



**DRAFT ENVIRONMENTAL ASSESSMENT
for the proposed
Robbins Septic
Land Application Site
Three Forks, Montana**

**Solid Waste Section
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ACRONYMS

Robbins – Robbins Septic

ARM – Administrative Rules of Montana

AAR– Annual Application Rate

Draft EA – Draft version of an environmental assessment before public comment

Final EA – Final version of an environmental assessment after public comment

DEQ – Montana Department of Environmental Quality

DNRC – Montana Department of Natural Resources and Conservation

EA – Environmental Assessment

EIS – Environmental Impact Statement

GWIC – Ground Water Information Center

MBMG – Montana Bureau of Mines and Geology

MCA – Montana Code Annotated

MEPA – Montana Environmental Policy Act

MNHP – Montana Natural Heritage Program

O&M – Operation and Maintenance

Proposed Action – Approving a new septage land application site

Septic Rules– ARM Title 17, chapter 50, subchapter 8, “Cesspool, Septic Tank, and Privy Cleaners”

SDLA – “Septic Disposal Licensure Act”, Title 75, chapter 10, part 12, MCA

Site – Approximately 31 acres of Robert Green property located approximately eight miles northeast of Three Forks off of Clarkston Road in Gallatin County, Montana.

SWL – Static Water Level

USFWS – United States Fish and Wildlife Service

USGS – United States Geological Survey

1. NEED FOR PROPOSED ACTION

1.1 SUMMARY

This draft environmental assessment (Draft EA) was prepared for the septage land application site proposed by Robbins Septic (Robbins), in accordance with the Montana Environmental Policy Act (MEPA). On August 25, 2021, the Department of Environmental Quality (DEQ) received an application from Robbins for the licensing of two new septage land application sites (Proposed Action). Robbins proposes the land application of septage on approximately 31 acres of Robert Green property located approximately eight miles northeast of Three Forks off of Clarkston Road in Gallatin County, Montana (Sites, **Figure 1**).

1.2 BACKGROUND

In September 2007, Robbins obtained a license from DEQ to pump and land apply septage in Montana. Robbins is currently approved to land apply septage on two land application sites in Gallatin County. Robbins is proposing to add the Sites to their license.

This application was signature-certified by Gallatin County prior to DEQ's environmental review. According to the Administrative Rules of Montana (ARM), DEQ cannot review a new site disposal application unless it has been previously certified by the local county health officer or designated representative.

Septage is the liquid and solid material removed from a septic tank, cesspool, portable toilet, or similar treatment works that receives only domestic waste and wastewater collected from household or commercial operations. Naturally occurring bacteria within wastewater reside in the typical septic tank, digesting organic matter over time. Pre-treated liquid (effluent) typically exits the septic tank through a perforated pipe and enters its leach field, leaving floating materials and solids in the tank for further digestion. Septic tanks are commonly pumped every two to five years depending on tank capacity and number of users. Septage is either delivered to a wastewater treatment plant for secondary treatment, land applied as proposed in the Draft EA, or dewatered and landfilled at a licensed Class II municipal solid waste landfill facility. Septage is different than sewage, which is wastewater and excrement that has not been treated and is conveyed in sewer systems. Septage is what Montana's septic tank pumpers land apply.

As Montana's population and seasonal visitation grow, the demand for disposal of septage increases. ***Wastewater treatment plants can accept only limited amounts of septage from pumpers.*** Land application by pumpers allows for safe disposal of septage without overloading Montana's wastewater treatment plants. Land application also reduces Montana farmers' reliance on chemical fertilizers to improve soil. Robbins' application was submitted to DEQ under the laws and rules for licensing septic pumpers, demonstrating their intent to meet the minimum requirements for the pumping and land application of septage.

When properly managed, land application of septage is a beneficial resource, providing economic and environmental benefits with no adverse public health effects. A licensed land application program recognizes and employs practices that maximize those benefits. Septage does not include prohibited material (e.g., garbage or tampons) removed from a septic tank or similar treatment works by pumping.

1.3 PURPOSE AND NEED

DEQ's purpose and need in conducting the environmental review is to act upon Robbins' application by evaluating potential impacts of the Proposed Action. If DEQ approves the application, DEQ will add the Site to their existing license. DEQ's decision to approve or deny the application depends upon the consistency of the application with the following:

1. Septage Disposal Licensure Act (SDLA);
2. Administrative Rules of Montana (ARM) Title 17, chapter 50, subchapter 8, "Cesspool, Septic Tank, and Privy Cleaners" (Septic Rules);
3. the Clean Air Act of Montana; and
4. Montana Water Quality Act.

Robbins proposes to comply with all the rules noted above.

1.4 LOCATION DESCRIPTION AND ANALYSIS AREA

The proposed Sites are as follow:

1. Robert Green property in the N ½ of Section 2, Township 2 North, Range 2 East, in Gallatin County, Montana; and
2. Robert Green property in the N ½ of Section 1, Township 2 North, Range 2 East, in Gallatin County, Montana.

The Sites are currently pasture grass.

Private drives via Clarkston Road would be used to access the Sites (**Figure 1**). The area being analyzed as part of this environmental review includes the immediate project area (**Figure 2**) as well as neighboring lands surrounding the analysis area as reasonably appropriate for the impacts being considered. The analysis area depends on the resource under evaluation, as noted in the subparts of *Section 3*.

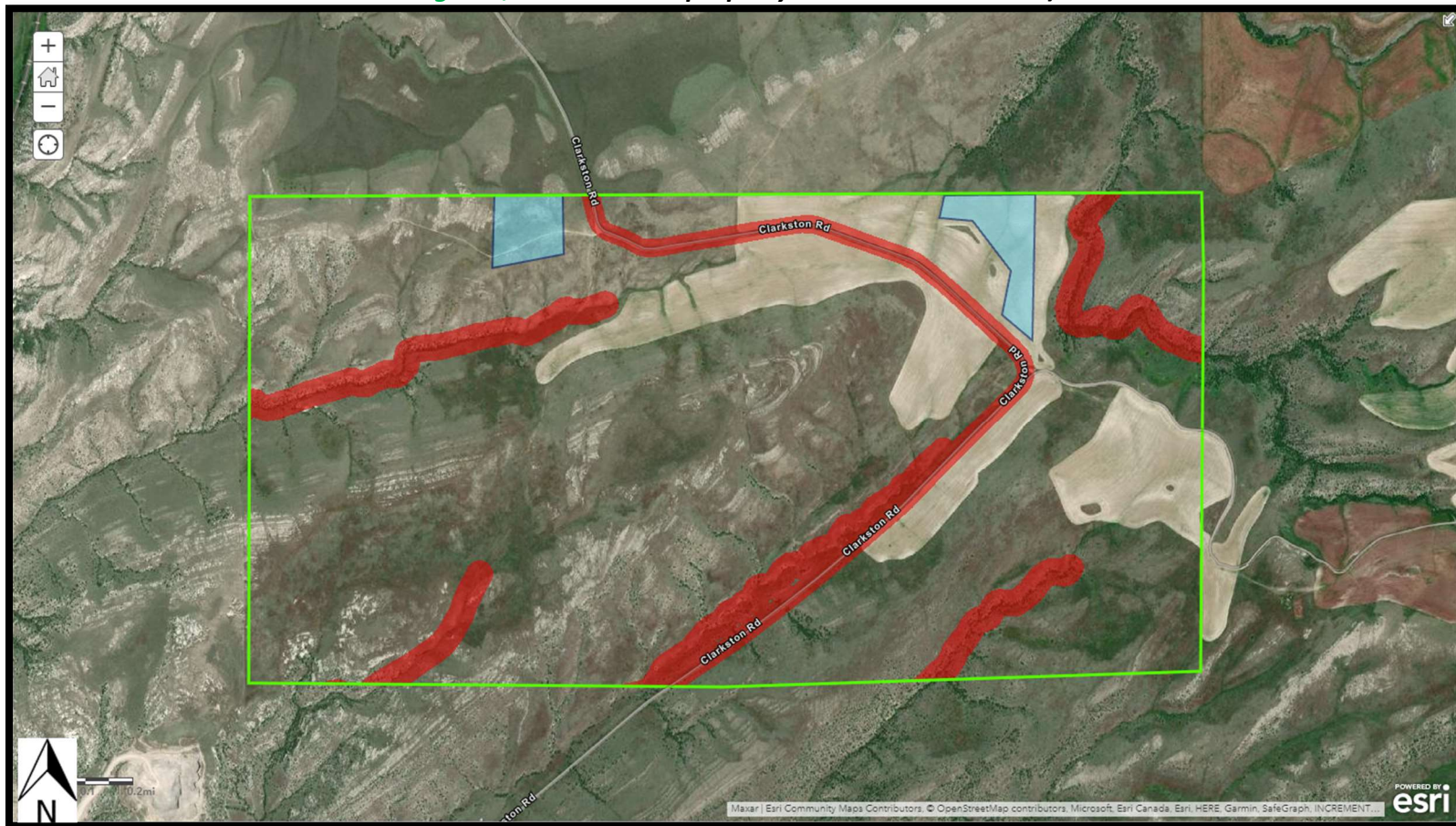
Figure 1: Proposed Land Application Sites
(approximate Sites shaded in *light blue*; applicable setbacks shaded in *red*; Robert Green property outlined in *dark blue*)



Source: ArcGIS (NOT TO SCALE)

Figure 2: Analysis Area

(approximate Sites shaded in light blue; applicable setbacks shaded in red; Sections 1 and 2 outlined in green; Robert Green property outlined in dark blue)



Source: ArcGIS (NOT TO SCALE)

1.5 COMPLIANCE WITH MEPA

Under MEPA, DEQ is required to prepare an environmental review for state actions that may have an impact on the human environment. Approval of the Proposed Action is considered a state action that may have an impact on the human environment. Therefore, DEQ must prepare an environmental assessment. This Draft EA analyzes the Proposed Action and reasonable alternatives to the Proposed Action and discloses potential impacts that may result from such actions. DEQ determined an EA was the appropriate level of review based on consideration of the criteria set forth in ARM 17.4.608.

1.6 PUBLIC INVOLVEMENT

DEQ released this Draft EA to present its initial findings described in *Section 4*. **A 30-day public comment period** commenced on the release of the document and **will end on January 15, 2022**. A notice of availability for the Draft EA was sent to adjacent landowners and other interested parties. A press release was sent to area media outlets and posted to the State Newsroom the day this Draft EA was published. This Draft EA may be viewed at: <https://deq.mt.gov/public/publiccomment>.

2. DESCRIPTION OF ALTERNATIVES

This Section describes the Proposed Action and No Action alternatives. MEPA requires the evaluation of reasonable alternatives to the Proposed Action. Reasonable alternatives are achievable under current technology and are economically feasible, as determined by the economic viability of similar projects with similar goals, conditions, and physical locations. According to Section 75-1-220(1), MCA, reasonable alternatives are determined without regard to the economic strength of the applicant but may not include an alternative facility or an alternative to the proposed project itself.

According to ARM 17.4.609(3)(f), an environmental assessment (EA) must include alternatives whenever reasonable and prudent. DEQ has not considered any other alternatives to the Proposed Action, beyond the no action alternative, because Robbins' application and operation and maintenance comply with the applicable laws and rules pertaining to land application of septage in Montana.

2.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, the Sites would not be approved by DEQ. Therefore, the Sites could not be used by Robbins, and disposal of septage would have to occur at another approved location or treatment works or their currently approved land application sites.

2.2 PROPOSED ACTION

Robbins is proposing the land application of septage on the Sites, described in *Section 1.1*.

2.2.1 LAND APPLICATION SITE OPERATIONS

The operational and setback requirements for land application of septage at this Site are provided in **Tables 1** and **2**:

Table 1: 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 crop's annual application rate (AAR) for nitrogen.
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

Table 2: 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. The Sites would not be used until their boundaries have been marked and approved by DEQ or the local county sanitarian.

Robbins would be required to log the type and amount of pumpings land applied annually as well as the dates applied. Disposal logs would be submitted to DEQ semiannually. DEQ would verify the Sites' annual application rate (AAR) and may periodically monitor the soils for adherence to the proposed maximum AAR.

2.2.2 EQUIPMENT AVAILABLE AND PUMPER TRUCK REQUIREMENTS

Robbins proposes to use the following equipment for land application activities:

1. 1997 International with a 2,700 gallon capacity
2. 1988 Kenworth with a 4,000 gallon capacity
3. 1987 1085 Massey Ferguson with a disc and harrow
 - a. Debris and trash screen collector hooks to both vacuum trucks with a hose

The Septic Tank, Cesspool, and Privy Cleaner Vehicle Inspection Form was created by DEQ to guide the vehicle inspection. 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. The following questions are on the form to verify compliance with the Septic Rules:

1. Does the vehicle show signs of leakage?
2. Is the vehicle equipped with the proper spreading equipment?
3. Is the spreading equipment mounted on the vehicle or separate?

4. If required to screen septage before land applying, is the vehicle, or site, equipped with the proper screening equipment?
5. Is the spreading equipment approved for use?
6. Is the screening equipment approved for use?
7. Make/Model of Vehicle
8. Tank Size

2.2.3 AMOUNT AND EXTENT OF SEPTAGE APPLICATION

Land application must not exceed the AAR (gallons per acre per year) based on:

1. The nitrogen content of the waste applied at the Site (EPA, 1993); and
2. The crop nitrogen yield for the crop or other vegetation at the Site.

The AAR for portable toilet and vault type waste is calculated as follows:

$$\text{AAR} = \frac{\text{minimum crop nitrogen requirement (lbs./acre/year)}}{0.0026 \text{ (lbs./gallon)}}$$

The Site is currently pasture grass. The nitrogen requirement for grass is 75 pounds per acre per year based on a conservative yield expectation at the Sites (Fertilizer Guidelines for Montana Crops, 2005; EPA, 1993). The resulting AAR for septage is 28,846 gallons per acre per year, which is equal to approximately 0.53 inches of liquid applied annually per acre. For comparison, the average annual precipitation in the Three Forks area is 12.51 inches per year.

Land application of septage at the AAR is alternated annually between separate parcels to allow for agronomic crop uptake of the applied nitrogen. Plants can utilize nitrogen available from the septage if the volume of septage applied each year does not exceed the AAR. When land application is rotated, one parcel is used every year. For example, if 100 acres are proposed for land application, 50 acres would be used one year and the other 50 acres would be used similarly the next year. In this case, Robbins would rotate the Sites each year. The residual soil nutrient levels at each parcel would vary over time. DEQ may periodically monitor the soil for nutrient content to determine compliance with the AAR.

The Robert Green property could annually treat the proposed 100,000 gallons of waste without exceeding the AAR on either of the Sites' acres each year.

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES BY RESOURCE

3.1 LOCATION DESCRIPTION AND ANALYSIS AREA

The location of the Sites is described in *Section 1.1* of this Draft EA. The analysis area includes land and resources in and around the Site. The analysis area is described in each subsequent section depending on the resource.

3.2 IMPACTS

Table 3 shows a summary of the impacts of the No Action Alternative and the Proposed Action.

Direct impacts are those that occur at the same time and place as the action that triggers the effect.

Secondary impacts are those that occur at a different location or later time than the action that triggers the effect.

Cumulative impacts are the collective impacts on the human environment when a specific action is considered in conjunction with other past, present, and future actions by location and type. Cumulative impact analysis under MEPA requires an agency to consider all past and present state and non-state actions. Related future actions must also be considered when these actions are under concurrent consideration by any state agency through pre-impact statement studies, separate impact statement evaluation, or permit processing procedures. Cumulative impact analyses help to determine whether an action, combined with other activities, would result in significant impacts.

Under the No Action Alternative, there would be no impacts for any resource.

Table 3: Impacts

Resource	Alternative 1 – No Action	Alternative 2 – Proposed Action
Wildlife and Habitats	No impact.	<u>Direct and Secondary Impact:</u> Minor. Wildlife tend to avoid land application sites due to human scent and activities and would relocate. (See <i>Section 3.2.1</i>) No cumulative impacts.
Soils and Vegetation	No impact.	<u>Direct and Secondary Impact:</u> Minor beneficial impact. The quality of soils and crop yields would be enhanced both immediately and in the future because of the Proposed Action. (See <i>Section 3.2.2</i>) No cumulative impacts.
Geology	No impact	No direct, secondary or cumulative impacts. (See <i>Section 3.2.3</i>)

Hydrology and Hydrogeology	No impact.	No direct, secondary, or cumulative impacts. (See <i>Section 3.2.4</i>)
Aesthetics and Noise	No impact.	<u>Direct and Secondary Impact:</u> Minor impact. Land application activities resemble agricultural and commercial activities occurring in the surrounding area. Odor would largely be controlled by daily incorporation into the soil via harrowing. (See <i>Section 3.2.5</i>) No cumulative impacts.
Human Health & Safety	No impact.	No direct, secondary, or cumulative impacts. (See <i>Section 3.2.6</i>)
Industrial, Commercial, and Industrial Activities	No impact.	No direct, secondary, or cumulative impacts. (See <i>Section 3.2.7</i>)
Recreation and Land Use	No impact.	No direct, secondary, or cumulative impacts. (See <i>Section 3.2.8</i>)
Cultural Uniqueness and Diversity	No impact.	No direct, secondary, or cumulative impacts. (See <i>Section 3.2.9</i>)
Demand for Government Services	No impact.	<u>Direct and Secondary Impact:</u> Minor. Gallatin County sanitarian and DEQ would conduct periodic inspections of the Site. (See <i>Section 3.2.10</i>) No cumulative impacts.
Socioeconomics	No impact.	<u>Direct and Secondary Impact:</u> Minor. There is a lack of literature or studies on potential impacts from land application sites on surrounding real property values in Montana. If any impacts occur, they are expected to be minor. (See <i>Section 3.2.11</i>) No cumulative impacts.
Traffic	No impact.	<u>Direct and Secondary Impact:</u> Minor. Robbins would access the Sites via private drives off of Clarkston

		<p>Road, which currently supports traffic to homes in the area. (See <i>Section 3.2.12</i>)</p> <p>No cumulative impacts.</p>
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3.2.1 WILDLIFE AND HABITATS

Impacts to wildlife and habitats from the Proposed Action would be minor.

Wildlife tends to avoid areas where human scents and activities are present including, but not limited to, septage land application sites. Montana Fish, Wildlife & Parks (FWP) manages the overall wildlife populations of the region. Species of fish, amphibians, and aquatic invertebrates and plants are not included on the following lists because land application activities would not impact nearby perennial waters based on STP requirements for minimum setbacks, maximum slopes, and elimination of runoff (see *Sections 2.2.1* and *3.2.4.1*).

The applicant does not plan to expand the Sites beyond the boundaries described in the application. Therefore, no habitats outside the land application areas would be impacted because human activities would be constrained to the Sites' boundaries. Odors are expected to be limited to the area immediately surrounding the point of land application (see *Section 3.2.5*). The Sites are located in a rural portion of Gallatin County. Adjacent land use in the vicinity of the Sites includes a mix of row crop agricultural production, grazing, and grasslands. Beyond the immediate vicinity of the Sites, a mixture of riparian areas, grasslands, and wooded foothills provide habitat for species present in the region.

3.2.1.1 THREATENED AND ENDANGERED SPECIES

The U.S. Fish & Wildlife Service's (USFWS) online databases were used to identify plant and animal species at the Sites and their associated analysis areas (USFWS, 2021). The USFWS species and status listings for Gallatin County, Montana, are shown in **Table 4**:

Table 4: Federally Established Species List

Scientific Name	Common Name	Status
<i>Canis lupus</i>	Gray wolf	Recovery
<i>Haliaeetus leucocephalus</i>	Bald eagle	Recovery
<i>Spiranthes diluvialis</i>	Ute ladies'-tresses	Threatened
<i>Pinus albicaulis</i>	Whitebark pine	Proposed threatened
<i>Aquila chrysaetos</i>	Golden eagle	Species of concern
<i>Charadrius montanus</i>	Mountain plover	Resolved taxon
<i>Lynx canadensis</i>	Canada lynx	Threatened
<i>Centrocercus urophasianus</i>	Greater sage grouse	Resolved taxon
<i>Anthus spragueii</i>	Sprague's pipit	Resolved taxon
<i>Gulo luscus</i>	North American wolverine	Resolved taxon

<i>Ursus arctos horribilis</i>	Grizzly bear	Threatened
<i>Danaus plexippus</i>	Monarch butterfly	Candidate

The Sites do not provide the habitat necessary to independently sustain the species listed above. Nearby grasslands, riparian areas, and protected lands provide adequate habitat for any species forced to relocate. Habitat for the whitebark pine exists east of the Sites in the Bridger Range and points of higher elevation throughout Gallatin County. The Ute ladies'-tresses prefer moist riparian habitats, which can be found west of the Sites along the Missouri River and its tributaries. The greater sage grouse is addressed separately in *Section 3.2.1.2*. The Proposed Action may deter transient wildlife from passing through the active land application area, but impacts to these species are anticipated to be minor.

3.2.1.2 SPECIES OF CONCERN

No impacts to species of concern are anticipated to result from the Proposed Action.

Designation as a species of concern is not a statutory or regulatory classification. Instead, these designations provide a basis for resource managers and regulators to make proactive decisions regarding species conservation.

The Montana Natural Heritage Program's (MNHP) online databases were accessed for listed species (MNHP, 2021). The MNHP species and status listing for Township 2 North, Range 2 East is shown in **Table 5**.

Table 5: Montana Recognized Animal Species List

Scientific Name	Common Name	Status	GRank/SRank
<i>Lasiurus cinereus</i>	Hoary bat	Species of concern	G3/S3
<i>Buteo regalis</i>	Ferruginous hawk	Species of concern	G4/S3
<i>Myotis lucifugus</i>	Little brown myotis	Species of concern	G3/S3
<i>Athene cunicularia</i>	Burrowing owl	Species of concern	G4/S3
<i>Falco peregrinus</i>	Peregrine falcon	Species of concern	G4/S3
<i>Gymnorhinus cyanocephalus</i>	Pinyon jay	Species of concern	G3/S3
<i>Lanius ludovicianus</i>	Loggerhead shrike	Species of concern	G4/S3
<i>Oreoscoptes montanus</i>	Sage Thrasher	Species of concern	G4/S3

The MNHP uses a standardized ranking system developed by The Nature Conservancy and maintained by NatureServe. Each species is assigned two ranks; one represents its global status (GRank), and one represents its status in the state (SRank). The scale is 1-5; 5 means common, widespread, and abundant; 1 means at high risk. Species with a GRank 5 are not included in **Table 5**.

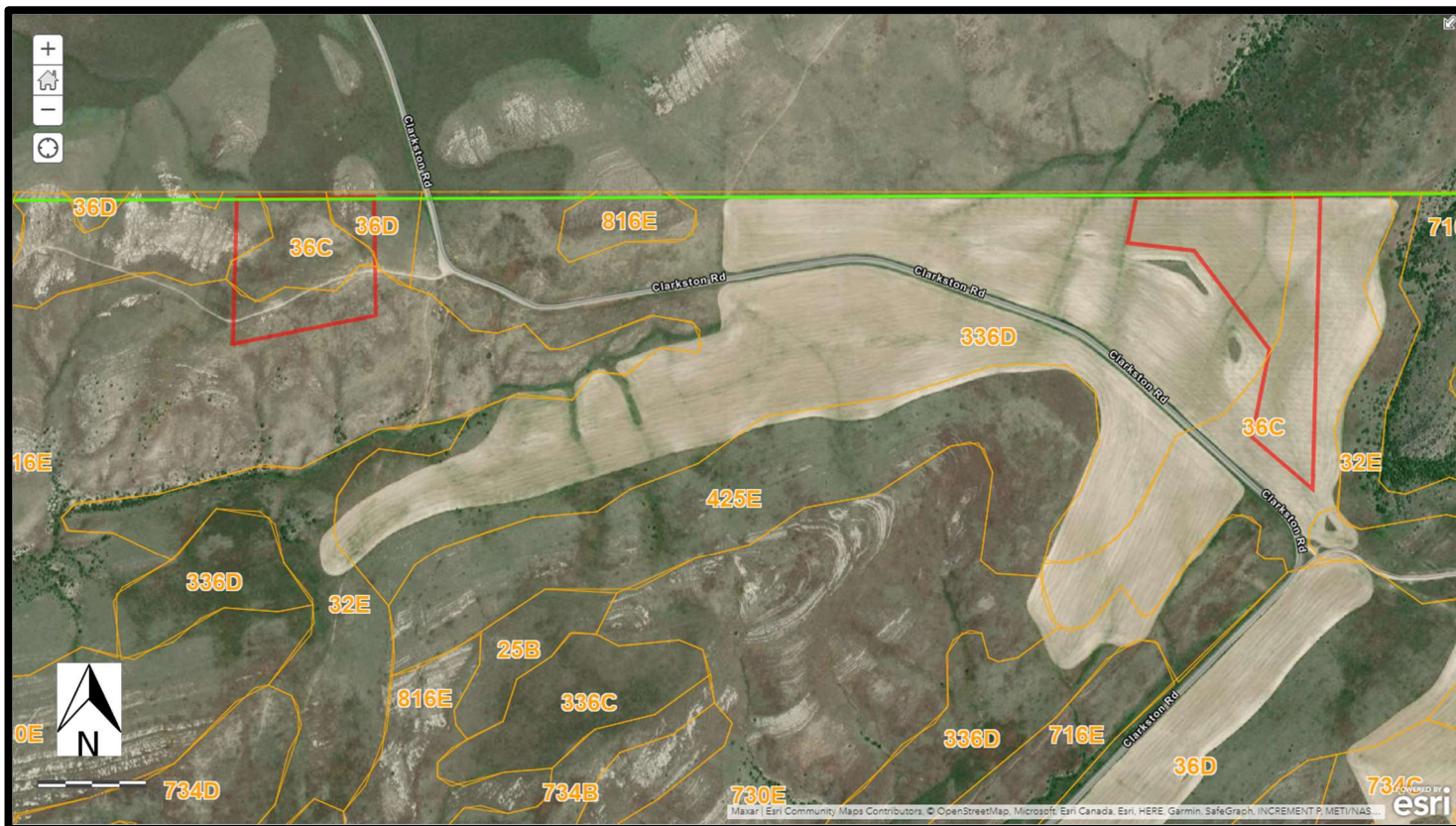
The Sites are located within a designated General Habitat for the greater sage grouse, as designated by the Department of Natural Resources and Conservation (DNRC). According to the DNRC, the Proposed Action is consistent with the Montana Sage Grouse Conservation Strategy and will not impact the species. Their findings show that it is unlikely the Sites have been utilized by sage grouse in the recent past and are unlikely to be utilized in the future.

3.2.2 SOILS AND VEGETATION

The impact of the Proposed Action to soils and vegetation would be minor.

The US Department of Agriculture (USDA) Natural Resources Conservation Service's (NRCS) National Cooperative Soil Survey databases were accessed for information about the shallow subsurface soils at the Sites and surrounding areas (**Figure 3** and **Table 6**).

Figure 3: Soil Resource Map
(Soil unit with delineation in orange, approximate Sites without setbacks in red, outline of Sections 1 & 2 in green)



Source: USDA, Natural Resources Conservation Service (NRCS), 2021 (NOT TO SCALE)

Table 6: USDA-NRCS, Custom Soil Resource Report, 2021

Map Unit Symbol	Map Unit Name	Soil Rating
36C	<i>Brocko silt loam, 4 to 8 percent slopes</i>	<i>Not limited</i>
36D	<i>Brocko silt loam, 8 to 15 percent slopes</i>	<i>Somewhat limited</i>
336D	<i>Brocko-Clarkstone silt loams, 8 to 15 percent slopes</i>	<i>Somewhat limited</i>

Soil types where land application would occur are silt loams. The ratings shown in **Table 6** are based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, the rate at which the septage is applied, and the method by which the septage is applied. "Not limited" indicates that a soil type has characteristics which are favorable for the specified use. Good performance and low maintenance can be expected. "Somewhat limited" indicates that a soil type has characteristics which are moderately favorable for the specified use. "Very limited" indicates that a soil type has one or more characteristics which are unfavorable for the specified use (NRCS, 2021).

The Sites currently grow pasture grasses. The MNHP online databases were accessed for listed plant species in the Township 2 North, Range 2 East analysis area and are shown in **Table 7** (MNHP, 2021). No impact is expected to result from the Proposed Action on these plant species of concern because they are not known to be present at the Sites. In addition, the Sites' grass varieties have been selectively managed for grazing. If a plant species of concern is documented to be present at the Sites, DEQ would revisit them to evaluate any potential impacts.

Table 7: Montana Recognized Animal Species List

Scientific Name	Common Name	Status	GRank/SRank
<i>Carex idaho</i>	Idaho sedge	Species of concern	G3/S3
<i>Spiranthes diluvialis</i>	Ute ladies'-tresses	Species of concern	G2/S1

Weed control is managed by Gallatin County. DEQ has not experienced any active or closed land application sites where weeds were abundant beyond what would be considered "typical" for pasture grass.

Septage contains nutrients that can reduce the reliance of the farmer or land manager on chemical fertilizers to improve soils. The Proposed Action would add valuable moisture, organic matter, and nutrients to the topsoil, improving the Sites' soil tilth and grass vigor. The quantity and quality of soils and vegetation at the Sites would be enhanced by the Proposed Action.

DEQ analyzed how the land application of septage would impact the Sites' environment given the weather of the region. The weather in the area is typical of

southwest Montana, classified as warm summer continental climate. The average pan evaporation rate is listed as 40.33 inches per year. The hot months of June, July, and August coincide with the average Montana septic tank pumper's busy season. Dry soils, vegetation, and crops in this semi-arid zone would benefit from the added moisture.

3.2.3 GEOLOGY

No geological impacts are anticipated to result from the Proposed Action.

Periodic harrowing of the surface topsoil to incorporate septage would not significantly affect the thickness or character of colluvium that remains on the Site. Septage land application operations would not involve excavation.

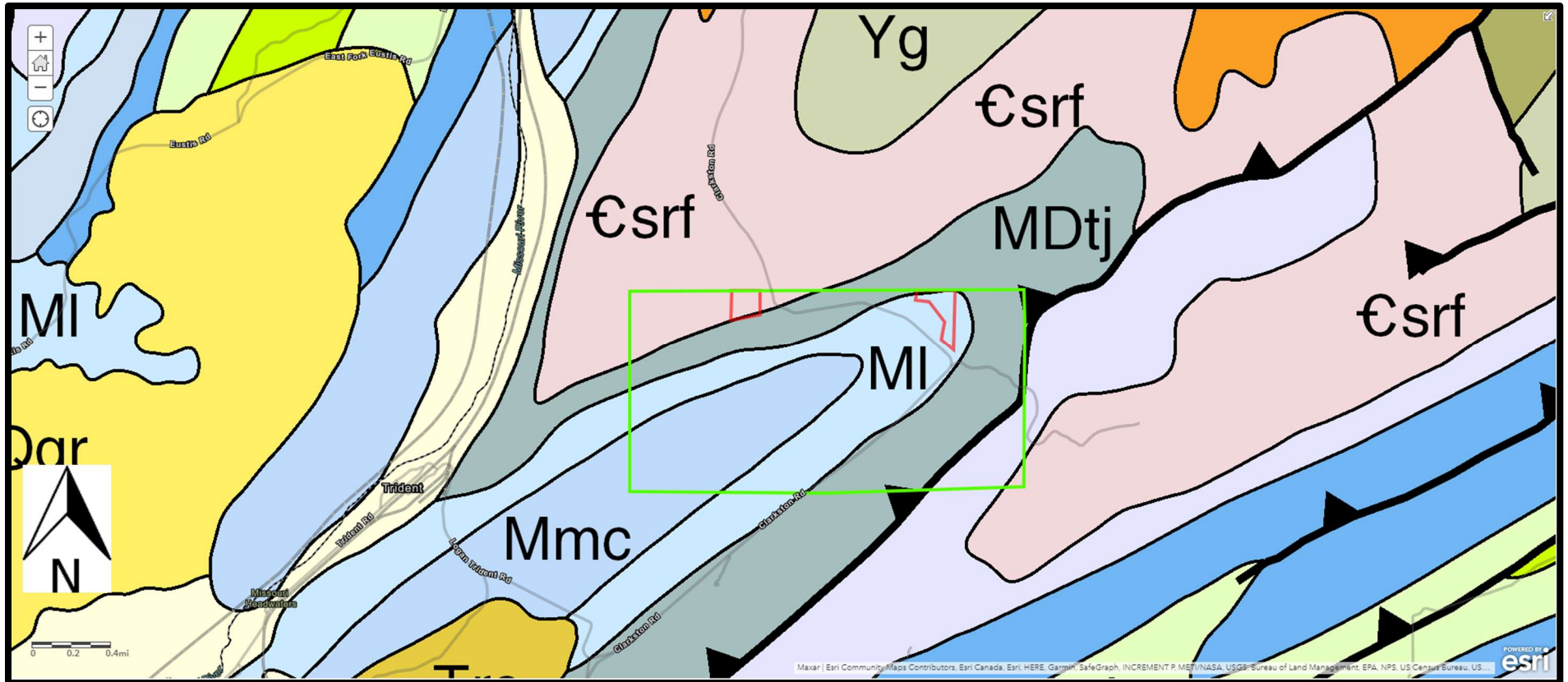
The analysis area for geology includes the Sites and the surrounding area (beyond a mile from the Sites' boundaries in **Figure 4**).

Most of the study area lies within the active seismic zone known as the Intermountain Seismic Belt of the northern Rocky Mountains, which was caused by ongoing tensional stresses across the region. Extension continues today, with many earthquakes occurring along the normal faults which separate the mountain ranges. Active hot springs are also found along the Willow Creek fault zone today (e.g. at Whitehall, Norris, and Bozeman). The "three forks" of the modern Missouri River join today near the Sites at the confluence of the Jefferson, Madison, and Gallatin Rivers in the Gallatin Valley. The youngest sediments, now mostly covering the existing Gallatin Valley are composed of various unconsolidated Pliocene to Quaternary gravels (shown by yellow to white tones on **Figure 4**).

Figure 4: Regional Geologic Map
(Sites outlined in red, Sections 1 & 2 outlined in green)

Rock Unit Symbols:

€srf – Snowy Range Formation through Flathead Formation; **MDtj** – Three Forks Formation and Jefferson Formation;
MI– Lodgepole Formation; **Mmc**– Mission Canyon Formation.



Source: MBMG, 500k geology layer; Esri/ArcGIS services (2021) (NOT TO SCALE)

3.2.4 HYDROLOGY AND HYDROGEOLOGY

The analysis area for hydrology and hydrogeology is the area surrounding the Sites, including the listed hydrologic unit code (HUC) -12 watersheds for surface water and a radius of 1 mile for groundwater. Some discussion of regional geology, based on published reports, is also provided. The analysis methods include reviewing wetland and jurisdictional waters information, onsite drilling reports, publications of the Montana Bureau of Mines and Geology (MBMG), and online maps.

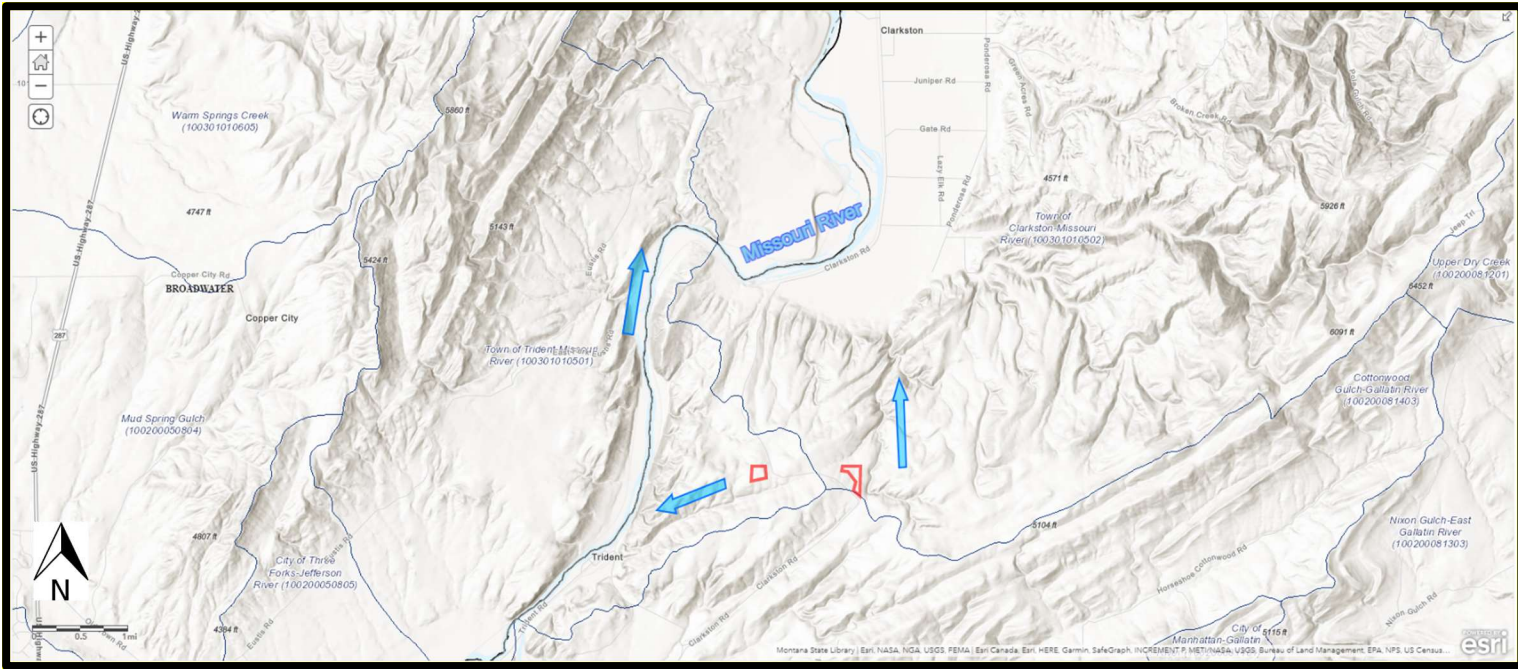
3.2.4.1 SURFACE WATER

No impacts to surface waters are anticipated to result from the Proposed Action.

The Sites are located within the Town of Clarkston – Missouri River watershed, HUC 100301010502, and the Town of Trident – Missouri River watershed, HUC 100301010501, respectively (**Figure 5**). During a major runoff event, surface water from the Sites would travel north (Town of Clarkston) or west (Town of Trident) via ephemeral and/or intermittent drainages to the mainstem Missouri River.

When a pumper properly and uniformly land applies pumpings, incorporates the material into the soil, rotates parcels, and adheres to setbacks, no impacts to surface water resources are anticipated because no pumpings would be pooled or present at the soil surface to be transported from the Sites by any surface water runoff. DEQ will periodically verify that operational standards and setbacks at the Sites are being met to eliminate any potential for septage to enter state surface waters.

Figure 5: Surface Water
(approximate Sites in red, flow direction arrow in blue, HUC-12 watershed boundaries in dark blue)



Source: Esri/ArcGIS, Montana State Library, USGS, and NRCS (**NOT TO SCALE**)

Periodic inspections by DEQ for compliance with setbacks near the Sites' borders, slope restrictions, and runoff patterns would ensure no pumpings enter nearby ephemeral or intermittent drainages.

3.2.4.2 GROUNDWATER

No impacts to groundwater or groundwater wells are anticipated to result from the Proposed Action.

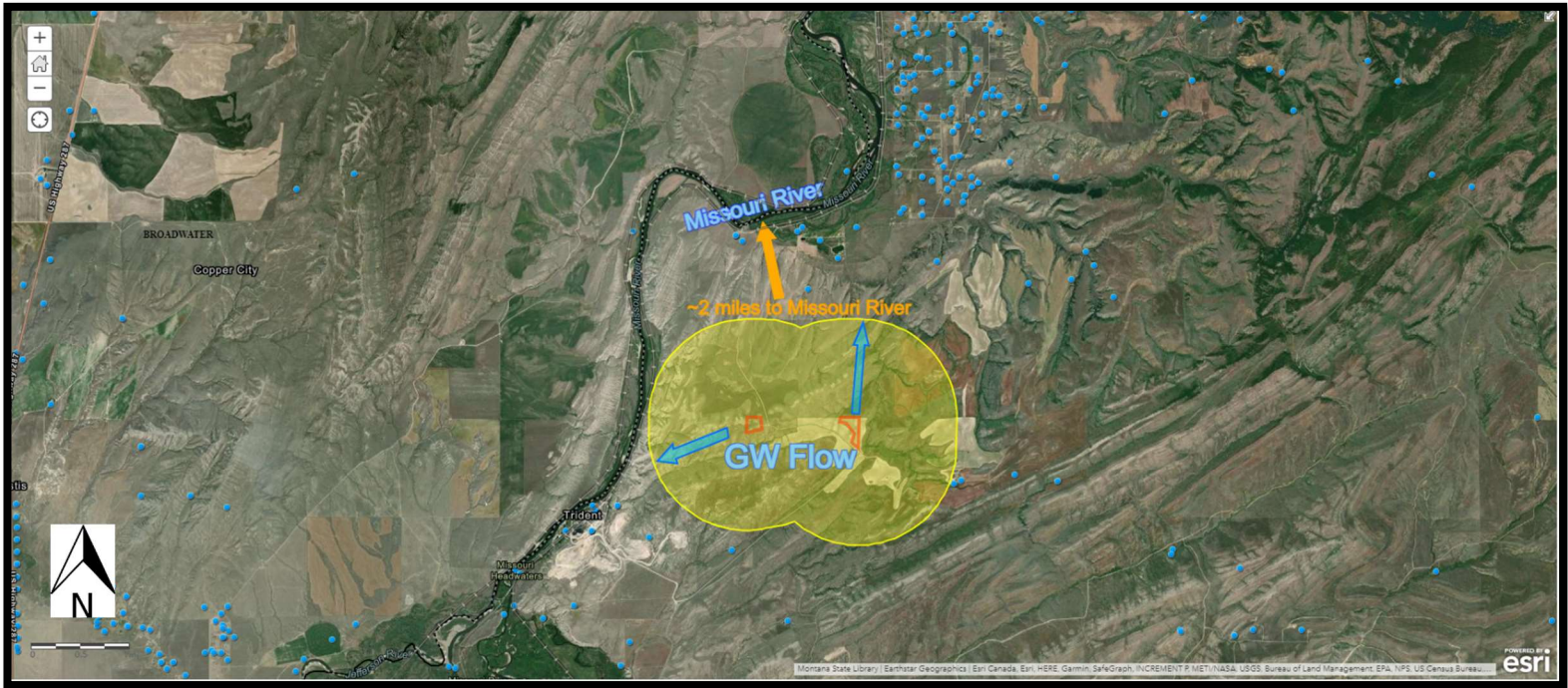
The Montana Bureau of Mines and Geology's Ground Water Information Center (GWIC) is DEQ's reference for well data in Montana. All wells located within one mile of the Site and documented by GWIC when the Draft EA was written were considered in this analysis. Any well not documented in GWIC is not included. If a well that did not appear in GWIC is proven to be within the 100-foot setback, or if a new well is developed within 100 feet of either Site, the boundaries would be adjusted to maintain this setback. See *Section 3.2.3* of this report for descriptions of the depositional environment beneath the Sites.

No wells exist within the boundaries of the Sites and there are no documented groundwater production wells within a one-mile radius of the Sites (see **Figure 6**). Groundwater flow directions in the vicinity of the Sites are assumed to be north-northwest toward the Missouri River, mimicking surface water drainage patterns (**Figures 5 & 6**). Groundwater production wells located in the vicinity

(outside of the 1-mile radius) report a range of static water levels of from 10 to 269 feet below the ground surface (bgs). Drillers' boring logs indicate that these wells are completed between 20 to 590 feet bgs with multiple screened intervals capturing groundwater bearing zones from fractures within sedimentary formations. Although relatively shallow static water levels are reported in some nearby wells, these are all located adjacent to the Missouri River and/or ephemeral drainages, where water levels are likely to be higher. Other area wells which are completed in geologic layers similar to those found at the Sites have much deeper static water levels and completion depths (up to 590 feet bgs). It can be assumed that the depth to groundwater at the Sites is greater than the six feet minimum required by ARM 17.50.809(8).

Inspections and possible monitoring by DEQ would verify compliance with requirements for land application of septage at the AAR for the native grasses grown on the Sites. This practice would be followed at the Sites to ensure the absence of vertical percolation of septage below the soil treatment zone.

Figure 6: Location of Nearby Groundwater Production Wells
(GWIC wells in blue circles, 1-mile radius yellow shaded circle for each Site)



Source: Esri/ArcGIS and GWIC/MBMG (NOT TO SCALE)

3.2.5 AESTHETICS AND NOISE

The impact to aesthetics and noise from the Proposed Action would be minor. The analysis area is the Sites and the surrounding area within one mile of the Sites.

Private drives would be used to access the Sites via Clarkston Road. The Sites are not located on a prominent topographical feature, but are visible from Clarkston Road. No other development is anticipated at the Sites. The Sites are located in a rural area on private property.

DEQ and/or the local county sanitarian would respond to complaints about odor to determine if wastes were not properly managed. With proper management, odors would be minimal. Naturally occurring bacteria in the soil use carbon in the waste as a fuel source. This activity results in the breakdown of wastes, which include odors. Usually, odors are only detected at the time and immediate vicinity (within feet) of the land application activity and are further mitigated by incorporation within six hours. Land application could occur daily. Dust caused by incorporation activities during the dry season would be reduced by the moisture content of septage.

The Proposed Action would be visible from Clarkston Road. Only one truck would access the Site at a time. Noise from the truck at the Site would resemble noises from agricultural and commercial activities currently occurring in the area. Therefore, impacts to aesthetics and noise would be minor.

3.2.6 HUMAN HEALTH & SAFETY

No impacts on human health and safety are anticipated to result from the Proposed Action.

Septage would be land applied at the Site. Septage would be incorporated into the soil surface within six hours of application and dust would be controlled. Livestock grazing is not anticipated at the Site. If grazing were to occur, it would not be permitted while land application activities occur or within 30 days of the most recent application, as per ARM 17.50.811 (5)(a).

Regarding COVID-19, the Environmental Protection Agency (EPA) expects a properly managed septic system to treat COVID-19 the same way it safely manages other viruses often found in wastewater. The World Health Organization (WHO) has indicated that “there is no evidence to date that COVID-19 virus has been transmitted via sewerage systems, with or without wastewater treatment.” Remnant RNA (component virus proteins) in fecal matter has been used to track the relative prevalence of the virus in wastewater treatment plants. More research is needed in this area, but there is no evidence of COVID-19 transmission from exposure to treated or untreated wastewater to date. (EPA, 2020)

The Sites are on private property and are accessed from Clarkston Road.

3.2.7 INDUSTRIAL, COMMERCIAL, AND AGRICULTURAL ACTIVITIES

No impacts to industrial and commercial activities are anticipated to result from the Proposed Action. Minor positive impacts to agricultural activities are expected due to the Proposed Action.

The Site is rural land and would not accommodate industrial or commercial activities. When land application occurs on an annual rotation (*Section 2.2.3*), crop production can occur and agricultural activities on the Site can continue. Land application of septage would improve soil health.

3.2.8 RECREATION, LAND USE, AND TOURISM

The impact to recreation and land use would be minor.

The Sites are on private property. Because the Sites are on private property, public recreation is already limited and would not be altered due to the Proposed Action. The public would need to request permission from the landowner to access private property. Because the Proposed Action would be occurring, no grazing could occur within 30 days of the last application of septage (ARM 17.50.811). The Proposed Action would impose limitations on the utilization of the Site for recreational activities until the Proposed Action ceases.

Surrounding properties include privately owned rangeland. Beyond the Site's boundaries, detection of odor would be temporary and greatly decreased with increased distance (see *Section 3.2.5*).

There would be no impact to tourism. Clarkston Road isn't a main corridor to tourist attractions in the area. Clarkston Road is a throughway to Clarkston, Montana, from Montana Interstate 90. Clarkston Road connects to roads in the area that provide access to homes, but not to tourist attractions.

3.2.9 CULTURAL UNIQUENESS AND DIVERSITY

No impacts to cultural uniqueness and diversity are anticipated to result from the Proposed Action.

The State Historic Preservation Office (SHPO) conducted a resource file search for Sections 1 and 2, Township 2 North, Range 2 East, which indicated there have been no previously recorded sites within the area. Based upon ground disturbances in Sections 1 and 2, Township 2 North, Range 2 East associated with agricultural activities and residential development, SHPO determined there is a low likelihood that cultural properties would be impacted.

3.2.10 DEMAND FOR GOVERNMENT SERVICES

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

DEQ staff would provide guidance to Robbins for septage land application activities at the Site, with assistance from the Gallatin County sanitarian as needed. Disposal logs showing volumes of waste applied by Robbins at the Site are submitted to DEQ twice a year. Disposal logs would be reviewed by DEQ to ensure the AAR is not exceeded. Periodic inspections are performed by DEQ at all septic tank pumper land application sites. DEQ may obtain periodic soil samples for testing of nutrient levels to ensure compliance with the AAR for the Site.

3.2.11 SOCIOECONOMICS

Impacts to socioeconomics from the Proposed Action would be minor. In considering impacts to socioeconomics, DEQ analyzed both impacts on job force and impacts from the Proposed Action on real property values in the area surrounding the Site.

The Proposed Action is not expected to result in additional employees being hired, as employees currently employed by Robbins would conduct necessary operations at the Site.

There is a lack of literature or studies on potential impacts from land application sites on surrounding real property values in Montana. Given the lack of analysis proving a direct and statistically significant link that land application sites devalue surrounding property, negative property value impacts from the Proposed Action are difficult to

quantify. However, because land application activities resemble existing agricultural and commercial activities in the surrounding area, any negative impacts to adjacent and nearby property values are expected to be minor. Visually, the Proposed Action would resemble existing agricultural and commercial land uses in the surrounding area. Similarly, as discussed in *Section 3.2.5*, odors are expected to be of limited duration and limited to the immediate area surrounding the land application activities. As discussed in *Section 3.2.4.2*, DEQ does not expect the Proposed Action to impact groundwater resources and thus does not expect impacts to groundwater resources to affect adjacent and nearby property values.

3.2.12 TRAFFIC

The impact to traffic from the Proposed Action would be minor.

There would be no significant increase in traffic on Clarkston Road. One pumper truck would access the Sites at a time. The Sites would be accessed from Clarkston Road. Clarkston Road currently supports daily traffic to homes in the area.

3.3 REGULATORY RESTRICTIONS

MEPA requires state agencies to evaluate regulatory restrictions proposed for imposition on private property rights because of actions by state agencies, including alternatives that reduce, minimize, or eliminate the regulation of private property (*Section 75-1-201(1)(b)(iii)*, MCA). Alternatives and mitigation measures required by federal or state laws and regulations to meet minimum environmental standards, as well as actions proposed by or consented to by the applicant, are not subject to a regulatory restrictions analysis.

No aspect of the alternatives under consideration would restrict the use of private lands or regulate their use beyond the permitting process prescribed by the SDLA. The conditions that would be imposed by DEQ in issuing the license would be designed to ensure conformance of the Proposed Action to the environmental standards required by the SLDA, or to uphold criteria proposed and/or agreed to by Robbins during application review. Thus, no further DEQ analysis is required beyond Robbins' application review for protection of human health and the environment.

3.4 CUMULATIVE AND SECONDARY IMPACTS

The Site is currently pasture grass. The surrounding area consists of rural agricultural activities and residential homes (distanced from the Sites). DEQ is not aware of any other proposed projects in the area.

Potential cumulative impacts are identified in **Table 3**. One potential cumulative impact was noted regarding wildlife and habitats. Wildlife avoidance of the Site would occur as a result of the Proposed Action (see *Section 3.2.1*). Because of the nature of the Proposed Action and its beneficial impact on soils, cumulative impacts are expected to be minor.

Secondary impacts are those that occur at a different location or later time than the action that triggers the effect. No secondary impacts are expected due to the Proposed Action beyond those described in *Section 3*.

4. FINDINGS

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

To determine whether preparation of an EIS is necessary, DEQ is required to assess 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 DEQ 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's location is described in *Section 1.4* of this Draft EA, and includes approximately 31 acres of Robert Green property located 8 miles northeast of Three Forks on Clarkston Road in Gallatin County, Montana. If Robbins renews their license and operations comply with the SDLA and its implementing rules, land application activities and DEQ site inspections would continue indefinitely. The Site is not within sage grouse core habitat, general habitat, or connectivity area. It has no special agricultural designation. Operations would not adversely affect any threatened or endangered species.

The Proposed Action is expected to improve soils and crops grown at the Site, as described in *Section 3.2.2*.

The Proposed Action is not expected to impact surface water resources. Operational standards ensure that all the setback requirements from surface water are met and that land application doesn't occur on **slopes that exceed 6%**, as described in *Section 3.2.4.1* of this Draft EA.

The Proposed Action is not expected to impact groundwater. The depth to groundwater is greater than six feet as required. Land application at agronomic rates would ensure that no seepage could percolate below the surface treatment zone.

DEQ has not identified any growth-inducing or growth-inhibiting aspects of the Proposed Action. However, access to the parcels on the Site for utilization by human recreation, crops, and livestock would be limited to meet the regulatory restrictions necessary to protect human health (ARM 17.50.811(4) and (5)). 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. Finally, the Proposed Action does not conflict with any local, state, or federal laws, requirements, or formal plans.

The Proposed Action would meet the requirements of the SDLA, the Clean Air Act of Montana, the Montana Water Quality Act, ARM, and county ordinances. Based on a consideration of the criteria set forth in ARM 17.4.608, DEQ has determined that Robbins' proposal to add the Site to its septic pumper license is not anticipated to significantly impact the quality of the human environment. Therefore, preparation of an EA is the appropriate level of review under MEPA.

5. OTHER GROUPS OR AGENCIES CONTACTED OR CONTRIBUTING TO THE EA

Gallatin County Environmental Health Department
United States Environmental Protection Agency
World Health Organization
United States Department of Agriculture
Montana Natural Heritage Program
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

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Date: December 15, 2021

7. REFERENCES:

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Average Pan Evaporation Data by State https://wrcc.dri.edu/Climate/comp_table_show.php?stype=pan_evap_avg

Fertilizer Guidelines for Montana Crops, Montana State University, 2005 <https://store.msuxextension.org/publications/AgandNaturalResources/EB0161.pdf>
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NRCS National Cooperative Soil Survey for Sections 1 & 2, Township 2 N, Range 2 E, Gallatin County, Montana, 2021 <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilsurvey.aspx>

EPA Domestic Septage Regulatory Guidance, 1993 <https://www.epa.gov/biosolids/domestic-septage-regulatory-guidance-guide-epa-503-rule>