Montana Department of Natural Resources and Conservation
Water Resources Division
Water Rights Bureau

ENVIRONMENTAL ASSESSMENT
For Routine Actions with Limited Environmental Impact

Part I. Proposed Action Description

1. *Petitioner/Contact name and address*: Four Corners Community Foundation (FCCF), c/o Arthur V. Wittich, 602 Ferguson Ave., Ste. 5, Bozeman, MT, 59718

2. *Type of action*: The Montana Department of Natural Resources and Conservation (DNRC) has received a petition to create a temporary controlled groundwater area (CGA) in the Four Corners area in Gallatin County, approximately five miles west of Bozeman, Montana (file #30011241-41H).

   DNRC must follow the statutory process and criteria in 85-2-506 through 85-2-508 MCA when reviewing a petition for a CGA. An administrative hearing on the Four Corners Community Foundation CGA petition will be held to gather information and arguments supporting and opposing the petition. The notice of the hearing will be published in the local paper, and be mailed to each area well driller, landowners and ground-water rights holders within the proposed CGA boundaries, local governments, and state and federal agencies. DNRC will receive oral and written testimony relevant to the designation or modification of the proposed CGA at the administrative hearing. The procedure will be full, fair and orderly, and all relevant evidence will be received. Because of the technical nature of the statutory criteria, data and expert testimony will be essential to making a case during the process.

   After the conclusion of the hearing, DNRC will issue a proposed order with written findings and a proposed decision on the petition. The proposed order will be distributed to parties that participated in the hearing, so that they may have the opportunity to submit exceptions. A final order will be issued following this review of the proposed order and exceptions to it. The final order will contain DNRC's decision on whether or not a controlled ground-water area should be designated. The final order can be appealed to district court.

3. *Water source name*: Groundwater

4. *Location affected by project*: Sections 34,35 Township 1 South, Range 4 East; Sections 1,2,3,10,11,13,14,15,22,23,24,25,26,27,33,34,35,36 Township 2 South, Range 4 East; Sections 18,19,30 Township 2 South, Range 5 East, Gallatin County, Montana. See map for more precise proposed boundary.

5. *Narrative summary of the proposed project, purpose, action to be taken, and benefits*:

FCCF seeks a temporary closure of the alluvial aquifer to new groundwater developments in excess of 35 gpm within the proposed boundary area until a local hydrologic/cumulative impacts study is completed to assess the interaction between groundwater and surface water.

6. *Agencies consulted during preparation of the Environmental Assessment: (include agencies with overlapping jurisdiction)*

Montana Dept. of Environmental Quality
State Historic Preservation Office
Montana Natural Resource Information System
Montana State University (Fleming Thesis – April 2003, Custer Grant Proposal)
Gallatin County Commission Office
Gallatin Local Water Quality District
Gallatin County Planning Office
Montana Dept. of Fish, Wildlife and Parks

Part II. Environmental Review

1. Environmental Impact Checklist:

PHYSICAL ENVIRONMENT

WATER QUANTITY, QUALITY AND DISTRIBUTION

Water quantity **-** *Assess whether the source of supply is identified as a chronically or periodically dewatered stream by DFWP. Assess whether the proposed use will worsen the already dewatered condition.*

Determination: Groundwater has no designation as chronically or periodically dewatered. The petition would temporarily close the area to some new groundwater developments. Because the groundwater in the area is hydraulically connected to the West Gallatin River and tributaries, (see Groundwater section below) restrictions on groundwater development would only ensure groundwater recharge to surface water in the area that is occurring would continue to do so. The West Gallatin River is considered chronically dewatered by DFWP from Shedd's bridge (Four Corners) to the mouth and periodically dewatered from Gallatin Gateway to Shedd's bridge.

Water quality **-** *Assess whether the stream is listed as water quality impaired or threatened by DEQ, and whether the proposed project will affect water quality.*

Determination: Groundwater in the area is identified as Class 1 for protection purposes. This is the base class used unless sampling shows a specific conductance greater than 1000 micro-siemens. Sampling for area subdivision proposals has shown the specific conductance to be below this level (per telecommunication with DEQ).

Effluent from septic systems containing nitrates and pathogenic microorganisms can infiltrate ground water and reach water supply wells. Elevated levels of nitrates in drinking water can cause various health effects including a serious illness in infants known as "blue baby syndrome". Microbial contaminants including fecal coliform, E coli, and cryptosporidium may cause gastrointestinal problems that can be particularly serious in infants and people with compromised immune systems. The U.S. Environmental Protection Agency has designated a Maximum Contaminant Level (MCL) of 10 mg/L nitrate (as N) and any occurrence of microbial contaminants as thresholds that must not be exceeded in water from public water systems.

Gallatin County began permitting on-site water treatment systems in 1966. Prior to that, on-site wastewater treatment systems were not required to meet any standards. In 1993, the State of Montana adopted minimum standards for on-site wastewater treatment systems that mandated all counties in Montana follow the minimum standards. The amount of nitrate released to the environment from a septic system depends on the composition of the wastewater and the design of the septic tank and drain field. Effluent from a properly functioning septic system contains roughly two to seven times the drinking water limit of 10 mg/L nitrate (Wilhelm et al, 1994). Once released to ground water, the persistence of nitrate and microbial contaminants depends on the physical and chemical conditions in soils and aquifer materials encountered by septic effluent. Dilution and denitrification, a process that uses organic carbon to convert nitrate to nitrogen gas, can lower nitrate concentrations in ground water.

Groundwater **-** *Assess if the proposed project impacts ground water quality or supply. If this is a groundwater appropriation, assess if it could impact adjacent surface water flows.*

Determination: Wells within the boundary of the proposed controlled ground water area obtain water from Quaternary age alluvium along the West Gallatin River and underlying poorly- to well-consolidated Tertiary age sedimentary rocks. Alluvium consists of an average of 55 feet of uniformly coarse sand and gravel (Hackett and others, 1960). Test wells for the Utility Solutions LLC beneficial water use application were drilled into Tertiary age rocks consisting of "a mixture of coarse grained sand and gravel interbedded with layers of fine-grained sand, silty sand, sandy and silty clay, sandstone, welded tuff, and hard, blocky clay". Quaternary- and Tertiary-age aquifers probably are interconnected to differing degrees.

The main sources of recharge to ground water within the proposed controlled ground water area are seepage from irrigation canals and tributaries of the West Gallatin River, return flows from flood irrigation, and snowmelt. Ground water discharges to the West Gallatin River and its tributaries and through evapotranspiration by riparian vegetation or leaves the area as underflow (Hackett and others, 1960).

Designation of a controlled ground water area would not authorize increased water use, but could place limitations on new uses and indirectly on development. Therefore, any impacts to ground water quality or supply probably would be favorable. In addition, ground water within the proposed controlled ground water area is hydraulically connected to surface water and any limitations on new uses would result in less impacts on surface water flows than otherwise could have occurred.

UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES

Endangered and threatened species **-** *Assess whether the proposed project will impact any threatened or endangered fish, wildlife, plants or aquatic species or any "species of special concern," or create a barrier to the migration or movement of fish or wildlife. For groundwater, assess whether the proposed project, including impacts on adjacent surface flows, would impact any threatened or endangered species or "species of special concern."*

Determination: Bald Eagles are a threatened species that may be seen within the proposed area. Westslope Cuttroat Trout may inhabit the water of the West Gallatin River. These species would not be directly affected by the creation of a CGA. Indirect benefits could occur if the level of development and water use is decreased, even if temporarily, as the groundwater in the area is connected to the river (see above discussion on groundwater).

Wetlands **-** *Consult and assess whether the apparent wetland is a functional wetland (according to COE definitions), and whether the wetland resource would be impacted.*

Determination: Any functional wetlands that exist in the proposed CGA would not likely be affected by the creation of a controlled groundwater area.

Ponds **-** *For ponds, consult and assess whether existing wildlife, waterfowl, or fisheries resources would be impacted.*

Determination: There are ponds within the proposed CGA that support the listed uses. Limiting the size or availability of potential wells for use to supply water for pond quality could be an inconvenience but is not a significant impact. There are other alternatives to controlling water quality.

GEOLOGY/SOIL QUALITY, STABILITY AND MOISTURE - *Assess whether there will be degradation of soil quality, alteration of soil stability, or moisture content. Assess whether the soils are heavy in salts that could cause saline seep.*

Determination: No impacts identified.

VEGETATION COVER, QUANTITY AND QUALITY/NOXIOUS WEEDS - *Assess impacts to existing vegetative cover. Assess whether the proposed project would result in the establishment or spread of noxious weeds.*

Determination: No impacts identified.

AIR QUALITY - *Assess whether there will be a deterioration of air quality or adverse effects on vegetation due to increased air pollutants.*

Determination: No impacts identified.

HISTORICAL AND ARCHEOLOGICAL SITES - *Assess whether there will be degradation of unique archeological or historical sites in the vicinity of the proposed project.*

Determination: There are recorded historic or archaeological sites within the proposed CGA. The action on the petition will not cause any ground disturbances directly. Any potential well drilling activity for study purposes should include a cultural resource inventory to identify specific sites.

DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AND ENERGY - *Assess any other impacts on environmental resources of land, water and energy not already addressed.*

Determination: No impacts identified.

HUMAN ENVIRONMENT

LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS - *Assess whether the proposed project is inconsistent with any locally adopted environmental plans and goals.*

Determination: There has been no zoning established in the Four Corners area. A previous attempt to designate zoning for the area through a Four Corners Area Community Plan was not successful. A number of planned subdivisions have received preliminary plat approval from the Gallatin County Commission. These subdivisions are at various stages of applying for approval from the Montana Dept. of Environmental Quality. This would indicate that the area is perceived as appropriate for development from the county's perspective. Potential controls on any groundwater developments, but particularly large capacity wells, could change that perception depending on the county's stance on the use of individual wells vs. community systems.

ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES - *Assess whether the proposed project will impact access to or the quality of recreational and wilderness activities.*

Determination: No impacts identified.

HUMAN HEALTH - *Assess whether the proposed project impacts on human health.*

Determination: Any controls established would be driven in part by the need for a sustainable and protectable water supply from the groundwater source in the area, which is directly linked to the support of human health of the area residents.

PRIVATE PROPERTY - *Assess whether there are any government regulatory impacts on private property rights.*
*Yes_**X**__ If yes, analyze any alternatives considered that could reduce, minimize, or eliminate the regulation of private property rights*.

Determination: Having a moratorium on the permitting of well systems for amounts greater than 35 gpm could have an affect on proposed developments that would have community water-well systems, at least during a two to four year study period. Minimizing conditions for permitting of wells less than 35 gpm and basing those conditions on scientific information may help reduce the effects of a controlled area. Current statute requires that within a controlled groundwater area there is no exception to the requirement of applying for and obtaining a water use permit prior to use of the water.

OTHER HUMAN ENVIRONMENTAL ISSUES - *For routine actions of limited environmental impact, the following may be addressed in a checklist fashion.*

Impacts on:

(a) *Cultural uniqueness and diversity?* No significant impact identified.

(*b)* *Local and state tax base and tax revenues?* Existing levels of taxes and revenue should not be affected.

(c) *Existing land uses?* Land use changes from agricultural to residential development in the CGA could be reduced in the short-term (2-to-4 years) because access to ground water for new appropriations would be restricted. Because of the restrictions in place in the CGA, builders may seek to construct new homes elsewhere. Hence, the temporary moratorium on permitting for wells greater than 35 gpm CGA could result in an indirect impact of increased well drilling and home construction in areas outside of the CGA boundaries.

(*d)* *Quantity and distribution of employment?* No significant impacts identified.

(e) *Distribution and density of population and housing?* A moratorium on ground-water development via wells greater than 35 gpm could restrict growth within the proposed CGA boundaries. To the extent that growth and demand for housing in the Four Corners area continues during the temporary CGA period, the growth that would have occurred in the proposed CGA might occur elsewhere.

(f) *Demands for government services?* Administration of any controls established would likely increase the workload of a number of agencies. DNRC would be impacted by an increase in permit filings for wells of 35 gpm or less. DEQ and Gallatin County Planning/Commission offices may be affected by alternative development requests.

(g) *Industrial and commercial activity?* A moratorium on ground-water development via wells greater than 35 gpm could restrict the growth of industrial and commercial developments that require larger water supplies within the proposed CGA boundaries.

(h) *Utilities?* No significant impacts identified.

(i) *Transportation?* No significant impacts identified

(j) *Safety?* No significant impacts identified.

(k) *Other appropriate social and economic circumstances?* None identified.

2. ***Secondary and cumulative impacts on the physical environment and human population:***

Establishment of proposed studies and temporary controls within the proposed area may have affects on property values and cause development to occur in other areas sooner than planned. If wells with a use of 35 gpm or greater are not allowed, more individual wells at rates less than 35 gpm could be constructed and lower density housing development may result.

Water use permits have been issued for the Elk Grove and Garden Center Subdivisions, and an application by Zoot Properties LLC is pending a final decision, all of which comprise a portion of the development of concern within the proposed CGA. An application for a water use permit has been received by Utility Solutions, LLC proposing to supply water to a number of approved or pending subdivisions. Within the proposed boundary area that application would not be subject to the provisions of the proposed controlled area as it was received prior to any final decision on the establishment of a controlled area. This proposed project would encompass a large portion of the area immediately around Four Corners for which several subdivisions have already received approval from the county.

Four controlled groundwater areas currently exist within Gallatin County: Sypes Canyon temporary CGA located just north of Bozeman on the west flank of the Bridger Mountains is a temporary control area for monitoring and study purposes – water use permits can be issued with conditions; Bozeman Solvent Site CGA extends from the old Buttery's shopping center (Hastings Video now) in a northern direction and just beyond the East Gallatin River and is a permanent control area established due to water quality issues – water use permits can be issued with conditions; Idaho Pole Company Site CGA is a total closure (except for replacement wells) – no water use permits issued; Yellowstone Controlled Groundwater Area exists around Yellowstone National Park and encompasses West Yellowstone and areas just outside of the park – permits are issued with conditions. All but the Yellowstone CGA are in the Gallatin Valley and close to the city of Bozeman.

As more controlled groundwater areas are established with the special permitting conditions or total closure to use, the area drillers, developers, landowners and permitting

agencies have to be more aware of restrictions or limits involved. It can typically be expected to take a longer period of time to acquire the necessary water rights in a control area that allows water use permits to be issued.

3. ***Describe any mitigation/stipulation measures:***

Some potential impacts of CGA designation could be mitigated by taking into consideration the new alternatives described below.

4. ***Description and analysis of reasonable alternatives to the proposed action, including the no action alternative, if an alternative is reasonably available and prudent to consider:***

No action alternative: This would allow potential development to apply for water use permits under the current statutory application process and be scrutinized on an individual basis. Individual well users of up to 35 gpm or 10 acre-feet per year would continue to file on water use with little review under the permit exemptions in the law. A proposed study by MSU would still proceed, if funded, to address the issues raised in the petition.

Proceed Alternative: Hold a hearing on the creation of a temporary CGA with the conditions as requested by the petitioners. This would allow public input and establish a record of evidence for a hearings examiner to make a decision on. The final decision could be a modification, denial or establishment as requested of a temporary controlled groundwater area.

Groundwater Study Alternative: A 4-year study of the groundwater supply would be initiated as suggested by the petitioners. The purpose of the study would be to characterize and quantify the availability of groundwater for appropriation and potential adverse impacts to current water users, and to characterize the nature and extent of changes in groundwater quality. The area would not be closed to groundwater development, but developers would be required to submit the following information before their water permit applications could be sent out for public notice: (1) a detailed drillers log containing descriptions of lithologies, well construction methods, and depth of occurrence of water, (2) the results of well-yield tests, and (3) a water quality analysis for nitrate, specific conductance, chloride and total coliform bacteria. An applicant that is issued a permit would be further required to submit to DNRC monthly depth to water measurements for the duration of the groundwater study. Following the completion of the 4-year study, DNRC would hold a hearing to consider whether additional groundwater developments within the control area should be restricted.

PART III. Conclusion

Based on the significance criteria evaluated in this EA, is an EIS required?

Finding:
*Yes___ No_**X**_*

If an EIS is not required, explain why the EA is the appropriate level of analysis for this proposed action: Any actions taken through the establishment of a controlled groundwater area would be administrative in extent with no physical action being directly involved. No significant environmental impacts have been identified.

DNRC has determined that this EA is the appropriate level of environmental review for the Four Corners Community Foundation CGA petition because the proposal in the petition and the alternatives presented in this EA would not significantly affect the quality of the human environment. If the petition were acted on as proposed, the temporary moratorium on new ground-water appropriations could have an economic impact on some. However, the moratorium and associated impacts would be temporary during the two-year study with a possible extension to 4 years.

Name of person(s) responsible for preparation of EA:

Name: Scott Compton
Title: Regional Manager
Date: December 14, 2004