

Wyoming  
Nonpoint Source  
Management  
Plan  
Update

March, 2000

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## EXECUTIVE SUMMARY

### PURPOSE

This Wyoming Nonpoint Source Management Plan is intended to serve several purposes. The following are among the reasons why this plan is being updated at this time: 1) the Nonpoint Source Management Plan identifies actions addressing the Environmental Protection Agency's nine key elements of an effective state nonpoint source program; 2) it provides the Department of Environmental Quality, Water Quality Division with an instrument to measure success in meeting federal water quality goals and the Wyoming Environmental Quality Act (W.S. 35-11-102), while utilizing the efforts and input of local citizens in prioritizing and addressing water quality concerns; 3) the plan will also serve the department as a monitoring tool in distinguishing effectiveness and efficiency of program activities and making adjustments to maximize the success of the nonpoint source program and improve the quality of the state's waters.

### VISION

The Wyoming Water Quality Division's Nonpoint Source Program intends to work through voluntary and incentive methods to preserve and restore the quality of Wyoming's surface water and groundwater resources so they continue to be available for designated uses. To do this, the Nonpoint Source Program shall rely largely on local voluntary implementation by individual landowners/users in a cooperative effort to address water quality improvements through watershed planning.

### Introduction

"The two main motivating factors for protecting water quality are economics and quality of life." - (Wyoming Nonpoint Source Task Force Strategic Plan, 1996)

Quality of life goals depend upon recreational and economic opportunities as well as a healthy lifestyle. Citizens want to be assured of clean, healthy drinking water for themselves and for future generations. They not only value a safe drinking water source, but they also value the recreational and business opportunities which are dependent on clean water. This motivates citizens to participate in protecting the water resource which is important in meeting their quality of life goals.

Economically, water quality protection and improvement can be shown to be cost effective. For example, communities implementing Wellhead Protection Programs can obtain variances from certain types of costly monitoring requirements. Developing new drinking water sources is almost always more costly than protecting an existing source. Healthy watersheds produce less sediment, thus reducing treatment costs for water utilities. Property values and bank loans for property are dependent on availability of potable water sources. Contaminated irrigation supplies have the potential to devastate crops. The livelihood of livestock producers is linked to clean and reliable water for their agricultural operations.

Long range plans developed by most Conservation Districts in 1995 and 1996 identified water quality as a high priority in local communities. While citizens inherently recognize the value of their water resources, they may not recognize how they personally may affect, nor know how to protect, water quality. The Water Quality Division's (WQD) voluntary programs are aimed at providing information, education, demonstration, technical assistance, and cost-share assistance to local sponsors for implementation of pollution prevention measures.

Additionally, the program offers economic incentives to local government entities, as well as citizen groups, to implement water quality planning and improvement projects. Cost-share grants can be used to conduct studies, identify which Best Management Practices are useful in curbing NPS pollution, and implement new water quality improvement technologies.

Nonpoint sources of pollution are diffuse in nature, difficult to assess, and result from land use activities in which contaminated runoff flows into surface water or percolates into ground water. Many factors, such as precipitation, soil type, slope, geology, vegetative cover, depth to groundwater, and distance to surface water can affect whether a land use will cause nonpoint source pollution. The site-specific nature of these factors, coupled with local economic and cultural considerations, are conducive to prevention and restoration activities which are best addressed and implemented through local initiatives. This is one reason why the Nonpoint Source Program relies largely on local voluntary implementation by individual landowners and/or users in a cooperative effort.

The Wyoming Water Quality Division's Nonpoint Source, Wetlands, and Wellhead Protection programs can best fulfill their mandate to protect and enhance water resources by supporting and facilitating these locally initiated nonpoint source efforts. An approach which addresses all sources of pollution, and each individual contributor within a watershed, is the most efficient and effective method for realizing local water quality gains, as well as the economic and quality of life goals, which are dependent upon water resources. However, because local institutional capacity is often insufficient to handle such large-scale watershed projects, the WQD voluntary programs are also intended to assist in increasing this capacity.

This updated Nonpoint Source Management Plan is intended to help the agency and local groups focus resources and activities over the short term (three to five years) and over the long term (ten to fifteen years). During the next five years, the WQD's voluntary programs will utilize a variety of tools to assist in development of local initiatives. These tools will include education, training, technical assistance, demonstration projects, financial assistance, assessment, and wetland banking. Nonpoint source program funding will be targeted both at developing the tools (i.e., education, technical assistance, demonstration, and assessment) and at cost-share funding for watershed planning and implementation efforts, recognizing that the scope of watershed efforts will be customized to accommodate the institutional capacity of the coordinating project sponsor. WQD will then assess the success of the short term implementation of these efforts at both the state and local levels. Those efforts that show success in improving water quality and local involvement will be maintained over the remaining five to ten year period of this plan. Those efforts that need improvement will be either improved or replaced with activities deemed to be more successful, and will be reassessed after an appropriate evaluation period (two to five years). Federal activities will likewise be monitored over the short and long terms. WQD will

work with the federal agencies in cases where their activities are falling short of the goals and objectives in this plan.

Although the Water Quality Division retains authority to take enforcement actions for violations to Wyoming Water Quality Standards, a voluntary approach to nonpoint source control is emphasized. It is the policy of the division that enforcement action may be taken only where water quality standards violations have been documented based on credible data, and where Best Management Practices (BMPs) have not been implemented in good faith.

In order to ensure that the water-quality protection measures of the nonpoint source program are properly implemented, the importance of public education and participation must be stressed. Recognizing the need for such education and participation, the Wyoming Department of Environmental Quality is continuing to execute a comprehensive outreach and education strategy. One emphasis of the education strategy is that the public become aware of the extent of the problems, and better understand how an individual's activities might contribute to those problems. Additionally, the appropriate BMPs must be disclosed to the potential users and made available to treat identified sources of nonpoint pollution. The education strategy addresses the financial and technical assistance that may be available to install needed BMPs. Finally, education and public awareness will be emphasized as a part of all demonstration projects.

While education, assessment, and financial assistance for watershed efforts will be ongoing activities, in time, there will be decreased emphasis on demonstration projects. As institutional capabilities grow, technical assistance will still be needed, but there should be decreased demand for these services. Assessment will continue to be a priority in the program, since it provides the basis for verifying success, identifying problem areas, and prioritizing projects for funding.

### Overarching Principles

The following three statements represent the top priorities for future actions of programs within the Water Quality Division. It is anticipated that all goals, objectives, and actions found in this plan will be derived from the ideas identified in the following three statements:

1. Continue an ongoing assessment of the statewide condition of surface and groundwater in Wyoming aimed at identifying risks and impairments on a watershed basis.
2. Implement a proactive information and education program to enhance the public's knowledge of nonpoint source pollution, source water protection, and wetland values to encourage participation in voluntary efforts to prevent, reduce, and eliminate pollution of the state's water resources.
3. Achieve protection of the quality of Wyoming's water resources through the targeted application of regulatory and non-regulatory methods.

## **LEGAL REQUIREMENTS AND AUTHORITY**

### **Federal Requirements**

The federal Water Quality Act of 1987 (also known as the Clean Water Act) established a new direction for the water quality efforts of the nation. Nonpoint source water pollution, which is pollution which is not regulated as point sources and caused by diffuse sources, is recognized as a serious impediment to meeting the goals of the Clean Water Act. The Act states specifically:

“...it is the national policy that programs for the control of nonpoint sources of pollution be developed and implemented in an expeditious manner so as to enable the goals of this Act to be met through the control of both point and nonpoint sources of pollution.”

In keeping with this philosophy the Clean Water Act was amended to include Section 319 Nonpoint Source Management Programs. This section provides the legal basis for the implementation of nonpoint source programs and identifies the requirements states must meet to qualify for assistance under the Act. Section 319 stresses two items which must be completed by a state prior to consideration for grants to ameliorate nonpoint source problems. These items are:

1. State Assessment Report; and
2. State Management Program.

The assessment report provides an analysis of nonpoint source water quality problems. The management program provides a direction for correction of these problems. The Wyoming Nonpoint Source Assessment was first completed in 1988 as part of the Statewide Water Quality Assessment Report, commonly known as the 305(b) Report. The 305 (b) Report, in conjunction with the Nonpoint Source Management Plan, provides the basis for nonpoint source decision making in Wyoming.

Section 319 (b) of the Clean Water Act describes the contents of the state management program. Implementation of the management program is intended to control pollution from nonpoint sources.

### **State Authority**

The policy and purpose of the Wyoming Environmental Quality Act as stated in § 35-11-102 is to “enable the state to prevent, reduce and eliminate pollution; to preserve, and enhance the air, water and reclaim the land of Wyoming; to plan the development, use, reclamation, preservation and enhancement of the air, land and water resources of the state; to preserve and exercise the primary responsibilities and rights of the State of Wyoming; to retain for the state control over its air, land and water and to secure cooperation between agencies of other states, interstate agencies, and the federal government in carrying out these objectives.”

Section 35-11-109 (a) (iii) and (viii) provides the director of the Wyoming Department of Environmental Quality with adequate authority for securing intergovernmental cooperation in implementing the Water Quality Management program. Further, §35-11-114 states that “(a) The advisory board shall recommend to the council through the administrator and director, comprehensive plans and programs for the prevention, control and abatement of air, water, and land pollution and the protection of public water supplies.”

The Water Quality Division (WQD) of the Wyoming Department of Environmental Quality (DEQ) is the designated agency for Water Quality Management in the State of Wyoming.

#### State Attorney General Certification

Upon production of a final plan which has received full public review and Water and Waste Advisory Board approval, the Water Quality Division will submit the plan for certification by the Wyoming Attorney General. Section 319(b)(2)(D) of the Clean Water Act requires certifications of legal authority to implement such management programs.



## **CHAPTER 1 - PROGRAM ELEMENTS, OBJECTIVES AND STRATEGIES**

### **Introduction**

The material in this chapter presents the goals and objectives of the Wyoming DEQ nonpoint source management program. The discussion found within this chapter is intended to meet EPA's key elements numbers 1 and 2. A complete list and description of EPA's key elements can be found in Appendix D of this document. There are many facets to the nonpoint source program, and DEQ recognizes the need for strong partnerships to implement the program successfully. This chapter is, therefore, broken into discussions of the various facets of the program. These facets are called "program elements".

The program elements discussed within, when viewed as an assembly of activities, describe the nonpoint source program undertaken in Wyoming. Some program elements are implemented directly by DEQ, while others are implemented by sister state agencies and/or federal agencies. DEQ has contacted, and received descriptive material from, each program, state agency, and federal agency mentioned in this chapter. The goals and objectives are a compilation of discussions with these individual programs and agencies. The goals and objectives specific to the management of nonpoint sources of pollution can be found near the end of this chapter, while the schedules and timelines for implementation have been placed in Chapter 3.

### **EPA's Key Elements of this Chapter**

1. The state program contains explicit short- and long-term goals, objectives, and strategies to protect surface and ground water.
2. The state strengthens its working partnerships and linkages with appropriate state, tribal, regional, and local entities (including conservation districts), private sector groups, citizens groups, and federal agencies.

Strengthening partnerships and linkages is a continuous process. The Department of Environmental Quality will continue to actively promote coordination and cooperation with state, tribal, regional, and local entities, private and nonprofit organizations, and federal agencies to increase the effectiveness and efficiency of the nonpoint source pollution program. Outreach efforts will include regularly scheduled meetings, effective information dissemination, soliciting and encouraging participation in program planning, renewing existing memorandums of agreement and developing new agreements when opportunities arise.

Maintaining uniformity of federal land management decisions with state nonpoint source program goals will be accomplished through periodic meetings with agencies, memorandums of understanding, agency involvement in working groups, task forces, and the states input on environmental assessments and environmental impact statements.

## WYOMING STATE PROGRAMS

### **ORGANIZATION FOR NONPOINT SOURCE MANAGEMENT**

The intent of the Wyoming Nonpoint Source Management Plan is to encourage a voluntary approach to controlling and preventing nonpoint source pollution. Through public education and information, financial assistance, and cooperation with management agencies, it is felt that the majority of nonpoint sources of pollution can be corrected or prevented. The use of Section 319 funds for demonstration projects to test Best Management Practices (BMPs) is critical to the program. Specific projects will be the basis for building statewide programs for nonpoint source categories. However, if violations of the state's Water Quality Standards occur, and BMPs have not been implemented, the WQD has the legal authority to take enforcement action based on Chapter 1, Wyoming Water Quality Rules and Regulations. Formal enforcement action would not be taken until conference and conciliation failed. Conference and conciliation would consist of attempts to obtain commitments to voluntarily implement BMPs, or modify BMPs to ensure standards are met. Upon failure of such negotiations, enforcement action may commence.

Coordination of management responsibilities is crucial to effective and efficient implementation of the nonpoint source program. The following sections describe the interrelationships and responsibilities of the Water Quality Division (WQD), Water and Waste Advisory Board (WWAB), Environmental Quality Council (EQC), the Nonpoint Source Task Force, and various local, state and federal management agencies.

#### Environmental Quality Council

The EQC is a quasi-judicial body whose powers and duties are outlined in Section 35-11-112 of the Environmental Quality Act. The EQC promulgates rules and regulations and conducts hearings. In accordance with the Wyoming Continuing Planning Process (CPP), disputes regarding the Nonpoint Source Management Plan may be appealed to the EQC.

#### Water and Waste Advisory Board

The Water and Waste Advisory Board (WWAB) advises the public and division administration in order to coordinate policies and activities of the WQD. In accordance with the CPP, the WWAB holds hearings, makes recommendations on proposed rules, and adopts management plans. The WWAB, after adoption, submits the management plans to the Governor for state certification.

#### Management Agencies

The WQD recognizes the value and benefits of authorities, technical capabilities, and nonpoint programs currently being implemented by state, local and federal agencies. Management agencies may have direct responsibility for lands, or they may be agencies which have jurisdiction over activities which may cause or contribute to nonpoint source pollution.

Through a Memorandum of Understanding (MOU), agencies can identify the activities which they are willing to implement to address nonpoint source pollution. The WQD will meet at least once a year to discuss issues of mutual concern. In such meetings the agencies shall, at a minimum, discuss the following:

1. Status of MOU and needed amendments;
2. Opportunities to meet mutual monitoring goals and needs;
3. Successes and failures in BMP implementation;
4. Funding needs;
5. Priority watersheds and projects;
6. Issues and concerns;
7. Opportunities for public education;
8. Review Management Agency Financial Assistance Programs for applicability to NPS.

Reports of these meetings shall be made available to the EPA, WWAB, NPS Task Force and the public, upon request.

#### NPS Task Force

A Nonpoint Source Task Force was established under the 1989 Nonpoint Source Management Plan and formally recognized by Executive Order 1996-2 Revised. The Task Force representatives serve at least one term of four years. Positions on the Task Force are filled through a request for participants to all interested parties. Upon receipt of the notices of interest, the governor, with recommendations from WQD, will select representatives from the following sectors:

1. One representative from the sheep industry;
2. One representative from the cattle industry;
3. One representative from the cropland industry;
4. One representative from the timber industry;
5. One representative from the oil and gas industry;
6. One representative from local government;
7. Two representatives from local conservation districts;
8. One representative from wildlife/sportsmen groups;
9. Two representatives from environmental groups;
10. One representative from recreation and travel industry;
11. One representative from the public at-large.

The Task Force will serve in the following roles:

1. To review and make recommendations for proposed amendments to the Wyoming Nonpoint Source Management Plan.
2. To adopt best management practices (BMPs) and recommend modifications to BMPs for nonpoint sources.

3. To prioritize and recommend implementation, assessment, information and education projects, and necessary programs for nonpoint source control funding, considering management agency priorities.
4. To disseminate information and to educate their constituencies or membership.

In addition to the above roles, the NPS Task Force, in October 1999, agreed to take a more active role in soliciting its constituents for proposals and in information and outreach activities. At that time, the Task Force developed an Information and Education subcommittee that will work to target information at those areas of greatest need, such as in priority watersheds. The Task Force subcommittee is working on the details of its outreach efforts to be presented to the Task Force by the Spring 2000 meeting.

The WQD retains final authority for action on recommendations made by the Task Force. The WQD will work with the appropriate management agencies to implement Task Force recommendations, and will carry out recommended amendments through the appropriate procedures outlined in the Wyoming CPP.

#### U.S. Environmental Protection Agency (EPA)

The EPA performs a vital role in securing cooperation of, and ensuring coordination with, federal agencies which manage lands or have jurisdiction over activities which may cause or contribute to NPS pollution. For activities which are funded under the Clean Water Act, EPA is the granting agency. To ensure coordination and implementation of NPS programs, Headquarters EPA must support regional and state efforts to resolve management differences between federal agencies and must make every effort to secure funding for nonpoint source programs.

### **DEPARTMENT OF ENVIRONMENTAL QUALITY**

#### **Water Quality Division**

##### Watershed Management Program

The Water Quality Division of the Department of Environmental Quality is the division responsible for administering most of the provisions of the Clean Water Act delegated to the State of Wyoming, including the Nonpoint Source Pollution program (authorized under Clean Water Act, Section 319). There are many aspects to effective implementation of the Nonpoint Source (NPS) program. The majority of the state's efforts in assuring implementation of the NPS program, however, are in the development and implementation of Best Management Practices, administration and oversight of grant funds, and coordination with other local, state and federal management agencies.

The Wyoming NPS Program has been developed as a voluntary program, providing guidelines for addressing nonpoint sources of pollution by adoption of the plan and BMPs included therein. Upon identification of water quality standards violations occurring as a result

of nonpoint sources, the WQD will work with state, local, and federal management agencies, along with private landowners and operators, to select appropriate BMPs and to develop a plan and schedule for implementation. The WQD will assist in identifying any potential financial assistance for implementation, testing, and monitoring of the BMPs. Such conference and conciliation procedures are similar to those utilized in the point source program, and provide the operator with the opportunity to address the problem voluntarily.

Implementation of Best Management Practices provides a certain level of protection for land users. The BMPs are designed to prevent water quality standards violations. It should be emphasized that BMPs are not static. Over time, additional information will show that some BMPs are ineffective, while other practices which have not been formally adopted as BMPs may be very effective. The WQD will work with management agencies, the NPS Task Force and private landowners to identify needed BMP modifications. Additionally, these entities will work together to address site-specific criteria, testing and monitoring needs which will assist in identifying conditions under which some BMPs may not be effective.

### Groundwater Program

The Groundwater Program at WQD is involved in several nonpoint source efforts designed to assist in protecting groundwater and drinking water supplies from sources having the potential to contribute nitrates, pesticides, and pathogens. Over the past several years, the program has co-chaired Wyoming's Groundwater and Pesticides Strategy Committee with the Wyoming Department of Agriculture (WDA). Among the activities the committee has undertaken is the development and implementation of the state's *Management Plan for Pesticides in Groundwater (SMP)*. As part of this effort, the Groundwater Program is closely involved with the development of groundwater sensitivity and aquifer vulnerability maps and providing education and technical assistance on the use of these tools to protect groundwater quality. Program staff are also involved in using these maps to: design and implement groundwater monitoring programs to assess impacts from pesticides and nitrates; and, assisting WDA in public outreach efforts to present and discuss sampling results.

The Groundwater Program also oversees groundwater related CWA Section 319 projects, and evaluates potential impacts to groundwater from proposed rural residential subdivisions having septic systems. Additionally, the Program develops and promotes informational materials, such as its series of fact sheets designed to inform rural water well owners on ways to protect their groundwater and drinking water supplies from contamination.

### Aboveground & Underground Storage Tank Program

Leaking Aboveground and Underground Storage Tank (LAUST) releases continue to constitute a major national soil and groundwater contamination problem, and Wyoming is no exception. Every county in the state has contamination originating from LAUST facilities. As of 23 November 1998, 1,433 contaminated LAUST sites have been identified where soil and/or groundwater requires some degree of remediation. Of these 1,433 contaminated sites, 343 have been cleaned up, primarily by contaminated soil over-excavation contracts with disposal at state-permitted landfill facilities. This leaves a balance of 1090 unresolved LAUST

contaminated sites which require some degree of remedial action. Of the 1090 unresolved contaminated sites, 280 sites are included within 22 currently active LAUST remediation projects. These contaminated sites are a sub-set of the 3,683 registered tank facilities involving 9,912 tanks. Before the final count is available, it has been projected that the total number of unresolved contaminated LAUST sites could approach 1,200 in Wyoming.

Wyoming rules and regulations have been promulgated for the AUST/LAUST program. These regulations are contained in Wyoming Water Quality Rules & Regulations, Chapter 17, Underground Storage Tanks, for the technical leak prevention requirements and environmental restoration standards. Chapter 19, Financial Responsibility for Underground Storage Tanks, contains the financial responsibility requirements. AUST/LAUST program delegation has not yet been granted by the U.S. Environmental Protection Agency.

The DEQ/WQD administers the AUST registration, leak detection compliance, investigation, and environmental remediation aspects of the program. The Wyoming Fire Marshall's Office administers the Uniform Fire Code including the National Fire Protection Association standards relating to flammable and combustible liquids. There are also local ordinances concerning USTs in several municipalities, and local fire codes where the local fire authority has jurisdiction over the State Fire Marshall's Office.

Program administration, regulatory compliance, and environmental restoration activities associated with the AUST/LAUST program are a very high priority in Wyoming. The relatively large number of LAUST sites in Wyoming, the potential adverse impacts to groundwater aquifers which may be serving as drinking water sources, environmental health and safety, and the costs and complexities of contaminated soil and/or groundwater restoration actions are just a few of the reasons for the program priority. WQD recognizes that the adverse affects associated with a LAUST could contribute to surface water and/or groundwater quality problems. Therefore, the AUST/LAUST staff and the Nonpoint Source staff work closely with other Water Quality Division staff to ensure that proper practices have been developed for use at the LAUST restoration sites.

### Water and Wastewater Program

In November 1997, WQD promulgated Chapter 15, Wyoming Water Quality Rules and Regulations, Standards for the Use or Surface Disposal of Biosolids. These regulations require a permit for the land application of treated biosolids generated during the treatment of domestic sewage. The regulations are essentially the same as those contained in 40 CFR Part 503. The state and EPA Region 8 have a coordinated program for biosolids. In November 1997, WQD also completed adoption of Chapter 21, Standards for the Reuse of Treated Wastewater. This chapter establishes standards and permitting requirements for persons who prepare or apply treated wastewater from domestic sewage. The intent of this regulation is to encourage and facilitate the safe and productive reuse of treated wastewater as a viable option in the management of the state's scarce water resources. For example, it is encouraged to use the treated wastewater for nonpotable purposes such as irrigation.

Chapter 20, "Permitting, Design, and Operation Standards for Confined Swine Feeding Operations" also establishes standards, and requirements for management plans and permitting relating to the land application of wastes from such operations housing 1,000 or more animal units.

### **Solid and Hazardous Waste Division**

The Solid and Hazardous Waste Division (SHWD) of the Department of Environmental Quality regulates three categories of landfills: municipal (types I, II, and III), industrial, and construction/ demolition. In addition, the Water Quality Division (WQD) has administered a formal program for the land application of municipal, industrial, and agricultural wastes since promulgating Chapter 11, Wyoming Water Quality Rules and Regulations in May, 1984. This authority is shared jointly with the SHWD, which also has the authority to regulate the land application of both solid and hazardous wastes. An agreement between SHWD and the Water Quality Division allows WQD to take the lead on permitting waste disposal by land application when waste material consists of less than 10% solids. The SHWD takes the lead when the waste material consists of 10% or greater solids. SHWD and WQD consult with each other in the issuance of these permits.

### **Land Quality Division**

#### **Mined Land Reclamation Program**

The Mined Land Reclamation Program is the largest of the Department of Environmental Quality Land Quality Division (LQD) programs. It ensures that all mining is conducted in an environmentally sound manner. It also ensures that mined lands are reclaimed to a condition as good as, or better than, the condition that existed before mining activities commenced. This is accomplished through the permitting and inspecting of all mining operations. If necessary, enforcement action is taken to ensure compliance with the relevant laws, regulations, and permit conditions.

The permitting process starts with an application submitted by the operator describing the premining condition of the environment. The application will include discussions about the existing vegetation, soils, groundwater, surface water, and wildlife. The application also describes the mining and reclamation process proposed by the applicant, what measures the applicant will take to minimize adverse affects to the environment while mining, and what restoration will be completed to return the environment to its premining condition. The detail of the information presented varies with the size and type of the operation. The operator must also post a bond as part of the application process to ensure reclamation will be completed. Once the application is approved by LQD, the proposed plan of operation becomes the permit for the facility.

The LQD assures compliance with surface water quality requirements through the review of the operator's proposals for control of point and nonpoint sources. In many cases the operator proposes the use of sedimentation ponds to handle runoff and/or pit water and other "process water" sources. The LQD reviews the design of such ponds to ensure compliance with

proper engineering and design criteria. The discharges from such ponds are regulated by the Water Quality Division (WQD) through its National Pollutant Discharge Elimination System (NPDES) discharge permit program. In other cases the operator may propose control of surface water runoff through the use of "Alternate Sediment Control Measures" (ASTMs). ASTMs are identical to "Best Management Practices" (BMPs) and typically consist of measures such as rock check dams, mulching, contour ditches, silt fences, etc. LQD's Guideline 15 (see Appendix E) provides mine operators with suggestions on how to utilize ASTMs in their mining and reclamation plans.

The operation may be inspected by LQD staff periodically to ensure compliance with the law and the permit. In addition to inspecting the operation for compliance, the inspectors may also identify potential problems and offer suggestions on how the problems can be further avoided and/or corrected. In some cases, the inspector may be able to assist the operator by suggesting a new technology or practice as a solution to avoiding some environmental harm.

### Known Water Quality Problems Associated with Mining

The only facility currently known to be causing surface water quality impairments is the Ferris Haggarty mine, which appears on the state's 303(d) list of impaired waterbodies. This mine was originally abandoned in 1910, was reopened in 1975, and has gone through a series of openings and abandonments since that time.

Groundwater becomes high in dissolved copper as it seeps through the mine shaft walls. The groundwater eventually discharges and introduces its high levels of copper into Haggarty Creek. These levels of copper have been found to be toxic to the trout, resulting in the loss of four miles of prime trout stream habitat. Clean-up of the Ferris Haggarty mine is now taking place under the authority of the Wyoming Abandoned Mine Land Program (AML). The AML has contracted with a consultant which, as of late 1998, is conducting field trials on various passive treatment technologies.

### **WYOMING GAME & FISH DEPARTMENT**

The Wyoming Game and Fish Department is mandated to manage the fish and wildlife resources of the state. Although this primarily applies to the direct management of fish and wildlife populations, there is an implied connection to manage fish and wildlife habitats on lands owned by the department, as well as assisting private landowners and land management agencies with proper habitat management activities.

Non point source pollution in Wyoming primarily influences aquatic ecosystems; however, the sources of such pollution may originate from uplands, riparian areas, and/or within stream channels themselves. Although the Wyoming Game and Fish Department has no regulatory mandate or authority in non point source pollution control, the department is involved in the oversight process through the Habitat Protection Program and the Aquatic and Terrestrial Habitat Management Programs.



The Habitat Protection Program coordinates the review and analysis of all proposed federal, state, and local policies, plans, projects, and activities with potential to adversely impact fish and wildlife habitat in Wyoming, and recommending and negotiating impact mitigation. The program develops and maintains cooperative agreements with various state and federal agencies relative to habitat protection. The program maintains the statewide cumulative impacts database and coordinates department spill/emergency response activities.

The Aquatic and Terrestrial Habitat Management Programs stress the importance of habitat management from a watershed and ecological landscape perspective. In recent years, the department has placed an emphasis on creating and enhancing wetlands. Wetlands provide habitat for wildlife, and assist in maintaining or enhancing water quality.

The department also coordinates with the DEQ/WQD on a variety of issues. Semi-annual coordination meetings are held between the agencies. The department provides support as requested on issues such as TMDLs, water quality rules revisions, NPDES permit reviews, BMP development, wetland banking, and other Clean Water Act activities.

## **WYOMING STATE ENGINEER'S OFFICE**

The Wyoming State Engineers Office (WSEO) is currently involved in two interstate water quality programs. The WQD is coordinating with the WSEO on both the Bear River Water Quality Task Force and Colorado River Salinity Control Program. The WSEO serves in an advisory capacity to the Wyoming TMDL workgroup and has performed state funded water quality studies.

Coordination and cooperation with the WSEO will continue through scheduled quarterly coordination meetings. The WSEO and DEQ/WQD will work closely to address emerging intrastate and interstate water quality issues, particularly those that may involve flow and quantity issues.

## **WYOMING WATER DEVELOPMENT COMMISSION (WWDC)**

As the lead agency for water development in the State of Wyoming, the WWDC recognizes its responsibility for protecting and conserving Wyoming's natural resources. Projects funded by WWDC include water quality protection components. The WWDC also funds research projects to identify practices that minimize construction and operation impacts and improve water, fish, and wildlife resources.

Most projects involving construction or extensive rehabilitation require permits or authorizations from various agencies. Projects requiring EAs or EISs involve public interest reviews which can sometimes be demanding on state resources. The various state and federal permitting processes and public review result in environmental issues being thoroughly addressed. Major water projects planned and financed by WWDC are designed with extensive mitigation and enhancement features to maintain or improve water quality. WWDC and DEQ/WQD will coordinate often with the various agencies to ensure emplacement of appropriate environmental safeguards.

WWDC and WQD will continue to ensure that reduction or prevention of nonpoint source pollution is a component of planning and construction activities. The WWDC and WQD will explore opportunities to address nonpoint source pollution issues as a component of basin plans within the statewide water planning process.

## **WYOMING DEPARTMENT OF TRANSPORTATION**

The Wyoming Department of Transportation (WYDOT) maintains open lines of communication with other state agencies through participation in quarterly coordination meetings. Among the topics typically discussed in the quarterly meetings is use of Best Management Practices (BMPs) at WYDOT facilities and how current BMPs may be improved. The WQD reviews WYDOT project proposals as a function of the permitting process and evaluates water quality issues and mitigation measures. The NPS program participates in the quarterly meetings and the permit review process to ensure that BMPs are included in the WYDOT activities. The WQD, Wyoming Game and Fish Department and Wyoming Department of Transportation have an active Memorandum of Understanding to address wetland issues.

## **WYOMING OIL AND GAS COMMISSION**

The DEQ communicates frequently with the representatives of the Oil and Gas Commission. Commission field representatives work closely with DEQ in preventing and addressing spills, addressing water quality concerns in the permitting process, and seeking solutions to issues as they arise. The DEQ and the Wyoming Oil and Gas Commission have an active Memorandum of Agreement defining the roles and responsibilities of the agencies.

## **WYOMING DEPARTMENT OF AGRICULTURE**

In 1979, Governor Herschler designated the Wyoming Department of Agriculture as the functional management agency for the control of nonpoint sources of pollution from agricultural activities. The department recognizes nonpoint source pollution from agriculture as a potential state water quality concern.

The department's nonpoint source pollution control activities include: Coordination with Wyoming's conservation districts in the planning, development and implementation of both urban and rural natural resource conservation, water quality, and watershed programs through technical, financial, and educational assistance.

Regulation of pesticides through registration, training and certification of applicators, and administrator of the Wyoming Environmental Pesticide Control Act (1973). The Wyoming Department of Agriculture has been leading the development of a generic pesticide state management plan to prevent adverse effects on Wyoming's environment, citizens, and groundwater resources.

The Wyoming Department of Agriculture and WQD meet frequently to develop effective outreach and education efforts for the agricultural community and address site-specific

solutions to water quality concerns. The department also provides formal comment on WQD actions.

## **FEDERAL PROGRAMS**

### **ARMY CORPS OF ENGINEERS REGULATORY PROGRAM**

The Army Corps of Engineers regulates the discharge of dredged or fill material into the waters of the United States in Wyoming. The Corps exercises jurisdiction over Wyoming's major rivers as well as smaller creeks and streams, intermittent waterways, lakes, reservoirs, wetlands, and in many cases man made water bodies and wetlands. The routine administration of the program is delegated to the Wyoming Regulatory Office of the Omaha District of the Corps of Engineers in Cheyenne, Wyoming.

Section 404 of the Clean Water Act is administered by the Corps of Engineers with oversight by the EPA. Section 404 requires a permit to place dredged or fill material into the waters of the United States. Typical activities regulated by the Corps' 404 program include road fills and bridge crossings, bank protection projects, site development for agriculture, residential or industrial purposes, pipeline crossings, dams and levees, etc. The WQD NPS program coordinates with the Corps, and reviews the 404 permit actions, to help ensure that BMPs are being properly used in all Corps activities.

The WQD also reviews all activities proposed for authorization under section 404 of the Clean Water Act to determine whether the action could cause, or contribute to, a violation of state water quality standards. This review and determination by the state is authorized under section 401 of the Clean Water Act, and is known as a "401 Certification". The Corps cannot issue any type of individual, regional, or nationwide permit for any activity when 401 certification has been denied. The WQD has denied 401 certification for several nationwide permits, and also for certain activities which could be covered under a nationwide permit but which would be located in waters classified as Class 1 by WQD.

### **NATURAL RESOURCE CONSERVATION SERVICE**

The Natural Resources Conservation Service is a natural resources and conservation agency of the U.S. Department of Agriculture charged primarily with helping individuals, groups, organizations, and governmental agencies plan and apply conservation treatment to protect their soil and water resources.

The Natural Resources Conservation Service works primarily with private landowners to solve the natural resource challenges on the nations private lands. Land users get help from the service mainly through partnership with Wyoming's 34 locally organized and managed conservation districts. Conservation districts provide local leadership for natural resource conservation within their boundaries. The districts work with farmers, ranchers, towns, counties, and government agencies at all levels. They determine local priorities for natural resource conservation concerns. Through a Memorandum of Understanding (MOU) with the USDA, the Natural Resources Conservation Service provides technical assistance to

conservation districts in carrying out their locally established priorities. Approximately 6600 farmers and ranchers are currently Wyoming conservation district cooperators.

Through Wyoming's conservation districts, the Natural Resources Conservation Service provides technical, educational, and financial assistance to address natural resource concerns. This assistance is provided through a variety of USDA programs administered or jointly administered by the Natural Resources Conservation Service. One such financial assistance program is the USDA Environmental Quality Incentive Program (EQIP). The 1996 Farm Bill provides for a State Technical Committee to advise the NRCS state Conservationist concerning criteria and priorities for the State initiatives under EQIP. WQD is a member of this committee and will use its membership to review proposals with respect to this management program.

The WQD has an MOU with the Natural Resources Conservation Service defining roles in addressing comprehensive nutrient management systems for Animal Feeding Operations/Confined Animal Feeding Operations.

In addition, the WQD participates in the Wyoming Conservation Partnership made up of representatives of the Natural Resources Conservation Service, Wyoming Department of Agriculture, and Wyoming Association of Conservation Districts in addressing agriculture water quality issues.

## **NATIONAL PARK SERVICE**

The National Park Service seeks to maintain the waters within the parks in a natural condition, free from pollutants generated by human activity. The National Park Service has found that the majority of water quality issues identified within the National Park system are associated with nonpoint source pollution. The scope and extent of water quality issues varies greatly, but the majority are related to surrounding land use activities such as oil and gas development, mining, encroaching urbanization, industrial activity, agricultural practices, or land development. The severity of water quality degradation (both surface and groundwater) and the constituents affected depend on the type and extent of activity, watershed and aquifer characteristics, and effectiveness of applied mitigation measures.

The National Park Service seeks to perpetuate surface and ground waters as integral components of park aquatic and terrestrial ecosystems, and seeks to restore, maintain, or enhance the quality of all water within the parks. The quality of water originating within the parks will be maintained through the implementation of nonpoint source pollution BMPs with respect to National Park Service administered activities. The National Park Service will enter into agreements or compacts with other agencies and governing bodies to secure their cooperation in avoiding degradation of water resources. Consistent with the rights of others, the service will maintain a continuous vigilance by observing and monitoring upstream diversions, adjacent uses, and ground water withdrawals and their effects on the occurrence, quantity and quality of water necessary for the continued preservation of park biota and ecosystems.

The National Park Service personnel will participate in the states required triennial review of water quality standards, and work with state, county, and local agencies to develop

and implement appropriate nonpoint source pollution control practices on National Park Service lands and lands upstream from the parks. The National Park Service personnel will also work with state, local, and federal agencies to implement applicable ground water protection programs.

## **UNITED STATES FOREST SERVICE**

The United States Forest Service (USFS) is an agency within the U.S. Department of Agriculture, and is responsible for the management of our nations National Forests and Grasslands. The USFS is working cooperatively with the state to restore impaired waters in a manner that will also allow legitimate and needed land management projects to continue. The USFS will develop a plan, in consultation with the state, to address the pollutants of concern for those portions of a watershed on National Forest System (NFS) lands having impaired waters.

The USFS has a process whereby state-listed 303(d) waters on NFS lands are assessed for verification and level of impairment. This process consists of the following: 1) field surveys to verify impairment and identify pollutant sources, and work with the state to refine the list of impaired streams, if necessary; 2) prioritize the pollutant sources, and estimate the percent of pollutant load caused by natural sources and each anthropogenic source, for each listed pollutant on every verified impaired stream; 3) develop a Total Maximum Daily Load (TMDL) plan with the state for each watershed having impaired waters. This plan would include implementing preventative watershed conservation practices and curative restoration programs consisting of management changes and land treatments as needed, disconnecting pollutant sources from waters in priority order, monitoring effectiveness of any changes, treatments, programs, or practices implemented, and reporting the progress to the state in 305(b) reports every two years.

The program that the USFS implements to control nonpoint sources of pollution works on the premise that nonpoint sources can be controlled by relying on state BMP programs, as intended by Congress in CWA Section 319. As applied by the USFS on National Forest System lands, the BMP program consists of: 1) defining practices, based on the best information available, that are expected to protect water quality; 2) monitoring to ensure the practices are applied; 3) monitoring to determine the effectiveness of practices; 3) mitigation to address unforeseen problems; and, 5) adjustment of design specifications of BMPs for future activities, where appropriate.

## **FISH AND WILDLIFE SERVICE**

The US Fish and Wildlife Service, an agency within the United States Department of the Interior, is the federal agency responsible for administering the Endangered Species Act for all plant and animal species, except marine species and anadromous fish which are addressed by the National Marine Fisheries Service. Under the Fish and Wildlife Coordination Act (P.L. 89-727), consultation with the Fish and Wildlife Service and the Wyoming Game and Fish Department is required where the waters of any stream or other body of water are proposed or authorized, permitted or licensed to be impounded, diverted, or otherwise controlled or modified by any agency under a federal permit or license for the purpose of preventing loss of and damage to wildlife resources. The Fish and Wildlife Coordination Act (FWCA) mandates

that federal agencies consult with the U.S. Fish and Wildlife Service (USFWS) prior to initiating an action that may have an adverse effect on fish and wildlife resources. The act requires that recommendations for conserving fish and wildlife resources be given full consideration in the decision-making process. This legislation gets the USFWS and the Wyoming Game and Fish Department involved and cooperating in small projects that do not require an EA or EIS. For projects falling under the jurisdiction of the FWCA, the act allows the USFWS to address virtually any aspect of a proposed project, including protection of water quality to maintain fish or wildlife resources.

## **BUREAU OF RECLAMATION**

The U.S. Bureau of Reclamation (Reclamation) is responsible for several water storage and irrigation projects in Wyoming. Reclamation participates in water quality studies and protection practices in facilities under its jurisdiction. Construction practices for reducing pollution from nonpoint sources are implemented as part of all Reclamation construction projects. Such practices include sediment and erosion controls, wastewater and storm water management controls, construction site management practices (such as proper management of oil storage tanks, material stock piles, and borrow or waste piles), and other controls, including state and local control requirements.

In addition to implementing the above controls and practices, all Reclamation contractors are required to submit a water quality management plan for review and approval. This plan is to describe how the contractor intends to protect water quality from activities related to the construction project. For example, the plan is required to describe: how the contractor intends to avoid discharges or accidental spills of pollutants; demonstrated compliance with state and local water disposal, sanitary sewer, or septic regulations; methods of handling and treating wastewater, including Best Management Practices implemented to prevent water pollution; and, methods to be used for preventing or controlling runoff and erosion for all construction sites, both during and after construction.

To ensure the construction specifications are adhered to, Reclamation regularly inspects the construction sites. In some instances, Reclamation will have an inspector on site who has been made aware of all construction specifications, including any site-specific construction contract conditions that may exist.

## **BUREAU OF LAND MANAGEMENT**

The Bureau of Land Management is responsible for managing public lands as mandated by Congress. It is the policy of the Bureau of Land Management to manage public lands in a manner that will conserve, protect, and improve the condition and productivity of renewable natural resources. Through its multiple resource management responsibilities the bureau is responsible for allowing the extraction and use of non renewable resources where appropriate. As directed by the Federal Land Policy and Management Act and bureau policy, the Bureau of Land Management has developed a three tiered resource management planning process to make land use planning decisions. These tiers are policy, resource management plans, and activity

plans. The bureau's planning process is the principal mechanism for guiding the implementation and management of soil and water resource conservation practices.

Formal comments are requested at several key points in the resource management planning process and public involvement is encouraged. Interested individuals are given opportunities to identify problems, provide data or analyses, and review and comment on proposals for management. Areas of accelerated soil erosion, critically eroding stream channels, and water quality impaired stream reaches can be identified as issues during the resource management plan tier of the process. Soil and water conservation practices are addressed in a general fashion during the land use planning tier and in site-specific detail during the activity planning and implementation tier of the process.

The Bureau's nonpoint source strategy is to continue to:

- Provide cooperation and assistance to state agencies in the management of the public lands to reduce nonpoint source pollution sources.
- Incorporate water quality impacts, including nonpoint sources, into land management actions planned and implemented by the bureau, including BMPs.
- Identify and address nonpoint source water quality issues in bureau activity plans.
- Provide personnel and resources to identify nonpoint source pollution and control techniques through coordinated research efforts and the implementation of BMPs.
- Implement program practices in conducting land use and land management activities to reduce or avoid water quality impacts and to improve water quality as necessary to meet management objectives and regulatory requirements.

The WQD and the Bureau of Land Management meet at least annually to evaluate the current MOU to determine if roles and responsibilities are accurately defined, as well as procedures for identifying and addressing nonpoint source pollution issues on bureau managed lands.

## **UNITED STATES GEOLOGICAL SURVEY**

The United States Geological Survey provides water quality assessment assistance to the WQD through cooperative agreements. The agency provides chemical analysis and flow data on selected stream segments in the state. The United States Geological Survey also participates in the monitoring of pesticides in Wyoming's groundwater. The agency is an active member of the state's TMDL Workgroup, providing technical assistance and valuable input in developing Wyoming's water quality improvement plan.

## **COMMUNICATION AND COORDINATION WITH PRIVATE AND NONPROFIT ORGANIZATIONS**

The Wyoming Department of Environmental Quality maintains informal participatory association with many interest groups. These relationships offer a wide range of input into the planning process resulting in greater ownership and acceptance of the resulting product, and

ultimately, more widespread implementation and progress toward water quality goals. Interest group involvement ranges from conveying information on department activities, providing comments and input on rules and policy, to full participation on advisory groups. The entities identified below receive mailings from DEQ, are invited to participate in local watershed planning efforts, and are solicited for membership on the NPS Task Force.

**Partial List of  
PARTICIPATING PRIVATE/NONPROFIT ORGANIZATIONS**

Wyoming Stock Growers Association  
Wyoming Association of Conservation Districts  
Wyoming Farm Bureau  
Wyoming Wool Growers Association  
Rocky Mountain Farmers Union  
Wyoming Outdoor Council  
Powder River Basin Resource Council  
Greater Yellowstone Coalition  
Wyoming Wildlife Federation  
County Commissioners Association  
The Nature Conservancy  
Wyoming Audubon Society  
Trout Unlimited  
Soil and Water Conservation Society  
Wyoming Association of Municipalities  
Wyoming Wheat Growers  
Wyoming Chapter Sierra Club  
Wyoming Timber Association  
Petroleum Association of Wyoming  
Ducks Unlimited

The Wyoming Department of Environmental Quality has memorandums of understanding or agreement with the following state agencies:

Wyoming Department of Transportation;  
Wyoming Department of Agriculture;  
Wyoming State Engineers Office;  
Wyoming Game and Fish Department; and  
Wyoming Oil and Gas Commission.

The Wyoming Department of Environmental Quality has memorandums of understanding or agreement with the following federal agencies:

United States Department of the Interior - Bureau of Land Management;  
United States Department of Agriculture - Forest Service;  
United States Department of the Interior - Bureau of Reclamation; and  
United States Department of Agriculture - Natural Resources Conservation Service.



The Wyoming Department of Environmental Quality has memorandums of understanding with most of Wyoming's 34 conservation districts. The DEQ will update current agreements and pursue agreements with the remaining districts within the next two years.

Many of the current memorandums are quite dated. The NPS program is represented through the CWA Section 208 process under these current agreements. The agreements with the U.S. Forest Service and Bureau of Land Management (BLM) are in the process of being updated. We anticipate at this time that the BLM agreement could be completed before the end of 2001. Other agreements need to be revisited during the next three years.

## **OVERARCHING PRINCIPLES**

The following three statements (also found in a more abbreviated form on page iii) represent top priorities for future actions of programs within the Water Quality Division. It is expected that all goals, objectives, and actions listed below be derived from the concepts expressed in the following three statements:

1. Continue an ongoing assessment of the statewide condition of surface water and groundwater in Wyoming aimed at identifying areas needing water quality improvements and/or protection projects on a watershed basis.
2. Implement a proactive information and education program to enhance the public's knowledge of nonpoint source pollution, source water protection, management of high priority aquifers, the values of wetlands to encourage participation in voluntary efforts to prevent, reduce, and eliminate pollution of the state's water resources.
3. Achieve protection of the quality of Wyoming's water resources through the targeted application of regulatory and non-regulatory methods, but primarily through the organization and facilitation of local stakeholders groups which develop and implement watershed management plans.

## **NONPOINT SOURCE GOALS and OBJECTIVES**

In the following section, the Wyoming Nonpoint Source Management Program goals, objectives, and actions are discussed. The goals, objectives, and actions of the plan have been broken into six major categories: 1) agriculture; 2) hydromodification; 3) silviculture; 4) groundwater protection; 5) urban and industrial; and, 6) watersheds, outreach, and partnerships. All of the goals mentioned below are derived from one or more of the above overarching principles.

The goals are long-term in nature. It is intended that the goals guide the nonpoint source program activities over the next 15 years. The objectives are shorter in term, expected to be achieved in a one-to-five year time frame, but also anticipated to be ongoing throughout the term of the goal. The actions are the specific activities that WQD and/or its partners will be

conducting on a continuing basis (i.e., day-to-day, month-to-month) in order to achieve the overlying objectives and goals.

## **AGRICULTURE**

Wyoming WQD has been increasing its efforts to provide outreach and technical assistance to the agricultural community over the last several years. This has been accomplished, in part, through the development of BMPs (1997), completion of the agency Information and Education Strategy (1999), providing 319 grants each year for agricultural demonstration projects, and the development of technical and financial assistance for operators of animal feeding operations.

Sources of NPS pollution will be identified through the ongoing statewide monitoring plan, monitoring for pesticides in groundwater program, citizen complaints, and local watershed assessment groups. Priority watersheds are to be addressed by locally led watershed assessment and planning groups, where there is a commitment by stakeholders to address water quality concerns. Through the assessment and planning process stakeholders will identify the sources of NPS pollution and Best Management Practices that will most effectively and efficiently improve water quality. The assessment and planning groups will also coordinate the technical, financial, and educational resources needed by landowners and land managers to implement the watershed plan.

WQD has permitted all of the existing CAFOs (more than 1000 Animal Units or AUs). The WQD program to address AFOs (less than 1000 AUs) is a voluntary, incentive-based approach. Landowners with AFOs have received information on the criteria and a self-assessment tool to determine the potential need for an NPDES permit for their operation. Over 4300 livestock owners received this brochure developed by the Wyoming Department of Agriculture and the Wyoming Association of Conservation Districts through a Clean Water Act section 319 grant. Landowners can voluntarily address potential water quality problems through adoption of appropriate Best Management Practices and development of Comprehensive Nutrient Management Plans. These voluntary actions may make permitting unnecessary. The Confined Animal Feeding Information and Education grant is also implementing five confined feeding Best Management Practice demonstration sites throughout the state. These sites are utilized for producer tours providing open discussion of animal feeding operation concerns and effective solutions. AFOs with potential water quality concerns are also addressed through locally-led watershed planning groups, citizen complaints, and producer requests for assistance.

WQD will continue to provide educational presentations to livestock producer groups and coordinate with Conservation Districts and the Natural Resources Conservation Service in meeting the goals of Wyoming's Animal Feeding Operation strategy.

Over the next five years, WQD will increase its efforts to work with these, and other state agencies, federal agencies, and local groups to develop strategies for improving the receiving water quality that has been affected by agricultural activities. Priority watersheds will

be the first areas of focus for the development and implementation of strategies developed by local groups with assistance from WQD. Priority watersheds are those watersheds wherein there exists an impaired waterbody or a threatened waterbody that necessitates some restoration and/or protection planning. The proposed schedules for the first group of watershed planning efforts are included in Chapter 2. At the end of the next five years, WQD will assess its progress in working with its partners to improve water quality, and either renew those efforts for the next ten years or implement a new strategy to be evaluated at the end of the second five years.

The following goals will set the direction of WQD's agricultural nonpoint source-related activities each year for the next 15 years. The objectives are more specific and will be implemented in the short-term primarily through the Project Implementation Plans of 319 grants, and the increased voluntary use of the BMPs published by DEQ in 1997. However, the actions listed after the last objective of each goal are the specific activities intended to lead to the successful implementation of the listed goals. These actions are goal-specific, and not necessarily objective-specific. Many of these goals and objectives are revised language found in the BMP manuals published by DEQ.

*Success:* Water quality monitoring by WQD, its partners, and local watershed groups, along with education and improvement projects, will show incremental water quality improvement from these agricultural sources over each five-year period for the next fifteen years.

**GOAL I: Improve water quality affected by run-off and infiltration from Croplands, Pasture/Haylands, and Animal Waste Sources.**

Objective I.1: SEDIMENT

Control or prevent sediment erosion and introduction into receiving waters from Croplands, Pasture/Haylands, and hydrologic modifications resulting in increased flow.

Objective I.2: NUTRIENTS

Control or prevent nutrient loading into surface waters and groundwater from Croplands, Pasture/Haylands, and Animal Waste sources.

Objective I.3: PESTICIDES & CHEMICALS, SALT, PATHOGENS, AND HEAVY METALS

Control or prevent pesticide/chemical, salt, pathogen, and heavy metal loading of surface waters and infiltration to groundwater from Croplands, Pasture/Haylands, and Animal Waste sources.

ACTIONS:

- A. Review and provide comments on management plans, project plans, NEPA documents, and other appropriate documents to assure that water quality concerns are adequately addressed through all phases of the project.
- B. Advise project proponents, and make BMP documents available, to ensure proper cropland, pasture/hayland, and animal waste management procedures are implemented.

- C. Periodically update BMP manuals to utilize current cost-effective technology.
- D. Provide follow-up through personal contact to ensure understanding of comments/suggestions.
- E. Conduct monitoring and site inspections where necessary to evaluate BMP implementation in priority watersheds.
- F. Encourage the development of local watershed management plans in priority watersheds.
- G. Develop strategies to properly manage pesticides/chemicals, fertilizers, salt, pathogens, and heavy metals to avoid excessive runoff to surface waters and infiltration to groundwater.
- H. Coordinate with sister agencies to encourage and facilitate the development of nutrient management plans for the proper handling, storage, and disposal of animal wastes at animal feeding operations (AFOs).
- I. Use aquifer sensitivity and groundwater vulnerability maps to identify areas where infiltration of nutrients and pesticides to groundwater is most likely to occur.
- J. Coordinate with the sister agencies to implement Wyoming's "Generic State Management Plan for Pesticides in Groundwater" (SMP), including: a groundwater monitoring program for pesticides and nutrients where groundwater is vulnerable; evaluate sampling results; communicate sampling information and results to the public; and assist local Conservation Districts, Weed and Pest Districts and the public with the development and implementation of management plans and BMPs to reduce infiltration of pesticides and nutrients.

**GOAL II: Protect and improve surface and groundwater quality from the effects of grazing by livestock, wildlife, and wild horses.**

Objective II.1: PROPER GRAZING

- II.1.a Encourage proper livestock, wildlife, and wild horse pasture and range grazing practices so that erosion and sedimentation are not accelerated above acceptable levels for the receiving waters.
- II.1.b Encourage proper livestock, wildlife, and wild horse riparian and wetland grazing practices so that erosion and sedimentation are not accelerated above acceptable levels for the receiving waters. Stream function should be maintained where the riparian areas are associated with live streams.

Objective II.2: LAND TREATMENT

Use of biological and mechanical means, and in some cases fire management, to enhance grazing land in order to reduce erosion and sedimentation, and thereby minimize water quality impacts.

### ACTIONS

- A. Review, and provide comments on, management plans, project plans, NEPA documents, and other appropriate documents to assure that water quality issues are addressed through all phases of the project.
- B. Provide conditions and/or suggestions in 401 certifications for needed 402 or 404 permits.
- C. Advise project proponents, and make BMP documents available, to encourage proper grazing and grazing-land management.
- D. Periodically update BMP manuals to utilize current cost-effective technology.
- E. Provide follow-up through personal contact to ensure understanding of comments/suggestions.
- F. Conduct monitoring and site inspections where necessary to evaluate BMP implementation in priority watersheds.
- G. Encourage development of local watershed plans that identify proper grazing practices as part of the watershed management and restoration strategies.

### **HYDROLOGIC MODIFICATION**

Hydrologic modification can be described as an activity which alters the physical structure, form, or flow pattern of primarily surface waters and sometimes groundwater. A hydrologic modification can be as complex a major dam or hydroelectric project development, or as simple as a utility line crossing a minor stream. DEQ believes that all construction in rivers and streams will have some effects on that river or stream. Some effects are beneficial, some adverse, and others may be insignificant. The following goals and objectives are intended to increase the occurrence of beneficial effects, and decrease the adverse effects, from anthropogenic activity during hydrologic modification.

The U.S. Army Corps of Engineers administers the Clean Water Act Section 404 permitting program, which regulates the discharge of dredged or fill material into waters of the United States. This is the primary regulation governing most hydrologic modifications. In addition, DEQ has developed the "Hydrologic Modifications Best Management Practices" manual to assist in averting adverse water quality effects during the modification activities. WQD is notified by the Corps of all 404 permit actions for hydrologic modification, and ensures that proper BMPs are incorporated as conditions within each permit.

Success: Water quality monitoring information developed by DEQ, its partners, and local watershed groups will show incremental water quality improvement from these sources over each five-year period for the next fifteen years.

**GOAL III: Discourage unnecessary stream channel alteration, and make all stream channel alteration planning, construction, and habitat improvement projects structurally safe and of low adverse environmental impact.**

### Objective III.1: PLANNING

To systematically evaluate all stream channel alteration to help make decisions as to the need, appropriateness and design of any project. For projects requiring permits, proper planning will result in a clear and complete application, thereby facilitating that process, and resulting in savings of time and effort.

### Objective III.2: CONSTRUCTION PROCEDURES

To ensure that all construction is done in a low impact manner when implementing any management practice or structure.

### Objective III.3: HIGH QUALITY WATERS

Discourage stream channel alterations, except where necessary for a public purpose, benefit, or emergency, on Class 1 waters.

### ACTIONS:

- A. Review, and provide comments on, management plans, project plans, NEPA documents, and other appropriate documents to assure that water quality issues are addressed through all phases of the project.
- B. Coordinate and cooperate with the U.S. Army Corps of Engineers on proposed projects to ensure that concerns are known prior to project commencement.
- C. Provide conditions and/or suggestions in 401 certifications for needed 402 or 404 permits.
- D. Advise project proponents, and make BMP documents available, to ensure proper construction procedures are implemented.
- E. Provide follow-up through personal contact to ensure understanding of comments/suggestions.
- F. Conduct monitoring and site inspections where necessary to evaluate BMP implementation in priority watersheds.
- G. Periodically update BMP manuals to utilize current cost-effective technology.
- H. Suggest minimum criteria, through the above review or 401 certification process, for stream channelization when it cannot be avoided, such as when channelization is the only practical way to protect life or property of significant value. This practice applies only to natural streams and rivers and is not intended to affect in any way artificial canals or irrigation systems.
- I. Encourage development of local watershed plans that identify proper hydrologic modification practices as part of the watershed management and restoration strategies.

### SILVICULTURE

Nearly 80% of the forested land in Wyoming is managed by a federal or state agency. An even larger percentage of the state's marketable saw timber is on these lands. Typically, these lands are found at or near the headwaters of the state's rivers and streams. It is because of this "upstream" location of harvestable timber that silvicultural practices have the potential to adversely affect surface water and groundwater resources.

The land management agencies responsible for timber, to a large extent, either have the appropriate technical staffs necessary for the proper selection and implementation of BMPs, or have access to them. A private individual, however, who wishes to manage the timber on his land, may be at a loss to understand and use proper management practices. Though many of the goals and objectives listed below are generic in nature, DEQ will increase its work with the local groups, especially in priority watersheds, over the next 15 years to help ensure that proper practices are understood by, and available to, all private timberland owners. DEQ intends to make the testing and innovative use of BMPs part of those activities eligible for funding under the state's section 319 grants. For example, through a cooperative agreement with the Timber Industry, silviculture and forestry BMPs have been developed. Also, The Wyoming Timber Industry Association has provided BMP training sessions in the classroom and in the field to private, state, and federal timber representatives in 1998 and 1999. The Timber Industry has been approved for a 319 project that will allow them to develop an auditing process to evaluate the effectiveness of BMPs and recommend changes, if necessary.

Success: Water quality monitoring information developed by DEQ, its partners, and local watershed groups will show incremental water quality improvement from silvicultural practices over each five-year period for the next fifteen years.

**GOAL IV: To encourage silvicultural practices that use best available management practices and that reduce adverse effects to water quality.**

**Objective IV.1: PLANNING**

To ensure proper planning has been conducted for silvicultural practices, and all necessary documents (e.g. NEPA, management plans, etc.) properly address BMPs and water quality issues.

**Objective IV.2: HARVESTING, THINNING, SLASH TREATMENT, and REVEGETATION**

To ensure project components are properly located and BMPS are implemented to reduce erosion, sedimentation, and water quality impacts.

**Objective IV.3: ROADS**

To protect water quality through proper location and design of roads, implementation of appropriate BMPs, and activities are properly timed with respect to excessive moisture periods and fish migration and spawning.

**Objective IV.4: PESTICIDES, HERBICIDES, FERTILIZERS, and CHEMICALS**

To ensure adverse effects to water quality are eliminated or reduced through proper handling and application of pesticides, herbicides, fertilizers, chemicals, and fuels.

**Objective IV.5: FIRE MANAGEMENT**

To minimize erosion, sedimentation, and water quality impacts during fire management activities.

**ACTIONS**

- A. Review, and provide comments on, management plans, project plans, NEPA documents, and other appropriate documents to assure that water quality issues are addressed through all phases of the project.
- B. Provide conditions and/or suggestions in 401 certifications for needed 402 or 404 permits.
- C. Advise project proponents, and make BMP documents available, to ensure proper silvicultural practices are implemented.
- D. Provide follow-up through personal contact to ensure understanding of comments/suggestions.
- E. Conduct monitoring and site inspections, as necessary, to evaluate BMP implementation in priority watersheds.
- F. Periodically update BMP manuals to utilize current cost-effective technology
- G. Encourage development of local watershed plans that identify proper silvicultural practices as part of the watershed management and restoration strategies.

## **GROUNDWATER PROTECTION**

The Groundwater Program at WQD strives to work with the local communities in assisting the implementation of programs that will protect the quality of the resource. Many of the activities of the Groundwater Program are directly intended to reduce the incidence of groundwater contamination from nonpoint sources of pollution, protect the public health, and increase the public awareness of the potential for nonpoint sources to contribute to groundwater contamination and public health concerns.

Over the next two years, the WQD Groundwater Program will be working with sister agencies to develop a monitoring strategy that will allow the agencies to identify priority aquifers and groundwater areas. Once these areas are identified and characterized, WQD will be able to better focus its resources to assist those communities and rural residents whose drinking water supplies are most in need of protection and restoration. WQD anticipates most of this assistance being in the form of information, technical assistance, and implementation grants to help ensure the development of local strategies that are crafted by, and tailored to the needs of, the local community.

Success: Comprehensive groundwater protection strategy will be finalized and implemented by the end of FY 2001 with monitoring and resources focused on priority areas over the fifteen year period of this plan.

**GOAL V: Improve groundwater quality, protect drinking water supplies from nonpoint sources of pollution, protect the public health, and increase the public awareness of the potential for nonpoint sources to contribute to groundwater contamination and public health concerns.**

Objective V.1: GROUNDWATER PROTECTION PROGRAM



- V.1.a Develop a groundwater protection strategy that focuses resources, monitoring, and education regarding the waters of high priority aquifers, and provides information on the contamination potential of nonpoint sources of pollution, which includes septic systems, landfills, and brownfields sites.
- V.1.b Provide assistance and information for local groups to properly implement wellhead and source water protection programs.
- V.1.c Encourage sound land use planning to protect groundwater resources, particularly proper siting of septic systems in rural residential and rural subdivision developments. (Urban developments are anticipated to be serviced by a municipal sewer system).
- V.1.d Encourage development of nutrient management plans at animal feeding operations to ensure the proper collection, storage, and disposal of animal wastes.

V. 1.e: Assess Conditions of Groundwater Resources

Objective V.2: LEAKING ABOVEGROUND/UNDERGROUND STORAGE TANKS

- V.2.a Reduce surface and ground water contamination attributed to Leaking Aboveground/Underground Storage Tanks (LAUST) by minimizing erosion, sedimentation, and water quality impacts during remediation efforts.
- V.2.b To increase the incidence of voluntary reporting for tank removal by a minimum of 5% per year for the next five years, and to have 100% voluntary reporting by the year 2015.

ACTIONS:

- A. Coordinate with sister resource agencies to develop, collect and compile information needed to communicate and illustrate groundwater conditions to the public. Such information should include: location, extent, use, and quality of the resource; aquifer sensitivity and vulnerability; and, potential contaminant sources.
- B. Develop and distribute information to the public for review and comment.
- C. Develop mechanism to collect, measure and define public feedback regarding priority aquifers, groundwater, uses, pollution sources and monitoring approaches.
- D. Develop strategy to identify priority aquifers and groundwater protection areas, and assist with implementation of strategies at the local level.
- E. Develop and implement a monitoring program designed to evaluate degree, extent, and source of impacts to groundwater and drinking water supplies, and to evaluate effectiveness of groundwater protection efforts.
- F. Develop and implement data management system to store and evaluate sampling results.
- G. Develop and implement information dissemination system to communicate sampling results to the public.

- H. Encourage development of local watershed plans that identify groundwater quality protection practices, such as wellhead and source water protection and proper septic system siting, as part of the watershed management and restoration strategies.
- I. Ensure implementation of proper management practices (BMPs) for use at LAUST restoration sites.
- J. Encourage development of local watershed plans that identify the potential of LAUSTs to contribute to the impairment of ground water and surface water bodies.
- K. Ensure the availability of literature and other guidance to tank owners/operators.
- L. Obtain and use contaminant fate and transport models to protect groundwater and drinking water supplies by predicting contaminant movement from various sources through the unsaturated and saturated zones.
- M. Review proposed rural residential subdivision developments to evaluate potential septic system impacts on groundwater and drinking water supplies.
- N. Revise, print and distribute, as necessary, guidance used to assist property developers in compiling and developing information to be submitted for evaluating septic system impacts on groundwater and drinking water supplies.
- O. Develop, print and distribute information and educational materials for developers and county planners that explain DEQ's subdivision review process and related information.

## **URBAN AND INDUSTRIAL**

Urban pollution presents some difficult problems. Urban centers in Wyoming are typically located near surface water. In most cases, there are one or more streams flowing through our cities. Protecting these streams is a major challenge and becomes more critical as cities experience population growth.

Nonpoint sources of pollution in the urban setting might include sediment from small construction sites, metals and other contaminants washed from streets or small commercial and industrial sites, and/or fertilizers or pesticides washing from lawns and golf courses. Pollutants will accumulate in the urban setting during the interval between rainfall and snow melt events. When rain falls or snow melts there may be a sudden introduction of pollutants into lakes, rivers, streams, wetlands, and groundwater because of such interval accumulation.

The completion of the Urban Best Management Practices for Nonpoint Source Pollution manual (1999), and the development of NPDES storm water permits will help protect the receiving water quality from the anticipated growth and urban expansion in Wyoming. In addition, the Nonpoint Source website, intended for information and outreach, should be completed by early 2000. Information regarding road construction, urban activities, and rural development are expected to be included. This website will also provide links to many other sites, such as universities and EPA, that provide environmental and regulatory information about Nonpoint Source Pollution and related activities.

Success: Permits for polluted runoff will be developed for those required urban and industrial permittees within 12 months of receipt of each application.

**GOAL VI: Work with tribes, local governments, and watershed groups to assist in identifying water quality concerns and implementing workable, cost-effective solutions to controlling polluted runoff from urban and industrial areas.**

Objective VI.1: URBAN/SUBURBAN GROWTH

VI.1.a Reduce the contaminated runoff from construction sites, existing developments, and developing areas, including brownfields sites.

VI.1.b Reduce the contaminated runoff from general urban sources, such as households, commercial facilities, municipal landfills, and landscaping activities.

VI.1.c Reduce the contaminated runoff from roads, highways, and bridges.

Objective VI.2: CONSTRUCTION PROCEDURES

To ensure that all construction is done in accordance with the proper practices required in a NPDES storm water permit (if required), or through the use of proper storm water management practices (when a NPDES storm water permit is not required).

**GOAL VII: Ensure permits are issued for all water pollution sources and facilities for which permits are required by the Environmental Quality Act and the Industrial Siting Act.**

Objective VII.1: WATER QUALITY PERMITS

The Water Quality Division will issue point source permits with provisions intended to account for nonpoint sources of pollution for all sources and facilities required by the above acts.

Objective VII.2: WATER QUALITY PERMIT COMPLIANCE

The Water Quality Division will protect the in-stream water quality standards and beneficial uses by seeking a prompt elimination of sources of water pollution that violate, or significantly contribute to a violation of, water quality standards, and by maintaining an active inspection program in accordance with the enforcement management system.

**GOAL VIII: Control sediment and other nonpoint sources of water pollution at active mines through partnership with DEQ Land Quality Division.**

Objective VIII.1: MINING PERMITS

The Land Quality Division will issue permits to mines with provisions intended to control nonpoint sources of pollution.

Objective VIII.2: MINING PERMIT COMPLIANCE

The Land Quality Division will enforce the runoff control provisions in the mining permits issued by the division.

### ACTIONS

- A. Develop/require storm water permits for those commercial/industrial entities addressed by the NPDES storm water regulations to reduce associated adverse affects, especially those that commonly develop along with urban growth.
- B. Encourage the use of urban BMPs for those urban and industrial activities not regulated under the NPDES permit program. Such activities may include brownfields sites, and certain municipal and private landfills.
- C. Increase public education efforts in urban areas to enhance awareness of impacts associated with urban growth.
- D. Encourage development of local watershed plans that identify nonpoint source pollution in urban areas as part of the watershed management and restoration strategies. These plans should include brownfields sites and certain landfills among the nonpoint sources identified.
- E. Review, and provide comments on, management plans, project plans, NEPA documents, and other appropriate documents to assure that water quality issues are addressed through all phases of the project or plan.
- F. Issue permits where necessary with provisions intended to control nonpoint sources of pollution.
- G. Periodically update BMP manuals to utilize current cost-effective technology
- H. Conduct monitoring and site inspections where necessary to evaluate BMP implementation and permit compliance in priority watersheds.

### WATERSHEDS, OUTREACH, and PARTNERSHIPS

Since its reorganization in 1997, the Water Quality Division (WQD) has focused much of its resources on a watershed basis. Many more water quality issues will be addressed in a holistic manner within a specific geographic area as a result of this reorganization.

The WQD has been initially focusing on those water bodies that are listed within the state's Section 303(d) list as impaired or threatened. Investigations and assessments of those water bodies have been, or are in the process of being, completed. Though the investigations are intended to identify the sources that are causing the water bodies to be impaired, the watershed focus is intended to address a larger scope of issues with local involvement being at the cornerstone of the effort. WQD and its partner agencies are embarking on such an effort to access local expertise and address local concerns throughout the geographic areas that can have an effect on the water quality of the listed water body. This is the intent behind the State Watershed Management Strategy. See appendix G for more information on the State Watershed Strategy and the 1999 priority watersheds.

Success: Have local watershed planning groups established in the identified priority watersheds, and have the groups engaged in the development and implementation of a watershed management strategy within five years after becoming established.

**GOAL IX: Develop and implement a State Watershed Management Strategy, and prioritize the state's watersheds based on those most in need of restoration and water quality improvement.**

**Objective IX.1: PRIORITY WATERSHEDS**

Maintain a priority watersheds list, and biannually verify that the listed watersheds are those most in need of restoration and water quality improvement in Wyoming.

**Objective IX.2: TARGET RESOURCES**

Ensure DEQ resources are targeted in priority watersheds.

**Objective IX.3: BASIN ADVISORY GROUPS/WATERSHED PLANNING GROUPS**

Support and cooperate with the Wyoming Water Development Commission, State Engineers Office, and conservation districts for the creation and operation of local watershed planning groups. Such groups are intended to be used at the local level for the purpose of empowering the public to work together to coordinate, plan, and address opportunities for watershed restoration and water programs development.

**Objective IX.4: INTERSTATE COMPACTS**

Work with adjoining states and interstate compacts to address water quality issues on a watershed/basin level.

**Objective IX.5: TRIBAL AND AGENCY COLLABORATION**

Work cooperatively with tribes and other agencies and groups to combine efforts within priority watersheds.

**Objective IX.5: INFORMATION and EDUCATION (I&E) STRATEGY**

Provide public education, information, and technical assistance to encourage voluntary protection of the resource.

**GOAL X: Coordinate monitoring between WQD partners in order to minimize redundancy, reduce analytical and personnel costs, and increase efficiency.**

**Objective X.1: PARTNERSHIPS**

Establish partnerships with other programs, tribes, agencies, and local groups to improve monitoring efforts at all levels.

**Objective X.2: DATA REQUIREMENTS**

Ensure data requirements are met for assessment purposes, and that all data collected are compatible.

**Objective X.3: WATERSHED TARGETING**

Combine resources for water quality monitoring purposes in priority watersheds.

**Objective X.4: INFORMATION and EDUCATION (I&E) STRATEGY**

Provide public education, information, and technical assistance to encourage voluntary monitoring by local watershed groups.

ACTIONS:

- A. Encourage 319 projects focusing on I&E, especially in priority watersheds and in watersheds with active Basin Advisory Groups.
- B. Design an approach that may be used for the creation and function of watershed/basin advisory groups.
- C. Create and maintain contacts with programs, tribes, agencies, and local groups, especially those with activities in priority watersheds.
- D. Implement the recommendations found in the Information and Education (I&E) Strategy for Wyoming's Nonpoint Source Water Pollution Control Program, dated February 1999.
- E. Provide training, technical assistance, and information to the local watershed groups to encourage proper monitoring and data collection practices.
- F. Biannually verify that the listed priority watersheds are those most in need of restoration and water quality improvement in Wyoming. Continue periodic updates to the Priority Watersheds list as more data becomes available.
- G. Review, and provide comments on, management plans, project plans, NEPA documents, and other appropriate documents to assure that water quality issues are addressed through all phases of the project or plan.
- H. Conduct monitoring and site inspections where necessary to evaluate BMP implementation in priority watersheds.
- I. Periodically update BMP manuals to utilize current cost-effective technology
- J. Encourage development of local watershed plans that identify partnering, outreach, and water quality improvement practices as part of the watershed management and restoration strategies.
- K. Develop higher resolution scale Geographic Information System (GIS) watershed maps statewide for the purpose of program administration, data management, and resource planning.

## **CHAPTER 2 - TARGETED and PRIORITY AREAS**

### **Introduction**

The material in this chapter presents those geographic areas that have been targeted by DEQ or its partners for a higher-than-average level of water quality protection (for example, state-designated Class 1 waters, or federally-designated wilderness areas), or for intensified environmental restoration activities (for example, 303(d)-listed impaired waters, or priority watersheds). The discussion found within this chapter is intended to meet EPA's key elements numbers 5 and 7.

Also included in this chapter will be a discussion of the DEQ Nonpoint Source Information and Education strategy that includes those areas targeted by the strategy. This strategy is intended to initially focus the agency's efforts in specific geographic areas to increase the public's awareness of the issues surrounding nonpoint sources of water pollution, and to provide the public with the information needed to voluntarily help control those pollution sources.

### **EPA's Key Elements of this Chapter**

5. The state program identifies waters and their watersheds impaired by nonpoint source pollution and identifies important unimpaired waters that are threatened or otherwise at risk. Further, the state establishes a process to progressively address these identified waters by conducting more detailed watershed assessments and developing watershed implementation plans, and then by implementing the plans.
7. The state identifies federal lands and activities which are not managed consistently with state nonpoint source program objectives. Where appropriate, the state seeks EPA assistance to help resolve issues.

## **SPECIAL AREAS OF PROTECTION**

### **Class 1 Waters**

According to the definition found in Chapter 1 of the Wyoming Water Quality Rules and Regulations, Class 1 waters are "(t)hose surface waters in which no further water quality degradation by point source discharges other than from dams will be allowed. Nonpoint sources of pollution shall be controlled through implementation of appropriate best management practices. In designating Class 1 waters, the Environmental Quality Council shall consider water quality, aesthetic, scenic, recreational, ecological, agricultural, botanical, zoological, municipal, industrial, historical, geological, cultural, archaeological, fish and wildlife, the presence of significant quantities of developable water and other values of present and future benefit to the people".

1. The first types of surface waters listed as Class 1 waters are all surface waters located within the boundaries of national parks and congressionally-designated wilderness areas. In the State of Wyoming those areas are Yellowstone National Park, Grand Teton National Park, and the wilderness areas listed in the section below. According to the US Forest Service, of the 3,112,561 acres of designated wilderness area in the state, 1,329 acres of the listed wilderness occur outside National Forest system boundaries.

The remaining surface waters listed as state-designated Class 1 water bodies are as follows:

2. The main stem of the Snake River through its entire length above the U.S. Highway 22 Bridge (Wilson Bridge);
3. The main stem of the Green River, including the Green River Lakes from the mouth of the New Fork River upstream to the wilderness boundary;
4. The main stem of the Wind River from the boundary of the Wind River Indian Reservation upstream to Boysen Dam;
5. The main stem of the North Platte River from the mouth of Sage Creek (approximately 15 stream miles below Saratoga, Wyoming) upstream to the Colorado state line;
6. The main stem of the North Platte River from the headwaters of Pathfinder Reservoir upstream to Kortez Dam;
7. The main stem of the North Platte River from the Natrona County Road 309 bridge (Goose Egg bridge) upstream to Alcova Reservoir;
8. The main stem of Sand Creek above the U.S. Highway 14 bridge;
9. The main stem of the Middle Fork of the Powder River through its entire length above the mouth of Buffalo Creek;
10. The main stem of the Tongue River, the main stem of the North Fork of the Tongue River, and the main stem of the South Fork of the Tongue River above the U.S. Forest Service Boundary;
11. The main stem of the Sweetwater River above the mouth of Alkali Creek;
12. The main stem of the Encampment River from the U.S. Forest Service boundary upstream to the Colorado state line;
13. The main stem of the Clarks Fork River from the U.S. Forest Service boundary upstream to the Montana state line;
14. All waters within the Fish Creek (near Wilson, Wyoming) drainage;
15. The main stem of Granite Creek (tributary of the Hoback River) through its entire length;
16. Fremont Lake;
17. All waters that are tributary to the above listed waters and are otherwise unlisted in Chapter 1, Appendix of the Wyoming Water Quality Rules and Regulations; and,
18. Wetlands adjacent to class 1 waters are also treated as class 1.



**Federally Designated Areas**

The following is the list of federally-designated Wild and Scenic Rivers and wilderness areas in Wyoming:

Wild and Scenic Rivers:

Clarks Fork River (Shoshone National Forest)

Wilderness areas:

Absaroka-Beartooth (Shoshone National Forest)  
Bridger (Bridger NF)  
Cloud Peak (Bighorn NF)  
Encampment River (Medicine Bow NF)  
Fitzpatrick (Shoshone NF)  
Gros Ventre (Teton NF)  
Huston Park ( Medicine Bow NF)  
Jedediah Smith (Targhee NF)

North Absaroka (Shoshone NF)  
Platte River (Medicine Bow NF)  
Popo Agie (Shoshone NF)  
Savage Run (Medicine Bow NF)  
Teton (Teton NF)  
Washakie (Shoshone NF)  
Winegar Hole (Targhee NF)

**Riparian Zone Typing and Protection**

The voluntary protection of function and benefits of the riparian zone are becoming more pronounced within the Wyoming agricultural community. Many ranchers have recently begun projects where fencing of riparian areas and implementing grazing strategies within riparian areas are a major portion of their overall ranching practices improvements. A number of recent CWA section 319 projects have funded such improvements within Wyoming (see Chapter 5).

In addition, WQD stresses the importance of the riparian zone for water quality and habitat diversity within many of its I&E activities. This is further exemplified by including these zones within some of the practices discussed within the Best Management Practices manuals for silviculture activities and grazing practices. Also, in spring/summer of 1999, WQD will be participating with BLM in an effort to better identify riparian zones and riparian typing techniques. Successful completion of this effort will be included in the FY 2000 annual NPS report to EPA.

**Wetlands Protection**

The Wyoming Environmental Quality Act makes no distinction between the protection of water quality in rivers and streams versus wetlands. According to the Wyoming Department of Environmental Quality Water Quality Rules and Regulations, Chapter 1, Section 12, “Point or nonpoint sources of pollution shall not cause the destruction, damage, or impairment of naturally occurring wetlands except when mitigated through an authorized wetlands mitigation process. However, this section does not apply to wetlands created by point or nonpoint sources; nor are such wetlands required to be maintained through continuation of such discharges”.

Wyoming Waterbodies and monitoring programs are now watershed based, and some waterbodies may include wetlands.

WQD anticipates integrating wetlands monitoring into the surface water monitoring program. Steps have been taken to improve the quality of wetland inventory data. WQD, USEPA, BLM and FWS participated in a cooperative funding effort to digitize the National Wetland Inventory (NWI) maps for the Bear, Great Divide, and the Little Snake Basins. This work was a cooperative effort between WQD and The Nature Conservancy. The eastern portion was funded by a federal Section 319(h) grant, and the Bighorn Basin work was funded by a Section 104 (b)(3) grant.

An important issue in Wyoming is the loss of wetlands associated with the application of water conservation practices and improved irrigation techniques. Return flows from flood irrigation projects support a significant part of Wyoming's wetland base. This is a particularly difficult issue because the effort to conserve water has many obvious environmental advantages of its own. A better understanding needs to be developed of the extent and function of the agriculturally-supported wetland to better manage the resource in the irrigated basins of the state.

#### **NONPOINT SOURCE INFORMATION AND EDUCATION STRATEGY**

The Wyoming Department of Environmental Quality, Water Quality Division (WQD) and the Nonpoint Source Task Force believe that education and information activities are critical to the success of nonpoint source (NPS) pollution control. Therefore, in 1997, the WQD and the Nonpoint Source Task Force decided to commission the development of a comprehensive information and education (I&E) strategy. The strategy consists of several components and is contained in a draft document developed by Western Management Services, LLC, dated December 1998. The components of the strategy, as outlined by the draft document, are: 1) an identification of existing NPS I&E strengths and weaknesses; 2) a description of the potential target audiences; 3) a list of existing NPS I&E materials; 4) an examination of the need for a newsletter to reach the target audiences; and, 5) a communication strategy for the future.

As part of that communication strategy, the Nonpoint Source website, intended for information and outreach, should be complete by early 2000. Information regarding activities such as silviculture, grazing, farming, feedlots, hydrologic modification, mining, oil and gas, road construction, urban activities, and rural development are expected to be included. Some of the topics covered for each activity are problem identification, priority setting, BMP planning and implementation, how to evaluate results, and how to obtain funding. This website will also provide links to many other sites, such as universities, EPA and other agencies that provide environmental and regulatory information about nonpoint source pollution and related activities.

As of 1999, there are currently two geographically focused Information and Education 319 projects taking place within priority watersheds: 1) the Laramie County Conservation District is conducting BMP implementation education within the district, which includes Crow

Creek; and 2) the City of Gillette will be placing television ads and creating various written materials as information about potential pollutants and pollution-causing activities that are aiding in the degradation of the water quality in the Gillette Fishing Lake. For a list of the 319 projects, see Chapter 5. WQD anticipates more geographically focused I&E projects within priority watersheds as the watershed program matures.

### **FEDERAL CONSISTENCY REVIEW**

The NPS Program coordinates and cooperates with many state, local and federal agencies on programs which complement the NPS efforts. Federal consistency remains an important part of the NPS Program, and National Environmental Protection Act (NEPA) document review is an important component for consistency evaluation by WQD. During FY98, 118 NEPA documents were received and reviewed, and eleven were commented on. Due to limited staff time, only project documents where permits are needed or water quality issues exist receive attention and comment. Over the past several years the number of project documents reviewed and the number receiving comments has varied considerably. The highest percentage of documents receiving comment was 14% in FY95 and the lowest was 1% in FY97. In FY98, 9% of documents reviewed received comments. The variance somewhat depends on the number of projects proposed and also on NPS staff time availability.

Federal coordination has also increased because of a TMDL lawsuit filed against EPA in December 1996. Two formal meetings were conducted with federal agencies regarding TMDLs and several other consultations were made with individual agencies. The state TMDL Coordinator has been participating in the Green Mountain Allotment Management Plan CRM process.

In addition, WQD participates in quarterly meetings with the federal agencies. The purpose of the meetings are multi-faceted. They are convened to ensure that the federal agencies are conducting needed monitoring in areas of concern on federal lands; to discuss implementation and consistent application of BMPs; and, to exchange and update information regarding the agencies' land management and water quality improvement practices.

### **NONPOINT SOURCE IMPAIRED WATERS**

Wyoming DEQ has identified 14 watersheds that it considers to be its 1999 priorities for future restoration and protection activities because impaired water bodies were found within these geographic areas. DEQ will address these impaired water bodies as it implements its State Watershed Strategy (introduced in Chapter 3 and discussed in detail in Appendix G).

Of these 14 priority watersheds, two are currently known to be impaired wholly by point sources, four are impaired by a combination of point and nonpoint sources, and seven have no known point source contribution to the impairment. These seven water bodies are: Crow Creek, Gillette Fishing Lake, Hunter Creek, North Platte tributaries adjacent to the Kendrick Reclamation Project, Green River Hams Fork, Wheatland Creek, and Powder River.

The four water bodies experiencing loading from a combination of point and nonpoint sources (Moorcroft Upper Belle Fourche River, Hulett Upper Belle Fourche River, Big Goose Creek, and Little Goose Creek) are fecal coliform impaired. Fecal coliform is commonly associated with point and nonpoint sources of pollution. Because both types of sources are known to be contributors in these water bodies, DEQ is currently conducting additional studies to determine the relative contribution of fecal coliform from point sources versus nonpoint sources of pollution.

There are two watersheds on the 1999 Priority Watersheds list that are known to be wholly point-source impaired. These are Haggarty Creek and Crooks Creek. Further investigation to discern the extent of nonpoint source contribution, if any, to the known impairment are anticipated to be completed as part of the monitoring conducted under the local watershed plan. For information regarding activities and scheduling within all these watersheds, please refer to Chapter 3 and Appendix G.

The fourteenth water body, the Clarks Fork River, is known to be impaired by mining waste runoff, which may be nonpoint source-related pollution. This watershed - shared by Wyoming and Montana - is also on the Wyoming 1999 Priority Watersheds list, and is undergoing further investigation to discern the extent of nonpoint source contribution to the known impairment. This water body is on the State of Montana 303(d) list of impaired water bodies for 1998. The State of Montana is currently developing a watershed restoration plan to address the mining waste runoff issues. WQD will participate with Montana in the development of this plan to ensure that issues on the Wyoming side of the border are properly addressed.

## **CHAPTER 3 - PROGRAM IMPLEMENTATION and MANAGED SOLUTIONS**

### **Introduction**

The discussion found within this chapter is intended to meet EPA's key elements numbers 3, 4, and 8. This discussion discloses how the state will implement its nonpoint source program to manage solutions for known impairments and known threats to water quality, and how it intends to review and continually improve the program. Also, please refer to this chapter for a brief discussion on the State Watershed Strategy. Finally, schedules for implementation of the State Watershed Strategy (which includes development of Total Maximum Daily Loads, where necessary) within the state's 14 priority watersheds can be found at the end of this chapter.

### **EPA's Key Elements of this Chapter**

3. The state uses a balanced approach that emphasizes both state-wide nonpoint source programs and on-the-ground management of individual watersheds where waters are impaired and threatened.
4. The state program (a) abates known water quality impairments from nonpoint source pollution and (b) prevents significant threats to water quality from present and future activities.
8. The state manages and implements its nonpoint source program efficiently and effectively, including necessary financial management.

## **STATE WATERSHED STRATEGY**

The state watershed approach to resource planning is a holistic state-wide approach to coordinating, planning, and addressing water issues. Such an approach facilitates integrated analysis and decision making through comparisons of risks, tradeoff, and calculating costs and benefits of various options at varying scales.

In Wyoming, watershed planning is more than just looking at water issues. It involves all activities that occur within the watershed. This would include the recognition that watershed boundaries cut across social and political boundaries. Therefore, it is paramount to get local involvement in the development of a plan that addresses all the important issues within a watershed.

WQD has developed five broad activities that define the overall direction in the implementation of its Watershed Strategy. (The five broad activities are introduced later in this section, and are included in Appendix G.) These activities will, eventually, be conducted systematically within every watershed throughout the state. WQD has identified 14 watersheds that will receive first attention, beginning in 1999. These watersheds are the initial priority

watersheds under the State Watershed Strategy . Once implemented, the practices conducted within these priority watersheds can be refined for further implementation within the state. WQD will revise the “Priority Watersheds” list every two years, as needed, to continue to address the State’s waterbodies most in need of restoration and/or protection.

In implementing its watershed strategy, WQD will provide overarching goals for consistency and acceptability of watershed planning, and assign responsibility for problem solving and solution development to the local level. Within this framework, WQD will provide a holistic mechanism for water quality management, including data and decision-making that combines point and nonpoint affects and considers the influence of groundwater on surface water. The strategy also calls for establishing a statewide data management system that, while gaining endorsement by all users, defines minimum levels of data quality and protocol for purposes of decision making.

WQD encourages watershed planning groups to utilize the general principles of locally led consensus-based processes. These processes should include: 1) voluntary participation; 2) all stakeholders and interested parties become involved in the process; 3) neutral party facilitation of the planning process; 4) set operating procedures, ground rules, and/or bylaws; 5) develop common goals; 6) manage by consensus; 7) develop an action plan specifying, at a minimum, targeted activities, BMPs, and waterbodies; 8) implement the plan and monitor for results; and 9) reevaluate progress toward goals at agreed upon specified time intervals.

WQD has outlined an acceptable consensus-based process above. However, WQD will continue to support the use of all locally led processes that are achieving the end result of protecting or improving water quality.

In addition, WQD will identify intrastate/tribal consistency issues and work to facilitate solutions, coordinate with federal land management agencies to participate in state and local-level processes, periodically assesses the condition and trends in the state’s waterbodies, and focus resources in areas of greatest need through the implementation of the strategy.

Water Quality Division (WQD) will begin implementing its state-wide watershed strategy by engaging in activities in fourteen watersheds where water quality has not been meeting designated uses or where state standards are threatened. These 14 watersheds are the Wyoming WQD’s 1999 “Priority Watersheds” under its State Watershed Strategy .

WQD has embarked on scheduling five activities within each of these watersheds. For more complete scheduling and definition detail for the 1999 Priority Watersheds, refer to Appendix G, Priority Watersheds - Activities Schedule.

The five activities that have been scheduled for each watershed are: water quality investigations; identification of sources of pollutants of concern; elimination or control of those pollutants of concern; development of a watershed plan (created by a local watershed group); and implementation of those locally developed watershed plans. WQD will work cooperatively with the conservation districts in the priority watersheds to create local groups willing to

develop and implement watershed-based environmental improvement and protection plans. WQD is especially interested in local groups coming forward as volunteers in those portions of the watersheds that include 303(d)-listed waterbodies. WQD will then coordinate with these local groups to ensure that specific actions, practices, and objectives become a vital part of the water quality improvements in those plans that include 303(d)-listed waterbodies. To assist the local groups in their planning and implementation efforts WQD will, for example, make funds available for water quality improvement projects, technology demonstration projects, or for workshops and forums intended to make the appropriate information available to the watershed planning and implementation groups.

WQD recognizes that the geographic areas for which a local group chooses to be responsible is dependent upon the constituents of that group. This is an expected possibility and could likely result in multiple watershed planning groups being created within a specific priority watershed. In these cases, WQD will assist these groups in facilitating coordination among them to ensure a seamless application of water quality improvement actions within the priority watershed as these groups begin to develop and implement their watershed management plans.

Additionally, DEQ may consider the actions contained within such a watershed management plan, developed by the local group, to displace a TMDL developed by DEQ if the actions, practices, objectives, etc. contained within the management plan achieve water quality improvement in those waterbodies that are listed as impaired. The ultimate goal of those water quality improvement actions should be to return the waterbody to compliance with state standards and its designated use. When the waterbody is returned to its designated use consistent with state standards, DEQ may be able to defer the development of a TMDL for that waterbody. In any case, if water quality improvements can be reliably shown, DEQ may be able to lower the priority of the development of the TMDL.

## **MANAGED SOLUTIONS FOR KNOWN IMPAIRMENTS**

The Water Quality Division (WQD) strongly encourages the development of local groups willing to develop and implement actions that will improve the water quality within their geographic areas. These groups are referred to within this plan as Watershed Planning Groups (also basin advisory groups, especially by the Wyoming Water Development Commission). Water quality does not have to be the only focus of the Watershed Planning Group. WQD may consider the actions, practices, and objectives contained within a watershed management plan, developed by such a local group, to be in lieu of a TMDL developed by DEQ if those actions, etc. are intended to achieve water quality improvement in those waterbodies that are listed as impaired. The ultimate goal of those water quality improvement actions, etc. should be to return the waterbody to compliance with state standards and its designated use.

The WQD has developed a “TMDL work plan” (initially dated July 30, 1997) that outlines, in more detail, the activities and approach to achieving a successful TMDL program in Wyoming. Data collected for preparation of the Clean Water Act Section 305(b) Water Quality Assessment Report is considered along with other available data to prepare the 303(d) list. DEQ will provide notice of intent to file a required Section 303(d) list and provide opportunity

for public comment on the proposed list and prioritization before it is filed with the EPA. DEQ will consider all comments and objections before adopting a final list for filing with the EPA. See Appendix C, Continuing Planning Process for more complete details on the TMDL development process.

For those waterbodies where no local group has come forward to develop a watershed management plan, WQD will develop a TMDL to return those waterbodies to compliance with State standards and their designated uses. WQD will encourage local watershed stakeholder groups and federal land management agencies to develop recommendations for Nonpoint Source TMDLs on impaired water bodies listed on the 303(d) list. The director will appoint representatives of various stakeholder groups to participate on a TMDL advisory workgroup. A Nonpoint Source TMDL may consist of a quantifiable goal, management technology, or a water quality management plan within a watershed implementation plan.

After TMDLs are established for impaired water bodies, point source TMDLs will be implemented through enforceable water quality-based discharge limits on National Pollution Discharge Elimination System (NPDES) permits. For nonpoint source TMDLs, the administrator, with the cooperation of affected land management agencies and local watershed stakeholder groups, shall develop a watershed implementation plan for impaired water bodies.

The watershed implementation plan shall identify goals, responsibilities, and recommend Best Management Practices (BMPs) to achieve the needed water quality improvement and return the impaired waterbody to a fully support status. The plan may also include various voluntary or incentive-based controls to achieve the needed water quality improvement. Included in the watershed implementation plan will be milestones to measure progress and success. Each plan shall be subject to public participation prior to approval by the administrator for implementation. All reasonable efforts shall be made to encourage voluntary source reduction, flexibility, and incentive-based controls. The final plan must provide reasonable assurance that continuous improvements will be made to the water quality of the impaired water body, with the ultimate achievement of the water quality improvement (or TMDL, if conducted by the state) leading to the restoration of the water body to its designated use(s).

## **MANAGED SOLUTIONS FOR KNOWN THREATS**

DEQ has developed a list of water bodies that need monitoring to determine if they should be included on the state's 303(d) list of impaired water bodies. Previous information - sometimes anecdotal, and sometimes sampling data that does not meet the definition of credible data - has led DEQ to collect further data on these water bodies. If the newly collected data meets the definition of credible data, and the water body is found not to be meeting water quality standards, the water body will be placed on the state's 303(d) list. If the new information shows the water quality is meeting state standards, the water body will be removed from the "need to monitor" list and will not be placed on the state's 303(d) list of impaired water bodies.



Foreseeing future water quality threats can be difficult. DEQ is taking a proactive approach by implementing an updated Information and Education program to ensure the public can find the necessary information to help avert future water quality threats. One tool that will provide this information is the Nonpoint Source Information and Education Website, due to be completed in early 2000. The site will contain pages focusing on the following activity areas: silviculture, grazing, crop production, feedlot management, hydrological modification, mining, oil and gas development, road construction, rural development, urban activities, solid waste disposal, and recreation. The website will also contain information on the following subjects: public meeting facilitation, data analysis, links to bibliographic databases, source assessment, goal and objective development, implementation planning, mapping, best management practices, grant writing and funding sources, technical assistance, evaluating results, project administration, intergovernmental relations, and water laws and regulations. Current plans are to expand and enhance the pages for each of the activity areas providing access to appropriate BMP documents, additional information, and links to other applicable sites.

The Wyoming Nonpoint Source Task Force membership formed an Information and Education (I&E) Subcommittee to develop actions to further promote the activities administered by this recommending body. The WQD is also developing priorities and an action plan to utilize the DEQ Outreach Program to assist in implementing Information and Education Strategy goals. In addition, DEQ will continue to fund I&E and water quality improvement projects, especially in the priority watersheds, through the 319 grant program.

## **PROGRAM REVIEW AND IMPLEMENTATION**

The Water Quality Division (WQD) will manage its Nonpoint Source Program in accordance with this plan, once approved, as required by the Clean Water Act. Amendments to this plan will be adopted by the Water and Waste Advisory Board following notice and opportunity for public comments on the plan. The plan will be certified by the governor before submittal to EPA for approval.

WQD will review and upgrade this plan in accordance with its continuing planning process, but generally once every five years. Any updates in general focus of this plan will be completed as part of the requirements under the State-EPA Performance Partnership Grant. WQD may also update this plan earlier than once every five years in order to modify the State Watershed Priority list, or when changes to BMPs or the TMDL list make it necessary. See Appendix C, Continuing Planning Process for more complete details on the various plan review and update processes.

### **Review and Implementation** - State Watershed Strategy

DEQ has developed the previously discussed five activities that define the overall direction of the implementation of its Watershed Strategy, not only as a means for implementing the Strategy, but also as tools to be used in evaluating progress of implementing the Strategy. As mentioned, the practices conducted within the priority watersheds may be refined for implementation further within the state. DEQ will evaluate the implementation

activities in each of the priority watersheds over the next 15 years. Specific results will be tracked and measured against targets (see Chapter 4 - Program Implementation Monitoring) to assess the success of the implemented activities. These activities will be conducted systematically within every watershed throughout the state once they have been implemented, evaluated, modified if necessary, and deemed successful in the initial priority watersheds. For an example of how WQD intends to implement its State Watershed Strategy on a yearly basis, the 1999 strategy and implementation schedule is included in Appendix G.

## **CHAPTER 4 - FOLLOW-UP ACTIONS AND IMPROVEMENTS**

The discussion found within this chapter is intended to meet EPA's key elements numbers 6 and 9. The focus of this chapter is on the processes DEQ will use to ensure program progress and how it will make changes to its program elements in the future. Please note that, though not all elements discussed within this chapter may fall under the direct responsibility of the Water Quality Division (WQD), each element discussed has a direct effect on the Nonpoint Source Program within the WQD.

### **EPA's Key Elements of this Chapter**

6. The state reviews, upgrades, and implements all program components required by section 319(b) of the Clean Water Act, and establishes flexible, targeted, and iterative approaches to achieve and maintain beneficial uses of water as expeditiously as practicable. The state programs include:
  - (a) A mix of water quality-based and/or technology-based programs designed to achieve and maintain beneficial uses of water; and
  - (b) A mix of regulatory, non-regulatory, financial and technical assistance as needed to achieve and maintain beneficial uses of water as expeditiously as practicable.
  
9. The state periodically reviews and evaluates its nonpoint source management program using environmental and functional measures of success, and revises its nonpoint source assessment and its management program at least every five years.

## **PROGRAM IMPLEMENTATION MONITORING**

This section describes how DEQ will measure its progress on the Goals and Objectives discussed in Chapter 1. In general, the planning improvement will be pursuant to the Continuing Planning Process described in Chapter 3. Most of these measures are tracked by various offices within DEQ, and reported to EPA, as stipulated in the DEQ Strategic Plan dated September 1, 1997.

### **Nonpoint Source Plan Activities**

By reviewing data of the measures tracked within the Water Quality Division, DEQ can assess its progress and make adjustments accordingly. For example, Goal X in Chapter 1 refers to activities regarding watershed management plan development. DEQ will track the number of local watershed groups created, the number of watershed management plans completed, and the number of plans being implemented. Each year DEQ will evaluate these data with respect to the schedules included in Appendix G, Priority Watersheds - Activities Schedule. If the activities are progressing as scheduled, there will be no need for changing the actions DEQ is

taking to ensure the goals and objectives are being met. However, if the schedules are not being met, then DEQ will assess its actions and design more appropriate ways to help ensure the plans and activities are being completed. (NOTE: Some of the targets below are listed with five year time-frames. DEQ will revise those targets on a biannual basis, as needed, to ensure progress toward achieving the long-term goals discussed in Chapter 1. Those targets without specific time-frames are expected to continue to be valid until all items are completed or until the relevant 15-year goal is revised, whichever comes first.)

#### 1. Surface and Groundwater Monitoring

- \* Track the percent implementation of the annual surface water monitoring plan.  
Target: 100% implementation each year
- \* Track the percent completion of the comprehensive groundwater monitoring plan.  
Target: 100% completion by end of FY 2001
- \* Track number of GW priority protection areas with improved water quality.  
Target: 100% by end of FY 2011
- \* Track the water quality data of 303(d)-listed bodies in priority areas.  
Target: 100% of water bodies each year.
- \* Realize incremental increase in water quality of listed water bodies in priority areas.  
Target(Short Term): 2 water bodies restored to meeting designated uses each biennium.  
Target (Long Term): 100% of water bodies restored to meeting designated uses each 15 years.
- \* Track technical and planning assistance provided to local governments.  
Number of Wellhead Protection (WHP) program assistance projects provided or funded.  
Number of Source Water Protection program assistance projects provided or funded.  
Number of LAUST remedial action plans submitted for review.

#### 2. Update Priority Watersheds List

- \* Track the number of priority watersheds in need of environmental restoration, water quality improvement or protection projects.  
Target: (uncertain, dependent upon monitoring data)
- \* Assess biannually, and include as needed, additional watersheds for the priority list.  
For example: - Use 303(d) list and monitoring data to determine if new stream segments have been added to the list of impaired water bodies, and determine if that watershed should be added to the priority watersheds list.  
- Remove from the priority watersheds list any watersheds that do not currently have stream segments on the 303(d) list or that are progressing satisfactorily under the local group watershed management plan.

#### 3. Local Watershed Management Plans

- \* Track the number of local watershed groups formed.  
Target: FY 2000 - 3; FY 2001 - 5; FY 2002 - 6

- \* Track the number of local watershed management plans completed  
Target: FY 2000 - 1; FY 2001 - 3; FY 2002 - 5; FY 2003 - 5  
Target (Long Term): 1 additional plan each year through FY 2015
  - \* Track the number of local watershed management plans being implemented.  
Target: FY 2000 - 1; FY 2001 - 2; FY 2002 - 4; FY 2003 - 10; FY 2004 - 14  
Target (Long Term): 1 additional plan each year through FY 2015
  - \* Track the number of watersheds where DEQ must develop a TMDL.
4. Nonpoint Source Total Maximum Daily Load (TMDLs) Developed by DEQ
- \* Track the number of nonpoint source TMDLs developed in lieu of watershed plans.  
Target: Up to 3 per year, dependent upon success of watershed plans.
  - \* Track the number of nonpoint source TMDLs implemented in lieu of watershed plans.  
Target: Up to 3 per year, dependent upon success of watershed plans.
5. Best Management Practices
- \* Update adopted Best Management Practices at 5-year intervals.  
(All adopted BMP manuals are targeted)
  - \* Track the number of conservation districts assisted with BMP implementation for NPS.  
Target: 7 per year; all 34 every 5 years; all 34 three times over the next 15 years.
  - \* Track the number of 319 projects assisting property owners in BMP implementation.  
Target: 100% increase in total projects in priority areas over next 15 years.
  - \* Track number of Federal land management agencies implementing BMPs that result in improved water quality.  
Target (Short Term): improved water quality in 2 segments per year;  
Target (Long Term): 30 segments with improved water quality over 15 years.
6. Interstate/Tribal Total Maximum Daily Loads Coordination
- \* Track the number of nonpoint source TMDLs being jointly developed.  
Target: FY 2002 ( in cooperation with Idaho and Utah on Bear River)

## **ENVIRONMENTAL MONITORING**

Wyoming DEQ has a schedule for its water quality monitoring that is updated every year, but envisions the state's reconnaissance monitoring of all major watersheds to be complete by the end of 2002. This would mark the end of a five year monitoring cycle that began with the writing of the five year comprehensive monitoring plan, dated June 9, 1998. Thereafter, the monitoring will be refined to characterize sub-basins and focus on areas where more detailed monitoring is needed to assess water quality concerns.

During the five year monitoring plan, the Water Quality Division must complete several monitoring objectives in its monitoring schedule. These objectives include: mandatory NPDES and storm water discharge inspections; investigation of complaints; Beneficial Use Reconnaissance Program (BURP) monitoring of at least 20% of the waters listed for such monitoring; monitoring of high priority "impaired" and Waste Load Allocation (for NPDES permit renewals) waters; and monitoring of approximately 25 long-term reference streams.

Most “threatened” waters on the state’s 303(d) list are currently being monitored as part of 319(h) watershed projects.

WQD will implement the monitoring on a watershed basis. In addition, WQD will work with the local watershed groups to incorporate watershed-based monitoring in the watershed management plans as they are being developed. Monitoring on a watershed basis will help achieve the department’s goal of incorporating appropriate water quality improvement activities and objectives within the watershed plans. The schedule presented in the five year monitoring plan (see Appendix F) calls for 35% of the TMDLs (or similar water quality improvement actions) to be completed by the end of the five year planning period.

## **PROJECT MONITORING**

The NPS projects funded under authorization of Section 319 of the Clean Water Act are assigned a Project Officer within WQD once the projects have been approved by the NPS Task Force and DEQ for funding. It is the responsibility of each project officer to track the progress of each project assigned, and to file a quarterly report with the program principle. The program principle then compiles the project officer information into a report for EPA.

Regular coordination between the project officer and the proponent is needed to ensure the project progresses as planned. WQD will work with the project proponents in order to ensure that by the year 2005 at least 70%, and by the year 2010 at least 90%, of all projects will be completed according to plan by the originally scheduled completion date. Currently, less than 50% of the 319 projects are completed without at least one extension to the original scheduled completion date.

## **DATA MANAGEMENT and TRACKING**

One of the most important projects the Water Quality Division (WQD) has been working on steadily since the Strategic Plan was written in 1997 is the improvement of data management and tracking. In the 1997 strategic plan WQD identified the need to “optimize” data collection location and frequency to “confirm maintenance of environmental quality and identify trends for management attention.” Also, in 1999 the Wyoming legislature passed a “credible data” act, requiring the collection of scientifically valid data from which the watershed planning groups can recommend and the agencies can make science-based decisions. To this end, WQD has improved access to, and understanding of, the EPA STORET data base for water quality data.

WQD is preparing a Quality Assurance Program Plan (QAPP) that will serve as the policy and guidance for all its environmental monitoring actions. The QAPP will stipulate how the agency will conduct environmental monitoring, processes for keeping sample integrity and chain of custody, and guidance for ensuring proper development of Quality Assurance/Quality Control (QA/QC) documents for project-specific environmental sampling. The QAPP is intended to be the program-level guidance document and, therefore, will not contain project-specific information.

Every two years, DEQ will propose a list of waterbodies that do not support their designated uses, and include these in the list as stipulated under Section 303(d) of the Clean Water Act. Data collected for preparation of the Clean Water Act Section 305(b) Water Quality Assessment Report is considered, along with other available data, to prepare the 303(d) list. The 305(b) report contains both surface and ground water quality information. Historic and current information are included in the 305(b) Water Quality Assessment Report.

## **CHAPTER 5 - PROJECTS**

NPS projects are an important part of Wyoming's NPS Program. These projects assist in accomplishing the goals of protecting and improving water quality within the state. Information and education projects and best management practices demonstration projects help inform people about nonpoint sources of pollution and help them to understand potential solutions to the problem. Watershed projects address water quality problems on streams not meeting beneficial uses or where beneficial uses are threatened. This helps the state maintain and improve water quality. Planning and assessment projects help the state determine where water quality problems exist and help with the planning for improvements.

The State of Wyoming does not provide match for Nonpoint Source Projects. However, through the Performance Partnership Grant (PPG) and state resources requested for the TMDL effort, the state is beginning to match the staffing and support grant. WQD is currently making a concerted effort to address a variety of issues which may eventually lead to institutionalizing the program. In particular, the TMDL issue has helped to form better partnerships with land and resource management agencies, and individual landowners realize that it is through strong state agency programs that the problems can be addressed and the "non-problems" can be documented.

The following is an example of nonpoint source projects that have been or are ongoing within the state. Since these projects are crucial to the successful implementation of the Wyoming NPS program, DEQ anticipates similar projects being funded in the future.

In general, greatest achievements in reducing pollutant loads and improving water quality and stream condition have been achieved by the larger watershed projects. Many of the watershed improvement projects are still underway. Completed or nearly completed projects that have been successful include the Site Specific Crop Management, North Fork Crazy Woman, Spread Creek, Bridger Creek, Sage Creek, Willow Creek, Upper Muddy Creek, Loco Creek and Squaw/Baldwin Creeks. The projects funded beginning with FY 1998 have more comprehensive monitoring programs associated with them which provide for improved documentation of achievements.



**Table 3.1.1. 319 PROJECTS FUNDED BY THE WYOMING NPS PROGRAM**

Grant No./ Project No.	Project	Organization	Completion Date	Final Report Filed	Comments
00863090-01	Miracle Mile	Medicine Bow Conservation Dist.	12/15/94	yes	
-02	Teton County Groundwater Study	University of Wyoming, Water Resources Center	2/28/92	yes	
-03	Bitter Creek	Trout Unlimited/ Flaming Gorge Chapter	2/28/92	yes	
-04	N. Fork Crazy Woman Creek Phase I of III	Lake DeSmet Conservation District	10/5/93	no	Report to be filed at the close of phase II and III
-05	WACD NPS Education	Wyoming Association of Conservation Districts	9/8/93	yes	Continued see grant 0086940-04
-06	Soil & Water Conservation Society	Soil & Water Conservation Society	6/26/91	yes	
-07	Range and Water Handbook	Wyoming Department of Agriculture	2/28/92	no	Project Canceled
008630920-02	N. Fork Crazy Woman Creek Phase II	Lake DeSmet Conservation District	3/30/98	no	DEQ is contracting to complete the final report
-03	Beaver Management	University of Wyoming, Cooperative Extension	12/5/94	yes	Brochure produced
-04	TSS Volunteer Monitoring Education	Teton Science School	3/30/97	yes	
-05	LCCD NPS Education	Laramie County Conservation District	5/21/96	yes	
-06	CRM Training	Wyoming Department of Agriculture	2/28/93	yes	

Grant No./ Project No.	Project	Organization	Completion Date	Final Report Filed	Comments
-07	Goshen County Groundwater Vulnerability	University of Wyoming, Water Resources Center	2/19/96	yes	
008630930-01	Reardon Draw Phase I of II	Sublette County Conservation Dist.	7/31/98	no	Final report in Progress
-02	N. Fork Crazy Woman Creek Phase III of III	Lake DeSmet Conservation District	3/30/98	no	DEQ is contracting to complete the final report.
-03	Upper Muddy Creek Phase I of III	Little Snake River Conservation District	12/31/97	yes	
008630940-01	Loco Creek	Little Snake River Conservation District	6/30/96	yes	
-02	Agriculture in the Classroom	Agriculture in the Classroom	5/22/96	yes	
-03	Bridger Creek	Bear Lake Regional Commission	7/8/96	yes	
-04	WACD NPS Information & Education	Wyoming Association of Conservation Districts	5/20/96	yes	
-05	Upper Muddy Creek Phase II of III	Little Snake River Conservation District	12/31/97	yes	
008630943-03	Reardon Draw Phase II of II	Sublette County Conservation District	7/31/98	no	Final Report in Progress
-42	North Fork Spread Creek	Bridger-Teton National Forest	7/31/98	no	Final Report in Progress
-43	CWID Irrigation & Grazing BMPs	Crazy Woman Watershed Improvement District	9/30/97	yes	Data will be evaluated as part N.F. Crazy Woman Watershed report
-45	Integration BMPs Through Education	Laramie County Conservation District	3/31/96	yes	
-46	Torrington WHP & GW Monitoring	Town of Torrington	10/30/97	yes	
-49	Squaw and Baldwin Creeks	Popo Agie Conservation District	6/30/98	yes	

Grant No./ Project No.	Project	Organization	Completion Date	Final Report Filed	Comments
008630950-01	WACD NPS Information & Education Continuation	Wyoming Association of Conservation Districts	9/30/97	yes	
-02	Upper Muddy Creek Phase III of III	Little Snake River Conservation District	12/31/97	yes	
-03	TSS Volunteer Monitoring Education Continuation	Teton Science School	12/31/97	no	Final Report in Review
-04	Willow Creek/ Smiths Fork	Uinta County Conservation District	12/31/98	no	Final Report in Review
-05	Information and Education Planning	Wyoming DEQ, WQD	2/28/99	no	Reports to be part of NPS annual report
-56	Star Valley Water Quality Investigations	Star Valley Conservation District	6/30/97	yes	Final report in Review
-58	Silviculture Brochure	Wyoming DEQ, WQD	6/30/97	yes	Brochure completed - report given in FY 96 & 97 annual report
-59	Torrington WHP Education & Monitoring	Town of Torrington	7/31/99	no	
008630960-01	Groundwater Vulnerability Mapping	University of Wyoming, Water Resources Center	9/30/98	no	
-02	Big Horn River Water Quality Assessment	Washakie County Conservation District	9/30/97	yes	
-04	Riparian Handbook	University of Wyoming, Cooperative Extension	5/31/99	no	
-05	Groundwater Monitoring for Pesticides	Wyoming Department of Agriculture	9/30/98	no	Final Report in Progress
-06	Flat Creek Water Quality Assessment	Teton County Natural Resources District	11/30/97	yes	
-08	Elk Mountain Wellhead Protection Project	Town of Elk Mountain	9/30/97	yes	

Grant No./ Project No.	Project	Organization	Completion Date	Final Report Filed	Comments
008630960-09	Confined Feeding I&E Project	Wyoming Association of Conservation Districts	9/30/99	no	
-10	LCCD Integrating BMPs through Education	Laramie County Conservation District	6/30/98	yes	
-11	Site Specific Crop Management	Geringer Brothers	12/31/99	no	
-13	Savery Creek Water Quality Assessment	Little Snake River Conservation District	9/30/97	yes	
008630970-01	Groundwater and Nitrate Sampling	Town of Torrington	12/31/00	no	
-02	Integrating BMPS through Education	Laramie County Conservation District	8/31/98	no	To be extended
-03	Locally Led and Initiated Watershed Efforts	Wyoming Association of Conservation Districts	6/30/00	no	
-04	Alkali Creek Pilot Watershed Project	Powell-Clark's Fork Conservation District			Project dropped by sponsor
-05	Sage Creek Watershed Project	Saratoga-Encampment-Rawlins Conservation District	9/30/00	no	
-06	Silviculture BMP Education	Wyoming Timber Industry Assoc.	12/01/99	no	
008630980-01	Integrating BMPs Through Education	Laramie County Conservation District			Cooperative Agreement in Progress
-02	Garden Creek Project	Natrona County School District #1	5/31/00	no	
-03	Filtration of NPS Pollution - Flat Creek	Teton County conservation District			Cooperative Agreement in Progress
-04	Wind River Indian Reservation NPS Monitoring	Wind River Environmental Quality Commission			Project Canceled
-05	Star Valley Water Quality Project	Star Valley Conservation District			Cooperative Agreement in Progress

<b>Grant No./ Project No.</b>	<b>Project</b>	<b>Organization</b>	<b>Completion Date</b>	<b>Final Report Filed</b>	<b>Comments</b>
008630980-06	Upper Muddy Creek Watershed Project	Little Snake River Conservation District			Cooperative Agreement in Progress
-07	Savery Creek Watershed Project	Little snake River Conservation District			Cooperative Agreement in Progress
-08	Water Education Wet, Wild and Learning Tree	Project Learning Tree	7/31/00	no	
-09	Squaw Creek Watershed Project	Park County/Shoshone National Forest			Cooperative in Progress
-10	Rock Creek/Shell Creek Water Quality Assessment	Lake DeSmet Conservation District	9/30/00	no	

## FUTURE PROJECTS

### Selection Process

WQD sends out Requests for Proposal each year upon notification from EPA that funds are forthcoming. The received proposals are then reviewed for relevance to regulations and consistency with guidance. The guidance used is usually that which is received from EPA for that grant year. Those projects deemed relevant to regulations and consistent with guidance are then tallied to determine the total amount of grant funds requested for the current grant year. If there are enough funds to pay for all grant proposals, all proposals will be approved. The WQD administrator has final approval authority, but advice from the Nonpoint Task Force and EPA weigh heavily in the decision. Should the total requested amount exceed the funds available, then WQD employs a scoring process whereby those proposals with the highest scores are those approved for funding. Funding approval proceeds down the list, beginning with the highest scored proposal, until all grant funds are allocated.

Below is a summary of the criteria used for ranking the proposals received for 1999 Nonpoint Source Pollution Control (Section 319) funds, and were fully described in a DEQ memorandum from Phil Ogle, Nonpoint Source Program Coordinator, dated June 12, 1998 (see Appendix A for full text). EPA and WQD Nonpoint Source staff evaluated all proposals and indicated to the NPS Task Force whether these criteria are met or if additional work is needed by the proponent to make the proposal fully comply with these requirements.

### General Selection Criteria

- Ž Demonstrated Water Quality Need: -- Does the project have a water quality benefit? Does the project address waters where beneficial are impaired or threatened? Prevention of pollution in impaired or threatened waters is considered a benefit.
- Ž State Strategy and Priority: -- Does the proposed project comply with the State Strategy as reflected in the NPS Management Plan and Nonpoint Source Strategic Plan? Monitoring and/or implementation projects proposed on Clean Water Act section 303d listed stream segments will be considered top priority for funding.
- Ž Project Well Planned -- Is the project the most efficient and effective method to achieve the state's water resource goals (treating the problem rather than the symptoms)? Does the project sponsor have the technical and administrative capabilities to conduct the project?
- Ž Program Coordination and Commitment -- Are the right entities involved in a comprehensive, integrated fashion?
- Ž Products -- How will the information, measurable water resource benefits, or the project evaluation be used? How will this information be distributed to an interested public? A project final report providing detail on the project activities will be required.

- Ž Reasonable Costs/Justifiable -- Are the proposed costs reasonable and justifiable? Can all items in the budget be found in the project description? Is Section 319 the appropriate source of funding for this project?
- Ž Efficient/Effective Funding -- Attention should be given to the most efficient and effective use of funds.
- Ž Information and Education Component -- Technology transfer and education is an important component of the program. Each proposal should include a specific effort to educate the public on the results of the project and transfer technology to potential users.
- Ž Evaluation and Monitoring Component -- Monitoring is an important component of the program. Each proposal should include an explanation of the evaluation and monitoring plan.

SB/pjb  
00712.doc  
March 20, 2000

# APPENDIX A



## MEMORANDUM

TO: All Interested Parties

FROM: Phil Ogle  
Nonpoint Source Program Coordinator

DATE: June 12, 1998

RE: **Request for Proposals for 1999 Nonpoint Source Pollution Control (Section 319) Funds**

### **DUE DATE: JULY 31, 1998**

Nonpoint source pollution is pollution which results from runoff of contaminants into surface waters or percolation of contaminants into groundwater. It is generally associated with human land disturbing activities such as urban development, construction, agriculture, recreation, silviculture, mineral exploration, etc. Under Section 319 of the federal Clean Water Act, funds can be made available to State and local agencies, non profit organizations, and private individuals to address nonpoint source pollution problems.

Nonpoint source pollution control funds are available each year on a competitive basis. Funds are awarded as reimbursement grants, meaning that funds can be issued to the recipient only after proof of expenditure on eligible costs identified in an approved project plan. All proposals submitted for these funds must identify at least 40% **non-federal** cash or in-kind services match.

Attached are the guidelines for submitting project proposals for FY-99 Section 319 funds. Project proposals must conform to the guidelines and utilize the attached forms and format in order to be eligible for funding. There are three standard categories of project proposals, each with its own set of guidelines. These categories are: Watershed, Information & Education, and Groundwater. Additionally, a fourth category allows a percentage of 319 funds to be used for assessment activities. Projects may be short or long term, but funding cannot be extended beyond four years. Landowners and operators receiving 319 funded cost sharing must practice nutrient and pesticide management consistent with the U.S. Department of Agriculture (USDA) National Resource Conservation Service's (NRCS's) Field Office Technical Guide or other appropriate standards to be eligible.

The Department of Environmental Quality (DEQ) and U.S. Environmental Protection Agency (EPA) will review the proposals and provide an evaluation to the Wyoming Nonpoint Source Task Force. The Task Force will review project proposals and DEQ/EPA evaluations, and make recommendations for project funding. Each project proponent will be allowed time for a presentation at the September 18, 1998 Task Force meeting in Lander, Wyoming. Upon recommendation by the Task Force, DEQ will negotiate detailed Project Implementation Plans (PIP) with proponents of the selected projects. EPA will work with DEQ and the proponents to develop an acceptable PIP. The Project Implementation Plan must be negotiated by September 30, 1999, or funds will be released and awarded for other purposes. Award of funds should not be expected prior to March, 1999. It is anticipated that the State of Wyoming will receive between \$500,000 and \$600,000 for nonpoint source projects.

Persons wishing to apply for funding should contact the Water Quality Division, Nonpoint Source (NPS) Program at (307) 777-7781 as soon as possible.

Project proposals must meet the following criteria in order to be considered for funding:

1. Proposals must be received by the Wyoming Department of Environmental Quality, Water Quality Division, Herschler Building, 4th Floor West, Cheyenne, WY 82002, Attention Phil Ogle, by close of business (5:00 p.m.), **JULY 31, 1998**. No consideration will be given to FAX copies or to proposals received after the deadline. Ensure that enough time is allowed for postal service delivery on or before the deadline.
2. Project narrative must be fifteen (15) pages or less. Budget forms, maps, milestone tables, and the project summary sheet are not counted as part of the fifteen page narrative.
3. Incomplete packages can not be considered for funding. If all information is not available for a requested content item, the proposal must describe how the needed information will be collected and used. An explanation should be provided for items that are not applicable to the particular proposed project.
4. Fifteen copies of the proposal must be submitted. One copy must be unbound and single-sided. The remaining copies should be double-sided. Proposals should be submitted on recycled paper. **Note:** All pages of the proposal must be on 8.5" x 11" paper. If colored or larger sized maps or large tables are submitted with the proposal, an additional 5 copies of the maps or tables must be included with the application.
5. If project administration, including indirect costs, is being requested for funding or use as match, it must be included as a separate task in the proposal, and must not exceed 10% of the total project cost. Administrative costs must be accounted for and documented separate from other project work activities.
6. If the project is going to utilize funds or staff contributed by other agencies or organizations, written commitments must be included with the proposal documenting the amount of money and/or the number of hours of effort expected from those agencies. We cannot award the subgrant until written commitments are received from all supporting agencies/organizations identified in the proposal.
7. Mileage expenses may not be reimbursed at a rate greater than \$.28 per mile.
8. The proposed budget must have a minimum match of 40% non-federal resources. However, any agreement signed as a result of this request may require a higher rate based on the respondent's proposed budget, negotiations, and DEQ and EPA approval. Matching funds or in-kind services utilized to meet the 40% match must be clearly identified as **non-federal**.
9. The DEQ is required to report to the EPA any and all past performance by a proponent. If your organization, or any principal investigator, has received previous EPA funds through the DEQ, reports to EPA will be submitted regarding quality of the product, compliance with time schedules, and reporting. Failure to complete grant requirements in accordance with conditions of prior grant agreements may result in a negative report and a lower score in the competitive standing for funds.

The following DEQ/EPA criteria for project appropriateness must be met. Also, the proposal must follow the appropriate attached format including project summary sheet, budget, and milestone tables. The NPS Program Staff and EPA will review all proposals and indicate to the Task Force if these criteria are met or if additional work is needed for the proposed project to meet the criteria.

#### **GENERAL CRITERIA**

1. Demonstrated Water Quality Need -- Does the project have a water quality benefit? Prevention of pollution in impacted or threatened waters is considered a benefit. Adequate, credible data must be available to indicate that designated beneficial uses are threatened or impaired. These data or a summary of these data must be presented as part of the project narrative. Pollution control practices required by National Pollutant Discharge Elimination System (NPDES) or by the EPA NPDES Phase I storm water

permit regulations may not be funded. Activities under a notice of violation or enforcement agreement under the NPDES program may not be funded.

2. State Strategy and Priority --Does the proposed project comply with the State strategy as reflected in the NPS Management Plan and Nonpoint Source Strategic Plan? Monitoring and/or implementation projects proposed on Clean Water Act section 303d listed stream segments will be considered top priority for funding. Projects on streams shown to be impaired by credible data will also be considered top priority for funding. Other projects including information and education, groundwater, watershed planning, wellhead protection, pesticide management, and development of Best Management Practices (BMPs) will be lower priority projects.
3. Project Well Planned -- Is the project the most efficient and effective method to achieve the State's water resource goals (treating the problem rather than the symptoms)? Are the objectives and tasks logically presented? Can one tell who is going to be doing what, when, where, and who is paying? Does the project sponsor have the technical and administrative capabilities to conduct the project? If the sponsor is weak in these areas, how will these weaknesses be addressed? Staff or contractor resumes and past project summaries may be used to demonstrate capabilities.
4. Program Coordination and Commitment -- Are the right entities involved in a comprehensive, integrated fashion? If appropriate, are CRM or a steering committee in place? In order to fit the criteria of a comprehensive watershed project, the proposal must have commitment from appropriate agencies (specifically federal and State land managers in the watershed).
5. Products -- How will the information, measurable water resource benefits, or the project evaluation be used? How will this information be distributed to an interested public? A project final report providing detail on the project activities will be required. A task for completion of the final report shall be included as part of the proposal and work plan. This task may be funded by use of 319 funds or a combination of 319 funds and matching funds. A draft final report must be approved prior to completion of the final report. DEQ reserves the right to withhold up to 10% of payments until the final report is approved.
6. Reasonable Costs/Justifiable -- Are the proposed costs reasonable and justifiable? Can all items in the budget be found in the project description? Is 319 the appropriate source of funding for this project? If this project is the continuation of an existing project, has adequate progress been documented and reported for previous phases? Frequently, funding is requested from 319(h) to provide technical assistance from other governmental organizations (i.e., NRCS, State wildlife agency) as part of a NPS project. If this request is made, an explanation should be provided to justify why the agency requires 319(h) funds to participate in the project/program.

Examples of when 319 funds can be used to support other agency personnel are:

- a. A new position is added to a field office staff to provide full-time technical assistance to a NPS project;
  - b. A new position is added to the existing staff to provide time for a person with relevant skills to work on the project;
  - c. The cost of detailing an existing employee to an office to provide technical or other assistance to the project. Only the costs of the detail, such as per diem and transportation, would be considered but salary would not be included.
7. Efficient/Effective Funding -- Attention should be given to the most efficient and effective use of funds. For example, streambank rip-rap may be relatively expensive

and not provide additional values that may be derived from restoration techniques such as streambank stabilization with plant materials and improved land use practices.

8. Information and Education Component -- Technology transfer and education is an important component of the program. Each proposal should include a specific effort to educate the public on the results of the project and transfer technology to potential users.
9. Evaluation and Monitoring Component - Monitoring is an important component of the program. Each proposal should include an explanation of the evaluation and monitoring plan. The monitoring plan would be fully developed in the Project Implementation Plan. Information and Education proposals should include an explanation of evaluation procedures to measure success of information transfer.

## FORMAT FOR WATERSHED PROJECT PROPOSALS

### 1.0 PROJECT PROPOSAL SUMMARY SHEET

A Project Proposal Summary page will precede each proposal. The format to be followed has been provided (Attached).

### 2.0 STATEMENT OF NEED

- 2.1 Describe the need for the project, the existing or potential water quality problem(s), and the NPS pollutant types. List the stream and/or aquifer water quality classification. Provide reference to the water quality priority as specified in the NPS Assessment Report and NPS Management Plan.

When an intermittent stream is involved in the project, describe the proximity of the stream to the water body being impaired and the portion of the pollutant load being contributed by the intermittent stream.

The complete stream system dynamics should be considered, particularly during the planning of in-stream or near stream activities. For example, the nature of the stream system and stream stability problems need to be understood before recommending the installation of in-stream structures for stream current deflection or habitat improvement.

- 2.2 Give waterbody name and describe as a stream, lake, or reservoir. Provide other descriptive information that might be useful regarding the water resource to judge the value of the project. Examples are: flow regime; geomorphic stream classification; physical condition of the stream; lake size, trophic status. In addition, describe aquatic habitat health. There should be at least one paragraph describing baseline information with an assessment as to accuracy, precision, and value of existing data.
- 2.3 Provide map(s) showing the size of watershed and the location of the project. Include land uses, land ownership, and important water resources (including springs and major wetlands). Include information on locations of present, past, and future water sampling stations and permitted point sources.
- 2.4 Provide **general information on the watershed** such as topography, elevation, land ownership, land use, precipitation (with seasonal distribution), other climatic information, soils, geology, erosion rates, aquifer vulnerability, wellhead protection area, vegetation conditions, and man-made features.

Include information that is relevant to the type of watershed water quality problem. For example;

Agricultural Projects: crop types, irrigation systems, types of enterprises (cow-calf, horse, sheep), management systems, Animal Unit Months (AUMs), range condition, and trends.

Silvicultural Projects: miles of temporary and permanent roads within 100 feet of perennial drainage, acreage of timber sales within 100 feet of perennial drainage, elevation and aspect of cuts.

Urban Projects: type of urban development, acreages of various land uses such as parks, housing, industrial areas.

Mining Projects: volume, locations, and chemistry of tailings and adit discharges, and groundwater-surface water relationships.

- 2.5 Provide information that defines the type of watershed water quality problem (chemical, biological, physical/habitat). Specify the source(s) of the pollutant or cause of the environmental degradation. If chemical or sediment constituents are involved, provide loading and

concentration information. If problems are related to physical/habitat decline, document the cause of the degradation. Include information on the timing of the pollution problem (e.g., storm-event related, low flow or continuous).

### 3.0 PROJECT DESCRIPTION

- 3.1 Describe the goal(s) for the project. Goals are broad statements linked to the project need and are achievable through measurable objectives. Goals may describe for example, BMPs to be demonstrated and why; new tools to be developed and for whom; the benefits to be derived in terms of water quality, aquatic habitat, and stream stability; and changes in public attitudes or awareness of NPS problems and solutions.
- 3.2 List and provide a narrative description of each objective and associated tasks. Objectives specify in more detail what is to be accomplished to help meet the goal. Each objective should have at least one associated task to be performed to accomplish the objective. Tasks are specific activities that include milestones, outputs, responsible parties, and costs. The following is an example of a goal, objectives, and accompanying tasks in the prescribed format.
- 3.3 Using the format furnished (Attached), provide a milestone table that lists outputs, quantities of each output, and responsible party(ies) for each task. Interim milestones need to be sufficiently frequent so that problems can be identified and corrected expeditiously. Milestones should be included for mid-year, annual, and final reports. Detailed milestones will be needed in the project implementation plan. Estimated costs for each task should be correlated with the project budget table, Section 6.0.

Goal: Improve the quality of water in Wet Creek so that it meets State water quality standards for a cold water fishery and restore the fishery to gold medal status.

Objective 1: Apply grazing management practices to 25,000 acres of rangeland, and irrigated and meadow pasture to decrease coliform and nutrient input to Wet Creek by 25 percent and increase the cutthroat trout standing crop by 100 percent.

Task 1: NRCS will complete the rangeland and pasture condition inventories. Inventories to be completed in 4 months.

Products - Resource inventory descriptions - Inventories on aerial photo base maps

Cost - \$20,000

Task 2. NRCS and landowner will develop rangeland and pasture management plans for 25,000 acres of land. Management plans will include BMPs such as fencing, streambank shaping, plantings, water development, riparian area pastures, planned grazing systems, and proper grazing use. Development of plans will be completed in 6 months.

Products - rangeland and pasture management plans

Cost - \$20,000

Objective 2: Implement an information and education program on pasture and riparian area management for landowners in Wet Creek drainage. Publish project results for Statewide distribution.

Include applicable tasks in same format as shown for Objective 1. Number tasks in a continuous sequence. For example, under the previous Objective (1) there were two tasks identified. The next task identified under Objective 2 should be listed as Task 3 and followed sequentially.

- 3.4 Using the format furnished (Attached), provide a milestone table that lists outputs, quantities of each output, and responsible party(ies) for each task. Interim milestones need to be sufficiently frequent so that problems can be identified and corrected expeditiously. Milestones should be included for mid-year, annual, and final reports. Detailed milestones will be needed in the project implementation plan. Estimated costs for each task should be correlated with the project budget table, Section 6.0.
- 3.5 Provide a narrative defining how the project will be managed and tracked, and how technical operations such as sampling will be completed. The proponent should describe how and why they are qualified to conduct the project. Summaries of past projects and resumes of staff or contractors involved in the project would help demonstrate qualifications.
- 3.6 When appropriate, identify the necessary environmental permits (e.g., permits under CWA Section 404, Resource Conservation and Recovery Act) required to conduct the project. If a National Pollution Elimination System permit is needed, justify why the project is a NPS project.

#### **4.0 COORDINATION PLAN**

- 4.1 Identify each cooperating organization and include letters of support. Briefly explain why the lead project sponsor is the appropriate entity to coordinate and/or implement the project. Discuss the roles and responsibilities assumed by the cooperators and/or contractors in the project planning and implementation. Also State the mode of agreement by which cooperating organizations will interact (e.g., MOU, MOA, contract, or informal agreement).
- 4.2 Describe local support for the project. Some examples of local support are: Requests for the project from local landowners, conservation district, or county. Results from town meetings or favorable reactions to the proposed project.
- 4.3 The State is concerned that use of 319(h) funds is well coordinated with other pertinent programs. Provide verification that this project is not duplicative with those sponsored by other groups.
- 4.4 The State is concerned that Section 319 funding not be used to replicate efforts or assume other agencies' responsibilities for activities being carried out in the project watershed. If similar activities are being undertaken in the watershed, they should complement each other and not unnecessarily replicate efforts. Project plans must address this issue.

#### **5.0 EVALUATION AND MONITORING PLAN**

- 5.1 Describe the monitoring strategy for the watershed, including tasks proposed to evaluate whether the project goals and objectives have been met. Results from the data analysis should be used to evaluate progress, determine if changes in project/monitoring design need to be considered, and assess the overall final project success.
- 5.2 Describe sampling and analysis design (e.g., up-stream/down-stream, paired watersheds, site trend, geomorphology or riparian measurements; whether sampling will be random, systematic, or stratified random). Then specify parameters to be measured. Locate on a map sampling sites in relationship to BMP applications and priority treatment areas. Describe surrogate monitoring methods if they are to be used in place of controlled sampling (e.g., photopoints, acres under treatment, rangeland erosion).
- 5.3 Reference EPA approved Quality Assurance Program Plan (QAPP) and identify any site specific amendments required for this project that are not covered by the QAPP.
- 5.4 Describe how and when the data will be managed and reported. Results from the data analysis should be used to evaluate progress, determine if changes in project/monitoring design need to be

considered, and assess the overall final project success. Identify organization(s) responsible for project evaluation and specify how the resulting information from the data analysis will be shared and utilized for future projects. A final report including analysis of data and activities is required.

5.5 Describe model used, if applicable.

## **6.0 INFORMATION AND EDUCATION**

6.1 Describe the specific activities which will be performed to assure technology transfer, public education and information dissemination on the goals, and accomplishments achieved as a result of project implementation.

## **7.0 BUDGET**

7.1 Present the project budget in the format provided (Attached). The budget needs to identify the annual and total costs for each Task described in the project narrative and milestone table. The budget table needs to indicate the amount and source of all federal and non-federal funds that will be used during each year of the project. The non-federal funding match should distinguish between cash and in-kind services.

The federal fiscal year (October 1-September 30) should be used to discuss and display budget information.



## FORMAT FOR INFORMATION & EDUCATION PROJECT PROPOSALS

### 1.0 PROJECT PROPOSAL SUMMARY SHEET

A Project Proposal Summary page will precede each proposal. The format to be followed has been provided (Attached).

### 2.0 STATEMENT OF NEED

- 2.1 Explain how this project is consistent with the project and water quality priorities that are specified in the State NPS Management Program document and why this project is needed to strengthen the State Nonpoint Source program.

The project proposal should describe the informational void that the project will fill. A needed project will not duplicate other efforts, instead it will enhance previous work by adapting existing materials to a targeted area, create new information/training, or the project may continue previous efforts such as a State NPS newsletter. The need statement should indicate why the approach being proposed is the best method to meet the need.

Proposals for on-the-ground demonstration projects need to provide information on the existing or potential water quality problems. Provide specific information on impairment of, or threats to, designated uses. A history of the problems needs to be included. The project area should be shown on a map.

- 2.2 Describe and justify the audience being addressed. Provide information about the targeting method, such as: age (e.g., elementary school, adult); location (e.g., statewide, watershed); association (e.g., private land owners, trade organizations); or current knowledge base (e.g., aware but needs details, needs new methods).

### 3.0 PROJECT DESCRIPTION

- 3.1 Describe the goal(s) for the project. Goals are broad statements linked to the project need and are achievable through measurable objectives. Goals may describe, for example; changes in public attitudes or awareness of NPS problems and solutions; BMPs to be demonstrated and why; new tools to be developed and for whom; and the benefits to be derived in terms of water quality.
- 3.2 List and provide a narrative description of each objective and associated task. Objectives specify in more detail what is to be accomplished to help meet the goal. Tasks are specific activities that include milestones, outputs, responsible parties, and costs.

Following is an example of the format to present goals, objectives, and tasks.

Goal: Implement an information and education program that will make the various publics aware of the relationship between water quality and riparian areas and the methods that can be used to treat problem sites.

Objective 1: Contract with various State and Federal Agencies to provide Information and Education programs and materials to bring about public awareness.

Task 1. Contract with the NPS Task Force and Department of Natural Resources to develop a strategy document to guide the management of riparian areas throughout the State. The document will be completed in 6 months.

Products - Contract, strategy document  
Estimated Cost - \$2,000

Task 2. DNR will contract with the Conservation District to develop an Education and Information program and to educate local resource managers and the public about the benefits of riparian area improvement/management using the information and education program document. Development of the program and training will take approximately 21 months.

Products - Develop a riparian I&E program document.  
- Provide training consisting of field tours and workshops.  
Estimated Cost - \$20,000

In subsequent objectives, include applicable tasks in same format as shown for Objective 1. Number tasks in a continuous sequence. For example, under the previous Objective (1) there were two tasks identified. The next task identified under Objective 2 should be listed as Task 3 and followed sequentially.

- 3.3 Using the format furnished (Attached), provide a milestone table that lists outputs, quantities of each output, and responsible parties for each task. Interim milestones need to be sufficiently frequent so that problems can be identified and corrected expeditiously. Milestones should be included for mid-year, annual, and final reports. Detailed milestones will be needed in the project implementation plan. Estimated costs for each task should be correlated with the project budget table, Section 6.0.
- 3.4 Provide a narrative defining how the project will be managed and tracked, and how technical operations such as sampling will be completed. The proponent should describe how and why they are qualified to conduct the project. Summaries of past projects and resumes of staff or contractors involved in the project would help demonstrate qualifications.

#### 4.0 COORDINATION PLAN

- 4.1 Identify each cooperating organization and include letters of support. Briefly explain why the lead project sponsor is the appropriate entity to coordinate and/or implement the project. Discuss the roles and responsibilities assumed by the cooperators and/or contractors in the project planning and implementation. Also State the mode of agreement by which cooperating organizations will interact (e.g., MOU, MOA, contract, or informal agreement).
- 4.2 Describe local support for the project. Some examples of local support are: Requests for the project from local landowners, conservation district, or county. Results from town meetings or favorable reactions to the proposed project.
- 4.3 The State is concerned that use of 319(h) funds is well coordinated with other pertinent programs. Provide verification that this project is not duplicative with those sponsored by other groups.
- 4.4 Describe how the project will coordinate with pertinent, 319 and non-319 funded NPS education programs, watershed projects, demonstration sites, and training programs being conducted by other organizations. Examples of other agencies and programs that may be producing similar materials or conducting similar projects are: Information and Education efforts funded by the EPA Pollution Prevention and Environmental Education Programs; projects funded by Clean Water Act 104(b)(3) grants; Cooperative Extension Service; school districts; State water research centers; The Nature Conservancy; universities; and State natural resources or wildlife agencies.

- 4.5 The State is concerned that Section 319 funding not be used to duplicate efforts or assume other agencies' responsibilities. Show that planned outputs have not been produced elsewhere, or if they have, why adaptation/modification is necessary. Indicate how the information derived from the project is transferable.

## **5.0 EVALUATION AND MONITORING PLAN**

- 5.1 Describe the plans for evaluating how well the project goals, objectives, and tasks have been met. When appropriate, the plan should describe how changes in behavior as a result of the project will be evaluated. Include the different types of evaluation tools to be used, such as recording requests for NPS newspapers and videos, exit and follow-up surveys for training courses, and readers surveys. Include the entity(ies) responsible for the evaluations. Identify how the results from monitoring and evaluation will be used to assist in developing future projects. A final report assessing project success and describing activities is required.
- 5.2 For demonstration projects, a monitoring plan should be considered for determining project effectiveness (direct water quality and/or surrogate methods). Refer to the guidance for watershed projects for detailed guidance on monitoring.

## **6.0 BUDGET**

- 6.1 Present the project budget in the format provided (Attached). The budget needs to identify the annual and total costs for each task described in the project narrative and milestone table. The budget table needs to show the amount and source of all federal and non-federal funds that will be used during each year of the project. Non-federal funding match should distinguish between cash and in-kind services.

For BMP demonstration projects, identify the planned BMPs, quantity of each BMP, and estimated cost for each BMP unit.

The federal fiscal year (October 1-September 30) should be used to discuss and display budget information.

## FORMAT FOR GROUND WATER PROJECT PROPOSALS

### 1.0 PROJECT PROPOSAL SUMMARY SHEET

A Project Proposal Summary page will precede each proposal. The format to be followed has been provided (Attached).

### 2.0 STATEMENT OF NEED

- 2.1 Provide reference to water quality priority in NPS Assessment and NPS Management Plans. Groundwater demonstration projects (e.g., wellhead protection, abandoned well sealing) need to follow the guidance issued for Information and Education proposals and be submitted as Information and Education Projects. Appropriate activities to be funded for groundwater and pesticides pursuant to 319(i) are; research, planning, groundwater assessments, technical assistance, education and training to protect the quality of groundwater, and to prevent contamination of groundwater from nonpoint sources of pollution. Remediation, the removal of pollutants from previously contaminated groundwater, is not eligible for funding under Section 319.
- 2.2 Give the aquifer name and describe type, (e.g., alluvial or bedrock aquifer, confined/unconfined, elevation, depth to ground water, and describe the relationship of the aquifer to surface waters in the region). Provide general information on the aquifer region being studied, such as land ownership, land use, soils, and pertinent regional geology. Furnish the aquifer designated use classification and discuss to what extent the designated uses of the water resource are not being met.
- 2.3 Provide map(s) showing location and size of the aquifer, including land uses, land ownership, location of project, important water resources, and any unique situations that may be important to the project.
- 2.4 Describe the existing or potential water quality problem(s) by listing the pollutant type(s), the contaminants of concern, historic ranges of concentrations (acute/chronic levels), areal extent of the contamination, sources, pathways, and timing of the pollution problem. Include relevant supplemental information. For example, on agricultural projects: crop types, irrigation systems, nutrient and pesticides used, application rates, and application schedule.

### 3.0 PROJECT DESCRIPTION

- 3.1 Describe the goal(s) for the project. Goals are broad statements linked to the project need and are achievable through measurable objectives. Goals may describe, for example, improved understanding of ground recharge zones.
- 3.2 List and provide a narrative description of each objective and associated task. Objectives specify in more detail what is to be accomplished to help meet the goal. Tasks are specific activities that include milestones, outputs, responsible parties, and costs.

Following is an example of the format to present goals, objectives, and tasks.

Goal: Assess the presence of nitrogen and pesticides in three priority shallow aquifers to provide information for the Pesticides in Ground Water State Management Plan.

Objective 1: Monitor ground water in the Platte, Sioux, and Bear aquifers.

Task 1. The Department of Natural Resources will contract with State University to establish the monitoring network. The contract will be issued within 2 months from the beginning date of the grant.

Products - Final contract  
Cost - \$2,000

Task 2. Contractor will identify 30 monitoring locations and acquire access agreements. Sites will be established within 6 months of the contract and access agreements finalized within 8 months.

Products - Areal photo base map identifying the monitoring well locations - 30 access agreements  
Cost - \$5,000

Objective 2: Develop a long range plan to establish a permanent State wide monitoring network for the purposes of monitoring contaminants in ground water. This activity will take 16 months to complete.

Include applicable tasks in same format as shown for Objective 1. Number tasks in a continuous sequence. For example, under the previous Objective (1) there were two tasks identified. The next task identified under Objective 2 should be listed as Task 3 and followed sequentially.

3.3 Using the format furnished (Attached), provide a milestone table that lists outputs, quantities of each output, responsible party(ies) for each task. Interim milestones need to be sufficiently frequent so that problems can be identified and corrected expeditiously. Milestones should be included for mid-year, annual, and final reports. Detailed milestones will be needed in the project implementation plan. Estimated costs for each task should be correlated with the project budget table, Section 6.0.

3.4 Provide a narrative defining how the project will be managed and tracked, and how technical operations such as sampling will be completed. The proponent should describe how and why they are qualified to conduct the project. Summaries of past projects and resumes of staff or contractors involved in the project would help demonstrate qualifications.

#### 4.0 COORDINATION PLAN

4.1 Identify each cooperating organization including the lead project sponsor. Briefly explain why the lead project sponsor is the appropriate entity to coordinate and/or carry out the project. Discuss the roles and responsibilities assumed by the cooperators and/or contractors in the project planning and implementation. Also State the mode of agreement by which cooperating organizations will interact (e.g., MOU, MOA, contract or informal agreement).

4.2 Describe local support for the project. Some examples of local support are: Requests for the project from local landowners, conservation district, or county. Results from town meetings or favorable reactions to the proposed project.

4.3 The State is concerned that use of 319(h) funds is well coordinated with other pertinent programs. Provide verification that this project is not duplicative with those sponsored by other groups. Other programs and agencies may have comparable responsibilities and linkages such as USGS monitoring, other ground water programs, drinking water programs, and projects conducted by water conservancy districts.

4.4 The State is concerned that Section 319 funding not be used to replicate efforts or assume other agencies' responsibilities for activities being carried out in the project watershed. If similar

activities are being undertaken in the watershed, they should complement each other and not unnecessarily replicate efforts. Project plans must address this issue.

## **5.0 EVALUATION AND MONITORING PLAN**

- 5.1 Describe the monitoring strategy for the project. The goals and objectives will be reflected in the sample design, sample analysis, data management and reporting. For example, if the project is intended to provide information on ground water quality related to public health, the goals, objectives, and tasks must specifically address issues related to health considerations. The sampling and analysis plans would then address specific parameters as they relate to acute and/or chronic toxicity levels, or maximum contaminant levels for public water supply.
- 5.2 Describe the sampling and analysis design (e.g., existing ground water wells, site trend, up-gradient/down-gradient wells, vadose sampling, nested wells for vertical stratification sampling, whether sampling is random, systematic, or stratified random) and specify parameters to be measured. On a map, locate sampling sites in relationship to suspected sources of contamination.
- 5.3 Reference the EPA approved Quality Assurance Program Plan (QAPP) and identify any site specific amendments required for this project that are not covered by the QAPP.
- 5.4 Describe how and when the data will be managed and reported. Results from the data analysis should be used to evaluate progress, determine if changes in project/monitoring design need to be considered, and assess the overall final project success. Identify organization(s) responsible for project evaluation and specify how the resulting information from the data analysis will be shared and utilized for future projects. A final report including analysis of data and activities is required.
- 5.5 Describe model used, if applicable.

## **6.0 INFORMATION AND EDUCATION**

- 6.1 Describe the specific activities which will be performed to assure technology transfer, public education and information dissemination on the goals, and accomplishments achieved as a result of project implementation.

## **7.0 BUDGET**

- 7.1 Present the project budget in the format provided (Attached). The budget needs to identify the annual and total costs for each Task described in the project narrative and milestone table. The budget table needs to indicate the amount and source of all federal and non-federal funds that will be used during each year of the project. The non-federal funding match should distinguish between cash and in-kind services. The amount and source of other EPA (non-Section 319) funds should be provided in column (3).

The federal fiscal year (October 1-September 30) should be used to discuss and display budget information.

## FORMAT FOR ASSESSMENT PROPOSALS

New guidelines from the Environmental Protection Agency allow a State to utilize up to 20% of its allocation for surface water assessments (groundwater assessments have always been allowable and will continue to be fundable). Locally sponsored surface water assessments should be targeted at identifying problems and potential solutions to nonpoint sources in a watershed.

### 1.0 PROJECT PROPOSAL SUMMARY SHEET

A Project Proposal Summary page will precede each proposal.  
The format to be followed has been provided (Attached).

### 2.0 STATEMENT OF NEED

- 2.1 Describe the need for the project, the potential water quality problem(s), and the potential NPS pollutant types. List the stream water quality classification. Provide reference to the water quality priority as specified in the NPS Assessment Report and NPS Management Plan.
- 2.2 Give waterbody name(s) and describe as a stream, lake, or reservoir. Provide other descriptive information that might be useful regarding the water resource to judge the value of the project. Examples are: flow regime; geomorphic stream classification; physical condition of the stream; lake size, trophic status. In addition, describe aquatic habitat health. There should be at least one paragraph describing available baseline information with an indication of accuracy, precision, and value of existing data.
- 2.3 Provide map(s) showing the size of watershed and the location of the project. Include land uses, land ownership, and important water resources (including springs and major wetlands). Include information on locations of present, past, and future water sampling stations and permitted point sources.
- 2.4 Provide **general information on the watershed** such as topography, elevation, land ownership, land use, precipitation (with seasonal distribution), other climatic information, soils, geology, erosion rates, aquifer vulnerability, wellhead protection area, vegetation conditions, and man-made features.  
Include information that is relevant to the type of watershed water quality problem. For example;  
Agricultural Projects: crop types, irrigation systems, types of enterprises (cow-calf, horse, sheep), management systems, Animal Unit Months (AUMs), range condition, and trends.  
Silvicultural Projects: miles of temporary and permanent roads within 100 feet of perennial drainage, acreage of timber sales within 100 feet of perennial drainage, elevation and aspect of cuts.  
Urban Projects: type of urban development, acreages of various land uses such as parks, housing, industrial areas.  
Mining Projects: volume, locations, and chemistry of tailings and adit discharges, and groundwater-surface water relationships.

### 3.0 PROJECT DESCRIPTION

- 3.1 Describe the goal(s) for the project. Goals are broad statements linked to the project need and are achievable through measurable objectives. Goals may describe for example; the benefits to be derived in terms of water quality, aquatic habitat, and stream stability; and changes in public attitudes or awareness of NPS problems and solutions.
- 3.2 List and provide a narrative description of each objective and associated tasks. Objectives specify in more detail what is to be accomplished to help meet the goal. Each objective should

have at least one associated task to be performed to accomplish the objective. Tasks are specific activities that include milestones, outputs, responsible parties, and costs.

- 3.3 Using the format furnished (Attached), provide a milestone table that lists outputs, quantities of each output, and responsible party(ies) for each task. Interim milestones need to be sufficiently frequent so that problems can be identified and corrected expeditiously. Milestones should be included for mid-year, annual, and final reports. Detailed milestones will be needed in the project implementation plan. Estimated costs for each task should be correlated with the project budget table, Section 6.0.
- 3.4 Provide a narrative defining how the project will be managed and tracked, and how technical operations such as sampling will be completed. The proponent should describe how and why they are qualified to conduct the project. Summaries of past projects and resumes of staff or contractors involved in the project would help demonstrate qualifications.

#### **4.0 COORDINATION PLAN**

- 4.1 Identify each cooperating organization and include letters of support. Briefly explain why the lead project sponsor is the appropriate entity to coordinate and/or implement the project. Discuss the roles and responsibilities assumed by the cooperators and/or contractors in the project planning and implementation. Also State the mode of agreement by which cooperating organizations will interact (e.g., MOU, MOA, contract, or informal agreement).
- 4.2 Describe local support for the project. Some examples of local support are: Requests for the project from local landowners, conservation district, or county. Results from town meetings or favorable reactions to the proposed project.

#### **5.0 ASSESSMENT PLAN**

- 5.1 Describe sampling and analysis design (e.g., up-stream/down-stream, paired watersheds, site trend, geomorphology or riparian measurements; whether sampling will be random, systematic, or stratified random). Then specify parameters to be measured. Locate on a map sampling sites in relationship to BMP applications and priority treatment areas. Describe surrogate monitoring methods if they are to be used in place of controlled sampling (e.g., photopoints, acres under treatment, rangeland erosion).
- 5.2 Describe how and when the data will be managed and reported. Results from the data analysis should be used to evaluate progress, determine if changes in project/assessment design need to be considered, and assess the overall final project success. Identify organization(s) responsible for project evaluation and specify how the resulting information from the data analysis will be shared and utilized for future projects. A final report including analysis of data and activities is required.

#### **6.0 BUDGET**

- 6.1 Present the project budget in the format provided (Attached). The budget needs to identify the annual and total costs for each Task described in the project narrative and milestone table. The budget table needs to indicate the amount and source of all federal and non-federal funds that will be used during each year of the project. The non-federal funding match should distinguish between cash and in-kind services.



**PROJECT SUMMARY SHEET**

**PROJECT TITLE NAME** \_\_\_\_\_

**NAME AND ADDRESS OF LEAD PROJECT SPONSOR**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**SPONSOR CONTACT PERSON** \_\_\_\_\_ **TITLE** \_\_\_\_\_

**PHONE** \_\_\_\_\_ **FAX** \_\_\_\_\_

**STATE** \_\_\_\_\_ **WATERSHED** \_\_\_\_\_

**PROJECT TYPES :**  **ASSESSMENT**  **WATERSHED**  **GROUNDWATER**  
 **I&E**

**WATERBODY TYPES**

- Groundwater
- Lakes/Reservoirs
- Rivers
- Streams
- Wetlands
- Other

**NPS CATEGORY**

- Agriculture
- Urban Runoff
- Silviculture
- Construction
- Resource Extraction
- Stowage and Land Disposal
- Hydrologic Modification
- Other

**PROJECT**      **LATITUDE** \_\_MIN. \_\_\_\_\_ **LONGITUDE** \_\_MIN. \_\_\_\_\_

**SUMMARIZATION OF MAJOR GOALS** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

**PROJECT DESCRIPTION:**

\_\_\_\_\_  
\_\_\_\_\_  
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\_\_\_\_\_

**FY** \_\_\_\_\_ **319 funds requested \$** \_\_\_\_\_

**Match \$** \_\_\_\_\_

**Other Federal Funds \$ \_\_\_\_\_**

**Total project cost \$ \_\_\_\_\_**

**MILESTONE TABLE FOR \_\_\_\_\_**

TASK/RESPONSIBLE ORGANIZATIONS	OUTPUT	Q T Y	YEAR 1						YEAR 2						YEAR 3					
			O/ N	D/ J	F/ M	A/ M	J/ J	A/ S	O/ N	D/ J	F/ M	A/ M	J/ J	A/ S	O/ N	D/ J	F/ M	A/ M	J/ J	A/ S
OBJECTIVE No.																				
OBJECTIVE No.																				
OBJECTIVE No.																				

If milestone dates are not definitive at this point, clarify in the Project Implementation Plan (PIP).

PROJECT TITLE: \_\_\_\_\_

TASK 1

Description: Administrative Costs (not to exceed 10% of total)

Product: Reports, accounting of funds, etc.

Inclusive Dates: \_\_\_\_\_

	319 Funds	Non Federal Cash Match	Non Federal In-Kind Match	Total	Other Federal Support
Personnel					
Fringe					
Travel					
Equipment					
Supplies					
Contractual					
Construction					
Other					
Indirect					
Total					

TASK 2

Description: \_\_\_\_\_

Product: \_\_\_\_\_

Inclusive Dates: \_\_\_\_\_

	319 Funds	Non Federal Cash Match	Non Federal In-Kind Match	Total	Other Federal Support
Personnel					
Fringe					
Travel					
Equipment					
Supplies					
Contractual					
Construction					
Other					
Indirect					
Total					

TASK 3

Description: \_\_\_\_\_

Product: \_\_\_\_\_

Inclusive Dates: \_\_\_\_\_

	319 Funds	Non Federal Cash Match	Non Federal In-Kind Match	Total	Other Federal Support
Personnel					
Fringe					
Travel					
Equipment					
Supplies					
Contractual					
Construction					
Other					
Indirect					
Total					

TASK 4

Description: \_\_\_\_\_  
 Product: \_\_\_\_\_  
 Inclusive Dates: \_\_\_\_\_

	319 Funds	Non Federal Cash Match	Non Federal In-Kind Match	Total	Other Federal Support
Personnel					
Fringe					
Travel					
Equipment					
Supplies					
Contractual					
Construction					
Other					
Indirect					
Total					

TASK 5

Description: \_\_\_\_\_  
 Product: \_\_\_\_\_  
 Inclusive Dates: \_\_\_\_\_

	319 Funds	Non Federal Cash Match	Non Federal In-Kind Match	Total	Other Federal Support
Personnel					
Fringe					
Travel					
Equipment					
Supplies					
Contractual					
Construction					
Other					
Indirect					
Total					

TASK 6

Description: \_\_\_\_\_  
 Product: \_\_\_\_\_  
 Inclusive Dates: \_\_\_\_\_

	319 Funds	Non Federal Cash Match	Non Federal In-Kind Match	Total	Other Federal Support
Personnel					
Fringe					
Travel					
Equipment					
Supplies					
Contractual					
Construction					
Other					
Indirect					
Total					

TASK 7

Description: \_\_\_\_\_  
 Product: \_\_\_\_\_

Inclusive Dates: \_\_\_\_\_

	319 Funds	Non Federal Cash Match	Non Federal In-Kind Match	Total	Other Federal Support
Personnel					
Fringe					
Travel					
Equipment					
Supplies					
Contractual					
Construction					
Other					
Indirect					
Total					

TASK 8

Description: \_\_\_\_\_  
 Product: \_\_\_\_\_  
 Inclusive Dates: \_\_\_\_\_

	319 Funds	Non Federal Cash Match	Non Federal In-Kind Match	Total	Other Federal Support
Personnel					
Fringe					
Travel					
Equipment					
Supplies					
Contractual					
Construction					
Other					
Indirect					
Total					

TASK 9

Description: \_\_\_\_\_  
 Product: \_\_\_\_\_  
 Inclusive Dates: \_\_\_\_\_

	319 Funds	Non Federal Cash Match	Non Federal In-Kind Match	Total	Other Federal Support
Personnel					
Fringe					
Travel					
Equipment					
Supplies					
Contractual					
Construction					
Other					
Indirect					
Total					

TASK 10

Description: \_\_\_\_\_  
 Product: \_\_\_\_\_  
 Inclusive Dates: \_\_\_\_\_

	319 Funds	Non Federal Cash Match	Non Federal In-Kind Match	Total	Other Federal Support
Personnel					
Fringe					
Travel					
Equipment					
Supplies					
Contractual					
Construction					
Other					
Indirect					
Total					

TASK 11

Description: \_\_\_\_\_  
 Product: \_\_\_\_\_  
 Inclusive Dates: \_\_\_\_\_

	319 Funds	Non Federal Cash Match	Non Federal In-Kind Match	Total	Other Federal Support
Personnel					
Fringe					
Travel					
Equipment					
Supplies					
Contractual					
Construction					
Other					
Indirect					
Total					

TASK 12

Description: Final Report Preparation  
 Product: Project Final Report  
 Inclusive Dates: \_\_\_\_\_

	319 Funds	Non Federal Cash Match	Non Federal In-Kind Match	Total	Other Federal Support
Personnel					
Fringe					
Travel					
Equipment					
Supplies					
Contractual					
Construction					
Other					
Indirect					
Total					

PROGRAM TOTALS

319 Funds	Non Federal Cash Match	Non Federal In-Kind Match	Total	Other Federal Support
-----------	---------------------------	------------------------------	-------	--------------------------

Personnel					
Fringe					
Travel					
Equipment					
Supplies					
Contractual					
Construction					
Other					
Indirect					
Total					

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Revised 5/28/98



# APPENDIX B

## Key for Wyoming's 1998 Section 303(d) Lists (Tables A-D) and Monitoring List (Table E)

Table A. Wyoming's 1998 Section 303(d) List A: Waterbodies requiring TMDLs, for which there is credible data that indicates that the reach does not support all its designated uses.

Table B. Wyoming's 1998 Section 303(d) List B: Waterbodies requiring TMDLs in the next two years due to the routine NPDES renewal process for permits containing Waste Load Allocations.

Table C. Wyoming's 1998 Section 303(d) List C: Waterbodies requiring TMDLs, for which there is data indicating trends away from supporting beneficial use and where there are improvement plans or other corrective actions in progress.

Table D. Wyoming's List of Delisted Waterbodies: Waterbodies removed from the 1996 303(d) List of Waterbodies requiring TMDLs.

Table E. List of Waterbodies from the 1996 303(d) list requiring further monitoring to determine beneficial use attainment.

### Basin

*Indicates the major river basin containing the waterbody.*

- “BF” Belle Fourche River Basin
- “BH” Big Horn River Basin
- “BR” Bear River Basin
- “CR” Cheyenne River Basin
- “GR” Green River Basin
- “LM” Little Missouri River Basin
- “LS” Little Snake River Basin
- “NP” North Platte River Basin
- “PR” Powder River Basin
- “SR” Snake River Basin
- “TR” Tongue River Basin
- “YR” Yellowstone River Basin

### HUC (Table E)

*Hydrologic Unit Code identifying the sub-basin containing the waterbody. Wyoming has 83 of these sub-basins.*

### Waterbody ID

*Unique identifier for each waterbody which indicates river basin followed by eight digit hydrologic unit (river sub-basin), followed by three digit identifier for that river basin, followed by stream order (based on 1:100,000 USGS map).*

### Class (CI)

*Indicates the DEQ Stream Classification, summarized below:*

- “1” Waters with the highest natural water quality and/or other qualities with extraordinary value to the people of Wyoming
- “2” Cold water game fishery
- “2WW” Warm water game fishery

- “3” Non-game fishery
- “4” Waters without the natural water quality to support fish

**WLA Threats, Credible Impairments, TMDLs Set (Tables A-D)**

*Indicates the pollutant of concern due to water quality based NPDES Permit renewal in next two years, impairments based on credible data, and/or EPA approved TMDLs set. The following abbreviations apply:*

- “NH3” Ammonia
- “FECAL” Fecal Coliform
- “TRC” Chlorine or Total Residual Chlorine
- “SILT” Siltation or sedimentation problems from erosion and/or deposition
- “TEMP” Temperature
- “BOD” Biological Oxygen Demand
- “SAL” Salinity
- “TDS” Total Dissolved Solids
- “TSS” Total Suspended Sediment

**Data Type (Table E)**

*Indicates the type(s) of data DEQ has on that waterbody.*

- “B” Biological data
- “C” Chemical data
- “P” Physical data
- “2” Secondary data (such as professional judgements, nominations, etc.)

**Data source, D Source**

*Indicates the source of data or the Waste Load Allocation permitted facility.*

- “BLM” Bureau of Land Management
- “BLRC” Bear Lake Regional Commission
- “CD” Conservation District
- “CCD” County Conservation District
- “DEQ” Wyoming Department of Environmental Quality
- “FS” Forest Service
- “IdDEQ” Idaho Department of Environmental Quality
- “SCS” Soil Conservation Service (now Natural Resources Conservation Service)
- “NRD” Natural Resource District
- “USFWS” US Fish and Wildlife Service
- “USGS” US Geological Survey
- “WGFD” Wyoming Game and Fish Department

**Monitor Reason (Table E)**

*Indicates the reason(s) for collecting more data.*

- “Inconclusive Data” Data is not complete enough to determine whether or not beneficial uses are met
- “Long Term Monitor” DEQ long term monitoring site

“No Primary Data”	Data does not fit the credible data criteria to determine whether or not beneficial uses are met
“No Recent Data”	Data is over 5 years old
“Old...”	Water Quality Standard Exceedence between 5 and 10 years old
“Ongoing...”	Indicates an ongoing project or study requiring further monitoring.
“UAA”	Use Attainability Analysis is required to respond to a request for a classification change.
“WQ Standards”	Water Quality Standards Exceedences in previous 5 years.

### Source

*Indicates the source of the pollutant(s).*

“N”	Non-point source pollution
“U”	Unknown source of contaminants
“P”	Point source pollution
“B”	Natural background source

### Nominated Impairments (Table D)

*Unless noted, this information is from the 1996 303(d) list.*

“[USGS MET]”	Metal data submitted by the United States Geological Survey. In several cases the USGS has reported this data to be in error
“[USGS ORG]”	Organic chemical data submitted by the United States Geological Survey. In several cases the USGS has reported this data to be in error
“FLOW”	Flow
“SILT”	Siltation or sedimentation
“SS”	Suspended sediment or turbidity
“ORG”	Organic chemicals or organic enrichment
“PATH”	Pathogens or bacteria
“PEST”	Pesticides
“NUTR”	Nutrients
“SAL”	Salinity, total dissolved solids or chlorides
“NH3”	Ammonia
“CHLOR”	Chlorine
“O&G”	Oil and grease
“RAD”	Radiation
“HAB”	Habitat
“TEMP”	Temperature
“pH”	pH
“DO”	Dissolved oxygen
“PRIORITY”	EPA Priority Pollutants

**Credible Delist Data** (Table D)

*Indicates the type of data used to delist the waterbody.*

**WLA NPDES** (Table B)

*Indicates NPDES discharge permits scheduled to be renewed within two years which discharge to the waterbody and require Waste Load Allocations.*

**BU Imp/Threat, BU Imp/Threat 2** (Tables A-C)

*Indicates the Beneficial Use(s) impaired or threatened on that waterbody.*

**New** (Tables A-C)

*Indicates waterbodies which were not on the 1996 303(d) list.*

**Location** (Table E)

*Indicates location of existing data. Often when monitoring, other portions of the watershed may need to be assessed.*

**Date** (Tables A-C)

*Indicates the year, since 1996, the waterbody was first evaluated as part of the 303(d) process (Note that all waterbodies on the 1996 303(d) List have a 1996 date.)*

**Priority** (Tables A-C)

*Indicates priority for TMDL development for waterbodies on the 303(d) lists.*

“H” High Priority

“M” Medium Priority

“L” Low Priority

“\*” An asterisk \* indicates waterbodies which are scheduled for TMDL development within two years (Targeted Waters)

## 303d List

TABLE A

Basin	Waterbody ID	Name	CI	Credible Impairments	Source	Data source	BU Imp/Threat	BU Imp/Threat 2	Date	Priority
BF	WYBF10120201-004-4	BELLE FOURCHE R	2WW	FECAL	P U	USGS 6428050	SECONDARY REC		1996	1998
BF	WYBF10120201-009-4	BELLE FOURCHE R	2WW	FECAL	U	USGS 6426500	CONTACT REC		1996	1998
BF	WYBF10120201-150-2	GILLETTE FISHING LAKE	2WW	SILT PHOSPHATE	N	INTERMOUNTAIN CD	WARM FISH		1996	1999
GR	WYGR14040107-020-3	GREEN R HAMS FK	2	pH	U	USGS 9224050	COLD FISH		1996	1998
LS	WYLS14050003-069-1	HAGGARTY CR	2	SILVER LEAD COPPER CADMIUM	P	USGS 9253455, DEQ	COLD FISH		1996	1998
NP	WYNP10180006-678-2	CROOKS CR	2	OIL DEPOSITS	U	DEQ-WQD	COLD FISH		1996	1998
NP	WYNP10180007-013-5	N PLATTE R	2	SELENIUM	B N	USGS 6645000	COLD FISH	WILDLIFE	1996	2001
NP	WYNP10180011-311-1	WHEATLAND CR	3	NH3	P U	USGS 6669050	NG FISH		1996	1998
PR	WYPR10090206-???-1	HUNTER CR	2	HEAVY SILTATION FROM ROAD	N	BHNF, DEQ	COLD FISH		1998	1998
PR	WYPR10090202-020-4	POWDER R	2WW	CHLORIDE	U	USGS 6313500	WARM FISH		1996	1998
SP	WYSP10190009-001-3	CROW CR	3,4	CADMIUM NH3 FECAL	U	USGS 6756060	NON GAME FISH	CONTACT REC	1996	1998
TR	WYTR10090101-006-3	BIG GOOSE CR	2	FECAL	U	USGS 6305500	CONTACT REC		1996	1998
TR	WYTR10090101-020-2	LITTLE GOOSE CR	2	FECAL	U	USGS 6304500	CONTACT REC		1996	1998
YR	WYYR10070006-027-2	YELLOWSTONE R CLARKS FK	1	COPPER (FROM MONTANA)	U	USGS 06205450	COLD FISH		1998	2001

## 303d List

TABLE B

Basin	Waterbody ID	Name	CI	WLA Threats	Data source	WLA NPDES	Exp Date	BU Imp/Threat	BU Imp/Threat 2	Date	Priority
BF	WYBF10120201-004-4	BELLE FOURCHE R	2WW	NH3, FECAL, TRC	HULETT WWTP	WY0020214	11/30/98	WARM FISH	SECONDARY REC	1996	1998
BH	WYBH10080009-733-1	BECK-ALLEN CANAL	4	FECAL	BURLINGTON WWTP	WY0034606	10/31/99	CONTACT REC		1998	1998
BH	WYBH10080007-005-5	BIGHORN R	2	FECAL, TRC	BASIN WWTP	WY0020028	3/31/00	COLD FISH		1996	1999
BH	WYBH10080007-008-5	BIGHORN R	2	NH3	HOLLY SUGAR WORLAND	WY0000183	1/31/99	COLD FISH		1996	2001
BH	WYBH10080007-011-5	BIGHORN R	2	NH3,FECAL, TRC	THERMOPOLIS WWTP	WY0020192	1/31/99	COLD FISH	CONTACT REC	1996	1998
BH	WYBH10080010-004-5	BIGHORN R	2	NH3,FECAL, TRC	GREYBULL WWTP	WY0020583	1/31/00	COLD FISH	CONTACT REC	1996	2002
BH	WYBH10080001-724-1	BROOKS LAKE CR	2	PHOSPHORUS	BROOKS LAKE TRADING	WY0028045	9/30/99	COLD FISH		1996	1998
BH	WYBH10080005-734-1	OCEAN LAKE #6 DRAIN	3	NH3,FECAL, TRC	PAVILLION WWTP	WY0020222	9/30/98	NON GAME FISH	SECONDARY REC	1998	1998
BH	WYBH10080003-077-3	POPO AGIE R	2	NH3, FECAL, TRC	LANDER WWTP	WY0020389	12/31/99	COLD FISH	SECONDARY REC	1996	1999
BH	WYBH10080001-073-3	WIND R	2	NH3,FECAL, TRC	DUBOIS WWTP	WY0020834	4/30/99	COLD FISH	CONTACT REC	1996	1998
BH	WYBH10080001-729-3	WIND R	2	NH3,FECAL, TRC	RIVERTON WWTP	WY0020672	5/31/98	COLD FISH	SECONDARY REC	1998	1998
BR	WYBR16010102-001-4	BEAR R	2	FECAL, TRC	COKEVILLE WWTP	WY0021032	7/31/99	COLD FISH	CONTACT REC	1996	1998
BR	WYBR16010101-005-3	YELLOW CR	3	NH3,FECAL, TRC	EVANSTON WWTP	WY0020095	8/31/99	NON GAME FISH	CONTACT REC	1998	1998
GR	WYGR14040107-020-3	GREEN R HAMS FK	2	NH3, FECAL, TRC	KEMMERER WWTP	WY0020320	6/30/98	COLD FISH	SECONDARY REC	1996	1998
GR	WYGR14040107-041-2	GREEN R SMITHS FK	2	NH3, FECAL, TRC	MOUNTAIN VIEW WWTP	WY0022896	10/31/98	COLD FISH	SECONDARY REC	1998	1998
LS	WYLS14050003-001-4	LITTLE SNAKE R	2	NH3, FECAL, TRC	DIXON WWTP	WY0021938	1/31/00	COLD FISH	CONTACT REC	1996	1998
NP	WYNP10180010-029-4	LARAMIE R	2	NH3, TRC	LARAMIE WWTP	WY0022209 WY0032590	7/31/99	COLD FISH	CONTACT REC	1996	2000
NP	WYNP10180004-047-4	MEDICINE BOW R	2	NH3, FECAL, TRC	MEDICINE BOW WWTP	WY0020257	10/31/98	COLD FISH	SECONDARY REC	1998	1998

303d List

Basin	Waterbody ID	Name	CI	WLA Threats	Data source	WLA NPDES	Exp Date	BU Imp/Threat	BU Imp/Threat 2	Date	Priority
NP	WYNP10180002-039-4	N PLATTE R	1	BOD, TSS, NH3, FECAL, TRC	SARATOGA WWTP	WY0021491	10/31/98	COLD FISH	CONTACT REC	1998	1998
NP	WYNP10180002-043-4	N PLATTE R	1	FECAL	A BAR A WWTP	WY0034762	3/31/00	CONTACT REC		1998	1998
NP	WYNP10180007-013-5	N PLATTE R	2	NH3, FECAL, TRC	CASPER WWTP	WY0021920	10/31/98	COLD FISH	SECONDARY REC	1996	1998
NP	WYNP10180008-004-5	N PLATTE R	2	NH3, FECAL, TRC	GUERNSEY WWTP	WY0021831	1/31/99	COLD FISH	CONTACT REC	1996	1998
NP	WYNP10180008-009-5	N PLATTE R	2	NH3,FECAL, TRC	DOUGLAS WWTP	WY0020109	1/31/99	COLD FISH	CONTACT REC	1996	1998
NP	WYNP10180009-097-2	RAWHIDE CR	2	NH3, FECAL, TRC	LINGLE WWTP	WY0021849	3/31/99	COLD FISH	SECONDARY REC	1998	1998
NP	WYNP10180011-311-1	WHEATLAND CR	3	NH3, FECAL, TRC	WHEATLAND WWTP	WY0020150	3/31/00	NON GAME FISH	SECONDARY REC	1996	1998
SR	WYSR17040103-031-2	GRANITE CR	1	TRC	USFS POOL	WY0035955	2/28/00	COLD FISH		1998	1998
SR	WYSR17040103-002-5	SNAKE R	2	TRC	ALPINE WWTP	WY0035611	12/31/98	COLD FISH		1996	1998
TR	WYTR10090101-105-3	GOOSE CR	2	NH3, FECAL, TRC	SHERIDAN WWTP	WY0020010	6/30/98	COLD FISH	CONTACT REC	1998	1998
TR	WYTR10090101-026-2	TONGUE R N	1	TRC	USFS WWTP	WY0020931	6/30/99	COLD FISH		1996	1998



## 303d List

TABLE C

Basin	Waterbody ID	Name	CI	Credible Impairments	Source	Data source	BU Imp/Threat	BU Imp/Threat 2	Date	Priority
BH	WYBH10080005-44 3-1	OCEAN LAKE	2WW	SILT	N	LOWER WIND RIVER NRD	WARM FISH		1996	1998
BR	WYBR16010101-02 2-1	BRIDGER CR	2	SILT	N	BEAR LAKE REGIONAL COMMISSION	COLD FISH		1998	1998
GR	WYGR14040107-15 9-1	GREEN R E FK SMITHS FK	2	SILT	N	UINTA CNTY CD	COLD FISH		1998	1998
GR	WYGR14040107-04 2-2	GREEN R W FK SMITHS FK	2	SILT	N	UINTA CNTY CD	COLD FISH		1998	1998
GR	WYGR14040101-28 0-1	REARDON DRAW	4	PHYSICAL DEGRADATION	N	SUBLETTE CNTY CD	WILDLIFE	AGRICULTURE	1998	1998
GR	WYGR14040107-27 9-1	WILLOW CR	2	SILT	N	UINTA CNTY CD	COLD FISH		1998	1998
LS	WYLS14050004-06 7-1	LITTLEFIELD CR	2	SILT	N	LITTLE SNAKE RIVER CD	COLD FISH		1996	1998
LS	WYLS14050003-07 1-1	LOCO CR	2	SILT NUTRIENTS TEMP	N	LITTLE SNAKE RIVER CD	COLD FISH		1996	1998
LS	WYLS14050003-07 2-2	LOCO CR	2	SILT NUTRIENTS TEMP	N	LITTLE SNAKE RIVER CD	COLD FISH		1996	1998
LS	WYLS14050003-07 0-1	LOCO CR W FK	2	SILT NUTRIENTS TEMP	N	LITTLE SNAKE RIVER CD	COLD FISH		1996	1998
LS	WYLS14050004-02 2-2	MCKINNEY CR	2	SILT	N	LITTLE SNAKE RIVER CD	COLD FISH		1996	1998
LS	WYLS14050004-00 7-3	MUDDY CR	3	SILT SAL/TDS	N	LITTLE SNAKE RIVER CD	NG FISH		1996	1998
LS	WYLS14050004-06 2-1	MUDDY CR	2	SILT	N	LITTLE SNAKE RIVER CD	COLD FISH		1996	1998
LS	WYLS14050003-00 4-3	SAVERY CR	2	SILT	N	LITTLE SNAKE RIVER CD	COLD FISH		1998	1998
NP	WYNP10150002-66 4-3	MCMASTERS RESERVOIR	2	FISH KILLS	B	WGFD, DEQ	COLD FISH		1996	1998
NP	WYNP10180002-08 8-3	SAGE CR	4	PHYSICAL DEGRADATION	N	SARATOGA-ENCAMPMENT-RAWLINS CD	WILDLIFE	AGRICULTURE	1996	1998
PR	WYPR10090205-06 4-2	CRAZY WOMAN CR N FK	2	SILT NUTRIENTS TDS	N	CRAZY WOMAN WATERSHED IMPROVEMENT DISTRICT	COLD FISH		1996	1998
PR	WYPR10090204-03 5-3	SALT CR	4	OIL SPILLS, TDS	U	DEQ	AGRICULTURE	WILDLIFE	1996	1998

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Basin	Waterbody ID	Name	CI	Credible Impairments	Source	Data source	BU Imp/Threat	BU Imp/Threat 2	Date	Priority
SR	WYSR17040101-25 6-1	SPREAD CR N FK	2	SILT	N	BRIDGER-TETON NF	COLD FISH	AQ LIFE	1998	1998
YR	WYYR10070006-11 8-1	SQUAW CR	2	SILT	N	SHOSHONE NF, PARK COUNTY	COLD FISH		1998	1998

## 303d List

TABLE D

Basin	Waterbody ID	Name	Cl	Size	Nominated Impairments	WLA NPDES	Exp Date	TMDLs Set	Credible Delist Data	D Source
BH	WYBH10080003-533-1	BALDWIN CR	2	16	SILT TURB				MEETS BEN. USES	POPO AGIE CD, WGFD, USGS
BH	WYBH10080009-301-1	DICKS CR	2	10.3	SILT				WRONG LOCATION	SHOSHONE NF
BH	WYBH10080001-551-1	DINWOODY CR	2	10.31	[USGS MET]				FAULTY DATA	SHOSHONE NF, USGS
BH	WYBH10080014-719-1	DRY GULCH	2	8.2	SILT NUTR SAL				CANNOT LOCATE	WGFD
BH	WYBH10080008-056-3	PAINT ROCK CR	2	21.1	SILT				MEETS BEN. USES	DEQ, BIG HORN NF, BLM
BH	WYBH10080016-094-2	PASS CR E	2	9.95	SILT				MEETS BEN. USES	DEQ
BH	WYBH10080014-020-4	SHOSHONE R	2	10.3	NH3 CHLOR PATH	WY0020451	8/31/97	NH3, FECAL, TRC	TMDLS	DEQ, USGS
BH	WYBH10080003-532-1	SQUAW CR	2	13.2	SILT FLOW HAB SAL TURB				MEETS BEN. USES	SHOSHONE NF, POPO AGIE CD, WGFD
CR	WYCR10120106-001-5	CHEYENNE R	3	21.6	SILT SAL ORG FLOW pH INORG				MEETS BEN. USES	SCS, NIOBRARA CNTY CD
CR	WYCR10120103-005-4	CHEYENNE R	3	9.6	SILT SAL ORG TURB pH INORG				MEETS BEN. USES	NIOBRARA CNTY CD
CR	WYCR10120105-206-3	LIGHTNING CR	4	9.2	SILT SAL ORG TURB pH INORG				MEETS BEN. USES	SCS, NIOBRARA CNTY CD
CR	WYCR10120105-160-1	LIGHTNING CR	4	19	SILT SAL ORG TURB pH INORG				MEETS BEN. USES	SCS, NIOBRARA CNTY CD
CR	WYCR10120105-010-3	LIGHTNING CR	4	25.4	SILT SAL ORG TURB pH INORG				MEETS BEN. USES	SCS, NIOBRARA CNTY CD
GR	WYGR14040101-228-1	PIXLEY CR	4	4.67	SILT SAL				MEETS BEN. USES	BRIDGER-TETON NF
LS	WYLS14050003-	LEDFORD SLOUGH	2	3	NH3 CHLOR PATH	WY0022888	9/30/00	NH3, FECAL, TRC	TMDLS	DEQ
NP	WYNP10180011-108-2	CHERRY CR	2	4.76	SILT PEST				DEQ MISLOCATION	N PLATTE VALLEY CD
NP	WYNP10180011-060-3	CHUGWATER CR	2	29.1	NH3 PATH CHLOR	WY0021431	1/31/98	NH3, FECAL, TRC	TMDLS	DEQ
NP	WYNP10180002-087-3	SPRING CR	2	3.4	SILT				DEQ MISLOCATION	SCS
NP	WYNP10180002-620-1	SPRING CR E FK S	2	10.91	SILT				DEQ MISLOCATION	SCS
PR	WYPR10090206-026-3	CLEAR CR M FK	2	17	SILT NUTR	WY0021024	11/30/01	NH3 TRC	MEETS BEN. USES	DEQ, BIG HORN NF

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Basin	Waterbody ID	Name	CI	Size	Nominated Impairments	WLA NPDES	Exp Date	TMDLs Set	Credible Delist Data	D Source
PR	WYPR10090206-060-2	CLEAR CR M FK	2	3.85	SILT NUTR				MEETS BEN. USES	BIG HORN NF
PR	WYPR10090206-061-2	CLEAR CR S	2	1.8	SILT NUTR				MEETS BEN. USES	DEQ, BIG HORN NF
PR	WYPR10090206-027-3	ROCK CR	2	6.1	SILT NUTR				MEETS BEN. USES	BIG HORN NF
PR	WYPR10090206-134-1	ROCK CR S FK	2	10.53	SILT NUTR				MEETS BEN. USES	BIG HORN NF
TR	WYTR10090101-093-1	RAPID CR	4	9.86	SILT FLOW				MEETS BEN. USES (Class 4)	BIG HORN NF, DEQ
TR	WYTR10090101-100-1	SMITH CR	2	9.8	SILT NUTR HAB PATH				MEETS BEN. USES	BIG HORN NF
YR	WYYR10070001-074-1	BUFFALO CR	1	18	SILT NUTR SAL TEMP				DEQ MISLOCATION	WGFD
YR	WYYR10070006-012-3	CRANDALL CR	2	5.4	SILT SAL FLOW				1988 FIRES	SHOSHONE NF, WGFD
YR	WYYR10070006-030-2	HOODOO CR	2	7.24	SILT SAL FLOW HAB				1988 FIRES	SHOSHONE NF
YR	WYYR10070006-082-1	PAPOOSE CR	2	7.3	SILT NUTR SAL				1988 FIRES	SHOSHONE NF
YR	WYYR10070006-084-1	SPRING CR	2	4.12	UNKNOWN				MEETS BEN. USES	SHOSHONE NF
YR	WYYR10070006-086-1	TEMPLE CR	2	4.9	SILT SAL FLOW HAB				1988 FIRES	SHOSHONE NF
YR	WYYR10070006-081-1	TIMBER CR	2	17.6	SILT SAL FLOW				1988 FIRES	SHOSHONE NF

## 303d List

TABLE E

Basin	HUC	Name	Waterbody ID	CI	Date	Data Type	D Source	MONITOR REASON	Location	Priority
BF	10120201	BEAVER CR	WYBF10120201-072-1	2	1996	P	BLACK HILLS NF	INCONCLUSIVE DATA	4 Reaches in T53&54N R63W	2000
BF	10120201	BEAVERDAM CR	WYBF10120201-071-1	2	1998	P	BLACK HILLS NF	INCONCLUSIVE DATA	S27 T55N R63W	2000
BF	10120201	BELLE FOURCHE R	WYBF10120201-005-4	2WW	1996	C, B, P	DEQ	INCONCLUSIVE DATA	S7 T53N R65W	2000
BF	10120201	BLACKTAIL CR	WYBF10120201-074-1	2	1998	P	BLACK HILLS NF	INCONCLUSIVE DATA	T53N R63-64W On Forest	2000
BF	10120201	BLACKTAIL CR E FK	WYBF10120201-	2	1998	P	BLACK HILLS NF	INCONCLUSIVE DATA	T53N R63-64W	2000
BF	10120201	CABALLO CR	WYBF10120201-040-2	2WW	1996	2	1996 305(b)	NO PRIMARY DATA	Tributary to Belle Fourche River South of Gillette	2000
BF	10120201	COOK LAKE	WYBF10120201-148-1	2	1996	P	WGFD, BLACK HILLS NF	INCONCLUSIVE DATA	On Beaver Creek	2000
BF	10120201	CUB CR	WYBF10120201-	2	1998	P	BLACK HILLS NF	INCONCLUSIVE DATA	S23 T54N R63W On Forest	2000
BF	10120201	DEER CR	WYBF10120201-	2	1998	P	BLACK HILLS NF	INCONCLUSIVE DATA	Tributary to Beaver Creek S22 T53N R63W	2000
BF	10120201	DEER CR	WYBF10120201-	2	1998	P	BLACK HILLS NF	INCONCLUSIVE DATA	Tributary to Lame Jones Creek S20 T54N R63W	2000
BF	10120201	DONKEY CR	WYBF10120201-042-2	2WW	1996	C	USGS	OLD NH3, FECAL	USGS Station near Moorcroft	2000
BF	10120201	FAWN CR	WYBF10120201-	2	1998	P	BLACK HILLS NF	INCONCLUSIVE DATA	S25 T54N R63W	2000
BF	10120201	HERSHEY CR	WYBF10120201-	2	1998	P	BLACK HILLS NF	INCONCLUSIVE DATA	S13 T53N R64W	2000
BF	10120201	KEYHOLE RES	WYBF10120201-007-4	2WW	1996	C	USGS	NO RECENT DATA	Keyhole Reservoir	2000
BF	10120201	LAME JONES CR	WYBF10120201-073-1	2	1998	P	BLACK HILLS NF	INCONCLUSIVE DATA	S8 T53N R63W	2000
BF	10120201	LITTLE BEAVER CR	WYBF10120201-	2	1998	P	BLACK HILLS NF	INCONCLUSIVE DATA	S32 T54N R63W	2000
BF	10120201	LITTLE CR	WYBF10120201-	2	1998	P	BLACK HILLS NF	POSSIBLE REFERENCE SITE	S2 T53N R63W	2000
BF	10120201	LOST HOUSTON CR	WYBF10120201-	2	1998	P	BLACK HILLS NF	INCONCLUSIVE DATA	S5 T51N R63W	2000
BF	10120201	LYTLE CR	WYBF10120201-075-1	2	1998	P	BLACK HILLS NF	INCONCLUSIVE DATA	T52N R63-64W On Forest	2000
BF	10120201	MILLER CR	WYBF10120201-077-1	2	1998	P	BLACK HILLS NF	INCONCLUSIVE DATA	Mainstem and Tributaries above Arkansas Creek	2000
BF	10120201	RESERVOIR GULCH	WYBF10120201-	2	1998	P	BLACK HILLS NF	INCONCLUSIVE DATA	S11 T54 R63	2000

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Basin	HUC	Name	Waterbody ID	CI	Date	Data Type	D Source	MONITOR REASON	Location	Priority
BF	10120201	STONEPILE CR	WYBF10120201-146-1	4	1996	C	USGS	OLD FECAL	USGS Station at Gillette	2000
BF	10120201	WHITELAW CR	WYBF10120201-151-1	2	1996	C, P, B	BLACK HILLS NF, DEQ	LONG TERM MONITORING	S9 T52N R63W	2000
BF	10120201	WINCHESTER CR	WYBF10120201-	2	1998	P	BLACK HILLS NF	INCONCLUSIVE DATA	S31 T53N R63W	2000
BF	10120201	WOOD CR	WYBF10120201-	2	1998	P	BLACK HILLS NF	INCONCLUSIVE DATA	S22 T54N R63W	2000
BF	10120202	BELLE FOURCHE R	WYBF10120202-002-4	2WW	1996	C, B, P	DEQ	INCONCLUSIVE DATA	S13 T55N R64W	2000
BF	10120202	DEEP CR	WYBF10120202-052-1	2	1998	P	BLACK HILLS NF	INCONCLUSIVE DATA	S1 T55N R63W	2000
BF	10120202	EAST CR N FK	WYBF10120202-	2	1998	P	BLACK HILLS NF	INCONCLUSIVE DATA	S10 T55N R63W	2000
BF	10120203	HAY CR M FK	WYBF10120203-057-1	2	1998	P	BLACK HILLS NF	INCONCLUSIVE DATA	S17 T54N R62W	1999
BF	10120203	REDWATER CR N FK	WYBF10120203-059-1	2	1998	P	BLACK HILLS NF	INCONCLUSIVE DATA	T53 R62-63W	1999
BF	10120203	SUNDANCE FAIRGROUNDS PO	WYBF10120203-147-1	2	1996	2	WGFD	INCONCLUSIVE DATA	Sundance Fairgrounds Pond	1999
BH	10080001	BEAR CR	WYBH10080001-172-2	2	1996	P, 2	SHOSHONE NF	INCONCLUSIVE DATA	Between E Fk Wind River and Waynes Creek	1999
BH	10080001	BEAR CR	WYBH10080001-591-1	2	1996	P, 2	SHOSHONE NF	INCONCLUSIVE DATA	Above Waynes Creek	1999
BH	10080001	BROOKS LK W CR	WYBH10080001-???-1	2	1998	P, 2	SHOSHONE NF	INCONCLUSIVE DATA	Western Tributary to Brooks Lake	1999
BH	10080001	CASTLE CR	WYBH10080001-594-1	2	1996	P, 2	SHOSHONE NF	INCONCLUSIVE DATA	Tributary to E Fk Wind R on Forest	1999
BH	10080001	HORSE CR	WYBH10080001-171-2	2	1996	P, 2	SHOSHONE NF	INCONCLUSIVE DATA	Between Wind River and Burroughs Creek	1999
BH	10080001	TRAPPERS CR	WYBH10080001-566-1	2	1996	P	SHOSHONE NF	INCONCLUSIVE DATA	S25 T42N R109W	1999
BH	10080001	WARM SPRINGS CR	WYBH10080001-567-1	2	1996	P, 2	SHOSHONE NF, HOT SPRINGS CD	INCONCLUSIVE DATA	S33 T42N R108W	1999
BH	10080001	WIND R	WYBH10080001-014-5	2	1996	C	USGS	INCONCLUSIVE DATA	Above Boysen Reservoir Near Shoshoni	1999
BH	10080001	WIND R	WYBH10080001-074-3	2	1996	2	WGFD	NO PRIMARY DATA	Between Horse Creek and Middle Fk Wind River	1999
BH	10080001	WIND R	WYBH10080001-167-2	2	1996	P, 2	SHOSHONE NF, WGFD	INCONCLUSIVE DATA	S2 T42N R109W	1999
BH	10080001	WIND R E FK	WYBH10080001-070-3	2	1996	2	1996 305(b)	NO PRIMARY DATA	Below Wiggins Fork	1999
BH	10080001	WIND R E FK	WYBH10080001-173-2	2	1996	P	SHOSHONE NF	INCONCLUSIVE DATA	Above Wiggins Fork	1999
BH	10080002	BEAVER CR	WYBH10080002-486-1	2	1996	P, 2	BLM, SHOSHONE NF	INCONCLUSIVE DATA	Multiple sites in T28&29N R98&99W	1999

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Basin	HUC	Name	Waterbody ID	CI	Date	Data Type	D Source	MONITOR REASON	Location	Priority
BH	10080002	LITTLE BEAVER CR	WYBH10080002-723-1	2	1996	P	BLM	INCONCLUSIVE DATA	S9 T29N R99W, S6 T29N R98W	1999
BH	10080003	BEASON CR	WYBH10080003-722-1	2	1996	2	1996 305(b)	NO PRIMARY DATA	Tributary to Willow Creek	1999
BH	10080003	DEEP CR	WYBH10080003-146-2	2	1996	P	BLM	INCONCLUSIVE DATA	T30-31N T99W	1999
BH	10080003	LITTLE POPO AGIE R	WYBH10080003-079-3	2	1996	2	1996 305(b)	NO PRIMARY DATA	Below Twin Creek	1998
BH	10080003	POPO AGIE R M	WYBH10080003-148-2	2	1996	2	DEQ, SHOSHONE NF, WGFD	INCONCLUSIVE DATA	Below Forest	1999
BH	10080003	TWIN CR	WYBH10080003-145-2	2	1996	P	BLM	INCONCLUSIVE DATA	T30-32N R98W	1999
BH	10080003	WILLOW CR	WYBH10080003-522-1	2	1996	2	1996 305(b)	NO PRIMARY DATA	T32N R99W	1999
BH	10080005	BIGHORN R	WYBH10080005-012-5	1	1996	C	USGS	NO RECENT DATA	Below Boysen Reservoir	2000
BH	10080005	BOYSEN RES	WYBH10080005-013-5	2	1996	C, 2	USGS, WGFD	NO RECENT DATA	Boysen Reservoir	2000
BH	10080005	FIVEMILE CR	WYBH10080005-064-3	2	1996	C	USGS	NO RECENT DATA	Near Shoshoni	2000
BH	10080005	FIVEMILE CR	WYBH10080005-159-2	2	1996	C	USGS	NO RECENT DATA	Above Wyoming Canal near Pavillion	2000
BH	10080005	MUDDY CR	WYBH10080005-157-2	2	1996	C	USGS	NO RECENT DATA	Near Pavillion and near Shoshoni	2000
BH	10080007	ALKALI CR	WYBH10080007-388-1	4	1996	2	HOT SPRINGS CD	NO PRIMARY DATA	Tributary to Kirby Creek	2001
BH	10080007	BIGHORN R	WYBH10080007-006-5	2	1996	2	WASHAKIE CCD	NO PRIMARY DATA	Between Fivemile Creek and Elk Creek	2001
BH	10080007	BIGHORN R	WYBH10080007-007-5	2	1996	2	WASHAKIE CCD	NO PRIMARY DATA	Between Slick Creek and Fivemile Creek	2001
BH	10080007	BIGHORN R	WYBH10080007-010-5	2	1996	C, 2	WASHAKIE CCD, HOT SPRINGS CD	INCONCLUSIVE DATA	Between Coal Draw and Owl Creek	2001
BH	10080007	BUFFALO CR	WYBH10080007-115-2	2	1996	2	WGFD, HOT SPRINGS CD	NO PRIMARY DATA	Tributary to Bighorn River above Thermopolis	2001
BH	10080007	BUFFALO CR	WYBH10080007-390-1	2	1996	2	WGFD	NO PRIMARY DATA	Above Jones Creek	2001
BH	10080007	COAL DRAW	WYBH10080007-120-2	2	1996	C, B, P	DEQ BURP 97	UAA	Tributary to Bighorn River	1997
BH	10080007	COTTONWOOD CR	WYBH10080007-059-3	4	1996	C, P	WASHAKIE CCD, BLM	INCONCLUSIVE DATA	Below Grass Creek	1998
BH	10080007	COTTONWOOD CR	WYBH10080007-060-3	4	1996	P	BLM	INCONCLUSIVE DATA	Grass Creek to Prospect Creek	1998
BH	10080007	COTTONWOOD CR	WYBH10080007-121-2	2	1996	2	1996 305(b)	NO PRIMARY DATA	Between Prospect Creek and Twentyone Creek	2001

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Basin	HUC	Name	Waterbody ID	CI	Date	Data Type	D Source	MONITOR REASON	Location	Priority
BH	10080007	FIFTEENMILE CR	WYBH10080007-058-3	3	1996	C, P, 2	USGS, BLM, WGFD, WASHAKIE CCD	INCONCLUSIVE DATA	Near Worland	2001
BH	10080007	GOOSEBERRY CR	WYBH10080007-126-2	2	1996	C, P	WASHAKIE CCD, BLM	INCONCLUSIVE DATA	Below Gillies Draw	2001
BH	10080007	GRASS CR	WYBH10080007-124-2	4	1996	2	1996 305(b)	NO PRIMARY DATA	Below Little Grass Creek	1998
BH	10080007	GRASS CR	WYBH10080007-725-1	2	1996	2	1996 305(b)	NO PRIMARY DATA	Above Little Grass Creek	2001
BH	10080007	KIRBY CR	WYBH10080007-061-3	4	1996	2	HOT SPRINGS CD	NO PRIMARY DATA	Tributary to Bighorn River Near Lucerne	2001
BH	10080007	KIRBY CR W	WYBH10080007-114-2	2	1996	2	HOT SPRINGS CD	NO PRIMARY DATA	Tributary to Kirby Creek	2001
BH	10080007	LAKE CR	WYBH10080007-113-2	2	1996	C, B, P, 2	DEQ, HOT SPRINGS CD	INCONCLUSIVE DATA	S28 T49N R86W	2001
BH	10080007	NOWATER CR	WYBH10080007-112-2	4	1996	C, P, 2	SCS, WGFD, WASHAKIE CCD	INCONCLUSIVE DATA	Between E Fk Nowater Creek and Mud Creek	2001
BH	10080007	OWL CR	WYBH10080007-062-3	2	1996	2	1996 305(b)	NO PRIMARY DATA	Below Mud Creek	2001
BH	10080007	OWL CR	WYBH10080007-063-3	2	1996	2	1996 305(b)	NO PRIMARY DATA	Above Mud Creek	2001
BH	10080007	RED CANYON CR	WYBH10080007-116-2	4	1996	P, 2	BLM, WGFD, HOT SPRINGS CD	INCONCLUSIVE DATA	Tributary to Bighorn River above Thermopolis	2001
BH	10080008	BUFFALO CR	WYBH10080008-106-2	3	1996	2	WASHAKIE CCD	UAA	Tributary to Nowood River above Tensleep	2000
BH	10080008	MEDICINE LODGE CR	WYBH10080008-097-2	2	1996	C, B, P, 2	BIG HORN NF, BLM, DEQ	INCONCLUSIVE DATA	Private land below Forest & BLM	2000
BH	10080008	NOWOOD R	WYBH10080008-027-4	2	1996	2	SOUTH BIG HORN CD, WASHAKIE CCD	NO PRIMARY DATA	Between Worland and Paint Rock Creek	2000
BH	10080008	NOWOOD R	WYBH10080008-028-4	2	1996	2	SOUTH BIG HORN CD, WASHAKIE CCD	NO PRIMARY DATA	Between Paint Rock Creek and Tensleep	2000
BH	10080008	NOWOOD R	WYBH10080008-029-4	2	1996	2	SOUTH BIG HORN CD, WASHAKIE CCD	NO PRIMARY DATA	Between Buffalo Creek (below Tensleep) to Bud Kimball Creek	2000
BH	10080008	NOWOOD R	WYBH10080008-030-4	2	1996	2	SOUTH BIG HORN CD, WASHAKIE CCD	NO PRIMARY DATA	Between Bud Kimball Creek and Buffalo Creek (above Tensleep)	2000
BH	10080008	NOWOOD R	WYBH10080008-067-3	2	1996	2	SOUTH BIG HORN CD, WASHAKIE CCD	NO PRIMARY DATA	Between Buffalo Creek (above Tensleep) and Deep Creek	2000



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Basin	HUC	Name	Waterbody ID	CI	Date	Data Type	D Source	MONITOR REASON	Location	Priority
BH	10080008	NOWOOD R	WYBH10080008-105-2	2	1996	2	SOUTH BIG HORN CD, WASHAKIE CCD	NO PRIMARY DATA	Between Deep Creek and Stove Creek	2000
BH	10080008	NOWOOD R	WYBH10080008-365-1	2	1996	2	SOUTH BIG HORN CD, WASHAKIE CCD	NO PRIMARY DATA	Above Stove Creek	2000
BH	10080008	OTTER CR N FK	WYBH10080008-103-2	2	1996	C, B, P, 2	DEQ, WASHAKIE CCD	INCONCLUSIVE DATA	S16 T45N R87W	2000
BH	10080008	PAINT ROCK CR S FK	WYBH10080008-339-1	2	1996	C, B, P	DEQ, BIG HORN NF	INCONCLUSIVE DATA	S14, 15 T49N R87W	2000
BH	10080008	SOLDIER CR	WYBH10080008-721-1	2	1996	2	BIG HORN NF	NO PRIMARY DATA	Tributary to South Paint Rock Creek	2000
BH	10080009	DICKS CR N FK	WYBH10080009-???-1	2	1998	C, B, P	SHOSHONE NF, MEETEETSE CD	INCONCLUSIVE DATA	S34 T47N R102W	2001
BH	10080009	GREYBULL R	WYBH10080009-053-3	2	1996	C, B, P, 2	SHOSHONE NF, MEETEETSE CD, SOUTH BIG HORN CD	INCONCLUSIVE DATA	S5 T48N R100W	2001
BH	10080009	HAYMAKER CR	WYBH10080009-311-1	1	1996	P, 2	SHOSHONE NF, MEETEETSE CD	INCONCLUSIVE DATA	Tributary to Greybull River On Forest	2001
BH	10080009	WOOD R	WYBH10080009-054-3	2	1998	C, B, P, 2	MEETEETSE CD	INCONCLUSIVE DATA	Near Meeteetse	2001
BH	10080010	BATTLE CR	WYBH10080010-254-1	2	1996	P, 2	BIG HORN NF	INCONCLUSIVE DATA	S15 T50N R87W	2002
BH	10080010	BIGHORN R	WYBH10080010-002-5	2	1996	C	USGS	NO RECENT DATA	At Kane	2002
BH	10080010	CROOKED CR	WYBH10080010-081-2	2	1996	2	1996 305(b)	NO PRIMARY DATA	Tributary to Bighorn River Below Bighorn Lake	2002
BH	10080010	GRANITE CR	WYBH10080010-247-1	2	1996	C, B, P	DEQ, BIG HORN NF	INCONCLUSIVE DATA	S15 T53N R89W	2002
BH	10080010	MAIL CR	WYBH10080010-249-1	2	1996	P	BIG HORN NF	INCONCLUSIVE DATA	S28 T53N R88W	2002
BH	10080010	PORCUPINE CR	WYBH10080010-082-2	2	1996	P	BIG HORN NF	INCONCLUSIVE DATA	Below Forest	2002
BH	10080010	PORCUPINE CR	WYBH10080010-228-1	2	1996	C, B, P	DEQ, BIG HORN NF	INCONCLUSIVE DATA	S20,21 T56N R91W (Above Devil Canyon)	2002
BH	10080010	SHELL CR	WYBH10080010-038-3	2	1998	C	USGS, SOUTH BIG HORN CD, DEQ	OLD FECAL	At Porter Gulch near Greybull	2002
BH	10080011	DRY CR	WYBH10080011-040-3	2	1996	2	1996 305(b)	NO PRIMARY DATA	Below Emblem Draw near Greybull	2001
BH	10080012	SHOSHONE R N FK	WYBH10080012-048-3	2	1996	C, B, P	WYDOT	LONG TERM MONITORING	Between Big Creek and Middle Creek on Forest	2000

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Basin	HUC	Name	Waterbody ID	CI	Date	Data Type	D Source	MONITOR REASON	Location	Priority
BH	10080014	ALKALI CR	WYBH10080014-287-1	2	1996	2	POWELL CLARKS FORK CD	NO PRIMARY DATA	Tributary to N Fk Shoshone River near Ralston	2001
BH	10080014	BITTER CR	WYBH10080014-289-1	2	1996	C	USGS	OLD NH3, FECAL	Below Sewage Lagoon near Powell	2001
BH	10080014	POLECAT CR	WYBH10080014-291-1	2	1996	2	SCS	NO PRIMARY DATA	Tributary to Sage Creek near Deaver	2001
BH	10080014	SAGE CR	WYBH10080014-	2	1998	2	WGFD	NO PRIMARY DATA	Near Cody	2001
BH	10080014	SAGE CR	WYBH10080014-211-2	2	1996	2	SCD,SCS	NO PRIMARY DATA	Near Frannie	2001
BH	10080014	SHOSHONE R	WYBH10080014-016-4	2	1996	C	USGS, SCS	OLD FECAL	At Kane	2001
BH	10080014	WHISTLE CR	WYBH10080014-191-2	2	1996	2	SCS	NO PRIMARY DATA	Between N Fk Shoshone R to West Branch Whistle Creek	2001
BH	10080014	WHISTLE CR	WYBH10080014-269-1	2	1996	2	SCS	NO PRIMARY DATA	Above West Branch Whistle Creek	2001
BH	10080016	LITTLE BIGHORN R	WYBH10080016-091-2	2	1996	C, B, P, 2	BIG HORN NF, DEQ	INCONCLUSIVE DATA	Upper watershed above Canyon	2002
BH	10080016	PASS CR W	WYBH10080016-093-2	2	1996	2	WGFD	NO PRIMARY DATA	Above Montana Line	2002
BR	16010101	BEAR R	WYBR16010101-006-3	2	1996	C, 2	USGS, SCS	NO RECENT DATA	At Evanston	1998
BR	16010101	BEAR R	WYBR16010101-007-3	2	1996	C, B, P	DEQ, SCS	INCONCLUSIVE DATA	S30 T14N R119W	1998
BR	16010101	BEAR R	WYBR16010101-008-3	2	1996	C, B, P	DEQ	INCONCLUSIVE DATA	S3 T12N R120W	1998
BR	16010101	BEAR R	WYBR16010101-058-4	2	1996	C, B, P	DEQ	INCONCLUSIVE DATA	S24,36 T16N R121W	1998
BR	16010101	MILL CR	WYBR16010101-015-2	2	1996	2	SUBLETTE CCD	NO PRIMARY DATA	Tributary to Bear River South of Evanston	1998
BR	16010101	PLEASANT VALLEY CR	WYBR16010101-031-1	4	1996	2	SUBLETTE CCD	NO PRIMARY DATA	Near Evanston	1998
BR	16010101	SULPHUR CR	WYBR16010101-016-2	2	1996	2	SUBLETTE CCD	NO PRIMARY DATA	Tributary to Bear River South of Evanston	1998
BR	16010101	TWIN CR	WYBR16010101-004-3	2	1996	C, B, P	BLM, DEQ, SCS, BEAR LAKE REG. COM.	INCONCLUSIVE DATA	Between Bear River and Rock Creek	1998
BR	16010101	TWIN CR	WYBR16010101-012-2	2	1996	P, 2	BLM, SCS, BEAR LAKE REG. COM.	INCONCLUSIVE DATA	Above Rock Creek	1998
BR	16010101	TWIN CR S FK	WYBR16010101-026-1	4	1996	P, 2	BLM, SCS	INCONCLUSIVE DATA	Tributary to Twin Creek	1998
BR	16010102	BEAR R	WYBR16010102-003-2	2	1996	2	BEAR LAKE REG. COM.	INCONCLUSIVE DATA	Between Utah Line and Woodruff Narrows Reservoir	1998
BR	16010102	BEAR R SMITHS FK	WYBR16010102-009-3	2	1996	C, B, P	DEQ, USGS, SUBLETTE CCD	INCONCLUSIVE DATA	S9 T27N R118W	1998

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Basin	HUC	Name	Waterbody ID	CI	Date	Data Type	D Source	MONITOR REASON	Location	Priority
BR	16010102	COAL CR	WYBR16010102-017-2	2	1998	C, B, P	IdDEQ	INCONCLUSIVE DATA	Tributary to Salt Cr, near mouth	1998
BR	16010102	COAL CR	WYBR16010102-040-1	2	1996	P	BLM	INCONCLUSIVE DATA	Tributary to Smiths Fork	1998
BR	16010102	COANTAG CR	WYBR16010102-045-1	2	1996	C, B, P	DEQ	INCONCLUSIVE DATA	Tributary to Smiths Fork S36 T28N R117W	1998
BR	16010102	GIRAFFE CR	WYBR16010102-	2	1998	C, B, P	IdDEQ	INCONCLUSIVE DATA	Possible reference near Salt Cr confluence	1998
BR	16010102	MILL CR	WYBR16010102-055-1	2	1996	P, 2	BLM, SCS	INCONCLUSIVE DATA	Tributary to Smiths Fork	1998
BR	16010102	SALT CR (THOMAS FK)	WYBR16010102-010-3	2	1996	C, B, P	IdDEQ	INCONCLUSIVE DATA	(Thomas Fk Bear) Below Giraffe Cr and Coal Cr	1998
BR	16010102	SUBLETTE CR	WYBR16010102-037-1	2	1996	2	SUBLETTE CCD	NO PRIMARY DATA	Tributary to Bear River South of Cokeville	1998
CR	10120103	BLACK THUNDER CR	WYCR10120103-015-3	3	1996	C, 2	USGS, WESTON CNRD	UAA	Near Hampshire	2002
CR	10120103	LITTLE THUNDER CR	WYCR10120103-041-2	2	1996	C, 2	USGS, WESTON CNRD	UAA	Near Hampshire	2002
CR	10120103	SNYDER CR	WYCR10120103-040-2	4	1996	2	SCS, NIOBRARA CNTY CD	INCONCLUSIVE DATA	Between Cheyenne River and South Snyder Creek	2002
CR	10120104	LANCE CR	WYCR10120104-006-4	2WW	1996	P, 2	SCS, NIOBRARA CNTY CD	UAA	Between Cheyenne River and Old Woman Creek	2002
CR	10120107	BEAVER CR	WYCR10120107-007-4	2WW	1996	2	DEQ, WESTON CNRD	UAA	Lower 5 miles above South Dakota	2002
CR	10120107	LAK RESERVOIR	WYCR10120107-218-1	2	1996	2	WGFD	NO PRIMARY DATA	LAK Reservoir	2002
CR	10120107	MW RESERVOIR	WYCR10120107-220-1	2	1996	2	WGFD	NO PRIMARY DATA	MW Reservoir	2002
CR	10120107	STOCKADE BEAVER CR	WYCR10120107-017-3	2	1996	2	WGFD, WESTON CNRD	UAA	Between Beaver Creek and Whoopup Creek	2002
CR	10120107	STOCKADE BEAVER CR	WYCR10120107-026-2	2	1996	2	WGFD, WESTON CNRD	UAA	Between Whoopup Creek and Salt Creek	2002
CR	10120107	STOCKADE BEAVER CR	WYCR10120107-087-1	2	1996	C, B, P, 2	DEQ, WGFD, WESTON CNRD	UAA	S7 T44N R60W	2002
GR	14040101	BIRCH CR	WYGR14040101-051-2	3	1996	2	1996 305(b)	NO PRIMARY DATA	Between Green River and S Fk Birch Creek	1998
GR	14040101	DRY PINEY CR	WYGR14040101-278-1	2	1996	C, P, 2	BLM, USGS, DEQ	INCONCLUSIVE DATA	Near Big Piney	1998

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Basin	HUC	Name	Waterbody ID	CI	Date	Data Type	D Source	MONITOR REASON	Location	Priority
GR	14040101	FONTENELLE CR	WYGR14040101-049-2	2	1996	C, B, P	SCS, BRIDGER-TETON NF, DEQ	LONG TERM MONITORING	S1 T24N R113W	1998
GR	14040101	FONTENELLE CR	WYGR14040101-186-1	2	1996	C, B, P, 2	SCS, BRIDGER-TETON NF, DEQ	INCONCLUSIVE DATA	S35 T27N R116W	1998
GR	14040101	GREEN R	WYGR14040101-012-4	2	1996	C, 2	USGS, SUBLETTE CCD	INCONCLUSIVE DATA	Below Reardon Draw	1998
GR	14040101	GREEN R	WYGR14040101-013-4	2	1996	2	SUBLETTE CCD	NO PRIMARY DATA	Between Birch Creek and Muddy Creek	1998
GR	14040101	MUDDY CR	WYGR14040101-207-1	2	1996	P	BLM	INCONCLUSIVE DATA	Tributary to Green River	1998
GR	14040101	ROCK CR	WYGR14040101-194-1	2	1996	P	BLM	INCONCLUSIVE DATA	Tributary to La Barge Creek	1998
GR	14040102	NEW FK R	WYGR14040102-029-3	2	1996	C, B, P, 2	SUBLETTE CCD, DEQ	INCONCLUSIVE DATA	S11 T30N R110W	1998
GR	14040102	NEW FK R	WYGR14040102-060-2	2	1996	C, B, P, 2	SUBLETTE CCD, DEQ	INCONCLUSIVE DATA	S24 T34N R110W	1998
GR	14040102	POLE CR	WYGR14040102-238-1	2	1996	P	BLM	INCONCLUSIVE DATA	Tributary to New Fork River Between Boulder and Pinedale	1998
GR	14040103	ALKALI CR	WYGR14040103-128-1	4	1996	2	SUBLETTE CCD	NO PRIMARY DATA	Tributary to Green River above Town of Green River	1998
GR	14040103	GREEN R	WYGR14040103-009-4	2	1996	2	1996 305(b)	NO PRIMARY DATA	Seedskadee NWR	1998
GR	14040104	BIG SANDY R	WYGR14040104-026-3	2	1996	C, P, 2	USGS, BLM, SUBLETTE CCD	INCONCLUSIVE DATA	At Gasson Bridge near Eden	1998
GR	14040104	LITTLE SANDY R	WYGR14040104-149-1	2	1996	2	1996 305(b)	NO PRIMARY DATA	Above Long Draw near Elkhorn Junction	1998
GR	14040105	BITTER CR	WYGR14040105-024-3	4	1998	C	USGS	OLD FECAL, SELENIUM	Near Rock Springs below Killpecker Creek	2000
GR	14040106	CURRANT CR	WYGR14040106-034-2	2	1996	P, 2	BLM, WGFD	ONGOING STUDY	Tributary to Flaming Gorge Reservoir	2000
GR	14040106	FLAMING GORGE RES	WYGR14040106-001-5	2	1996	2	WASATCH-CACHE NF	NO PRIMARY DATA	Flaming Gorge Reservoir	1999
GR	14040106	GREEN R	WYGR14040106-006-4	2	1996	C	USGS	INCONCLUSIVE DATA	Below Town of Green River	2000
GR	14040106	RED CR	WYGR14040106-036-2	2	1996	P, 2	BLM, SCS	INCONCLUSIVE DATA	S3 T12N R103W	2000
GR	14040107	GREEN R BLACKS FK	WYGR14040107-002-5	2	1996	2	SCS	NO PRIMARY DATA	Near Granger	1998

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Basin	HUC	Name	Waterbody ID	CI	Date	Data Type	D Source	MONITOR REASON	Location	Priority
GR	14040107	GREEN R BLACKS FK	WYGR14040107-004-5	3	1996	2	SCS	NO PRIMARY DATA	Below Interstate 80	1998
GR	14040107	GREEN R HAMS FK	WYGR14040107-045-2	2	1996	2	SCS	NO PRIMARY DATA	Above Willow Creek near Kemmerer	1998
GR	14040107	GREEN R SMITHS FK	WYGR14040107-017-3	2	1996	C, 2	USGS, SCS	NO RECENT DATA	Near Lyman	1998
GR	14040107	WILLOW CR	WYGR14040107-171-1	2	1996	2	SCS	NO PRIMARY DATA	Between Muddy Cr and W Fk Willow North of Kemmerer	1998
GR	14040108	ALBERT CR	WYGR14040108-021-3	3	1996	2	SUBLETTE CCD	NO PRIMARY DATA	Tributary to Muddy Creek near Cumberland Gap	1998
GR	14040109	VERMILLION CR	WYGR14040109-025-3	2	1996	P, 2	BLM, SUBLETTE CCD	INCONCLUSIVE DATA	Between Colorado Line and Alkali Creek	1998
GR	14040109	VERMILLION CR N FK	WYGR14040109-124-1	2	1996	P, 2	BLM, SUBLETTE CCD	INCONCLUSIVE DATA	Above Coyote Creek	1998
LM	10110201	LITTLE MISSOURI R	WYLM10110201-001-4	2WW	1996	2	DEVILS TOWER CD	NO PRIMARY DATA	Below N Fk Little Missouri River	1998
LM	10110201	LITTLE MISSOURI R N FK	WYLM10110201-002-3	2WW	1996	2	DEVILS TOWER CD	NO PRIMARY DATA	Below Driscoll Creek	1998
NP	10150002	SILVER SPRINGS CR	WYNP10150002-647-1	4	1998	2	SCS	UAA	Tributary to Niobrara River	1999
NP	10180002	BEAR CR	WYNP10180002	2	1998	2	MEDBOW NF	INCONCLUSIVE DATA	Tributary to Douglas Creek	1999
NP	10180002	CEDAR CR	WYNP10180002-200-2	2	1996	2	SAR-ENC-RAWL CD	NO PRIMARY DATA	SW of Saratoga	1999
NP	10180002	CEDAR CR S	WYNP10180002-606-1	2	1996	2	SAR-ENC-RAWL CD	NO PRIMARY DATA	South Cedar Cr (not Middle Cedar) SW of Saratoga	1999
NP	10180002	DOUGLAS CR	WYNP10180002-179-2	2	1996	C, B, P	DEQ, MED BOW NF	INCONCLUSIVE DATA	Below Pelton Creek	1997
NP	10180002	DOUGLAS CR	WYNP10180002-180-2	2	1996	C, B, P	DEQ, MED BOW NF	INCONCLUSIVE DATA	Below Keystone	1997
NP	10180002	ENCAMPMENT R	WYNP10180002-086-3	1	1996	C	USGS	NO RECENT DATA	At Mouth near Encampment	1999
NP	10180002	HOG PARK CR S	WYNP10180002	2	1998	2	MEDBOW NF	INCONCLUSIVE DATA	Between Hog Park Creek and Colorado Line	1999
NP	10180002	JACK CR	WYNP10180002-623-1	2	1996	2	SAR-ENC-RAWL CD	NO PRIMARY DATA	Below Forest near Saratoga	1999
NP	10180002	MUDDY CR	WYNP10180002-589-1	2	1996	2	1996 305(b)	NO PRIMARY DATA	Tributary to Douglas Creek below Keystone	1999
NP	10180002	N PLATTE R	WYNP10180002-034-4	2	1996	C, 2	USGS, DEQ	INCONCLUSIVE DATA	Station above Seminole Reservoir	1999

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Basin	HUC	Name	Waterbody ID	CI	Date	Data Type	D Source	MONITOR REASON	Location	Priority
NP	10180002	SMITH CR N	WYNP10180002-666-1	2	1998	2	MEDBOW NF	INCONCLUSIVE DATA	Tributary to Douglas Creek	1999
NP	10180003	N PLATTE R	WYNP10180003-032-4	1	1996	C, 2	USGS	INCONCLUSIVE DATA	Miracle Mile Area	2000
NP	10180004	DEEP CR	WYNP10180004-396-1	2	1998	2	MEDBOW NF	INCONCLUSIVE DATA	Below Sand Lake	2000
NP	10180004	MEDICINE BOW R	WYNP10180004-045-4	2	1996	C	USGS	INCONCLUSIVE DATA	Above Seminole Reservoir near Hanna	2000
NP	10180004	ROCK CR	WYNP10180004-077-3	2	1996	2	DEQ	INCONCLUSIVE DATA	Near Rock River	2000
NP	10180005	LITTLE MEDICINE BOW R	WYNP10180005-070-3	2	1996	C, P	DEQ, USGS	INCONCLUSIVE DATA	Near Shirley Basin Mine Reclamations and Boles Spring	2000
NP	10180005	SHIRLEY BASIN RES	WYNP10180005-661-2	2	1996	2	WGFD	NO PRIMARY DATA	S12 T26N R80W	2000
NP	10180006	BUFFALO CR	WYNP10180006-	2	1998	P, 2	CITIZEN	INCONCLUSIVE DATA	T30, 31N R92W	2001
NP	10180006	COTTONWOOD CR	WYNP10180006-215-2	2	1996	P, 2	BLM, POPO AGIE CD	UAA, INCONCLUSIVE DATA	T28&29N R91W	2001
NP	10180006	COTTONWOOD CR	WYNP10180006-558-1	2	1996	P	BLM	INCONCLUSIVE DATA	S32, 29 T28N R91W	2001
NP	10180006	LONG CR	WYNP10180006-217-2	2	1996	P, 2	BLM, CITIZENS	INCONCLUSIVE DATA	S19 T31N R93W	2001
NP	10180006	MORMON CR	WYNP10180006-549-1	2	1996	P	BLM	INCONCLUSIVE DATA	S12 T29N R98W	2001
NP	10180006	PINE CR	WYNP10180006-221-2	2	1996	P	BLM	INCONCLUSIVE DATA	S17,20 T28N R100W	2001
NP	10180006	PINE CR	WYNP10180006-536-1	2	1996	2	1996 305(b)	NO PRIMARY DATA	Above 221-2	2001
NP	10180006	STRAWBERRY CR	WYNP10180006-532-1	2	1996	P	BLM	INCONCLUSIVE DATA	T29N R98, 99W	2001
NP	10180006	TIN CUP CR	WYNP10180006	2	1998	P, 2	CITIZEN	INCONCLUSIVE DATA	T31N R92, 93W	2001
NP	10180006	WILLOW CR	WYNP10180006-534-1	2	1996	P	BLM	INCONCLUSIVE DATA	T28,27N R89-91W	2001
NP	10180006	WILLOW CR	WYNP10180006-560-1	2	1996	C, B, P	BLM, DEQ-LQD, NATRONA CCD	UAA, INCONCLUSIVE DATA	T29N R100W	2001
NP	10180007	BATES CR	WYNP10180007-069-3	2	1996	C, 2	USGS, NATRONA CCD	OLD SELENIUM, UAA	Near Alcova	2001
NP	10180007	CASPER CR	WYNP10180007-206-2	2	1996	C, 2	USGS, NATRONA CCD	OLD SELENIUM, UAA	At Casper	2001
NP	10180007	CORRAL CR	WYNP10180007-149-2	2	1996	2	WGFD, NATRONA CCD	UAA	T31N R80W	2001
NP	10180007	DEER CR	WYNP10180007-067-3	2	1996	C, B, P	USGS, DEQ	INCONCLUSIVE DATA	Below lower Deer Creek Canyon	2001
NP	10180007	GARDEN CR	WYNP10180007	2	1998	C, B, P	DEQ	INCONCLUSIVE DATA	Tributary to North Platte R in Casper	2001
NP	10180007	N PLATTE R	WYNP10180007-015-5	1	1996	C, B	USGS, USFWS	INCONCLUSIVE DATA	Between Bates Creek and Poison Spider Creek	2001

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Basin	HUC	Name	Waterbody ID	CI	Date	Data Type	D Source	MONITOR REASON	Location	Priority
NP	10180007	N PLATTE R	WYNP10180007-016-5	1	1996	C, 2	USGS, BLM	INCONCLUSIVE DATA	At Alcova	2001
NP	10180007	N PLATTE R	WYNP10180007-018-5	2	1996	2	WGFD	NO PRIMARY DATA	Below Pathfinder	2001
NP	10180007	POISON SPIDER CR	WYNP10180007-208-2	3	1996	C	USGS	OLD SELENIUM	Near Mills and Goose Egg	2001
NP	10180007	POISON SPRING CR	WYNP10180007-486-1	4	1998	C, B	USGS, USFWS	OLD SELENIUM	Near Alcova	2001
NP	10180007	RABBIT CR	WYNP10180007-133-1	2	1996	2	1996 305(b)	NO PRIMARY DATA	Tributary to LaPrele Creek	2001
NP	10180008	HORSESHOE CR	WYNP10180008-064-3	2	1996	2	WGFD	NO PRIMARY DATA	T29N R68W	2002
NP	10180008	N PLATTE R	WYNP10180008-006-5	2	1996	2	WGFD	NO PRIMARY DATA	Between Glendo and Guernsey Reservoirs	2002
NP	10180008	N PLATTE R	WYNP10180008-007-5	2	1996	C, 2	USGS, WGFD	NO RECENT DATA	Below Glendo Reservoir	2002
NP	10180008	WAGON HOUND CR	WYNP10180008-124-2	2	1996	2	1996 305(b)	NO PRIMARY DATA	Tributary to North Platte below Douglas	2002
NP	10180009	ARNOLD DRAIN	WYNP10180009-665-1	4	1996	2	N PLATTE VALLEY CD	NO PRIMARY DATA	Arnold Dam to Platte River	2002
NP	10180009	CHERRY CR CANAL	WYNP10180009-	4	1998	2	SOUTH PLATTE VALLEY CD	NO PRIMARY DATA	Canal tributary to North Platte River	2002
NP	10180009	JM CR	WYNP10180009-257-1	2	1996	P, 2	NIOBRARA CNTY CD, LINGLE FT LARAMIE CD	UAA	Tributary to Rawhide Creek	2002
NP	10180009	MUSKRAT CR	WYNP10180009-260-1	2	1996	P, 2	NIOBRARA CNTY CD, LINGLE FT LARAMIE CD	UAA	Tributary to Rawhide Creek	2002
NP	10180009	N PLATTE R	WYNP10180009-001-5	2	1996	2	1996 305(b)	NO PRIMARY DATA	Between Nebraska Line and Rawhide Creek	1999
NP	10180009	RAWHIDE CR	WYNP10180009-095-2	2	1996	2	LINGLE FT LARAMIE CD	INCONCLUSIVE DATA	Above JM Creek	2002
NP	10180010	HANGING LAKE	WYNP10180010-659-1	2	1996	2	WGFD	NO PRIMARY DATA	S17 T16N R78W	2000
NP	10180010	LITTLE LARAMIE R S	WYNP10180010-664-1	2	1998	2	MEDBOW NF	INCONCLUSIVE DATA	Above Albany	2000
NP	10180010	MEEBOER LAKE	WYNP10180010-660-1	2	1996	2	WGFD	NO PRIMARY DATA	S4 T14N R75W	2000
NP	10180010	MILL CR M	WYNP10180010	2	1998	2	MEDBOW NF	INCONCLUSIVE DATA	Below Rock Creek Ridge on Forest	2000
NP	10180010	MILLER LAKE	WYNP10180010-663-1	2	1996	2	WGFD	NO PRIMARY DATA	S28 T13N R78W	2000
NP	10180011	CHUGWATER CR	WYNP10180011-059-3	2	1996	C, B, P	DEQ	INCONCLUSIVE DATA	S21 T24N R67W	1998
NP	10180012	BEAR CR	WYNP10180012-055-3	2	1996	2	SOUTH GOSHEN CD	UAA	Below Fox Creek	1999

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Basin	HUC	Name	Waterbody ID	CI	Date	Data Type	D Source	MONITOR REASON	Location	Priority
NP	10180012	BEAR CR	WYNP10180012-056-3	2	1996	2	SOUTH GOSHEN CD	UAA	Between Little Bear Creek and Fox Creek	1999
NP	10180012	BEAR CR	WYNP10180012-100-2	2	1996	2	SOUTH GOSHEN CD	NO PRIMARY DATA	In Goshen County Above Little Bear Creek	1999
NP	10180012	BEAR CR	WYNP10180012-234-1	2	1996	2	1996 305(b)	NO PRIMARY DATA	Above North Fork Bear Creek	1999
NP	10180012	HORSE CR	WYNP10180012-019-4	2	1996	2	N PLATTE VALLEY CD, LARAMIE CCD	UAA	Between Little Horse Creek and Fourmile Draw	1999
PR	10090201	ARCH CR	WYPR10090201-301-1	2	1996	2	POWDER RIVER CD, SCS	UAA	Tributary to Bear Trap Creek	1998
PR	10090201	BEAR TRAP CR	WYPR10090201-071-2	2	1996	2	SCS	NO PRIMARY DATA	Between Arch Creek and Sawmill Creek	1998
PR	10090201	BEAR TRAP CR	WYPR10090201-322-1	2	1996	C, B, P, 2	DEQ, WGFD, SCS	INCONCLUSIVE DATA	S2, T45N R85W	1998
PR	10090201	BEAVER CR	WYPR10090201-072-2	2	1996	2	POWDER RIVER CD	UAA	Between Middle Fk Powder R and Blue Creek	1998
PR	10090201	BLUE CR	WYPR10090201-295-1	2	1996	2	SCS	NO PRIMARY DATA	Tributary to Beaver Creek	1998
PR	10090201	PASS CR	WYPR10090201-303-1	2	1996	2	SCS	NO PRIMARY DATA	Tributary to North Fk Powder River	1998
PR	10090201	POWDER R M FK	WYPR10090201-030-3	2	1996	C, 2	USGS, POWDER RIVER CD	OLD FECAL, UAA	Above Kaycee	1998
PR	10090201	POWDER R M FK	WYPR10090201-073-2	1	1996	C, B, P, 2	DEQ, LAKE DESMET CD	INCONCLUSIVE DATA	S14 T42N R84W	1998
PR	10090201	POWDER R N FK	WYPR10090201-068-2	2	1996	C, B, P, 2	USGS, DEQ, BIG HORN NF, POWDER RIVER CD	UAA, INCONCLUSIVE DATA	T47,48N R85W	1998
PR	10090201	POWDER R RED FK	WYPR10090201-070-2	2	1996	C, 2	USGS, SCS	NO RECENT DATA	Near Barnum	1998
PR	10090201	ROCK CR	WYPR10090201-293-1	2	1996	2	WGFD	NO PRIMARY DATA	Tributary to Middle Fk Powder River	1998
PR	10090201	SAWMILL CR	WYPR10090201-302-1	2	1996	2	1996 305(b)	NO PRIMARY DATA	Tributary to Bear Trap Creek	1998
PR	10090201	WEBB CR	WYPR10090201-155-1	2	1996	P, 2	BIG HORN NF, SCS	INCONCLUSIVE DATA	S31 T48N R85W	1998
PR	10090202	BARBER CR	WYPR10090202-047-2	4	1996	2	LAKE DESMET CD	NO PRIMARY DATA	Between Powder River and Maycock Draw	1999
PR	10090202	FIFTEENMILE CR	WYPR10090202-201-1	2	1996	2	POWDER RIVER CD, SCS	UAA	Tributary to Powder River below Kaycee	1999



## 303d List

Basin	HUC	Name	Waterbody ID	CI	Date	Data Type	D Source	MONITOR REASON	Location	Priority
PR	10090202	FLYING E CR	WYPR10090202-311-1	4	1996	2	SCS	NO PRIMARY DATA	Tributary to Powder River below I-90	1999
PR	10090202	FORTIFICATION CR	WYPR10090202-183-1	4	1996	2	SCS	NO PRIMARY DATA	Tributary to Powder River above Crazy Woman Creek	1999
PR	10090202	FOURMILE CR	WYPR10090202-053-2	4	1996	2	SCS	NO PRIMARY DATA	Between Powder River and North Fk Powder River	1999
PR	10090202	FOURMILE CR	WYPR10090202-055-2	4	1996	2	SCS, LAKE DESMET CD	NO PRIMARY DATA	Above North Fork Fourmile Creek	1998
PR	10090202	NINEMILE CR	WYPR10090202-054-2	4	1996	2	LAKE DESMET CD	NO PRIMARY DATA	Between Powder River and Horse Creek	1998
PR	10090202	NINEMILE CR	WYPR10090202-310-1	4	1996	2	LAKE DESMET CD	NO PRIMARY DATA	Above Horse Creek	1998
PR	10090202	POWDER R	WYPR10090202-003-5	2WW	1996	2	LAKE DESMET CD, SCS	NO PRIMARY DATA	Between Clear Creek and Ivy Creek	1999
PR	10090202	POWDER R	WYPR10090202-004-5	2WW	1996	2	LAKE DESMET CD, SCS	NO PRIMARY DATA	Between Ivy Creek and Deadman Creek	1999
PR	10090202	POWDER R	WYPR10090202-006-5	2WW	1996	2	LAKE DESMET CD, SCS	NO PRIMARY DATA	Between Cottonwood Creek and Fortification Creek	1999
PR	10090202	POWDER R	WYPR10090202-015-4	2WW	1996	2	LAKE DESMET CD, SCS	NO PRIMARY DATA	Between Fortification Creek and Barber Creek	1999
PR	10090202	POWDER R	WYPR10090202-016-4	2WW	1996	C	USGS	OLD CHLORIDE	Above Dead Horse Creek near Buffalo	1999
PR	10090202	POWDER R	WYPR10090202-017-4	2WW	1996	2	POWDER RIVER CD, LAKE DESMET CD, SCS	UAA	Between Indian Creek and Pumpkin Creek	1999
PR	10090202	POWDER R	WYPR10090202-018-4	2WW	1996	2	POWDER RIVER CD, LAKE DESMET CD	UAA	Between Pumpkin Creek and Ninemile Creek	1999
PR	10090202	POWDER R	WYPR10090202-019-4	2WW	1996	2	POWDER RIVER CD, LAKE DESMET CD	UAA	Between Ninemile Creek and Fourmile Creek	1999
PR	10090202	PUMPKIN CR	WYPR10090202-049-2	4	1996	2	LAKE DESMET CD	NO PRIMARY DATA	Tributary to Powder River T47N R77W	1998
PR	10090202	SPOTTED HORSE CR	WYPR10090202-044-2	4	1996	2	LAKE DESMET CD	NO PRIMARY DATA	Between Powder R and South Prong Spotted Horse Creek	1998

## 303d List

Basin	HUC	Name	Waterbody ID	CI	Date	Data Type	D Source	MONITOR REASON	Location	Priority
PR	10090202	SPOTTED HORSE CR	WYPR10090202-172-1	4	1996	2	LAKE DESMET CD	NO PRIMARY DATA	Above South Prong Spotted Horse Creek	1998
PR	10090203	POSEY CR	WYPR10090203-281-1	4	1996	2	SCS	NO PRIMARY DATA	Tributary to South Fk Powder River	1999
PR	10090203	POWDER R S FK	WYPR10090203-032-3	4	1998	C	USGS	OLD SELENIUM	Near Kaycee	1999
PR	10090204	CASTLE CR	WYPR10090204-076-2	4	1996	C	OIL SPILLS	INCONCLUSIVE DATA	Between Salt Creek and Alkali Creek	1998
PR	10090204	MEADOW CR	WYPR10090204-256-1	3	1996	2	NATRONA CCD	UAA	Tributary to Salt Creek	1998
PR	10090204	TEAPOT CR	WYPR10090204-260-1	4	1996	2	1996 305(b)	NO PRIMARY DATA	Tributary to Salt Creek	1998
PR	10090205	BILLY CR	WYPR10090205-150-1	2	1996	C, B, P	BIG HORN NF, DEQ	INCONCLUSIVE DATA	S13 T48N R84W	1998
PR	10090205	CRAZY WOMAN CR	WYPR10090205-014-4	2	1996	2	LAKE DESMET CD	NO PRIMARY DATA	Between Wallows Creek and North Fk Crazy Woman Cr	1998
PR	10090205	CRAZY WOMAN CR M FK	WYPR10090205-153-1	2	1996	P, 2	BIG HORN NF, LAKE DESMET CD	INCONCLUSIVE DATA	S19 T48N R84W	1998
PR	10090205	CRAZY WOMAN CR N FK	WYPR10090205-028-3	2	1996	C, B, P	BIG HORN NF, DEQ	INCONCLUSIVE DATA	S35 T49N R82W	1998
PR	10090205	CRAZY WOMAN CR S FK	WYPR10090205-029-3	3	1996	2	LAKE DESMET CD	NO PRIMARY DATA	Between North Fk Crazy Woman Cr to Beaver Cr	1998
PR	10090205	CRAZY WOMAN CR S FK	WYPR10090205-067-2	3	1996	2	LAKE DESMET CD	NO PRIMARY DATA	Above Beaver Creek	1998
PR	10090205	DOYLE CR	WYPR10090205-065-2	2	1996	P	BIG HORN NF	INCONCLUSIVE DATA	S5 T47N R84W	1998
PR	10090205	DOYLE CR	WYPR10090205-154-1	2	1996	2	LAKE DESMET CD	NO PRIMARY DATA	Tributary to Middle Fk Crazy Woman Creek	1998
PR	10090205	LITTLE N FK CRAZY WOMAN	WYPR10090205-145-1	2	1996	C, B, P	DEQ, BIG HORN NF	INCONCLUSIVE DATA	S6 T49N R83W +	1998
PR	10090205	MUDDY CR	WYPR10090205-148-1	2	1996	P	BIG HORN NF	INCONCLUSIVE DATA	S2 T48N R84W	1998
PR	10090205	MUDDY CR	WYPR10090205-306-2	2	1996	C, B, P	DEQ	INCONCLUSIVE DATA	Below Dry Muddy Cr	1998
PR	10090205	POISON CR	WYPR10090205-151-1	2	1996	2	1996 305(b)	NO PRIMARY DATA	Tributary to Middle Fk Crazy Woman Creek	1998
PR	10090205	POISON CR	WYPR10090205-152-1	2	1996	P	BIG HORN NF	INCONCLUSIVE DATA	S23 T48N R84W	1998
PR	10090205	POLE CR	WYPR10090205-146-1	2	1996	P	BIG HORN NF	INCONCLUSIVE DATA	S23 T49N R84W	1998
PR	10090205	POLE CR	WYPR10090205-160-1	2	1996	2	POWDER RIVER CD, LAKE DESMET CD	UAA	Tributary to North Fk Crazy Woman Creek	1998
PR	10090206	BOXELDER CR	WYPR10090206-122-1	4	1996	2	LAKE DESMET CD	NO PRIMARY DATA	Tributary to Piney Creek	1998
PR	10090206	BULL CR	WYPR10090206-062-2	4	1996	2	LAKE DESMET CD	NO PRIMARY DATA	Tributary to Clear Creek South of Buffalo	1998

## 303d List

Basin	HUC	Name	Waterbody ID	CI	Date	Data Type	D Source	MONITOR REASON	Location	Priority
PR	10090206	CLEAR CR	WYPR10090206-007-4	2	1996	C	USGS	NO RECENT DATA	Near Arvada	1998
PR	10090206	CLEAR CR	WYPR10090206-008-4	2	1996	2	LAKE DESMET CD, WGFD	NO PRIMARY DATA	Between Buffalo Creek and Dead Mans Draw	1998
PR	10090206	CLEAR CR	WYPR10090206-009-4	2	1996	2	LAKE DESMET CD, WGFD	NO PRIMARY DATA	Between Dead Mans Draw and Double Crossing Creek	1998
PR	10090206	CLEAR CR	WYPR10090206-010-4	2	1996	2	LAKE DESMET CD, WGFD	NO PRIMARY DATA	Between Double Crossing Creek and Piney Creek	1998
PR	10090206	CLEAR CR	WYPR10090206-011-4	2	1996	C	USGS	NO RECENT DATA	At Ucross; below Rock Creek near Buffalo; above Kumor Draw near Buffalo	1998
PR	10090206	FRENCH CR	WYPR10090206-136-1	2	1996	P, 2	BIG HORN NF, SCS	INCONCLUSIVE DATA	S36 T51N R84W	1998
PR	10090206	LITTLE PINEY CR	WYPR10090206-127-1	2	1996	C, B, P	DEQ	INCONCLUSIVE DATA	S27 T53N R83W	1998
PR	10090206	LITTLE SOURDOUGH CR	WYPR10090206-141-1	2	1996	P	BIG HORN NF	INCONCLUSIVE DATA	On National Forest Lands	1998
PR	10090206	PINEY CR S	WYPR10090206-323-1	2	1996	2	WGFD	NO PRIMARY DATA	Tributary to Piney Creek	1998
PR	10090206	ROCK CR	WYPR10090206-025-3	2	1996	2	LAKE DESMET CD	NO PRIMARY DATA	Below National Forest	1998
PR	10090206	ROCK CR N FK	WYPR10090206-058-2	2	1996	2	1996 305(b)	NO PRIMARY DATA	Tributary to Rock Creek	1998
PR	10090206	SHELL CR N FK	WYPR10090206-324-1	4	1998	2	LAKE DESMET CD	NO PRIMARY DATA	Above Shell Creek Reservoir to National Forest	1998
PR	10090206	SHELL CR S FK	WYPR10090206-325-1	4	1998	2	LAKE DESMET CD	NO PRIMARY DATA	T52N R83W	1998
PR	10090206	SOURDOUGH CR	WYPR10090206-140-1	2	1996	P, 2	BIG HORN NF, LAKE DESMET CD	INCONCLUSIVE DATA	S34 T50N R84W	1998
PR	10090207	POWDER R	WYPR10090207-001-5	2WW	1996	2	1996 305(b)	NO PRIMARY DATA	Between Montana Line and LX Bar Creek	1999
PR	10090207	POWDER R	WYPR10090207-002-5	2WW	1996	2	LAKE DESMET CD	NO PRIMARY DATA	Between LX Bar Creek and Clear Creek	1999
PR	10090208	LITTLE POWDER R	WYPR10090208-021-4	2	1996	C	USGS	INCONCLUSIVE DATA	Above Dry Creek near Weston	1999
SP	10190009	CROW CR	WYSP10190009-002-3	2,3,4	1996	C	USGS, FEWAFB	OLD NH3, FECAL	Above Dry Creek to N Fk Crow Creek	1998
SR	17040101	PACIFIC CR	WYSR17040101-058-2	2	1996	2	1996 305(b)	NO PRIMARY DATA	Between Snake River and Gravel creek	2002
SR	17040102	GROS VENTRE R	WYSR17040102-014-3	2	1996	2	1996 305(b)	NO PRIMARY DATA	Above North Fork	2002

## 303d List

Basin	HUC	Name	Waterbody ID	CI	Date	Data Type	D Source	MONITOR REASON	Location	Priority
SR	17040103	CACHE CR	WYSR17040103-096-1	2	1996	C, B, P	USGS, DEQ	INCONCLUSIVE DATA	Near Jackson	2002
SR	17040103	FLAT CR	WYSR17040103-013-3	2	1996	P, 2	BLM, TCNRD	ONGOING STUDY	Between Snake River and Cache Creek	2002
SR	17040103	GREYS R	WYSR17040103-006-3	2	1996	C, B, P	DEQ	INCONCLUSIVE DATA	S34 T37N R118W	2002
SR	17040103	HORSE CR	WYSR17040103-028-2	2	1996	2	1996 305(b)	NO PRIMARY DATA	Tributary to Snake River North of Hoback Junction	2002
SR	17040103	LITTLE GRANITE CR	WYSR17040103-101-1	2	1996	C, B, P	DEQ, USGS	INCONCLUSIVE DATA	S34 T39N R114W	2002
SR	17040103	WILLOW CR	WYSR17040103-029-2	2	1996	C, B, P	DEQ, BRIDGER-TETON NF	INCONCLUSIVE DATA	S5 T38N R115W	2002
SR	17040203	GRASSY CR	WYSR17040203-254-1	2	1996	2	1996 305(b)	NO PRIMARY DATA	Below Grassy Lake	2002
TR	10090101	BIG WILLOW CR	WYTR10090101-057-1	2	1996	P	BIG HORN NF	INCONCLUSIVE DATA	S15 T55N R89W	1998
TR	10090101	BULL CR	WYTR10090101-058-1	2	1996	P	BIG HORN NF	INCONCLUSIVE DATA	S916 T55N R89W	1998
TR	10090101	LITTLE GOOSE CR	WYTR10090101-020-2	2	1996	C, B, P	BIG HORN NF, DEQ	INCONCLUSIVE DATA	Little Goose Campground. T55&56N R84W	1998
TR	10090101	LITTLE TONGUE R	WYTR10090101-022-2	2	1996	C, B, P	BIG HORN NF, DEQ	INCONCLUSIVE DATA	S6 T55N R87W, S24 T57N R87W	1998
TR	10090101	PRAIRIE DOG CR	WYTR10090101-019-2	2	1996	C, B, P	DEQ	INCONCLUSIVE DATA	T 54&55N R83W	1998
TR	10090101	PRUNE CR	WYTR10090101-101-1	1	1996	P	BIG HORN NF	INCONCLUSIVE DATA	S4 T55N R88W	1998
TR	10090101	SOLDIER CR	WYTR10090101-047-1	2	1996	P	BIG HORN NF	INCONCLUSIVE DATA	S16 T55N R86W	1998
TR	10090101	SUCKER CR	WYTR10090101-054-1	1	1996	P	BIG HORN NF	INCONCLUSIVE DATA	S27 T55N R88W	1998
TR	10090101	TONGUE R	WYTR10090101-001-5	2	1996	2	1996 305(b)	NO PRIMARY DATA	Montana Line To Prairie Dog Creek	1998
TR	10090101	TONGUE R	WYTR10090101-003-4	2	1996	2	1996 305(b)	NO PRIMARY DATA	Between Prairie Dog Creek and Goose Creek	1998
TR	10090101	TONGUE R	WYTR10090101-007-3	2	1996	P	BIG HORN NF	INCONCLUSIVE DATA	S24 T56N R88W	1998
TR	10090101	TONGUE R N	WYTR10090101-026-2	1	1996	C, B, P	BIG HORN NF, DEQ	INCONCLUSIVE DATA	S35,36 T56N R89W	1998
TR	10090101	TONGUE R S	WYTR10090101-025-2	1	1996	C, B, P	BIG HORN NF, DEQ	INCONCLUSIVE DATA	S4 T55N R88W, S4&23 T54N R88W	1998
YR	10070001	FLINT CR	WYYR10070001-062-1	1	1996	2	1992 305(b)	NO PRIMARY DATA	Tributary to Lamar River in Yellowstone NP	2002
YR	10070001	OBSIDIAN CR	WYYR10070001-150-2	1	1996	C, B, P	DEQ	INCONCLUSIVE DATA	Above Indian Creek Campground	2002

Basin	HUC	Name	Waterbody ID	CI	Date	Data Type	D Source	MONITOR REASON	Location	Priority
YR	10070001	OPAL CR	WYYR10070001-061-1	1	1996	2	1992 305(b)	NO PRIMARY DATA	Tributary to Lamar River in Yellowstone NP	2002
YR	10070001	TROUT CR	WYYR10070001-121-1	1	1996	C, B, P	DEQ	INCONCLUSIVE DATA	Above Grand Loop Road	2002
YR	10070006	DEAD INDIAN CR	WYYR10070006-033-2	2	1996	2	SHOSHONE NF	INCONCLUSIVE DATA	Tributary to Clarks Fork	2002
YR	10070006	SUNLIGHT CR	WYYR10070006-013-3	2	1996	2	SHOSHONE NF	NO PRIMARY DATA	Between Clarks Fork and Gravel Bar Creek	2002

# APPENDIX C

**Water Quality Management Planning  
Continuing Planning Process**

**Department of Environmental Quality  
Water Quality Division**

**November 7, 1997**

Introduction

The Water Quality Division (WQD) of the Department of Environmental Quality is the designated agency for water quality management in the state of Wyoming. The department functions under authority of Wyoming Statute 35-11-101 through 35-11-1507 with Articles 3 (Water Quality) and 14 (Storage Tanks) directly reflecting the mission of the division. The state is required by 40 CFR, Part 130 and the Clean Water Act of 1987, Section 303, 33USC 1313 (e), to establish and maintain a continuing planning process. Requirements of the plan are set forth in 40 CFR, Section 130.

The purpose of this plan is to clarify the mission, procedures and processes within the Water Quality Division. Programs designed to protect and enhance the water resource are specified within the content directives of 40 CFR, Part 130.6. The processes discussed are also specified in 40 CFR, Section 130.5.

WQD Goals and Objectives

By Wyoming Statute 35-11-102, the Water Quality Division is charged to prevent, reduce and eliminate pollution; preserve and enhance the waters of Wyoming; preserve and exercise the primary responsibilities of the state; retain control over the water resource for the state; and secure cooperation between state agencies, interstate agencies and the federal government to meet these goals. The director of the department is charged in W.S. 35-11-109 with responsibilities that include the selection of the Water Quality Division Administrator and promulgations of regulations necessary to enforce the Environmental Quality Act. Duties of the division administrators are listed in W.S. 35-11-110. Article 3 (Water Quality) sets forth prohibited acts within the waters of the state and specific duties and responsibilities of the Water Quality Division administrator.

*Process for establishing and assuring water quality standards.* Surface water and groundwater quality standards are established through rulemaking authority of the Environmental Quality Act (W.S. 35-11-302) through procedures identified in the Wyoming Administrative Procedures Act, W.S. 16-3-101 through 115, and rules developed by the Wyoming Secretary of State governing agency rulemaking. Surface water quality standards are contained in Chapter 1 and are required by Section 303(c) of the Clean Water Act (CWA) to be updated triennially. Groundwater standards are similarly developed and contained in Chapter 8 of the Water Quality Rules and Regulations. Revisions are completed when necessary through rulemaking procedures.

In general, the rulemaking process is initiated through notice to the governor and public outreach. The public outreach consists of notice of the administrator's intent to proceed with rulemaking, the conceptual nature and extent of the proposed rules and a solicitation for public comment on the need for, scope of and extent of the rules. The administrator then drafts rules for review and solicits recommendations from the Water and Waste Advisory Board. A 45-day public notice is provided on the proposed rules. The board may accept public comments before making recommendations to the administrator. The board's actions are advisory, not mandatory, to the administrator. The administrator recommends proposed rules to the director who may recommend the proposed rules to the Environmental Quality Council for adoption.

If rules are recommended to the Environmental Quality Council for adoption, the council will hold a public hearing on the proposed rules to receive public comment. A 45-day notice is provided prior to the hearing. After receiving and considering public comment, the council may adopt the regulations. If rules are adopted by the council, they must be filed with the Secretary of State's Office within 60 days of adoption. Before filing with the Secretary of State's Office, the governor must approve the rules and the Attorney General's Office must concur with the rules. The Legislative Services Office also conducts a review of the rules for approval by the Legislative Management Council. Unless specified otherwise in the rules, the rules become effective on the date they are filed in the Secretary of State's Office.

*Process for assuring adequate authority for intergovernmental cooperation.* W.S. 35-11-109 (a) (ii) lists one duty of the director to "Advise, consult and cooperate with other agencies of the state, the federal government, other state, interstate agencies and other persons in furtherance of the purposes of this act." W.S. 35-11-109 (a) (viii) also states that the director may, "Represent Wyoming in any matters pertaining to plans, procedures or negotiations for interstate compacts or other intergovernmental arrangements relating to environmental enhancement and protection." The department and the WQD have, and will continue to participate in Memorandum of Understanding documents signed with other state and federal agencies.

*Process for updating and maintaining water quality management plans.* Water Quality Management Plans are developed and revised as specified in the Wyoming Environmental Quality Act (W.S. 35-11-101 through 1507). Water Quality management plans will include plans developed by the state for wellhead protection, source water protection, area-wide management plans and the state Nonpoint Source Management Plan. Public comment and administrative review opportunities are provided during the process for adoption of major planning documents that define process or non-mandatory programs. These plans must be submitted by the state to the U.S. Environmental Protection Agency (EPA) under the requirements of the Clean Water Act or Safe Drinking Water Act.

The documents, other than area wide management plans, will be drafted or reviewed by the agency, using a task force of stakeholders whenever feasible to help guide and advise on the contents of the plan and written documents. The proposed plan will then be presented to the Water and Waste Advisory Board for adoption by resolution. The Water and Waste Advisory Board will provide 45 day public notice and opportunity for public comment on the proposed plan before adoption. The adopted plan will be certified by the governor before submittal to the EPA for approval. Area wide management plans will be adopted or revised by the local government entity prior to being submitted to the Water Quality Advisory Board for adoption and the governor for certification.

## TMDLs

*Process for development of Total Maximum Daily Loads (TMDLs).* The WQD has developed a "TMDL work plan" (initially dated July 30, 1997) that outlines, in more detail, the activities and approach to achieving a successful TMDL program in Wyoming. Following are the processes that will be followed for development of TMDLs:

Developing the 303(d) list of Impaired Waterbodies - The need for development of TMDLs is determined by standards set forth in Chapter 1 of the Water Quality Rules and Regulations and Section 303(d) of the Clean Water Act. Those waterbodies that are considered impaired and listed under Section 303(d) of the Clean Water Act are candidates for TMDL development. Every two years, WQD will propose a list of waterbodies that do not support their beneficial use(s), or in the case of point sources, where an NPDES permit must be issued during the next two-year period. Water bodies on the list will be prioritized as to their urgency to have TMDLs developed. Each 303(d) listing shall include the criteria used by the agency to prioritize the list for development of TMDLs.

Data collected for preparation of the Clean Water Act Section 305(b) Water Quality Assessment Report is considered along with other available data to prepare the 303(d) list. The 305(b) report



is prepared by the state and submitted to the EPA. The 305(b) report contains both state surface and groundwater quality information. Historic and current data collection and program information are included in this assessment report.

WQD will provide notice of intent to file a required Section 303(d) list and provide opportunity for public comment on the proposed list and prioritization before it is filed with the EPA. WQD will consider all comments and objections before adopting a final list for filing with the EPA. Interested or affected parties may request a review of the proposed 303(d) list of impaired waterbodies before the Water and Waste Advisory Board where there are major objections to proposed waterbodies on the list. The advisory board may consider the comments and objections and make recommendations to the WQD. In accordance with the required schedule, the administrator will submit an adopted 303(d) list of impaired waterbodies to the EPA.

Developing Point Source TMDLs - During permit issuance or permit renewal, the division will conduct a waste load analysis for permits requiring water quality-based effluent limits, and where necessary, develop TMDLs during the permitting process. Waste load allocations are derived by using the WLANH3 model for ammonia, QUALIIE model for dissolved oxygen and a mass balance equation for other pollutants. The upstream contribution or load allocation of a pollutant is calculated by utilizing Q7/10 flow data, STORET data and other United States Geological Survey (USGS) sources which are factored into the models and mass balance equation. The models and the mass balance equation take into consideration the load allocation from upstream sources, a wasteload allocation for point sources, and have a built in margin of safety. Public notice of the intent to issue the permit will include notice of the intent to adopt TMDLs for the receiving waters. Affected stakeholders may comment on or object to the proposed TMDL during the public comment period and prior to permit issuance. All objections and comments will be considered by the administrator and director prior to permit approval. If the objections remain unresolved upon permit issuance, the affected person may appeal the agency decision to the Environmental Quality Council for hearing and resolution. The administrator will submit adopted TMDLs to the EPA for approval.

Developing Nonpoint Source TMDLs - WQD will encourage local watershed stakeholder groups and federal land management agencies to develop recommendations for TMDLs on impaired water bodies listed on the 303(d) list. The director will appoint representatives of various stakeholder groups to participate on a TMDL advisory workgroup. This workgroup will meet periodically to review and advise WQD on policy and technical issues concerning the implementation of the TMDL work plan for nonpoint source TMDLs. The administrator shall chair this workgroup and the meetings will be announced and open to the public. The administrator, with the advice of the workgroup, will prioritize and develop schedules for the establishment of TMDLs on impaired waterbodies. A TMDL may consist of a quantifiable goal, management technology, or a water quality management plan as discussed in the section on implementation.

A notice of intent and a local public participation process will be provided whenever nonpoint source TMDLs are proposed. A public meeting may be held on proposed nonpoint TMDLs, if necessary or requested. Interested or affected persons may comment on the proposed TMDL or object to the proposed TMDL. The administrator will consider all comments and objections before TMDL adoption. Objections to TMDLs which cannot be resolved by the administrator may be referred to the Water and Waste Advisory Board for review and recommendation on the disputed issues. Interested parties may appeal the decision of the agency to adopt a TMDL to the Environmental Quality Council for review in accordance with the department's Rules of Practice and Procedure. The administrator will submit adopted nonpoint TMDLs to the EPA for approval.

*Process for implementation of Total Maximum Daily Loads.* After TMDLs are established for impaired water bodies, point source TMDLs will be implemented through enforceable water quality-

based discharge limits on National Pollution Discharge Elimination System (NPDES) permits. For nonpoint source TMDLs, the administrator, with the cooperation of affected land management agencies and local watershed stakeholder groups, shall develop a watershed implementation plan for impaired water bodies. The watershed implementation plan shall identify goals, responsibilities, and recommend Best Management Practices (BMPs) to achieve the TMDL and return the impaired water body to a fully support status. The plan may also include various voluntary or incentive-based controls to achieve the TMDL. Included in the watershed implementation plan will be milestones to measure progress and success. Each plan shall be subject to public participation prior to approval by the administrator for implementation. All reasonable efforts shall be made to encourage voluntary source reduction, flexibility and incentive-based controls. The final plan must provide reasonable assurance that continuous improvements will be made to the water quality of the impaired water body and eventually the TMDL will be achieved restoring the water body to its beneficial use(s).

### Effluent Limitations

*Process for development of effluent limitations and schedules of compliance.* Limits upon effluent and other discharges are restricted through the permitting and spill clean up processes. Limitations, the associated permitting processes, and clean up mandates are established through rulemaking authority of the Environmental Quality Act through procedures identified in the Wyoming Administrative Procedures Act, W.S. 16-3-101 through 115, and rules developed by the Wyoming Secretary of State governing agency rulemaking. Limitations are contained in:

- Chapter 1 for surface water quality standards;
- Chapter 2 for point source discharges;
- Chapter 4 for oil and hazardous substances spills;
- Chapter 7 for the discharge of water associated with oil and gas production;
- Chapter 9 for the discharge of hazardous substances into groundwater;
- Chapter 10 for surface coal mine effluent sedimentation control;
- Chapter 13 for waste disposal injection wells;
- Chapter 17 for the control of underground storage tanks; and
- Chapter 18 for general NPDES permits.

Revisions are completed when necessary through rulemaking procedures.

**Spill Program.** The program is authorized by W.S. 35-11-301 and 302. Chapter 4 of the Water Quality Rules and Regulations defines a spill or release and sets standards for the clean up and disposal of hazardous substances. The division receives notification of between 600 and 800 spills per year. Chapter 4 authorizes the development of a Wyoming Oil and Hazardous Pollution Contingency Plan.

*Process for determining the priority for permit issuance.* The process for issuing permits is outlined in the rules and regulations for effluents as listed above. Programs have been established within the division to administer the rules and regulations.

**National Pollution Discharge Elimination System Program.** This program sets limits on point source end-of-the-pipe effluent discharges based on water quality standards. Permits are issued to point source dischargers. Draft permits are available for a 30-day public comment period before issuance can take place. Substantive comments trigger a public hearing before the Environmental Quality Council. Permit holders monitor discharges. The division also samples discharges during unannounced visits. Repeated violators are subject to enforcement actions and may be subject to penalties. All NPDES permits are given priority. During the review period, NPDES permits are examined by the groundwater program to ensure that the discharge will not impact groundwater use.

**Stormwater permits.** Under the general permitting approach, a single generic permit is issued to cover storm water point sources and a large number of similar facilities within a geographic area. General permits are issued to industrial stormwater, construction stormwater and short-term end-

of-pipe effluent dischargers. Draft general permits are available for a one time 30 day public comment period before they can be issued. To obtain coverage under a general permit, an applicant must submit a completed "Notice of Intent" (NOI). If the activity is determined to be eligible and an individual permit is not required, notification will be sent to the applicant that coverage has been granted. There is no public comment period during the NOI process. Once the discharge has ceased, a Notice of Termination must be submitted.

*Process for development of incorporating any area wide waste treatment or basin plans.* The division reorganized in 1997 to create a watershed management unit to provide a holistic approach to management of surface water quality issues.

### Municipal, Commercial and Industrial Wastewater Treatment

*Process for adequate control of residues from water treatment and reuse of treated wastewater.* The division operates programs designed to protect the public health from discharges into the waters of Wyoming from wastewater treatment facilities. Rules governing discharges and facility construction standards are established through rulemaking authority of the Environmental Quality Act through procedures identified in the Wyoming Administrative Procedures Act, W.S. 16-3-101 through 115 and rules developed by the Wyoming Secretary of State governing agency rulemaking. Wastewater treatment facilities are governed by water quality rules and regulations that include:

- Chapter 1 for surface water quality standards;
- Chapter 2 for point source discharges;
- Chapter 3 for construction, installation and modification of public water supplies, wastewater facilities and other facilities capable of polluting Wyoming waters;
- Chapter 5 for certification of operators of public water and wastewater systems;
- Chapter 11 for design standards for sewerage systems, treatment works, disposal systems; and public water supply distribution systems;
- Chapter 12 for design standards for public water supplies;
- Chapter 15 for standards for the use or surface disposal of bio-solids;
- Chapter 20 for confined swine feeding operations; and
- Chapter 21 standards for the reuse of treated wastewater.

Revisions are completed when necessary through rulemaking procedures.

**Operator Certification Program.** This program protects public water supplies and publicly owned wastewater systems by insuring the technical competency of operators through operator training, testing and certification. The program is implemented through W.S. 35-11-302 (a) (iv) and Chapter 5 of the WQD Rules and Regulations.

**Construction Permit (District Engineer) Program.** Construction permits are authorized in Chapters 3, 11, and 12 of the Water Quality Rules and Regulations. These permits are issued for commercial, industrial, and municipal wastewater facilities; land and road application systems; small on-site wastewater facilities and public water supply facilities.

*Process for developing an inventory and ranking for construction of wastewater treatment works.* In 1988, the division and the Wyoming Association of Municipalities conducted a statewide survey to assess wastewater treatment facility needs. A mechanism exists to handle anticipated funding needs five to ten years in the future.

**State Revolving Fund.** The Federal Water Pollution Control Act Title II Construction Grants Program (EPA 201 Construction Grants) is administered through the State Farm Loan Board as authorized by W.S. 16-1-201 through 207. The State Farm Loan Board is the source for state funding associated with the program. The system has resulted in total compliance with the Clean Water Act by municipal dischargers.

## Nonpoint Source Management and Control

*Nonpoint Program.* The state nonpoint source control program is a voluntary and incentive-based program. The program seeks to control sources through education and encouragement of Best Management Practices (BMPs), including demonstration, information and education, and restoration projects. Assessment and demonstration projects are selected for funding by the Nonpoint Source Task Force.

*Nonpoint Source Task Force.* Through Executive Order 1996-2 (revised) the governor officially recognized the Nonpoint Source Task Force as an independent citizen's task force created for the purpose of assisting the WQD with prioritizing and selecting nonpoint source projects for funding with Section 319 and 205j pass-through monies, for adopting and periodically modifying nonpoint source BMPs and making recommendations on amendments to the state's Nonpoint Source Management Plan. The task force meets semiannually. Meetings are noticed and open to the public.

*BMPs for Non-point Sources of Pollution.* Each BMP document developed by the WQD is approved by the Wyoming Nonpoint Source Task Force and certified by the governor before submission to the EPA for approval. Opportunity for public comment will be provided on all proposed BMPs before adoption by the Nonpoint Source Task Force and the EPA. BMP documents are reviewed for possible revision and updating on a regular basis by the Nonpoint Source Task Force. In lieu of BMPs, rules and regulations have been developed for underground storage tanks, mineral extraction and highway construction.

*Wetlands banking.* The division operates a wetlands program under authority of W.S. 35-11-308 through 311. The program either approves or denies federal permitting actions concerning wetlands through a process called certification. The wetlands bank program was created to expedite permitting. It allows industry, landowners, or others to build credits for the construction, restoration or enhancement of wetlands. These credits can be bought and sold as a means to expedite the mitigation of wetland impacts.

*State Management Plan.* WQD will manage its Nonpoint Source Program in accordance with the approved State Management Plan, as required by Section 319 of the Clean Water Act and the programs strategic plan. Amendments to this plan will be adopted by the Water and Waste Advisory Board following notice and opportunity for public comments on the plan. The plan will be certified by the governor before submittal to EPA for approval.

## Groundwater Protection

Wyoming recognizes that surface and ground water are constantly interacting and influencing each other, depending upon the hydrology of the area. All nonpoint and point source programs directed at protecting the waters of Wyoming contain groundwater components.

*Wellhead Protection (WHP) and Source Water Protection (SWP) Programs.* Authorized by W.S. 35-11-114(a) and 35-11-110, the WHP and SWP Programs were established to enable local governments to protect surface water or groundwater drinking water supplies from sources of pollution. The programs also aid the WQD point source permitting program in protecting public water supplies from pollution sources by providing information on protection areas.

*AUST/LAUST.* The Aboveground/Underground Storage Tank and Leaking Above-ground/Underground Storage Tank Program was created by Article 14 of the Environmental Quality Act. The program operates under Water Quality Rules and Regulations, Chapters 17 and 19. The program sets forth technical requirements for storage tanks and requires total remediation for releases from regulated tanks. The program registers regulated tanks, collects tank registration/contaminated site fees, and accomplishes on-site tank installation, modification, and permanent closure inspections. It also completes on-site regulatory inspections for compliance with leak detection requirements and reviews facility documentation provided by

owner/operators. Environmental remediation actions are prioritized so that sites with the worst contamination receive funding first.

Underground Injection Control (UIC) Program. The UIC Program was established by W.S. 35-11-301 (a) (I) (ii) and (iii) and W.S. 35-11-302. Injection wells are regulated as follows:

- Class I and IV wells, Chapter 13 of the Water Quality Rules governing groundwater standards;
- Class V wells, Chapter 16 of the Water Quality Rules governing sewage disposal (doesn't include small wastewater systems disposing of less than 2,000 gallons per day of domestic wastewater);
- Class III wells, Land Quality Division, Wyoming DEQ (except all types of wastes, including subsurface distribution systems or drain fields); and
- Class II wells, Wyoming Oil and Gas Commission.

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# APPENDIX D

## NINE KEY ELEMENTS OF AN EFFECTIVE STATE NONPOINT SOURCE PROGRAM

(The following discussion was used as attachment A in an EPA memorandum from Assistant Administrator J. Charles Fox to State and Interstate Water Quality Program Directors, dated January 7, 1999.)

### **1. The State program contains explicit short- and long-term goals, objectives, and strategies to protect surface and ground water.**

The State's long-term goals are consistent with the national program vision that all states implement effective and dynamic nonpoint source programs designed to achieve and maintain beneficial uses of water. The shorter-term objectives consist of activities, with milestones, that are designed to demonstrate reasonable further progress that leads to accomplishment of the long-term goals as expeditiously as possible. The State program includes objectives that address nonpoint sources of groundwater pollution. The objectives list both implementation steps and the results to be achieved (e.g., water quality improvements or load reduction).

The State program includes long-term goals; shorter-term goals (e.g., 3- to 5-year) objectives that are periodically updated based on progress; strategies to achieve progress towards achieving the goals, objectives; indicators to measure progress; and annual work plans to implement the strategies.

### **2. The State strengthens its working partnerships and linkages with appropriate State, Tribal, regional, and local entities (including conservation districts), private sector groups, citizens groups, and Federal agencies.**

The State uses a variety of formal and informal mechanisms to form and sustain these partnerships. Examples include memoranda of agreement, letters of support, cooperative projects, sharing and combining funds, and meetings to share information and ideas.

The State nonpoint source lead agency works collaboratively with other key State and local nonpoint source entities in the development and implementation of the section 319 management program, and actively involves them in decision making. Interagency collaborative teams, nonpoint source task forces, and representative advisory groups have all proven effective for accomplishing these linkages, especially where they meet on a regular basis and are managed in a collaborative and inclusive manner.

Further, the State seeks public involvement and comment on significant proposed program changes and engages in public education activities to promote public awareness of nonpoint source pollution and its solutions. As appropriate, representatives are involved from local, regional, State, interstate, Tribal and Federal agencies, and public interest groups, academic institutions, private landowners and producers, concerned citizens and others. This involvement helps ensure that environmental objectives are well integrated with those for economic stability and other social and cultural goals.

### **3. The State uses a balanced approach that emphasizes both State-wide nonpoint source programs and on-the-ground management of individual watersheds where waters are impaired and threatened.**

The State nonpoint source management program emphasizes a watershed management approach and is well integrated with other important programs to protect and restore water quality. These include point source, ground water, drinking water, clean lakes, wetlands protection and national estuary programs; coastal zone programs; conservation and pesticide management programs; and other natural resource and environmental management programs.

Each State has the flexibility to design its own nonpoint source management program in a manner that is best suited to attain and maintain beneficial uses of water. On-the-ground implementation of practices and programs is the best means of reducing and preventing pollution from nonpoint sources, but States may achieve this on-the-ground implementation by a combination of watershed approaches and State-wide programs. Similarly, as described more fully in element 5 below, the State may use any combination of water-quality or technology-based approaches it deems appropriate to make progress towards attaining and maintaining beneficial uses of water.

**4. The State program (a) abates known water quality impairments from nonpoint source pollution and (b) prevents significant threats to water quality from present and future nonpoint source activities.**

The program is designed to remedy waters that the State has identified as impaired by nonpoint source pollution. Further, the program is designed to prevent new water quality problems from present and reasonably foreseeable nonpoint source activities, especially in waters which currently meet water quality standards.

While it may take years to remedy waters that are already impaired, it is also important for States to take appropriate steps expeditiously to protect clean waters from reasonably foreseeable degradation. State programs should place a priority on protecting waters from future nonpoint source pollution as soon as possible (generally within 5 years).

**5. The State program identifies waters and their watersheds impaired by nonpoint source pollution and identifies important unimpaired waters that are threatened or otherwise at risk. Further, the State establishes a process to progressively address these identified waters by conducting more detailed watershed assessments and developing watershed implementation plans, and then by implementing the plans.**

The State identifies waters impaired by nonpoint source pollution based on currently available information (e.g., in reports under sections 305(b), 319(a), 303(d), 314(a), and 320), and revises its list periodically as more up-to-date information becomes available. The State also identifies important unimpaired waters that are threatened or otherwise at risk from nonpoint source pollution.

In addition, the State identifies the primary categories and subcategories causing the water quality impairments, threats, and risks. At 5-year intervals, the State updates the identification of waters and their watersheds impaired or threatened by nonpoint source pollution preferably as part of a single comprehensive State water quality assessment which integrates reports required by sections 305(b), 319(a), 303(d), 314(a), and 320.

The factors used by the State to progressively address its waters may include a variety of relevant environmental and administrative considerations, including, for example:

- \* human health;
- \* ecosystem health including ecological risk;
- \* the beneficial uses of the water;
- \* value of the watershed or ground-water area to the public;
- \* vulnerability of the surface or ground water to additional environmental degradation;
- \* likelihood of achieving demonstrable environmental results;
- \* implementability;
- \* extent of alliances with other Federal agencies and States to coordinate resources and actions; and
- \* readiness to proceed.



The State links its prioritization and implementation strategy to other programs and efforts as appropriate. Examples include total daily maximum loads, clean lakes programs, comprehensive ground water protection programs, source water protection programs, wetlands protection programs, national estuary programs, ambient monitoring programs, and pesticides management programs. Related programs administered by agricultural, forestry, highway, and other agencies should also be linked, for example, USDA's Water Quality Initiative, PL-534 and PL-566 Watershed Projects and the Northwest Salmon Initiative. In establishing priorities for ground-water activities, the State considers wellhead protection areas, ground-water recharge areas, and zones of significant ground water/surface water interaction.

More detailed information on priority setting is also contained in pp. 11 and 12 of the December 1987 Nonpoint Source Guidance; Setting Priorities: The Key to Nonpoint Source Control (EPA, 1987); Selecting Priority Nonpoint Source Projects: You Better Shop Around (EPA, 1989); Geographic Targeting: Selected State Examples (EPA, 1993) and Watershed Protection: A Project Focus (EPA, 1995).

**6. The State reviews, upgrades, and implements all program components required by section 319(b) of the Clean Water Act, and establishes flexible, targeted, and iterative approaches to achieve and maintain beneficial uses of water as expeditiously as practicable. The State programs include:**

**(a) An mix of water quality-based and/or technology-based programs designed to achieve and maintain beneficial uses of water; and**

**(b) A mix of regulatory, non-regulatory, financial and technical assistance as needed to achieve and maintain beneficial uses of water as expeditiously as practicable.**

Section 319(b) specifies the minimum contents of State nonpoint source management programs. These include:

(i) An identification of the measures (i.e., systems of practices) to be used to control nonpoint sources of pollution, focusing on those measures which the State believes will be most effective in achieving and maintaining water quality standards. These measures may be individually identified or presented in manuals or compendiums, provided that they are specific and are related to the category or subcategory of nonpoint sources. They may also be identified as part of a watershed approach towards achieving water quality standards, whether locally, within a watershed, or State-wide;

(ii) An identification of programs to achieve implementation of the measures, including, as appropriate, nonregulatory or regulatory programs for enforcement, technical assistance, financial assistance, education, training, technology transfer, and demonstration projects. States should establish a flexible, targeted approach to solve their water quality problems. States have the freedom to decide the best approaches for solving the problems they identify under key element 5 above. These approaches may include one or all of the following:

- \* watershed or water-quality based approaches aimed at meeting water quality standards directly
- \* iterative, technology-based approaches based on best management practices or measures, applied on either a categorical or site-specific basis, or
- \* an appropriate mix of these approaches;

(iii) A description of the processes used to coordinate and, where appropriate, integrate the various programs used to implement nonpoint source pollution controls in the State;

(iv) A schedule with goals, objectives, and annual milestones for implementation at the earliest practicable date; legal authorities to implement the program; available resources; and institutional relationships;

(v) If program is changed substantially, certification by the Attorney General or designee;

(vi) Sources of funding from Federal (other than 319), State, local, and private sources;

(vii) Federal land management programs, development projects and financial assistance programs (see key element 7 below); and

(viii) A description of the monitoring and other evaluation programs that the State will conduct to help determine short- and long-term program effectiveness.

In addition, State nonpoint source management programs must incorporate existing baseline requirements established by other applicable Federal or State laws to the extent that they are relevant. For example, coastal States and Territories should include or cross-reference approved State coastal nonpoint source programs required by section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990. In this manner, States can make sure that these coastal nonpoint source programs and other relevant baseline programs are integrated into section 319 programs and that they are eligible for section 319(h) grant funding, which is limited by section 319(h)(1) to “the implementation of approved section 319 programs.”

All of these components should be identified by the State, included in the State nonpoint source management program and be reviewed and approved by EPA under section 319 of the Clean Water Act.

**7. The State identifies Federal lands and activities which are not managed consistently with State nonpoint source program objectives. Where appropriate, the State seeks EPA assistance to help resolve issues.**

The State commits to reviewing and identifying those Federal land management programs, development projects and financial assistance programs that are or may be inconsistent with the State’s nonpoint source management program.

As a Federal agency, EPA has a special role to play in support of State nonpoint source programs by working with other Federal agencies to enhance their understanding of the significance of nonpoint source pollution and of the need to work cooperatively with States to solve nonpoint source problems. Where appropriate, EPA will help develop memoranda of agreement among States and Federal agencies to help reduce nonpoint source pollution on Federal lands and to better address nonpoint source pollution in Federal assistance programs and development projects. In addition, where appropriate, EPA will assist in resolving particular issues that arise between the State and Federal agencies with respect to Federal consistency with the State nonpoint source management program.

**8. The State manages and implements its nonpoint source program efficiently and effectively, including necessary financial management.**

The State implements its program to solve its water quality problems as effectively and expeditiously as possible. Timeliness is key to accomplishing environmental objectives and demonstrating results as soon as possible. To help assure that priority water quality problems are

addressed cost-effectively and in a timely manner, the State includes in its program a process for identifying the critical areas requiring treatment and protection within watersheds selected for implementation activities, and assigns the highest priority to addressing those areas.

The State employs appropriate programmatic and financial systems that ensure that section 319 dollars are used consistently with its legal obligations, and generally manages all nonpoint source programmatic funds to maximize environmental benefits. The State ensures that section 319 dollars complement and leverage funds available for technical and financial assistance from other Federal sources and agencies.

**9. The State periodically reviews and evaluates its nonpoint source management program using environmental and functional measures of success, and revises its nonpoint source assessment and its management program at least every five years.**

In its upgraded program, the State establishes appropriate measures of progress in meeting its programmatic and environmental goals and objectives identified in key element #1 above. The State also describes a monitoring/evaluation strategy and a schedule to measure success in meeting those goals and objectives. The State integrates monitoring and evaluation strategies with ongoing Federal natural resource inventories and monitoring programs.

# APPENDIX E

**WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY  
LAND QUALITY DIVISION  
GUIDELINE NO. 15**

**ALTERNATIVE SEDIMENT CONTROL MEASURES**

This document is a guideline only. Its contents are not to be interpreted by applicants, operators, or LQD staff as mandatory. If an operator wishes to pursue other alternatives, he or she is encouraged to discuss these alternatives with the LQD staff.

**I. INTRODUCTION**

This guideline identifies specific sediment control measures that may be used in addition to or in place of sedimentation ponds. Operators should note that alternative sediment control design requirements are minimal for areas less than 30 acres. Monitoring requirements are also minimal for small ephemeral receiving streams (drainage areas less than 0.5 square miles). Land Quality Division (LQD) will rely on field inspections of small areas, focusing on construction and maintenance to ensure their effectiveness.

These recommendations do not constitute the only acceptable alternative sediment control techniques. LQD intends to maintain flexibility so that they can evaluate sediment control systems not envisioned in this guideline. The final sediment control system should conform to the standards described herein for design, construction, maintenance, and monitoring.

Even where sedimentation ponds are constructed, alternative sediment control changes can be used to minimize sediment delivery to ponds and thereby decrease the frequency of pond maintenance. Alternative techniques are especially applicable to large reclaimed watersheds, where erosion must be controlled before a downstream pond is eliminated.

**II. Objective of Alternative Sediment Control Measures (ASCM's)**

Alternative sediment control measures are presented as an option other than the use of sedimentation ponds in the DEQ/LQD Coal Rules and Regulations when it can be demonstrated that they "will not degrade receiving waters" (Chapter IV, Section 2.(f)(i)). Receiving waters are defined by the LQD as:

1. Any unimpounded and undisturbed or permanently reclaimed stream outside of the permit area that is within three (3) channel miles downstream of an area controlled by an ASCM; or
2. Any unimpounded and undisturbed or permanently reclaimed stream within the permit area downstream of an ASCM.

As stated in Chapter IV, Section 2.(f)(vii), "Appropriate sediment control measures shall be designed, constructed, and maintained using the best technology currently available to prevent additional contributions of sediment to streamflow or to runoff outside the affected land". Also, a surface water monitoring program "...will be used to demonstrate that the quality and quantity of runoff from affected lands...will minimize disturbance to the hydrologic balance". (Chapter IV, Section 2.(i)(ii)).

These regulations suggest that there is a design/maintenance standard, **best technology currently available (BTCA)**, a performance standard, **non-degradation of receiving waters**, and a

verification standard, **demonstrable monitoring program**. ASCM's should be designed such that it can be demonstrated that sediment yields are not greater than background levels.

### III. Best Technology Currently Available (BTCA)

#### A. Elements of BTCA.

The design methods, construction techniques, maintenance practices and monitoring system all contribute to a system that can be considered BTCA.

#### B. Determination of BTCA.

1. BTCA will be determined on a case by case basis. BTCA determinations will be based on the type of disturbance, the size of the disturbance and the length of time the ASCM will be in place. The LQD will not require the same ASCM sophistication on, for example, small temporary topsoil stockpiles or topsoil stripping areas as they will for a permanently reclaimed watershed. The determination of BTCA will be based on how effective the ASCM is at:

a. Preventing soil detachment and erosion, using slope erosion control practices.

b. Retaining sediment as close as possible to its point of origin, using on-slope and in-channel sediment trapping structures.

It is preferable to use effective slope erosion control practices where possible. Sediment traps should constitute a second line of defense.

2. The LQD realizes that many technologies currently exist that can be considered the "best" technology. New technologies may be developed in the near future that may provide a higher degree of erosion protection than is "currently" available.

### IV. Design of ASCM's

ASCM's can be considered for disturbed or reclaimed areas that are not within one-half mile (channel distance) of any class I, II, or III stream. (These classes are defined in the DEQ/WQD Rules and Regulations, Chapter I, Section 4). Small areas (less than 30 acres) located within one half mile of a class I, II, or III stream, may be protected using ASCM's, subject to the discretion of the LQD administrator.

#### A. Designing ASCM's for Small Areas (less than 30 acres)

The only sediment control design requirements for small disturbed area (less than 30 acres) are:

1. Sediment trapping structures (e.g., toe ditches, rock check dams) should be designed to pass or detain runoff from storms of recurrence intervals determined by their expected lifetimes (see Appendix 1). A generic design may be acceptable where many similar small areas will be controlled by similar structures as long as they will withstand the design precipitation event.

2. Rocks used to construct check dams should be angular and have an appropriate size distribution so that the design peak flow cannot entrain them or else be enclosed in a staked wire mesh structure.
3. Toe ditches should be graded to a zero slope, where practical. Otherwise, toe ditches should be gently graded to a stabilized outlet that has a check dam of porous rock, staked hay bales, or a fabric sediment fence to retain sediment.
4. Detention basins will be considered alternative sediment control only when their capacity is less than 0.5 acre-foot.
5. The operator need only report the ASCM design and its justification with a planview location and a general description of the type structure to the LQD. Proposals of this size should outline the inspection and maintenance programs the operator will use to regularly evaluate the stability and effectiveness of each ASCM.

B. Designing ASCM's for Large Areas (30 acres and larger)

1. The design of ASCM's for large areas should be based on predicted sediment loads or yields from the particular area of disturbance. The operator should compare predicted or measured native sediment yields to those predicted for the disturbed area.
2. A state-of-the-art computer watershed model should be used as an ASCM design tool. The LQD will work with the operator to determine which model(s) can be considered state-of-the-art for the particular application. Section VII of this guideline includes specific model information that should be submitted.

C. Implementation Priorities for Various ASCM's

The following lists prioritize the most desirable ASCM's for each particular disturbed area:

1. Topsoil Stripping Areas
  - a. Divert undisturbed water around the stripped area into an approved diversion channel.
  - b. Divert drainage from the stripped area into the pit.
  - c. Divert drainage from the stripped area away from the pit through an ASCM:
    1. Place native vegetation buffer strips or filter cloth between the disturbance and the channel.
    2. Place sediment trapping structures in channel (porous rock check dams, staked straw bales).
    3. Place sediment trapping structures below the channel grade.
2. Overburden/Topsoil Stockpiles
  - a. Utilize a flat construction profile.
  - b. Locate stockpiles away from drainageways.
  - c. Use contour plowing, seeding and mulch on stockpiles.

- d. Establish a good vegetative cover.
- e. Grade contour ditch outlets to stabilized drainageways.
- f. Grade toe ditches to sediment trapping structure that retains minimum amount of water.
- g. Grade toe ditches to zero grade and less than 0.5 acre-foot capacity.

### 3. Postmining Surfaces

#### a. Stable landform design

Geomorphic approaches to stable landform design are highly recommended to minimize sediment yield. For example, drainage density and channel and hillslope profile shapes can be varied and lose lengths reduced to minimize sediment yield.

#### b. Short-term slope erosion controls

- 1. Regraded topsoil surfaces should be pitted with a large disc, chisel plow or ripper working along the contour to increase infiltration and detain runoff.
- 2. Bare rounded surfaces should be mulched and vegetated rapidly. It is highly recommended that mulch be anchored in the topsoil and that vegetation be planted immediately after surface grading. Cover crops provide a standing mulch that can be mowed prior to subsequent plantings.

#### c. In-channel sediment retention measures

Vegetation is often sufficient to stabilize stream channels. A rock check dam should be placed in channel reaches that produce excessive sediment from their bed and banks. Accumulated sediment should be regularly removed from rock check dams. Check dams should be used as a final resort in permanently reclaimed stream channels.

### D. Location of Sedimentation Ponds

Sedimentation ponds must be used to control runoff from facilities areas, coal stockpiles and pit drainage. Sediment ponds may also be necessary when maintenance of ASCM's is a chronic unresolved problem.

## V. Construction and Maintenance of ASCM's

### A. Construction of ASCM's

Each type of ASCM has construction and maintenance guidelines that are specified in most handbooks on sediment control (see list of references, Appendix 2). Some basic guidelines include:

- 1. Mulch must be anchored to prevent it from being washed or blown off the slope.



2. Rocks used in porous rock check dams should be the appropriate size, angularity, and density to prevent flows from transporting them or else they should be contained in anchored wire mesh.
3. Contour ditches should be constructed with a stabilized outlet and berms that are well compacted and vegetated.
4. Concentrating flow in a diversion ditch can result in severe erosion by gullying if the outlet is not adequately constructed and stabilized.
5. Baled hay check dams should be staked into the bed and banks of channels. Flow should pass over the low point of the channel. If hay bales are placed level across the channel, they should be staggered so that water will not pond behind them and be deflected into the banks.

**B. Maintenance of ASCM's**

The operator should report, repair and log any significant damage to an ASCM as soon as possible after the damage occurs. The operator should inspect the ASCM at the beginning and at the end of each runoff season, and after each runoff event. An inspection and maintenance log should be kept to document the condition of each ASCM at the time of each inspection. The log should describe any damage, the required maintenance, and the date repairs were made.

**VI. Performance of ASCM's**

**A. Monitoring Ephemeral Tributary (Class IV) Streams**

Where the receiving water is an ephemeral (Class IV) stream, the water quality standard set by DEQ/WQD Rules and Regulations, Chapter 1, Section 15, is as follows:

"...substances...influenced by the activities of man that will settle to form sludge, bank or bottom deposits shall not be present in quantities which could result in significant aesthetic degradation, ... or adversely affect public water supplies, agricultural or industrial water use, plant life or wildlife, etc."

**1. Small ephemeral receiving streams**

Small ephemeral receiving streams (drainage areas less than 0.5 square miles) that are receiving waters for ASCM's should be visually inspected after each runoff event.

- a. Channels and hillslopes should be inspected for signs of rill and gully erosion. The volume and location of any recently accumulated sediments should be recorded.
- b. Repeat photographs should be taken at least annually and after large runoff events at several permanent locations along the receiving stream to supplement the written record of observations.

**2. Large ephemeral receiving streams**

In addition to the requirements for visually monitoring small ephemeral receiving streams, monitoring of large ephemeral receiving streams (drainage areas greater than 0.5 square mile) should include one, or both, of the following:

- a. Repeat surveys of representative permanently benchmarked stream channel cross sections located within the disturbed reach of the channel and continuing into the receiving stream channel.
- b. Upstream and downstream sediment yield monitoring stations that follow the plan set forth for Class I, II, and III streams below.

**B. Monitoring Class I, II, and III streams**

Any class I, II or III receiving stream should be monitored upstream and downstream of the disturbed area so that any potential increase in sediment load related to mining disturbance can be detected.

1. The methods of data collection and the analytical basis for determining whether or not degradation has occurred should be outlined in detail in the ASCM proposal.
2. Continuous flow recorders and automatic sediment samplers should be installed at permanent upstream and downstream station locations.
3. Automatic sediment samplers should begin sampling at the onset of each runoff event and continue at 5 to 10 minute intervals throughout each runoff event. Other sampling intervals or methods will be considered according to their ability to verify sediment yields.
4. The applicant should submit a monitoring station maintenance plan. Data from monitoring stations should be retrieved within 24 hours of each runoff event. Faulty equipment should be immediately repaired or replaced. Monitoring stations should be inspected by the operator after every runoff event, and a log of monitoring and maintenance activities should be kept for LQD review. The LQD will be looking for a long-term record of maintenance as well as a company's efforts to correct problems in a timely fashion.

**VII. Contents of an ASCM Proposal**

The proposal for implementation of an ASCM for areas greater than 30 acres should include the following items:

- A. A general description of the area to be controlled by ASCM's and the types and duration of expected disturbance include the distance to and type of nearest receiving stream and/or Class I, II, or III stream.
- B. Description of the ASCM Design Procedure
  1. List and justify values chosen for the watershed (or subwatershed) variables and model parameters (e.g., soils, sediment grain size distribution, slopes, etc.).

2. Where applicable, submit data used to calibrate model and the calibration results (e.g., design hydrographs, hyetographs, curve numbers, etc.).
  3. Explain the choice of ASCM's.
  4. Submit and justify the design storm recurrence interval and duration, runoff volume, and peak discharge.
  5. Submit sample calculations and/or computer model output.
- C. Provide a map of ASCM's on a mining sequence topographic map or overlay. Each ASCM should be referenced in the descriptive text and design information, and dates of construction or implementation of each ASCM should be given. This map should be updated in each Annual Report if modifications are made.
- D. Provide specifications for each ASCM and a schematic diagram of each typical structure.
- E. For reclaimed areas:
1. Refer to drainage basin and channel designs in reclamation plan:
    - a. Longitudinal profiles of reclaimed channels.
    - b. Typical reclaimed channel cross sections.
    - c. Reclaimed area contour map with 10' or less contour interval.
    - d. Justification of drainage basin design.
    - e. Reclaimed basin characteristics such as: relief ratio, drainage area, topsoil and spoil particle sizes, average channel slope. Include discussion of how reclaimed basins, slopes and channels are designed to minimize additional sediment yield to downstream areas.
  2. Surface treatments (mulch, contour ripping).
  3. Channel protection measures, if any.
- F. Maintenance and inspection plan.
- G. Monitoring plan and description of degradation analysis.
- H. If any impounding structure is designed to retain more than 2.0 ac-ft of water, a WQD permit must be obtained.
- I. ASCM's designed to control large disturbed watersheds (excluding isolated small areas) may need to be permitted through the State Engineer's Office (Form SW-1, Application to Appropriate Surface Water). The State Engineer's Office should be contacted directly to determine whether or not such a permit is required.

## APPENDIX 1

### Design Events for Temporary Structures

Exceedence of the design runoff is likely to result in destruction of in-channel ASCM's and in the remobilization of any stored sediment. Therefore, temporary structures should be designed for an event with some reasonably small probability of occurrence over the structure's lifetime.

Example:

The highest acceptable risk of structure failure during that structure's lifetime is 20%.

Table 1 shows event return periods for which the risk of failure (at least once) over a given number of years will be no greater than 20%. The return periods in Table 1 were calculated from the following equation:

$$P = 1 - (1-1/t)^n$$

where P is the probability that an event of return period t will be equaled or exceeded at least once during the course of n years (Linsley, Kohler and Paulhus, 1982).

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Table 1 - Design Event Return Periods

Expected Lifetime of Structure (yrs)	2	5	7	10
Design Event Return Period (yrs)	10	25	33	50

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Over any two-year period, a 10-year event has a 20% chance of being equaled or exceeded at least once. Therefore, based on the criterion of 20% acceptable risk of failure, the appropriate design storm for a structure intended to function for two years is the 10-year peak runoff, or predicted peak runoff from the 10-year rainfall. For structure lifetimes outside the range of those in Table 1, appropriate design storm return periods should be calculated in the same manner from the equation given above.

## APPENDIX 2

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# APPENDIX F

**WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY  
WATER QUALITY DIVISION  
FIVE-YEAR COMPREHENSIVE MONITORING PLAN**

**July 1, 1998**

**INTRODUCTION**

Historically, Wyoming's surface water monitoring program has focused on National Pollution Discharge Elimination System (NPDES) compliance monitoring, monitoring spills and citizen complaints, baseline data collection for the state's Reference Stream Program, a coordinated sampling program with the U.S. Geological Survey (USGS), special water quality projects, and assisting in the monitoring programs associated with Surface Water Assessment (205j) and Watershed (319h) Projects. The recent focus on Total Maximum Daily Loads (TMDLs) has resulted in the department's need to expand this monitoring program, both in scope and personnel.

On July 30, 1997, the department finalized a "Total Maximum Daily Load (TMDL) Workplan." One of the goals listed in that workplan was to establish a monitoring plan to verify additions/deletions to the 303(d) list of impaired waters and to develop/verify TMDLs on priority waterbodies. An objective of that goal was to conduct initial Beneficial Use Reconnaissance Program (BURP) monitoring "on all waterbodies listed on 1996 303(d) list in five years, beginning in 1998." These waterbodies are contained in the department's "Table E" and fulfillment of the workplan goal will be tracked through that table.

A second monitoring-related goal presented in the Workplan was to "establish TMDL's on a watershed basis for all *impaired* waterbodies on 1996 303(d) list within ten year period." The schedule presented in the Workplan called for completion of 10% of the TMDLs by the end of 1998 and completion of 35% of the TMDLs in this 5-year planning period.

**MONITORING OBJECTIVES**

The Water Quality Division must complete several monitoring objectives in any potential monitoring schedule. These include completing mandatory NPDES effluent and storm water inspections, investigation of complaints, BURP monitoring of at least 20% of the "monitor list" waters, monitoring of high priority "impaired" and Waste Load Allocation (NPDES Renewal) waters, and monitoring of approximately 25 long-term monitoring reference streams. Most "threatened" waters on the 303(d) list are currently being monitored as part of 319(h) Watershed Projects.

The Water Quality Division will implement the monitoring program on a watershed approach, as much as possible. Monitoring on a watershed basis will help achieve the department's current Work Plan goal of "establishing TMDLs on a watershed basis." Additional benefits to the watershed approach include:

- obtaining a more comprehensive look at the water quality in the watershed;
- better efficiency of the monitoring staff ;
- better potential for involvement of local watershed stakeholder groups; and

- monitoring and watershed management plans implemented in the upper reaches of a large basin will assist in defining and resolving water quality issues in the lower reaches of the basin.

## FIVE YEAR MONITORING SCHEDULE

The 5-year monitoring program, by individual Hydrologic Unit, is outlined by years in Table 1. The specific watersheds to be monitored are also shown on Figures 1 through 5 for years 1998 through 2002, respectively. Several items led to the formulation of this proposed schedule:

- High Priority TMDL Waterbodies. Eleven “impaired” waterbodies and 5 discharge permits requiring additional monitoring data in order to establish TMDLs have “high” priorities. These high priority waterbodies were targeted for monitored in the initial two years;
- 104(b) Grant. In order to fulfill the obligations of this EPA grant, waterbodies specifically outlined in the grant were targeted for 1998. Many of these waterbodies (68%) are located in the Powder, Green, and Bear River basins. Large rivers and lakes in the 104(b) grant were the exception and are scheduled for monitoring in 1999;
- Watershed Approach. The schedule took into consideration monitoring the state’s larger river basins from headwaters downstream. Monitoring in basins such as the Big Horn/Wind River and North Platte River will be initiated in the upper watersheds first;
- Seasonality. The schedule attempted to mix lower elevation watersheds with higher elevation watersheds in order to increase the field sampling season as much as possible. The department will attempt to monitor a mixture of “plains” and “mountain” streams each year;
- Workloads and Travel. Specific workloads for each of the four WQD field offices and the respective travel for each of the five years were taken into account. Field personnel will be located in the department’s Casper, Cheyenne, Lander, and Sheridan offices. A mixture of waterbodies covered by each of those locations was desired;
- Monitoring Protocol Development. The proposed schedule provides time allowances for the development and peer review of large river and lake BURP monitoring protocols;
- Waterbody Classification Questions. The department will respond to waterbody reclassification requests through the implementation of Use Attainability Analysis. The initial step in addressing reclassification concerns will be a review of existing data bases (DEQ, Wyoming Game and Fish, Bureau of Land Management, U.S. Forest Service, etc.). If the data review does not provide sufficient information, BURP monitoring will be conducted on the waterbody in question. Exact scheduling of monitoring to address reclassification questions will depend the impacts of the possible mis-classification to the waterbody’s placement on a 303(d) list, impacts to the determination of a discharge permit’s Waste Load Allocation, and lastly how the waterbody’s location fits into the general monitoring schedule; and,
- Cooperating Groups and Agencies. The department will coordinate DEQ monitoring efforts with those of watershed groups, conservation districts, and surface land management agencies as much as possible. For example, monitoring efforts in the Idaho and Utah portions of the Bear River basin will be initiated in 1998. The department is scheduling monitoring in Wyoming’s portion of this basin for 1998 to complement those efforts.



## PROPOSED 1998 MONITORING

The 1998 monitoring effort will cover a combination of discharge permit, complaint, reference stream, and BURP level monitoring. Watershed assessments will be completed in 19 of the state's 79 individual Hydrologic Units (Table 1). These 19 Hydrologic Units are located in the Bear, upper Green, Tongue, Powder, Little Missouri, Little Snake, and South Platte River Basins. Six Hydrologic Units containing 1998 303(d) listed waterbodies or 104(b) grant waterbodies will have a partial watershed assessment in 1998. Complete watershed assessment of these 6 Hydrologic Units will be completed through BURP level monitoring later in the program.

Most of the complete watershed assessments will be accomplished through the BURP level monitoring of streams originally contained on the state's 1996 303(d) list of impaired waterbodies. These waterbodies are those which the state lacks primary credible data or has inconclusive primary credible data necessary to make an impairment declaration and are presented in Table E. Forty-three additional waterbodies had secondary credible data submitted during the public comment period for the 1998 303(d) list. These waterbodies have been placed, along with Table E waterbodies, in a master list of waterbodies slated for potential monitoring. During the upcoming 5-year period, BURP level monitoring of some of these may be necessary in order to complete watershed assessments on units with no or very few Table E waterbodies.

### NPDES Inspections and Monitoring

The department will conduct the necessary NPDES effluent and storm water inspections for 1998. Approximately 350 permitted NPDES effluent discharge sites will need to be sampled during 1998. A single permit may consist of one or as many as 40 individual discharge outfalls. Some waterbodies with discharge permits will require additional BURP level monitoring to assist in the development of respective Waste Load Allocations (WLA).. Currently, the department anticipates expanded monitoring efforts will be necessary on approximately 20% (5 to 7 in number) of the waterbodies listed in Table B of the 1998 303(d) list (Waterbodies with WLA Discharge Permits Expiring). The 5 to 7 waterbodies requiring BURP level monitoring will be monitored during the July 15 through October 31 BURP monitoring window. NPDES discharge permits contained within a watershed scheduled for BURP level monitoring may be inspected in conjunction with that BURP monitoring. The department will attempt to accomplish the remainder of the required NPDES effluent inspections and monitoring between November 1 and July 14.

The department is striving to inspect 20% of the NPDES storm water permits during 1998. This equates to approximately 200 storm water permits. Again, these inspections will occur outside of the July 15 - October 31 BURP monitoring window as much as possible.

### Citizen Complaint Investigations and Monitoring

The Watershed Section of the Water Quality Division historically receives between 30 and 50 citizen complaints and investigations each year. It is the department's policy to respond to citizen complaints in a timely and thorough manner. The exact number, location, and timing of citizen complaints are unknowns. Some of these will most likely fall in the BURP monitoring period and be located in watersheds outside of the department's areas of concentrated monitoring. The department will attempt to balance response to complaints with the required monitoring effort as efficiently as possible.

### Special Projects

Special projects requiring staff monitoring actions can be another unknown factor in the overall monitoring schedule. Special projects can originate from citizen group or government concerns (e.g.

monitoring water quality effects of a municipal street salting program) to response to regulatory issues (e.g. monitoring in response to spills).

#### Monitoring Long Term Reference Sites

The department's Reference Stream Project has currently identified 17 long term monitoring sites in the state's 7 major ecoregions. Review of data collected in 1997 will allow the department to select approximately 8 additional long term reference sites (3 or 4 in each major ecoregion). Annual monitoring of the 25 sites will enable the department to measure the natural, annual variation observed in the waterbodies under reference (minimal human influence) condition. The monitoring of these waterbodies must be conducted within the BURP monitoring window.

#### Monitoring 1998 303(d) Impaired Waterbodies for Development of TMDLs (Table A)

Table A of the 1998 303(d) list provides a listing and prioritization of waterbodies in the state where credible data indicate an impairment. This table lists 14 impaired waterbodies. In accordance with parameters found in the document entitled *Section 303(d) List Criteria for Prioritizing Impaired Waterbodies for Development of TMDLs*, eleven of these waterbodies have been given a "High" priority, one given a "Medium" priority, and two given a "Low" priority for TMDL development. All of these waterbodies will have some type of monitoring conducted in 1998.

Nine of the eleven "High" priority waterbodies and the single "Medium" priority waterbody are scheduled for complete BURP level monitoring in 1998. The two "High" priority waterbodies where BURP monitoring is not proposed in 1998 are the Clarks Fork of the Yellowstone River and Gillette Fishing Lake. The impairment on the Clarks Fork is located in the state of Montana and BURP monitoring and TMDL development will require coordination with that state and the EPA. This waterbody will continue to be monitored for water quality parameters through the Wyoming DEQ / USGS coordinated sampling program. BURP level monitoring of the Gillette Fishing Lake is proposed for 1999. This one year delay is proposed to allow the department to develop Lake Monitoring Protocols. The Gillette Fishing Lake has received a considerable amount of monitoring by the Intermountain Conservation District.

The two "Low" priority waterbodies are Haggarty Creek and the North Platte River near Casper, Wyoming. The Haggarty Creek impairment is associated with historic mining activity and is a reclamation project within the department's Abandoned Mine Lands Division. The AML division will monitor and ultimately develop the TMDL for Haggarty Creek. The selenium impairment to the North Platte River near Casper is currently being addressed by the U.S. Bureau of Reclamation. Additionally, BURP level monitoring of large rivers such as the North Platte will be delayed until 1999 at which time the department will have adopted Large River BURP monitoring protocols.

#### Monitoring 1998 303(d) Waterbodies with Waste Load Allocation Discharge Permits Expiring (Table B)

Twenty-nine NPDES discharge permits with waste load allocations will expire in the next two years. These waterbodies are listed in Table B of the 1998 303(d) list. All of these permits will require new waste load allocation determinations prior to permit renewal. Inspection and effluent monitoring will occur on all 29 of these discharge permits prior to expiration. Expanded chemical and biological monitoring have been proposed for at least 5 of these permits during 1998. The reasons for the expanded monitoring are to update baseline data, investigate waterbodies where the discharger has exhibited problems meeting effluent standards, or reevaluate the classification of the receiving water being discharged to.

### Monitoring 1998 303(d) Waterbodies with Non-Point Source Threats (Table C)

Twenty waterbodies are listed in Table C of the 1998 303(d) list as having non-point source pollution threats. Eighteen of these waterbodies currently have watershed improvement projects with conservation districts or watershed groups. Those entities have monitoring programs for their respective projects. Historically, the department has provided some assistance to these groups through training, monitoring, or data analysis. The amount of departmental assistance in 1998 will depend upon existing workloads and the number of requests.

Two waterbodies without watershed projects have been listed in Table C as being threatened. Salt Creek is listed as threatened due to exceedences in some of the water quality standards and a number of industrial spills in the watershed. Salt Creek will be monitored during 1998. McMasters Reservoir has been listed as threatened because of overwintering problems with the fisheries. This threat may reflect more the physical nature of the reservoir than a water quality condition. Because the department does not have Lake monitoring protocols developed, McMasters Reservoir is tentatively scheduled for BURP level monitoring in 1999.

### Monitoring of 1996 303(d) Waterbodies With Secondary Credible Data or Inconclusive Primary Data (Table E)

The department's Table E currently contains 295 waterbodies that were originally placed on the state's 1996 303(d) List of Impaired Waterbodies. These waterbodies have secondary credible data or inconclusive primary credible data suggesting a potential impairment. The department, through the TMDL Workplan, has committed to having BURP level monitoring completed on these waterbodies in the next five years. To aid in achieving this monitoring commitment, the department received a Section 104(b) grant from the U.S. Environmental Protection Agency in 1997. The 104(b) grant covered BURP level monitoring on 60 waterbodies where sources of possible impairment included discharges from point sources. The monitoring of 4 of these waterbodies was completed in late October, 1997. Grant requirements call for the monitoring of the remaining 56 waterbodies to be completed in 1998. Six of the waterbodies covered by the 104(b) grant are large rivers or lakes. Because the department has not presently developed large river or lake BURP monitoring protocols, the department will be making a formal request to EPA to monitor those waterbodies in 1999.

The 104(b) grant to-date has enabled the department to purchase one complete set of monitoring equipment, conduct initial records searches on half of the waterbodies, and complete BURP monitoring on 4 waterbodies. In 1998, the department anticipates using grant money for salary and per diem for three biological interns and to cover a portion of the season's lab analysis costs. Nine WQD Watershed Section employees and the three interns will comprise six monitoring teams to conduct the proposed 1998 monitoring. Through this expanded monitoring effort the department is hoping to complete BURP level monitoring on 112 Table E waterbodies in 1998.

### Monitoring of Additional Waterbodies in 1998 to Achieve a Complete Watershed Assessment

Two additional waterbodies, Giraffe Creek and Coal Creek, in the lower Bear River watershed will be monitored in 1998 in order to obtain a better assessment of the watershed. Inconclusive primary credible data were provided by the State of Idaho for these waters. This monitoring will be done in order to get a good interstate perspective of these waters.

### PROPOSED 1999 - 2002 MONITORING

NPDES, citizen complaint, special project, and long term reference site monitoring for the years of 1999 through 2002 will follow patterns discussed in the section on Proposed 1998 Monitoring presented

above. The proposed 1998 monitoring will most likely identify waterbodies requiring revisiting or additional monitoring site establishment. These actions will occur within the 1999 - 2002 period. Revisits, along with monitoring and investigation of waterbodies ultimately placed on the 2000 and 2002 303(d) lists, can not be included in this proposed schedule at this time. Some scheduling expansion and alteration will most likely be necessary as a result of those future lists. Some additional monitoring, BURP level or USGS stations, will be necessary for those Hydrologic Units containing few or no Table E waterbodies.

#### Monitoring of Waterbodies on Table E

The 1999 monitoring effort will complete the watershed assessments of the Powder and South Platte River Basins. Monitoring will also be conducted and completed in three smaller watersheds (Sundance Creek of the Belle Fourche, Niobrara River, and Bear Creek of the North Platte) that exit the state before contributing to a larger watershed. Monitoring will also begin in the upper watersheds of the Wind River in the Big Horn/Wind River Basin and in the North Platte River Basin (Sweetwater River basin). The proposed 1999 monitoring effort will cover 20 individual Hydrologic Units ( 16 complete and 4 partial watershed assessments). Monitoring will focus on 1 303(d) impaired waterbody, 1 303(d) threatened waterbody, and 55 Table E waterbodies.

The 2000 effort will complete the watershed assessments of the Great Divide, Belle Fourche, and Green River Basins. Additionally, monitoring will continue down the Big Horn/Wind River Basin and begin in the upper North Platte River Basin (Saratoga Valley). Monitoring in the upper reaches of the Shoshone River watershed of the Big Horn/Wind River Basin (much of the monitoring associated with highway reconstruction along the river) will be initiated and completed in 2000. The proposed 2000 monitoring effort will provide complete watershed assessments on 12 Hydrologic Units and focus on 40 Table E waterbodies.

The proposed 2001 monitoring effort will provide complete watershed assessments on 8 Hydrologic Units. Monitoring will continue down the Big Horn/Wind River Basin and also move into the central portion of the North Platte River Basin. The 2001 monitoring effort will focus on 45 Table E waterbodies.

The proposed 2002 monitoring effort will complete the watershed assessments on the state's remaining 24 Hydrologic Units. Monitoring will be complete watershed assessments of the Big Horn/Wind, Henrys Fork, North Platte, Snake, Yellowstone, Cheyenne, and Madison River Basins. Monitoring will focus on the remaining 43 Table E waterbodies and fulfill the department's commitments found in the TMDL Workplan.

# APPENDIX G

## STATE WATERSHED STRATEGY

As mentioned in Chapter 3, WQD has developed five broad activities that define the overall direction in the implementation of its Watershed Strategy. The five broad activities are: 1) water quality investigations; 2) identification of sources of pollutants of concern; 3) elimination or control of those pollutants of concern; 4) development of a watershed plan (created by a local watershed group); and, 5) implementation of those locally developed watershed plans. These activities will, eventually, be conducted systematically within every watershed throughout the state, although not necessarily in the same order. WQD has identified fourteen watersheds that will receive first attention, beginning in 1999. These watersheds are the initial priority watersheds under the State Watershed Strategy. Once implemented, the practices conducted within these priority watersheds can be refined for further implementation within the state. WQD will review the "Priority Watersheds" list every two years, and revise the list as needed, to continue to address the State's water bodies most in need of restoration and/or protection.

DEQ will begin implementing its state-wide watershed strategy by engaging in activities in fourteen watersheds where water quality has not been meeting designated uses or where state standards are threatened. These 14 watersheds are the Wyoming DEQ's 1999 "Priority Watersheds" under its State Watershed Strategy. WQD has embarked on scheduling the five activities within each of these watersheds. For more complete scheduling and definition detail for the 1999 Priority Watersheds, refer below to Priority Watersheds - Activities Schedule.

WQD will work cooperatively with the conservation districts in the priority watersheds to create local groups willing to develop and implement watershed-based environmental improvement and protection plans. WQD will, then, coordinate with these local groups to ensure that specific actions, practices, and objectives become a vital part of the water quality improvements in those plans that include 303(d)-listed stream segments. To assist the local groups in their planning and implementation efforts WQD will, for example, make funds available for water quality improvement projects, technology demonstration projects, or for workshops and fora intended to make the appropriate information available to the watershed planning and implementation groups.

Additionally, DEQ may consider the actions contained within such a watershed management plan, developed by the local group, to be sufficient to allow DEQ to defer its development of a Total Maximum Daily Load (TMDL) if the implementation of the actions, practices, and objectives contained within the management plan achieve the desired water quality improvement in those water bodies listed as impaired. The ultimate goal of those water quality improvement actions should be to return the waterbody to compliance with its designated use consistent with state standards. If this occurs, DEQ may be able to defer the development of the TMDL for those impaired water bodies that have been improved by the effective implementation of actions included within the watershed plan.

## **WATERSHED PLANNING GROUPS AND IMPLEMENTATION PLANS**

The Water Quality Division (WQD) strongly encourages the development of local groups willing to develop and implement actions that will improve the water quality within their geographic areas. These groups are referred to within this plan as Watershed Planning Groups. Watershed Planning Groups may take responsibility for watersheds or subwatersheds of varying sizes, depending on their locale. Though water quality does not have to be the only focus of the watershed management plan developed by such a group, WQD will approve only those portions of the watershed plan that address water quality issues and concerns. The remaining portions of the plan, if any, will be addressed by other appropriate State programs.

WQD may consider those water quality improvement actions, practices, and objectives contained within a watershed management plan, developed by such a local group, to be sufficient to allow the Agency to lower the priority of a TMDL being developed by WQD for that impaired waterbody. Such a lowering of priority may only be considered if those water quality improvement actions included within the watershed plan are intended to achieve water quality improvement in those water bodies that are listed as impaired. The ultimate goal of those water quality improvement actions should be to return the water body to compliance with State standards and its designated use.

WQD recognizes that the geographic areas for which a local group chooses to be responsible is dependent upon many factors, such as the constituency of that group, and the drainage area directly contributing to the water body of focus. This is an expected possibility and could likely result in multiple watershed planning groups being created within a specific priority watershed. In these cases, WQD will assist these groups in facilitating coordination among them to ensure a seamless application of water quality improvement actions within the priority watershed as these groups begin to develop and implement their watershed management plans.

WQD anticipates that the watershed implementation plans developed by the local groups will identify goals, responsibilities, and recommend Best Management Practices (BMPs) to achieve the needed water quality improvement and return the impaired waterbody to a fully support status. The plan may also include voluntary or incentive-based controls to achieve the needed water quality improvement. Included in the watershed implementation plans will be milestones to measure progress and success. Each plan shall be subject to public participation, as per the Continuing Planning Process (CPP - see appendix C), prior to approval by the administrator for implementation. All reasonable efforts shall be made to encourage voluntary source reduction, flexibility, and incentive-based controls. The final plan must provide reasonable assurance that continuous improvements will be made to the water quality of the impaired waterbody. The ultimate achievement of these water quality improvements will be that the water body meets its designated use(s).

## **PRIORITY WATERSHEDS FOR 1999**

The 14 priority watersheds identified for 1999 are briefly described in the following, with location, pollutants of concern, proposed actions, and coordination activities included. For more complete scheduling and definition detail refer to Priority Watersheds - Activities Schedule. Please refer to Chapter 4 for the schedules, or targets, for the general measures and activities discussed elsewhere within this plan.

### 1999 Priority Watersheds

<u>Name</u>	<u>Pollutant</u>	<u>Plan Date</u>
Belle Fourche River*	Fecal Coliform	2002
Clarks Fork (Yw St River)	Copper	2003
Crooks Creek	Oil & grease	2000
Crow Creek	Fecal, Metals, NH3	2002
Gillette Fishing Lake	Silt, Phosphate	2001
Big Goose	Fecal Coliform	2003
Little Goose	Fecal Coliform	2003
Haggarty Creek	Copper	2003
Hams Fork (Green R.)	pH	2003
Hunter Creek	Sediment	2000
No. Platte River (Kendrick Reclamation)	Selenium	2000
Powder River	Chloride	2003
Wheatland Creek	NH3	2000

\* There are two priority segments within the Belle Fourche basin. They will be treated as separate watersheds because one segment is located in the area above the Keyhole Dam (Moorcroft Upper Belle Fourche), and the other is below the Keyhole Dam (Hulett Upper Belle Fourche).

1. Moorcroft Upper Belle Fourche River: This segment of the Belle Fourche River is located below the town of Moorcroft in Crook County. The water body number is 10020201-009-4 and carries a class 2ww designation. The pollutant of concern is fecal coliform. Water quality monitoring reported at the USGS 6426500 gage four miles northeast of Moorcroft has indicated the fecal coliform count has exceeded standards during critical times of the year. Future water quality monitoring will initially focus on the discharge from the wastewater treatment plant as the possible upstream source of fecal coliform. Preliminary monitoring conducted by DEQ in 1998 indicates that the tributary waters may be contributing to the pollutant load. DEQ will coordinate with Crook County (formerly Devils Tower) Conservation District to develop a watershed plan with appropriate water quality improvement actions included to allow the waterbody to be moved by DEQ to a low priority for TMDL development and ultimately removed from the 303(d) list when designated uses have been restored.
2. Hulett Upper Belle Fourche River: This segment of the Belle Fourche River is located below the town of Hulett in Crook County. The water body number is 10120201-004-4 and carries a class 2ww designation. The pollutant of concern is fecal coliform. The



exceedence of water quality standards was recorded at the USGS gage 6428050 downstream of the wastewater treatment plant. The municipality has a history of noncompliance with its NPDES discharge permit limits for fecal coliform during the summer season. Monitoring conducted by DEQ in 1998 also indicated such permit limit exceedences, however, there may be some contribution from the tributary waters. Further monitoring will be conducted to confirm the wastewater treatment plant as a source, and to further isolate any other contributing sources. The town of Hulett is currently operating under a compliance plan in order to achieve compliance. DEQ will coordinate with Crook County Conservation District to develop a watershed plan with appropriate water quality improvement actions included that may eventually allow the waterbody to be moved by DEQ to a low priority for TMDL development and ultimately removed from the 303(d) list when designated uses have been restored.

3. Clarks Fork- Yellowstone River: The Clarks Fork is tributary to the Yellowstone River located in Park County. The water body number is 10070006-027-2 and carries a Class 1 designation. The drainage area contributing to this watershed is contained within parts of Wyoming and Montana. The pollutant of concern is copper, as reported at the USGS gage 6205450 located 7.5 miles southeast of Cooke City, MT. The source of pollution is suspected to be runoff from mine wastes in Montana, which is most likely a nonpoint source of pollutants. The upper segment of the Clarks Fork River in Montana has been listed by Montana as impaired by heavy metals. Wyoming will partner with Montana when they schedule development of a TMDL. The US Forest Service has been given responsibility through court action to affect cleanup of mine tailings designed to correct impairment problem.
4. Crooks Creek: Crooks Creek is a tributary to the Sweetwater River in Fremont County. The water body number is 10180006-678-2 and carries a class 2 designation. The pollutants of concern are oil and grease and may be the result of oil from unpermitted oil well discharges, as reported from observations made by a DEQ monitoring team during a routine visit in 1997. The sources and extent of the pollution will be determined in FY 1999 by water quality investigations and sampling along the impaired segment. Corrective action will be taken once the pollutant sources are accurately determined. Such action may include enforcement of existing NPDES permit provisions, company containment and clean-up of any privately owned source, or writing a new NPDES permit that will ensure the elimination of such discharges. This segment will remain a high priority segment with a two-year time frame for developing an implementation schedule.
5. Crow Creek: Crow Creek is tributary to the South Platte River and is located in Laramie County. The water body number is 10190009-001-3 and carries a class 3 and class 4 designation. The pollutants of concern are cadmium and fecal coliform as discovered in sampling at USGS gage 6756060 located 2.3 miles southeast of Archer. The Laramie County Conservation District was awarded a 319 grant to monitor this stream segment, to analyze previous monitoring data, and sponsor watershed planning groups for the Crow Creek and Dry Creek drainages. In addition, the grant was intended to assist the conservation district in increasing public awareness and creating alternatives to controlling pollution in those drainages. Storm water runoff and wastewater treatment plant discharges are suspected as major contributors to the impairment of the creeks. A watershed plan, with appropriate water quality improvement actions, will be developed

after the 319 project is completed and its effectiveness for restoring designated uses is evaluated. DEQ will coordinate and assist a local entity in developing and implementing the watershed plan.

6. Gillette Fishing Lake: The Gillette Fishing Lake is located on Donkey Creek within the municipality of Gillette in Campbell County. The water body number is 10120201-150-2 and carries a class 2ww designation. The pollutants of concern are sediment and phosphate. The source of the pollution seems to be a combination of storm water runoff and nonpoint runoff. The Campbell County Conservation District has been approved for a 319 project which will be used to gather water quality data and educate the public concerning practices that will improve storm water runoff and nonpoint source runoff quality. The District has developed several partnerships including the municipality which will contribute time and materials to help improve the water quality of the lake. DEQ did not monitor the lake in 1998. The development of a watershed management plan will be delayed until the outcome of the 319 project can be evaluated, anticipated to be early 2001.
7. Big Goose Creek: Big Goose Creek is tributary to the Tongue River and is located in Sheridan County. The water body number is 10090101-006-3 and carries a class 2 designation. The pollutant of concern is Fecal Coliform. The exact sources of the pollutant is undetermined. It is suspected that point sources and nonpoint sources are significant contributors to the problem. WQD is currently conducting studies to identify specific sources and determine their relative contributions. Several samples along Big Goose Creek were taken in 1998 by DEQ. The analysis indicated exceedence of the fecal coliform standard. A watershed plan, with appropriate water quality improvement actions, will be written beginning in spring 2000. The municipality, county and the Sheridan County Conservation District have joined in a cooperative effort in the development of a watershed plan. Awarded a 319 project to pursue assessment and implementation of a watershed plan.
8. Little Goose Creek: Little Goose Creek is tributary to Big Goose Creek which is tributary to the Tongue River and is located in Sheridan County. The water body number is 10090101-020-2 and carries a class 2 designation. The pollutant of concern is fecal coliform as reported at the USGS gage 6304500 located in Sheridan 0.6 miles up stream from the mouth. The exact sources of the pollutant is undetermined. It is suspected that point sources and nonpoint sources are significant contributors to the problem. WQD is currently conducting studies to identify specific sources and determine their relative contributions. Monitoring by DEQ in 1998 has not been analyzed to date. A TMDL, or a watershed management plan with appropriate water quality improvement actions, will need to be written within the next five years. The municipality and county along with the Sheridan County Conservation District have expressed some interest in initiating a watershed planning group. It may be possible to include Big and Little Goose into one watershed plan.
9. Haggarty Creek: Haggarty Creek is tributary to the West Fork of Lost Creek which is tributary to Battle Creek which is tributary to the Little Snake River. It is also diverted into the Belvedere Ditch which discharges into Big Gulch which is tributary to Savory Creek, a tributary to the Little Snake River. The water body is located in Carbon County.

The water body number is 14050003-069-1 and carries a class 2 designation. The pollutant of concern is copper discharging from an inactive copper mine. The Wyoming DEQ Abandoned Mine Lands (AML) Division has been working with EPA to assess a constructed wetland pilot project for reducing a portion of the heavy metals draining from the mine. The evaluation of the effectiveness of the project will be analyzed in 1999. If the results are favorable, a larger wetland will be constructed to treat the total flow. A draft TMDL has been submitted by AML to EPA for review. A final TMDL is pending, and is awaiting further water quality data and EPA approval.

10. Hams Fork (Green River): The Hams Fork is located in Lincoln County. It is tributary to the Blacks Fork River which is tributary to the Green River. The water body number is 14040107-020-3 and carries a class 2 designation. The pollutant of concern is pH. The source of monitoring is the USGS gage 9224050 2.8 miles South of Kemmerer. Monitoring will need to be conducted to determine if the impairment is from natural geologic sources or some other source. The impaired reach was monitored in 1998. More monitoring may be necessary to isolate the source of pollutant. The Lincoln County Conservation District (LCCD) has shown interest in developing a watershed plan for the river. They will receive assistance in the form of facilitation from the WACDs state watershed consultant in initiating a watershed planning group. The LCCD has received a grant under the 205(j) program to conduct water quality assessments. A TMDL, or a watershed plan with appropriate water quality improvement actions and with leadership from the Lincoln County Conservation District, will be written within the next five years.
11. Hunter Creek: Hunter creek is tributary to Clear Creek which is tributary to the Powder River and is located in Johnson County. The water body carries a class 2 designation. The pollutant of concern is sediment. A US Forest Service road which provides access to a wilderness trail head and a special use access to a private inholding within the Bighorn National Forest is located adjacent to the Creek. The problem area is along the lower ½ mile of road above the confluence of Hunter Creek with Clear Creek. Because of the topography it was necessary to build the road next to the stream and consequently any runoff from the road or its drainage ditches discharges sediment directly into the stream. Most of this occurs during the spring runoff as a result of plowing the road for winter access to the private land. DEQ monitored the water body in the summer of 1998. Macroinvertebrate data has been analyzed . BMPs implemented by the USFS may have been effective in reducing the sediment load. A TMDL , with appropriate water quality improvement actions, will be completed in Winter1999/2000. Restoration alternatives will be proposed. The plan, with involvement from local stakeholders, will be written by the state. The TMDL with appropriate plan may allow for delisting.
12. North Platte River (Kendrick Creek): The segment of the North Platte of concern is located near Casper. The water body number is 1080007-013-5 and carries a class 2 designation. The pollutant of concern is selenium as reported at the USGS gage 6645000 located 5.8 miles east of city hall in Casper. The soil and geology in the area are high in selenium and expanded irrigation from past water projects has released selenium in amounts that have caused an impairment to this river segment. The Bureau of Reclamation, in cooperation with conservation groups and land owners, is preparing an Environmental Assessment (EA) document pursuant NEPA to assess the impacts and alternative remedial actions necessary to correct the impairment. The draft EA should be

out for public review by Spring 2000 . A TMDL, or watershed plan with appropriate water quality improvement actions, will be written within the next five years depending upon the results of the EA.

13. Powder River: The impaired segment of the Powder River is located in Johnson County. The water body number is 10090202-020-4 and carries a class 2ww designation. The pollutant of concern is Chloride as reported by the USGS at gage 6313500 located 0.6 miles west of Sussex. The geology of the contributing watershed is such that the chloride may be from natural sources or from oil field discharge. Monitoring was conducted in 1998 by DEQ. More monitoring will be necessary to isolate the source of contamination. The Powder River Conservation District has expressed some hesitancy to become involved in a TMDL or watershed plan effort because of a lack of information. The district is currently completing an historical review in cooperation with local landowners and industry representatives. DEQ may have to develop the watershed management plan with as much local involvement as possible. Plan development is currently scheduled to begin in Fall 2000.
  
14. Wheatland Creek: Wheatland Creek is tributary to the Laramie River and is located in Platte County. The water body Number is 10180011-3111-1 and carries a class 3 designation. The pollutant of concern is Ammonium (NH<sub>3</sub>). The Wheatland waste water settling ponds discharge into a gully which discharges into Wheatland Creek. The Wheatland municipality has been in chronic violation of its NPDES permit because of its failure to meet NH<sub>3</sub> standards. The Municipality has agreed to develop a pilot project involving a wetland and zeolite polisher intended to reduce the discharges of BOD and NH<sub>3</sub> to permit levels. DEQ monitored the water body in the summer of 1998 and will need to do additional sampling to determine the extent of impairment attributed to the wastewater treatment plant discharges. The development of the wetland and zeolite scrubber will be completed in three years and monitoring will determine effectiveness of the pilot project. If successful, the municipality will construct a larger wetland and scrubber combination. The wetland will remove BOD load and the zeolite will remove NH<sub>3</sub>. A TMDL, or a watershed plan with appropriate water quality improvement actions, will need to be written at the local level and restoration alternatives discussed. The plan, with involvement from local stakeholders, Platte County Conservation District, the City of Wheatland, and Platte County, will need to be approved by the state.