

January 19, 2000

Senator William Crismore  
Chairman, Environmental Quality Council  
P.O. Box 201704  
Helena, Montana 59620-1704

Dear Senator Crismore:

The Department of Natural Resources and Conservation (DNRC) has received your letter of December 28, 1999, requesting information on the type of data that is currently available and used in identifying environmental conditions and trends over time. DNRC presently reports biennially to the Environmental Quality Council on the Status of Compliance With, and Enforcement of, Montana's Natural Resource and Environmental Laws. Three of the department's seven divisions have programs that report under HB 132. They are: Water Resources Division, Water Operations Program, Water Measurement Program, Water Rights Program, and Board of Water Well Contractors; Oil and Gas Division, Oil and Gas Conservation Program; and the Forestry Division, Service Forestry Program. I have attached a copy of our most recent Compliance and Enforcement Report to provide additional background information on these programs.

To provide you with some information prior to your January 21, 2000, meeting date I have asked these same divisions to provide initial responses to the four questions raised in your December 28<sup>th</sup> letter. After the committee reviews these responses, we will be happy to work with it to clarify or provide additional information as may be requested.

#### **WATER RESOURCES DIVISION**

##### **State Water Projects Bureau (Jim Domino, 444-6622)**

The following are the State Water Projects Bureau responses:

##### **Questions 1 and 2.**

Environmental Data currently collected by the State Water Projects Bureau (SWPB) encompasses five main areas, listed below. Note that the data collected by the SWPB as it relates to the condition of dams and canals is related to the existing and potential future environmental conditions of the associated water bodies. The condition of the dam and/or canal structure can influence the associated riparian and aquatic environment upstream and downstream from the structures.

1. Annual Inspections: This involves the information collected through the annual inspections of each of the 21 DNRC and 10 DFWP projects the Bureau currently oversees. Each project is inspected for potential structural deficiencies and/or other potential problems that could make the dam unsafe. Inspection reports are developed, written, reviewed for accuracy and filed. Needed

rehabilitation efforts are based on the inspection report findings, or on immediate observations and conditions if warranted. The Bureau is also responsible for the oversight of 10 major irrigation canals. Beginning in 2000 the canals will also be inspected on a regularly scheduled annual basis.

Indicators: Indicators for this area include any observed and documented unsafe condition, such as cracks, structural movement, pitting and corrosion in the outlets works, spillway deterioration, sink holes or depressions, earth movement (e.g. slides, slumps), erosion, and water seepage.

2. Seepage Monitoring: Seepage monitoring programs are required at all of the regulated high hazard dams in Montana as a condition of the operating permits for the dams. The Bureau has twenty-one projects of which nineteen are classified as high hazard. A project is classified as high hazard if failure of the dam would endanger lives and property downstream.

Over the past two years, thirteen groundwater-monitoring wells were completed in the embankment and toe area at Nilan East Dam. Sixteen additional monitoring wells and six vibrating wire piezometers were installed at the Tongue River Dam. The Bureau was also awarded a \$100,000 grant from the Renewable Resource Grant and Loan Program for the installation of seepage monitoring drill holes and piezometers at Ackley Lake, Cottonwood Dam, Deadman's Basin Dam and Dike, Nilan North Dam, and Ruby Dam. These five projects were chosen due to existing seepage concerns and potential downstream hazards. These monitoring wells were installed in November and December 1999.

Following completion of this work, the Bureau will have active monitoring programs at fourteen of the nineteen high hazard projects. The monitoring wells and piezometers are measured bi-monthly during the irrigation season and monthly during the remainder of the year by Department staff or the dam operators. Seepage at the remaining five high-hazard dams (Painted Rocks, Glacier Lake, Yellowstone, Willow Creek, and Cataract) are monitored yearly through the annual inspections conducted at the dams.

Indicators: Indicators for seepage monitoring involve the observance of changes in the subsurface water levels. These changes could indicate a potential problem with the structural stability of the dam.

3. Water Measurement and Water Rights: The State Water Projects Bureau is responsible for all activities required to protect, defend, and maintain water rights for all state-owned water projects. Over the past several years, the Bureau has collected and recorded bimonthly reservoir storage data for 17 state-owned reservoir projects. The Bureau also operated and maintained 30 permanent stream and canal gauging stations associated with State projects. Additionally, the Bureau also installed staff gages and initiated monitoring of the five tributaries immediately above Painted Rocks Reservoir. These gages will be used to provide inflow data for use in implementing the recently developed Operating Plan for Painted Rocks Reservoir. This data collection included tabulating and recording annual discharge summaries for all stations for 1998 and 1999.

The State Water Projects Bureau previously requested the Montana Water Court to clarify its project water rights by consolidating its claims, which were originally filed for five uses (storage, irrigation, stock, domestic, and municipal), into claims for "Sale of Water" for those same purposes. The proposed clarification of purpose would allow the place of use for the water to be described in more general terms, i.e., as a general service area described by township, range, and county only. The proposed consolidation and clarification of DNRC's claims would not change the historical purpose of water use from the state projects, but only more accurately and concisely reflect that historical use.

The Water Projects Bureau continues to work on the settlement of unresolved objections and case work in various basins still in the preliminary stages of litigation and involving its state water projects.

Indicators: Indicators for this area include reservoir storage data, stream and canal flow data, and the amount of contracted water for each project.

4. Hydropower Production: The hydropower program administers the development and operation of hydropower facilities on state-owned water projects. To date, one hydropower facility, the Broadwater Power Project near Toston, has been built. With a maximum capacity of 10 megawatts, the project began generating power in June 1989. DNRC owns and operates the facility and contracts with Montana Power Company (MPC) to sell the energy. Earned revenues are used to pay for rehabilitating state-owned water projects. In an average year, the project generates roughly \$3 million in earned income from energy and capacity sales. Income from energy sales will escalate each year of the contract while income from capacity sales remains constant.

Indicators: Indicators for this area involve the annual revenue generated from energy and capacity sales.

5. Project Transfers: The State of Montana originally became involved, many years ago, in various water conservation projects because there was a need for government to create employment opportunities and stabilize the agricultural economy. Governmental involvement in these projects no longer provides public benefits, and the projects are being transferred to private ownership. The activities listed below were most recently accomplished

- \* Preliminary file reviews, financial status determinations, title searches, and field reviews were performed on Winnett, Big Dry, Little Dry, Valentine, North Winifred and Brady.

- \* Negotiations were initiated regarding the transfer of the Brady Community Water project to the local water district. The Bureau released the Lisk Creek project and the Petrolia Reservoir Project.

Indicators: The indicator for this area of responsibility is the number of projects transferred or in the process of being transferred. The following projects have been successfully transferred:

<u>Project</u>	<u>Transfer Date</u>
Lewistown Ditch	April, 1994
Park Branch Canal	August, 1994
Columbus Canal	November, 1994
Vigilante Canal	January, 1995
West Bench Canal	January, 1995
Delphia Melstone	March, 1995
Livingston Ditch	March, 1995
South Side Canal	March, 1995
Florence Canal	June, 1995
Paradise Canal	June, 1995
Sidney Canal	June, 1995
Hysham Canal	November, 1995
Camp Creek Reservoir	January, 1996
Fadness Canal	February, 1996
Theboe Lake	January, 1998
Checkerboard Canal	June, 1998
Lisk Creek Reservoir	August, 1998
Petrolia Reservoir	February, 1999
Brady Water Supply	August, 1999

Other related non-DNRC programs that involve the collection of environmental data and the use of indicators affecting the State Water Projects Bureau include the Department of Environmental Quality (DEQ) Total Maximum Daily Load Program (TMDL) and the required compliance with the Montana Environmental Protection Act (MEPA), as administered by the Environmental Quality Council (EQC). Data for the TMDL program is collected by DEQ and will be used to help protect and improve water quality. The MEPA is followed by the development of Environmental Impact Statements and Environmental Assessments for all relevant projects and actions.

### **Question 3.**

3. The most relevant summary of information would be from the annual inspection reports and the rehabilitation work completed on state-owned projects. This information is presented each year in the DNRC Fiscal Year Report.

### **Question 4.**

4. The creation of a comprehensive database of reservoir and dam related information (e.g. up to date storage data, geographic information, structural data, previous inspection reports, water use, etc.) as part of the Natural Resources Information System would greatly enhance the management, operation and maintenance of the state-owned water projects. This database would make this information easily accessible to both government agencies and the public.

**Water Operations Bureau (Laurence Siroky, 444-6816)**

### **Question 1**

1. Environmental data and value:

Floodplain Program: The dollars of flood damage and lives lost due to floods of 1 in 100 year frequency or less is information that is currently available. An increasing cost over time is an indicator of the encroachment of buildings and activities within the 100 year floodplain.

Chronically dewatered watercourses: An increasing number of requests to identify chronically dewatered watercourses is an indicator of increased use or increased conflicts, or discovery of a particular attribute of the stream that is affected by dewatering. An increase of the number of chronically dewatered streams identified may be due to a variety or combination of factors including drought, more use, more valuable crops, discover of a animal or plant species of particular concern in or adjacent to the stream. Rather than have a stream identified as chronically dewatered by the state, several watershed groups have been formed. They feel that they can approach dewatering problems in a more comprehensive manner. There is at least one other list of dewatered streams strictly from the standpoint of fish habitat that was prepared by Fish, Wildlife and Parks.

### **Question 2**

2. Environmental data developed and usefulness:

Floodplain: Cities, counties, insurance agency people track damage and property losses during a flood. An increasing trend, demonstrates the need for more floodplain delineations. Wetter weather trends or the rate at which snow pack melts could cause increasing flood damages.

Dewatered: The number of mile of stream identified formally as chronically dewatered can be tabulated. It is not necessarily a list of all dewatered streams physically but a list that has met the legal determination and administrative rule making.

### **Question 3**

3. Include in compliance report:

Yes, for both.

### **Question 4**

4. Recommendations and suggestions:

Need more time to analyse what would be an appropriate environmental trend in this program.

## **Water Rights Bureau (Nancy Andersen, 444-6631)**

### **Question 1**

1. Environmental data and how valuable the data is in describing conditions and identifying trends.

Data Collected:

Acres under irrigation involving water rights  
Types of uses of Montana's water  
Closure areas  
Authorizations to Change  
Ownership Updates of Water Rights  
Notice of Completion of Groundwater Development <35gpm not to exceed  
10AF/yr

Value:

-Acres under irrigation involving water rights – historical acreage figures verses present day acreage figures can aide in identifying trends in land use/environmental conditions.

-Types of uses of Montana's water – comparison of historical uses verses number and type of current uses can show trends in land use and environmental conditions by showing increases or decreases in different uses.

-Closure areas – number and types of closures, as well as the circumstances around the initiation of the closures provide valuable information about the environmental and land use trends and sociable/political climate pertaining to the environment and land use.

-Authorizations to Change – The number and types of changes received by the department signify the trends in the land use and can be used to describe trends over time as they associate to water rights.

-Ownership Updates of Water Rights – Ownership Updates received by the department can provide information regarding whether land related to a water right is subdivided or left whole which in turn can show trends in land use and environmental conditions.

-Notice of Completion of Groundwater Development <35gpm not to exceed 10AF/yr (602) – Trends in 602's received can assist in identifying trends in land use, environmental conditions, urban sprawl, and groundwater development.

Water right data is indicative of environmental trends in Montana but are limited to those trends and conditions associated to water rights.

### **Question 2**

2. We have not developed environmental indicators, as such. However, at the end of each fiscal year, we generate statistics that display the year's water right activity from the perspective of "how many applications did we get and how many did we process."

### **Question 3**

3. Since the water right program is not one that lends itself to reporting "compliance" it, the biennial compliance report from our program is extremely vague. We could provide some graphics and narrative on the environmental trends that our statistics indicate. It is important to remember that these trends are not totally representative of what is happening in the state but rather the trends indicate trends that might be identifiable for water right related land use.

#### **Question 4**

4. From a water rights perspective, my recommendation is to extend our compliance report to indicate any identified trends we may see from the previous fiscal year's activity.

#### **OIL AND GAS CONSERVATION DIVISION (Tom Richmond 656-0040)**

##### **Question 1**

1. The only "environmental data" we gather is as a result of regulatory program requirements: permit issuance, field inspection results, compliance action taken, etc. We do not collect environmental data per se.

##### **Question 2**

2. We have not developed any "environmental indicators" at this time. We track statistics about our activities and compliance actions, but those data may not be useful in tracking environmental trends. Perhaps an unusual increase in compliance actions might suggest a trend, but we may have "paperwork" violations, e.g.: failure to file timely production reports, which have nothing to do with environmental compliance. One could speculate that an increase in orphan wells maybe an indicator of a bad trend, but the trend would be more economic than environmental.

##### **Question 3**

3. Unless the concept of environmental indicators is well defined and the report format structured to obtain the results EQC is looking for (a little unsure at this point), such descriptions are likely to be very subjective. Repeatability of the conclusions drawn from the same data is not likely from agency to agency, and even from program to program within an agency; such reports are too dependent on the personalities making them. For instance, some may see 10,000 acres of new subdivisions as an environmental catastrophe while others may see the same statistic as an indicator of economic progress

##### **Question 4**

4. Program specific regulatory agencies should not do documentation of conditions and trends, as this presumes a (possibly subjective) review of the data by the same people collecting it. EQC should develop objective indicators and request only data, not conclusions from the agencies gathering such information. Compliance and enforcement data are probably not really environmental indicators, as there may not be a relationship between an action and the environment. Once EQC determines the indicators to be tracked, agencies would be better equipped to determine the costs and difficulties (if any) of obtaining data if it is not already being captured.

#### **FORESTRY DIVISION (Chris Tootell 542-4303)**

##### **Service Forestry Program**

### **Question 1**

1. The best data being collected by Forestry Division is the BMP audits. It does not describe conditions or environmental trends. It does describe the trends of BMP application and effectiveness. So what is really described is management practice quality, not environmental indicators. The most recent version of the results is the "1998 Forestry BMP Audit Report."

The HRA program, though regulatory in nature, has a monitoring character to it. The condition of activity generated fuels is monitored for compliance with the state slash standard. There is, however, no data measurement of the slash.

The SMZ program has no data collection or research aspects to it.

The Forest Pest Management Program publishes the annual, "Montana Forest Insect and Disease Conditions and Program Highlights." The data collection for this is extensive aerial surveys with some ground truthing. It is a good, though extensive, indication of forest insect and disease trends.

### **Question 2**

2. The focus of Forestry Division monitoring listed above is mostly to determine some kind of management activity compliance, not measure environmental quality indicators. Therefore there is not empirical indicators per se. We believe that the proper management implementation protects resources and therefore resource indicators, but we haven't defined and measured specific indicators. The exception to this might be the I&D Conditions report. There is a good, general history of the ebb and flow of various forest pests because of this annual, aerial monitoring.

I believe the trend is to move away from monitoring discrete environmental indicators in favor of more holistic, extensive surveys of environmental condition. The problems with monitoring individual indicators are huge volumes of data necessary to draw conclusions and that individual indicators don't necessarily speak to broad environmental quality or conditions.

### **Question 3**

3. In Forestry Division we could provide a narrative of the I&D conditions and trends, and the BMP applications and effectiveness trends, in the biennial compliance and enforcement report.

### **Question 4**

4. Documenting the physical conditions and trends of Montana resource would be a huge "lumped" program. Our departments, divisions, and bureaus are typically "split" into narrow resource areas (water, trees, range, fish, etc.). There may be individual monitoring efforts in some state programs that could supply data for some environmental resources. Someone would have to take on the substantial task of seeing what specific efforts exist and where the information voids are.

I hope this provides a basis for your committee's deliberations. If I can be of further assistance, please let me know.

Sincerely yours,

ARTHUR R. CLINCH  
Director