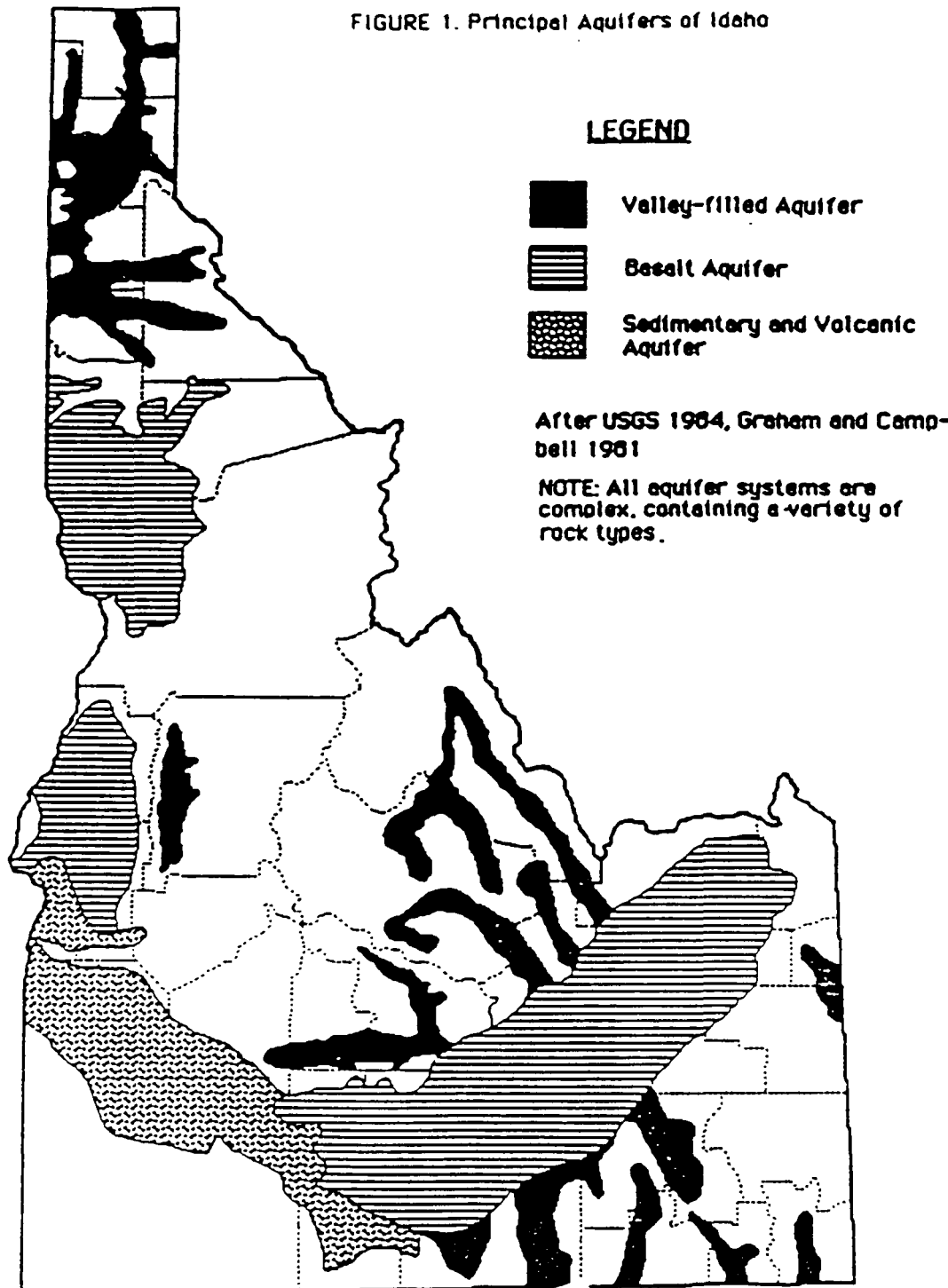
Unconsolidated sedimentary aquifers yield sufficient water for domestic and farming activities and are located in valley filled regions of the state. Such aquifers in northern Idaho are of glacial outwash and recent alluvium with the principal one being the Spokane Valley-Rathdrum Prairie Aquifer. This system is extremely productive with very high transmissivities resulting in low draw down in high-yielding wells. Much attention is being focused on protecting this aquifer because its extreme vulnerability to contamination.

The Snake River Plain Aquifer in southern Idaho is composed of primarily of basalt with sedimentary interbeds. It is the principal aquifer in the state and one of the largest in the country. It discharges 6.5 million acre-feet annually to the Snake River. Smaller basalt aquifers in the Weiser River Basin and the Lewiston-Moscow area have much smaller yields, but provide most of the domestic water and significant agricultural water for their regions.

Sedimentary and volcanic aquifers are found in the Boise Valley, Mountain Home, Buhl and Twin Falls. They are composed of clay, silt, sand and gravel and interbedded volcanics and are located primarily in the western Snake Plain. Such aquifers may yield significant geothermal water.

With the advent of the new computerized geographic information systems (GIS), environmental and natural resource agencies as well local governments and others are moving into a new era in mapping capability and coordination. The Idaho Geographic Information Advisory Committee (IGIAC) was created by Executive Order No. 88-16 dated June 26, 1988. The order established the voting membership of the committee as members of state agencies with the non-voting membership open to federal agencies, industrial and

FIGURE 1. Principal Aquifers of Idaho



professional organizations and academic institutions. The IGIAC was created to:

1. Review new geographic information mapping and remote sensing technology applications which can be directed to the states interests;
2. Make recommendations to state and federal agencies regarding geographic information systems, mapping programs, and remote sensing specifications;
3. Assist in the preparation of requests to pertinent federal agencies as a part of the diversified national mapping program;
4. Meet on at least an annual basis to review geographic information programs carried on by federal and state agencies and private industry, develop a list of priorities with regard thereto, and make recommendation with regard to possibilities for cooperation and resource sharing; and
5. Submit an annual report to the Governor of the committee's activities subsequent to the annual meeting.

The voting members of the committee include the Departments of Transportation, Water Resources, Fish and Game, Parks and Recreation, Lands, Health and Welfare, the State Tax Commission and the Division of Financial Management.

The IGIAC established a geographic information policy and a standard for a geographic data base in 1988. These are contained in Appendices A and B. They emphasized that the increasingly powerful GIS technology has the potential to greatly increase efficiency and reduce costs and is in a period of dynamic evolution and growth. Also GIS technology is but one of related technologies (e.g. remote sensing and digital cartography) that can assist in carrying out responsibilities more efficiently. IGIAC established that it is imperative that strong emphasis be placed on coordination among organizations using or planning these technologies.

The 7.5-minute, 1:24,000 scale quadrangle map series has recently been completed by USGS. The IGIAC feels that USGS needs to pursue maintenance of its 7.5-minute mapping via acquisition of update information from appropriate agencies, i.e., secure hydrology feature update from IDWR, transportation feature update from transportation departments, etc. They also have a number of other recommendations for USGS on this mapping program which are highlighted in 1989 annual report of IGIAC.

The small scale 1:1,000,000 maps are produced by the USGS and the USFS and are used by nearly every agency in Idaho. Typically they are derived maps compiled from reduced 7.5-minute, 1:24,000 scale

maps and the agencies reprinting them usually perform an update and add a theme such as ownership, recreation sites, etc.

Orthophoto quadrangles (OQ's) are primarily 1:24,000 scale photo-image maps formatted to cover the same area as the standard 7.5 minute quadrangle maps. Other scales are used by some agencies with some using a township format.

While OQ's were originally conceived as a temporary stand-in for standard maps, they have found a niche as a replacement for high altitude photo maps. They have been adopted and are maintained as a base by the U.S. Bureau of Land Management (BLM), the U.S. Forest Service (USFS), the Idaho Department of Lands, IDWR, and several large corporations. The USGS, BLM and the USFS have OQ production equipment. USGS produces OQ's for other agencies and maintains a master to make copies for users while BLM and USFS produce OQ's for internal use only. IGIAC recommends that USGS and USFS formalize and publicize their cooperative arrangement for production of OQ's and establish an aerial photography contract to produce 1:80,000-scale photos where OQ's are needed. They also feel that USGS needs to provide coordination for OQ cooperative projects on a local basis.

Many agencies in Idaho are performing digital mapping and IGIAC recommends that they continue to work closely together to develop nonduplicative, multiuse digital data sets, including a graphic coordinate database. Agencies can use the digital map information to make and recreate maps and perform GIS analysis for management purposes. One example will be discussed in the next section on ground-water vulnerability mapping. The users of GIS (the ARC/INFO system is used by all) are listed in Appendix C and this is expected to expand rapidly.

With the increased emphasis on mapping in Idaho and the rapidly expanding GIS capabilities, aquifer mapping for ground-water quality protection purposes can be refined and enhanced.

Aquifer Vulnerability Mapping

Idaho has been the leader in EPA Region 10 for the past several years in ground-water vulnerability mapping. IDHW initiated the project but it was a multi-agency effort building on the combined expertise of IDWR, USGS, IDHW and the U.S. Soil Conservation Service (SCS). The purpose was to develop and demonstrate a method to rate areas within the state for their ground-water pollution potential. The project was initiated on a pilot project basis by mapping the Lake Walcott quadrangle on a 1:100,000 scale. After this was successfully completed in 1988, the mapping was extended across the entire Snake River Plain and tributary valleys. The project is ongoing with the intention of mapping the entire state.

The results of the work on the Snake River Plain were recently summarized in a report entitled "Ground Water Vulnerability Assessment, Snake River Plain Southern Idaho" dated April 1991. The following four pages provide the excerpted Executive Summary.

EXECUTIVE SUMMARY

The Idaho Ground Water Vulnerability project was initiated by the Idaho Department of Health and Welfare to rate areas within the state for their relative ground water pollution potential. The Idaho Department of Health and Welfare (IDHW) combined their efforts and expertise with the Idaho Department of Water Resources (IDWR), the U.S. Geological Survey (USGS) and the U.S.D.A. Soil Conservation Service (SCS) to develop the vulnerability maps.

The project utilized a modified form of DRASTIC (Aller et. al., 1985) which was developed by the National Water Well Association under contract to the U.S. Environmental Protection Agency. The DRASTIC model evaluates the ground water pollution potential of a given hydrogeologic setting based on a set of defined characteristics, along with ratings or "weights" assigned to those characteristics. This project utilized three layers which resemble those used by DRASTIC (depth-to-water, soils, and recharge), but differ greatly from DRASTIC in that they used different sources of information, a finer scale, and a different point rating scheme. The project used a Geographic Information System (GIS), which gives the ability for enhanced data analysis and integration capabilities over the standard cartographic techniques used by DRASTIC.

1) Description of Data Layers

a) Depth-to-water Layer

The depth-to-water layer was developed by the U.S. Geological Survey (Maupin, in press-a; Maupin, in press-b). Depth-to-water is important for susceptibility assessment because areas where the ground water is close to the surface typically have a higher probability of ground water pollution than areas where ground water is quite deep. A computer program (Universal Kriging) was used to generate a surface representing first-encountered ground water below land surface from measured water levels. The depth-to-water values were generated by subtracting land-surface altitudes from the KRIGED water-level surface using a simple FORTRAN program. The depth-to-water map was then contoured and broken into categories, with each category rated on a scale of 1 to 50 points to reflect its relative significance to ground water vulnerability. The following ratings were used:

<u>Depth-to-water Ranges</u>	<u>Rating (points)</u>
1 to 25 feet	50
26 to 50 feet	35
51 to 100 feet	20
101 to 250 feet	10
> 250 feet	1

Note: This Executive Summary was excerpted from a report entitled "Ground Water Vulnerability Assessment Snake River Plain, Southern Idaho"

b) Recharge Layer

The "recharge" component of the Ground Water Vulnerability Model was developed by the Idaho Department of Water Resources. This layer represents water that penetrates the ground surface and percolates to the water table, potentially carrying contaminants with it.

The "recharge" map combined three data sets or layers that indicate types of land cover. The first layer outlines irrigated and dry cropland. The second layer differentiates between sprinkler- and gravity-fed irrigation delivery systems. The third layer subdivides land cover types into five categories representing rangelands, agricultural lands, forests, lava flows, and riparian areas. Each resulting recharge class was given the following point rating to be used in determining relative vulnerability:

<u>Recharge Classes</u>	<u>Rating (points)</u>
Gravity-fed irrigated land	50
Riparian areas	50
Sprinkler-fed irrigated land	40
Forests	30
Dryland agriculture	20
Rangeland	20
Bare rock (lava flows)	10
Urban areas	No rating
Surface water	No rating

c) Soils Layer

The soils layer incorporated the State Soil Geographic Database (STATSGO) and SOILS-5 databases developed by the SCS. Four soil-landscape characteristics were chosen to be included in the soils layer. These characteristics are: 1) permeability of the most restrictive layer; 2) depth-to-water table within the soil horizon; 3) depth to bedrock; and 4) flooding frequency. Each characteristic was rated to reflect its relative significance to ground water susceptibility. The ranges of possible scores for the soils layer are as follows:

<u>Soil Characteristics</u>	<u>Rating (points)</u>
1) permeability	2 to 20
2) depth to bedrock	1 to 10
3) depth to water-table	0 or 8
4) flooding frequency	0 to 5

Total	2 to 43

The score for each soil unit was then multiplied by three to determine the final soils vulnerability rating. This was done because the soils layer incorporates more than one criteria relevant to ground water vulnerability assessment, and hence deserves more weighing than the other two layers.

2) Vulnerability Map

The Ground Water Vulnerability map (Figure 2) was generated by merging the three characteristics (depth-to-water, recharge, and soils) into one map using computer mapping (Geographic Information System) techniques. The point ratings from each layer were added to create a total vulnerability rating.

The final vulnerability map was broken into four categories of relative vulnerability; low, moderate, high, and very high. The division points for these categories were derived by graphing the relationship of total acres versus total vulnerability factor. The resulting distribution is 30% = low, 30% = moderate, 30% = high, and 10% = very high vulnerability (Figure 8). These divisions will be refined in the near future by comparing the vulnerability maps with ground water monitoring data, and then adjusting the divisions to correlate with the monitoring data in a statistically-valid fashion.

3) Uses of Vulnerability Maps

The vulnerability maps are designed to serve as a tool for prioritizing ground water management activities. Areas of higher vulnerability can be given higher priority for prudent ground water protection measures and study in order to assure that limited resources are effectively used in areas of greatest concern. Because of the scale of mapping that was incorporated in the development of these maps, they should be used for regional program planning purposes only, and should not be used for making site specific decisions. This is because there could be smaller areas of very high vulnerability within generalized areas of low vulnerability, and vice versa. Programs which can utilize vulnerability maps include leaking underground storage tanks (LUST), wellhead protection, ground water monitoring, public water supplies, agricultural chemicals, waste water management, best management practice (BMP) implementation and development, hazardous and solid waste management, state and federal superfund programs, land use planning, State underground tank insurance agencies, and public information. The maps may also be useful in establishing "Areas of Drilling Concern" within the regulatory programs of IDWR.

Ground-Water Standards and Aquifer Classification

As discussed in the introduction, proposed ground-water standards that included an aquifer classification system went to public hearing in late 1987. Legislators became interested and asked IDHW to put them on hold while they drafted and introduced the Ground Water Quality Protection Act of 1989. With passage of the bill, the Ground Water Council was directed to focus on the need for ground-water standards and the Board of Health was empowered to adopt such standards for contaminants for which EPA had developed maximum contaminant levels. The current draft of the Ground Water Quality Plan recommends that standards be adopted including a system of categories of aquifers. The categorization is proposed to be based on vulnerability, existing and future beneficial uses, existing quality and social and economic considerations. Three categories have been suggested.

As proposed IDHW, IDWR and the Idaho Department of Agriculture (IDA) would propose initial categories for the major use aquifers. Initial categories would be adopted by rule by the Board of Health after opportunity for public comment. Regulations are proposed for changing the category of an aquifer or for proposing a category for an uncategorized aquifer. The burden of proof would be on the petitioner and any changes would require full public participation. Different management strategies would be necessary for each category of aquifer.

The ground-water standards would consist of a two part approach with a preventative portion based on increasing trends rather than fixed percentages as was proposed in 1987. The enforcement portion would automatically kick in when an MCL was exceeded. The standards would establish aquifer protection permits to manage a localized source when voluntary efforts prove inappropriate or ineffective.

Wellhead Protection Area Delineation

Idaho is currently in the process of developing the framework for their wellhead protection program. A technical advisory committee has been formed which will address the state's approach to wellhead area delineation. A policy advisory committee has also been formed to provide direction in development of the overall program. The Idaho wellhead protection program will likely embrace a voluntary approach for local programs so delineation techniques will probably provide a list of options. A draft wellhead protection plan is due to EPA in the spring of 1992.

Sole Source Aquifer Designation

Two sole source aquifer designations have been made by EPA in Idaho and a third is expected during the fall of 1991. Those designated include the Spokane Valley-Rathdrum Prairie Aquifer and the Lewiston Basin Aquifer. Both are interstate aquifers with the designations extending across the Washington border. The former was

FIGURE 2

Relative Groundwater Vulnerability : Idaho Snake River Plain

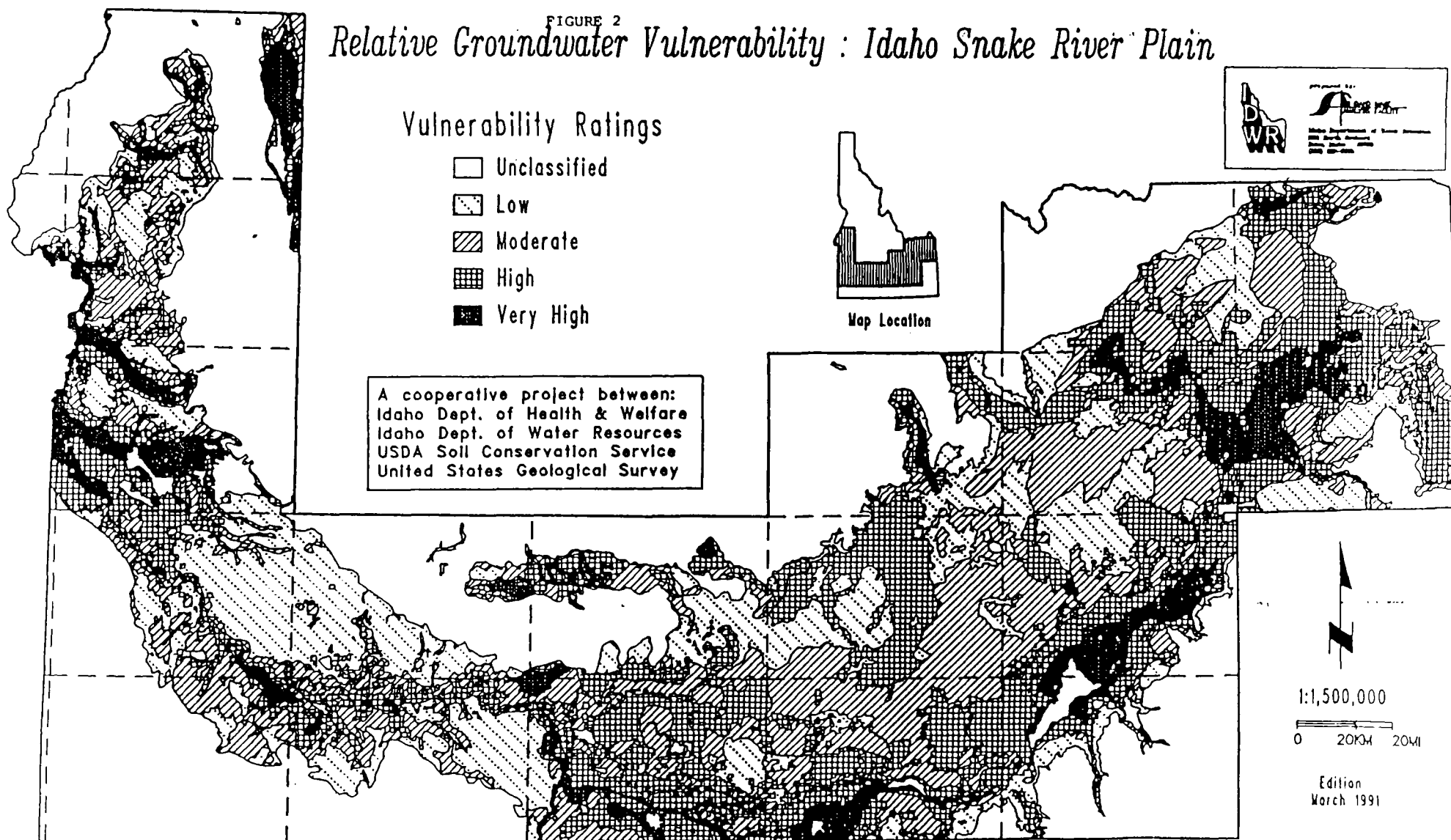


Figure 2 Relative Groundwater Vulnerability map, Snake River Plain, Idaho.
 This map contains generalized data — for more detail refer to the 1:500,000 scale map.

the second designation in the country and was made in 1978. Protection of this aquifer has received a great deal of attention and the special funding provided by Congress will be discussed later. The latter was designated in 1988 and includes Tribal lands administered by the Nez Pierce Tribe.

Designation of the Snake River Plain Aquifer in southern Idaho has been pending for a number of years with the boundaries extending into Wyoming, Utah and Nevada as well. This is one of the most productive aquifers in the world and designation should occur in the fall of 1991. Over 9000 square miles will be included in the designation.

Sole source designation has been used creatively in Idaho in protecting the ground water resource especially for the Spokane Valley-Rathdrum Prairie Aquifer. Projects proposed for Federal financial assistance have frequently been modified to better address ground-water protection concerns because the required review by EPA. The cooperation and assistance of State and local agencies in the review process has also been instrumental in factoring in ground-water protection concerns.

Ground-Water Quality Assessments

In 1979 the USGS identified the need for a dedicated statewide ground-water monitoring program involving that agency and IDHW and IDWR to address trends and identify contamination. This continuing need was also recognized in the original 1983 ground-water quality management plan and the 1985 update and was included as a recommendation for implementation. Lack of funding was an impediment and most monitoring was small scale and mostly done in areas of known or suspected contamination.

With the passage of the 1989 GWQPA the legislature recognized the need for long term monitoring by mandating development of a comprehensive ground-water monitoring network. This is to include point of use monitoring, point of contamination monitoring, problem assessment monitoring and assessment of the ambient ground-water quality. The ambient monitoring network is managed by IDWR and the initial wells were selected and sampled in 1990. This was expanded to a 400 well network in 1991. The final network may include as many as 1500 - 2000 wells. The regional and local monitoring is to be administered by IDHW but to date has gone unfunded. A specific monitoring plan is being developed by a sub-committee of the Ground Water Council and will constitute part of the overall Ground Water Quality Plan called for in the GWQPA. The monitoring plan will address ambient monitoring, regional problem monitoring and site specific problem monitoring. An annual monitoring plan is to be prepared along with an annual report on results which will be available to the public.

The small scale localized sampling programs have detected a variety of contaminants including nitrates, bacteria, petroleum products, pesticides, etc. Groups other than State and Federal agencies are also becoming interested in monitoring. In 1990 and again in 1991

The Farm Bureau worked with farmers and State agencies in conducting a fairly extensive sampling program where well owners provided samples for analysis. Although the results were not alarming, pesticides were detected and high nitrates reconfirmed as a problem in some wells.

State Programs and the USGS

The State programs and USGS have a long history of working together on cooperative projects on a variety of ground-water issues. As discussed previously, the IGIAC group relies heavily on USGS products and USGS serves as a nonvoting member. In recent years USGS has also served as an active member on the ground water vulnerability task force and was a key participant in developing one of the GIS data layers for the maps.

The USGS started the Regional Aquifer-System Analysis program in 1978 prompted by the 1977 drought. The purpose was to define regional hydrology and geology to establish a framework of background information on geology, hydrology and geochemistry of the important aquifer systems in the U.S.. Several of these detailed studies were carried out within Idaho's borders with major effort being the Snake River Plain Aquifer. This work provided a great deal of new data on ground water in these areas of the state.

The National Water-Quality Assessment (NAWQA) Program is a major new USGS effort designed to describe the status and trends in the quality of the Nation's ground and surface water resources. The Administration decided that USGS should begin with implementation in 1991 after an earlier pilot project and followed up with substantial funding. Sixty study units throughout the country will be extensively analyzed over a period extending to 2002. The Upper Snake River Plain in Idaho will be one of the first 20 to be initiated and intensively studied. This program should aid the state considerably in implementing their ground-water protection program.

IIB. CONTAMINATION SOURCE IDENTIFICATION

The current draft of the Ground Water Quality Plan recognizes a variety of both point and non-point sources of contamination and references the list in the Office of Technology Assessment's 1984 report. Table 2 provides this listing. Idaho has done a priority ranking of major sources which will be discussed in the next section on priority setting.

A number of ground water contamination sources are currently regulated by state and federal agencies. The following provides a brief summary of information on each source type. Additional discussion on the status and direction of these programs are provided in Chapter III.

Underground Storage Tanks

Idaho feels they need enabling legislation to receive delegation from EPA for the underground storage tank program. Current information shows that approximately 3200 nonexempt tank sites have been registered in Idaho. The state estimates approximately 30% of the nonexempt population are unregistered which would bring the total to about 4600. Furthermore, they estimate that between 1900-2400 contaminated sites exist and that between 300-600 of these sites have ground water contamination.

Solid Waste Landfills

There are an estimated 140 landfills in Idaho that are not well regulated from a ground-water protection standpoint because the regulations date back to 1973.

Hazardous Waste Facilities

There are currently 976 Idaho businesses and government agencies that are known to generate, treat, store, transport or dispose of hazardous waste. Five hazardous waste facilities are permitted including three post closure permits, one storage and treatment permit, and one storage, treatment and disposal permit. The disposal permit is for a major state-of-the-art facility where the vast majority of the wastes come from out of state.

Underground Injection Control Wells

IDWR has received primacy from EPA to administer the Underground Injection Control (UIC) Program. Class V wells are the only type allowed in Idaho and an estimated 4500-5000 exist. Shallow wells (under 18 feet) pose a threat to ground-water quality in Idaho as their number and uses are not well understood. There is reason to believe that numerous automobile service stations are utilizing this practice.

Improperly constructed wells drilled near areas high risk or known contamination provide the opportunity for increased vertical

Table 2: Potential Sources of Ground Water Contamination

CATEGORY I - Sources designed to discharge substances:

Subsurface percolation (e.g., septic tanks and cesspools)
Injection Wells
 Hazardous waste
 Non-hazardous waste (e.g., brine disposal and drainage)
Non-waste (e.g., enhanced recovery, artificial recovery, solution mining and in-situ mining)
Land Application
 Waste Water (e.g., spray irrigation)
 Wastewater byproducts (e.g., sludge)
 Hazardous waste
 Non-hazardous waste

CATEGORY II - Sources designed to store, treat, and/or dispose of substances; discharge through unplanned release:

Landfills
 Industrial hazardous waste
 Industrial non-hazardous waste
 Municipal Sanitary
Open dumps, including illegal dumping (waste)
Residential (or local) disposal (waste)
Surface Impoundments
 Hazardous waste
 Non-hazardous waste
Waste tailings
Waste piles
 Hazardous waste
 Non-hazardous waste
Materials stockpiles (non-waste)
Graveyards
Animal burial
Aboveground storage tanks
 Hazardous waste
 Non-hazardous waste
 Non-waste
Underground storage tanks
 Hazardous waste
 Non-hazardous waste
 Non-waste
Containers
 Hazardous waste
 Non-hazardous waste
 Non-waste
Open burning sites
Detonation sites
Radioactive disposal sites

CATEGORY III - Sources designed to retain substances during transport or transmission:

Pipelines
 Hazardous waste
 Non-hazardous waste
 Non-waste
Materials transport and transfer operations
 Hazardous waste
 Non-hazardous waste
 Non-waste

CATEGORY IV - Sources discharging substances as a consequence of other planned activities:

Irrigation practices (e.g., return flow)
Pesticide applications
Fertilizer applications
Animal feeding operations
De-icing salts applications
Urban runoff
Percolation of atmospheric pollutants
Mining and mine drainage
 Surface related mining
 Underground mine-related

CATEGORY V - Sources providing conduit or inducing discharge through altered flow patterns:

Production wells
 Oil (and gas) wells
 Geothermal and heat recovery wells
 Water supply wells
Other wells (non-waste)
 Monitoring wells
 Exploration wells
Construction excavation

CATEGORY VI - Naturally occurring sources whose discharge is created and or exacerbated by human activity:

Ground water - surface water interactions
Natural leaching
Salt-water intrusion/brackish water upconing (or intrusion of other- poor-quality natural water)

(from Office of Technology Assessment, 1984)

movement and spread of contaminants to otherwise uncontaminated aquifers. IDWR is exercising its authorities to establish "Areas of Drilling Concern."

Land Spreading Operations

Approximately 100 land application permits have been issued over the past several years under a new land application permit program that was initiated in 1988. These permits regulate the conditions for land application of municipal and industrial wastewater. Dairies and confined animal feeding operations are exempt from land application permit requirements.

IIC. SETTING PRIORITIES

In 1979 the USGS prioritized Idaho's aquifers based upon the sources of potential pollution, population, and ground water use. This assessment was based on hydrologic units which are surface features that describe general recharge areas for aquifers. By applying such a rating system directly to major aquifers, their potential for pollution can be determined. The eleven major aquifers were ranked in priority order in terms of pollution potential in Figure 3. The areas of highest priority for protection such as the Boise, Snake Plain and Rathdrum Prairie have begun to receive the most attention for vulnerability mapping, aquifer protection plans and other protection activities.

Most known and potential sources of ground-water contamination have been ranked in Idaho. IDHW ranked potential contamination utilizing two factors. The first related to the adequacy of the present regulatory program for a particular land use practice or contamination source with unregulated or unmonitored activities placed highest. The second factor was the relative public health or environmental risk posed by the potential contamination. Activities which can produce contaminants of high toxicity which are typically found in areas of high population density were ranked highest. The two factors, regulatory program development and relative risk, were ranked on a scale of 1-3 and combined using the formula in Table 3. Idaho considers Table 3 to present the ranking of potential sources of ground-water contamination in the state and plans to place most emphasis accordingly.

Combined with the above list of ranked sources, the ground-water vulnerability maps described previously will serve as a valuable tool for prioritizing ground water management and protection activities. Areas of higher vulnerability can be given priority for the limited resources available for protection activities, special studies, and monitoring programs. Because of the scale used in development of the maps, they should be used for regional program planning purposes only and not for making site specific decisions. There can be areas of very high vulnerability within generalized areas of low vulnerability and vice versa. Programs which should find the maps useful include underground storage tanks, management of agricultural chemicals, hazardous and solid waste management, wellhead protection, wastewater management, ground-water monitoring, public water supply management, nonpoint source best management practices (BMP) application, remedial action, underground storage tank insurance considerations, etc.

The Ground Water Quality Plan mandated by the legislature will include a series of ground water policy statements for the state each having a list of recommendations for implementation. Once the legislature adopts the plan, the Ground Water Council will likely prioritize the recommendations and develop a implementation schedule.

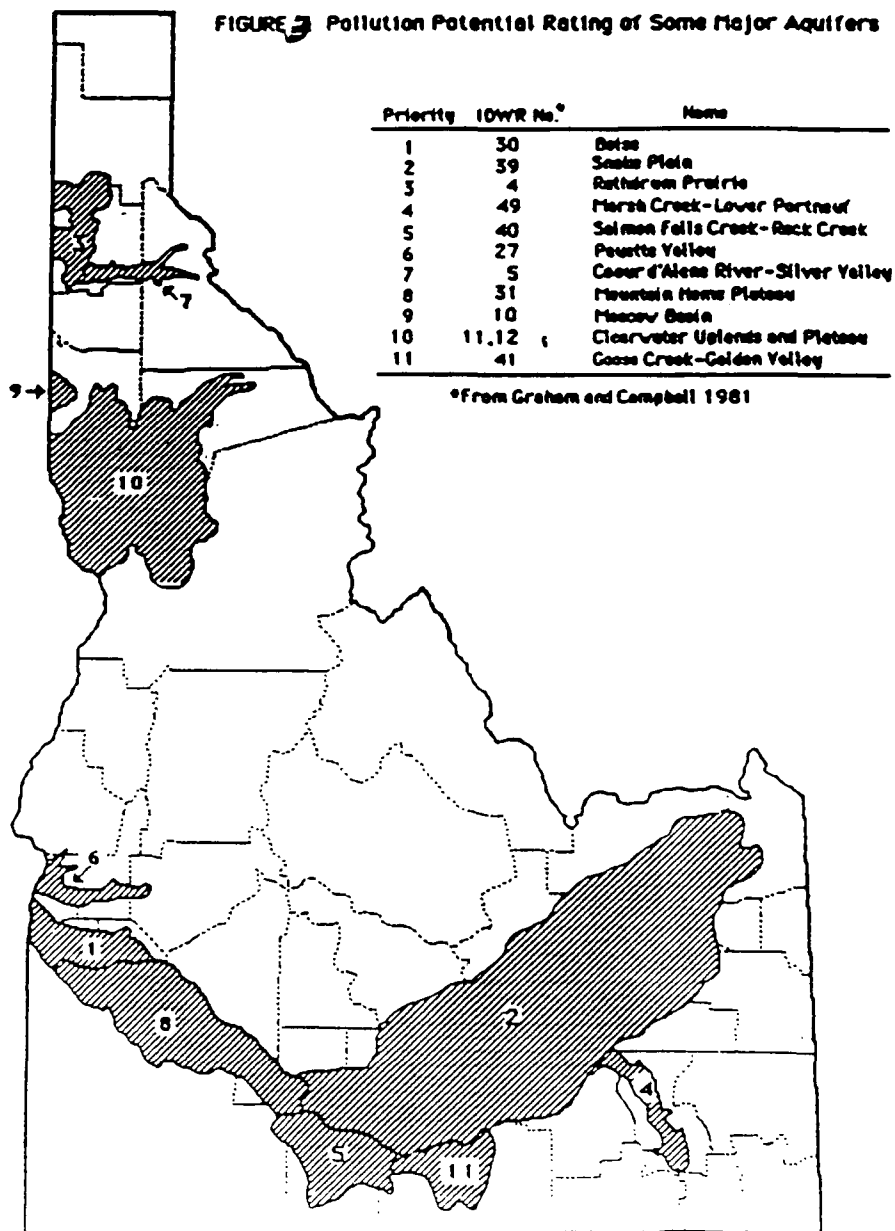


Table 3¹
Priority Ranking and Rating of Potential Sources of Groundwater
Contamination

Priority	Potential Source of Contamination	Factor		Score ²
		Regulatory	Risk	
1	Petroleum handling and storage	2.9	3.0	295
2	Feedlots and dairies	2.8	2.0	243
2	Landfills and hazardous waste sites	2.0	2.8	243
3	Land application of wastewater	2.5	2.3	240
4	Hazardous material handling	1.5	3.0	237
5	Pesticide handling and use	2.3	2.3	225
6	Land spreading of septage and sludge	2.3	2.0	215
6	Surface runoff	2.0	2.3	215
6	Pits, ponds and lagoons	2.3	2.0	215
6	Radioactive substances	2.3	2.0	215
7	Fertilizer application	1.5	2.3	194
8	Septic tank systems	1.8	2.0	191
9	Mining, including oil & gas drilling	1.5	2.0	177
10	Wells: injection, geothermal, domestic	1.7	1.8	175
11	Silvicultural activities	1.5	1.8	150

¹Modified from Technical Report for the Snake Plain Aquifer (IDHW 1985) and Environmental and Energy Study Institute (1985)

²Total Score is determined by the formula:

$$\text{Total Score} = \sqrt{\frac{\text{Regulatory}^2 + \text{Risk}^2}{2}} \times 100$$

IID. DATA MANAGEMENT, MONITORING, AND RESEARCH

Legislative mandates in the GWQPA of 1989 require that a comprehensive ground water monitoring network be developed, a GIS data management system be developed and maintained and that a ground-water quality data management program be established.

Data Management

The GWQPA clearly recognizes the need for a comprehensive ground-water quality data management system to meet the needs and handle the information for multiple state and local agencies. IDWR is currently coordinating this project and receives much input and assistance from IDHW and IDA as well as others. These agencies had previously developed data systems to meet some of their own needs and this new initiative will build upon past work while developing new capabilities to meet more of the identified needs. In developing the system, the state intends to have it encompass the scope of ground water minimum data set developed nationally by EPA in coordination with others and meet other broader state needs. The GWQPA establishes that the data system be accessible to the public and they intend to meet this requirement by allowing others to access and read the information but not have the capability to manipulate it.

To date IDWR has been working on the development of user and system requirements. This will be completed so that any computer hardware or software acquired will be adequate to meet everybody's objectives. Data processing staff have been hired. A consultant is to be responsible for developing, installing, and modifying the computer software necessary to satisfy all user needs. It is hoped that a prototype information system will be available by late 1991. Initial input data from primary sources has been requested.

The draft Ground Water Quality Plan now undergoing public participation contains two proposed policies related to ground water monitoring data issues. The first states that all publicly funded ground-water quality monitoring and data gathering activities will be consistent with the ground-water monitoring plan which is part of the overall Ground Water Quality Plan. This is to encourage that all public entities submit data in an electronic format to be easily incorporated into the data system and that appropriate quality assurance and quality control (QA/QC) guidelines be followed. The second policy relates to the need for the data management system to include data from past, present, and future ground-water quality monitoring and that it all be accessible to the general public.

In implementing this policy, state agencies will maintain an effort to coordinate with all public and private ground-water quality data collection programs. A technical data review committee will be established to classify all data as to its level of confidence, utility, and limitations it may have. The committee will make use of the data management system's capability to

evaluate data confidence and record results of the review process. A data certification procedure is also proposed whereby the supplying organization would certify that the data is free of data entry errors.

Well Drillers Reports have historically been maintained by IDWR. These reports are prepared and submitted by the driller as required by Idaho statute. The drillers report is an important and often sole source of subsurface information on aquifer lithology, water levels, and well design. Currently these reports are on microfiche and are extensively utilized by government and the public. The microfiche is organized by legal survey description and has no search, sort, and retrieval mechanism thereby reducing this systems usefulness for subsurface research. The IDWR is studying the implementation of a digital imaging system where these reports would be stored in an optical disk and would be available as an indexed image to government and the public via computer link. IDWR has secured partial funding and is reviewing equipment and software options. The new system could make the current 60,000 drillers report archive more useful and help IDWR process approximately 2500 new reports received annually.

The GWQPA also required that a natural resource GIS be developed and maintained which will be accessible to the public. For the past several years IDWR has been the lead for GIS and has been instrumental in development of the ground-water vulnerability maps. This will continue and other agencies such as IDHW and will obtain GIS workstations and have access to the database.

Monitoring

The GWQPA mandated that a comprehensive ground-water quality network be established and that ambient, point of use, point of contamination and problem assessment monitoring be addressed. As part of the Ground Water Quality Plan being developed by the Ground Water Council a proposed overall monitoring plan has been developed specifying roles, responsibilities, etc. It is envisioned that each year an annual monitoring plan for that particular year covering items such as sampling objectives, probable site locations, QA/QC, sampling constituents and estimated costs.

IDWR is to have responsibility for ambient monitoring and IDHW for local and regional monitoring. Funding for the ambient program has been provided but to date the local and regional monitoring has gone unfunded. Table 4 provides a comparison of the types of monitoring that are to be done by each agency. IDWR worked in cooperation with USGS in sampling 97 wells during the summer of 1990. Selection of the well sites was coordinated with existing monitoring programs to reflect as many different locations as possible throughout the state. An analysis for more than 70 potential contaminants was performed for all the wells. Preliminary results show positive detection for at least one of the potential contaminants at approximately 20 percent of all the sampled sites. The network and sampling have been significantly expanded in 1991 to a minimum of 400 sites. A proposed minimum

	Area of Monitoring	Monitoring Duration	Types of Questions Monitoring Will Answer	Lead Agency
<u>Ambient Monitoring</u>	Statewide	Long term, ongoing	What is general statewide ground water quality? What are the trends over time? Are there problem areas that need more detailed monitoring? What are background levels? Is ground water generally suitable for drinking, agricultural, and industrial purposes?	IDWR
<u>Problem Monitoring</u> A. Regional Monitoring	Areas of high vulnerability, 10-250 square miles	Typically 1-5 years per area	What is ground water quality in areas of highest vulnerability? How much variability is there in ground water quality in these areas? How widespread are the problems? What needs to be addressed by applying BMP's? How effective are the BMP's?	IDHW
B. Site-Specific Monitoring	Areas of contamination incidents, less than 10 square miles	Typically 1-5 years per site (except where duration specified by state or federal statute)	Are there point-source impacts such as leaking underground tanks, chemical spill, or landfill? Once the area is identified and problem isolated is the management plan working to rectify the problem? Are additional studies needed?	IDHW

Table 4. Comparison of the three parts of the Ground Water Quality Monitoring Program

monitoring of 375 wells annually was proposed and approved by the Ground Water Council. Hopefully annual funding will be provided so that the monitoring can begin to provide data for trend analysis.

Over past years many ground-water quality studies have been conducted by various state and federal agencies mostly in the vicinity of known or suspected sites of contamination. Also public water supply wells are required by law to be routinely monitored. In spite of these previous efforts the ability to describe existing statewide ground-water quality is still extremely limited. The limitations on existing ground-water quality information are:

- Data from all monitoring efforts are not stored in a central database so that much information is not readily useable in making assessments of ambient quality.
- There are variations in sampling and analytical methods between collecting agencies making data potentially incomparable.
- The period of record is generally short (the same wells are not revisited) and the frequency of analysis is inadequate to identify trends over time.
- Interpretation of long term trends is very difficult because cyclic seasonal variations in ground water quality are poorly understood.
- Evaluation of potential ground-water impacts from point sources is sometimes difficult because existing monitoring and/or water supply wells are not always optimally cited or constructed.
- Non-point source monitoring is rarely done because of the costs involved for large well networks.
- Interpretation of variations in ground-water quality with depth are difficult because wells are often open to several aquifers.
- Improperly designed monitoring systems often do not allow determination of the specific source of contamination that is detected.
- Sampling programs do not always provide for analysis of all the potential contaminants of concern.

Although the mandates in the GWQPA for statewide monitoring and data management systems will help alleviate some of these shortcomings, some will continue to remain issues to deal with.

Quality Assurance

The draft monitoring plan proposed for the statewide monitoring plan clearly recognizes the need for QA/QC. The plan contains a section on sample collection and laboratory practices indicating specific QA/QC plans will be prepared for each sampling event modeled after procedures established by EPA. A QA/QC coordinator has recently been hired by Bureau of Laboratories to develop laboratory wide procedures. The laboratory will be asking for sampling plans in advance of sampling events. The annual review planned for the monitoring program will focus the status of issues including QA/QC.

The IDA will soon be completing a new two million dollar laboratory which will greatly enhance the capability for sampling analysis.

Research

Much ground-water research is done at the University of Idaho and the Idaho Geological Survey (IGS) maintains close affiliation with the school. Publications and maps are available from the IGS office in Moscow, Idaho. The draft Ground Water Quality Plan contains a research policy proposing ongoing research to protect ground-water quality. The recommendations for implementation are that the Universities have the lead, that research be of an applied nature designed to allow a better understanding of factors affecting quality, that the research involve local, state and federal agencies as well as interested private entities, and that the Universities consult with the above to determine high priority ground-water research needs.

III. DEVELOPING AND IMPLEMENTING PREVENTION AND CONTROL PROGRAMS

IIIA. SOURCE ELIMINATION

Idaho Waste Reduction Assistance Program

Idaho has initiated the Idaho Waste Reduction Assistance Program (IWRAP) under federal funding. A waste reduction and recycling clearinghouse has been established and a toll-free hot line made available. IWRAP has also linked the public with regional waste exchanges and is networking with national information exchange services. IDHW has also promoted waste reduction and recycling with a Solid Waste Awareness Week and a three year public service awareness campaign called "Let's Talk Trash". The three-R's (reduce, reuse and recycle) have also been promoted within Idaho schools.

Agricultural Pollution Abatement Plan

Idaho has long been recognized as a leader in non-point source agricultural pollution abatement activities. While most of the emphasis has been placed on surface water issues, the need for coordinated surface water/ground-water approach is beginning to be recognized. The program began in 1976 when the Soil Conservation Commission (SCC) initiated development of the Agricultural Pollution Abatement Plan (APAP). The APAP development process spanned three years and involved extensive public interaction. The APAP basically calls for replacing management practices impacting water quality with best management practices (BMP's) that minimize such impacts. Funding from the state's Water Pollution Control Account has been made available annually to fund demonstration projects for BMP's. Table 5 provides a list of some of these projects that relate to ground water that have been funded under this program as well as other ground-water projects that have been funded from other sources such as CWA 319, the President's USDA Clean Water Initiative Program, etc.

The BMP development process in Idaho is a multi-agency effort that involves a systematic approach. To evaluate BMP's and the degree they are implemented the APAP established the Idaho State Water Quality Feed Back Loop Process. The process was contained in the APAP when it was certified by the Governor in 1979 and was officially incorporated into the Idaho State Water Quality Standards in 1987. An integrated system of BMP's are approved by the state, implemented on a site specific basis and evaluated through monitoring and modified as needed to achieve water quality standards. The SCC and its Districts are recognized to be the principal local agency for implementing and coordinating soil and water quality programs in their respective districts and as so, assume a leadership role in BMP implementation. Each District follows the Field Office Technical Guide in each SCS Field Office which contains the standards and specifications for soil and water conservation practices.

SUMMARY OF IDAHO AGRICULTURAL PROGRAMS AND PROJECTS

OCTOBER 1991

PROJECT TITLE	OUTPUT	SCHEDULE	DEQ'S ROLE	LEAD AGENCIES	COOPERATORS	COMMENTS
SNAKE RIVER DEMONSTRATION PROJECT USDA PRESIDENTIAL INITIATIVE PROJECT	DEMONSTRATE GROUND WATER BEST MANAGEMENT PRACTICES TO GAIN ON FARM ACCEPTANCE AND ADOPTION	6 YEAR PROJECT BEGINS 1/91	DESIGN, DEVELOP, AND IMPLEMENT A GROUND WATER MONITORING PROGRAM AND ASSIST IN THE EVALUATION PROCESS	US DEPARTMENT OF AGRICULTURE AGENCIES (SOIL CONSERVATION SERVICE, COOPERATIVE EXTENSION SERVICE, AGRICULTURAL STABILIZATION AND CONSERVATION SERVICE)	IDAHO SOIL CONSERVATION COMMISSION IDAHO DEPARTMENT OF AGRICULTURE IDAHO DEPARTMENT OF WATER RESOURCES IDAHO DIVISION OF ENVIRONMENTAL QUALITY EAST CASSIA SOIL CONSERVATION DISTRICT WEST CASSIA SOIL CONSERVATION DISTRICT MINIDOKA SOIL CONSERVATION DISTRICT	MONITORING FUNDS PROVIDED BY EPA 319 NATIONAL MONITORING PROGRAM 1 OF 2 USDA PRESIDENTIAL INITIATIVE PROJECTS IN IDAHO, 1 OF 8 USDA DEMONSTRATION PROJECTS IN U.S.
IDAHO SNAKE - PAYETTE RIVERS HYDROLOGIC UNIT USDA PRESIDENTIAL INITIATIVE PROJECT	IDENTIFY THE NATURE AND EXTENT OF NONPOINT SOURCE POLLUTION FROM PESTICIDES AND NUTRIENTS, DEVELOP AND IMPLEMENT GROUND WATER BEST MANAGEMENT PRACTICES TO REDUCE ADVERSE GROUND WATER QUALITY IMPACTS FROM CONTRIBUTING SOURCES	6 YEAR PROJECT BEGINS 1/91	DESIGN, DEVELOP, AND IMPLEMENT A GROUND WATER MONITORING PROGRAM TO IDENTIFY GROUND WATER IMPACTED BY AGRICULTURAL NONPOINT SOURCES	US DEPARTMENT OF AGRICULTURE AGENCIES (SOIL CONSERVATION SERVICE, COOPERATIVE EXTENSION SERVICE, AGRICULTURAL STABILIZATION AND CONSERVATION SERVICE)	IDAHO SOIL CONSERVATION COMMISSION IDAHO DEPARTMENT OF AGRICULTURE IDAHO DEPARTMENT OF WATER RESOURCES IDAHO DIVISION OF ENVIRONMENTAL QUALITY CANYON SOIL CONSERVATION DISTRICT GEM CONSERVATION DISTRICT PAYETTE SOIL CONSERVATION DISTRICT WEISER RIVER SOIL CONSERVATION DISTRICT ADAMS SOIL CONSERVATION DISTRICT	MONITORING FUND SOURCE IS UNKNOWN, 1 OF 2 USDA PRESIDENTIAL INITIATIVE PROJECTS IN IDAHO, 1 OF 37 USDA HYDROLOGIC UNIT PROJECTS IN U.S., RELATED TO OREGON'S HYDROLOGIC UNIT PROJECT IN MALHEUR COUNTY.
LOWER PAYETTE STATE AGRICULTURAL WATER QUALITY PROGRAM PROJECT	IDENTIFY THE NATURE AND EXTENT OF NONPOINT SOURCE POLLUTION FROM PESTICIDES AND NUTRIENTS, DESIGN AND DEVELOP A PLAN OF ACTION TO REDUCE ADVERSE GROUND WATER QUALITY IMPACTS FROM CONTRIBUTING SOURCES	3+ YEAR PROJECT BEGAN 8/89	ASSIST IN THE DEVELOPMENT OF A GROUND WATER MONITORING PROGRAM TO IDENTIFY GROUND WATER IMPACTED BY AGRICULTURAL NONPOINT SOURCES	PAYETTE SOIL CONSERVATION DISTRICT	IDAHO SOIL CONSERVATION COMMISSION USDA SOIL CONSERVATION SERVICE IDAHO DIVISION OF ENVIRONMENTAL QUALITY	INITIAL MONITORING FUNDS HAVE BEEN GIVEN TO DEQ BY THE SOIL CONSERVATION COMMISSION. THESE ARE LIMITED FUNDS AND ARE NOT ADEQUATE TO COMPLETE THE PROJECT. INTENTION IS TO INCLUDE A REQUEST FOR MONITORING FUNDS IN WITH THE OVER ALL PROJECT BUDGET.
SCOTT'S POND STATE AGRICULTURAL WATER QUALITY PROGRAM PROJECT	IDENTIFY THE NATURE AND EXTENT OF NONPOINT SOURCE WATER POLLUTION FROM AGRICULTURAL ACTIVITIES WITH AN EMPHASIS ON GROUND WATER QUALITY IMPACTS RESULTING FROM IRRIGATED CROP LANDS, DAIRIES, AND FEEDLOTS	2+ YEAR PROJECT BEGAN 8/90	ASSIST IN THE DEVELOPMENT OF A GROUND WATER MONITORING PROGRAM TO IDENTIFY AND ASSESS NONPOINT SOURCE IMPACTS RESULTING FROM IRRIGATED CROP LANDS, DAIRIES, AND FEEDLOTS	NORTH SIDE SOIL CONSERVATION DISTRICT	US SOIL CONSERVATION SERVICE IDAHO DIVISION OF ENVIRONMENTAL QUALITY SOIL CONSERVATION COMMISSION NORTH SIDE CANAL COMPANY JEROME COUNTY HEALTH DEPARTMENT BUREAU OF LAND MANAGEMENT IDAHO DAIRYMAN'S ASSOCIATION JEROME COUNTY COMMISSIONERS AGRICULTURAL RESEARCH SERVICE IDAHO DEPARTMENT OF FISH & GAME	GROUND WATER QUALITY MONITORING HAS BEEN FUNDED THROUGH THE IDAHO POLLUTION ACCOUNT FUND. THIS IS THE FIRST GROUND WATER PROJECT FUNDED THROUGH THIS ACCOUNT.

SUMMARY OF IDAHO AGRICULTURAL PROGRAMS AND PROJECTS

OCTOBER 1991

PROJECT TITLE	OUTPUT	SCHEDULE	DEQ'S ROLE	LEAD AGENCIES	COOPERATORS	COMMENTS
DEEP CREEK STATE AGRICULTURAL WATER QUALITY PROGRAM PROJECT	DETERMINE THE STATUS OF BENEFICIAL USES OF SURFACE WATERS AND GROUND WATER WITHIN THE PROJECT AREA. IDENTIFY THE NATURE AND EXTENT OF ANY ADVERSE IMPACTS ON WATER QUALITY RESULTING FROM NONPOINT SOURCE AGRICULTURAL ACTIVITIES.	2 YEAR PROJECT BEGINNING 4/91	ASSIST IN THE DESIGN AND IMPLEMENTATION OF A WATER QUALITY MONITORING PROGRAM TO CHARACTERIZE CURRENT WATER QUALITY CONDITIONS. ASSIST IN THE DEVELOPMENT OF A WORK PLAN TO ADDRESS ANY ADVERSE WATER QUALITY IMPACTS IDENTIFIED.	BALANCED ROCK SOIL CONSERVATION DISTRICT	USDA SOIL CONSERVATION SERVICE IDAHO SOIL CONSERVATION COMMISSION IDAHO DIVISION OF ENVIRONMENTAL QUALITY	GROUND WATER QUALITY MONITORING HAS NOT BEEN FUNDED. INTENTION IS TO INCLUDE A REQUEST FOR MONITORING FUNDS IN WITH THE OVERALL PROJECT BUDGET REQUEST.
JUMP CREEK STATE AGRICULTURAL WATER QUALITY PROGRAM PROJECT	DETERMINE THE STATUS OF BENEFICIAL USES OF SURFACE WATERS AND GROUND WATER WITHIN THE PROJECT AREA. IDENTIFY THE NATURE AND EXTENT OF ANY ADVERSE IMPACTS ON WATER QUALITY RESULTING FROM NONPOINT SOURCE AGRICULTURAL ACTIVITIES.	2 YEAR PROJECT BEGINNING 4/91	ASSIST IN THE DESIGN AND IMPLEMENTATION OF A WATER QUALITY MONITORING PROGRAM TO CHARACTERIZE CURRENT WATER QUALITY CONDITIONS. ASSIST IN THE DEVELOPMENT OF A WORK PLAN TO ADDRESS ANY ADVERSE WATER QUALITY IMPACTS IDENTIFIED.	OWHYTEE SOIL CONSERVATION DISTRICT	USDA SOIL CONSERVATION SERVICE IDAHO SOIL CONSERVATION COMMISSION IDAHO DIVISION OF ENVIRONMENTAL QUALITY	GROUND WATER QUALITY MONITORING HAS NOT BEEN FUNDED. INTENTION IS TO INCLUDE A REQUEST FOR MONITORING FUNDS IN WITH THE OVERALL PROJECT BUDGET REQUEST.
BEAR RIVER STATE AGRICULTURAL WATER QUALITY PROGRAM PROJECT	DETERMINE THE STATUS OF BENEFICIAL USES OF SURFACE WATERS AND GROUND WATER WITHIN THE PROJECT AREA. IDENTIFY THE NATURE AND EXTENT OF ANY ADVERSE IMPACTS ON WATER QUALITY RESULTING FROM NONPOINT SOURCE AGRICULTURAL ACTIVITIES.	2 YEAR PROJECT BEGAN 10/90	ASSIST IN THE DESIGN AND IMPLEMENTATION OF A WATER QUALITY MONITORING PROGRAM TO CHARACTERIZE CURRENT WATER QUALITY CONDITIONS. ASSIST IN THE DEVELOPMENT OF A WORK PLAN TO ADDRESS ANY ADVERSE WATER QUALITY IMPACTS IDENTIFIED.	FRANKLIN SOIL CONSERVATION DISTRICT	USDA SOIL CONSERVATION SERVICE US DEPARTMENT OF FISH AND GAME US FOREST SERVICE IDAHO SOIL CONSERVATION COMMISSION IDAHO DIVISION OF ENVIRONMENTAL QUALITY	GROUND WATER QUALITY MONITORING HAS NOT BEEN FUNDED. INTENTION IS TO INCLUDE A REQUEST FOR MONITORING FUNDS IN WITH THE OVERALL PROJECT BUDGET REQUEST. INITIAL GROUND WATER QUALITY SAMPLES WERE COLLECTED AND ANALYZED APPROXIMATELY 10/90.
ADMINISTRATION OF THE GROUND WATER PORTION OF THE STATE AGRICULTURAL WATER QUALITY PROGRAM	INCORPORATION OF GROUND WATER QUALITY PROTECTION IN THE ESTABLISHED STATE AGRICULTURAL WATER QUALITY PROGRAM.	ON-GOING	DEGREE OF GROUND WATER QUALITY INVOLVEMENT WILL VARY DEPENDING ON INITIAL PROJECT EVALUATION.	IDAHO DIVISION OF ENVIRONMENTAL QUALITY	USDA SOIL CONSERVATION SERVICE IDAHO SOIL CONSERVATION COMMISSION INDIVIDUAL CONSERVATION DISTRICTS	THE STATE AGRICULTURAL WATER QUALITY PROGRAM HAS REQUESTED GROUND WATER QUALITY CONCERNS BE REPRESENTED IN THE PROGRAM. PAST REPRESENTATION HAS BEEN INADEQUATE DUE TO LIMITED PROGRAM INVOLVEMENT. ADEQUATE ADMINISTRATIVE INVOLVEMENT HAS BEEN ESTIMATED TO REQUIRE APPROX. 32 HOURS PER PROJECT. APPROX. 5-7 PROJECTS ARE INITIATED EACH YEAR.

SUMMARY OF IDAHO AGRICULTURAL PROGRAMS AND PROJECTS

OCTOBER 1991

PROJECT TITLE	OUTPUT	SCHEDULE	DEQ'S ROLE	LEAD AGENCIES	COOPERATORS	COMMENTS
GROUND WATER QUALITY COUNCIL'S AGRICULTURAL CHEMICALS SUBCOMMITTEE	ASSIST IN THE DEVELOPMENT OF A GROUND WATER QUALITY MANAGEMENT PLAN FOR AGRICULTURAL CHEMICALS IN GROUND WATER.	1 YEAR PROJECT BEGAN 7/90	PROVIDE TECHNICAL ASSISTANCE TO THE GROUND WATER QUALITY COUNCIL'S AGRICULTURAL CHEMICALS SUBCOMMITTEE DURING THE DEVELOPMENT OF A STATE WIDE GROUND WATER MANAGEMENT PLAN FOR AGRICULTURAL CHEMICALS.	IDAHO DEPARTMENT OF AGRICULTURE	IDAHO DIVISION OF ENVIRONMENTAL QUALITY ASSOC. OF SOIL CONSERVATION DISTRICTS U.S. ENVIRONMENTAL PROTECTION AGENCY IDAHO WATER RESOURCE RESEARCH INSTITUTE SNAKE RIVER CHEMICAL, INC. IDAHO FARM BUREAU FEDERATION	THE AGRICULTURAL CHEMICALS SUBCOMMITTEE IS ASSISTING THE GROUND WATER QUALITY COUNCIL IN DEVELOPING A AGRICULTURAL CHEMICAL MANAGEMENT PLAN FOR THE STATE.
EPA 319 SPECIAL BONUS PROJECT	PROVIDE GROUND WATER QUALITY DATA TO SUPPORT INITIAL GROUND WATER QUALITY CHARACTERIZATION FOR USE IN AGRICULTURAL NONPOINT SOURCE PROJECTS IN CENTRAL SNAKE RIVER PLAIN	1 YEAR PROJECT BEGAN 9/90	PROVIDE INITIAL CHARACTERIZATION OF GROUND WATER QUALITY CONDITIONS WITH RESPECT TO ADVERSE IMPACTS RESULTING FROM AGRICULTURAL ACTIVITY	IDAHO DIVISION OF ENVIRONMENTAL QUALITY	US ENVIRONMENTAL PROTECTION AGENCY	PROJECT FUNDING HAS BEEN PROVIDED BY EPA THROUGH A SECTION 319 GRANT. THIS PROJECT IS INTENDED TO PROVIDE INITIAL GROUND WATER QUALITY MONITORING SUPPORT FOR THE SNAKE PLAIN DEMONSTRATION PROJECT AND VERIFICATION MONITORING TO SUPPORT THE SNAKE PLAIN GROUND WATER VULNERABILITY MAPPING PROJECT.
EPA 319 CONFINED ANIMAL FEEDING OPERATION (CAFO)	DESIGN, DEVELOP, PROMOTE INNOVATIVE CONFINED ANIMAL FEEDING OPERATION FACILITIES AND BEST MANAGEMENT PRACTICES TO REDUCE POTENTIAL ADVERSE IMPACTS ON GROUND WATER QUALITY.	1 YEAR PROJECT BEGAN 1/91	PROVIDE PROJECT ADMINISTRATION, OVERSIGHT, FACILITIES, AND TECHNICAL SUPPORT FOR A SOIL CONSERVATION SERVICE ENGINEER IN THE TWIN FALLS FIELD OFFICE.	IDAHO DIVISION OF ENVIRONMENTAL QUALITY	US ENVIRONMENTAL PROTECTION AGENCY US SOIL CONSERVATION SERVICE	PROJECT FUNDING HAS BEEN PROVIDED BY EPA THROUGH A SECTION 319 GRANT. THIS PROJECT IS INTENDED TO BE EXTENDED BEYOND THE CURRENT TERMINATION DATE. THIS PROJECT IS INTENDED TO PROVIDE SUPPORT FOR THE SNAKE PLAIN DEMONSTRATION PROJECT AND THE SCOTT'S POND PROJECT WITH RESPECT TO CONFINED ANIMAL FEEDING OPERATIONS WITHIN THE AREA.
STATE PESTICIDE MANAGEMENT PLAN	DEVELOP AND ESTABLISH A PREVENTIVE AND RESPONSIVE APPROACH TO ADDRESSING GROUND WATER CONTAMINATION RESULTING FROM AGRICULTURAL CHEMICALS.	2+ YEAR PROJECT BEGAN 8/90	ASSIST IN PROGRAM DEVELOPMENT BY PROVIDING TECHNICAL ASSISTANCE RELATIVE TO GROUND WATER QUALITY PROTECTION.	IDAHO DEPARTMENT OF AGRICULTURE	US ENVIRONMENTAL PROTECTION AGENCY IDAHO DIVISION OF ENVIRONMENTAL QUALITY	THE STATE PESTICIDE MANAGEMENT PLAN IS BEING COORDINATED THROUGH THE EPA FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT. PLAN DEVELOPMENT IS SCHEDULED TO BEGIN 7/91.

SUMMARY OF IDAHO AGRICULTURAL PROGRAMS AND PROJECTS

OCTOBER 1991

PROJECT TITLE	OUTPUT	SCHEDULE	DEQ'S ROLE	LEAD AGENCIES	COOPERATORS	COMMENTS
REVISION OF THE STATE AGRICULTURAL POLLUTION ABATEMENT PLAN	REVISE THE STATE AGRICULTURAL POLLUTION ABATEMENT PLAN TO INCLUDE THOSE ITEMS IDENTIFIED AS INADEQUATELY ADDRESSED IN THE FEDERAL CLEAN WATER ACT SECTION 319 NONPOINT SOURCE WATER QUALITY ASSESSMENT.	1 YEAR PROJECT BEGAN 8/90	ASSIST IN THE AGRICULTURAL POLLUTION ABATEMENT PLAN REVISION BY PROVIDING TECHNICAL ASSISTANCE WITH RESPECT TO GROUND WATER QUALITY PROTECTION. SOURCES OF GROUND WATER CONCERN INCLUDE CONFINED ANIMAL FEEDING OPERATIONS AND IRRIGATED CROPLANDS.	IDAHO SOIL CONSERVATION COMMISSION	IDAHO ASSOC. OF SOIL CONSER. DISTRICTS IDAHO FARM BUREAU IDAHO WATER USERS ASSOCIATION IDAHO CATTLE ASSOCIATION IDAHO AGRICULTURAL CHEMICAL ASSOCIATION IDAHO DAIRYMEN'S ASSOCIATION US SOIL CONSERVATION SERVICE U OF I EXTENSION SERVICE FARMERS HOME ADMINISTRATION US BUREAU OF RECLAMATION US BUREAU OF LAND MANAGEMENT IDAHO DEPARTMENT OF LANDS IDAHO DIVISION OF ENVIRONMENTAL QUALITY US FOREST SERVICE AGRICULTURAL RESEARCH SERVICE AGRI. STABIL. & CONSERV. SERV. IDAHO DEPARTMENT OF WATER RESOURCES US ENVIRONMENTAL PROTECTION AGENCY	THE IDAHO SOIL CONSERVATION COMMISSION HAS ESTABLISHED AN INDUSTRY REPRESENTED COMMITTEE TO LEAD THE REVISION PROCESS STATE AND FEDERAL AGENCIES PARTICIPATE IN THE COMMITTEE PROCESS BY PROVIDING TECHNICAL ASSISTANCE.
SOIL CONSERVATION SERVICE WATER QUALITY MANAGEMENT COMMITTEE	TO ADDRESS CURRENT ISSUES AND PLOT OUT OUR FUTURE DIRECTION IN POLICY TYPE ISSUES AND DIRECTION.	ON GOING	TO PARTICIPATE IN COMMITTEE DISCUSSIONS CONCERNING CURRENT AND FUTURE POLICY TYPE ISSUES AND DIRECTION.	USDA SOIL CONSERVATION SERVICE	IDAHO SOIL CONSERVATION COMMISSION IDAHO DIVISION OF ENVIRONMENTAL QUALITY	THE SOIL CONSERVATION SERVICE WATER QUALITY MANAGEMENT COMMITTEE REPORTS TO THE SCS STATE CONSERVATIONIST (PAUL CALVERLEY).
SOIL CONSERVATION SERVICE WATER QUALITY TECHNICAL COMMITTEE	TO ADDRESS CURRENT ISSUES AND PLOT OUT OUR FUTURE DIRECTION IN TECHNICAL ISSUES.	ON GOING	TO PARTICIPATE IN COMMITTEE DISCUSSIONS CONCERNING CURRENT AND FUTURE TECHNICAL TYPE ISSUES AND DIRECTION.	USDA SOIL CONSERVATION SERVICE	IDAHO SOIL CONSERVATION COMMISSION IDAHO DIVISION OF ENVIRONMENTAL QUALITY	THE SOIL CONSERVATION SERVICE WATER QUALITY TECHNICAL COMMITTEE REPORTS TO THE WATER QUALITY MANAGEMENT COMMITTEE.
IN-HOUSE AG CHEMICAL GROUND WATER QUALITY MONITORING	TO OBTAIN GROUND WATER QUALITY DATA TO CHARACTERIZE AND EVALUATE IMPACTS RESULTING FROM AGRICULTURAL ACTIVITIES.	ON GOING	DESIGN, DEVELOP, IMPLEMENT, AND EVALUATE GROUND WATER QUALITY PROJECTS.	DIVISION OF ENVIRONMENTAL QUALITY	SPECIFIC TO PROJECT	IN-HOUSE PROJECTS DEVELOPED TO ADDRESS SPECIFIC PROGRAM CONCERNS OR TO ASSIST OR SUPPORT RELATED IN-HOUSE PROJECTS.
COOPERATIVE AG WATER QUALITY MONITORING	TO OBTAIN GROUND WATER QUALITY DATA TO CHARACTERIZE AND EVALUATE IMPACTS RESULTING FROM AGRICULTURAL ACTIVITIES.	ON GOING	DESIGN, DEVELOP, IMPLEMENT, AND EVALUATE GROUND WATER QUALITY PROJECTS.	DIVISION OF ENVIRONMENTAL QUALITY	SPECIFIC TO PROJECT	COOPERATIVE PROJECTS TO ADDRESS SPECIFIC CONCERNS OR AREAS, THESE PROJECTS SHOULD BE CONSIDERED AN ASSET TO THE DIVISION'S PUBLIC RELATIONS.

SUMMARY OF IDAHO AGRICULTURAL PROGRAMS AND PROJECTS

OCTOBER 1991

PROJECT TITLE	OUTPUT	SCHEDULE	DEQ'S ROLE	LEAD AGENCIES	COOPERATORS	COMMENTS
USDA FARM BILL	STATE ENVIRONMENTAL AGENCIES WILL HAVE A MAJOR ROLE IN DETERMINING LANDS AND PRACTICES ELIGIBLE FOR PROGRAM ASSISTANCE.	ON GOING	PARTICIPATION THROUGH SECTION 319 AND WELL HEAD PROTECTION PROGRAMS.	USDA AGENCIES	TO BE DEVELOPED	THE 1991 FARM BILL HAS INCORPORATED VARIOUS GROUND WATER QUALITY PROTECTION ISSUES. ACTIONS IN RESPONSE TO THESE ISSUES NEED TO BE ADDRESSED THROUGH STATE WATER QUALITY PROGRAMS
RATHDRUM PAIRIE PROJECT	DETERMINE THE STATUS OF BENEFICIAL USES OF SURFACE WATERS AND GROUND WATER WITHIN THE PROJECT AREA. IDENTIFY THE NATURE AND EXTENT OF ANY ADVERSE IMPACTS ON WATER QUALITY RESULTING FROM NONPOINT SOURCE AGRICULTURAL ACTIVITIES.	ON GOING	DESIGN, DEVELOP, AND IMPLEMENT A GROUND WATER QUALITY PROTECTION PROGRAM TO PROTECT WATER QUALITY FROM AGRICULTURAL NONPOINT SOURCES.	DIVISION OF ENVIRONMENTAL QUALITY	SPECIFIC TO PROJECT ACTIVITY	THE RATHDRUM PAIRIE PROJECT IS A COMPONENT OF THE SOLE SOURCE AQUIFER MANAGEMENT PROGRAM.
DEPARTMENT OF AGRICULTURE PESTICIDE APPLICATORS CERTIFICATION AND TRAINING PROGRAM	SERIES OF EDUCATIONAL WORKSHOPS TARGETED FOR PESTICIDE APPLICATORS ATTENDANCE IS REQUIRED TO OBTAIN APPLICATORS CERTIFICATION	ON-GOING	CURRENTLY NOT PARTICIPATING	IDAHO DEPARTMENT OF AGRICULTURE	UNIVERSITY OF IDAHO COOPERATIVE EXTENSION SYSTEM	ATTENDANCE IS REQUIRED TO OBTAIN NEEDED CERTIFICATION FOR APPLICATION OF SELECT PESTICIDES

Revisions to the APAP are under consideration and many will relate to better incorporation of ground water concerns so a more balanced approach to surface water and ground-water quality protection is maintained. The state feels that passage of the 1990 USDA Farm Bill provides new tools for the development of individual farm plans for protection of both. In addition, the President's Water Quality Initiative provides many new resources to address agricultural pollution issues and inter-agency committees have been established to address current issues and plot future direction.

USDA Water Quality Demonstration Project and Hydrologic Unit Project

Two USDA water quality projects have recently been implemented to address ground water impacts resulting from agricultural activities.

The Snake River Plain Demonstration Project was one of eight nationwide water quality projects and the Snake-Payette Rivers Hydrologic Unit Planning Project was one of 37 nationwide water quality projects which were selected and funded by USDA. The demonstration project is located in south central Idaho and the hydrologic unit project is located in southwestern Idaho. These projects are designed to show farmers and ranchers new ways to minimize the effects of agricultural nonpoint sources of pollution on ground-water quality. The USDA's Soil Conservation Service and the University of Idaho Cooperative Extension Service provide joint leadership for these five year projects. Cost share will be provided by the Agricultural Stabilization and Conservation Service to eligible farmers and ranchers who install approved management practices. Ground-water monitoring is being performed by IDHW to document the effects of these installed practices on the area's ground-water quality through funding awarded by EPA's Clean Water Act Section 319 nonpoint source program.

Grassy Swales

Injection wells are numerous in Idaho and provide a direct conduit for contaminants to reach ground water. The concept of using grassy swales as an alternative is beginning to be implemented primarily in North Idaho where they are following the lead of Spokane County. The idea is to use the grassed area as a filter for contaminant removal before infiltration.

IIIB. LOCATIONAL CRITERIA

Hazardous Waste Facility Siting

In 1985 the legislature passed the Hazardous Waste Facility Siting Act encouraging alternatives to land disposal of hazardous waste, requiring the development of a state hazardous waste siting management plan, a site licencing program, and mandating a great deal of public involvement in siting decisions. A Siting Board was also established. The licencing program was not to be duplicative of the RCRA permitting program and to date only one licence has been issued under the siting law program.

Source Specific Locational Criteria

Septic Systems: The minimum setback from domestic water supply wells under the existing rules is 100 feet.

Underground Injection Wells: For certain types of Class V wells minimum setback distances from water wells have been established by regulation based on the discharge rate to the injection well. For example for a discharge rate of 1-2 cubic feet per second the minimum setback is 2500 feet while for a discharge rate 4-5 cubic feet per second it is 4000 feet.

Public Water Supply Regulations: Minimum setback distances for public water supply wells include the following:

- 50 feet from a sewer line
- 100 feet from a home septic tank
- 50 feet from livestock operations

These setback requirements will be looked at when regulations are updated as it is felt that they do not provide adequate protection. Setback requirements will also be addressed in the wellhead protection program.

Land Application of Wastewater: Each land spreading operation gets a site specific permit which may specify a setback distance. The applicants are required to supply maps showing all wells in the area.

Land Applications of Sewage Sludge: Under current Idaho water quality regulations, sewage treatment plants are to have a sludge disposal plan which is approved by IDHW. The plan is to cover application rates when used as fertilizer and include setbacks to streams and wells. The requirement to have such plans has been adhered to in a very limited sense, however.

IIIC. PERMITTING, COMPLIANCE MONITORING AND ENFORCEMENT SYSTEMS

Permitting

While Idaho has general enabling legislation under Title 39, Chapters 1 and 36 to protect the environment and health of the state, they have not developed a permit program allowing assumption of the National Pollution Discharge Elimination System (NPDES) from EPA and the federal system operates in the state. The NPDES system is a surface water protection program and does not cover potential ground-water impacts unless the ground water discharge has the potential to impact a surface water body. Recent changes, however, now make the NPDES program available to regulate the use of sewage sludge and septate as fertilizer and to regulate sludge/septate landfills, disposal pits, and lagoons. Future rules may allow EPA to delegate this authority separately from other NPDES permitting authority.

Unlike some of the other states in Region 10, Idaho does not have general waste discharge regulations to deal with any type of potential ground water impact that may arise. Rather, they have used the above mentioned general enabling legislation along with other media specific statutes to write permitting regulations that control some activities with potential ground water impacts.

Land Applied Wastewater: Concern about past and future potential ground water impacts of municipal and industrial wastewater land spreading operations lead to the establishment of a new permitting program in 1988. IDHW administers the program and worked closely with the regulated community in developing the program. Since inception of the program 84 of the 97 applicants have been permitted with a number of additional applications expected in the next year. A semi-automated annual report submittal tracking mechanism has been set up and there are plans to incorporate land application site and monitoring information into a GIS ground-water vulnerability data layer. Now that the bulk of the initial permitting has been processed IDHW wants to begin evaluating the effectiveness of the program. This program could also be expanded to cover sewage sludge and septage thus controlling these ground-water threats in another way than the NPDES option mentioned above.

Underground Injection Wells: Injection wells are defined as any bored, drilled, or dug hole deeper than it is wide used for subsurface placement of fluids. Only Class V wells are authorized in Idaho and the regulatory program is administered by IDWR which received primacy from EPA in 1984. Prior to receiving primacy IDWR operated a UIC program of their own. Shallow wells are those less than 18 feet deep and they are authorized by rule but must be reported for inventory purposes. Wells deeper than 18 feet require a permit and abandonment requires IDWR notification and proper plugging. The quality of the injectate is also to be regulated. Many have expressed the opinion that this program is underfunded and not effective because of large number of shallow wells of unknown location.

Well Construction Standards: The owner of any well constructed, drilled, deepened or enlarged after July 1, 1987 requires a drilling permit from IDWR. Wells are to be constructed in accordance with the well construction standards adopted in 1988 which state all wells shall be constructed in a manner that will guard against waste and contamination of ground water. Many people, however, have expressed the opinion that the well construction standards are outdated and inadequate.

Solid Waste Disposal Sites: The regulations covering solid waste were written in 1973 and are not up to date especially in terms to ground-water protection. They require landfills to have conditional use permits, but this authority has been exercised in a limited manner. Much effort went into seeking new legislation in 1990 but it was not successful leaving a major source of potential ground-water contamination unregulated by IDHW.

During 1991, IDHW together with the Health Districts, have been actively looking into the future of Idaho's solid waste program. A new and considerably upgraded program may emerge within the next several years with some funding made available to support it. An interim measure taken by one of the counties on its own, was to follow the State of Washington regulations as the basis for developing a new landfill.

EPA's RCRA Subtitle D landfill criteria has finally been finalized and will become effective in October 1993. Under Subtitle D, States have the lead role for permitting and enforcement, and are expected to have, or adopt, regulations which are at least as stringent as the new federal criteria. Secondly, citizens may file suit in federal district court to achieve enforcement of the Subtitle D criteria.

Hazardous Waste Sites: Idaho has final authorization from EPA to operate nearly all aspects of the RCRA hazardous waste program so IDHW has permitting authority for storage, treatment and disposal facilities. As discussed earlier, there are few permits in Idaho as it is complex process with stringent requirements (including ground-water protection) which motivates generators to have the waste handled off site.

Septic Tanks: The Idaho regulations for subsurface sewage disposal require that installation permits be acquired from IDHW for subsurface systems. The permit applicant must supply a specified list of information with the permit request. The permit will be issued or denied based on completeness and on meeting the technical standards contained in the regulations. Installers must also have a registration permit. Recent court decisions have determined that the State Legislature, through concurrent resolutions, has the authority to change Idaho Rules and Regulations. Consequently, regulations have been altered to allow less stringent requirements in one area of the state.

There is currently a discrepancy between Idaho statutes and EPA

regulations regarding the inclusion of septic systems serving at least 20 persons as a Class V injection well. EPA is working with Idaho to change state statutes to make this inclusion.

Other Control Programs

In addition to source control programs requiring permits other control programs for ground-water protecting or monitoring are underway or evolving.

Underground Storage Tanks: Idaho currently has 11 people working in the Underground Storage Tank Program (UST) and the Leaking Underground Storage Tank Program (LUST) at IDHW all who are funded by EPA grants. In 1990 the legislature passed a concurrent resolution authorizing IDHW to submit a UST regulatory proposal to the legislature for approval. IDHW submitted a proposal in 1990 which included draft regulations as well as necessary staffing and funding levels. No further action has been taken by the legislature. IDHW, however, feels they need further legislative direction to actually implement a program and apply to EPA for primacy. The legislature has also established a Petroleum Tank Insurance Fund to provide low cost insurance to tank owners with tanks in compliance with federal standards, a Certified Tank Technician Program for tank testing, installation and removal (administered by the Fire Marshall) and a UST Upgrade Assistance Program to assist small retailers to qualify for conventional loans.

EPA currently has responsibility for enforcing the federal UST regulations for notification, tank testing and financial responsibility. IDHW is provided both UST and LUST funding to support staff working on these programs. To qualify for the UST grant the state must be actively seeking primacy. Currently state action on this issue is uncertain since IDHW feels further legislative direction is necessary.

Sewage Sludge: Under the state water quality standards, sewage treatment plants are required to have sludge disposal plans approved by IDHW. In some cases IDHW visits and approves individual sites, but in general the requirement to have such plans is not closely followed.

Idaho National Engineering Laboratory: The Idaho National Engineering Laboratory (INEL) is an 890 square mile U.S. Department of Energy (DOE) facility in Eastern Idaho. It lies over the Snake River Plain Aquifer and has nine major facilities with nuclear reactor research, fuel reprocessing and waste management, constituting it's major operations. In 1989, at the recommendation of the Governor, the Idaho legislature established the state's INEL Oversight Program. The purpose of this major new program is to ensure that Idaho monitors INEL activities to protect public health and the environment, to ensure that the people of Idaho have a vigilant and independent overseer with full access to INEL and to provide Idahoans with an independent factual analysis of INEL activities.

Over 30 state personnel paid by both federal and state funding sources make up the oversight team. The team represents a variety of state agencies with coordination provided by the Deputy Director of IDHW. The staff conducts independent health and environmental studies, analyzes historic and current environmental monitoring and health data, ensures compliance with state environmental regulations, oversees environmental restoration activities, makes recommendations to DOE and reports findings to the legislature and the public. To improve the state's effectiveness, a state project office has been established near INEL in Idaho Falls where 11 technical staff are responsible for ground-water monitoring, hazardous waste and water quality inspections, corrective action and engineering review of drinking water and wastewater systems.

This program is to take a comprehensive environmental and public health view of the facility on a scientific basis. There are still problems related to issues of sovereign immunity regarding federal government compliance with state regulatory requirements. A notice of violation was recently issued by the state to INEL covering a number of environmental regulations.

There is also a group of eight people (with an additional 12 FTE approved) in the Hazardous Materials Bureau who are funded by DOE and responsible for overseeing the superfund mandated cleanup of past practices contamination. These staff members are independent of, but work in close coordination with, the Oversight Program.

Drinking Water Program: Idaho has received primacy from EPA for the Public Water Supply (PWS) program in 1978 but that status is tentative as IDHW has been unable to secure adequate resources to adequately implement the new requirements of the 1986 amendments to the Safe Drinking Water Act (SDWA). The program is currently 70% federally funded and 30% state funded. They would like to keep the program if adequate state resources can be secured from the legislature.

With the exception of the developing Wellhead Protection Program that is separately authorized in the SDWA, the PWS program is not set up to protect ground-water but the monitoring data from it is used to assist in the state's overall ground-water protection efforts. Both the PWS and the ground-water program are located in the same section at IDHW somewhat simplifying coordination. The majority of drinking water in the state comes from ground-water sources. Private wells have no monitoring requirements but their construction is minimally regulated by IDWR.

Monitoring of public wells is done as required by the SDWA with analysis required at the state laboratory or a state certified laboratory. The sampling is done by the purveyor so there are questions about QA/QC. Monitoring results have resulted in some wells being taken off line but that has not solved the contamination problem. The vulnerability criteria used in Idaho for justifying the need for waiving VOC monitoring is testing once, and if no hits are detected the source is considered not

vulnerable. They feel this approach has saved \$200,000 in unneeded monitoring costs.

Agricultural Chemicals/Chemigation: In addition to the discussion of this in the above section on source reduction, the Department of Agriculture chairs the Agricultural Chemicals Subcommittee of the Ground Water Council. The Ground Water Quality Plan being developed will contain a Agricultural Chemicals Ground Water Management Plan as an appendix. This appendix will not meet all the requirements for a State Pesticide Management Plan (PMP) as required by EPA's draft National Pesticides in Ground Water Strategy. The PMP is expected to be developed as a separate document by the Department of Agriculture with assistance from IDHW. The ongoing vulnerability mapping program will assist greatly in implementing the PMP. The PMP will outline the state's approach to dealing with use of pesticides in the state that are deemed by EPA to be of concern because potential ground-water contamination.

In 1989 the Idaho legislature passed a chemigation law for regulation of chemicals added to irrigation water which is spread on the land. The Department of Agriculture administers the program and promulgated the required regulations in 1990. All those using chemigation must be licenced and must follow the general and technical requirements of the regulations. One of the major requirements of the regulations is for the use of backflow devices to prevent chemicals from flowing back into the well.

Under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), the State of Idaho has enforcement primacy for the use and misuse of pesticides. The Department of Agriculture administers this enforcement program based on State regulations and on requirements listed on pesticide labeling. The Department of Agriculture also administers the State pesticide applicator certification program which requires training of certain types of pesticide applicators.

Agricultural chemicals container rinsate regulations are also pending finalization.

Feedlots and Dairies: Dairy operations in Idaho are regulated through a general waste discharge permit (NPDES) issued by the Environmental Protection Agency (EPA) as authorized under the Federal Clean Water Act. Through a contractual agreement, the Water Quality Bureau of the Department of Health and Welfare's Division of Environmental Quality assists EPA in implementing this program by conducting periodic field inspections and responding to complaints. If violations are identified, the operation is referred to EPA for enforcement. The State of Idaho does not have enforcement authority under this permit program.

The Water Quality Bureau published the "Idaho Waste Management Guidelines for Concentrated Animal Feeding Operations" in 1987. These guidelines are intended to provide technical assistance to dairy operators for properly operating and maintaining dairies.

The guidelines address water quality problems, current regulations, runoff control, land application of animal wastes, and odor control. These are merely guidelines, and the State of Idaho does not have the authority to enforce these guidelines as regulations.

There are no state drinking water regulations directly applicable to dairy operations, particularly on how a dairy operates. However, there are Federal and State Safe Drinking Water Regulations that have limitations on the amount of nitrates and bacteria that may be present in public water supply systems providing water to 10 or more households or 25 or more people. Nitrates and bacteria can be the result of dairy operations, although other sources such as septic tanks can also create these contaminants. These regulations only limit the allowable amount of these contaminants in the drinking water supplied in public drinking water, and have no direct application on how a particular dairy operates. There are no state water quality regulations that apply to private water systems such as an individual house with a domestic water well, so it is that well owner's responsibility to assure that his well is providing water safe for consumption.

Without adequate personnel either at the state or federal level to perform compliance inspections of CAFOs, the NPDES permit system is unlikely to meet EPA's intended goal of approximately 400 CAFOs in the Twin Falls area, only 29 have obtained a NPDES permit. The percentage of CAFO operators who have voluntarily applied for their NPDES permit is very small. An inordinate amount of time is spent on responding to illegal discharge complaints and working with the operator to control the discharge.

It is not practical to view EPA's CAFO permit program as a final solution to addressing surface water and groundwater concerns associated with dairies and feedlots. The issuance of permits is the first step in a process that will take the input and cooperation and coordination from a number of government agencies. Development of specific design criteria for waste management facilities, operation and maintenance considerations, and update of Idaho Waste Management Guidelines for CAFOs need to be addressed along with a viable ongoing compliance inspection and enforcement program in order to adequately control the problem.

Sludge and Septage: Idaho is not decided where to go with a sludge management program. EPA has developed the criteria for what a good state program would be but the Agency's technical regulatory requirements won't be out until January 1992 and the state wants to see the final version before making any decisions. Generally this program is not viewed as a high priority.

Currently the state water quality standards call for municipalities to have sludge management plans but this is not evenly implemented. There are liner requirements for municipal lagoons which are usually natural liners but sometimes plastic liners have been required. The requirement was that they have either an approved disposal site or such a plan, one or the other. Sludge land application guidelines were developed by the state a number of

years ago. The land application of wastewater permit program discussed earlier does not cover sludge. Some sludge is also disposed of in monofills and there are municipal composting plants in Couer d' Alene and Lewiston. The state is also concerned about septage disposal and has regulations governing the cleaning of septic tanks. Federal sludge regulations for municipal wastewater treatment plants may include septate land application requirements. State septage regulations may need to be updated.

The NPDES program is run by EPA in Idaho and municipal permit applicants are being asked to submit a sludge management plan as part of their application. Many of the applicants have been advised of this several times with limited success.

Mining: On January 1, 1988 the Rules and Regulations for Ore Processing by Cyanidation went into effect. The regulations established the procedures and requirements for the issuance and maintenance of a permit to construct, operate and close that portion of an ore processing facility which utilized cyanidation and is intended to contain, treat or dispose process water or process-contaminated water containing cyanide. The regulations specify procedures for obtaining a permit and set minimum performance standards for: 1) the design and construction of the cyanidation facility; 2) water quality monitoring and reporting; 3) process water containment and control during operation; and 4) seasonal and permanent closure of the facility. Site-specific design and operating flexibility are built into the program. The burden of proof is upon the permit applicant to demonstrate how water quality will be protected. Permit requirements may also vary depending on local factors. A form of financial assurance for detoxification of heaps and solutions at permanent closure is required before operation may begin. The regulations also provide procedures for public involvement, appeals modification or expansion of a facility and permit revocation.

"Registration" in lieu of a permit was required for facilities existing on January 1, 1988. Registration provides the Department with information needed to evaluate future expansions or modifications and provides a basis for compliance inspections. Prior to the March 31, 1988 deadline for registration, eight cyanide facilities registered as existing facilities. Of those eight facilities, only three are currently operating.

The fact sheet and draft permit are prepared in the appropriate DEQ field office with coordination by the central office. Engineering plan and specification reviews are done in the field offices. The permit is finalized in the central office and sent to the applicant under the Director's signature. Since January 1, 1988, fourteen applications have been received, two were returned as incomplete with no resubmittal, one is on hold at the request of the applicant, one is currently being processed, and ten permits have been issued.

It is difficult to estimate the number of future CN permit applications as so much depends on the current price of gold.

There will probably be at least one new application next year. This will be an expansion of a currently operating, registered facility. Tracking of permit "conditions", compliance inspections of operating facilities, and monitoring the construction of newly permitted facilities should receive the most attention next year.

Rathdrum Prairie Aquifer Protection Program: As mentioned previously there is a major effort in Northern Idaho to protect this highly vulnerable and productive aquifer under special funding provided by Congress for the past four years. This program is modeled after Wellhead Protection Program concepts and is being undertaken by IDHW and the Panhandle Health District. Several staff work at both agencies and are developing programs to better characterize the resource and develop programs for controlling nearly all potential sources of contamination. They are dealing with septic tanks, solid waste, agricultural chemicals, wood waste, pipelines, drain wells, etc. One special new program for dealing with hazardous materials was developed and is being implemented. Critical Materials Regulations have been developed under a recently adopted ordinance that require all those handling specified hazardous materials to report them to the Panhandle Health District. Secondary containment may then be required depending on the nature of the operation to prevent leaks and spills from reaching the aquifer. A major national conference is planned for the Spring of 1993 to showcase accomplishments of the aquifer protection program both in North Idaho and Spokane County, Washington which shares in the funding.

Indian Lands: There is limited interaction between the state and Indian Tribes on ground-water protection but IDHW has been asked to enforce in spill situations on occasion. Some of the Tribes have been active in pursuing ground-water protection issues especially the Shoshone-Bannock Tribe. There is a proposed policy in the draft Ground Water Quality Plan that states State/Tribal Agreements should be pursued when aquifers span Tribal boundaries.

Idaho Tribes are generally willing to respond to state requests for PWS monitoring and report results to the state but state enforcement does not apply.

The Shoshone-Bannock Tribe is the most aggressive of Idaho tribes in protecting ground water. Under CWA 106 and Pesticides grants they have developed a ground-water protection plan and adopted a ground-water Protection Act. Both the and the Nez Pierce Tribe have expressed interest in the Wellhead Protection Program and have made proposals for EPA demonstration grant funds.

Compliance Monitoring

Compliance monitoring is carried out by agencies in Idaho that have regulations covering activities with ground-water contamination potential. The major environmental regulator is IDHW and they have the primary role in inspections, etc.

IDHW: IDHW conducts compliance monitoring for the above mentioned programs they administer with inspections carried out primarily by the staff in their field offices. Each program has it's own scheme for setting priorities which are not necessarily tied to the value or vulnerability of the ground-water resource. With the ongoing ground-water vulnerability mapping program, this can begin to change since many programs can use this information for planning as was discussed earlier.

There is sufficient legislation to provide the basis for adequate compliance monitoring but for nearly all programs resources are limited. The state also does not want to overemphasize it at the expense of other activities. Generally enough monitoring cannot be accommodated within existing staff resources and there is insufficient oversight over regulated facilities responsible for self monitoring and reporting. Also better tracking systems for monitoring inspections and results is felt as a need by IDHW. Permit fees are generally not imposed to help cover the cost of compliance monitoring. Through the ongoing efforts of the Ground Water Council it is envisioned that interagency MOA's can be developed to allow better coordination and cooperation between agencies involved in monitoring.

IDWR: The primary ground-water protection aspects of IDWR's activities relate to driller licencing, well construction standards and the regulations for construction and use of injection wells. The permits for injection wells are usually issued for 10 years and they try to inspect at least once over that span preferably within two years of renewal. Owners and operators of injection wells are not normally subject to monitoring, record keeping and reporting requirements but these requirement can be imposed for ground-water protection purposes.

The construction of water wells requires a permit and fee. With the large number of wells that are constructed annually the monitoring and regulation of construction regulations is limited. IDWR can take action if owner or drillers are in violation of standards or if drillers have not submitted drillers reports.

Department of Agriculture: The 1989 chemigation law gives the Director right of entry to determine compliance with the law or the regulations promulgated thereto. The Director may also enter in an agreement with IDWR allowing any employee of that agency to determine compliance. The Director or his designee is also charged with making at least 250 annual audits of chemigation installations. Retail sellers and suppliers that have reason to know that agricultural chemicals will be applied by chemigation must insure that the sales recipient has a chemigation licence.

US Environmental Protection Agency: Since EPA administers the NPDES Program they are just getting started in compliance monitoring of sludge land spreading as newly required under this program.

Health Districts: The seven Health Districts provide oversight of the septic tank regulations and site inspections are made on

installations. The Panhandle Health District also oversees implementation of the Critical Materials Regulations discussed previously for protection of the Rathdrum Prairie Aquifer.

The Panhandle Health District also performs project reviews for EPA for possible ground-water impacts of proposed projects receiving federal financial assistance. This is done in accordance with Section 1424(e) of the SDWA outlining EPA's responsibilities once the agency designates a sole source aquifer (as was done for the Rathdrum Prairie Aquifer).

The Panhandle Health District also has a Cooperative Agreement with IDWR for the UIC program. The Health District receives and processes permit applications and does inspections, but IDWR retains permitting authority for injection wells.

Enforcement

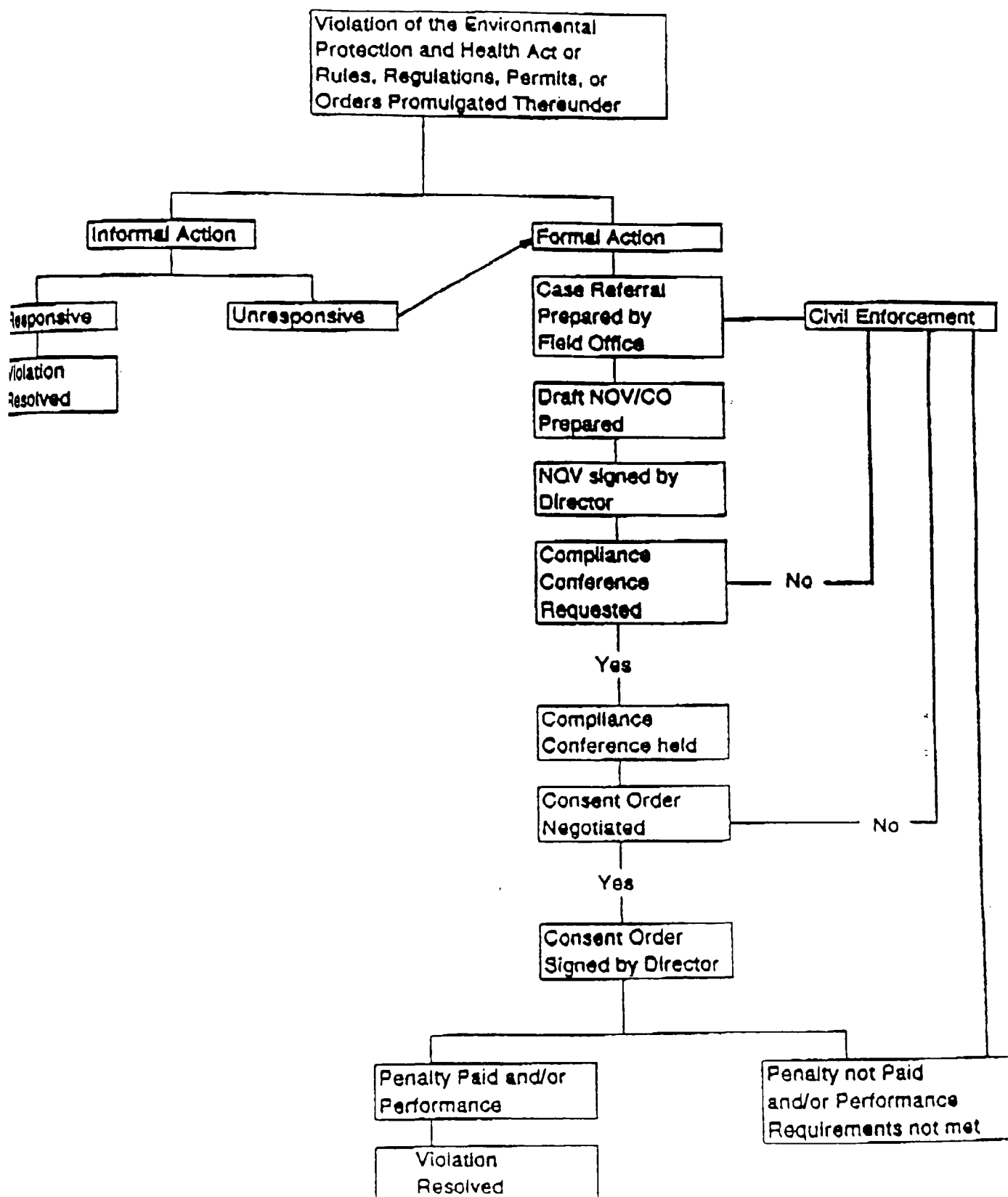
The agencies in Idaho with ground-water protection regulations have enforcement authority to take action when requirements are not met. Enforcement tools generally include notices of violation (NOV), consent orders (CO) and civil and criminal penalties. Both formal and informal actions can be taken. Each agency's penalty provisions are contained in the statutes and regulations for the programs they administer.

IDHW: Enforcement actions by IDHW that are related to ground-water stem from regulatory programs administered by the Water Quality Bureau and the Hazardous Materials Bureau (primarily RCRA). The RCRA program has been delegated to Idaho by EPA under the stringent equivalency requirements of that program. While IDHW lacks the authority to issue "orders", their NOV and CO processes have been deemed adequate for equivalency to the EPA RCRA enforcement regulations. With the exception of the PWS program, EPA has not delegated water quality authorities to the Water Quality Bureau and the enforcement procedures are largely the same as RCRA. Figures 4 and 5 provide a depiction of the options and administrative procedures that are available. Enforcement actions are initiated in the field offices and then sent to Boise where they are centrally handled. Ground water remediation is presently conducted under the authority of the Water Quality Standards. Legislation is needed to provide more authorities.

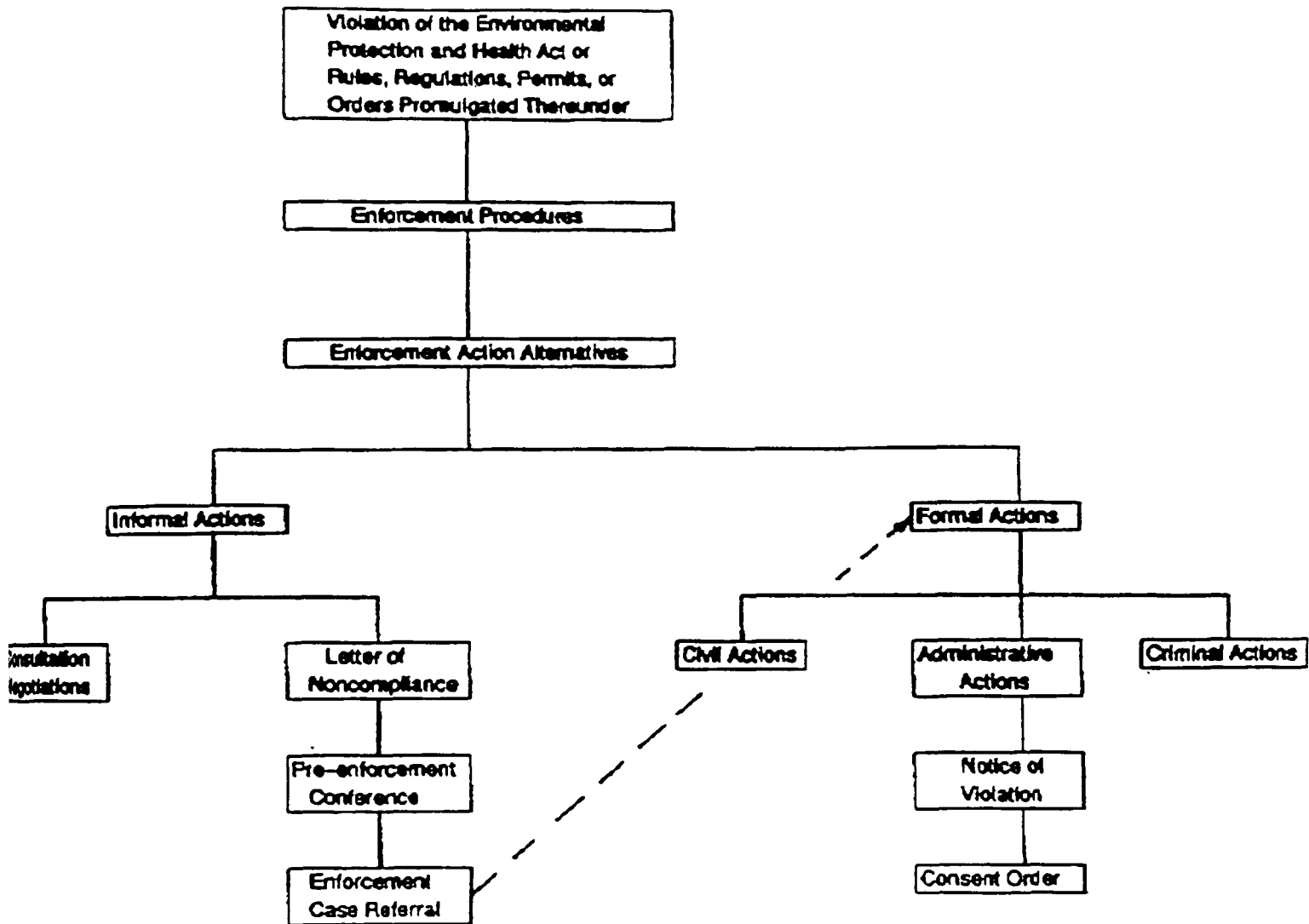
In general there is adequate legislation to provide the basis for regulatory enforcement but regulations are lacking as in the UST program. There is lack of adequate staff for enforcement activities and IDHW feels that enforcement procedures need improvement and they are working on improvement. The authority to issue "orders" would also help streamline the enforcement process. One of IDHW's priorities is to develop a better tracking system for keeping up to date on the status of enforcement actions.

IDWR: Title 42, Chapter 39 related to UIC wells provides IDWR the authority to seek injunctive relief, levy civil and criminal penalties and issue cease and desist orders. The penalties can be

ADMINISTRATIVE ENFORCEMENT ACTION PROCESS



ENFORCEMENT ACTION ALTERNATIVES
WATER QUALITY BUREAU



applied to those who construct, operate, maintain, convert, plug or abandon wells in a manner that may result in injection of a hazardous or radioactive waste in violation of Idaho Code.

Under the well construction standards owners or operators allowing waste contamination of ground water or causing a well not to meet construction standards are subject to civil penalties. Drillers who violate construction standards are subject to the penalty provisions of Title 42.

Department of Agriculture: Under the chemigation law, anyone conducting chemigation without a licence will be liable to civil penalties fines over and above under the general penalty provisions of Idaho Code.

Fines are to go to the water pollution control account. The Department can also issue stop work orders for violations of chemigation rules. Penalties escalate with the frequency of violation. A first violation within a five year period is to result in warning letter from the Director. A second violation within a five year period is to result in a misdemeanor. Upon a third or subsequent violation, within a five year period, the violator will be subject to a misdemeanor and be fined \$10,000 for each separate violation or \$1,000 per day for continuing violations whichever is greater. These penalties are in addition to others provided by law for pollution of waters of the state.

Remediation

The draft Ground Water Quality Plan developed by the Ground Water Council contains a proposed remediation policy. It states that: "The policy of the state of Idaho is where contamination resulting from human activities produces a significant potential for the impairment of an existing or projected future beneficial use of ground water, remediation should be conducted when feasible and appropriate. Decisions for when to initiate remediation, the extent of remediation needed and the appropriate remedy should take into consideration site specific risks to health and the environment, the cost of remediation, the technological limitations and the need to maintain or recover beneficial uses of ground water and interconnected surface water." The proposed policy includes recommendations to develop remediation regulations and what they should include, concepts for what the definition of responsible party should be and the need for public participation.

A summary of current ongoing remediation activities is provided below.

Superfund Type Activities: Idaho does not have any superfund type legislation similar to the federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) enacted by Congress in 1980 and reauthorized in 1986. All CERCLA type work in Idaho is federally funded and EPA, INEL, DOD and BLM provide funding to the Hazardous Materials Bureau to assist in overseeing and management of the National Priority List (NPL) sites in Idaho. There are nine NPL sites in Idaho four of which have ground-water

problems. Responsible parties are encouraged to undertake voluntary cleanup actions, but enforcement options and/or federal superfund monies are used, when necessary, to facilitate site cleanup. Federal and state criteria or standards (e.g. MCL's, ACL's, water quality criteria, etc.) are typically used to establish ground-water cleanup goals. Specific ground-water remediation techniques are selected on a site specific basis after consideration of possible options. All contractors or responsible parties conducting superfund work for EPA or under EPA oversight are required to submit ground-water monitoring data to the Agency according to the formats specified in the regional ground-water order.

RCRA Corrective Action Sites: Idaho has RCRA interim authorization for corrective action at old waste management facilities where contamination problems exist. They are in the early stages of the program and are doing facility assessments to determine what is out there.

Leaking Underground Storage Tanks (LUST): Idaho receives a LUST Trust Fund grant from EPA to fund staff to enforce Idaho's Water Quality Standards and oversee state-led and responsible party-led investigation and cleanup activities. There are a large number of LUST sites in the state as discussed previously and field staff are fully committed. It is expected that many additional LUST sites will be discovered when Insurance Fund audits are made of applicants for the low cost insurance. Only those meeting the federal standards are eligible for the insurance.

Contamination Log: In 1985 a contamination log project was initiated to help track contamination incidents and maintain an ongoing record. After initial records of historical information were obtained it was intended that field staff update the log on a periodic basis as new contamination information was revealed. These updates did not materialize on a reliable or consistent basis and the log was largely put on hold. In 1990 the contamination log activity was resumed as it was seen as a potential tool in answering the increasing number of environmental audit requests on specific areas and as a possible database for tracking enforcement proceedings allowing sites to be prioritized and tracked. The computer group plans to begin developing a new database system in late summer 1991. The groundwater unit is also trying to improve more consistent reporting on contamination incidents by field staff.

INEL: There are 350 identified waste units at INEL containing a wide variety of potential contamination sources. Three locations at INEL have releases of hazardous waste beyond the waste site boundaries. The state has worked with DOE to develop workplans for sampling soil and regular meetings are held to hold DOE accountable for completing scheduled activities. Hazardous Materials Bureau staff have reviewed summary assessments characterizing contaminants at numerous waste units and UST's. Ten waste unit closure plans that were submitted in FY90 were found inadequate and an additional 18 are expected to be submitted in FY91. EPA created a technical

review committee to help solve hydrogeological problems related to environmental restoration at INEL. This committee is made up of specialists from DOE, DOE contractors EPA, and EPA contractors, USGS and the state. DOE is also preparing a Programmatic Environmental Impact Statement to serve as a planning document for future environmental restoration at DOE facilities nationwide.

IV. DEFINING ROLES WITHIN THE STATE AND THE RELATIONSHIP TO FEDERAL AGENCIES

IVA. State Roles

As discussed previously several state agencies have regulatory authority over activities that affect ground-water quality. The responsibilities and roles of each are discussed briefly below:

Idaho Department of Health and Welfare

The Idaho Department of Health and Welfare (IDHW), Division of Environmental Quality administers most of the environmental protection programs in Idaho and is charged by the legislature as being the primary agency for ground-water quality protection. The draft Ground Water Quality Plan being developed by the Ground Water Quality Council also contains a policy assigning IDHW with lead for regional and local ground-water monitoring. IDHW administers the programs for drinking water, ground-water protection, wellhead protection, solid waste, hazardous waste, sewage construction grants, agricultural pollution abatement grants, non-point source pollution, septic tanks, sludge land spreading plans, land application of wastewater, and currently assists EPA in implementing the underground storage tank, leaking underground storage tank, and Superfund programs. In this capacity they develop regulations, write permits, and provide compliance monitoring and enforcement. They also have a major role in environmental oversight at INEL along with other agencies.

Idaho Department of Water Resources

The Idaho Department of Water Resources administers programs dealing with water quantity issues and is charged by the legislature with being the agency responsible for the natural resources GIS system and for collection of baseline data on the state's water resources. The draft Ground Water Quality Plan developed by the Ground Water Quality Council also contains a policy assigning IDWR with lead for ambient ground-water monitoring. IDWR is also responsible for protecting ground-water quality through it's permitting program for underground injection wells and the water well construction standards and driller licencing.

Idaho Department of Agriculture

The Idaho Department of Agriculture is charged by the legislature with being responsible for regulating the use of agricultural chemicals as related to ground-water protection. The draft Ground Water Quality Plan developed by the Ground Water Quality Council contains a policy stating that agrichemicals will be managed so that potential contaminants will not impair beneficial uses of ground water below the crop root zone. The Department has lead responsibility for developing the state's Pesticide Management Plan

as called for in EPA's draft national Pesticide in Ground-Water Strategy. The Department also has responsibility for administering and enforcing the 1989 Chemigation Law.

State Fire Marshal

The State Fire Marshal's Office has responsibility for Certified Tank Technician Program established by the legislature in 1990 to help assure that persons that install, remove, and leak test tanks meet established requirements.

State Insurance Commissioner

The 1990 legislature established the Petroleum Tank Insurance Fund that provides low cost insurance to tank owners that can demonstrate that their tanks are not leaking and are in complete compliance with federal technical requirements.

INEL Oversight Program

This special program enacted by the legislature has the program administrator reporting to the Deputy Director of IDHW. The program is guided by an internal steering committee made up of these two individuals plus the Administrators of the Divisions of Health and Environmental Quality at IDHW. Programs submit proposals for resources tied to specific program objectives with the steering committee setting priorities and approving workplans for allocation of funds. This mechanism has been formalized with IDWR through a Memorandum of Understanding. Affected bureaus at IDHW must submit a workplan with measurable objectives to maintain there Oversight funding and must participate in the INEL QA/QC program.

Idaho Geological Survey

The Idaho Geological is closely associated with the University of Idaho and studies and reports on geology, surface and ground water resources, and the energy resources in the state. They maintain an extensive list of publications, etc. that are available for distribution.

Coordination Mechanisms

The Ground-Water Quality Protection Act of 1989 clearly recognized the need for inter-agency coordination and public participation in protection of the ground-water resource. It mandated the creation of a Ground Water Quality Council representing a wide variety of interests to guide the development of the Ground Water Quality Plan required by the law. The Council is to exist for up to two years after approval of the plan and will then be disbanded if not reauthorized by the legislature. During the two years after plan adoption, and thereafter if reauthorized, the Council is to oversee progress in implementing the plan.

Once the plan is approved it is envisioned that more detailed memorandums of agreement will be developed among the various

agencies to better outline specific roles and responsibilities in implementing the plan.

As discussed earlier many new agricultural initiatives related to ground water such as the Clean Water Act Section 319 non-point source program, the President's Water Quality Initiative and the 1990 Farm Bill provide a great deal of opportunity if coordinated right. IDHW has committed FTE to maintain a broad perspective on the overall picture to insure opportunities aren't missed and that duplication of effort doesn't occur. The Department of Agriculture's FTE will also be increased in July 1991 allowing more resources to be available for coordinating on these new programs. The Farm Bureau has also taken an active role in water quality issues and has been working with state agencies on ground-water monitoring programs.

IVB. Local Roles

The Ground Water Quality Protection Act of 1989 contains a specific section on the duties of local government in ground-water protection. Local units of government are directed to incorporate provisions of the adopted statewide Ground Water Quality Plan in their programs and are encouraged to implement ground-water quality protection policies within their jurisdictions. Implementation of such local policies, however, must be consistent with the state plan and not preempted by the laws or regulations of the state.

All units of state and local government are directed to cooperate with the Ground Water Council and are to assist state regulatory agencies in disseminating public information on protection of ground-water quality. They are also to cooperate in the collection of ground-water quality data and in research on technologies for preventing or remedying ground-water contamination. Any unit of government which issues a permit or licence dealing with the environment is to take into account the effect of the activity on ground-water quality and may attach conditions to the licence or permit to mitigate potential adverse effects. They may not, however, require permits or licenses that are not otherwise authorized by law. Also, if a state agency issues a permit or licence dealing with the environment, and that agency considers the impact of that activity on ground-water quality, no other unit of government may impose additional prohibitions or conditions that impact the rights of the permittee.

The ground-water quality law also directs local governing boards amending, repealing, or adopting comprehensive plans to consider what such action would have on the quality of ground water. The draft Ground Water Quality Plan developed by the Ground Water Council also contains two proposed policies on state/local issues. The first states that all units of local government shall integrate the state plan into their existing programs and planning activities and are authorized and encouraged to implement ground-water quality protection policies within their respective jurisdictions. The second states that local governments shall not adopt ground-water quality ordinances, regulations, standards, etc. that are not consistent with state plan or impose duplicative requirements on the public.

Local unit of government can adopt ground-water protection ordinances, etc. which cover protection measures not covered by state programs. Such is the case in North Idaho where the Panhandle Health District used the ordinance approach to develop Critical Materials Regulations requiring secondary containment measures for those handling specified hazardous materials. The ground-water protection authorities of local government, however, have become controversial during development of the Ground Water Quality Plan because of the wording in the ground water protection act that was discussed above.

IVC. Relationship with Federal Agencies

State ground-water protection regulatory agencies generally have their primary interaction with EPA at the federal level although other agencies are involved as discussed below. The relationship with EPA varies depending on the nature and status of the pollution control program involved. On overall protection of the ground-water resource the state works with EPA on a voluntary cooperative basis to work towards building a comprehensive program through federal financial and technical assistance. Other programs originate from a national statutory mandate and allow delegation from EPA to the state if requirements are met. In Idaho the IDWR has been delegated the UIC program and IDHW has been delegated the RCRA and PWS programs. EPA provides financial assistance and maintains oversight of the state programs.

For other programs where the state has not sought delegation they receive funding to assist in implementation such as in the NPDES and UST programs. For some programs EPA has no authority such as for septic tank regulation and land applied wastewater permitting. Other programs such as Clean Water Act Section 319 for nonpoint source pollution control require that the state develop an EPA approved plan to be eligible to receive funding for implementation.

The Idaho Department of Agriculture will be working closely with EPA over the next several years in developing and implementing the state's Pesticide Management Plan as called for in the proposed national Pesticides in Ground-Water Strategy. This will require close coordination between the pesticides and ground-water programs at both EPA and the state.

The state's relationship with INEL is a special oversight program with DOE and it's purpose and scope were discussed previously.

With the increased focus on agricultural practices and water quality the state needs expanded coordination and interaction with USDA and its various outreach and financial and technical assistance programs. The state has been a leader in this area and the 319 non-point source program, the President's Water Quality Initiative and the 1990 Farm Bill provide many new opportunities to reduce surface and ground-water quality impacts by the adoption of new and improved BMP's.

The state has worked closely with USGS on a number of monitoring and resource characterization projects over the years as was discussed previously. The USGS has also been a key player in the vulnerability mapping program currently underway. The new NAWQA program being implemented by USGS is a major long term program which includes parts of Idaho as initial study areas and should benefit state ground-water protection efforts greatly. USGS is also involved in the INEL Oversight Program.

The BLM and the USFS have been heavily involved in nonpoint source issues and work closely with both EPA and the state in addressing these issues. The BLM also has a cooperative agreement with IDHW

to fund a position in the Hazardous Materials Bureau for assessing pollution from BLM's extensive land holdings in Idaho. Approximately 40% of the permitted landfills are on lands leased to counties by BLM.

The draft Ground Water Quality Plan contains a proposed policy related to federal consistency. It states that it is the policy of the state of Idaho that ground water underlying all federally owned lands be provided with the same level of protection as other ground waters of the state. For implementation it states that federal agencies should comply with the plan and any ground-water standards that may come about as well as incorporating all applicable state and local ground-water protection provisions.

V. RESOURCES

VA. Financial

The state of Idaho is heavily dependent on federal funding for many of its environmental programs. For example, Superfund activities in Idaho are entirely funded with federal dollars from various agencies. Getting adequate state funding to administer the PWS program has been a problem and with the many new responsibilities added by the 1986 amendments to the SDWA it is uncertain whether the state can maintain primacy. Currently EPA provides about 70% of the funding. The Department of Agriculture has gotten an increase for staff support in dealing with water quality issues with EPA now funding about 1/3 of the program. The IDWR receives EPA funding to administer the UIC program which requires a 25% match.

The ground-water protection unit at IDHW has utilized funding from several sources to support its activities. These include Clean Water Act 106, 319 and 205(j) funding, some state funds and funding from DOE for the INEL Oversight Program. Also for the past four years Congress has provided substantial special appropriations to be used for programs to protect the Rathdrum/Spokane Prairie Aquifer in both Washington and Northern Idaho. Substantial progress is being made.

For a number of years the state has supported the Agricultural Pollution Abatement Plan with funds from Water Pollution Control Account. Funds for this account are generated from specially generated tax revenues. Potential sources of funding for these type of activities have considerably expanded with funding of the 319 non-point source program, introduction of the President's Clean Water Initiative and passage of the 1990 Farm Bill.

The Ground Water Quality Protection Act of 1989 mandated both an ambient monitoring program and regional and local ground-water monitoring programs. To date funding has been provided to IDWR for ambient monitoring but IDHW hasn't been provided funding for the local and regional program for which they are responsible.

The draft plan will make recommendations for how the provisions of the plan should be funded. When the final proposed plan goes to the legislature next January, many issues on the adequacy of financial resources will be decided depending on the action taken.

VB. Personnel

The organizational structure in the Water Quality Bureau at IDHW has made coordination on ground-water protection somewhat simpler than in other states. The ground-water protection, PWS, UST and LUST programs have been in units supervised by the ground water/drinking program manager. A current reorganization effort may undo this however. The ground-water protection unit has a supervisor and 10 staff members working on the Ground Water Quality Plan, the land applied wastewater permit program, the vulnerability mapping project, the agricultural water quality program, ground-water monitoring efforts, the wellhead protection program and soil science and hydrogeologic technical support. Each of the field offices also have staff that deal with ground-water issues. The following provides staffing levels for other programs impacting ground water (including field staff) and the percentage of funding support derived from federal sources.

<u>Program</u>	<u># of Staff</u>	<u>% Federally Funded</u>
PWS	14	70
UST/LUST	11	90
RCRA	17	49
CERCLA	20	99
Solid Waste/Sludge	1	0
Nonpoint Source	24	75
Laboratory	56	16
Data Management	6	40

The Department of Agriculture has two FTE working on water quality issues and IDWR has 3 staff working on the UIC program.

APPENDIX A

STATE OF IDAHO

POLICY STATEMENT FOR GEOGRAPHIC INFORMATION SYSTEMS

Background

In the past decade, governmental agencies and private industry have developed increasingly powerful computer systems designed to process and analyze map information. Collectively called geographic information systems (GIS), these systems have the potential to significantly increase efficiency and reduce costs to the State for conducting land, water, demographic, and other resource management activities.

GIS technology, much like the computer field in general, is in a period of dynamic evolution and growth. Moreover, GIS technology is but one of a number of related technologies (e.g., remote sensing, and digital cartography) that could assist state agencies in carrying out their mandated responsibilities more efficiently. Indeed, these technologies are becoming ever more closely linked, and are part of the information management activities of Idaho. Within this framework, it is imperative that emphasis be placed on coordination between the departmental organizations currently using or planning to use these technologies. This coordination will facilitate exchange of data between agencies.

Objectives

- A. Encourage and assist in the development, implementation, and use of geographic information systems to meet current and future statewide and departmental missions and objectives.
- B. Establish an effective management and support framework for the orderly growth of geographic information system technology within the State.
- C. Achieve and maintain levels of hardware, software, and data compatibility in accordance with State standards and promote the sharing of technology, research, applications, and data resources throughout the State of Idaho.
- D. Encourage cooperative work among state agencies, universities, federal agencies and private associations to test, demonstrate, and complete cooperative projects within their mandated responsibilities.
- E. Coordinate development of statewide information predicated upon agencies implementing their own geographic information systems.
- F. Develop a central catalog of geographic information for current and future agency and statewide applications.

Policies

It is the policy of the State of Idaho to encourage the utilization of geographic information systems when such use enhances the overall cost effectiveness of administrative functions or improves productivity. It is also the State's policy to acquire, and support geographic information systems through well planned implementation strategies. These strategies include:

a. Develop and maintain data standards for base category data, statewide exchange data and, as needed, project data.

b. Develop and maintain contracts for state agency use covering the purchase of geographic information systems software and hardware.

Management and Organizational Responsibilities

A. The Idaho Geographic Information Advisory Committee (formerly the Idaho Mapping Advisory Committee) will be responsible for developing data standards for geographic information systems.

B. The IGIAC will be responsible for the development of specifications for the contract purchasing of geographic information systems hardware and software in conjunction with the state purchasing agent and the state data processing coordinator.

C. The acquisition and application of geographic information systems hardware and software will be accomplished in accordance with each agency's approved automated data processing plan.

D. The IGIAC will establish a standing GIS subcommittee to accomplish the following:

1. Hold quarterly meetings for information exchange and work status review. Identify opportunities for exchange of data, joint production of data or the contracting of work between state agencies.

2. Review needs for geographic information and determine data categories necessary for statewide applications. Establish and maintain an inventory of each category's collection status.

3. Provide GIS informational and educational opportunities as needed.

4. Work with agencies to implement the objectives of this policy.

APPENDIX B

IDAHO MAPPING ADVISORY COMMITTEE

RECOMMENDED STANDARDS FOR DIGITAL CARTOGRAPHIC DATA January 29, 1988

GEOGRAPHIC BASE DATA - This includes digital cartographic data and information that are captured and stored as a part of a statewide geographic data base. These data elements must be at a level of accuracy which make them suitable for interchange with federal and local government entities. Digital Line Graph (DLG) - as defined by the U.S. Geological Survey (USGS), National Mapping Division is the recommended standard for these data. This implies an accuracy of plus or minus 40 feet. This standard is used by the USGS in the production of their 7.5 minute quad (1:24000) maps. Any data which are digitized from a 7.5 Quad map should conform to this DLG standard.

IDAHO GIS DATA - Unique state data and information developed for use in Idaho Geographic Information Systems (GIS) are intended for interchange among Idaho State Agencies. These data are "system" specific. Vendors represent geographic information and digitized data in different ways. They may or may not include facilities for the interchange of geographic data with other vendor's systems. When the state, through the Idaho Mapping Advisory Committee (IMAC), establishes a recommended GIS standard, this category of data can be captured and remain in the standard system format. This category includes map data captured from scales other than 1:24,000, including the 1:100,000 scale. As DGL standard are adopted and published by USGS for other map scales, they can also be adopted by IMAC. Until that time, state agencies can continue to collect data with available systems and software.

PROJECT SPECIFIC DATA - This includes the collection of data to generate a report or meet the needs of a single agency. The data and information collected are not intended for interchange with other agencies or government entities. No standard is appropriate to the specific project or problem which is being addressed.

APPENDIX C
IDAHO ARC/INFO USERS

COMPANY/AGENCY	LICENSE TYPE	CONTACT	
Geographic General, Inc.	1	Andy Little	343-1181
Power Engineers, Inc.	2	Mary Ann Mix	788-3456
Morrison-Knudsen Co.	2,1	Kim Johnson	386-5000
Potlatch Corporation	2	Steve Smith	799-1288
Boise Cascade Corporation	2	Brad Holt	384-7632
U.S. Forest Service			
Pest Management	1	Joy Roberts	364-4224
Boise National Forest	2,2,1	Rich Jeffs	364-4211
U.S. Soil Conservation Svc	1	Doug Harrison	334-1525
U.S. Geological Survey			
Water Resources	2	Molly Maupin	334-9012
University of Idaho			
Forestry	2	Michael Scott	885-6960
Landscape Architecture	2	Toru Ottawa	885-7729
Geography	1	Karl Chang	885-6240
ID Dept of Health & Welfare	1	Mike Cook	334-5907
ID Dept of Water Resources	2,2,1,1,1	Hal Anderson	334-7888
ID Dept of Lands	2	Dave Gruenhagen	334-3864
Nez Perce Tribe	1	Jack Bell	843-5416

1-PC ARC/INFO License
2-Workstation ARC/INFO License