

GRASSHOPPER PLANNING AREA

BEAVERHEAD COUNTY

COMPREHENSIVE PLAN ADDENDUM

Adopted - December 6, 1999

**PREPARED BY THE
BEAVERHEAD COUNTY LAND USE AND PLANNING OFFICE
AND THE
BEAVERHEAD COUNTY PLANNING BOARD
IN COOPERATION WITH THE
CITIZENS OF THE GRASSHOPPER PLANNING AREA**

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1. INTRODUCTION

The Grasshopper Planning Area is located in the Grasshopper Valley between Jackson and Dillon in the north central portion of Beaverhead County

The rural area of Beaverhead County, like so many other areas around the State, has experienced increased development and growth as people seeking an escape from fast-paced urban areas have moved to this area. The Grasshopper Valley's natural beauty, rural atmosphere, and exceptional recreation qualities continue to attract more residents and visitors each year. The expected completion of the Pioneer Mountain Scenic Byway in the near future will more than likely increase the popularity of this area to the outside world.

This growth and change impacts a wide variety of areas. There are impacts on the County's ability to provide increased public services such as fire protection, law enforcement, solid waste disposal, and noxious weed control to name a few. There are also impacts on the area's sense of community, rural agricultural lifestyle, and open landscape. Increased growth and development also impacts the natural environment. Wildlife habitat and migration patterns, aquifers and stream systems along with the fisheries they support, as well as native vegetation are all affected.

The Grasshopper Area Plan is intended to be a guide to help preserve long valued local lifestyles, traditions, and resources while accommodating new opportunities that may benefit the citizens.

Due to the large and diverse area covered by the Beaverhead County Comprehensive Plan it is by necessity very broadly based and worded. The Grasshopper Area Plan more specifically states issues, goals, and objectives that were identified by local residents and landowners. This Plan is intended to become an addendum to the County Comprehensive Plan.

The Grasshopper Area Plan has been developed under legal authority for county planning provided by Montana State Statutes. The Beaverhead County Planning Board and Beaverhead County Commission shall be guided by and give consideration to the goals and objectives set out in the plan. Not all of the Plan's goals, objectives, and recommendations can be met to the same degree in every instance. Use of the Plan will require a balancing of its various components on a case by case basis.

The geographic description of lands covered in the Grasshopper Planning Area is the entire Grasshopper Creek drainage above or up drainage of Bannack.

2. BACKGROUND

Beaverhead County implemented its first comprehensive plan in 1976 more than twenty years ago. This County wide general policy document was revised and updated in 1990. This plan was intended to assist elected officials to maintain a consistency in their daily decision making and provide a degree of predictability for the community at large. County comprehensive plans reflect the fact that planning is a continual process and not simply an ageless document. Comprehensive plans require revisions every 10 to 15 years as circumstances, conditions, and information changes.

In 1996 the Beaverhead County Planning Board initiated its first local vicinity or area plan. Local vicinity planning takes place on a small enough scale that participants are familiar with the area, the issues, and the options available that can be agreed to. The area plan is developed and agreed to by those most affected.... neighborhood residents.

In 1997 the North Dillon Area Plan was added as an addendum to the Beaverhead County Comprehensive Plan. The Grasshopper planning effort is the second area plan undertaken by the Beaverhead County Planning Board. These local vicinity planning efforts will continue in areas around the County that are experiencing the most growth related pressures.

3. COMPREHENSIVE PLAN GOALS AND OBJECTIVES

The Grasshopper Area Plan is to guide future growth and development in this area while protecting agriculture and the rural character of the Grasshopper Valley. This plan is intended to assist the residents of the area, property owners, area business persons, County government, and the Beaverhead County Planning Board in reaching decisions on land use decisions within the area.

In the course of preparing the plan, the residents and property owners identified assets and issues that resulted in the following:

3.1 Fire Protection and Emergency Services Goals

To provide emergency response services (particularly fire protection) that will adequately handle current and anticipated growth in the valley by:

- A. Encourage the creation of a Rural Fire District, or Fire Company in the Grasshopper Valley.
- B. Explore the possibility of locating a radio repeater or "link" in the

upper Grasshopper Valley to enhance emergency radio communication capabilities, and decrease emergency response time.

- C. New development should be encouraged to incorporate fire resistive building materials and landscaping techniques into their design and construction.

3.2 Agricultural Land and Rural Lifestyle Goals

Our agricultural land and rural character is being lost to scattered residential development that converts agricultural land and is disruptive to traditional agricultural operations. Provide opportunities and limitations for residential development while maintaining the rural and agricultural assets of the Grasshopper Area by:

- A. Encourage larger lot sizes in the lower (below Polaris) portion of the Valley. Smaller lot sizes are more appropriate in or near the previously approved and platted subdivisions.
- B. Recognize that the private agricultural lands in the Valley are part of the natural amenities that make the Grasshopper Valley an enjoyable place to visit and live.
- C. Recognize that agricultural lands are a valuable cultural and economic resource that need to be protected and maintained.
- D. Acknowledge that industrial development is incompatible with the rural agricultural nature of the Grasshopper Valley.

3.3 Natural Resources

Potential impacts on surface and ground water, and the spread of noxious weeds have been identified as current and future growth related concerns. Future growth and development should be done in a manner that protects the area's natural resource by:

- A. Increasing public awareness of the affects of development on the natural environment (soil erosion, air and water quality, noxious weeds, etc.)
- B. Controlling the spread of noxious weeds.
- C. Ensure that future development does not degrade the areas surface and groundwater quality.

3.4 Roads

To provide for roads that are compatible with future growth expectations, and efficiently and economically addressing the traffic needs of the citizens by:

- A. Completing the upgrading of the Polaris/Wise River Road in a timely, cost efficient manner.
- B. Coordinating land use planning with the existing road system in the valley so that future development activities are compatible and appropriate.

3.5 Private Property Rights

Private lands and private property are protected by specific legal and constitutional provisions. Land use plans must strike a balance between the needs and personal freedom of the individual and the collective rights and interests of the community by:

- A. Recognize that any regulations imposed on private land must relate to a general public purpose and must not be more restrictive than needed to achieve that purpose.

4. THE PEOPLE AND PLACE

4.1 History

The Polaris Post Office opened in 1898. The area was an important silver producing area that included the Polaris Mine and later the Silver Fissure Mining Company.

The Polaris School District was established and approved in 1892 and has been in continuous operation since then.

The Grasshopper Valley has long been noted for its cattle and the native hay production that supports the livestock.

The upper Valley has become a "destination" spot for both summer and winter recreationists. Hunting, fishing, hiking, camping, skiing, and snowmobiling are some of the activities that are attracting ever increasing numbers of people to this area.

4.2 Vegetation/Climate

The entire upper Grasshopper Valley is bordered by mountains that have a profound effect on the climate of this high mountain valley. Elevations range from approximately 7,200 feet at Elkhorn Hot Springs to approximately 6,100 feet at the Harrison Ranch.

The effects of these influences show up in the growing season as well as annual precipitation. The freeze free season ranges from 10 to 30 days in the higher elevations and 30 to 50 days at lower elevations. Mean annual precipitation in the mountains is 30 to 40 inches. The "rain shadow" areas in the lower valley average 10 to 12 inches per year, Mean annual snowfall ranges from 50 to 100 inches per year.

Vegetation in the higher elevations is mainly climax forest of Douglas Fir, Subalpine Pine, and Lodgepole Pine. Native vegetation at lower elevations consist of Blue Bunch Wheatgrass, Columbia Needlegrass, Basin Wild Rye, Lupine, Idaho Fescue, Arrowleaf Balsam root, Big Sagebrush, and Tall Larkspur. Private agricultural lands also include flood irrigated grass hay for livestock feed.

Lower elevation soils consist of Mollisols of nearly level to highly dissected, sloping, steep benches and terraces.

4.3 Water/Geology

The basin (Grasshopper Valley) morphology and topography are the result of a combination structural subsidence, filling by deposition and erosion of the deposited sediment. Grasshopper Creek is the major stream system that drains the Central Southern Pioneer Mountains and the Grasshopper Valley.

Grasshopper Creek flows due south through the Grasshopper Valley. At the valley terminus, Grasshopper Creek flows southeast for about 20 miles where it flows into the Beaverhead River.

Most of the Grasshopper Valley is underlain by unconsolidated alluvial deposits. The shallow, unconsolidated alluvium consists almost entirely of layers and mixtures of sands, silt, clay, and gravel.

Well logs from the upper Grasshopper Valley show that the top 50 feet of material is generally unconsolidated, consisting of sands, coarse to fine gravels with cobbles, silts and clays. Depth to the shallow unconfined

groundwater in this area ranges between 5 to 7 feet below the ground surface.

Well logs from the mid to lower Grasshopper Valley show that the top 100 feet of material is generally unconsolidated, consisting of sands, coarse to fine gravels, silts and clays. Depth to the shallow unconfined groundwater is between 15 and 20 feet below the ground surface.

In unconfined aquifers, similar to the Grasshopper Valley the direction of the groundwater movement is generally perpendicular to the water table contours. This would be towards the south or parallel with the flow of Grasshopper Creek. The rate of groundwater movement in the shallow unconfined aquifer can be estimated based on aquifer lithology as determined from drinking water well logs. The range of permeabilities for the unconsolidated alluvium is probably between 500 and 2500 gallons per day per foot squared (gpd/ft²).

4.4 Soils

In general the soils in the Grasshopper Valley area are formed from glacial outwash/till in the valley and granitic and metamorphic rocks on the foothills and mountains. The valley which makes up the majority of this area is poorly sorted bouldery gravel and sand deposited by glacial meltwater.

The following general soils information is from the state soil map unit information. The valley consists of two areas, the floodplain/stream terrace area and the upland/alluvial fans. The floodplain/stream terrace areas consist of soils similar to Gallatin-Slocum-Babb and the upland/alluvial fan areas consist of soils similar to Maurice-Raynesford-Pishkun. The mountain slopes consist of soils similar to Garlet-Worock-Whitore and include areas of Rock Outcrop.

Slocum and Gallatin series are very deep, somewhat poorly drained on low stream terraces and floodplains. The Babb, Maurice, Pishkun and Raynesford series are very deep, well drained on alluvial fans and high stream terraces.

The Garlet, Worock, and Whitore series consist of very deep, well drained soils that formed in colluvium or alluvium on mountain slopes and foothills.

Flood hazard ratings for:

Slocum -- occasional,
Gallatin -- rare,
Babb, Maurice, Pishkun, Raynesford, Garlet, Worock, and Whitore --
none.

Septic tank absorption field ratings for:

Gallatin -- severe
Slocum -- severe wetness, percs slowly.
Babb -- moderate, percs slowly, slopes 8-15%
Maurice -- severe, poor filter
Pishkun, Garlet, Whitore -- moderate, percs slowly, large stones, slopes 8-15%,
severe slopes >15%
Raynesford, Worock -- severe, percs slowly, slopes >15%

Ratings are based on a depth of 0 to 60 inches.

RECOMMENDATION: Site specific soil investigations are encouraged for
any proposed development and construction.

4.5 Population and Land Use Patterns

The current full time population of the area is estimated to be between 55
and 75 residents. Because of the large number of seasonal recreation
homes, the population in the valley varies drastically during the year. If
all of the residences were occupied the population would be in excess of
300 residents.

The 1998 voter registration figures show 81 voters registered in School
District #21, and 93 voters registered in Precinct #19 (Polaris).

5. PUBLIC SERVICE

5.1 Law Enforcement

Law Enforcement within this planning area is provided by the Beaverhead
County Sheriff's Office operating out of the County Courthouse in Dillon
or the Wisdom Deputy who resides in Wisdom. Response time is 20 to
40 minutes.

5.2 Emergency Medical Services

911 Emergency service is available in Beaverhead County. Medical emergency calls are handled by the Beaverhead County Sheriff's Dispatch Center. Beaverhead Ambulance, an all volunteer emergency medical service, operates out of Dillon. Grant has a Quick Response Unit as part of the Grant Volunteer Fire Department that could also provide service to the area. Big Hole Fire District #3 also provides ambulance service out of Wisdom.

Response times: Approximately 40 to 60 minutes out of Dillon, 40 to 60 minutes out of Grant, and 40 to 60 minutes out of Wisdom.

5.3 Education Services

The Grasshopper Planning area lies within the borders of the Polaris Elementary School District #21. The school is located approximately 2 ½ miles south of Polaris. This school district provides education for grades K-8.

Beaverhead County High School located in Dillon provides education for grades 9-12.

5.4 Fire Protection

Approximately 18 square miles of private lands within the planning area are unprotected by any organized fire district. The balance of the private land as well as some Forest Service lands are included in Big Hole Fire District #3. Volunteer departments are located in Wisdom and Jackson as part of this district. A small 300 gallon older model wildland truck is also located at the Harrison Ranch and manned by local volunteers.

Response Times: Approximately 1 hour out of Jackson, 1+ hours out of Wisdom, and 40-50 minutes out of Dillon (Mutual Aid Agreement).

5.5 Road Maintenance

Petitioned County roads or roads that the County has a prescriptive easement are maintained by the Beaverhead County Road Department. Private lanes and roads are not maintained by the County. Public and private subdivision roads are the responsibility of subdivision homeowners' associations. Special road maintenance districts maybe created by petition to upgrade or maintain specific roads in a proposed district.

5.6 Additional Services

Other governmental services provided by Beaverhead County include health, weed control, recording, sanitation, planning, airport facilities, fair facilities, welfare, support for senior citizens, museum activities, and county extension. The Beaverhead Search and Rescue, an all volunteer organization, also provides emergency response service. Solid waste disposal is provided by Beaverhead County at the Millpoint canister site.

6. DEVELOPMENT PLAN: RECOMMENDED POLICIES AND ACTIONS

Plan implementation is often the weak link in a comprehensive or area planning effort. Without a strong implementation program; the time, thought, and energy invested in the preparation of this plan will be largely wasted.

The Plan recommends various policies and actions to implement the items stated in Section 3. (Goals and Objectives)

Beaverhead County already uses one important tool of plan implementation, namely, the County subdivision regulations and the subdivision review process. The County also has regulations governing sanitation and sewage treatment systems that were implemented to protect surface and groundwater quality. The overall development plan looks to county officials, landowners, and individual citizens to share the responsibility for plan implementation.

6.1 Fire Protection and Emergency Services

- A. Work with state and county fire officials to support the newly formed Grasshopper Valley Volunteer Fire Company.
- B. Support subdivision regulations and development codes that help reduce the risk of fire in new developments.
- C. Meet with emergency service providers and County officials to explore opportunities to enhance emergency radio communications in the Grasshopper Valley.

6.2 Agricultural Land and Rural Lifestyle Goals

- A. Support landowner initiated efforts to preserve agricultural lands in the valley, and provide information and technical assistance to accomplish this. These efforts may include such tools as conservation easements, agricultural zoning, deed restrictions, local land trusts, etc.

- B. Adopt a countywide ordinance that provides an explicit statement of Right-to-Farm protections.
- C. Encourage the distribution of Beaverhead County's "Code of the New West" to residents, newcomers, and visitors; to inform and acknowledge that agricultural lands need to be protected and maintained.
- D. Discourage future industrial development in the Grasshopper Valley due to its incompatibility with this rural, agricultural area.

6.3 Natural Resources

- A. Continue to monitor the areas surface and groundwater to ensure that future development does not degrade this valuable community resource.
- B. Encourage local groups and families to Adopt-a-Highway to keep our valley attractive. This will help control litter and noxious weeds.
- C. Work with the Beaverhead County Weed Department to establish a Grasshopper Valley Weed Project thru the State Trust Fund and/or annual "Weed Day" to help contain and control the spread of noxious weeds in the Valley.

6.4 Roads

- A. Encourage Beaverhead County to actively pursue the timely completion of the Scenic Byway in the most cost efficient manner possible.
- B. Support the enforcement of Beaverhead County's Subdivision Road Standards in all new subdivisions.

6.5 Private Property

- A. Encourage County officials to be cognizant of and abide by state and federal laws as they pertain to private property rights.

7. CONCLUSION

Adoption of this Grasshopper Area plan will require the time, and energy of a number of responsible groups and individuals.

The Planning Board and it's staff, the County Commission and other County officials have recognized the desirability of the goals and objectives, and given sufficient time and resources, will work towards their implementation.

Local groups and organizations, as well as local citizens, must also share in the responsibility of implementing this plan. The people and Beaverhead County officials will need to work together in partnership to see that the cultural and social values of the Grasshopper Valley are retained for future generations.

GRASSHOPPER PLANNING AREA PROCESS TIME LINE

GRASSHOPPER VALLEY AREA PLANNING PROCESS TIME LINE

All meetings were held at the Polaris School.

September 25, 1997 – Planning Board conducts initial kick-off meeting. Explained what the reasons were for the Board's decision to prepare an area plan in the Grasshopper Valley. They include: growth and development related issues in the area, the upgrading of the Polaris/Wise River Road will bring more pressure, and increased demand on public services (i.e. fire protection, etc.). Developing an "area plan" allows Board to focus on localized issues and concerns.

Brief presentation on fire protection issues and options from Rex Caraker and Bob Nelson from Fire District #3, Rick Stohmyer DNRC Area Fire Coordinator, and George Johnson Forest Service Fire Management Officer.

Met with Torrey Mountain Subdivision Homeowners regarding road issues.

October 22, 1997 – Planning Board conducts another informational meeting discussing what an area plan is and what are the benefits as well as the step by step process involved. These are:

1. Assets and issues in the area will be identified.
2. Information and data will be gathered and presented on these various subjects.
3. The information will be used to determine possibilities and options.

4. Goals and objectives will be developed by citizens.
5. Policy statements and an implementation plan will be created for the goals and objectives.
6. The County Commission will be asked to formally adopt the area plan as part of the County's Comprehensive Plan.

November 17, 1997 – Citizens and landowners of the Valley identified the desirable aspects of growth and change that should be encouraged and the undesirable impacts of increased growth that an area plan should address. These were prioritized with the top three in each category identified.

Options and methods of dealing with the undesirable impacts and encouraging the desirable aspects were also discussed.

*For details see attached report of November 17, 1997 meeting.

February 26, 1998 – Richard Miller, Beaverhead County Road Manager, presented information on the Scenic By-way, the County's road snow plowing policy and the road budget. Bill Crowley from Appraisal Services was also in attendance and answered questions about the Scenic By-way right-of-way acquisition process.

A portion of the meeting was once again devoted to Torrey Mountain and Clark Creek road issues.

April 13, 1998 – Jack Eddie, Beaverhead County Weed Supervisor, was present to talk about the County's Noxious Weed Control Program. The opportunity to conduct a spray day in the Valley this summer

was made available if area residents were interested.

Larry Laknar, Beaverhead County Sanitarian, also attended this meeting and presented information concerning individual septic systems, the Montana Non-degradation of State Waters law, and how septic systems can affect groundwater quality.

General information about land use planning was also presented.

June 17, 1998 --

Access to public land and access related issues were presented by Katie Bump from the United States Forest Service.

Scott Ferris of Blue Ribbon Environmental presented a proposal to assess water quality of the shallow water bearing zone in the Grasshopper Valley.

A "mid term" report was presented by Rick Hartz of the Planning Department.

October 13, 1998 --

The primary focus of this meeting was to provide in depth information about fire protection issues in the Valley. Roy Cornell, Dillon Volunteer Fire Department Fire Chief, Keith Reeder, Beaverhead County Fire Warden, and Rick Strohmyer, Department of Natural Resources and Conservation Fire Coordinator, all presented information and future fire protection options for the area.

A citizens committee was formed to look into these options.

November 23, 1998 --

Scott Ferris of Blue Ribbon Environmental presented the results of

the water quality study. The study showed that the current water quality of Grasshopper Creek and area wells is good.

The citizens group looking into fire protection issues gave an update on the groups' progress.

Richard Miller, Beaverhead County Road Manager, gave an in depth presentation concerning his road budget expenditures.

April 20, 1999 -

Citizens and landowners develop goals and objectives as well as implementation ideas for three of the five identified areas of concern.

Sept. 28, 1999 -

Draft plan presented to citizens and landowners for review and revisions. The area covered by Plan was determined by those in attendance. Program report on Grasshopper Volunteer Fire Company's efforts was presented.

November 18, 1999 -

Planning Board conducted public hearing on final version of Grasshopper Area Plan prior to making recommendation to County Commissioners.

APPENDICES

Polaris School District #21

YEAR	TAXABLE VALUE	SCHOOL DISTRICT MILLS LEVIED	STUDENTS
1998	\$534,449	32.05	7
1997	\$519,195	38.95	8
1996	\$468,534	38.17	11
1995	\$474,831	37.00	11
1994	\$432,277	36.81	14
1993	\$422,122	25.12	16
1992	\$361,641	23.94	14
1991	\$350,855	23.94	14
1990	\$335,349	25.11	11
1989	\$326,968	9.69	10
1988	\$323,333	8.99	10
1987	\$327,298	18.24	
1986	\$337,672	17.58	

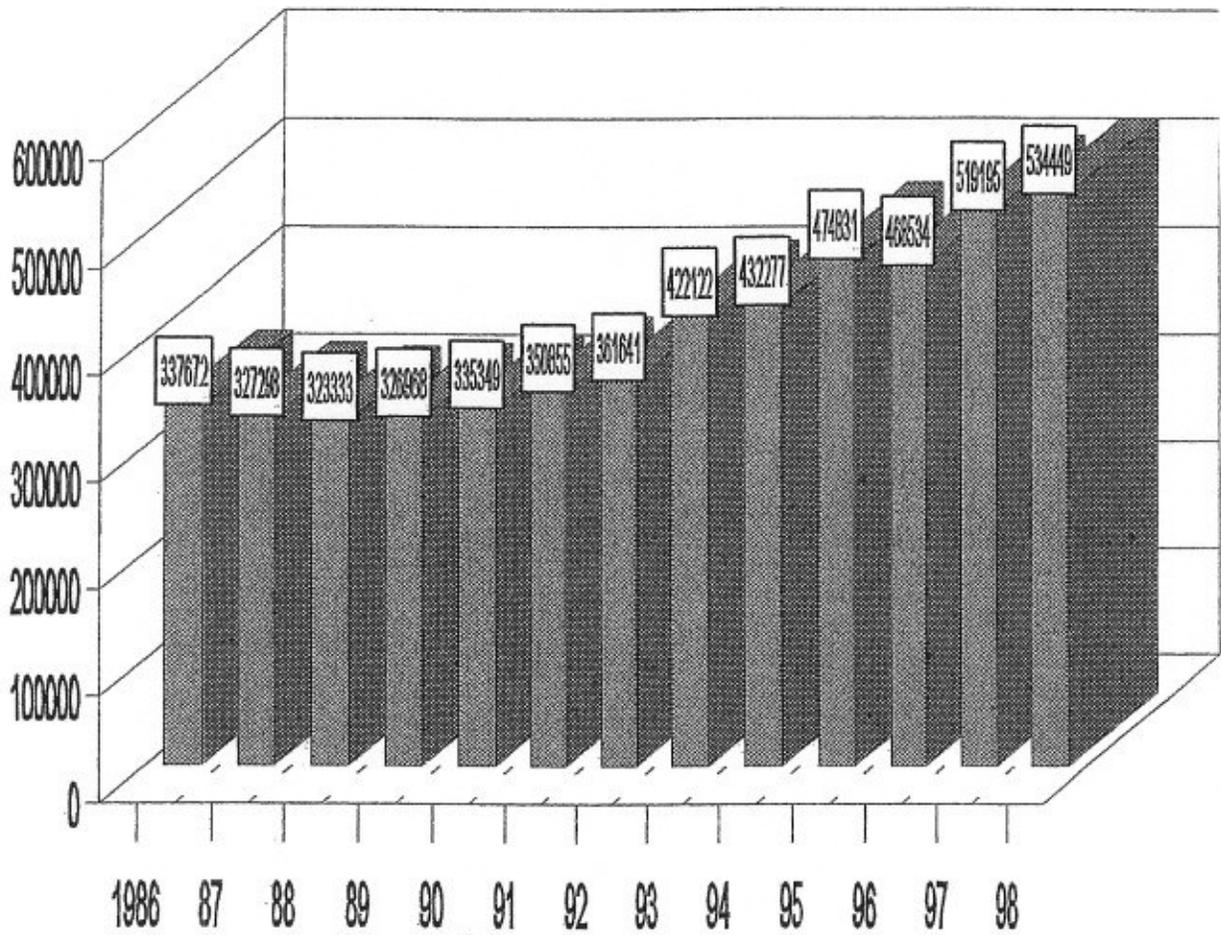
*Beaverhead County Superintendent of Schools

Polaris School District #21 Number of Housing Units

Years	1990	1995	1998
Housing Units	104	123	126

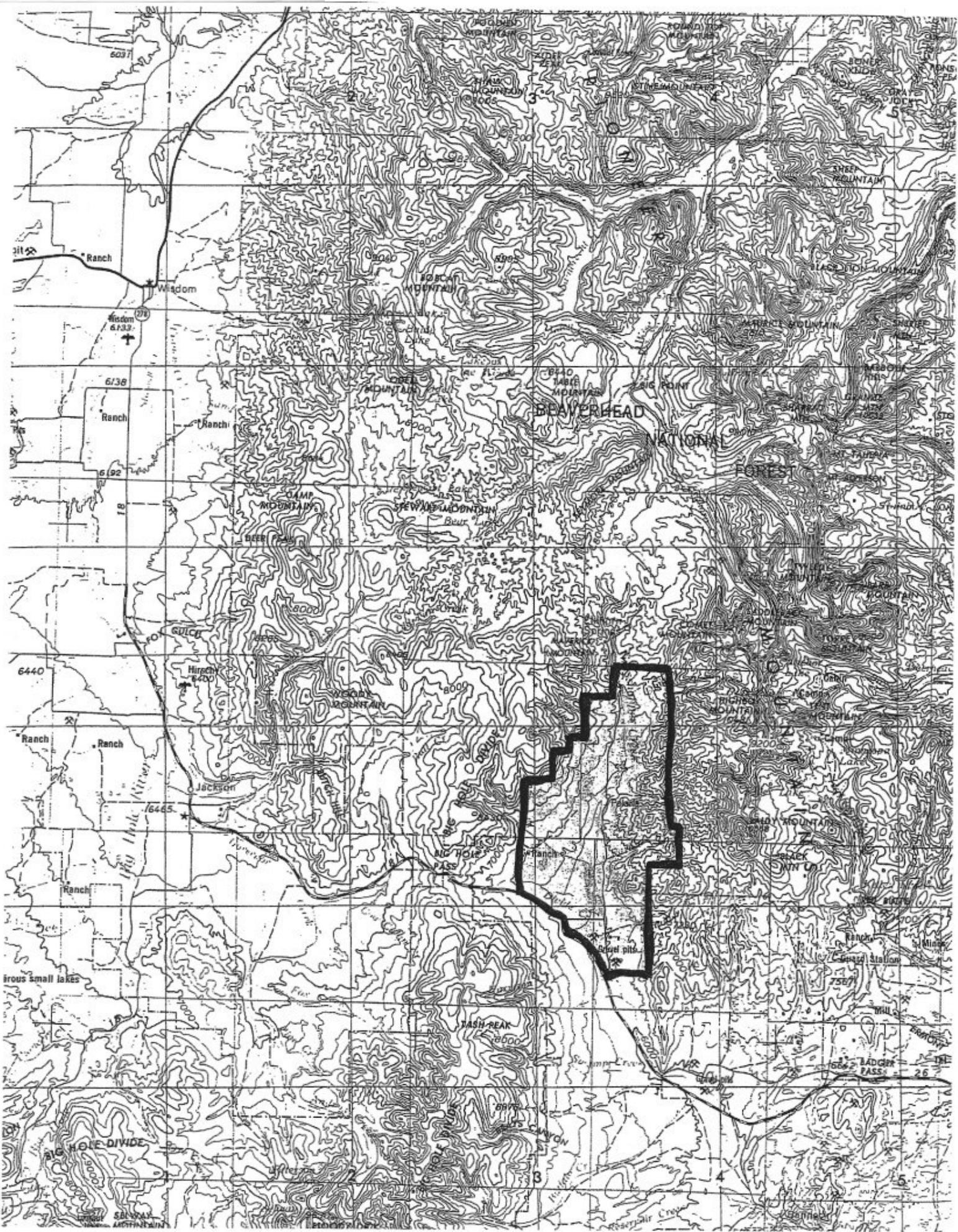
*Beaverhead County Property Assessment Office

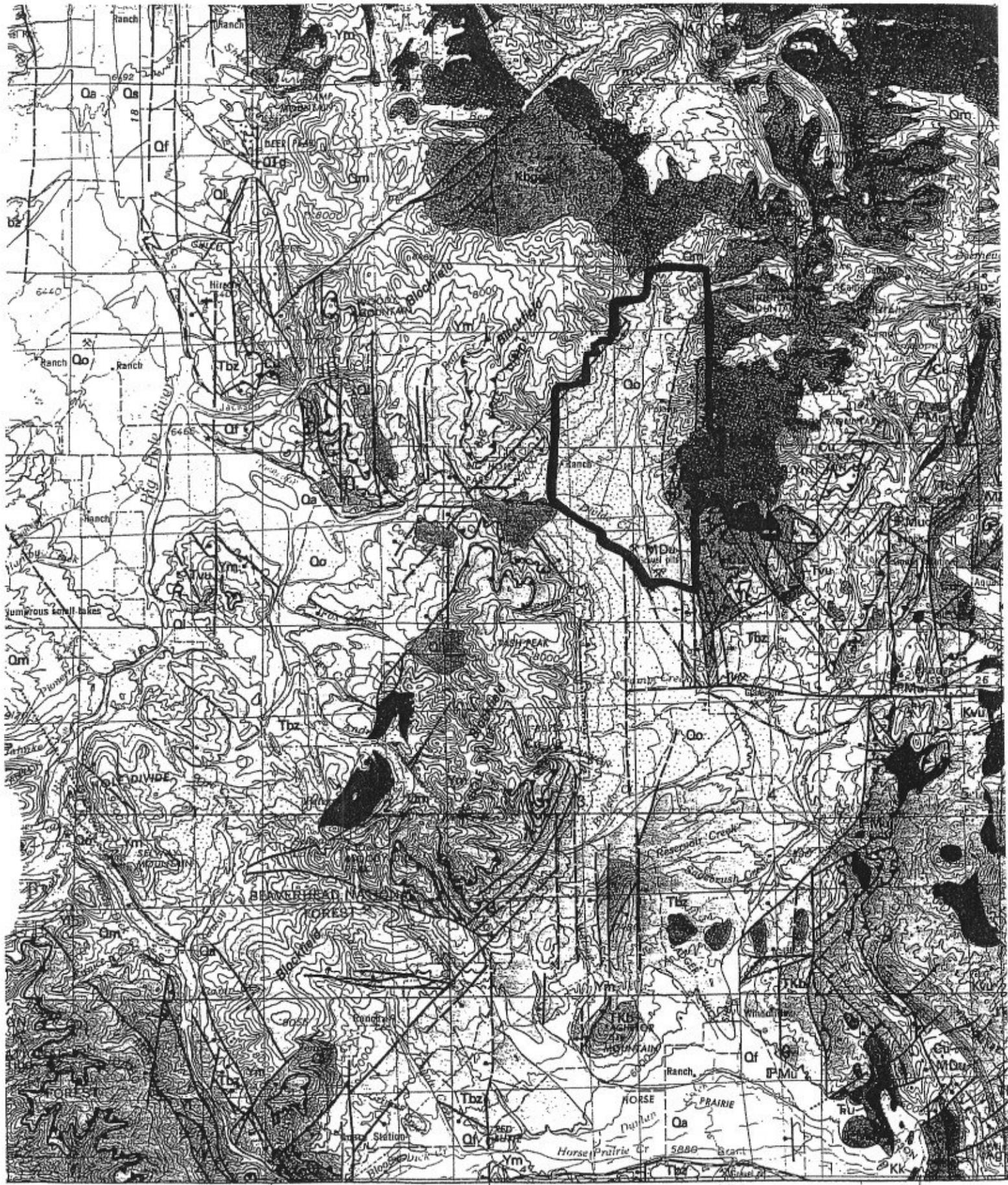
Polaris School District #21 Taxable Valuation



TAXABLE VALUE

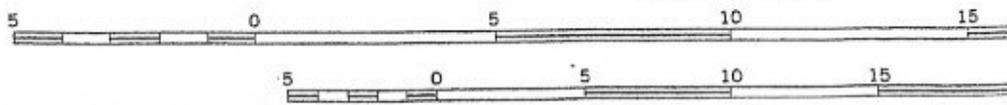
*Beaverhead County Superintendent of School's Office





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BLUE RIBBON ENVIRONMENTAL

Blue Ribbon Environmental,
74 Fox Ridge Drive
Dillon, Montana 59725
406-683-6183

August 25, 1998

Rick Hartz
Beaverhead County Planner
County Courthouse
Dillon, Montana 59725

Re: Water Quality Assessment
Grasshopper Valley
Beaverhead County, Montana

Dear Rick:

Blue Ribbon Environmental is pleased to present the findings from our water quality assessment from selected locations in the Grasshopper Valley, Beaverhead County, Montana. The purpose of this assessment was to assess the presence of nitrates in the shallow and deeper water bearing zones and surface water.

PROJECT UNDERSTANDING

The Grasshopper Valley has experienced considerable growth over the past 10 years. Strong growth is expected to continue in this area. Based on the expectation of continued growth, the shallow water table and use of individual septic systems Beaverhead County would like to assess the impacts of current septic systems and the potential impacts of additional septic systems in this area.

Nitrates are typical compounds associated with septic system effluent. High levels of nitrates in the ground water or surface water may indicate that the septic system is not operating properly.

Water samples were collected from 15 water wells and 2 surface water locations. The 15 water wells consisted of 12 shallow wells with static water at the time of drilling of between 6 -24 feet below the ground surface and 3 deeper wells with static water levels of between 47 - 154 feet below the ground surface.

One surface water sample was collected from the creek about 1/2 mile south of Elkhorn Hot Springs. The second surface water sample was collected from Grasshopper Creek adjacent to Polaris, Montana.

Figures 1, 2 and 3 present the sample locations.

Montana Tech was contacted and well logs from the Grasshopper Valley area were obtained. Well logs that indicated shallow static water levels at the time of drilling were identified. The owners of these wells were notified that the county wished to collect a water sample from their well.

WATER QUALITY

Sampling Procedures

On August 5, 1996 water samples were collected from the 15 wells and 2 surface water locations. The water sample was collected from an outside faucet or pressure tank at each residence. The surface water samples were collected by dipping a sample jar in the creek.

The water samples were collected in a laboratory prepared jar. Sulfuric acid was placed in each sample (preservative). The samples were placed in a chilled cooler and sent to Energy Laboratories, Billings, Montana for analysis.

Chemical Results

The level of nitrates in the well samples ranged between 0.11 mg/l and 1.78 mg/l. No nitrates were detected (detection limit 0.05 mg/l) in either of the surface water samples.

Table 1 presents the analytical results.

Table 1. Nitrate Results

<u>Sample Location</u>	<u>Depth of Well</u>	<u>Depth of Groundwater</u>	<u>Total Nitrates in mg/l (ppm)</u>
B. Ballenbacker #2	140 feet	16 feet ATD	0.13
Bonds #3	63 feet	16 feet ATD	0.11
Loendorf #4	261 feet	10 feet ATD	0.13
Nelson #5	43 feet	12 feet ATD	1.78
Becker #6	80 feet	11 feet ATD	0.60
White #8	45 feet	15 feet ATD	0.53
Porter #11	100 feet	22.5 feet ATD	0.26
Elkhorn Hot Sp. #12	NA	NA	0.29
Eck #13	196 feet	154 feet ATD	0.46
Owen #14	148 feet	90 feet ATD	0.39
Grasshopper Inn #15	140 feet	24 feet ATD	0.27
Riddle #16	125 feet	47 feet ATD	0.36
Given #17	100 feet	6 feet ATD	0.66
Marchesseau #18	75 feet	6-12 feet ATD	0.15
Cox #19	74 feet	16 feet	0.20
Grasshopper Cr. Upper	————	Surface Water	<0.05
Grasshopper Cr. Polaris	————	Surface Water	<0.05

Notes: Depth of well and depth to groundwater obtained from well logs
 ATD - Static water level at time of drilling
 NA - Information not Available

Interpretation of Results

No water sample exceeded 5 mg/l, the Montana Non-Degradation Standard (ARM 16.20.701-714) or 10 mg/l the federal drinking water standard for nitrates.

No Nitrates were detected in either surface water sample.

Based on these results it does not appear that the level of nitrates currently in the groundwater or in the surface water are at a level that pose a significant threat to public health. These results are only for the specific areas that the samples were collected. It is possible, that locations not sampled have levels of nitrates in the groundwater that are higher and may pose a human health concern.

In addition, the level of nitrates in the groundwater from the wells sampled may vary over time based on water level fluctuations or septic system failure.

Attachment A presents a copy of the analytical certificates.

RECOMMENDATIONS

We recommend that well owners in the the Grasshopper Valley check the quality of their drinking water on a regular basis. The water samples should be analyzed for general drinking water parameters.

Septic tanks should also be pumped every 3 to 4 years, or went necessary.

INFORMATION LIMITATIONS

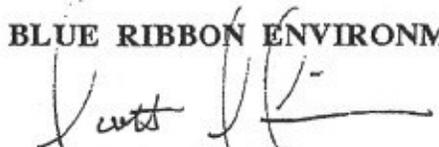
This work and this report was prepared, using generally accepted professional practices for the nature of the work performed in the same or similar localities, at the time the work was performed. It is intended for the exclusive use of Beaverhead County Commissioners for specific application to the project site and purpose. No other warranty, express or implied, is made.

It should be noted that Blue Ribbon Environmental, Inc. relied on reports and verbal information provided by the individuals indicated above regarding certain portions of the site. Blue Ribbon Environmental can only relay this information and cannot be responsible for its accuracy or completeness.

Any questions regarding the field work and this report, presentation of the information, and interpretation of the data are welcome and should be referred to Scott Ferris at (406) 683-6183.

Sincerely,

BLUE RIBBON ENVIRONMENTAL



SCOTT S. FERRIS

Principal, Environmental Engineer

Attachment A - Analytical Certificates

cc: Larry Laknar (Beaverhead County Sanitarian)

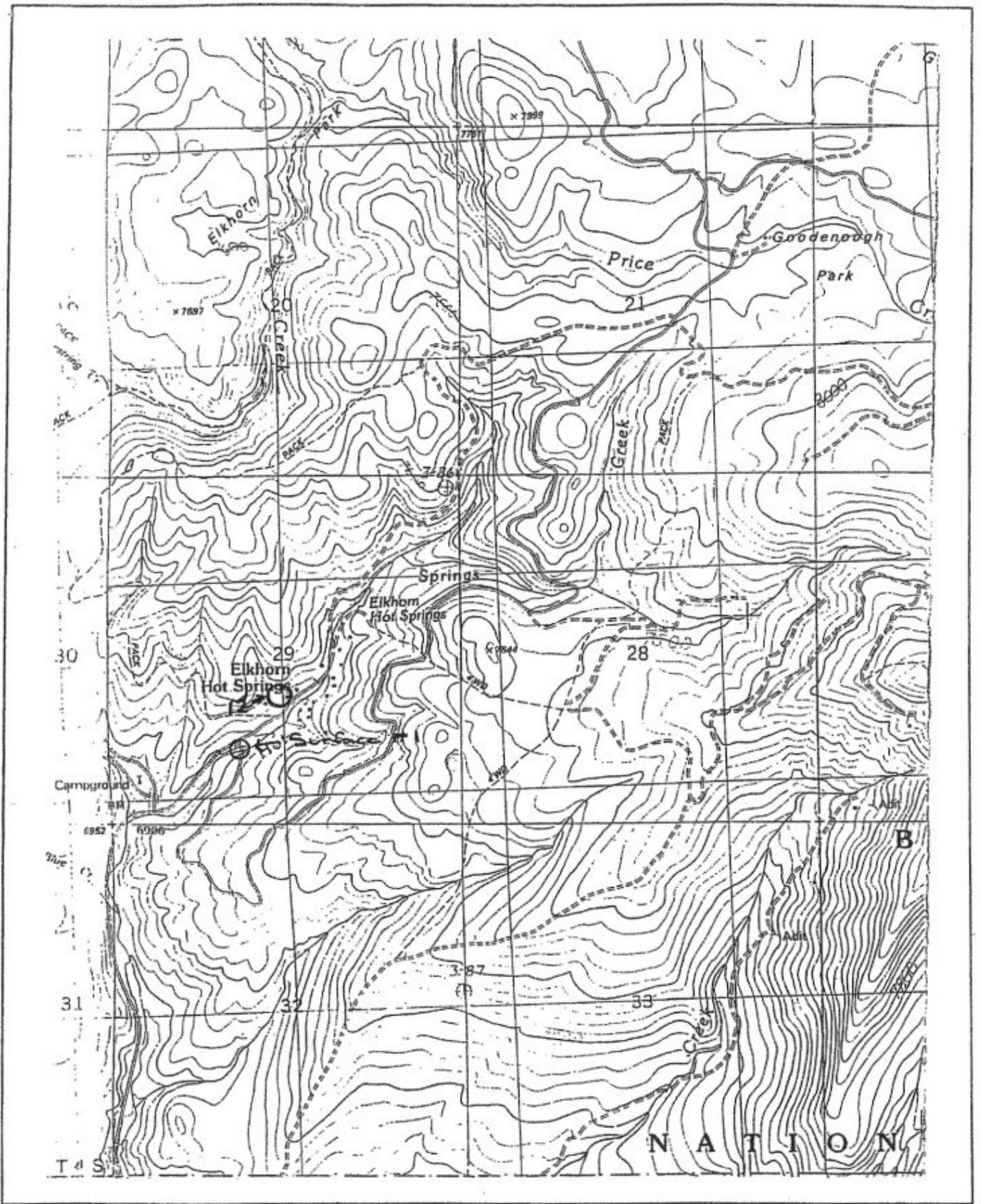


Figure 2 - Sample Locations 8-5-98

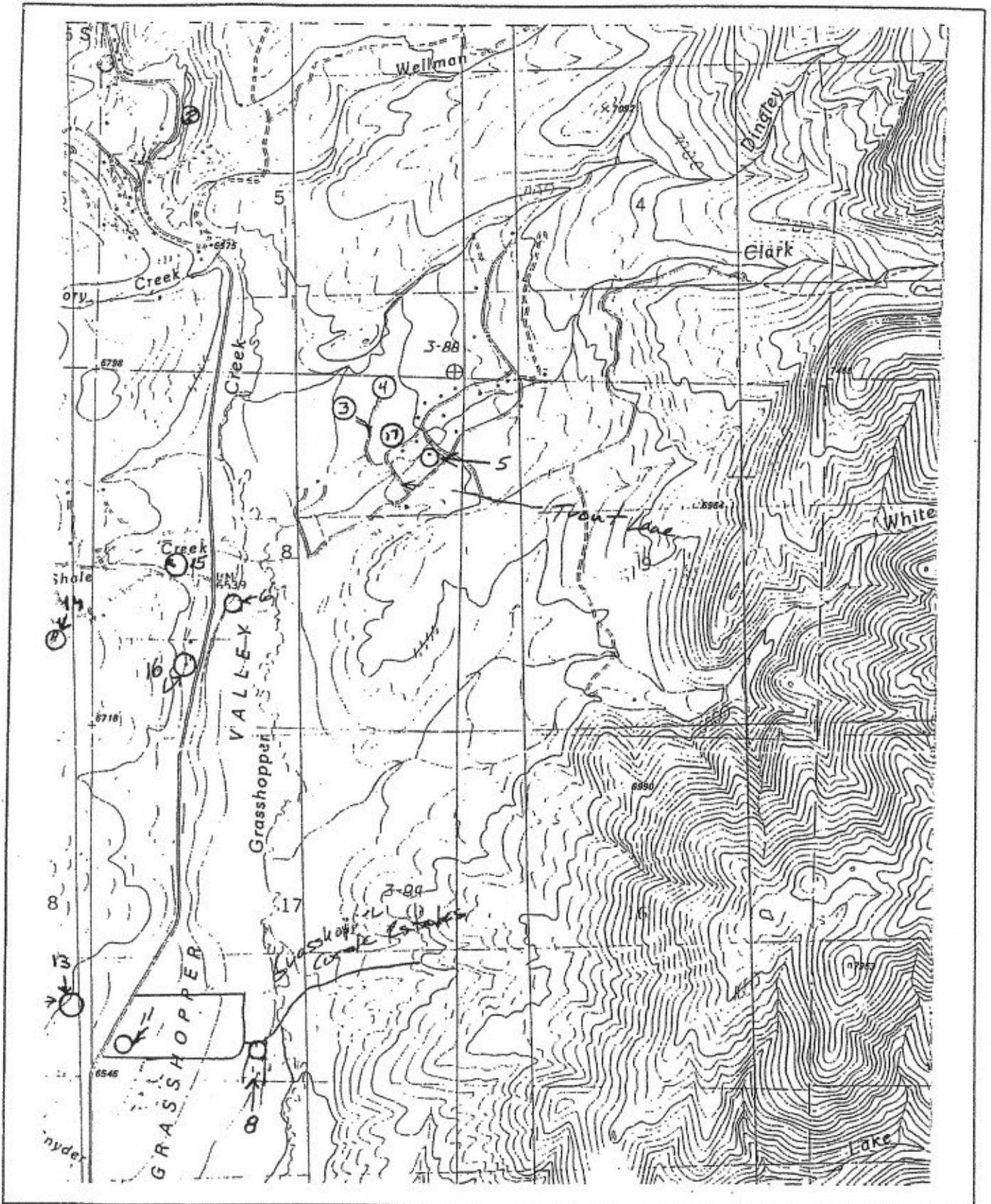


Figure 1 - Sample Locations 8-5-98

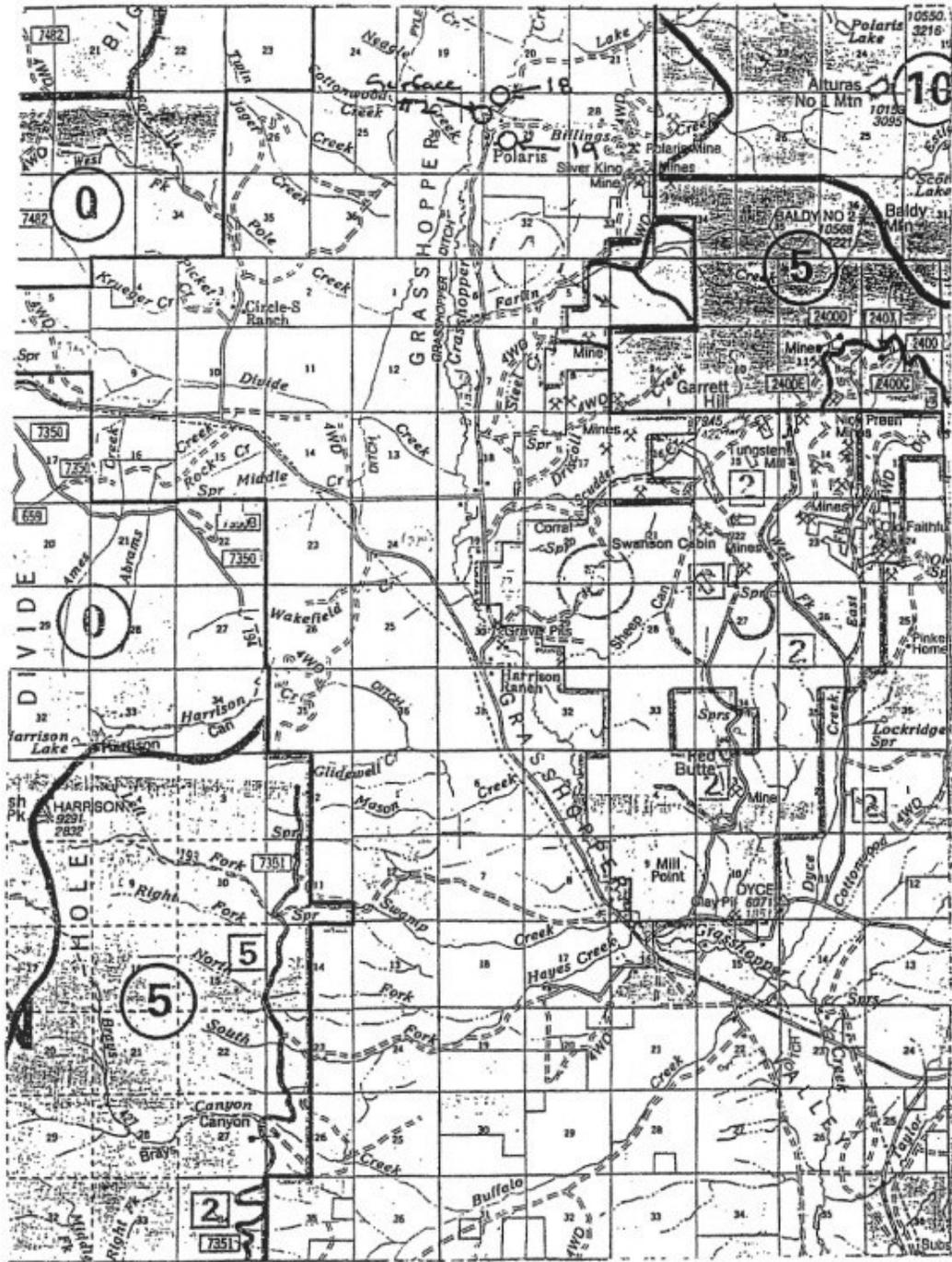


Figure 3 - Sample Locations 8-5-98

ATTACHMENT A

Analytical Certificate

LABORATORY REPORT

Page: 1

To : Blue Ribbon Environmental
 Address : Scott Ferris
 74 Fox Ridge Dr.
 Dillon, MT 59725

Date: 11-AUG-98 lms

WATER ANALYSIS REPORT

Project : Grasshopper Beaverhead Co.
 Received Date: 07-AUG-98

ANALYSIS FOR : Nitrate plus Nitrite as N

LabSamp #	Sample ID	Report			Re- marks	Method	- Analysis -		
		Limit	Results	Units			Date	Time	By
98-51435	Grasshopper Upper Sampled: 05-AUG-98	0.05	<0.05	mg/l	353.2	10-AUG-98	1512	BAS	
98-51436	Porter #11 Sampled: 05-AUG-98	0.05	0.26	mg/l	353.2	10-AUG-98	1512	BAS	
98-51437	Grasshopper Creek Polaris Sampled: 05-AUG-98	0.05	<0.05	mg/l	353.2	10-AUG-98	1513	BAS	
98-51438	Cox 19 Sampled: 05-AUG-98	0.05	0.20	mg/l	353.2	10-AUG-98	1514	BAS	
98-51439	Marhesseau Upper #18 Sampled: 05-AUG-98	0.05	0.15	mg/l	353.2	10-AUG-98	1514	BAS	
98-51440	Given 17 Sampled: 05-AUG-98	0.05	0.66	mg/l	353.2	10-AUG-98	1515	BAS	
98-51441	Elkhorn #12 Sampled: 05-AUG-98	0.05	0.29	mg/l	353.2	10-AUG-98	1516	BAS	
98-51442	Nelson #5 Sampled: 05-AUG-98	0.05	1.78	mg/l	353.2	10-AUG-98	1516	BAS	
98-51443	Ballenbacker #2 Sampled: 05-AUG-98	0.05	0.13	mg/l	353.2	10-AUG-98	1517	BAS	
98-51444	Grasshopper #15 Sampled: 05-AUG-98	0.05	0.27	mg/l	353.2	10-AUG-98	1519	BAS	
98-51445	Riddle #16 Sampled: 05-AUG-98	0.05	0.36	mg/l	353.2	10-AUG-98	1520	BAS	
98-51446	Owen #14 Sampled: 05-AUG-98	0.05	0.39	mg/l	353.2	10-AUG-98	1558	BAS	
98-51447	Loendorf #4 Sampled: 05-AUG-98	0.05	0.13	mg/l	353.2	10-AUG-98	1522	BAS	
98-51448	Becker #6 Sampled: 05-AUG-98	0.05	0.60	mg/l	353.2	10-AUG-98	1523	BAS	
98-51449	Bonds #3 Sampled: 05-AUG-98	0.05	0.11	mg/l	353.2	10-AUG-98	1524	BAS	
98-51450	Eck #13 Sampled: 05-AUG-98	0.05	0.46	mg/l	353.2	10-AUG-98	1524	BAS	
98-51451	White #8 Sampled: 05-AUG-98	0.05	0.53	mg/l	353.2	10-AUG-98	1525	BAS	

Lab No(s). 98-51445 - 98-51451

QUALITY ASSURANCE DATA PACKAGE

This report includes the results of quality assurance tests performed with the sample analyses. They are performed to determine if the methodology is in control and to monitor the laboratory's ability to produce accurate and precise results.

Constituents	Duplicate Analysis		Spiked	Blank	----- Reference -----		Date Analyzed
	--- mg/l (ppm) ---	Original Duplicate	Analysis % Recovery	Analysis, mg/l ppm	Sample Analysis, mg/l ppm	Accept Range mg/l ppm	
Nitrate plus Nitrite as N	0.18	0.22	92	<0.05	2.37	2.04-2.56	10-AUG-98

Lab No(s). 98-51435 - 98-51444

QUALITY ASSURANCE DATA PACKAGE

This report includes the results of quality assurance tests performed with the sample analyses. They are performed to determine if the methodology is in control and to monitor the laboratory's ability to produce accurate and precise results

Constituents	Duplicate Analysis --- mg/l (ppm) ---	Analysis mg/l ppm	% Recovery	Blank Analysis, mg/l ppm	Sample Analysis, mg/l ppm	Reference	
						Accept Range	Date Analyzed
Nitrate plus Nitrite as N	0.13	0.15	97	<0.05	2.37	2.04-2.56	10-AUG-98