



**FINAL ENVIRONMENTAL ASSESSMENT
for the
All Country Septic Tank Pumping
Septage Land Application Site
Toston, Montana**

**Waste Management and Remediation Division
Waste and Underground Tank Management Bureau
Solid Waste Section
PO Box 200901
Helena, MT 59620-0901**

July 9, 2019

Table of Contents

ACRONYMS	4
1. NEED FOR PROPOSED ACTION	5
1.1 SUMMARY	5
1.2 BACKGROUND.....	5
1.3 STATE ACTION	5
1.4 PURPOSE AND NEED	5
1.5 LOCATION DESCRIPTION AND STUDY AREA	6
1.6 REGULATORY RESPONSIBILITIES AND REQUIREMENTS.....	8
1.7 PUBLIC PARTICIPATION	8
2. DESCRIPTION OF ALTERNATIVES	9
2.1 INTRODUCTION.....	9
2.2 NO ACTION ALTERNATIVE.....	9
2.3 PROPOSED ACTION.....	9
2.3.1 SEPTAGE LAND APPLICATION SITE OPERATIONS	9
2.3.2 EQUIPMENT REQUIREMENTS.....	11
2.3.3 AMOUNT AND EXTENT OF SEPTAGE APPLICATION	11
3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES BY RESOURCE	12
3.1 LOCATION DESCRIPTION AND STUDY AREA	12
3.2 WILDLIFE AND HABITATS.....	12
3.2.1 THREATENED AND ENDANGERED SPECIES	12
3.2.2 SPECIES OF CONCERN	13
3.3 SOILS AND VEGETATION	15
3.4 HYDROLOGY.....	17
3.4.1 SURFACE WATER.....	17
3.4.2 GROUNDWATER.....	17
3.5 GEOLOGY	20
3.6 CLIMATE.....	21
3.7 AESTHETICS.....	23
3.8 HUMAN HEALTH & SAFETY	23
3.9. DEMAND FOR GOVERNMENT SERVICES.....	23

3.10	TRAFFIC	24
4.	CONCLUSIONS AND FINDINGS.....	24
4.1	EVALUATION OF MITIGATIONS, STIPULATIONS, AND OTHER CONTROLS ENFORCEABLE BY DEQ OR ANOTHER GOVERNMENT AGENCY	24
4.2	FINDINGS	24
5.	OTHER GROUPS OR AGENCIES CONTACTED, OR WHICH MAY HAVE OVERLAPPING JURISDICTION.....	26
6.	AUTHORS	26
7.	REFERENCES:.....	26

Tables

Table 1:	Septage Land Application Operational Requirements	10
Table 2:	Septage Land Application Site Setback Requirements.....	10
Table 3:	Federally Established Species List	12
Table 4:	Montana Recognized Species List.....	13
Table 5:	USDA, NRCS, Web Soil Survey, 2019	16
Table 6:	Summary of Nearby Wells	20
Table 7:	Climate Data for Radersburg, Montana	22

Figures

Figure 1:	Proposed Septage Land Application Site	6
Figure 2:	Landowner's Property Boundary	7
Figure 3:	USDA, Natural Resources Conservation Service (NRCS), Web Soil Survey, 2019 .	15
Figure 4:	Location of Nearby Documented Water Supply Wells	19
Figure 5:	Geologic Map of Radersburg-Toston Valley, Central Montana.	21

ACRONYMS

All Country – All Country Septic Tank Pumping Inc.

ARM – Administrative Rules of Montana

AAR– Annual Average Rate

DEQ – Montana Department of Environmental Quality

EA – Environmental Assessment

EIS – Environmental Impact Statement

GWIC – Ground Water Information Center

MCA – Montana Code Annotated

MEPA – Montana Environmental Policy Act

MNHP – Montana Natural Heritage Program

O&M – Operation and Maintenance

Proposed Action – Licensing a new septage land application site

Septic Rules– Montana Cesspool, Septic Tank, and Privy Cleaners, ARM Chapter 50, subchapter 8

SDLA – Septic Disposal Licensure Act

Site – The proposed land application of septage on 322.5 acres of property located east of Montana Highway 287, just south of Toston in Broadwater County, Montana

SWL – Static Water Levels

USFWS – United States Fish and Wildlife Service

1. NEED FOR PROPOSED ACTION

1.1 SUMMARY

This is the final version of an environmental assessment (Final EA), prepared in accordance with the Montana Environmental Policy Act (MEPA). On August 13, 2018, All Country Septic Tank Pumping (All Country) submitted an application to the Department of Environmental Quality (DEQ) for licensing a new septage land application site (Proposed Action). All Country proposes the land application of septage on 322.5 acres of property located east of Montana Highway 287, just south of Toston in Broadwater County, Montana (Site).

1.2 BACKGROUND

The Site was selected solely by the applicant. The Site was first approved by Broadwater County. DEQ is the primary agency responsible for ensuring that any activities proposed by All Country for licensing under the Septage Disposal Licensure Act (SDLA) fully comply with applicable laws and administrative rules. Through the process of developing the Final EA, DEQ determines the potential for impacts to the environment due to the Proposed Action. The MEPA process is a method that informs the public about project alternatives and potential impacts, and allows for public input on the Proposed Action.

1.3 STATE ACTION

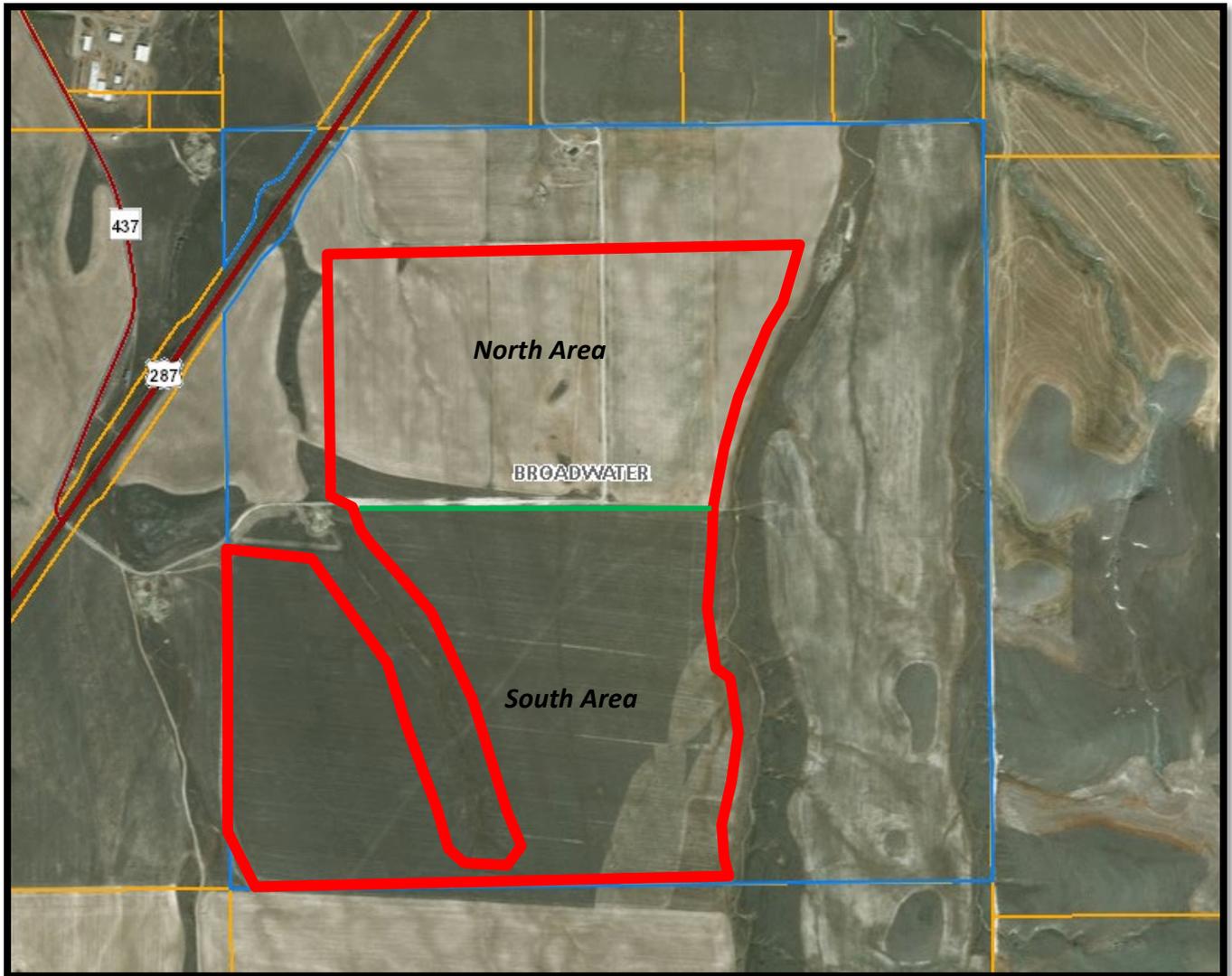
All Country must obtain a license issued by DEQ before it may pump or land apply septage. DEQ's decision to approve or deny the Site depends upon the consistency of the applicant's Proposed Action with the SDLA; Montana Cesspool, Septic Tank, and Privy Cleaners, Administrative Rules of Montana (ARM) Chapter 50, subchapter 8 (Septic Rules); Montana Clean Air Act; and Montana Water Quality Act.

1.4 PURPOSE AND NEED

All Country has applied for a license to spread and treat septage by land application (**Figure 1**). Septage is the liquid and solid material removed from a septic tank, cesspool, portable toilet, or similar treatment works that only receive domestic waste and wastewater from humans or household operations. The Septic Rules establish minimum requirements for the pumping and land application of septage. The request is reviewed by DEQ for approval or denial of the Proposed Action.

When properly managed, the land application of septage is a beneficial resource providing an economical and environmentally sound practice that does not adversely affect public health. A properly managed land application program recognizes the benefits of septage and employs practices to maximize those benefits. Septage contains nutrients that can reduce the reliance of the farmer on chemical fertilizers to improve soil. Septage, when land applied as a soil conditioner, is considered an application rather than a disposal. The Proposed Action would add valuable moisture, organic matter, and nutrients to the topsoil, improving the soil tilth and subsequent crop production on the Site. Septage does not include prohibited material removed from a septic tank, cesspool, or similar treatment works that receives industrial wastewater and does not include grease removed from a grease trap at a restaurant.

Figure 1: Proposed Septage Land Application Site
(septage land application areas outlined in **red** and separated by **green** line; landowner's parcel outlined in **blue**; surrounding property boundaries outlined in **orange**)

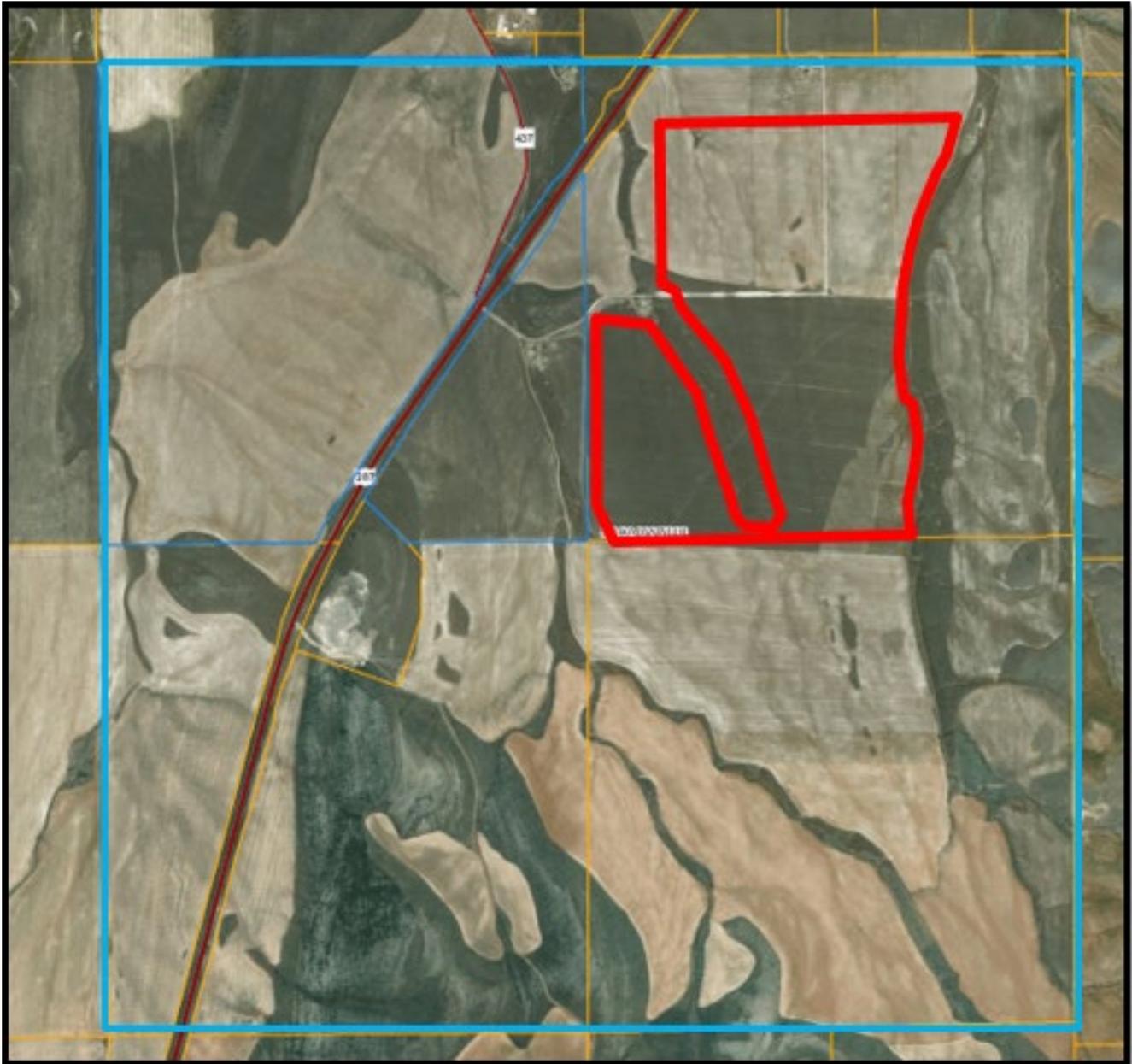


Source: Montana Cadastral (**NOT TO SCALE**)

1.5 LOCATION DESCRIPTION AND STUDY AREA

Toston is located approximately 50 miles southeast of Helena on Montana Highway 287 North. The Site is located just south of Toston on Montana Highway 287 North near mile marker 98. The intersection of Montana Highway 287 North and Montana Secondary Highway 437 provide Site access via a gravel road heading east (**Figure 1**).

**Figure 2: Landowner's Property Boundary
(Site in red, landowner's property in blue)**



Source: Montana Cadastral (**NOT TO SCALE**)

The study area perimeter (not shown) extends approximately one mile beyond the boundaries of the Site (**Figure 2**).

The Site is located within 322.5 acres on the Robert Cazier property located at Section 36, Township 4 North, Range 1 East, in Broadwater County (**Figure 1**). Presently, wheat crops are farmed on the Site. Land application would be rotated annually between the north and south parcels, “North Area” and “South Area” in **Figure 1**. Additional land owned by Robert Cazier surrounding the Site is shown on **Figure 2**.

1.6 REGULATORY RESPONSIBILITIES AND REQUIREMENTS

In reviewing All Country’s application for a new septage land application site, DEQ must comply with MEPA and the SDLA, including applicable Septic Rules. MEPA procedures direct DEQ to analyze the Proposed Action for potential environmental impacts; to publish its findings in a draft EA for public review; and to solicit public comments prior to its decision, in accordance with Montana Code Annotated (MCA), Section 75-1-102.

Upon completing the draft EA, DEQ may:

- Approve the site application
- Deny the site application
- Expand upon the draft EA
- Write an environmental impact statement (EIS)

If the Proposed Action is approved, a Final EA is published. DEQ is then responsible for conducting inspections of the Site to ensure compliance with the Septic Rules. If violations are noted, DEQ assists the applicant in returning to compliance. If compliance is not reached, DEQ could rescind licensure of the Proposed Action at the Site.

According to the requirements of ARM 17.50.809, the Proposed Action shall maintain proper setbacks during all septage land application activities at the Site. The proposed Site meets all setback requirements listed in **Table 2**.

1.7 PUBLIC PARTICIPATION

DEQ is releasing this Final EA to present initial findings as described in Section 4.2. A 30-day public comment period on the draft EA began on May 3 and ended on June 2. Adjacent landowners and other interested persons who contacted DEQ’s Solid Waste Section were sent copies. A public notice announcing the draft EA’s availability was posted on the DEQ website, <https://deq.mt.gov/public/ea/SepticPumpers>, and published in the local newspaper.

DEQ is required, according to MEPA regulations, to disclose any potential impacts to the physical environment that may result from approving the Proposed Action. The MEPA-designated goals of an EA are:

1. Report the results of DEQ’s environmental review to the public

2. Determine if an EIS is needed

The EA is a procedural document outlining the processes DEQ followed during its decision-making. The EA identifies the potential impacts of a state action. The MEPA process does not extend DEQ's regulatory authority beyond substance addressed in the SDLA statute and Septic Rules. It does, however, assist agencies in making balanced decisions by seeking public review and input.

DEQ is releasing this Final EA to:

- Promote outreach to interested or affected parties
- Promote public understanding of the SDLA and Septic Rules
- Discuss the applicant's objectives and operations
- Evaluate compliance with applicable laws and rules
- Ensure that DEQ identifies all potential environmental impacts
- Disclose the significance of potential environmental impacts
- Define the enforceable measures and conditions of the Proposed Action

2. DESCRIPTION OF ALTERNATIVES

2.1 INTRODUCTION

This chapter summarizes alternatives to All Country's Proposed Action, including the No Action Alternative required by MEPA. MEPA may require the evaluation of reasonable alternatives to the Proposed Action, according to ARM 17.4.609(3)(f). Section 75-1-220, MCA, however, states that unless a project is state-sponsored, DEQ's review of an alternative site is not required.

The application submitted by All Country contains mitigating factors (as required by the Septic Rules) preventing significant impacts. All Country's application and associated documents are public record and may be accessed or copied during DEQ's normal business hours.

2.2 NO ACTION ALTERNATIVE

Under the No Action Alternative, the proposed septage land application site would be denied by DEQ. Therefore, the Site could not be used by All Country, and treatment or disposal of septage pumped by them would occur at another approved location. Farming activities would continue at the Robert Cazier property with no impacts from the land application of septage.

2.3 PROPOSED ACTION

The Proposed Action is DEQ licensing the new septage land application site proposed by All Country.

2.3.1 SEPTAGE LAND APPLICATION SITE OPERATIONS

The operational requirements for land application of septage at All Country's proposed Site are provided in **Table 1**:

Table 1: Septage Land Application Operational Requirements

ARM Reference	Specific Restrictions
17.50.809(10)	All non-putrescible litter must be removed from the land application site within 6 hours of application.
17.50.809(12)	Pumpings may not be applied at a rate greater than the annual application rate (AAR) of the site for crop nitrogen requirement on an annual basis.
17.50.810(1)	Pumpings may not be applied to flooded, frozen, or snow-covered ground if the pumpings may enter state waters.
17.50.811(3)	Pumpings may be applied only if the person first performs one of the following vector attraction and pathogen reduction methods: <ul style="list-style-type: none"> • injection below the land surface so no significant amount remains on the land surface within one-hour of injection; • incorporation into the soil surface’s plow layer within 6 hours of application; • addition of alkali material so that the pH is raised to and remains at 12 or higher for a period of at least 30 minutes; or, • management as required by 17.50.810 when the ground is frozen

The land application site setback requirements are provided in **Table 2:**

Table 2: Septage Land Application Site Setback Requirements

ARM Reference	Specific Restrictions
17.50.809(1)	Pumpings may not be applied to land within 500 feet of any occupied or inhabitable building.
17.50.809(2)	Pumpings may not be applied to land within 150 feet of any state surface water, including ephemeral or intermittent drainages and wetlands.
17.50.809(3)	Pumpings may not be applied to land within 100 feet of any state, federal, county, or city-maintained highway or road.
17.50.809(4)	Pumpings may not be applied to land within 100 feet of a drinking water supply source.
17.50.809(6)	Pumpings may not be applied to land with slopes greater than 6%.
17.50.809(8)	Pumpings may not be applied to land where seasonally high groundwater is 6 feet or less below ground surface.

Land application would be limited to areas approved by DEQ. All Country would mark the approved boundaries of the Site with flags, stakes, or rock cairns, ensuring wastes are applied only in approved areas, every other year, and at a specified rate. Areas within the Site would not be used until their boundaries have been marked and approved, by DEQ or the local county sanitarian. All Country would be required to log the type and amount of septage pumped daily, tracking the rate of land application. These disposal logs would be submitted twice a year for DEQ to verify compliance with the annual application rate (AAR) for the Site.

2.3.2 EQUIPMENT REQUIREMENTS

All Country has not purchased a pumper truck. When purchased, the vehicle would be inspected by the county health officer or their designated representative. The Septic Tank, Cesspool, and Privy Cleaner Vehicle Inspection Form was created by DEQ. This form outlines the requirements in the Septic Rules for land application of septage. This form requires the following evaluation:

1. Does the vehicle show signs of leakage?
2. Is the vehicle equipped with the proper spreading equipment? Specify
3. Is the spreading equipment mounted on the vehicle or separate? Specify
4. If required to screen septage before land applying, is the vehicle, or site, equipped with the proper screening equipment? Specify
5. Is the spreading equipment approved for use?
6. Is the screening equipment approved for use?
7. Make/Model of Vehicle
8. Tank Size

The county health officer's or designated representative's signature on the vehicle inspection form certifies that the vehicle is equipped with the necessary equipment to adequately screen and spread septage while land applying.

All land application operations would comply with **Table 1** and **Table 2**.

2.3.3 AMOUNT AND EXTENT OF SEPTAGE APPLICATION

Land application would occur as needed, at a rate not exceeding the AAR in gallons per acre. For septage, the AAR is calculated based upon uptake by a specific crop or grass, as follows:

$$\text{AAR} = \text{crop nitrogen requirement} / 0.0026 \text{ for septage waste}$$

The wheat crop at this location has a crop nitrogen requirement of 165 pounds per acre. The resulting AAR for septage is 63,461 gallons per acre, which is equal to approximately 2.34 inches of liquid applied per acre. For comparison, the average annual precipitation received during a calendar year in Radersberg, Montana is 11.7 inches of rain over any acre.

When land application is rotated, the same location isn't used every year. For example, if 100 acres is proposed for land application, 50 of those acres would be used one year and the other 50 acres would be used the next year. In this case, the applicant has designated two areas to rotate, using each one every other year (**Figure 1**). The north area is approximately 120 acres and the south area is approximately 200 acres. One year, the north area would be used. The next year, the south area would be used.

Once any acre has been treated to incorporate 63,461 gallons into the soil, that acre cannot be used again until after the crops have properly regenerated to uptake the nutrient loads the following year. The 322.5 total acres would accommodate the proposed volumes; land application activities would not exceed the AAR.

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES BY RESOURCE

3.1 LOCATION DESCRIPTION AND STUDY AREA

The Site is referenced in Section 1.1 of this Final EA. The study area includes land and resources in and around the Site. DEQ staff visited the Site to observe resources, habitats, land uses, and species.

3.2 WILDLIFE AND HABITATS

The impact to wildlife and habitats would be minor.

Transient wildlife tends to avoid septage land application sites due to human scent and activities. Fish, Wildlife and Parks manages the overall wildlife populations in the region. The Site is currently being used for crop production. Land application activities are like current agricultural use of the Site.

The Montana Sage Grouse Habitat Conservation Program’s map of the area shows the Site and surrounding properties are not located within a Sage Grouse core, connectivity, or general habitat.

Past and current farming activities at the Site altered the previous grassland/sagebrush habitats. The applicant does not plan to expand the Site by plowing new fields. Therefore, no habitat outside the land application area would be impacted.

3.2.1 THREATENED AND ENDANGERED SPECIES

U.S. Fish and Wildlife Service’s (USFWS) online databases were used to identify plant and animal species in the Site and the study area. The USFWS species and status listings for Broadwater County, Montana, are shown in **Table 3**:

Table 3: Federally Established Species List

Scientific Name	Common Name	Status
<i>Canis lupus</i>	gray wolf	recovery
<i>Lynx canadensis</i>	Canada lynx	threatened
<i>Gulo gulo luscus</i>	North American wolverine	proposed threatened
<i>Haliaeetus leucocephalus</i>	bald eagle	recovery
<i>Pinus albicaulis</i>	whitebark pine	candidate
<i>Spiranthes diluvialis</i>	Ute ladies’-tresses	threatened

The Site does not provide the habitat necessary for bald eagle, gray wolf, Canada lynx, North American wolverine, or whitebark pine.

Ute ladies'-tresses are perennial orchids that grow near the base of the Rocky Mountains in Montana. These have been documented in the upper Missouri River and its tributaries. This species typically prefers highly specialized and limited habitat dependent upon unaltered, moist streambanks; wet meadows; and abandoned stream channels. These habitat types are not present at the Site.

3.2.2 SPECIES OF CONCERN

Designation as a species of concern is not a statutory or regulatory classification. Instead, these designations provide a basis for resource managers and decision-makers to make proactive decisions regarding species conservation. Because of the limited development and low human population in the area, there remains adequate acreage of similar habitat near the Site to accommodate any species of concern forced to relocate due to the proposed activities.

The Montana Natural Heritage Program's (MNHP) online databases were accessed for listed species. The MNHP species and status listing for Township 4 North, Range 1 East is shown in **Table 4**:

Table 4: Montana Recognized Species List

Scientific Name	Common Name	Status
<i>Ardea herodias</i>	great blue heron	species of concern
<i>Dolichonyx oryzivorus</i>	bobolink	species of concern
<i>Gymnorhinus cyanocephalus</i>	pinyon jay	species of concern
<i>Numenius americanus</i>	long-billed curlew	species of concern
<i>Oreoscoptes montanus</i>	sage thrasher	species of concern
<i>Rhynchophanes mccownii</i>	McCown's longspur	species of concern
<i>Spizella breweri</i>	Brewer's sparrow	species of concern

The Site does not provide the habitat necessary for great blue heron, pinyon jay, or long-billed curlew.

Sage thrashers and Brewer's sparrow appear as breeding residents east of the divide in early spring. Both species are sagebrush specialists, and nesting density is positively correlated with sagebrush density. They favor dense sagebrush stands with large canopy coverage and nest above ground in the sagebrush canopy. The sparse sagebrush cover located outside the land application area would not provide adequate habitat.

The McCown's longspur is a common breeding resident (April - October) on the prairies east of the divide. They breed in sparsely vegetated shortgrass prairie, often on elevated benches with patches of bare ground sustained by grazing, fire, and lack of

moisture (Marks, 2016). Current land use has altered the natural habitat of the site and the proposed land application activities would be an additional deterrent for breeding/nesting by McCown's longspur.

The bobolink is an uncommon to common breeding resident (May - August) statewide. Current research indicates that bobolinks prefer large tracts of dense, tall grasses with intermediate amounts of litter (Marks, 2016). The annual farming of tall wheat grass at the site provides a possible breeding habitat for the bobolink. Past reports linking agriculture and bobolinks indicate that nests are usually empty prior to August harvests. Inspection of the wheat field would be conducted prior to harvest and any observed active nesting would require further inspection and notification of Fish, Wildlife and Parks.

3.3 SOILS AND VEGETATION

The US Department of Agriculture's (USDA) web soil survey was accessed for information related to the shallow subsurface soils at the Site and surrounding area. The source map below shows the approximate locations of soil units at the Site.

Figure 3: USDA, Natural Resources Conservation Service (NRCS), Web Soil Survey, 2019

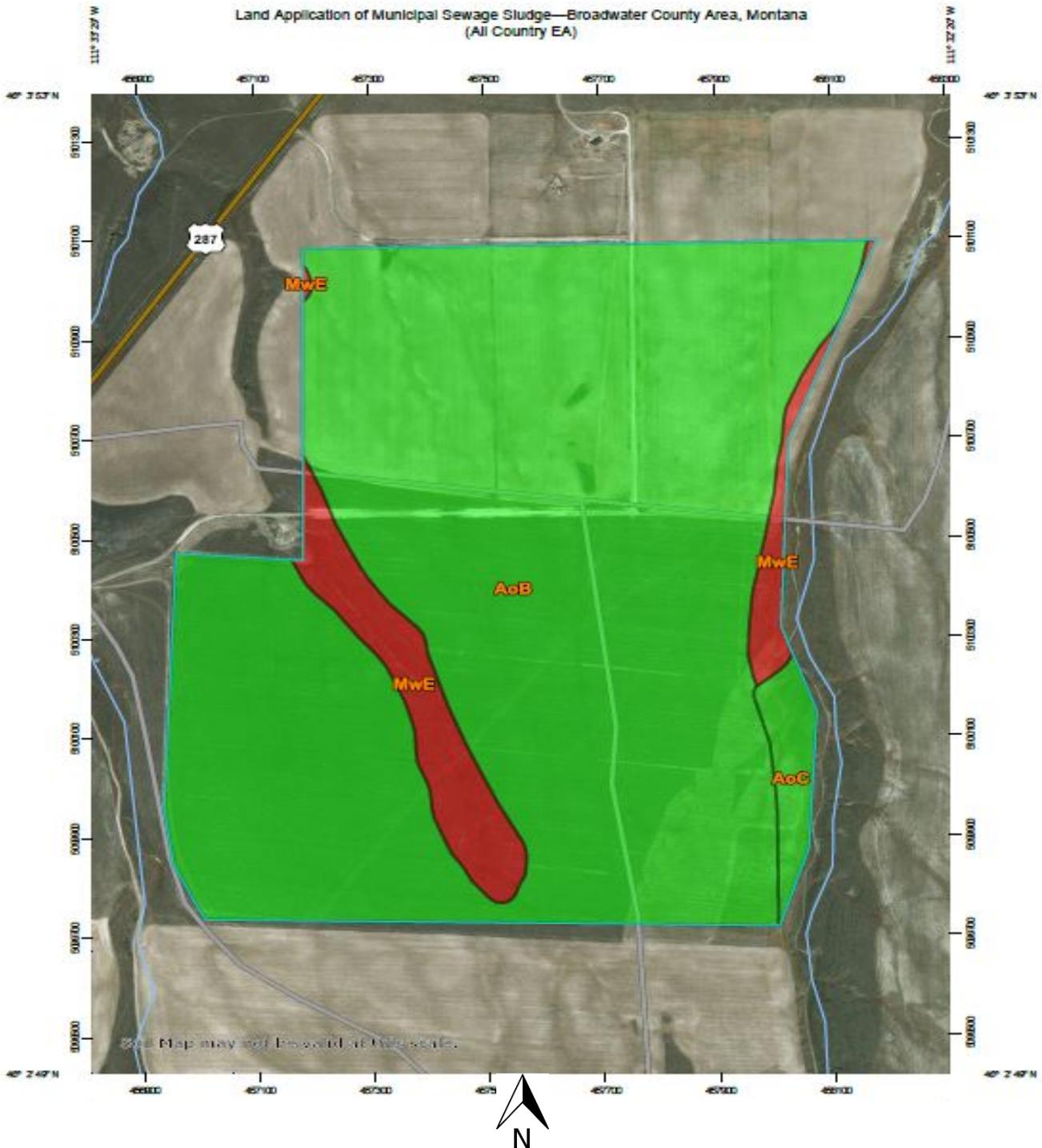


Table 5: USDA, NRCS, Web Soil Survey, 2019

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres In AOI	Percent of AOI
AoB	Amesha loam, 1 to 4 percent slopes	Not limited	Amesha (90%)		303.6	90.1%
			Mussel (5%)			
			Musselshell (3%)			
			Amesha (2%)			
AoC	Amesha loam, 4 to 9 percent slopes	Not limited	Amesha (60%)		7.7	2.3%
			Amesha (15%)			
			Chinook (15%)			
MwE	Musselshell-Crago channery loams, 15 to 35 percent slopes	Very limited	Musselshell (50%)	Slope (1.00)	25.8	7.7%
			Crago (40%)	Filtering capacity (1.00)		
				Slope (1.00)		
				Droughty (0.96)		
			Cabbart (3%)	Droughty (1.00)		
				Depth to bedrock (1.00)		
				Slope (1.00)		
Totals for Area of Interest					337.1	100.0%

The Site is predominantly in a region designated as Cultivated Crops. These areas are used to produce crops: alfalfa, corn, small grains (wheat), seed crops, soybeans, and vegetables; typically on an annual cycle. Agricultural plant cover is variable depending on season and type of farming, and may be dry-farmed or irrigated. The Cultivated Crops area can be classified as existing farmland while the remaining land is native ecosystem, which includes Big Sagebrush Steppe and Rocky Mountain Lower Montane. The areas surrounding the farm fields are dominated by perennial bunch grasses and forbs with sparse sagebrush. The Site sits primarily in the Cultivated Crops area, while the grasses and sagebrush occupy areas of natural drainages which would be excluded from land application activities.

The Site is in an agriculturally developed area dominated by farm fields and surrounded by grassland and sagebrush-covered hillsides. The surrounding sections are similar, with Cultivated Crops area (40-80%).

The quantity and quality of crops and vegetation grown would be enhanced by the Proposed Action. When properly managed, septage is a valuable soil conditioner because it contains nutrients and moisture. This can reduce reliance on chemical fertilizers for agriculture. A good land application process recognizes the benefits of septage and employs practices to maximize these benefits. The acreage available for land application would be rotated through the seasons and used appropriately, not exceeding the AAR. This rotation allows vegetation to utilize nitrogen and other nutrients added by septage.

3.4 HYDROLOGY

The analysis area for hydrology is the Site and the surrounding area. Some discussion of regional geology, based upon published reports, is also provided. The analysis methods for hydrology included reviewing wetlands and jurisdictional waters information, onsite drilling reports, publications of the Montana Bureau of Mines and Geology, and topographic maps. DEQ staff also visited the Site to identify drainages and any other topographical features that could be places of concern.

3.4.1 SURFACE WATER

There are no anticipated impacts to surface water.

The Site is located approximately 5.8 miles west of the Missouri River, and lies within the Upper Missouri River Watershed. A riparian emergent drainage transects the west portion of the site. This drainage can also be seen on the map (**Figure 1**). While water does not frequently flow through this area, flow may appear during major storm events. If any ephemeral surface waters form within the Site from storm events and/or drainage migration, the pumper would maintain the required 150-foot setback from those areas. Furthermore, land application would not occur on slopes exceeding 6%.

3.4.2 GROUNDWATER

There are no anticipated impacts to groundwater or to groundwater wells.

Groundwater underlying the Townsend Valley is in Quaternary and Tertiary deposits that consist mainly of conglomerate, shale, sandstone, and tuff, with minor amounts of breccia, limestone, and diatomaceous earth. Groundwater in these deposits occurs under both confined and unconfined conditions. In the southern end of the valley where the Site is located, groundwater occurs in limestone and shale Tertiary beds and is unconfined.

The Montana Bureau of Mines and Geology's Groundwater Information Center (GWIC) is DEQ's reference for well data in Montana. All wells documented by GWIC when this Final EA was written were considered. Any well not documented in GWIC is not included in this Final EA, but if wells are proven to be within setbacks, the setbacks would be maintained by adjusting the Site's boundaries.

GWIC's database locates wells by Section and identified two wells in Section 36. For this Final EA, DEQ evaluated GWIC's information on all wells within the Robert Cazier property boundaries as well as within proximity to the site (**Figure 4**). No wells are within the Site. This includes the five wells in Section 26 and five wells in Section 25. While there are other wells within a half-mile of the site, these wells were evaluated for the sole purpose of approximating static water levels of groundwater beneath the Site.

Table 6 summarizes information for the wells that were identified near the Site. Because the data in GWIC is based on well drillers' records, the details are not field-verified for accuracy. Further, the contents of GWIC's database rely only on information from submitted drilling records. There may be additional wells in the area that are not contained in the database because the records were not submitted to GWIC. This analysis is based on the information contained in GWIC's database.

According to GWIC's database, groundwater in this area is determined to be at an average of 200 feet below the ground's surface. This is determined by averaging the documented static water levels (SWL) of the twelve wells located nearest to the Site (in Sections 25, 26, and 36). The Site sits at an elevation of around 3,800 feet above sea level. The thickness of the alluvium deposits and weathered shale overlying the groundwater aquifer is approximately 200 feet. The well log data shows there is approximately 0 to 10 feet of topsoil, followed by differing types of clay, sand, and gravel and weathered shale (going down hundreds of feet). From the description of aquifers in the Townsend valley, we can determine that groundwater sits in an unconfined aquifer within a fractured limestone/shale mix. DEQ concludes that there is no groundwater above the six-foot minimum required by ARM 17.50.809 (8).

As required, SWLs are greater than six feet below ground surface. Pumpings may not be applied within 100 feet of a drinking water source. There are two documented wells within the Robert Cazier property boundaries, but not within the Site. All land application activities must remain outside the setback requirements from these wells. All static water levels in the wells nearest the Site are deeper than the required six-foot minimum, and farther than the 100-foot setback from the Site's boundaries. If any wells are drilled within the 100-foot setback, the Site would adjust its borders to maintain the setbacks. Due to the overlying sediments and the need for moisture, all septage would be absorbed by the soils and not migrate over 100 feet to contaminate wells.

Figure 4: Location of Nearby Documented Water Supply Wells
(well in *blue* circles, approximate Site boundaries outlined in *red*, US Highway 287-mile markers in *red*, numbers outlined in white [e.g., mile 98 at Site entrance])



Source: Ground Water Information Center (GWIC), Montana Bureau of Mines and Geology (**NOT TO SCALE**)

Table 6: Summary of Nearby Wells

Township	Range	Section	Total depth	Static water level	Date	Use
04N	01E	25	630	230	9/24/2018	DOMESTIC
04N	01E	25	440	203	1/5/2018	DOMESTIC
04N	01E	25	450	224	6/8/2018	DOMESTIC
04N	01E	25	297	218	7/20/2018	DOMESTIC
04N	01E	26	245	168	5/9/2008	STOCKWATER
04N	01E	26	305	183	5/1/2008	STOCKWATER
04N	01E	26	324	197	7/19/2006	DOMESTIC
04N	01E	36	380	252	11/19/2007	DOMESTIC
04N	01E	36	400	248	3/15/2006	STOCKWATER

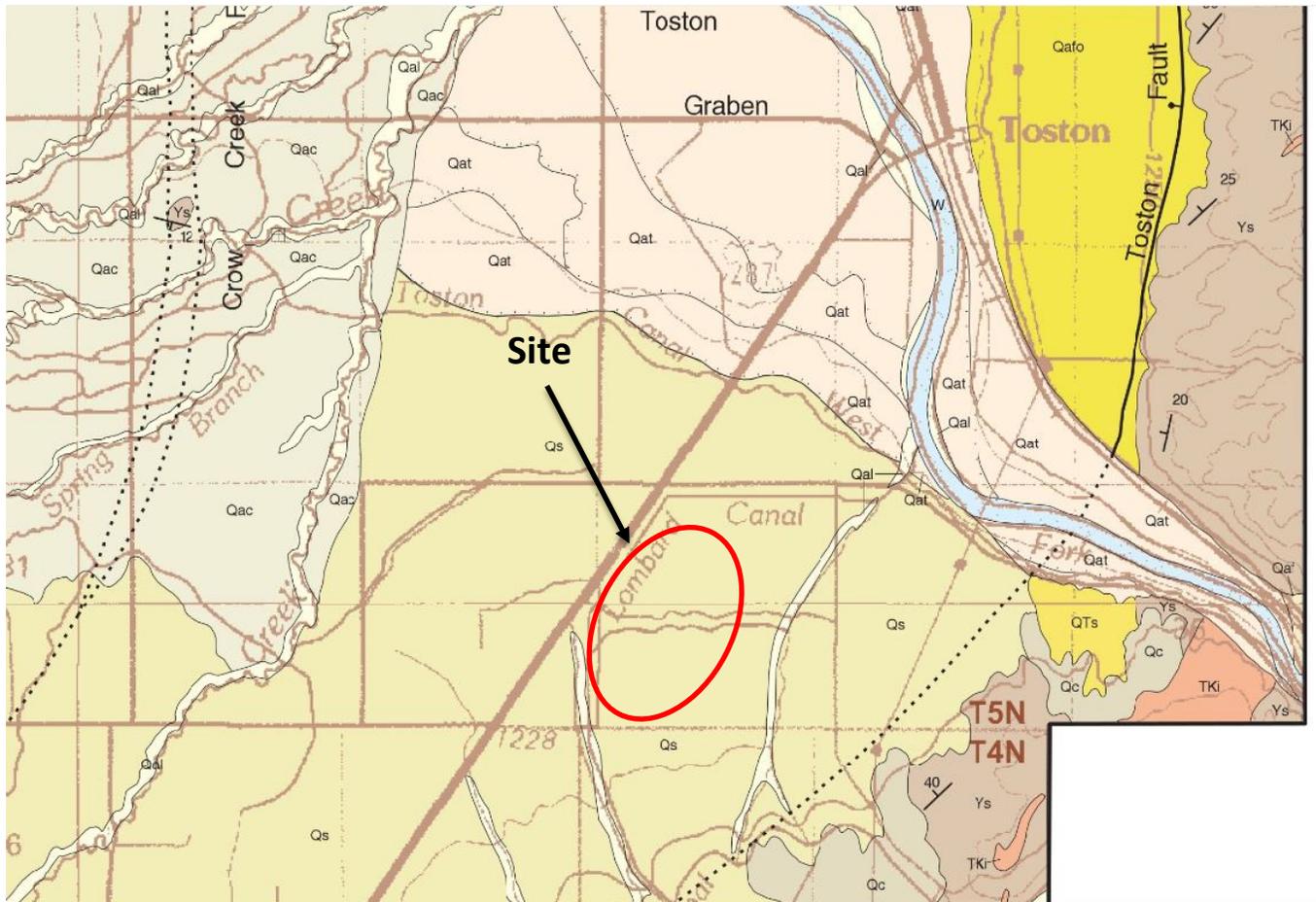
Source: GWIC, Montana Bureau of Mines and Geology

Note: The total depth column is the depth drilled, which may be deeper than the bottom of the completed well. Static water level is the level of water measured in the well at the time of installation. All data is based upon the driller's logs and may not be reported for every well.

3.5 GEOLOGY

The Site lies in the intermontane basin underlain by three major geological units: Quaternary alluvium, igneous formations, and sedimentary formations. Known as the Townsend Basin, this ancient Tertiary basin formed a northwest-southeast trending intermountain valley between the Big Belt and Elkhorn Mountains during late uplift of the area. These mountains are subsidiary ranges of the active Rocky Mountain chain. The Townsend Basin lies in a structural depression formed by the down warping of underlying pre-Cambrian and Cambrian sedimentary bedrock. These ancient sedimentary formations have been intruded by masses of granite. The basin is partially filled with water-bearing Quaternary alluvium, overlain by Pleistocene to Holocene sediments and alluvial terrace deposits.

Figure 5: Geologic Map of Radersburg-Toston Valley, Central Montana.
Symbols: Qs -Sedimentary, fine-grained; Qal -Alluvium; Qat -Alluvium terrace deposit;
Qac -Alluvium and Colluvium; Qato-Older alluvial fan deposit; Ys-Proterozoic sedimentary and
metasedimentary rock



Source: Montana Bureau of Mines and Geology, Vuke, S.M., 2007 (**NOT TO SCALE**)

3.6 CLIMATE

DEQ analyzed how land application of septage would impact the Site's environment given the climate of the region. The area analyzed for impacts to climate is the Site. Analysis methods for climate included a site visit and researching data from this link:

<http://www.weatherbase.com/weather/weather.php?s=413842&cityname=Radersburg-Montana-United-States-of-America> (averages based on climate records collected over the past 30 years) for Radersburg, Montana.

The climate in the area is typical of Montana and is classified as warm summer continental climate. **Table 7** summarizes climate data for Radersburg, Montana. The average temperature for the year in Radersburg is 44 degrees with July being the warmest month. The coolest month is January. The annual precipitation averages 11.7 inches, with June being the wettest month at 1.8 inches. The least precipitation occurs during the winter, November to February.

Table 7: Climate Data for Radersburg, Montana

MONTHLY - WEATHER AVERAGES SUMMARY [\[Show All Data \]](#) [°C] °F

Average Temperature Years on Record: 26 

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
F	44	20.1	28.3	33.9	43	52.8	60.2	66.5	64.6	55	45.5	33.2	25.1

Average High Temperature Years on Record: 30 

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
F	58.9	31.6	40.2	49.1	59.5	68.4	77.2	83.9	82.5	72.6	61.2	43.4	35.5

Average Low Temperature Years on Record: 30 

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
F	28.6	7.4	14.6	21.1	28.1	37.1	43.9	47.1	45.4	37.2	29	19	12.5

Average Precipitation Years on Record: 30 

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
in	11.7	0.4	0.2	0.7	1	2	1.8	1.1	1.4	1.4	0.8	0.5	0.4

Average Number of Days With Precipitation Years on Record: 26 

	ANNUAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Days	74	4	3	6	6	10	11	7	7	7	5	4	4

Source: www.weatherbase.com

Net evaporation rates were obtained and evaluated from the Western Regional Climate Center to ensure the Site could properly utilize the increase in moisture. The net evaporation rates for the Canyon Ferry Dam location were used due to its proximity to the site. The monthly average pan evaporation is listed as 35.46 inches per year. Data was recorded from 1907-1996. On average, there is zero evaporation shown between November and March, but averages per month include 3.15 for April, 5.04 for May, 6.21 for June, 7.91 for July, 7.04 for August, 4.18 for September, and 1.93 for October. These averages correlate directly to the hot, dry months of a Montana summer. The 35.46 inches of evaporation each year shows that the soils and climate can handle more than the average of 11.2 inches of precipitation this Site sees annually.

Due to the extremely dry climate, the low average annual precipitation, and the high evaporation rate, the proposed activities would have a positive impact on the Site's landscape. The dry, hot months of June, July, August, and September correlate to the average Montana septic tank pumper's busy season. Dry soils, vegetation, and crops would benefit from the added moisture provided by septage land application activities.

3.7 AESTHETICS

Aesthetic impacts from the land application activities would be minor.

The application of septage resembles day-to-day farming and ranching activities in the area. The Site is on cultivated cropland. No other development is anticipated at the Site. The Site is not located on a prominent topographical feature.

DEQ and/or the local county sanitarian would respond to odor complaints to determine if wastes have not been properly managed. With proper management, odors would be minimized. The naturally occurring bacteria in the soil uses carbon in the waste as a fuel source. This activity results in the breakdown of wastes, including odors. While the presence of odors may be detectable during land application activity, these odors are typically noticed only within proximity. Wind is typical in the Toston area and would quickly disperse odors from land application activities.

3.8 HUMAN HEALTH & SAFETY

No impacts to human health and safety are anticipated because of land application activities.

The septage would be land applied at the Site. The dispersive mechanism that would be equipped on the pumper truck would apply waste in a wide, thin, even layer. Septage would be incorporated into the soil surface within six hours of application, per the ARM. No livestock grazing areas exist on the Site. The existing cultivated crop areas would continue to be used for wheat production. The 30-day wait period after the last application would be maintained for harvesting food crops, feed crops, and fiber crops.

Typically, the Site would be used for land application in the same monthly timeframe that fertilizer would be applied to a bare field. Once the soil has accepted the added moisture and nutrients (within the AAR), the land application activities would move to another approved area within the Site. The crops can then be planted and grown at the Site if harvesting is after the 30-day wait period. The ARM and adopted federal rules have determined this 30-day wait period is a sufficient amount of time to protect human health and safety.

Public access into the Site is controlled by multi-strand barbed-wire fences. All access roads to the Site are gated. When operated in accordance with ARM, no additional concerns are anticipated.

3.9 DEMAND FOR GOVERNMENT SERVICES

The impact to the demand for government services would be minor.

The government resources that would be utilized for the oversight of the operation and maintenance of this Site would be the Broadwater County sanitarian and DEQ. The Broadwater County sanitarian and DEQ staff would conduct periodic inspections of land application activities at the Site. Volumes of waste applied at the Site from would also be monitored by DEQ to ensure the AAR is not exceeded. Site inspections are performed at all septic tank pumper land application locations.

3.10 TRAFFIC

The impact on traffic would be minor.

There would not be a significant increase in traffic on US Highway 287. The Site is located approximately 11 miles southeast of the city of Townsend in a mixed land use area consisting of agricultural properties and residential subdivisions. The Site would be accessed via US Highway 287. The roads to be used by the applicant's truck currently support traffic to homes, farms, and ranches. The roads also support traffic to Bozeman and Helena.

4. CONCLUSIONS AND FINDINGS

4.1 EVALUATION OF MITIGATIONS, STIPULATIONS, AND OTHER CONTROLS ENFORCEABLE BY DEQ OR ANOTHER GOVERNMENT AGENCY

The Site and the O&M plan meet the requirements of the Montana SDLL, Air and Water Quality Acts, and other applicable Montana environmental laws and regulations, as well as county ordinances. Adherence to the regulations and the approved O&M plan would mitigate the potential for harmful releases and impacts to human health and the environment from the Proposed Activity at the Site.

4.2 FINDINGS

The Site is approved.

Based on consideration of all the criteria set forth in ARM 17.4.608, DEQ has determined operation of the site would not significantly affect the human environment. Therefore, an EA is the appropriate level of environmental review, and an EIS is not required.

The depth and breadth of the project is typical of a land application site. DEQ's analysis of potential impacts from the proposed project are appropriate to the complexity, environmental sensitivity, degree of uncertainty, and inherent mitigating factors provided by the Septic Rules for each resource considered.

To determine whether preparation of an EIS is necessary, DEQ is required to determine the significance of impacts associated with the Proposed Action. The criteria that DEQ is required to consider in making this determination are set forth in ARM 17.4.608(1)(a) through (g):

- (a) The severity, duration, geographic extent, and frequency of occurrence of the impact;
- (b) The probability that the impact will occur if the proposed action occurs; or conversely, reasonable assurance in keeping with the potential severity of an impact that the impact will not occur;
- (c) Growth-inducing or growth-inhibiting aspects of the impact, including the relationship or contribution of the impact to cumulative impacts;
- (d) The quantity and quality of each environmental resource or value that would be affected, including the uniqueness and fragility of those resources or values;
- (e) The importance to the state and to society of each environmental resource or value that would be affected;
- (f) Any precedent that would be set because of an impact of the proposed action that would commit the department to future actions with significant impacts or a decision in principle about such future actions; and
- (g) Potential conflict with local, state, or federal laws, requirements, or formal plans.

The Site is located as described in Section 1.5 of this Final EA. It encompasses 322.5 acres of Robert Cazier property.

The location is not within sage grouse core habitat, general habitat, or connectivity area. It has no special agricultural designation. Operation would not adversely impact any wildlife species or habitats.

Operation of the site is not expected to impact surface water resources. Operational standards require all the setback requirements from surface water and slopes exceeding 6% are met, as described in Section 3.4.1 of this Final EA.

Operation of the site is not expected to impact groundwater. The site is well within the setback requirements for groundwater, as described in Section 3.4.2 of this Final EA.

DEQ has not identified any growth-inducing or growth-inhibiting aspects of the proposed project. DEQ's approval is not a decision regarding, in principle, any future actions that DEQ may perform. Furthermore, approval doesn't set any precedent or commit DEQ to any future action with significant impacts. Finally, operation of the proposed site does not conflict with any local, state, or federal laws, requirements, or formal plans.

5. OTHER GROUPS OR AGENCIES CONTACTED, OR WHICH MAY HAVE OVERLAPPING JURISDICTION

Broadwater County Environmental Health Department
United States Department of Agriculture
Montana Natural Heritage Program
Montana Department of Environmental Quality
Montana Historical Society State Historic Preservation Office
United States Geological Survey
Montana Bureau of Mines and Geology
US Fish & Wildlife Service
Montana Sage Grouse Habitat Conservation Program

6. AUTHORS

Final EA prepared by:

Fred Collins, John Collins, Mike Eder, and Tim Stepp
Waste and Underground Tank Management Bureau

Date: July 9, 2019

7. REFERENCES:

Montana Tech of the University of Montana, Montana Bureau of Mines and Geology, Groundwater Information Center <http://mbmgwic.mtech.edu/>

Montana Bureau of Mines and Geology, Geologic Map of Radersburg-Toston Basin, Montana, Susan M. Vuke, 2007

United States Department of Agriculture, Natural Resources Conservation Service, Web Soil Survey, 2019 <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>

Montana Natural Heritage Program, 2018 <http://mtnhp.org/default.asp>

Jeffery S. Marks et al., *Birds of Montana*, Buteo Books, Arrington, VA, 2016

Montana Topographic Maps <http://www.topozone.com/montana/>

Montana Cadastral Mapping Project, Montana State Library, 2019
<http://svc.mt.gov/msl/mtcadastral>

Radersburg, Montana Weather Averages Summary
<http://www.weatherbase.com>

Average Pan Evaporation Data by State
<https://wrcc.dri.edu/htmlfiles/westevap.final.html>