

DEPARTMENT OF NATURAL RESOURCES
AND CONSERVATION



BRIAN SCHWEITZER
GOVERNOR

DIRECTOR'S OFFICE (406) 444-2074
TELEFAX NUMBER (406) 444-2684

STATE OF MONTANA

WATER RESOURCES DIVISION (406) 444-6601
TELEFAX NUMBERS (406) 444-0533 / (406) 444-5918
<http://www.dnrc.mt.gov>

1424 9TH AVENUE
PO BOX 201601
HELENA, MONTANA 59620-1601

Cover Letter

June 23, 2011

TO: Governor's Office, Vivian Hammill, Rm. 204, State Capitol, P.O. Box 200801, Helena, MT 59620-0801
Environmental Quality Council, Capitol Building, Room 106, P.O. Box 201704, Helena, MT 59620
Dept. of Environmental Quality, Metcalf Building, P.O. Box 200901, Helena, MT 59620-0901
Director's Office
Dept. of Natural Resources and Conservation, 1625 11th Ave. Helena, MT 59620
Director's Office
Information Services Section
Water Resources Division, 1424 9th Ave., P.O. Box 201601, Helena, MT 59620-1601
Scott Irvin, Water Resources Div., Lewistown Office, 613 NE Main, Suite E, Lewistown, MT 59457
Montana Dept. of Fish, Wildlife & Parks, 1420 E. 6th Ave. Helena, MT 59620
Director's Office
Ann Tews, DFWP Lewistown Area Office, 2358 Airport Rd., P.O. Box 938, Lewistown, MT 59457
Eugene Taber Jr., Upper Musselshell Water Users Association, P.O. Box 61, Shawmut MT 59078
Montana Environmental Information Center, P.O. Box 1184, Helena, MT 59624
Montana Audubon Council, P.O. Box 595, Helena, MT 59624
Wheatland County Commissioners, 201 A. Ave. NW, Harlowton, MT 59036
Wildlife Federation, P.O. Box 1175, Helena, MT 59624
Trout Unlimited, P.O. Box 7186, Missoula, MT 59807
Northern Plains Resource Council, 2401 Montana Ave. Suite 200, Billings, MT 59626-2336
U.S. Army Corps of Engineers, 10 W. 15th St. Suite 2200, Helena, MT 59626
U.S. Fish & Wildlife Service, MT Field Office, 100 N. Park Ave. Helena, MT 59601

Ladies and Gentlemen:

The enclosed Environmental Assessment (EA) has been prepared for the Martinsdale North Dam Drain Monitoring Improvements Project and is submitted for your consideration. Please feel free to contact me at (406) 444-6622 (e-mail jdomino@mt.gov) should you have any questions or comments. Comments will be accepted until 5:00 p.m., July 22, 2011. Comments can also be mailed to: MT Dept. of Natural Resources and Conservation, State Water Projects Bureau, 1424 9th Ave., P.O. Box 201601, Helena, MT 59620-1601, attn. James P. Domino. Copies of the EA are available upon request. The EA can also be viewed on the DNRC website at www.dnrc.state.mt.us. Thank you.

Sincerely,

A handwritten signature in blue ink that reads "James P. Domino".

James P. Domino
Environmental Science Specialist
State Water Projects Bureau

STATE WATER PROJECTS
BUREAU
(406) 444-6646

WATER MANAGEMENT
BUREAU
(406) 444-6637

WATER OPERATIONS
BUREAU
(406) 444-0860

WATER RIGHTS
BUREAU
(406) 444-6610



Martinsdale Reservoir North Dam Drain Monitoring Improvements.

Montana Environmental Policy Act Environmental Assessment



Martinsdale North Dam

**Montana Department of Natural Resources and Conservation,
Water Resources Division,
State Water Projects Bureau**

June, 2011

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Martinsdale Reservoir North Dam Drain Monitoring Improvements.

Draft Environmental Assessment and MEPA Checklist

PART I. PROPOSED ACTION DESCRIPTION

1. Type of proposed state action:

The repair and improvement of the existing drain system and the installation of automated instrumentation at the Martinsdale North Dam will allow for enhanced monitoring of seepage, sedimentation, reservoir water levels and outflows from the dam. Improved monitoring of these conditions will enhance the early detection of potentially unsafe conditions and reduce the response time needed to correct problems.

2. Agency authority for the proposed action:

The Montana Legislature enacted statute 85-1- 101(1) through (6) MCA, which states:
"It is hereby declared as follows:

(1) The general welfare of the people of Montana, in view of the state's population growth and expanding economy, requires that water resources of the state be put to optimum beneficial use and not wasted.

(2) The public policy of the state is to promote the conservation, development, and beneficial use of the state's water resources to secure maximum economic and social prosperity for its citizens.

(3) The state, in the exercise of its sovereign power, acting through the department of natural resources and conservation, shall coordinate the development and use of the water resources of the state so as to effect full utilization, conservation, and protection of its water resources.

(4) The development and utilization of water resources and the efficient, economic distribution thereof are vital to the people in order to protect existing uses and to assure adequate future supplies for domestic, industrial, agricultural, and other beneficial uses.

(5) The water resources of the state must be protected and conserved to assure adequate supplies for public recreational purposes and for the conservation of wildlife and aquatic life.

(6) The public interest requires the construction, operation, and maintenance of a system of works for the conservation, development, storage, distribution, and utilization of water, which construction, operation, and maintenance is a single object and is in all respects for the welfare and benefit of the people of the state.

1. Name of project: Martinsdale Reservoir North Dam Drain Monitoring Improvements.

3. Name, address phone number of project sponsor :

State Water Projects Bureau, MT. Dept. of Natural Resources &
Conservation, 1424 9th Ave., P.O. Box 201601, Helena, MT 59620-
1601 (406) 444-6646

4. Construction Timeline:

Estimated Commencement Date: September 1, 2011

Estimated Completion Date: November 1, 2011

Current Status of Project Design (% complete) 75%

5. Location affected by proposed action (county, range and township):

The North Dam is located in Wheatland County, Township 8N, Range 12E, in the northwest quarter of the southeast quarter of section 18, approximately 1 mile southeast of Martinsdale. The land where the dam and reservoir are located is owned by the of the State of Montana and administered by the Montana Department of Natural Resources and Conservation, State Water Projects Bureau.

6. Project size -- estimate the number of acres that would be directly affected that are currently:

	<u>Acres</u>		<u>Acres</u>
(a) Developed:		(d) Floodplain	<u>0</u>
Residential	<u>0</u>		
Industrial	<u>0</u>	(e) Productive:	
(b) Open Space/Woodlands/Recreation	<u>0</u>	Irrigated cropland	<u>0</u>
		Dry cropland	<u>0</u>
(c) Wetlands/Riparian Areas	<u>0</u>	Forestry	<u>0</u>
		Rangeland	<u>0</u>
		Other	
		(dam embankment <u>5 acres</u>	
		and road across dam	
		crest)	

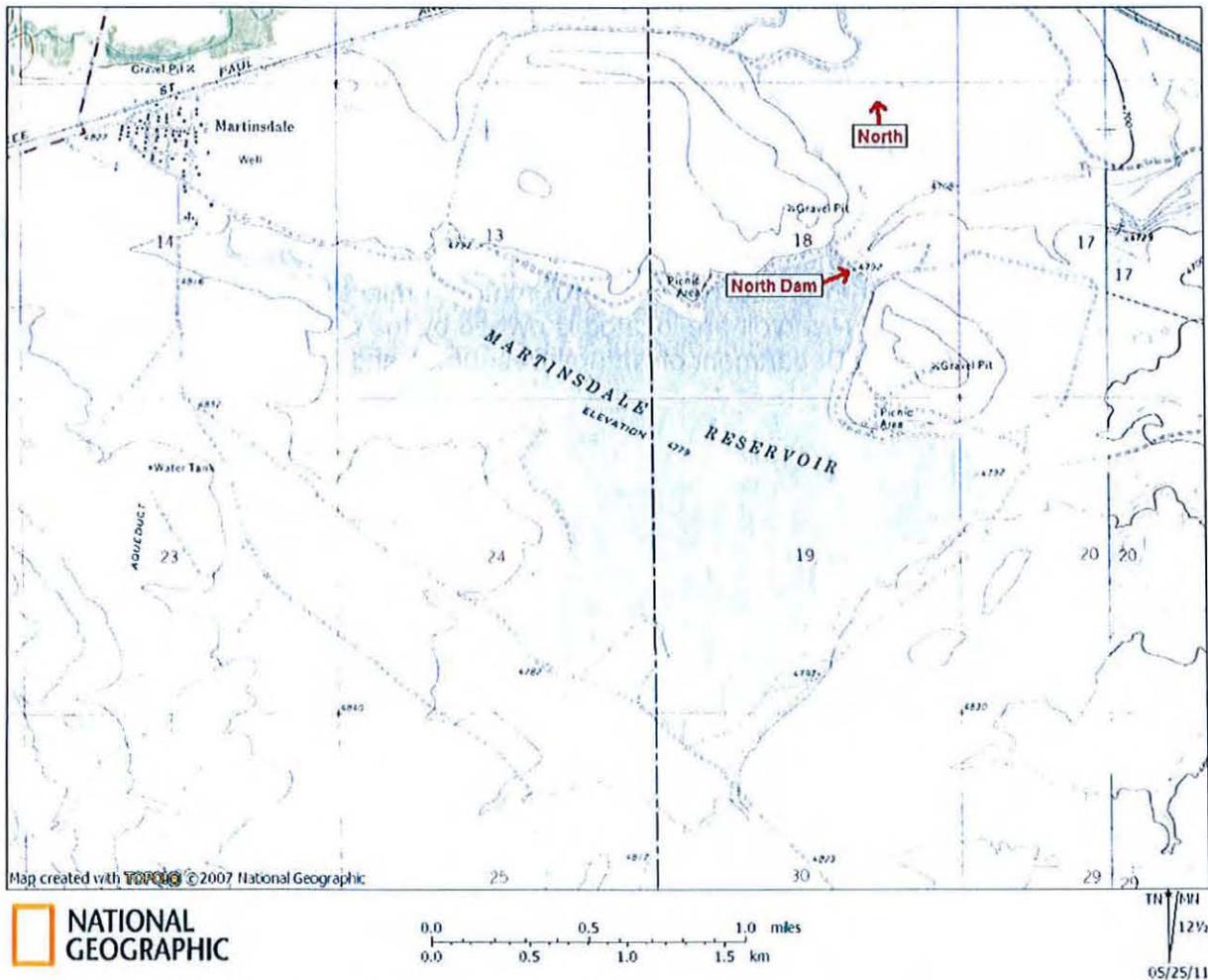


Figure 1. Local area map of Martinsdale Project

7. Listing of any other Local, State or Federal agency that has overlapping or additional jurisdiction.

(a) **Permits:** All permits will be obtained prior to applicable project construction.

The following permits would be needed:

<u>Agency Name</u>	<u>Permit</u>	<u>Status</u>
MT DEQ	Short-Term Exemption from Surface Water Quality (318 Authorization)	Pending
Corps of Engineers	Federal Clean Water Act (404 Permit)	Pending
MT Historic Preservation Office	Cultural Clearance	Pending
MT DNRC Dam Safety	Construction Permit	Obtained 3/16/11

(b) **Funding:**

Funding Source	Amount			
	Grant (\$)	Loan (\$)	Other (\$)	Total (\$)
A. Renewable Resource Program	100,000			100,000
B. DNRC In-kind Contribution	29,525			29,525

Estimated Total Project Cost \$129,525

(c) **Other Overlapping or Additional Jurisdictional Responsibilities:**

<u>Agency Name</u>	<u>Type of Responsibility</u>
State Historic Preservation Office	Cultural Resource Protection

8. Narrative summary of the proposed action or project including the benefits and purpose of the proposed action:

The Martinsdale North Dam and Reservoir are located in Wheatland County approximately 1 mile southeast of Martinsdale, Montana. The dam is owned by the Montana Department of Natural Resources and Conservation and operated and maintained by the Upper Musselshell Water Users Association. The earthfill dam is one of two dams that make up the Martinsdale Project. The North Dam is 91 feet high, has a crest length of 1,000 feet. The North and East Dams were constructed in 1939. The dams impound 23,185 acre-feet of water at full pool. The water is used primarily for agricultural irrigation. Recreation and flood control are also major benefits provided by the reservoir, although no specific allocations to these uses currently exist. Both the North and East Dams are classified as high hazard. A dam is classified as high hazard if failure of the dam would endanger lives and property downstream. This classification is not a reflection of the actual condition of the dam.

This project modifies portions of the existing drain system to improve the measurement of seepage flows and sedimentation rates. Automated reservoir level instrumentation is to be installed to allow continual monitoring of the reservoir.

The anticipated project start date is September 1, 2011, with the project expected to be complete by November 1, 2011. The funding source is a \$100,000 DNRC Renewable Resource Grant and Loan Program grant. In-kind services amount to \$29,525 for a funding total of \$129,525. The construction estimate is approximately \$100,000.

The project consists of three parts:

1. Right Abutment Drain Modifications.
2. Main Drain Manhole Installation for Flow and Sediment Monitoring.
3. Automated Reservoir level Transducer Installation

1. Right Abutment Drain Modifications – Currently there are 8 horizontal well-drains in the right abutment of the dam that collect seepage through the abutment. These drains come together in a common trench and enter into a 15-ft deep manhole. There also is a 4" interceptor drain that enters the manhole coming from the toe of the right abutment. The modifications will reroute the 8 Horizontal Drains and the Interceptor Drain away from the right manhole to a catchment basin structure where flow for each of the drains can be safely and easily measured and monitored.

The right manhole will be left in place. The 2" and 3" horizontal drains, which enter the manhole approximately 3 feet above the manhole floor, will be cut/stubbed off approximately 2 feet from outside of the manhole. The drain stubs will be used to capture seepage around the manhole by fixing a ¼" square stainless screen to the end of the each pipe, bedding the pipe ends in gravel, and protecting the adjacent base materials with a sand filter. The horizontal drains will be cut, realigned

and fitted with an adapter to increase their size to 6" diameter. A drain vent header system will also be constructed to facilitate the transition from pressure pipe flow to gravity flow.

The trench for the new 6" pipes, from near the right manhole to the catchment basin, will include a trench drain pipe (6" slotted PVC pipe) to collect seepage entering the trench backfill. A protective two-stage sand and gravel filter will envelope the slotted pipe throughout the trench. The trench will be approximately 100 feet long, 10 feet wide at bottom and vary from 15 feet deep near the manhole to about 5 feet deep at the catchment basin. Topsoil that was removed will be replaced and the disturbed areas re-seeded with native grasses.

Approximately 20,000 cubic yards will be excavated for the 100 ft long trench. Machinery will likely consist of a medium size excavator and medium size front end loader. Compaction will most likely be done by walk behind compaction machinery. Approximately 800+ cubic yards will be excavated to place the concrete catchment basin. A 6" perforated pipe will be placed between the trench and catchment basin, and backfilled with a sand and gravel blanket.

2. Main Drain Manhole Installation The Main Collector Manhole, located near the center toe of the dam, receives water from the left abutment manhole. The original left and right toe drains for the embankment are also piped into the main collector manhole. From this manhole a 12" PVC collector pipe carries the drainage about 190 feet to its outlet in a secondary canal. The outlet is in a known seepage area that is typically submerged when irrigation releases are being made.

Modifications include the installation of two 72" diameter x 10' manholes about 30 feet upstream of the 12" PVC outlet. One manhole will have instrumentation for flow monitoring and the other manhole will collect sediment. After excavation, the existing 12" PVC pipe will be cut, and the manholes, pipe and instrumentation installed. The manholes will sit on 1 ½ feet of compacted drain gravel as specified for the right abutment drain work. The drain gravel will be installed above the excavated and compacted sub-grade foundation. Drain gravel will be compacted per specifications. The remainder will be backfilled with excavated material and re-seeded with native grasses.

Approximately 6,000 cubic yards will be excavated for the manhole placement. Machinery will likely consist of a medium size backhoe and medium size front end loader. Compaction will most likely be done by walk behind compaction machinery.

3. Automated Reservoir level Transducer Installation - The reservoir transducer will be installed in the reservoir approximately 550 feet upstream of the right abutment beyond the existing riprap on the right side of the reservoir. At approximate elevation of 4764, a 15' deep hole will be excavated and a 10' long, 4" PVC pipe casing installed. The excavation will be completely backfilled with drain gravel. An 18" CMP culvert will be installed above the casing at a depth of about 5'. From there a 4' trench will convey schedule 80 PVC electrical conduit and wiring up to the existing access road. Conduit and wiring will be buried in a 3' deep trench along the access road to the dam crest and gate house. DNRC personnel plan to install a data logger and telemetry equipment in the gatehouse.

Approximately 300 cubic yards will be excavated out of the reservoir area, likely with a medium size excavator or backhoe and backfilled completely with drain gravel. No re-seeding is anticipated.

This work is being performed to allow for the continued safe operation and monitoring of the dam, and to insure the continued use of the stored water for agricultural irrigation, recreation and fisheries purposes.

The Montana Department of Environmental Quality (DEQ), Montana Department of Fish, Wildlife and Parks (DFWP) and the U.S. Army Corps of Engineers (COE) were consulted concerning the need for any environmental permits for this project. The State Historic Preservation Office (SHPO) was also informed of the construction.

Project Photographs:



Downstream face of North Dam



Outlet and drains



Upstream face of North Dam



Seepage area near manhole

PART II. ENVIRONMENTAL REVIEW

1. **Description and analysis of reasonable alternatives (including the no action alternative) to the proposed action whenever alternatives are reasonably available and prudent to consider and a discussion of how the alternatives would be implemented:**

Alternative A: No Action

This would negate any improvements in the existing drain system and would not allow for enhanced monitoring at the dam, thus increasing the chances that an unsafe condition could develop unnoticed. Conditions such as excessive seepage can affect the structure's integrity and increase the risk to the public and property downstream. This risk would increase overtime. In addition, the supply of irrigation water could be negatively affected, resulting in potentially severe hardship to the area's economy. Recreational use would be negatively affected and fisheries and wildlife resources associated with the reservoir could be harmed should the safe operation of the dam be compromised.

Alternative B: Proposed Action / Preferred Alternative

The drain system improvements and automated monitoring enhance dam safety and longevity and promote effective water conservation for irrigation needs. Protecting the area's agricultural based economy, providing irrigation and stock water, protecting fisheries resources, wildlife habitat, and recreational use would be achieved under this alternative. Site plans are provided in Appendix A.

2. Evaluation, listing of mitigation, stipulation, or other control measures enforceable by the agency or other government agency:

Other than the requirements associated with the permits mentioned in Section 7(a) on page 5 of this report, there are no formal stipulations of mitigation or other controls associated with the proposed action. This action does not involve any permanent or long-term permits or granting of a license on which stipulations would be placed.

PART III. PUBLIC PARTICIPATION

1. Describe the level of public involvement for this project if any, and, given the complexity and the seriousness of the environmental issues associated with the proposed action, is the level of public involvement appropriate under the circumstances?

The public will be notified by way of a public notice on the DNRC web page at www.dnrc.mt.gov. Individual notices will be sent to the State Water Projects Bureau standard EA distribution list (as presented on the cover page of this EA) and to those that have requested a copy.

Duration of comment period:

A 30-day comment period is proposed. This level of public involvement is appropriate for the scale and scope of the proposed action. Opening and closing dates for comments are provided on the EA Cover Letter and Distribution List.

PART IV. EA PREPARATION

- 1. Based on the significance criteria evaluated in this EA, is an EIS required? If an EIS is not required, explain why the EA is the appropriate level of analysis for this proposed action.**

Based on an evaluation of the primary, secondary, and cumulative impacts to the physical and human environment under the Montana Environmental Protection Act (MEPA), this environmental review found no significant impacts from the proposed action. In determining the significance of the impacts, the DNRC assessed the severity, duration, geographic extent, and frequency of the impact, the probability that the impact would occur or reasonable assurance that the impact would not occur, growth-inducing or growth inhibiting aspects of the impact, the importance to the state and to society of the environmental resource or value affected, and precedent that would be set as a result of the proposed action that would commit the DNRC to future actions; and potential conflicts with local, state or federal laws. Therefore, an EA is the appropriate level of review and an EIS is not required.

- 2. Name, title, address and phone number of the person(s) responsible for preparing the EA:**

James P. Domino
Environmental Science Specialist
State Water Projects Bureau
Montana Department of Natural Resources and Conservation
1424 9th Avenue, P.O. Box 201601
Helena, MT 59620-1601
(406) 444-6622
E-mail jdomino@mt.gov

- 3. List of agencies consulted during preparation of the EA:**

Montana Department of Fish, Wildlife & Parks
Montana Department of Environmental Quality
U.S. Army Corps of Engineers
Montana State Historic Preservation Office

PART V. ENVIRONMENTAL REVIEW CHECKLIST

4. Evaluation of the impacts of the Proposed Action including secondary and cumulative impacts on the Physical and Human Environment.

A. PHYSICAL ENVIRONMENT

1. <u>LAND RESOURCES</u> Will the proposed action result in:	IMPACT *				Can Impact Be Mitigated *	Comment Index
	Unknown *	None	Minor *	Potentially Significant		
a. **Soil instability or changes in geologic substructure?		X				
b. Disruption, displacement, erosion, compaction, moisture loss, or over-covering of soil, which would reduce productivity or fertility?			X			1b.
c. **Destruction, covering or modification of any unique geologic or physical features?		X				
d. Changes in siltation, deposition or erosion patterns that may modify the channel of a river or stream or the bed or shore of a lake?			X			1d.
e. Exposure of people or property to earthquakes, landslides, ground failure, or other natural hazard?		X				
f. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Resources:

1 b & d.) Site disturbance would occur on the upstream and downstream sides of the dam, and along the dam crest during installation of the new drains and monitoring instruments. Some soil compaction may occur due to equipment operation. The monitoring instrumentation would be placed in a location on the upstream (reservoir) side of the dam below the normal full-pool elevation. Installation in this location will involve minor excavating, moving and/or replacing the existing rock riprap, and the placement of fill on the upstream face of the dam below the normal pool elevation. Approximately 500 sq-feet of surface area would be disturbed below the reservoir water line from the excavation and replacement of riprap (see site plan in Appendix A).

Effects would be non-significant and minor in the short and long-term because of the small scale and scope of the disturbance, all work being performed when the site is dry (above the water level) and reclamation of areas disturbed during construction.

2. <u>AIR</u> Will the proposed action result in:	IMPACT *				Can Impact Be Mitigated *	Comment Index
	Unknown *	None	Minor *	Potentially Significant		
a. **Emission of air pollutants or deterioration of ambient air quality? (Also see 13 (c).)			X			2a.
b. Creation of objectionable odors?		X				
c. Alteration of air movement, moisture, or temperature patterns or any change in climate, either locally or regionally?		X				
d. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Air Resources (attach additional pages of narrative if needed):

2a. Minor and temporary emissions would be created by equipment during the installation process. The effect would be temporary, minor, non-significant and end with the completion of the project.

3. <u>WATER</u> Will the proposed action result in:	IMPACT *				Can Impact Be Mitigated*	Comment Index
	Unknown *	None	Minor *	Potentially Significant		
a. *Discharge into surface water or any alteration of surface water quality including but not limited to temperature, dissolved oxygen or turbidity?			X			3a.
b. Changes in drainage patterns or the rate and amount of surface runoff?		X				
c. Alteration of the course or magnitude of floodwater or other flows?		X				
d. Changes in the amount of surface water in any water body or creation of a new water body?		X				
e. Exposure of people or property to water related hazards such as flooding?		X				
f. Changes in the quality of groundwater?		X				
g. Changes in the quantity of groundwater?		X				
h. Increase in risk of contamination of surface or groundwater?			X			3h.
i. Effects on any existing water right or reservation?		X				
j. Effects on other water users as a result of any alteration in surface or groundwater quality?		X				
k. Effects on other users as a result of any alteration in surface or groundwater quantity?		X				
l. Effects on any wetlands?		X				
M. other?		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Water Resources:

3a. The proposed action could potentially cause a slight increase in turbidity, but the increase would be very minor, temporary and non-significant. The risk is greatly reduced by completing all of the work on the upstream (reservoir) side of the dam when the work site is dry (above the water level). It is not anticipated that significant amounts of sediments would enter the reservoir or the Musselshell River, which is 2.5 miles downstream from the dam.

3h. The risk of water contamination exists due to equipment operation in the area around the dam. This impact is minor, temporary, non-significant and would end with the completion of the project. The risk would be mitigated by insuring that all equipment is properly maintained with no fluid or fuel leaks.

All these effects would be short-term and end with the completion of the project. No long-term significant impacts are anticipated to water quality as a result of the proposed action.

4. <u>VEGETATION</u> Will the proposed action result in?	IMPACT *				Can Impact Be Mitigated *	Comment Index
	Unknown *	None	Minor *	Potentially Significant		
a. Changes in the diversity, productivity or abundance of plant species (including trees, shrubs, grass, crops, and aquatic plants)?		X				
b. Alteration of a plant community?			X			4b.
c. Adverse effects on any unique, rare, threatened, or endangered species?		X				4c.
d. Reduction in acreage or productivity of any agricultural land?		X				
e. Establishment or spread of noxious weeds?			X			4e.
f. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Vegetation (attach additional pages of narrative if needed):4a.

4b. Some vegetation (grasses and small shrubs) would be disturbed from the excavation and construction. The impacts would be non-significant and minor and are negligible due to the reclamation and reseeding of the disturbed area.

4c. A Natural Heritage file search was performed. There are no documented observations of any other threatened or endangered plants, or plant species of special concern in the vicinity of the project. .

4e. An increase in noxious weeds may occur due to soil disturbance and equipment operation. Effects are negligible in the long-term because of reclamation and weed control implementation.

** 5. <u>FISH/WILDLIFE</u> Will the proposed action result in:	IMPACT *				Can Impact Be Mitigated *	Comment Index
	Unknown *	None	Minor *	Potentially Significant		
a. Deterioration of critical fish or wildlife habitat?		X				
b. Changes in the diversity or abundance of game animals or bird species?		X				
c. Changes in the diversity or abundance of non-game species?		X				
d. Introduction of new species into an area?		X				
e. Creation of a barrier to the migration or movement of animals?		X				
f. Adverse effects on any unique, rare, threatened, or endangered species?		X				5f.
g. Increase in conditions that stress wildlife populations or limit abundance (including harassment, legal or illegal harvest or other human activity)?			X			5g.
h. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary effects on Fish and Wildlife (attach additional pages of narrative if needed):

5f.) A Natural Heritage file search indicated that Westslope Cutthroat Trout and Northern Redbelly Dace (both species of special concern) are found in the Martinsdale Reservoir and the nearby Musselshell River. The Grasshopper Sparrow (species of special concern) is also found in the vicinity of the project. No other wildlife or fish species of special concern is known to exist in the vicinity of the project.

It is not anticipated that the proposed action would have any negative impacts to any listed wildlife or fisheries species of special concern.

5g.) Local wildlife within the immediate vicinity of the project location (e.g. mule deer, antelope, raptors, waterfowl, song birds) would experience a temporary increase in stress due to the construction activity. The wildlife would most likely avoid the immediate work site during construction. This impact would be minor, non-significant and end upon project completion.

Any potential impacts to fish and wildlife resources will be temporary, minor, short-term and end upon completion of the project.

B. HUMAN ENVIRONMENT

6. <u>NOISE/ELECTRICAL EFFECTS</u> Will the proposed action result in:	IMPACT *				Can Impact Be Mitigated *	Comment Index
	Unknown *	None	Minor *	Potentially Significant		
a. Increases in existing noise levels?			X			6a.
b. Exposure of people to serve or nuisance noise levels?		X				
c. Creation of electrostatic or electromagnetic effects that could be detrimental to human health or property?		X				
d. Interference with radio or television reception and operation?		X				
e. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Noise/Electrical Effects (attach additional pages of narrative if needed):

6a. There will be a temporary increase in noise levels during construction. This would end after completion of the construction activity. There are no residences adjacent to the site that would be disturbed by the activity.

7. <u>LAND USE</u> Will the proposed action result in:	IMPACT *				Can Impact Be Mitigated *	Comment Index
	Unknown *	None	Minor *	Potentially Significant		
a. Alteration of or interference with the productivity or profitability of the existing land use of an area?		X				
b. Conflict with a designated natural area or area of unusual scientific or educational importance?		X				
c. Conflict with any existing land use whose presence would constrain or potentially prohibit the proposed action?		X				
d. Adverse effects on or relocation of residences?		X				
e. Increase regulatory restrictions on private property?		X				
f. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Land Use (attach additional pages of narrative if needed):

8. RISK/HEALTH HAZARDS Will the proposed action result in:	IMPACT *				Can Impact Be Mitigated *	Comment Index
	Unknown *	None	Minor *	Potentially Significant		
a. Risk of an explosion or release of hazardous substances (including, but not limited to oil, pesticides, chemicals, or radiation) in the event of an accident or other forms of disruption?		X				
b. Affect an existing emergency response or emergency evacuation plan, or create a need for a new plan?		X				
c. Creation of any human health hazard or potential hazard?		X				
d. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Risk/Health Hazards (attach additional pages of narrative if needed):

9. <u>COMMUNITY IMPACT</u> Will the proposed action result in:	IMPACT *				Can Impact Be Mitigated *	Comment Index
	Unknown *	None	Minor *	Potentially Significant		
a. Alteration of the location, distribution, density, or growth rate of the human population of an area?		X				
b. Alteration of the social structure of a community?		X				
c. Alteration of the level or distribution of employment or community or personal income?		X				
d. Changes in industrial or commercial activity?		X				
e. Increased traffic hazards or effects on existing transportation facilities or patterns of movement of people and goods?		X				
f. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Community Impact (attach additional pages of narrative if needed):

10. <u>PUBLIC SERVICES/TAXES/UTILITIES</u> Will the proposed action result in:	IMPACT *				Can Impact Be Mitigated *	Comment Index
	Unknown *	None	Minor *	Potentially Significant		
a. Will the proposed action have an effect upon or result in a need for new or altered governmental services in any of the following areas: fire or police protection, schools, parks/recreational facilities, roads or other public maintenance, water supply, sewer or septic systems, solid waste disposal, health, or other governmental services? If any, specify:		X				10a.
b. Will the proposed action have an effect upon the local or state tax base and revenues?		X				
c. Will the proposed action result in a need for new facilities or substantial alterations of any of the following utilities: electric power, natural gas, other fuel supply or distribution systems, or communications?		X				
d. Will the proposed action result in increased use of any energy source?		X				
e. Define projected revenue sources						10e.
f. Define projected maintenance costs.						10f.
g. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Public Services/Taxes/Utilities (attach additional pages of narrative if needed):

10a. The proposed action would not have an effect upon or result in a need for new or altered governmental services.

10e. The DNRC will provide funding for the project. Funding sources are identified on page 5, Section 7 (b).

10f. All maintenance costs associated with the Project will be the responsibility of the Upper Musselshell Water Users Association.

** 11. <u>AESTHETICS/RECREATION</u> Will the proposed action result in:	IMPACT *				Can Impact Be Mitigated *	Comment Index
	Unknown *	None	Minor *	Potentially Significant		
a. Alteration of any scenic vista or creation of an aesthetically offensive site or effect that is open to public view?			X			11a.
b. Alteration of the aesthetic character of a community or neighborhood?		X				
c. Alteration of the quality or quantity of recreational/tourism opportunities and settings?			X			11c.
d. Will any designated or proposed wild or scenic rivers, trails or wilderness areas be impacted?		X				
e. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Aesthetics/Recreation (attach additional pages of narrative if needed):

11 a & c. Construction will temporarily affect the aesthetics of the work site in the short-term. Some day users, campers, picnickers, and anglers may be impacted. The area receives moderate to heavy angling and recreational use. The quality of the recreational opportunities and setting may be temporarily impacted.

It is anticipate that the effects will be minor and non-significant in the long-term. The impacts would end upon project completion.

12. <u>CULTURAL/HISTORICAL RESOURCES</u> Will the proposed action result in:	IMPACT *				Can Impact Be Mitigated *	Comment Index
	Unknown *	None	Minor *	Potentially Significant		
a. **Destruction or alteration of any site, structure or object of prehistoric historic, or paleontological importance?		X				12a.
b. Physical change that would affect unique cultural values?		X				12b
c. Effects on existing religious or sacred uses of a site or area?		X				12c.
d. Will the project affect historic or cultural resources?		X				12d.
e. Other:		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Cultural/Historical Resources (attach additional pages of narrative if needed):

12a-d. The proposed project will not result in the destruction, disturbance or alteration of any known site, structure, or object of prehistoric, cultural, religious, sacred, historic or paleontological importance.

SIGNIFICANCE CRITERIA

13. <u>SUMMARY EVALUATION OF SIGNIFICANCE</u> Will the proposed action, considered as a whole:	IMPACT *				Can Impact Be Mitigated *	Comment Index
	Unknown *	None	Minor *	Potentially Significant		
a. Have impacts that are individually limited, but cumulatively considerable? (A project or program may result in impacts on two or more separate resources that create a significant effect when considered together or in total.)		X				13a.
b. Involve potential risks or adverse effects, which are uncertain but extremely hazardous if they were to occur?		X				
c. Potentially conflict with the substantive requirements of any local, state, or federal law, regulation, standard or formal plan?		X				
d. Establish a precedent or likelihood that future actions with significant environmental impacts will be proposed?		X				
e. Generate substantial debate or controversy about the nature of the impacts that would be created?		X				
f. Is the project expected to have organized opposition or generate substantial public controversy?		X				

Narrative Description and Evaluation of the Cumulative and Secondary Effects on Significance Criteria (attach additional pages of narrative if needed):

13a. This EA found no significant impacts to the human or physical environment from the proposed action.

PART VI. NARRATIVE EVALUATION AND COMMENT

This EA did not reveal any significant negative impacts to the physical and human environment stemming from the proposed action. No threatened or endangered species would be significantly affected, and no unique or sensitive physical, cultural or historic features would be disturbed. The impacts associated with the actual construction will be short-term, minor and end with the completion of the project. Impacts associated with potentially small increases in the sediment loads, weed proliferation, fish and wildlife stress, aesthetics, recreational use and the quality of the recreational experience will be mitigated by reclamation, weed control efforts, and a relatively short project duration (i.e. impacts would end upon project completion). The proposed project will not affect public safety or the beneficial uses of reservoir water.

The no action alternative would result in inadequate monitoring capabilities at a designated high-hazard dam, and could potentially result in unnecessary delays in identifying and addressing the development of unsafe structural conditions. This could result in potentially serious, increasing risks to public health and safety, downstream property, and reservoir beneficial uses.

References:

Consultation with the U.S. Army Corps of Engineers, Helena MT. Regulatory Office, June 2011

Consultation with the MT Department of Environmental Quality, Water Protection Bureau, Helena, MT. June 2011

Consultation with the MT State Historic Preservation Office, Helena, MT.
June 2011

Species of Special Concern File Search, Montana Natural Heritage Program, Helena, MT. May 2011.

Martinsdale Dam Manual for Operation and Maintenance, DNRC State Water Projects Bureau, 1424 9th Avenue, P.O. Box 201601, Helena, MT 59620, Originally Published 1992, revised January 2011.

A Guide to the Montana Environmental Policy Act, John Munding and Todd Everts, 1998. Revised by Larry Mitchell, 2004 and Todd Everts, 2006. Published by the Legislative Environmental Policy Office, Environmental Quality Council.

Climax Vegetation of Montana Based on Soils and Climate, U.S. Dept. of Agriculture, Soil Conservation Service, Bozeman, MT. September 1976

Appendix A – Site Plan

NORTH DAM DRAIN MONITORING IMPROVEMENTS

MARTINSDALE RESERVOIR WHEATLAND COUNTY, MONTANA

FEBRUARY 2011

SHEET INDEX

SHEET 1	EXISTING PLAN
SHEET 2	MODIFICATION PLAN
SHEET 3	RIGHT ABUTMENT PLAN & PROFILE
SHEET 4	RIGHT MANHOLE PLAN
SHEET 5	RIGHT DRAIN CATCHMENT PLAN
SHEET 6	CATCHMENT REBAR DETAILS
SHEET 7	MAIN DRAIN PLAN & PROFILE
SHEET 8	RESERVOIR TRANSDUCER

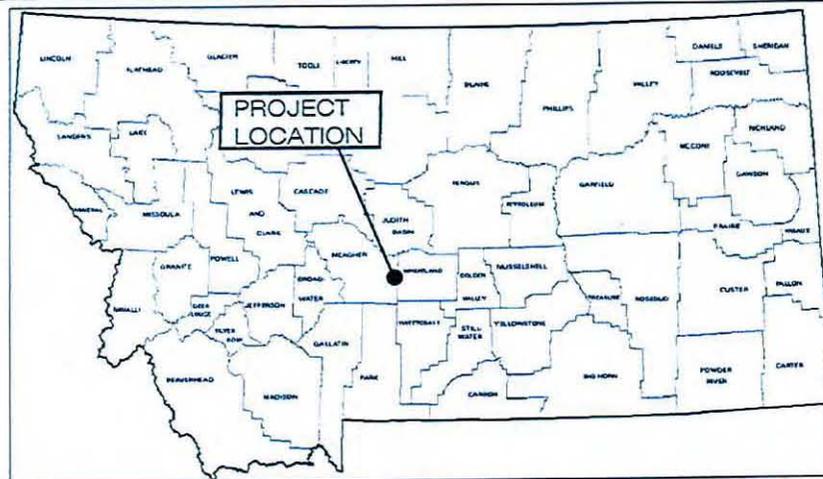
PREPARED BY:

The Montana
Department of Natural Resources
and Conservation

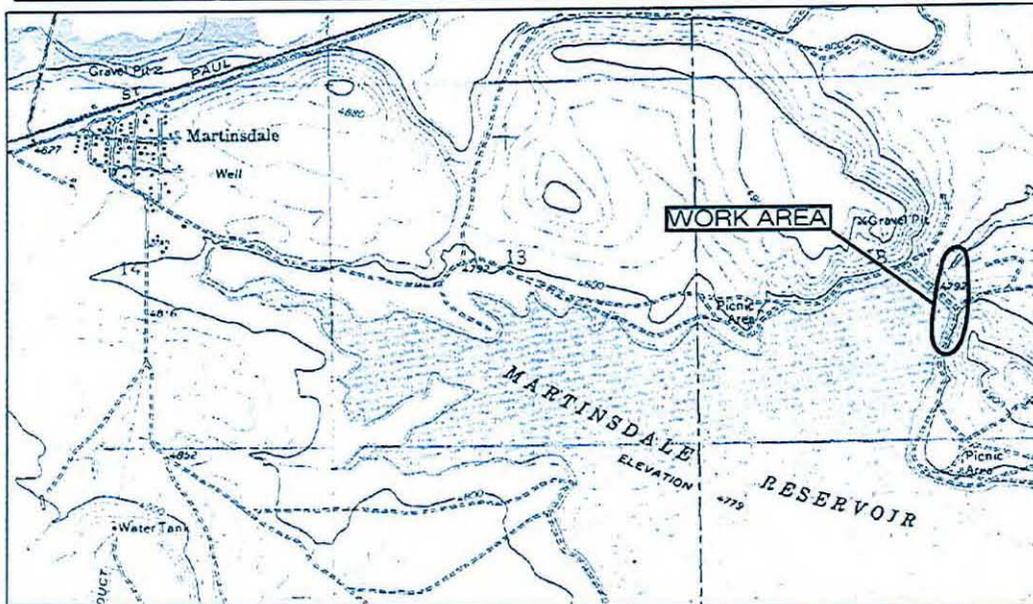


State Water Projects Bureau
P.O. Box 201601
Helena, MT 59620-1601
(406) 444-6646

Kevin B. Smith
Approved: Kevin Smith, P.E., Chief
State Water Projects Bureau, Montana DNRC

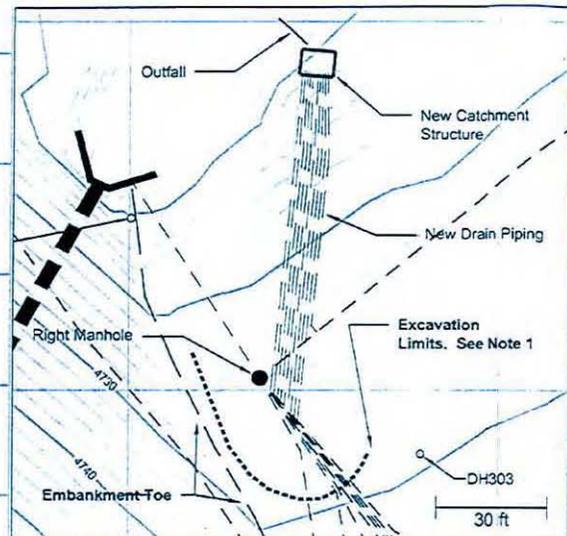
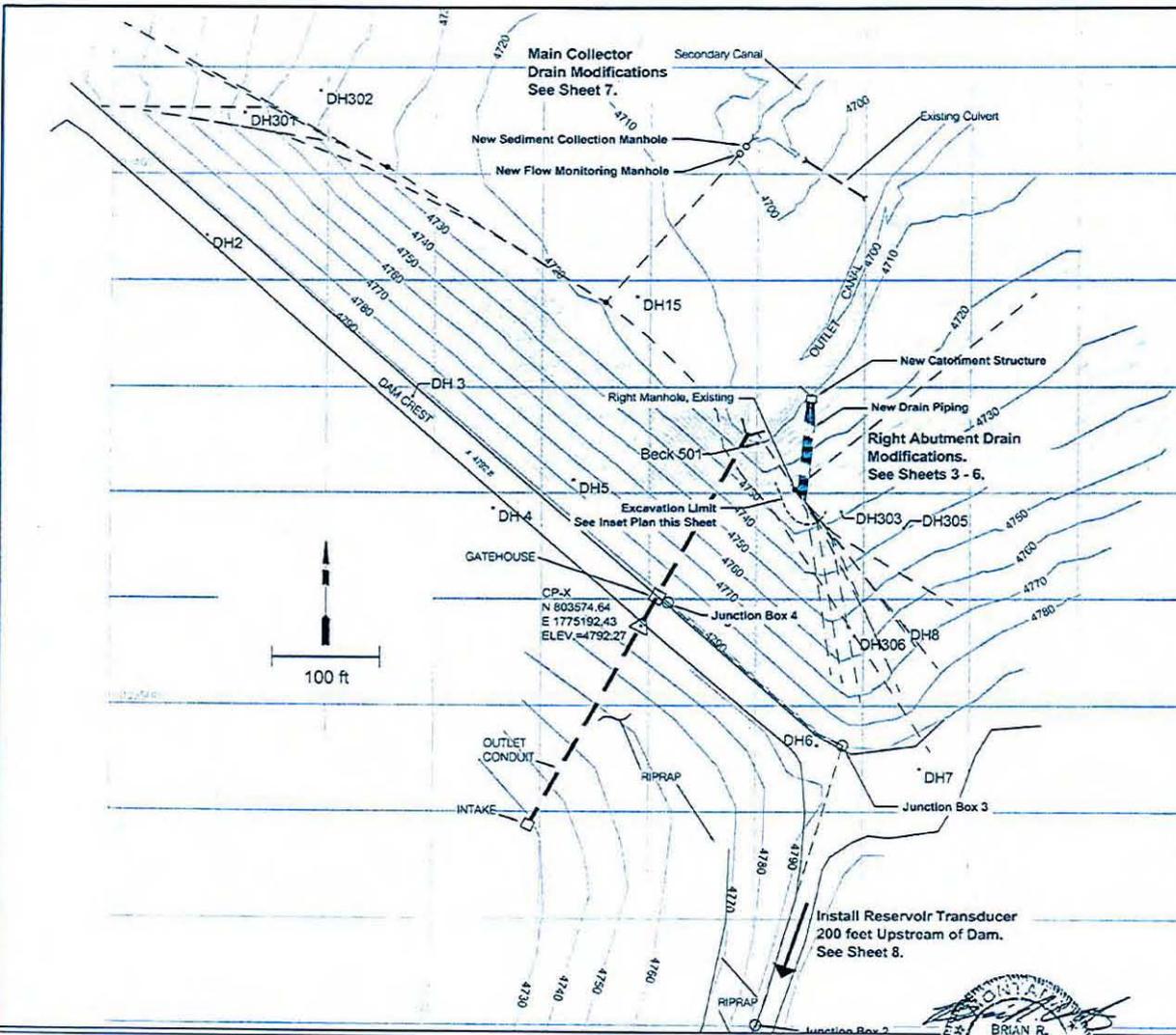


1 in = 1600 ft.
approx



COVER SHEET

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NOTE 1: Excavation Shall Not Extend Beyond Excavation Limit.



MONTANA DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION
 1424 9TH AVENUE
 HELENA, MONTANA 59620-1601 (406) 444-6546

DRAWN BY: SMC-OCL	<input type="checkbox"/>	DATE: FEBRUARY 2011
DESIGNED BY: SMC	<input type="checkbox"/>	
CHECKED BY: BK	<input type="checkbox"/>	
APPROVED BY: KS	<input type="checkbox"/>	
DATE: FEBRUARY 2011	REVISION	DATE BY



PROJECT TITLE
 MARTINDALE NORTH DAM
 DRAIN IMPROVEMENTS

SHEET TITLE
 Modification Plan

SHEET NO.
 2

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Montana Department of Natural Resources and Conservation
Water Resources Division
1424 9th Ave. P.O. Box 201601
Helena, MT 59620-1601
(406) 444-6601 fax (406) 444-0533



Martinsdale North Dam at full pool

