MINUTES OF THE MEETING
LONG RANGE PLANNING SUBCOMMITTEE
50TH LEGISLATIVE SESSION

The meeting of the Long Range Planning Subcommittee was called to order by Chairman Rep. Robert Thoft on February 10, 1987 at 8:00 a.m., in Room 202B of the State Capitol.

ROLL CALL: All members of the Long Range Planning Subcommittee were present except Rep. Gene Donaldson who was excused.

Tape 66:A:000

RIT PROJECTS

Grant #2 Anaconda-Deerlodge County: (038)

Bob Androzi said he would like the program to continue for two more years.

Grant #7 Department of Health
and Environmental Sciences: (137)

Sara Weinstock said the plan for the project has been revised to only include state monies. Ms. Weinstock said the gold and copper mine used cyanide in their mining process and there is cyanide and arsenic contaminating the area.

Grant #8 Toole County: (186)

Ken Valentine, Toole County Commissioners Office, said their original request was for $300,000 but was only recommended for funding at $150,000 in RIT funds.

Mr. Valentine said 4,300 acres are left damaged by oil and gas sludge.

Rep. Bardanouve asked if there are any capped wells on this site. Mr. Valentine said the present drillers are plugging wells but the drillers in the past were not required to do so, and the cost of plugging a well costs $50,000. (355)

George Ochenski, Montana Environmental Information Center, said during the 1985 Legislative Session there was a law passed that stated that Montana can take action against parties responsible for environmental damage done. (443)

(66:B:000)

Grant #3 Department of Health and Environmental Sciences:

Steve Pilcher, Department of Health said the Clark Fork River has been ignored because of the wide range of problems it has.

Mr. Ochenski said there had been a study done on the Clark Fork River and it stated that the State of Montana is losing $15 million in revenues because of the poor condition of the river.

Grant #10 Department of Health and Environmental Sciences: (080)

Ms. Weinstock said the monies being asked for would be used to clean up five abandoned oil refineries.

Ms. Weinstock stated that many animals have been killed in the sludge pits at the abandoned refineries.

Mr. Ochenski and Mr. Valentine said they are in favor of this project.

Ms. Weinstock said there are no responsible parties. She said one of the reasons might be that the refineries closed before 1960. Ms. Weinstock stated there are over 100 abandoned refineries in the state. (127)

Grant #12 Sheridan County Conservation District: (197)

Ellis Hagen, submitted a fact sheet to the Subcommittee (Exhibit #2).

Mr. Hagen said the North East Land and Mineral Association was formed to deal with salt water contamination.

Mr. Hagen said Sheridan County Conservation District is currently seeking a water reservation.

Mr. Hagen said without receiving the full amount of funding requested it will be difficult to do the project.

Marvin Miller, Bureau of Mines and Geology, said the aquifer's depth ranges from 400-100 feet. (349)

Grant #15 Montana State Library: (431)

Sara Parker, Montana State Library, submitted two worksheets (Exhibit #3,#4).

Ms. Parker said the project serves as a pilot project in Yellowstone County. (67:A:000)

Robert Rasmussen, Mr. Ochenski, Howard Johnson, and Larry Weinberg all said they are in favor of this project.

Dana Field, Audobon Legislative Fund, submitted here written testimony (Exhibit #5).

ADJOURNMENT: There being no further business the Long Range Planning Subcommittee adjourned at 9:35 a.m.

Bob Thoft
Chairman Rep. Bob Thoft

law

DAILY ROLL CALL

LONG RANGE PLANNING SUBCOMMITTEE

DATE February 10 , 1987

NAME	PRESENT	ABSENT	EXCUSED
Rep., Thoft, Chairman	✓		
Sen., Van Valkenburg, Vice-Chairman	✓		
Rep., Bardanouve	✓		
Rep., Donaldson			✓
Sen., Aklestad	✓		
Sen., McLane	✓		
Sen., Walker	✓		

Form CS-30A
Rev. 1985

EXHIBIT 1
DATE 2/6/87
HB

Office of the Legislative Fiscal Analyst
February 5, 1987

Table 1
Resource Indemnity Trust Interest
1987 and 1989 Bienniums

	1987 Biennium	1989 Biennium
Beginning Balance	$ 2,001,373	$ 133,109
Revenue	13,478,388	13,684,665
Total Funds Available	$15,479,761	$13,817,774
Expenditures		
30% Water Development	$ 4,043,516	$ 4,105,400
6% Hazardous Waste	808,703	821,080
Agency Operations*	5,832,752	4,273,995
House Bill 952	232,892	-0-
RIT Grant Program	4,428,789	-0-
Total Appropriations	$15,346,652	$ 9,200,475
Ending Fund Balance	$ 133,109	$ 4,617,299

*Natural Resources subcommittee has approved $3,679,247 for agency operations in the 1989 biennium and has another $594,748 under consideration as of 2-3-87.

MQ1A:bn:rit2-5.

DATE 2/16/87

HB

WASTE DISPOSAL IMPACT ASSESSMENT
SHERIDAN COUNTY

Oilfield reserve pits have been historically used in Sheridan County since thee 1950's for disposal of drilling wastes, including cuttings, spent drilling fluids and additives. These disposal sites are located in close proximity to wellsites or drillsites without regard to security from subsurface aquifers or nearby domestic and stock wells of local residents. Reserve evaporation pits used to be lined with clay or bentonite but since 1970 a plastic pit lining has been used. Recent studies have shown that reclamation practices at these pits often deviate from this design, creating salinity-related surface reclamation problems and possibly contamination of groundwater supplies due to leaching of pit materials.

Many reserve pit liners fail during the drilling operation. When the well is completed and the pit is abandoned, the prudent practice of liquid removal and injection to deep formations is often replaced by trenching or "spider-legging" the abandoned pit and pushing wastes out of the lined pit. The degree of contamination depends on the type of soil, the soils permeability, and depth and proximity to the water table of underlying aquifers. Disposal sites close to glacial channel aquifers, the Wes ty Dagmar aquifer, pose a serious threat to water quality. About 40% of the area around this aquifer has active oil development on the surface. There are an estimated 800 known abandoned reserve pits in the county.

In addition to this visible source of contamination potential, there are also less visible sources like leaky saltwater pipelines, saltwater injection disposal wells, and sites of uncontrolled salt water disposal from the past. There has already been reports of groundwater contamination from disposal sites. I have a neighbor that lost their domestic well due to leaching from a saltwater pit. They haven't been able to find another suitable well for drinking and house use. Sheridan Conservation district has completed a hydrology study and is in the process of completing a water reservation on the Westby-Dagmar channel which has good potential for agriculture and domestic use, therefore the conservation district would like to see this study undertaken to protect a documented benefitial water aquifer. It would seem to us conservationists that waste disposal study is very viable and urgently needed in Sheridan County.

The enclosed sheets are our budget, expected time of completion, well site locations, and other pertinent information that the Sheridan Conservation District and the Sheridan County Planner want you as legislators to review and consider for the Sheridan Waste Disposal Site Study funding.

TABLE 2. PROPOSED BUDGET

I. PROFESSIONAL SERVICES COSTS	RIT grant Request	Local Match/ In-kind
A. Personnel		
Project Geologist (24 months)	$ 60,000	
Graduate Assistant (2 year stipend)	6,000	
Hydrogeologist (MBMG) (10 months)	27,500	$ 4,000
Surveying Technician (SCS)(1 month)		2,000
Student Assistant (SCCD) (3 months)	1,730	
Project Administrator (Sher.Co.)(6 mos)	11,500	3,500
Administrative Assistant (SCCD) (6 mos)	5,400	2,700
Subtotal Personnel Services	$112,130	$12,200
B. Associated Administrative Costs		
Office Supplies	$ 600	
Telephone	2,000	
Postage	600	
Travel (15,000 miles, 30 days)(Sher.Co.)	3,000	2,000
Copying (5000 @ $0.10/copy)	500	
Office rent (SCCD)		3,000
Indirect Costs (MBMG)	8,250	1,200
Subtotal Associated Costs	$ 14,950	$ 6,200
C. Other Costs - Research		
Drillng Costs (50 days @ $650/day)	$ 32,500	
Test Well Materials	7,250	
Water Quality Analyses (64 @ $75, 40 @ 130)	10,000	
Water Testing Equipment (expendable)	500	
Water Testing Equipment (non-expendable)	1,500	
Geophysical Equipment (rental)	6,600	
Report and Mapping Reproduction Costs	5,000	
Travel and Per diem	20,000	2,000
Survey Instrument Rental (SCS)		1,200
Subtotal Research Costs	$ 83,350	$ 3,200
TOTAL PROFESSIONAL SERVICES	$210,430	$21,600
V. 5 PER CENT CONTINGENCY	$ 10,500	
VI. PROJECT COST	$220,930	$21,600
TOTAL PROJECT COSTS		$242,530

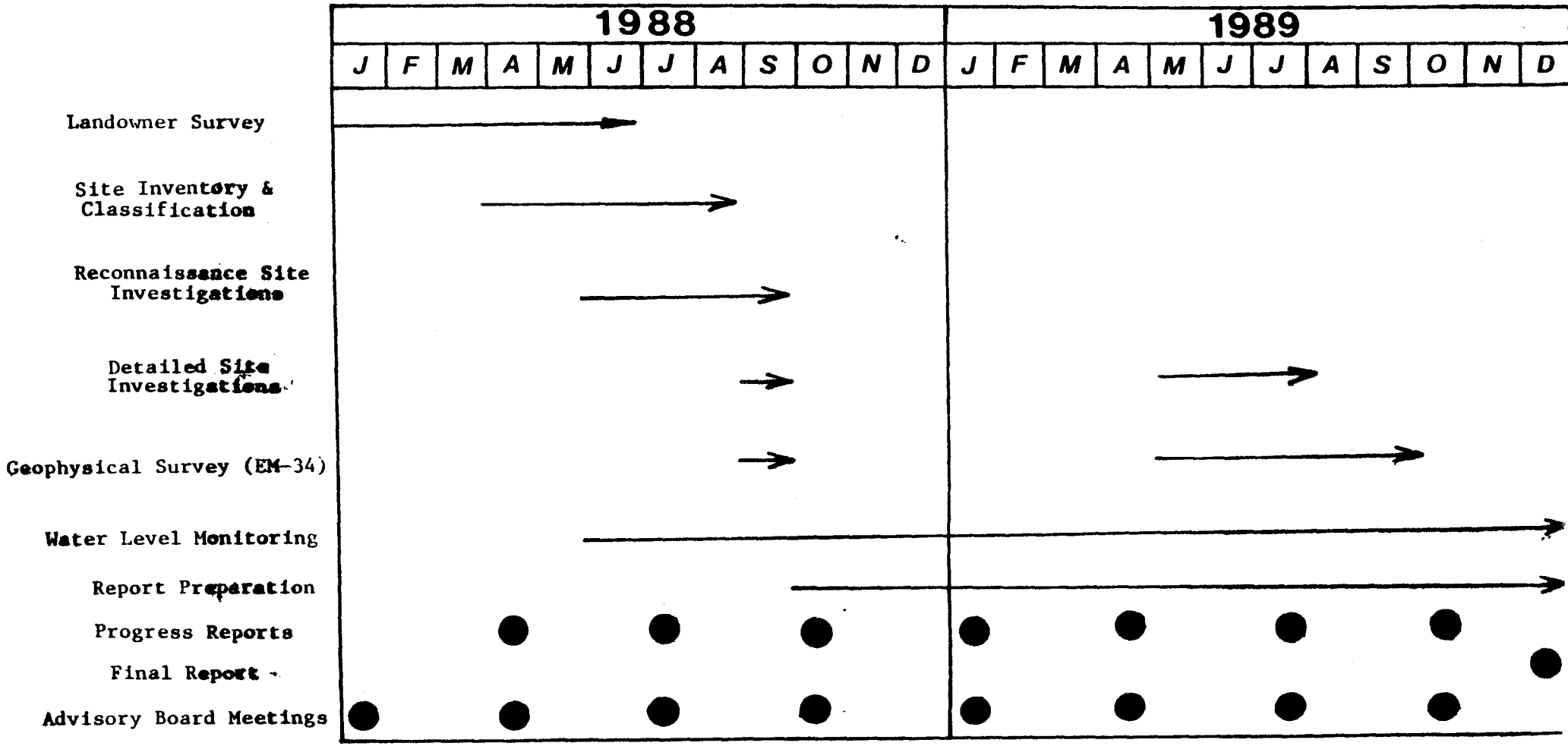


TABLE 1. PROPOSED PROJECT SCHEDULE
(assumes funding availability
on January 1, 1988)

GROUNDWATER PROBLEMS

MT EQC 1985
Ann. Rpt 9th Edtn
Montana's Water

Reserve Pit Problems

Reserve pits used in oil and gas drilling are potential sources of groundwater contamination. These reserve pits are dug adjacent to oil or gas drilling rigs to hold wastes associated with rig operations. Highly saline in content, these pit wastes are often buried at the drill site after drilling is completed. Board of Oil and Gas Conservation regulations prohibit the storage of wastes in unlined earthen pits except when natural soil conditions preclude seepage. Some observers claim, however, that these requirements are inadequate.

Monitoring groundwater conditions near reserve pits is not mandatory; consequently the extent of groundwater pollution associated with the operation and reclamation of these pits is unknown. There are documented instances of groundwater contamination associated with reserve pits.

The Groundwater Advisory Council recommended that the state take steps to prevent groundwater contamination from reserve pits. It further recommended that the Board of Oil and Gas Conservation, which is charged with regulating oil and gas development in Montana, should assess the extent to which present reserve pit reclamation procedures threaten groundwater quality. In its assessment, the board's staff found that significant degradation of water quality over a widespread area is unlikely to occur.

MACO Policy Statements Jan 86-87

III. ENVIRONMENT/LAND USE/NATURAL RESOURCES

BASIC PHILOSOPHY

The Montana Association of Counties believes that the protection of the environment and the wise development and utilization of our natural resources are essential concerns of all citizens and all levels of government.

The role of elected county officials is to determine what programs and services should be implemented, in conjunction with state and federal guidelines, to ensure a safe environment and energy resources for future generations.

CRUDE OIL AND NATURAL GAS DEVELOPMENT

County government should be adequately compensated for the nonrenewable resources, crude oil and natural gas obtained within their jurisdictions.

MINERAL RESOURCE

MACo believes that the mining of copper, silver and other minerals in Montana should be encouraged through proper consideration of both economic and environmental aspects of development. New methods of taxation and an adequate return of mining revenues to counties must be developed.

ENVIRONMENTAL HEALTH, AIR AND WATER POLLUTION

The protection of the quality of our natural resources requires active involvement by county government officials and coordination of environmental planning by all levels of government. Environmental health programs should be administered where practical at the local level by county governments in the areas of water quality, air quality, shelter quality and solid waste. Environmental health services should be provided by counties through training local public health sanitarians. State and federal governments should provide funding for mandated programs.

The growing problem of noxious weeds must be addressed. All levels of government must unite to combat the spread of noxious weeds which are rapidly having increased impact on agricultural crop production.

WATER RESOURCES

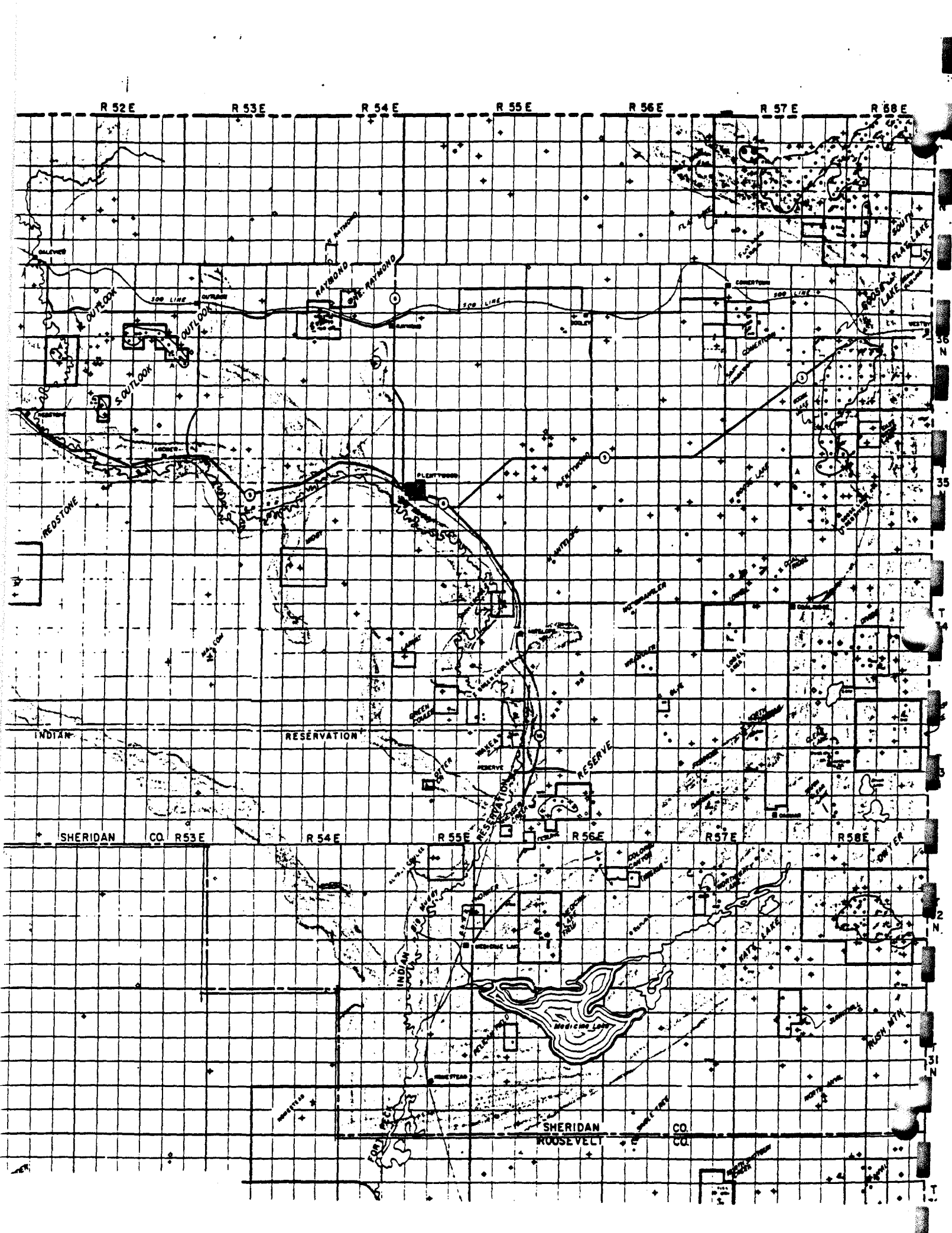
Approximately 90% of Montana's water, that annually falls as precipitation, passes out of the state without being utilized. County governments must take an active role in encouraging retention of needed water resources. The Montana Association of Counties urges:

1) Adequate means of developing and funding multi-purpose projects to retain water supplies.

2) Additional, immediate research on the effect of coal and oil development on underground water supplies.

3) Guarantees from the state and federal governments that sufficient water supplies will be maintained for personal consumption and agriculture in considering coal gasification projects and other energy-related efforts in Montana.

4) Increase the limits on irrigation water allocations dispersed by federally-owned/operated/regulated irrigation projects to 160 acres (320 for married couples). Urge passage of any legislation increasing the allowable


R 52 E
R 53 E
R 54 E
R 55 E
R 56 E
R 57 E
R 58 E
RAYMOND
OUTLOOK
REDSTONE
PLENTYWOOD
INDIAN RESERVATION
SHERIDAN CO.
ROOSEVELT CO.
MEDICINE LAKE
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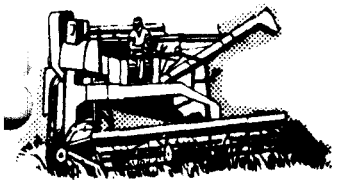


NORTHEAST

MONTANA LAND AND MINERAL OWNERS ASSOCIATION, INC.

PHONE 406-385-2457

WESTBY, MONTANA 59275-9503

February 6, 1987

Long Range Planning Committee

Re: RIT Program

The Northeast Montana Land and Mineral Owners Association was organized January 1975 mainly because of the problems caused by salt-water contamination due to negligent disposal practices by area oil companies.

Mr. Billie Janssen testified to observing such damages on a tour he and other members of the Sheridan County Conservation District attended in the Westby area on December 12, 1974. Several members of the NMLMOAI have also experienced surface contamination due to improper salt-water disposal practices.

Although the salt-water contamination situation has improved over the years, our membership is still very concerned about surface and groundwater contamination. We support the Sheridan County Conservation District's bid for a grant to study and purchase equipment to monitor sites (past and present) for determination of environmental damage resulting from mineral development. This study would certainly be a step forward in correcting and possibly eliminating future contamination problems.

As you review the situation, please consider the $220,000 grant that has been applied for this study.

Thank you.

Respectfully yours,

The Northeast Montana Land & Mineral Owners Association

NMLMOAI/cn

c: All NMLMOAI Directors
Sheridan County Conservation District
Doug Smith, Sheridan County Planner

Roosevelt County Soil Conservation Districts

CULBERTSON, MONTANA
Febuary 5,1987

STUBBLE MULCH TILLAGE

Too: Long Range Planning Committee;

GRASSED WATERWAYS

The Roosevelt County Conservation District wishes to go on record supporting the Sheridan County Conservation District program for Salt Water Desposal Impact Assement.

STOCK WATER DEVELOPMENTS

Salt water from oil wells in the area is being hauled to desposal wells and being pumped into under ground formations for desposel. This presents a real possibilty for spills, pit seepage and pipe leakage that can and will cause soil and ground water contamation. Therefor we urge that you suport this program to head off a serious problem.

◈

STRIP CROPPING

Pete Purvis
Chairman Roosevelt County Conservation Dist
Culbertson, Montana 59218

FEED RESERVES

◈

CONTOUR CULTIVATION

◈

STORAGE OF IRRIGATION WATER

◈

COMPLETE FARM PLANS

CONSERVATION ON WATERSHEDS

◈

FLOOD IRRIGATION

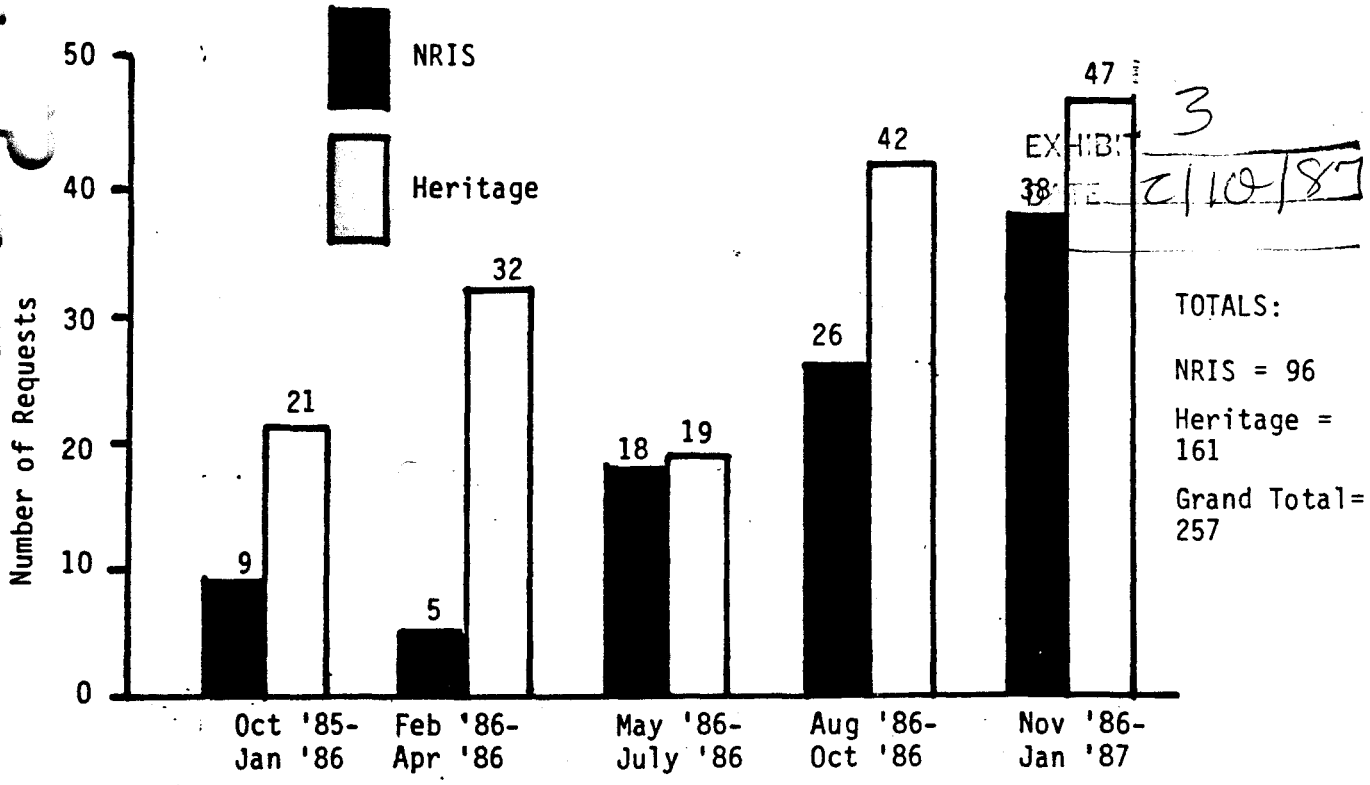
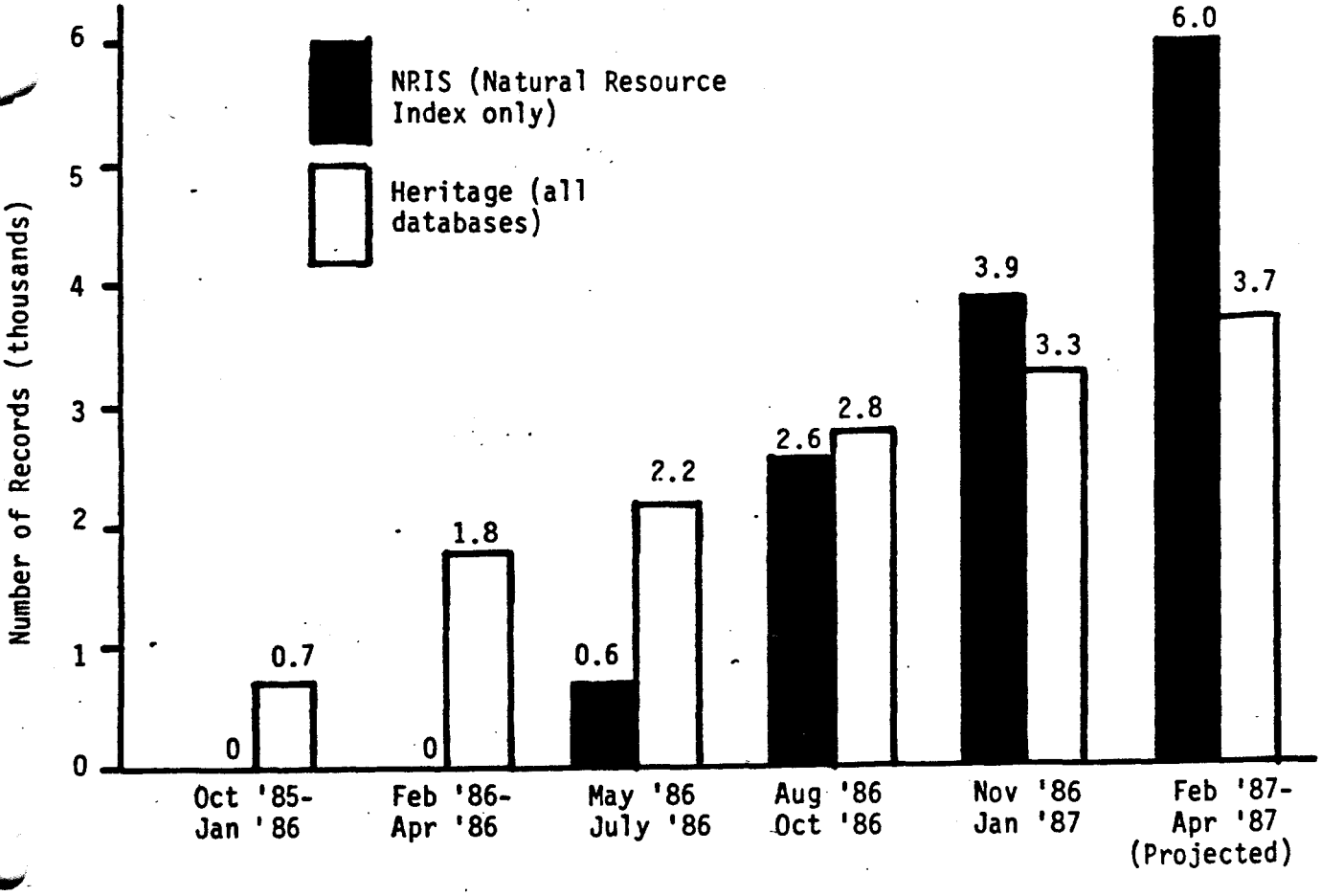


EXHIBIT 3
DATE 2/10/87

Number of requests processed by NRIS and Heritage, Oct.'85-Jan.'87



Growth in number of records in the NRIS and Heritage databases

WESTECH
Western Technology and Engineering Inc.
P. O. BOX 6045
3005 AIRPORT ROAD
HELENA, MT 59604
(406) 442-0950

EXHIBIT 14
DATE 2/10/87
HB

February 5, 1987

Mr. David Genter
Montana Natural Heritage Program
Montana State Library Building
1515 E. Sixth Avenue
Helena, MT 59620

Dear Mr. Genter:

Western Technology and Engineering, Inc. (WESTECH) is a small, privately owned environmental consulting firm located in Helena. Our principal clients are members of the Montana mining industry. We conduct vegetation, soils, wildlife, and other environmental inventories, prepare reclamation plans and contribute to impact analyses prepared for both the Montana and National Environmental Policy Acts.

We have used the resources of the Montana Natural Heritage Program since its inception in autumn, 1985. We have found it to be of considerable value to ourselves and our clients.

I understand that government agencies are the primary beneficiaries of your program, but I think it is important to emphasize its value to private business as well. As government spending is reduced, the responsibility to provide biological resource data and subsequent environmental evaluations will rest more heavily on the private sector. We have seen this trend already, through the evolution of "third party" environmental impact statements. In addition, the Montana mining industry is gradually rebounding from its economic doldrums. As this recovery accelerates, our staff (and those of mining companies) will increase its use of the Natural Heritage Program. Therefore, it is appropriate that Resource Indemnity Trust Funds financially sponsor your program.

MONTANA POWER COMPANY

GENERAL OFFICES: 40 EAST BROADWAY, BUTTE, MONTANA 59701 • TELEPHONE (406) 723-5421

January 23, 1987

Ms. Sara Parker
Montana State Library
1515 E. 6th Avenue
Helena, Montana 59620

RE: Natural Resource Information System

Dear Ms. Parker:

Personnel from The Montana Power Company's Environmental Department have used the Natural Resource Information System. These persons report to me that the program has been of significance in their research of natural resource data regarding five projects undertaken in 1986. Increased use is anticipated by them as they become more familiar with the system and the information it makes readily available. A time savings was realized through the use of bibliographies prepared by the library. These resources precluded a duplicative search of the literature by our own employees. In short, the system works; it promises to be capable of providing the research efficiencies expected when it was funded in the 1985 Session.

Sincerely,

John A. Lahr

John A.Lahr
Director,
Governmental Affairs

As with any new business, a mining company's primary concern is its initial investment, i.e. that money spent to obtain a permit and develop the mine before a financial return is realized. Environmental data collection is a substantial "up-front" cost, and may discourage some companies to develop. Since it is certainly not desirable to weaken environmental standards for development, any program which helps provide the needed information in a cost-effective manner is a welcome addition to responsible development. While the Natural Heritage Program was not conceived as a "build Montana" project, it certainly has the potential to contribute to a better economic climate while helping to maintain the environmental quality cherished by Montanans.

Therefore, I would like to voice my support for your program, both as the owner of a small business and as a professional biologist. Please let me know if I can help generate support for what I consider to be an excellent and justified program.

Sincerely,

Dean Culwell

Dean Culwell

s

Timberlands
P. O. Box 3
Militown, Montana 59851
406 258-5511

Champion
Champion International Corporation

Mr. Dave Genter
Montana Natural Heritage Program
State Library Building
1515 E. 6th Avenue
Helena, MT 59620

February 4, 1987

Dear Dave:

Thank you for making me aware of the hearing for funding the Montana Natural Heritage Program. Since it is unlikely anyone from Champion will be able to attend the hearing, I hope this letter will be of some help.

The heritage program provides a service to large landowners, such as Champion, in an area not associated as a concern for these landowners. This is in the area of endangered and rare species and protection to unique natural areas. Our land managers are all professional foresters with strong backgrounds in the natural sciences. They, perhaps more than many others, do not want to see rare plants, animals and unique areas destroyed. This is also the feeling of Champion. After all, our company is made up of these people.

The database now in place helps us to identify these habitats and areas so we can manage our lands, not only more effectively, but also in a way that helps protect this resource we are often said to destroy. It is a tool helping our managers to identify environmental issues we may not have been aware of. The fact this database is maintained by the state (a neutral party) also helps improve its credibility.

Sharing this type of data and a willingness to serve as a third party in assisting large and small landowners in land trades is a service which is appreciated by Champion. It would be the loss of an important management tool if the service cannot be funded. At a time when the public is more aware of environmental concerns, managers of our resources need this type of service.

Very truly yours,

James R. Runyan /mrw

James R. Runyan
Planning Manager

mrw/RUNYAN

~~Park One Building~~
~~2819 3rd Avenue North~~
Post Office Box 789
Billings, Montana 59103-0789
(406) 252-5208

MONTCO

February 3, 1987

Mr. David Genter, Coordinator
Montana Natural Heritage Program
1515 East 6th Avenue
Helena, Montana 59620

Dear Mr. Genter:

The purpose of the Montana Natural Heritage Program established in 1985 was to provide a comprehensive and readily available system for the acquisition, storage, and retrieval of natural resource information for the entire state. The program has provided a vehicle for obtaining natural resource data which would have otherwise remained obscure and costly to collect.

During the period 1978-1984, Montco, in its mine permitting and EIS process, expended millions of dollars in the collection of environmental data and assessment of critical areas within the 16,000-acre project area. A program such as the Montana Natural Heritage Program would have provided a much more cost-effective and timely method of data accumulation and assessment of the natural resources within our area of concern.

The use of such a program would also have greatly facilitated the permitting process for Montco while at the same time providing the necessary environmental protection. This program is truly a cost-effective and useful program.

Montco looks forward to utilizing the valuable natural resource data the program provides as well as working with your staff in future development activities.

Sincerely,

Douglas A. Day
Lands Manager

DAD/hml

ECOLOGICAL CONSULTING SERVICE

ECON INC.
130 Neill Ave
Helena, Montana 59601
Telephone
406/442-4650

February 7, 1987

Mr. David Genter, Coordinator
Montana Natural Heritage Program
State Library
1515 East 6th Avenue
Helena, Montana 59620

Dear Mr. Genter:

This letter expresses our support for the Montana Natural Heritage Program. This program is valuable for a number of reasons. First, the nature of the data base makes biological information available in condensed, reliable format, which saves everyone time (and money). Second, the data are not readily available from other Montana sources. Third, the readily accessible nature of the Heritage Program is cost effective, especially when the data are needed on a geographical, site-specific basis.

Millions upon millions of dollars have been spent by the private and public sectors in Montana over the last several decades on research studies. Certainly studies have duplicated each other, causing considerable waste, simply because no central data base existed. I anticipate that the Montana Natural Heritage Program will continue to be a very valuable resource to private business firms such as ours, and also to various agencies.

I hope that the data base will continue to be supported by state government. As long as both public and private sectors must comply with the National Environmental Policy Act (NEPA) and the Montana Environmental Policy Act (MEPA), not to mention several dozen other regulatory acts, the Heritage Program will save a great deal of money for everyone involved among the many user groups.

Sincerely,

Robert E. Carroll
President

REC/lh

February 3, 1987

Bamberg Assoicates
26050 E. Jamison Circle
Aurora, CO 80016

Mr. David Genter
Montana Natural Heritage Program
State Library Building
1515 E. Sixth
Helena, Montana 59602

Dear Mr. Genter:

This letter is in support of the Montana Natural Heritage Program, and a recommendation for further funding and continuation of this program. I have used the services of this program in a recent natural resources study and impact analysis for a transmission line in central Montana, and would have used it earlier on other biological studies I conducted in Montana had it been available. I have used information from a similar natural heritage program in Colorado and other states, and find them an excellent and well-organized source. This program has a great intrinsic value in preserving and organizing information in Montana, and, in addition, is a resource for individuals and businesses who need this kind of a source. There is value in maintaining these programs so they can be updated and kept current. During this past year I contributed information to the Montana program on ecological studies I conducted during the early 1960's in remote alpine regions of Montana mountains that generally has not been available through any other source.

The Natural Heritage Program is organized in a useable form that can be utilized in a cost-effective manner by consultants and businesses wanting to work or establish facilities in Montana. The information will facilitate business establishment and supply important basic natural history information in a central source that is readily available.

I strongly urge you to continue this program, and to build and continue the good job you have started.

Sincerely yours

Samuel A. Bamberg

Samuel A Bamberg, PhD
President

cc: Mr. Ted Schwinden
Governor

MONTANE LAND SERVICE
George B. Chaffee
Consultant

Appraisal & Resource
Consultant Services

Box 361, Lump Gulch Route
Clancy, MT 59634

406 933-5565

February 4, 1987

TO WHOM IT MAY CONCERN:

For the past fifteen years I have owned and operated a private resource consulting business providing services in forestry, range management, and baseline studies for environmental impact statements, mining permits and other resource developments. Clients served include: private business and government agencies in Montana and the Pacific Northwest.

In the process of conducting resource inventories and studies, there are state and federal requirements to meet which necessitates referencing to an existing data base pertaining to flora, fauna and biological community types. This data base provides the foundation for correlation of field data with existing information to accurately express the capability and sensitivity of a particular ecosystem unit to various types of land uses and impacts. The most important data base source is the Montana Natural Heritage Program. This organization is very helpful and cooperative in providing valuable information for management planning and the status of rare and endangered species. The Montana Natural Heritage is not an environmental organization that engages in resource confrontation, but an organized source of programmed data and information. They assist the private consultant in providing an unbiased, wide assortment and classified source of information for environmental assessment and to prescribe rehabilitation measures to mitigate impact areas subject to mining, logging, road construction and other land disturbances. From this standpoint we vitally need the Montana Natural Heritage Program as a support group in developing Montana's natural resources in the future. They are an integral part of the task force it takes to perform the overall job in conforming with state and federal environmental laws.

Montana is unique in having some of the last undeveloped and preserved ecotypes in the United States. Heritage personnel are actively engaged in locating rare and endangered species of flora and fauna in Montana's undisturbed areas. These benchmark areas provide valuable guidelines for prescribing management and rehabilitation measures on comparable ecosystems subject to mining and other land development. We in the private sector, who work for the land users, find the Heritage Program an invaluable source upon which to supplement our current inventories and studies for preparing land use plans.

Let's keep the Heritage Program intact for the future benefit of Montana's resources.

Sincerely,

George B. Chaffee

George B. Chaffee
Resource Consultant

GBC:cc

ELCODE: **ABNLC13030**

IDENTIFIERS

NAME: **TYMPANUCHUS PHASIANELLUS**
COMNAME: **SHARP-TAILED GROUSE**
STATE:
GRANK: **G5** FEDSTATUS: SRANK: **S5** STATEPROT: **UB**

TAXONOMY

FAMILY: **PHASIANIDAE**
TAXCOMM: **"T. CUPIDO and T. PHASIANELLUS hybridize sporadically, but occasionally they interbreed extensively on a local level" (B83COM01).**

SUBSPCOMM:

STATUS

FEDMIGRAT: MARINEMAM:
STATCOMM: **An arena or lek bird; males gather on mating grounds and engage in communal courtship displays.**

GAMESPEC: COMMERSPEC: SPORTFISH:
PROTNONG: FURBEARER: PEST:
SSTATCOMM:

MIGRATION

NONMIGR: **Y** LOCALMIGR: DISTMIGR:
MIGRCOMM: **"Northern populations irregularly migratory" (B66GOD01). May travel 200-300 mi during periods of food shortages and high populations (B80TER01).**

STBREED: STWINTER: MIGTRANS: IRREGAPP: WITHINST:
SMIGRCOMM:

FOOD HABITS

CARNIVORE: HERBIVORE: **Y** NECTARVORE:
PISCIVORE: GRANIVORE:
INVERTVORE: FRUGIVORE:
FOODCOMM: **About 10% of the adult bird's diet is insects, 90% is plant food (B32BEN01). During the first few weeks of life, chicks feed mostly on insects, some berries. Adults eat berries, grain, leaves, buds, and flowers of a wide variety of plants**
SFOODCOMM:

REPRODUCTION

COLBREED:
REPROCOMM: **Breeding begins early Apr in s and w, to early May in n of range (B78HAR01). Female usually incubates @ 12, sometimes 5-7, eggs for 23-24 days (B80TER01). Nestlings precocial. Young tended by female; brood disperses in 6-8 weeks.**
SREPROCOMM:

SPECIES ECOLOGY

MAXLENGTH: Ø MAXWEIGHT: Ø

ECOMM: **Populations have fluctuated, especially in s part of range, due to habitat changes.**

SECOLCOMM:

PHENOLOGY/SEASONALITY

HIBAEST: CIRCADIAN: DIURNAL: Y NOCTURNAL: CREPUSCULR:

PHENCOMM: **Males congregate at dancing grounds in the spring. Breeding begins early Apr in s and w, to early May in n of range (B78HARØ1). Sharp-tailed grouse gather in flocks during the fall and winter.**

JANA:	APRA:	JULA:	OCTA:
JANB:	APRB:	JULB:	OCTB:
FEBA:	MAYA:	AUGA:	NOVA:
FEBB:	MAYB:	AUGB:	NOVB:
MARA:	JUNA:	SEPA:	DECA:
MARB:	JUNB:	SEPB:	DECB:

PHENCOMM:

DISTRIBUTION

RANGECOMM: **Locally from c AK, and Yuk east to w-c Que south to e WA, e OR, s ID, c UT, c CO, extreme ne NM (at least formerly), c NE, e SD, e ND, c MN, c WI, n MI; formerly south to s OR, ne CA, ne NV, w KA, s IA, n IL, and probably n TX (B83COMØ1).**

IN-STATE RANGE

BAILEY ECOREGIONS:

112M:	Y	3111L:	Y	3112L:	Y	3112M:	Y	3151A:	Y

CWDC WATERSHEDS:

100100:	W	100402:	Y	100800:	Y	101102:	Y
100200:	Y	100500:	Y	100901:	Y	101202:	Y
100301:	Y	100600:	Y	100902:	Y	170101:	Y
100302:	Y	100700:	Y	101000:	Y	170102:	Y
100401:	Y						

COUNTY-OF-OCCURRENCE:

MTBEAV:	T	MTFLAT:	Y	MTMADI:	Y	MTROOS:	Y
MTBIGH:	Y	MTGALL:	Y	MTMEAG:	Y	MTROSE:	Y
MTBLAI:	Y	MTGARF:	Y	MTMINE:	W	MTSAND:	Y
MTBROA:	Y	MTGLAC:	Y	MTMISS:	Y	MTSHER:	Y
MTCARB:	Y	MTGOLD:	Y	MTMUSS:	Y	MTSILV:	T
MTCART:	Y	MTGRAN:	T	MTPARK:	Y	MTSTIL:	Y
MTCASC:	Y	MTHILL:	Y	MTPETR:	Y	MTSWEE:	Y
MTCHOU:	Y	MTJEFF:	Y	MTPHIL:	Y	MTTETO:	Y
MTCUST:	Y	MTJUDI:	Y	MTPOND:	Y	MTTOOL:	Y
MTDANI:	Y	MTLAKE:	Y	MTPOWD:	Y	MTTREA:	Y
MTDAWS:	Y	MTLEWI:	Y	MTPOWE:	Y	MTVALL:	Y
MTDEER:	T	MTLIBE:	Y	MTPRAI:	Y	MTWHEA:	Y
MTFALL:	Y	MTLINC:	Y	MTRAVA:	T	MTWIBA:	Y
MTFERG:	Y	MTMCCO:	Y	MTRICH:	Y	MTYELL:	Y

SRANGECOMM:

SRANGEREF:

HABITAT

MARINE:
  PELAGIC:
  ABYSSAL:
  NEARSHORE:
ESTUARINE:
  BAYSOUND:
  RIVERMOUTH:
  TIDEPOOL:
  TIDESHORE:
  EHERBWET:
  ESHRUBWET:
  EFORWET:
RIVERINE:
  BIGRIVER:
  MEDRIVER:
  CREEK:
  SPRNGBROOK:
    HIGHGRAD:
    MEDIUMGRAD:
    LOWGRAD:
    RIFFLE:
    POOL:

LACUSTRINE:
  DEEPWATER:
  SHALLWATER:
PALUSTRINE: Y
  TEMPPOOL:
  PHERBWET:
  PSHRUBWET:
  PFORWET:
  BOGFEN:
  RIPARIAN: Y

TERREST:
  FOREST: Y
  WOODLAND:
    HARDWOOD: Y
    CONIFER: Y
    MIXED:
  SHRUBCAP: Y
  SAVANNAH:
  GRASSLAND: Y
  DESERT:
  ALPINE:
  TUNDRA:
  ICE:
  SALTFLAT:
  SAND:
  BAREROCK:
  CLIFF:
  CROPLAND:
  SUBURBAN:
  URBAN:

SUBTERRAN:
  SUBTERREST:
  SUBAQUATIC:
SPECFACTOR:
  SNAGHOLLOW:
  LOGDEBRIS:
  INSOIL:
  BENTHIC:

HABCOMM: **"Grasslands, especially with scattered woodlands, arid sage-brush, brushy hills, oak savanna and edges of riparian woodland" (B83COM01).**

REPHABCOMM: **Usualy nests in grasslands, about 1/2 mi from dancing grounds (B80TER01). The nest is a shallow depression lined with grasses, leaves, and other plant material. Usually nests under cover of a tree, shrub, or stump.**

SHABCOMM:

REFERENCES

NATREF: **B80TER01NA B83COM01NA B78HAR01NA**
STATEREF:
ADDITIONAL SOURCES:

B32BEN01NA Bent, A.C. 1932. Life histories of North American gallinaceous birds. U.S. Natl. Mus. Bull. 162. Washington, D.C.

B66GOD01NA Godfrey, W.E. 1966. The birds of Canada. National Museums of Canada, Ottawa.

RECORD MAINTENANCE

GEDITION: **86-04-15** GUPDATE: **85-12-05**
SEDITION: SUPDATE:

Montana Natural Heritage Program
Element Occurrences: Eureka Dancing Grounds

EOCODE: ABNLC13033.001
NAME: TYMPANUCHUS PHASIANELLUS COLUMBIANUS GRANK: G4TU SRANK: S1 FEDSTATUS:
COMMON NAME: COLUMBIAN SHARP-TAILED GROUSE LAST OBSERVATION: 1986-05-01
MANAGED AREAS: PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
COUNTY: LINCOLN
QUADNAME: EUREKA NORTH QUADCODE: 4811581
TOWNRANGE: 037N027W SECTION: 26 TRSCOMM: NW4 LAT: 485645 LONG: 1150436
DIRECTIONS: 1.8 MI. NORTH OF EUREKA AIRPORT. 0.25 MI. EAST OF ROAD.

HABITAT DESCRIPTION: SITE IS SOUTH OF LARGE DEPRESSION IN PALOUS PRAIRIE SETTING.
BUNCH GRASS OBSCURES DANCING/NESTING BIRDS.

ELEMENT DATA: LAST KNOWN ACTIVE COLUMBIAN SHARP-TAILED GROUSE LEKKING
GROUND.

BEST SOURCE: BOWN, R.R. 1980. THE STATUS OF THE COLUMBIAN SHARP-TAILED
GROUSE IN THE TOBACCO PLAINS, EUREKA MT. SENIOR THESIS, U.M.
COMMENTS: IN GREAT DANGER OF BEING DESTROYED. ESTIMATES OF ONLY 8-12
LEKKING BIRDS REMAINING.

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EOCODE: ABNLC13033.001
NAME: TYMPANUCHUS PHASIANELLUS COLUMBIANUS GRANK: G4TU SRANK: S1 FEDSTATUS:
COMMON NAME: COLUMBIAN SHARP-TAILED GROUSE LAST OBSERVATION: 1986-05-01
MANAGED AREAS: PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
COUNTY: LINCOLN
QUADNAME: EUREKA NORTH QUADCODE: 4811581
TOWNRANGE: 037N027W SECTION: 26 TRSCOMM: NW4 LAT: 485645 LONG: 1150436
DIRECTIONS: 1.8 MI. NORTH OF EUREKA AIRPORT. 0.25 MI. EAST OF ROAD.

HABITAT DESCRIPTION: SITE IS SOUTH OF LARGE DEPRESSION IN PALOUS PRAIRIE SETTING.
BUNCH GRASS OBSCURES DANCING/NESTING BIRDS.

ELEMENT DATA: LAST KNOWN ACTIVE COLUMBIAN SHARP-TAILED GROUSE LEKKING
GROUND.

BEST SOURCE: BOWN, R.R. 1980. THE STATUS OF THE COLUMBIAN SHARP-TAILED
GROUSE IN THE TOBACCO PLAINS, EUREKA MT. SENIOR THESIS, U.M.
COMMENTS: IN GREAT DANGER OF BEING DESTROYED. ESTIMATES OF ONLY 8-12
LEKKING BIRDS REMAINING.

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Montana Natural Heritage Program
Element Occurrences: Eureka Dancing Grounds

EOCODE: ABNLC13033.002
NAME: TYMPANUCHUS PHASIANELLUS COLUMBIANUS GRANK: G4TU SRANK: S1 FEDSTATUS:
COMMON NAME: COLUMBIAN SHARP-TAILED GROUSE LAST OBSERVATION: 1980-
MANAGED AREAS: PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
COUNTY: LINCOLN
QUADNAME: EUREKA NORTH QUADCODE: 4811581
TOWNRANGE: 037N027W SECTION: 23 TRSCOMM: NW4 LAT: 485725 LONG: 1150438
DIRECTIONS: 2.5 MI NORTH OF EUREKA AIRPORT. STOP AT CURVE IN ROAD.
0.3 MI. ENE OF ROAD, 0.25 MI DUE NORTH OF SEASONAL POND.

HABITAT DESCRIPTION:

ELEMENT DATA: ONE OF TWO ACTIVE DANCING GROUNDS IN 1974. MAY NO LONGER BE IN USE.

BEST SOURCE: BOWN, R.R. 1980. THE STATUS OF THE COLUMBIAN SHARP-TAILED GROUSE IN THE TOBACCO PLAINS, EUREKA, MT. SR THESIS, U of M.
COMMENTS: SUBDIVISION DEVELOPMENT IS REPORTEDLY IN PLANNING AT THIS SITE.

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EOCODE: ABNLC13033.002
NAME: TYMPANUCHUS PHASIANELLUS COLUMBIANUS GRANK: G4TU SRANK: S1 FEDSTATUS:
COMMON NAME: COLUMBIAN SHARP-TAILED GROUSE LAST OBSERVATION: 1980-
MANAGED AREAS: PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
COUNTY: LINCOLN
QUADNAME: EUREKA NORTH QUADCODE: 4811581
TOWNRANGE: 037N027W SECTION: 23 TRSCOMM: NW4 LAT: 485725 LONG: 1150438
DIRECTIONS: 2.5 MI NORTH OF EUREKA AIRPORT. STOP AT CURVE IN ROAD.
0.3 MI. ENE OF ROAD, 0.25 MI DUE NORTH OF SEASONAL POND.

HABITAT DESCRIPTION:

ELEMENT DATA: ONE OF TWO ACTIVE DANCING GROUNDS IN 1974. MAY NO LONGER BE IN USE.

BEST SOURCE: BOWN, R.R. 1980. THE STATUS OF THE COLUMBIAN SHARP-TAILED GROUSE IN THE TOBACCO PLAINS, EUREKA, MT. SR THESIS, U of M.
COMMENTS: SUBDIVISION DEVELOPMENT IS REPORTEDLY IN PLANNING AT THIS SITE.

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Montana Natural Heritage Program
Element Occurrences: Eureka Dancing Grounds

EOCODE: ABNLC13033.003
NAME: TYMPANUCHUS PHASIANELLUS COLUMBIANUS GRANK: G4TU SRANK: S1 FEDSTATUS:
COMMON NAME: COLUMBIAN SHARP-TAILED GROUSE LAST OBSERVATION:
MANAGED AREAS: PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
COUNTY: LINCOLN
QUADNAME: EUREKA NORTH QUADCODE: 4811581
TOWNRANGE: 037N027W SECTION: 11 TRSCOMM: W2 LAT: 485912 LONG: 1150444
DIRECTIONS: 4.5 MI. N. OF EUREKA AIRPORT, 0.2 MI. EAST OF ROAD.

HABITAT DESCRIPTION: ROLLING HILLS WITH REMNANT BUNCH GRASS. PHILLIPS CREEK
DRAINS FROM THE NE AND E.

ELEMENT DATA: NO BIRDS ACTIVE ON LEK IN RECENT YEARS.

BEST SOURCE: BOWN, R.R. 1980. STATUS OF THE COLUMBIAN SHARP-TAILED GROUSE
IN THE TOBACCO PLAINS, EUREKA, MT. SR. THESIS, U.M., MSLA.
COMMENTS: CONTINUE TO SURVEY.

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EOCODE: ABNLC13033.003
NAME: TYMPANUCHUS PHASIANELLUS COLUMBIANUS GRANK: G4TU SRANK: S1 FEDSTATUS:
COMMON NAME: COLUMBIAN SHARP-TAILED GROUSE LAST OBSERVATION:
MANAGED AREAS: PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
COUNTY: LINCOLN
QUADNAME: EUREKA NORTH QUADCODE: 4811581
TOWNRANGE: 037N027W SECTION: 11 TRSCOMM: W2 LAT: 485912 LONG: 1150444
DIRECTIONS: 4.5 MI. N. OF EUREKA AIRPORT, 0.2 MI. EAST OF ROAD.

HABITAT DESCRIPTION: ROLLING HILLS WITH REMNANT BUNCH GRASS. PHILLIPS CREEK
DRAINS FROM THE NE AND E.

ELEMENT DATA: NO BIRDS ACTIVE ON LEK IN RECENT YEARS.

BEST SOURCE: BOWN, R.R. 1980. STATUS OF THE COLUMBIAN SHARP-TAILED GROUSE
IN THE TOBACCO PLAINS, EUREKA, MT. SR. THESIS, U.M., MSLA.
COMMENTS: CONTINUE TO SURVEY.

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Montana Natural Heritage Program
Element Occurrences: Eureka Dancing Grounds

EOCODE: ABNLC13033.004
NAME: TYMPANUCHUS PHASIANELLUS COLUMBIANUS GRANK: G4TU SRANK: S1 FEDSTATUS:
COMMON NAME: COLUMBIAN SHARP-TAILED GROUSE LAST OBSERVATION:
MANAGED AREAS: PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
COUNTY: LINCOLN
QUADNAME: EUREKA NORTH QUADCODE: 4811581
TOWNRANGE: 037N027W SECTION: 10 TRSCOMM: SW4,15NW4 LAT: 485841 LONG: 1150608
DIRECTIONS: 4 MI. NORTH OF EUREKA AIRPORT. GO WEST 0.8 MILE. ROAD
ACCESSIBILITY IS QUESTIONABLE.

HABITAT DESCRIPTION:

ELEMENT DATA: NO BIRDS SIGHTED ON LEK ON RECENT YEARS.

BEST SOURCE: USFS. REXFORD RANGER DISTRICT. UNPUBLISHED NOTES, MAPS FROM
FILES.
COMMENTS: CONTINUE TO SURVEY.

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EOCODE: ABNLC13033.004
NAME: TYMPANUCHUS PHASIANELLUS COLUMBIANUS GRANK: G4TU SRANK: S1 FEDSTATUS:
COMMON NAME: COLUMBIAN SHARP-TAILED GROUSE LAST OBSERVATION:
MANAGED AREAS: PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
COUNTY: LINCOLN
QUADNAME: EUREKA NORTH QUADCODE: 4811581
TOWNRANGE: 037N027W SECTION: 10 TRSCOMM: SW4,15NW4 LAT: 485841 LONG: 1150608
DIRECTIONS: 4 MI. NORTH OF EUREKA AIRPORT. GO WEST 0.8 MILE. ROAD
ACCESSIBILITY IS QUESTIONABLE.

HABITAT DESCRIPTION:

ELEMENT DATA: NO BIRDS SIGHTED ON LEK ON RECENT YEARS.

BEST SOURCE: USFS. REXFORD RANGER DISTRICT. UNPUBLISHED NOTES, MAPS FROM
FILES.
COMMENTS: CONTINUE TO SURVEY.

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Montana Natural Heritage Program
Element Occurrences: Eureka Dancing Grounds

EOCODE: ABNLC13033.005
NAME: TYMPANUCHUS PHASIANELLUS COLUMBIANUS GRANK: G4TU SRANK: S1 FEDSTATUS:
COMMON NAME: COLUMBIAN SHARP-TAILED GROUSE LAST OBSERVATION:
MANAGED AREAS: PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
COUNTY: LINCOLN
QUADNAME: EUREKA NORTH, REXFORD QUADCODE: 4811581 4811582
TOWNRANGE: 036N027W SECTION: 08 TRSCOMM: NW4,5SW4 LAT: 485418 LONG: 1150730
DIRECTIONS: GO 2.2 MILES WEST ON HWY 37 TO EUREKA CEMETARY. TURN RT (N)
ONTO ROAD AT BEND AND PROCEED WEST FOR APPROX. 1 MILE.

HABITAT DESCRIPTION: LEK IS IN OPEN GRASSLAND SOUTH OF ROAD JUST BEFORE THE CREEK
CROSSING.

ELEMENT DATA: NO BIRDS SIGHTED ON LEK IN RECENT YEARS.

BEST SOURCE: USFS. REXFORD RANGER DISTRICT. UNPUBLISHED NOTES, MAPS FROM
FILES.
COMMENTS: CONTINUE TO SURVEY.

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EOCODE: ABNLC13033.005
NAME: TYMPANUCHUS PHASIANELLUS COLUMBIANUS GRANK: G4TU SRANK: S1 FEDSTATUS:
COMMON NAME: COLUMBIAN SHARP-TAILED GROUSE LAST OBSERVATION:
MANAGED AREAS: PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
COUNTY: LINCOLN
QUADNAME: EUREKA NORTH, REXFORD QUADCODE: 4811581 4811582
TOWNRANGE: 036N027W SECTION: 08 TRSCOMM: NW4,5SW4 LAT: 485418 LONG: 1150730
DIRECTIONS: GO 2.2 MILES WEST ON HWY 37 TO EUREKA CEMETARY. TURN RT (N)
ONTO ROAD AT BEND AND PROCEED WEST FOR APPROX. 1 MILE.

HABITAT DESCRIPTION: LEK IS IN OPEN GRASSLAND SOUTH OF ROAD JUST BEFORE THE CREEK
CROSSING.

ELEMENT DATA: NO BIRDS SIGHTED ON LEK IN RECENT YEARS.

BEST SOURCE: USFS. REXFORD RANGER DISTRICT. UNPUBLISHED NOTES, MAPS FROM
FILES.
COMMENTS: CONTINUE TO SURVEY.

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Montana Natural Heritage Program
Element Occurrences: Eureka Dancing Grounds

EOCODE: PDCAR0U1S0.001
NAME: SILENE SPALDINGII GRANK: G2 SRANK: S1 FEDSTATUS: C2
COMMON NAME: SPALDING CAMPION LAST OBSERVATION: 1985-07-16
MANAGED AREAS: PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
COUNTY: LINCOLN
QUADNAME: EUREKA NORTH QUADCODE: 4811581
TOWNRANGE: 037N027W SECTION: 26 TRSCOMM: NW4 LAT: 485643 LONG: 1150440
DIRECTIONS: TOBACCO PLAINS, CA. 3.5 AIR MILES NNW. OF EUREKA.

HABITAT DESCRIPTION: GENTLY ROLLING GLACIATED PLAINS; UNIQUE GRASSLAND COMMUNITY DOMINATED BY STIPA COMATA & FESTUCA SCABRELLA, WITH POA SECUNDA; POA PRATENSIS IN SWALES; SILTY SOILS.
ELEMENT DATA: 101-1000 INDIVIDUALS, "PERHAPS LARGEST POPULATION IN THE WORLD"; PRAIRIE IS IN VERY GOOD CONDITION, WITH LITTLE EVIDENCE OF SEVERE DISTURBANCE; SILENE OCCURS IN SWALES WHICH HAVE DEEPER, LESS GRAVELLY SOILS.
BEST SOURCE: LESICA, P. DEPT. OF BOTANY, UNIV. OF MONTANA, MISSOULA, MT; VOUCHER-LESICA, P. (3541), 1985, MONTU.
COMMENTS: SEE EF FOR MAPS, SPECIAL PLANT SURVEY AND NATURAL COMMUNITY SURVEY FORMS, AND SPECIES LIST.

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Montana Natural Resource Information System
Selected Information Sources on
Land Use in Yellowstone County

February 9, 1987

Cumin Associates. 1977. Mid-Yellowstone Area Planning Organization five county land use study. Billings, Montana. 51 pp. LOCATION: SCS, Billings

Cumin Associates. 1977. Mid-Yellowstone Area Planning Organization - county existing land useand water quality-related controls. Billings, Montana. 23 pp. LOCATION: SCS, Billings

Dibble, J.R. and P.L. Guthrie. 1985. Forest inventory analysis, Crow Indian Reservation, Montana; 1981-1990 management plan period. Portland, Oregon. LOCATION: BIA Forestry Div., Billings

Individual Indian agencies. 1985. Natural resource information system - inventory and production report of surface land uses on reservation land in Montana. (Stage of completion: preliminary; format: files.) Contact: Bob Swick, 4030 Federal Bldg., Billings MT 59101, 657-6325. LOCATION: BIA Land & Minerals Div., Billings

Mid-Yellowstone Areawide Planning Organization (or HKM Associates or Cumin Associates). 1978. Collection of c. 16 titles on water quality: management plan, management project, program report, studies for wastewater management program; threats: point source, agricultural non-point, other non-point; areawide monitoring; problems and solutions. Billings, Montana. Contact: Al Bond, 1629 Avenue D bldg.A-7, Billings MT 59102, 657-6527. LOCATION: SCS, Billings

Mid-Yellowstone Areawide Planning Organization. 1976. Unpublished Mid-Yellowstone areawide planning organization resource map, land use - land cover. (Scale = 1:250,000; base = unknown.) Billings, Montana. (Size = 18X23; min. res. = 10 acres.) Contact: Jerry Burns, 3304 2 Av N, Billings MT 59101, 252-5697. LOCATION: MT DHES, Billings

Mid-Yellowstone Areawide Planning Organization. 1976. Unpublished Mid-Yellowstone areawide planning organization resource map, land use - ownership and recreation. (Scale = 1:250,000; base =unknown.) Billings, Montana. (Size = 18X23; min. res. = 10 acres.) Contact: Jerry Burns, 3304 2 Av N, Billings MT 59101, 252-5697. LOCATION: MT DHES, Billings

Montana Dept. of State Lands, Southern Land Office. 1986. State land non-agriculture or grazing activities files. (Stage ofcompletion: Preliminary; format: Files.) Billings, Montana. Contact: Jane Kellison, 528 S.Moore Ln, Billings MT 59101, 259-3264. LOCATION: DSL, Billings

U.S. Bureau of Indian Affairs, Land and Minerals Division. 1986. Collection of c. 250 titles on land and mineral issues on Indian lands in Montana. Billings, Montana. Contact: Rick Stefanic, 4030 Federal Bldg., Billings MT 59101, 657-6325. LOCATION: BIA library, Billings

U.S. Bureau of Land Management, Lewistown District. 1983. Draft Environmental Impact Statement, Billings Resource Area Reource Management Plan. Billings, Montana: BLM State Office. Approx. 300 pp. plus maps. LOCATION: MSL I 1.98: B49/draft

U.S. Dept. of Agriculture Economic Research Service, Forest Service, and Soil Conservation Service. 1974. Main Report for the Wind - Bighorn - Clarks Fork River Basin Type IV Survey, and Montana supplement. Bozeman, Montana: USDA Field Advisory Committee. Approx 300 pp. plus maps in 2 volumes, main report and Montana supplement. LOCATION: MSL A 57.2: W72/3/supp.

U.S. Dept. of Agriculture, Soil Conservation Service. 1972. Yellowstone County soil and water conservation needs inventory. Portland, Oregon. 43 pp. LOCATION: SCS, Billings

U.S. Dept. of Interior, Bureau of Indian Affairs, Billings Area Office. 1985. Draft Crow Agency forest management plan and environmental assessment. Billings, Montana. 57+24 pp. LOCATION: BIA Forestry Div., Billings

U.S. Dept. of Interior, Bureau of Indian Affairs, The Planning Support Group. 1974. Bibliography: a listing of reports by The Planning Support Group and predecessor, Missouri River Basin Investigations Project. Billings, Montana. 46 pp. c. 280 citations. Contact: Doug Oellermann, 4337 Federal Bldg., Billings MT 59101 (657-6782). LOCATION: BIA Water Resources Div., Billings

U.S. Soil Conservation Service. 1972. Unpublished land use maps (color coded and pie graphed) of Yellowstone County. (Scale = 1:500,000; base = unknown.) Bozeman, Montana. (Size = 12X18; min. res. = 5 acres.) Contact: Dave Doty, 1629 Avenue D, Billings MT 59102, 657-6527. LOCATION: SCS, Billings

Yellowstone County Technical Action Panel. 1968. An appraisal of potential outdoor recreational developments in Yellowstone County, Montana. Billings, Montana. 45 pp. LOCATION: SCS, Billings

List of Montana streams having populations
of Yellowstone cutthroat trout

Natural Resource Information System
February 6, 1986

WATER CODE	RIVER NAME	COUNTY	USGS HYDRO-LOGIC UNIT
220140 AGF	ARMSTRONG SPRING CREEK	PARK	10070002
101600 AMN	CATARACT CREEK	JEFFERSON	10020006
220865 AOE	BRUSH FORK WILLOW CREEK	CARBON	10070006
084380 A6I	LOWER TWIN CREEK	FLATHEAD	17010209
080720 A6O	BIGLOW CREEK	FLATHEAD	17010209
083780 A6Q	KATE CREEK	FLATHEAD	17010209
163760 A9L	SURPRISE CREEK	JUDITH BASIN	10040102
011500 BA4	CORRAL CREEK	BEAVERHEAD	10020001
224928 BBH	ROCK CREEK SEC 01	CARBON	10070006
105840 DQB	QUEEN GULCH	JEFFERSON	10020006
084380 DY9	LOWER TWIN CREEK	FLATHEAD	17010209
084380 DZA	LOWER TWIN CREEK	FLATHEAD	17010209
087720 DZQ	WHEELER CREEK	FLATHEAD	17010209
087920 DZR	WOUNDED BUCK CREEK	FLATHEAD	17010209
087920 DZS	WOUNDED BUCK CREEK	FLATHEAD	17010209
087920 DZT	WOUNDED BUCK CREEK	FLATHEAD	17010209
222128 DZX	E FK MILL CREEK	PARK	10070002
223647 DZY	LION CREEK	PARK	10070002
224186 DZZ	MILL CREEK	PARK	10070002
224221 DZ1	MILL FORK CREEK	PARK	10070002
226157 DZ4	STUTCHES SPRING CREEK	PARK	10070002
224270 D1E	MOL HERON CREEK	PARK	10070002
223775 D1H	LOCKE CREEK	PARK	10070002
224592 D1J	PASSAGE CREEK	PARK	10070002
224620 D1K	PETERSON CREEK	PARK	10070002
065149 D5P	RATTLESNAKE CREEK	MISSOULA	17010204
065149 D5Q	RATTLESNAKE CREEK	MISSOULA	17010204
065149 D5R	RATTLESNAKE CREEK	MISSOULA	17010204
065149 D5S	RATTLESNAKE CREEK	MISSOULA	17010204
065149 D5T	RATTLESNAKE CREEK	MISSOULA	17010204
065149 D5U	RATTLESNAKE CREEK	MISSOULA	17010204
065149 D5V	RATTLESNAKE CREEK	MISSOULA	17010204
065149 D5W	RATTLESNAKE CREEK	MISSOULA	17010204
065149 D5X	RATTLESNAKE CREEK	MISSOULA	17010204
065149 D5Y	RATTLESNAKE CREEK	MISSOULA	17010204
067220 D51	WRANGLE CREEK	MISSOULA	17010204
130528 EAT	BLACK SAND SPRING	GALLATIN	10020007
222192 037	E FK WEST RED LODGE CREEK	CARBON	10070006

WATER CODE	RIVER NAME	COUNTY	USGS HYDRO-LOGIC UNIT
220168 162	BAD CANYON CREEK	STILLWATER	10070005
226262 163	TEPEE CREEK	STILLWATER	10070005
220014 442	ADAIR CREEK	PARK	10070003
220021 443	ALDRIDGE CREEK	PARK	10070002
220056 444	ANDERSON CREEK	PARK	10070002
220133 446	AREA CREEK	PARK	10070002
220140 447	ARMSTRONG SPRING CREEK	PARK	10070002
220182 448	BANGTAIL CREEK	PARK	10070003
220245 449	BASSETT CREEK	PARK	10070002
225768 450	S FK HORSE CREEK	PARK	10070003
220350 451	BEAR CREEK	PARK	10070001
220350 452	BEAR CREEK	PARK	10070001
220399 453	BEAVER CREEK	PARK	10070002
220434 454	BENNETT CREEK	PARK	10070003
220476 455	BIG CREEK	PARK	10070002
220476 456	BIG CREEK	PARK	10070002
220476 457	BIG CREEK	PARK	10070002
220532 458	BILLMAN CREEK	PARK	10070002
220784 459	BRACKETT CREEK	PARK	10070003
220784 460	BRACKETT CREEK	GALLATIN	10070003
220868 461	BUCK CREEK	MEAGHER	10070003
221498 463	CREVICE CREEK	PARK	10070001
220938 464	CACHE CREEK	GALLATIN	10070003
220952 465	CANYON CREEK	PARK	10070003
221078 466	CEDAR CREEK	PARK	10070002
221134 467	CINNABAR CREEK	PARK	10070002
221218 468	CLEAR CREEK	PARK	10070003
221239 469	COKE CREEK	PARK	10070002
221365 470	COTTONWOOD CREEK	PARK	10070002
221386 472	COTTONWOOD CREEK	PARK	10070003
221386 473	COTTONWOOD CREEK	PARK	10070003
221358 474	COTTONWOOD CREEK	PARK	10070002
221610 476	DAISY DEAN CREEK	PARK	10070003
221680 477	DEEP CREEK	PARK	10070003
221848 480	DRY CREEK	PARK	10070002
221869 481	DRY CREEK	PARK	10070002
221876 482	DRY CREEK	PARK	10070003
221988 483	EAGLE CREEK	PARK	10070001
222072 484	E FK BEAR CREEK	PARK	10070001
222128 485	E FK MILL CREEK	PARK	10070002
222156 486	E FK ROCK CREEK	PARK	10070003
222268 487	EIGHTMILE CREEK	PARK	10070002
222268 488	EIGHTMILE CREEK	PARK	10070002
222282 489	ELBOW CREEK	PARK	10070002
222303 490	ELDRIDGE CREEK	PARK	10070002
222324 491	ELK CREEK	PARK	10070003

WATER CODE	RIVER NAME	COUNTY	USGS HYDRO-LOGIC UNIT
222366 492	EMIGRANT CREEK	PARK	10070002
222366 493	EMIGRANT CREEK	PARK	10070002
222366 494	EMIGRANT CREEK	PARK	10070002
222394 496	FAIRY LAKE CREEK	GALLATIN	10070003
222408 497	FALLS CREEK	PARK	10070003
222457 498	FERRY CREEK	PARK	10070002
222548 499	FLATHEAD CREEK	PARK	10070003
222562 500	FLESHMAN CREEK	PARK	10070002
222562 501	FLESHMAN CREEK	PARK	10070002
222632 502	FOX CREEK	PARK	10070003
222674 503	FRIDLEY CREEK	PARK	10070002
222674 504	FRIDLEY CREEK	PARK	10070002
222730 505	GOAT CREEK	MEAGHER	10070003
222853 507	GREEN CANYON CREEK	GALLATIN	10070003
222968 508	HAMMOND CREEK	PARK	10070003
223066 509	HELLROARING CREEK	PARK	10070002
223192 510	HORSE CREEK	PARK	10070002
223206 511	HORSE CREEK	PARK	10070003
223185 512	HORSE CREEK	GALLATIN	10070003
223276 513	HYALITE CREEK	PARK	10070002
223584 514	LEWIS CREEK	PARK	10070002
223724 516	LITTLE MISSION CREEK	PARK	10070002
223770 517	LITTLE TRAIL CREEK	PARK	10070001
223794 518	LODGEPOLE CREEK	PARK	10070003
223798 519	LODGEPOLE CREEK	PARK	10070003
223930 525	MCDONALD CREEK	PARK	10070002
224158 526	MILES CREEK	PARK	10070003
224074 528	M FK HORSE CREEK	PARK	10070003
224200 529	MILL CREEK	PARK	10070003
224172 530	MILL CREEK	PARK	10070002
224172 531	MILL CREEK	PARK	10070002
224242 532	MISSION CREEK	PARK	10070002
224242 533	MISSION CREEK	PARK	10070002
224270 534	MOL HERON CREEK	PARK	10070002
224270 535	MOL HERON CREEK	PARK	10070002
224390 537	N FK EIGHTMILE CREEK	PARK	10070002
224305 538	NELSON SPRING CREEK	PARK	10070002
224319 539	NIXON CREEK	PARK	10070003
224361 541	N FK BRACKETT CREEK	GALLATIN	10070003
224396 543	N FK ELK CREEK	PARK	10070003
224410 544	N FK FLATHEAD CREEK	GALLATIN	10070003
224663 548	PINE CREEK (WEST)	PARK	10070002
224746 549	PORCUPINE CREEK	PARK	10070003
224998 551	ROCK CREEK	PARK	10070003
224998 552	ROCK CREEK	PARK	10070003
224998 553	ROCK CREEK	PARK	10070003

WATER CODE	RIVER NAME	COUNTY	USGS HYDRO-LOGIC UNIT
224984 554	ROCK CREEK	PARK	10070002
225222 555	SERRETT CREEK	PARK	10070003
225334 556	SHIELDS RIVER SEC 01	PARK	10070003
225348 557	SHIELDS RIVER SEC 02	PARK	10070003
225362 558	SHIELDS RIVER SEC 03	PARK	10070003
225502 559	SIXMILE CREEK	PARK	10070002
225502 560	SIXMILE CREEK	PARK	10070002
225502 561	SIXMILE CREEK	PARK	10070002
225516 562	SKUNK CREEK	GALLATIN	10070003
225628 563	SMITH CREEK	PARK	10070003
225628 564	SMITH CREEK	PARK	10070003
225740 566	S FK ELK CREEK	PARK	10070003
225796 568	S FK SHIELDS RIVER	PARK	10070003
225940 569	SPRING CREEK & TRIBS	PARK	10070003
226160 571	SUCE CREEK	PARK	10070002
226160 572	SUCE CREEK	PARK	10070002
226160 573	SUCE CREEK	PARK	10070002
226328 574	TOM MINER CREEK	PARK	10070002
226328 575	TOM MINER CREEK	PARK	10070002
226412 578	TURKEY CREEK	PARK	10070003
226636 579	W FK MILL CREEK	PARK	10070002
226902 580	WILLOW CREEK	PARK	10070003
226902 581	WILLOW CREEK	PARK	10070003
227058 582	YELLOWSTONE RIVER SEC 07B	PARK	10070002
227072 584	YELLOWSTONE RIVER SEC 08B	PARK	10070002
227071 585	YELLOWSTONE RIVER SEC 08A	PARK	10070002
227084 586	YELLOWSTONE RIVER SEC 09	PARK	10070001
223934 588	MEADOW CREEK	PARK	10070003
225180 589	SCOFIELD CREEK	PARK	10070003
223420 590	KAY CREEK	PARK	10070003
221974 591	DUGOUT CREEK	PARK	10070003
220906 592	BULLRUN CREEK	PARK	10070003
220798 797	BRIDGER CREEK	SWEET GRASS	10070002
220826 798	BROADWATER RIVER	PARK	10070006
221190 802	CLARKS FORK YELLOWSTONE SEC 03	PARK	10070006
221176 803	CLARKS FORK YELLOWSTONE SEC 02	CARBON	10070006
221512 806	CROOKED CREEK	CARBON	10080010
222352 809	ELK CREEK	SWEET GRASS	10070002
222898 810	GROVE CREEK	STILLWATER	10070005
226118 816	STILLWATER RIVER SEC 02	STILLWATER	10070005
223864 818	LOWER DEER CREEK	SWEET GRASS	10070002
223864 819	LOWER DEER CREEK	SWEET GRASS	10070002
224774 823	POWERS CREEK	CARBON	10070006
224886 825	RED LODGE CREEK	CARBON	10070006
224956 830	ROCK CREEK SEC 02	CARBON	10070006
225586 833	SLOUGH CREEK	PARK	10070001

WATER CODE	RIVER NAME	COUNTY	USGS HYDRO-LOGIC UNIT
225684 834	SODA BUTTE CREEK	PARK	10070001
226454 839	UPPER DEER CREEK	SWEET GRASS	10070002
226552 841	WEST BOULDER RIVER	PARK	10070002
227043 855	YELLOWSTONE RIVER SEC 06	STILLWATER	10070004
227057 856	YELLOWSTONE RIVER SEC 07A	SWEET GRASS	10070004
226944 858	WOODBINE CREEK	STILLWATER	10070005
222254 861	EAST ROSEBUD CREEK	CARBON	10070005
226118 868	STILLWATER RIVER SEC 02	STILLWATER	10070005
223752 892	LITTLE ROCKY CREEK	STILLWATER	10070005
087720 943	WHEELER CREEK	FLATHEAD	17010209

EXHIBIT 2
2/10/87
HB

Montana

Audubon Legislative Fund

Testimony in support of the Montana Natural Heritage Program and
Montana Natrual Resource Information System
February 10, 1987

Mr. Chairman and Members of the Committee,

My name is Janet Ellis and I'm here today representing the Montana Audubon Legislative Fund. The Audubon Fund is composed of 9 chapters of the National Audubon Society located throughout the state.

The Audubon Fund would like to express its support for the State Library's Natural Resource Information System and Natural Heritage System.

Development and protection of Montana's natural resources - including minerals, forests, water, agriculture and wildlife - requires planning. The Heritage-NRIS system helps the developer develop and the planner plan - at a savings to both. It's a planning tool that will allow Montana to continue to grow without losing the best of what we have. The quality information gathered by this system is outstanding, and the method used to store it is efficient, economical and useful - to business, industry, government agencies, and citizens groups. This is a state program with a broad base of support from many Montanans.

VISITOR'S REGISTER

LONG RANGE PLANNING SUBCOMMITTEE SUBCOMMITTEE

AGENCY(S) _____ DATE FEBRUARY 10, 1987

DEPARTMENT _____

NAME	REPRESENTING	SUPPORT	OPPOSE
Robert Rasmussen	L&C Co. Planning Dept.		
Ken Ballantyne	Toole County Planning Bd	X	
Howard Jacobson	Toole Cty. Planning Board	X	
Howard Johnson	Off of Governor	X	
Mike Rubich	MDHES		
Ellie Hagen	Sheridan Cons. District	X	
Doug Smith	Sheridan County	X	
Larry Weinberg	MT. UNIV. SYSTEM	✓	
David Genter	MT NATURE CONSERVANCY	X	
Dana Field	MT AUDUBON LEGIS FUND	✓	

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR WITNESS STATEMENT.
IF YOU HAVE WRITTEN COMMENTS, PLEASE GIVE A COPY TO THE SECRETARY.

FORM CS-33A
Rev. 1985