

**OPERATING PERMIT APPLICATION
MONTANA LIMESTONE RESOURCES**

**APPENDIX A-8
BASELINE LAND USE REPORT**

Revised September 2017

BASELINE LAND USE STUDY
MONTANA LIMESTONE RESOURCES PROJECT,
GRANITE COUNTY, MONTANA

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TABLE OF CONTENTS

	<u>Page</u>
1.0 INTRODUCTION.....	1
2.0 METHODS.....	1
3.0 RESULTS	1
3.1 OWNERSHIP AND JURISDICTIONS.....	3
3.2 GRAZING	5
3.3 IRRIGATED LANDS	5
3.4 TIMBER.....	5
3.5 RECREATION AND MANAGEMENT AREAS.....	5
4.0 REFERENCES CITED.....	6

TABLES

Table 1	Land Use Classification within the MLR Project Study Area.....	1
Table 2	Summary of Existing Land Uses within the MLR Project Study Area.....	3
Table 3	Land Ownership within the MLR Project Study Area.....	3

FIGURES

Figure 1	General Location.....	2
Figure 2	Land Use Classification Map	4

1.0 INTRODUCTION

The Montana Limestone Resources (MLR) Project will be developed on private land located in northeastern Granite County, approximately one mile west of Drummond. The study area (Figure 1) is located in all or portions of Sections 1 and 2, T10N, R13W; Section 31, T11N,R12W; and Sections 23, 25-28 and 34-36, T11N, R13W, comprising the former Bar-Four-Bar Ranch property totaling 3,521 acres (5.5 square miles). The land use investigation included a search for available information pertaining to public and private jurisdictions and uses. The northeast boundary of the Project area is located less than one mile southwest of the Clark Fork River and Interstate-90. Tigh Creek flows through the northwestern corner of the study area, flowing into the Clark Fork River at the northernmost part of the study area.

2.0 METHODS

The following information sources were investigated or contacted for the baseline land use study:

- U.S. Geological Survey (USGS) primary land use classification system (Anderson et al. 1976);
- USGS quadrangle map (1:24,000 scale Drummond quadrangle), 1989;
- Aerial photography, 2013;
- Natural Resources Conservation Service (NRCS) maps, 1996 and 2014;
- Charlie Moody, Ranch Manager, former Bar-Four-Bar Ranch, January and February, 2014;
- Federal, state, and local government documents.

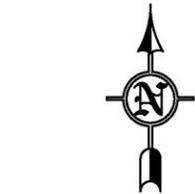
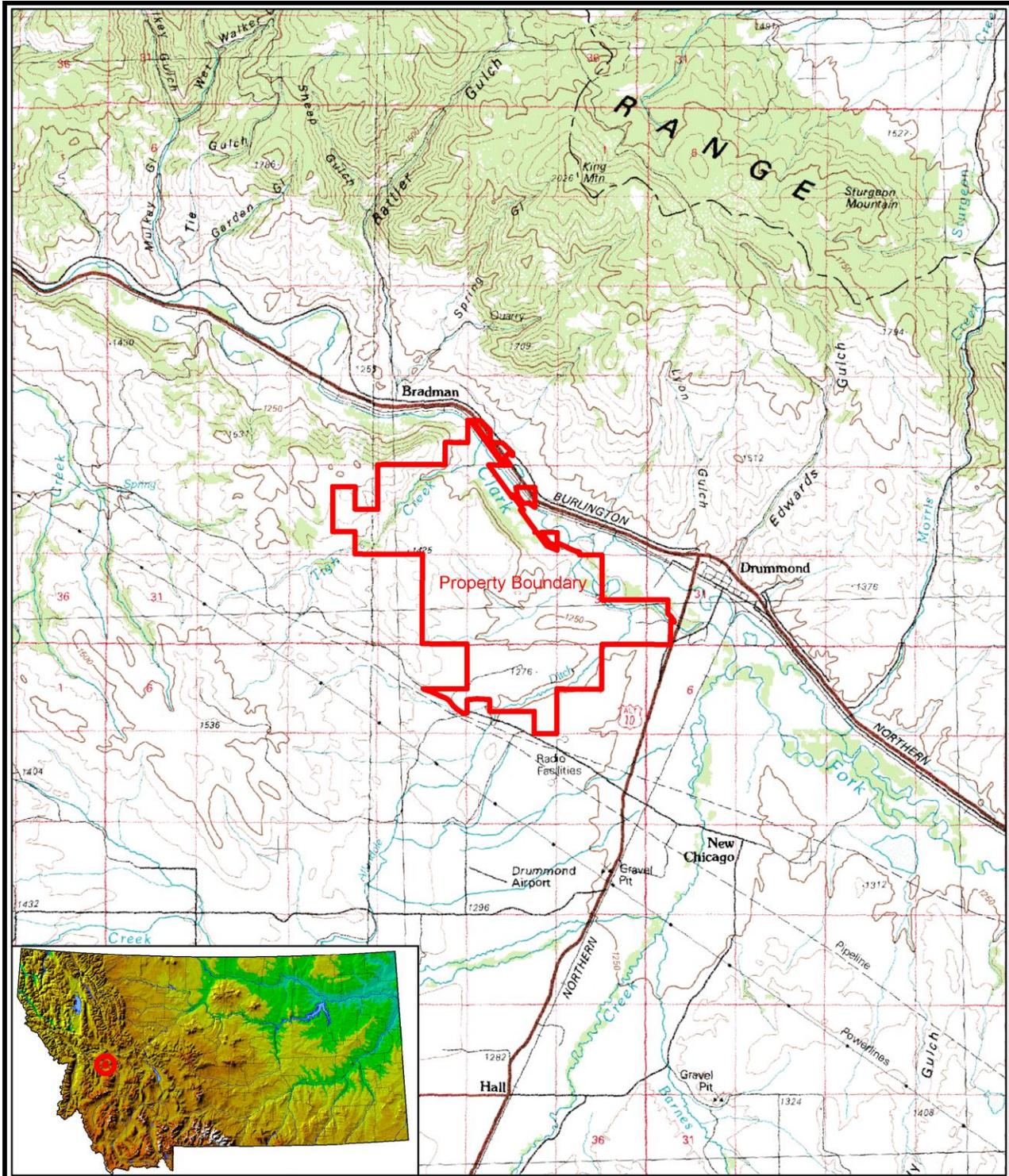
3.0 RESULTS

Lands within the study area were assigned a land use category based on aerial photography interpretation and field investigations. Land use categories are generally based on the USGS primary classifications (Anderson et al. 1976). The land use categories associated with the study area are described in Table 1.

Table 1
Land Use Classification within the MLR Project Study Area.

Land Use Classification	Description
Grazing Land	Grassland and Shrubland rangeland which is grazed by cattle.
Woodland/Grazeable Woodland	Upland forest dominated by Rocky Mountain juniper, ponderosa pine, and/or Douglas-fir which is grazed by cattle where accessible.
Irrigated Hay Land	Bottomland generally located within or near floodplains which is irrigated and used to produce hay for cattle consumption.
Non-Irrigated Hay Land	Hay land located within floodplains or on uplands which is not irrigated and is used for grazing cattle.
Transportation Corridor	Roads and Railroads

A summary of existing land uses within the study area is presented in Table 2 and mapped on Figure 2.



USGS 100k: Missoula East



Montana Limestone Resources Project Area General Location



WESTECH
ENVIRONMENTAL

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Figure 1

Table 2
Summary of Existing Land Uses within the MLR Project Study Area.

Land Use Classification	Acres	Percent of Acreage
Grazing Land	2374.4	67.4
Woodland/Grazeable Woodland	692.1	19.6
Irrigated Hay Land	66.3	1.9
Non-Irrigated Hay Land	287.9	8.2
Transportation Corridor	38.5	1.1
Miscellaneous ¹	62.1	1.8
Study Area Total	3521.3	100.0

¹ Residential, water and gravel bar, rock outcrops and scree

3.1 OWNERSHIP AND JURISDICTIONS

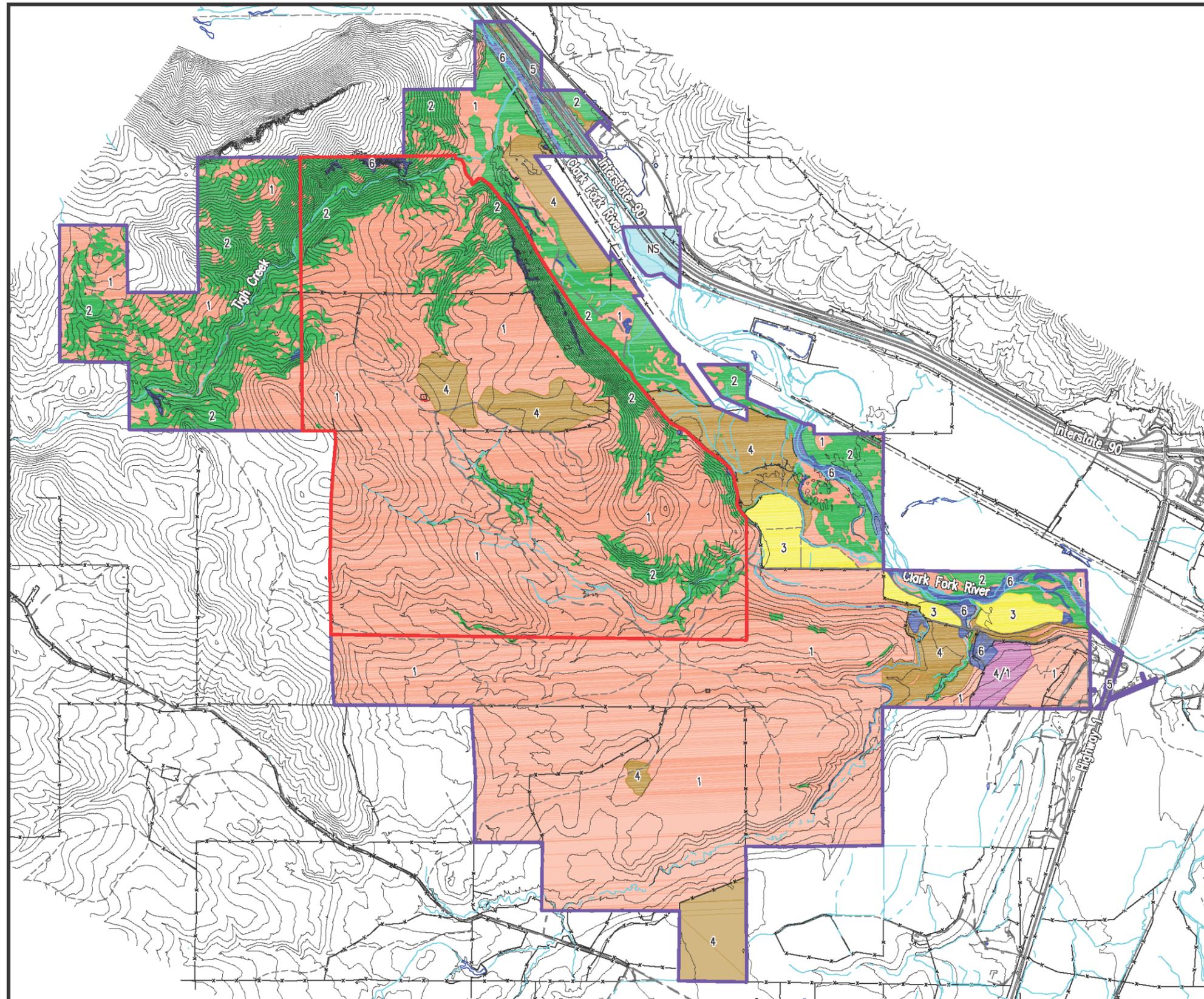
The study area is comprised of private land. Lands within Granite County that are used for agricultural, grazing, horticultural or timber production are not subject to the County planning and zoning district regulations (Granite County 2012). The study area is within the Montana Department of Fish, Wildlife and Parks (MTFWP) Commission District 1 and Administrative Region 2.

Private land, comprised of neighboring ranches, surrounds the study area except for Section 22, T11N, R13W at the northern boundary of the area which is managed by the Bureau of Land Management (BLM). Two residences are located within the study area including one house inhabited by the Ranch Manager and one uninhabited, smaller house. Other buildings in the study area include a metal-sided shop approximately 50 by 100 feet at base, one small barn, and a metal-sided shop approximately 30 by 50 feet at base. Other residences are located approximately one mile from the southeastern boundary of the study area. Land ownership within the study area is summarized in Table 3.

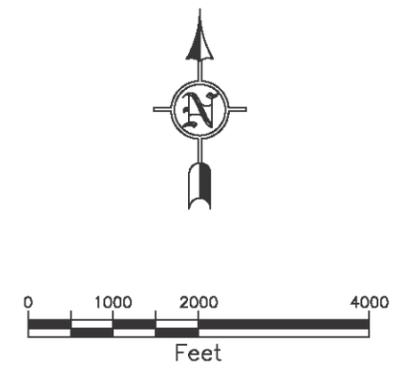
The study area has been used for cattle grazing and hay production since the late 1800's. Limited mining activity occurred in the 1930's prior to the Great Depression (Charlie Moody, personal communication, 21 January 2014).

Table 3
Land Ownership within the MLR Project Study Area.

Ownership	Acres	Percent of Acreage
Private	3,521	100.0



- LEGEND**
- Extensive Study Area
 - Intensive Study Area
- Land Use**
- 1 Grazing Land
 - 2 Woodland / Grazeable Woodland
 - 3 Irrigated Hay Land
 - 4 Non-irrigated Hay Land
 - 4/1 Non-irrigated Hay Land / Grazing Land
 - 5 Transportation Corridor
 - 6 Miscellaneous
 - NS Not Surveyed



**Montana Limestone Resources
Land Use**

SCALE: 1"=2000' DATE: 04/02/14 Rev. 08/18/17 DRAWN BY: DC CHECKED BY: KS FILE: MLR17_LandUse.dwg	Figure 2 SHEET: 1 of 1
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3.2 GRAZING

The majority of the study area is an active cattle ranch. Each year, 300 yearling calves are brought to the ranch to graze from early May until they are sold in late September. The yearlings' average weight gain over the five-month period is 600 pounds. The yearlings are sold when they reach 800 to 900 pounds. It is estimated that the stocking capacity of the ranch is approximately 1200-1500 total animal unit months (AUM). The ranch has a 160-acre lease on the State quarter-section described previously. The grazing permit on the State lease allows for 14 head of cattle per month (14 AUM). The ranch (study area) is divided into 8 pastures on which the cattle are rotated over the course of a year.

3.3 IRRIGATED LANDS

Approximately 150 acres in the northeastern portion of the study area on the Clark Fork River floodplain are irrigated lands. This area is irrigated grass hay which is harvested to feed to cattle. The hay is harvested twice a year, producing 1.5 tons per acre each harvest for a total production of 3 tons per acre each year (Charlie Moody, personal communication, 21 January 2014).

3.4 TIMBER

Conifer Forest and Woodland habitat types and communities were identified in the study area including series dominated by Rocky Mountain juniper, ponderosa pine, or Douglas-fir. The majority of the study area is not suitable for timber harvest (NRCS 2003). No forestry activities or timber harvesting is known to have occurred within the study area within the last 20 to 40 years (Charlie Moody, personal communication, 19 February 2014).

3.5 RECREATION AND MANAGEMENT AREAS

Because the majority of the study area is privately owned, recreational uses of the lands are limited to the family members of the former owners of the ranch. Hunting for big game on a limited basis is the only recreational use cited by the Ranch Manager (Charlie Moody, personal communication, 21 January 2014). The ranch has not participated in MTFWP's Block Management Program. No MTFWP Wildlife Management Areas are located within a six-mile radius of the study area. No U.S. Forest Service lands are located within a six-mile radius of the study area. The section of BLM land bordering the northern boundary of the study area is an isolated parcel located on the south side of the Clark Fork River and Interstate-90.

Fishing and rafting on the Clark Fork River is a popular recreational activity. The Montana Stream Access Law allows anglers, floaters and other recreationists in Montana to have full use of most natural waterways between the high-water marks for fishing and floating, along with swimming and other river or stream-related activities. Another recreational site close to the study area is the Drummond City Park which is also a Fishing Access Site on the Clark Fork River. The Fishing Access Site is maintained and managed by the city of Drummond. It is located approximately one-mile south of Drummond and approximately one-half-mile east of the eastern-most boundary of the study area.

4.0 REFERENCES CITED

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