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

# ENVIRONMENTAL ASSESSMENT
**For Routine Actions with Limited Environmental Impact**

Revised 1-2001

## Part I. Proposed Action Description

1. *Applicant/Contact name and address*: JAMES L. HADLEY
381 8TH LN NE
FAIRFIELD, MT 59436

2. *Type of action*: Application for Beneficial Water Use Permit No. 41K-30022398

3. *Water source name*: Spring Coulee

4. *Location affected by action*: E2NWSE of Section 13, T22N R02W, Teton County

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

This proposed project is to build a 62.4 acre-foot on-stream reservoir on Spring Coulee, a tributary of Muddy Creek. The reservoir will be used for stock water and to irrigate 20 acres. The stock will drink directly from the reservoir and the water will be pumped from the reservoir, using a 336 gpm pump, for sprinkler irrigation. The period of diversion for the on-stream reservoir will be year round. The period of use for stock will be year round, and the period of use for irrigation will be April 15 to October 15. The proposed project is for 48 acre-feet for irrigation, 1.7 acre-feet for stock water plus 43.2 acre-feet of reservoir evaporation, for a total volume of 92.9 acre-feet.

The DNRC shall issue a water use permit if an applicant proves the criteria in 85-2-311, MCA, are met.

*6.* *Agencies consulted during preparation of the Environmental Assessment:*
*(include agencies with overlapping jurisdiction)*
State Historic Preservation Office (SHPO)
Montana Natural Heritage Program
Dept. of Enviromental Quality Website (TMDL 303d listing)
National Wetlands Inventory Website
Natural Resources Conservation Service Soil Survey Website

## 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:* Spring Coulee is not considered a chronically or periodically dewatered stream by the DFWP. This source is within the Upper Missouri River Basin Closure. The Muddy Creek drainage is considered to have too much water due to excess return flows largely caused from Greenfields Irrigation District (GID). This causes unnaturally high flows in the Muddy Creek drainage. In 1997, the legislature (per MCA 85-2-343) made an exception to the closure and opened the Muddy Creek drainage to allow for new appropriations of water as long as they will assist in the reduction of the erosion problem. This project is proposed to help remove excess water from the Muddy Creek drainage, which will have a benefit in the reduction of erosion.

***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:* The 303(d) list from DEQ does not identify Spring Coulee as water quality impaired. Spring Coulee is a tributary of Muddy Creek. At one time, Muddy Creek was identified as an impaired stream needing a TMDL plan. As of this date, the DEQ website now shows that all TMDLs needed have been completed. The high flows in the Muddy Creek drainage results in high sediment loads and erosion. The Muddy Creek Task Force was created to help resolve the problems. The high sediment loads and erosion has serious impacts to downstream sources, specifically the Sun River and Missouri River. These impacts affect irrigation, fishing, recreation, aquatic life, public water supplies, etc. The long-term goal of the Muddy Creek Task Force is to reduce return flows from Greenfields Irrigation District in Teton County, thereby reducing erosion and minimizing water quality degradation. The applicant is working with the Greenfields Irrigation District to ensure the project is constructed adequately to minimize impacts and reduce erosion. The controlled reservoir storage and proper irrigation management will help reduce flows into Muddy Creek, thereby helping to reduce erosion.

***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*: This is not a groundwater project.

**DIVERSION WORKS** *- Assess whether the means of diversion, construction and operation of the appropriation works of the proposed project will impact any of the following: channel impacts, flow modifications, barriers, riparian areas, dams, well construction.*

*Determination*: In addition to the stock water and irrigation use, the reservoir impoundment is intended to alter the flow in Spring Coulee, and subsequently Muddy Creek, to help reduce erosion. Applicant has been working with Greenfields Irrigation District to design the outlet structures, to include check boards, which can be manipulated by the applicant to help control the flows and slow surges. Both are considered by Greenfields Irrigation District to cause

erosion. When a known surge is expected, the applicant can adjust the check boards, allowing the reservoir level to be slowly lowered, thereby allowing the reservoir to hopefully absorb some of the surge as the reservoir refills. The dam on the reservoir is designed to be about 14 - 15 feet high, with the emergency spillway height also at 14 feet, however, the dam is designed with outlets and check boards at about 12 feet. The diversion to be used for the irrigation system will be a 336 gpm pump with a screened suction line in the reservoir. It is not expected that the project will impact channel impacts, barriers and riparian areas.

## 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*: According to a report from the Montana Natural Heritage Program, there are no species of special concern in the general area of this project. The project site is not within or near a critical wildlife habitat area and will not deteriorate any wildlife habitat.

***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*: No known wetlands exist in the project area.

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

*Determination*: It is anticipated that existing wildlife and waterfowl will not be impacted, and in fact should benefit from the proposed reservoir.

## 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*: According to the NRCS Soil Survey website, the soils in the proposed project area are primarily Saypo Clay loam and Niart-Crago gravelly loams. The Saypo Clay Loam, where the reservoir is proposed, is about 0-60 inches deep, with a water holding capacity of .9 to 6.0 inches. This soil appears to be good for the reservoir site since it has limited piping and seepage. The Niart-Crago gravelly loams, where generally the irrigated land will be located, is about 0-60 inches deep, with a water holding capacity of .15 to 11.4 inches. Website information indicates the soils in the irrigated area have severe limitations that reduce choice of plants or that require special conservation practices, or both. With sprinkler irrigation, the soil can be irrigated at very slow rates to allow for complete water intake with minimal runoff and ponding. Irrigation enhances crop cover during the growing season and provides more protection from wind and water erosion. Irrigation also increases plant residues returned to the

soil. Soil structure is improved, microbe populations benefit from the added food source, and nitrogen fertility is enhanced. The soils around the proposed reservoir site and irrigated land will be temporarily disturbed when the reservoir is constructed, pump and pipeline is installed. However, disruption should be moderate and the area will be revegetated so impacts should be minor.

**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*: There will be some disturbance to the vegetative cover during the construction phase of the reservoir and pipeline. These impacts, however, should be minor. As mentioned above, the disturbed area will also be revegetated. There is potential to establish or spread noxious weeds due to vegetation disturbance, however, it is the responsibility of the property owner to control weeds on their property.

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

*Determination*: No impact is anticipated as a result of this project.

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

*Determination*: According to the Montana State Historic Preservation Office (SHPO), there are no previously recorded historic sites within the project area. Based on the lack of previous inventory and the ground disturbance associated with this project, SHPO feels the project has potential to impact cultural properties. Therefore, they recommend that a cultural resource inventory be conducted to determine whether or not sites exist and if they will be impacted. Since the project is located on private property, any inventory conducted would be at the landowner's discretion.

**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 additional impacts on other environmental resources were 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*: This fits into the Muddy Creek Task Force management plan of reducing erosion on Muddy Creek. The applicant indicated that Greenfields Irrigation District currently

has plans to try to control flows and surges, which to the applicant's understanding cause the most erosion. There are no other known environmental plans or goals in this area.

**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*: There is little or no recreational value on this stream.

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

*Determination*: This project should not have any impact on human health.

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

*Determination*: This should not impact any other private property rights.

**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.

(b) *Local and state tax base and tax revenues ?* No significant impact. This project should increase tax revenue to the local and state tax base.

(c) *Existing land uses ?* No significant impact. Sprinkle irrigating the land will increase the productivity and profitability of the land.

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

(e) *Distribution and density of population and housing ?* No significant impact.

(f) *Demands for government services ?* No significant impact.

(g) *Industrial and commercial activity ?* No significant impact.

(h) *Utilities ?* No significant impact.

(i) *Transportation ?* No significant impact.

*(j)* *Safety ?* No significant impact.

*(k)* *Other appropriate social and economic circumstances ?* No significant impact. The project should benefit the area and erosion control effort.

**2.** ***Secondary and cumulative impacts on the physical environment and human population:*** No secondary or cumulative impacts have been identified.

**3.** ***Describe any mitigation/stipulation measures:*** None

**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 significant impacts have been identified. Under the no action alternative, this permit would not be approved and the land use would remain as is. The applicant would not benefit economically from the increased hay production. In addition, no action would be contrary to the long term goals of the Muddy Creek Task Force, which includes reducing return flows and erosion in the Muddy Creek drainage, and enhancing the agricultural economy. At this time, a reasonable alternative has not been determined.

## PART III. Conclusion

*Based on the significance criteria evaluated in this EA, is an EIS required?* No

*If an EIS is not required, explain why the EA is the appropriate level of analysis for this proposed action:* No significant impacts have been identified, therefore an EIS is not necessary.

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

*Name:* Dixie Brough
*Title:* Water Resources Specialist
*Date:* November 29, 2006