

**MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY**

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

**FINAL ENVIRONMENTAL ASSESSMENT (EA)  
SOUTH WEST SEPTIC  
DRY AND WET GEORGIA ROAD LAND APPLICATION SITE**

**SECTION 1.0 – SOLID WASTE SECTION ROLES AND RESPONSIBILITIES:**

The Department of Environmental Quality (DEQ), Solid Waste Section (SWS), is responsible for ensuring activities proposed under the Solid Waste Management Act, the Septage Disposal Licensure Act, the Integrated Waste Management Act, and the Motor Vehicle Disposal & Recycling Act are in compliance with current regulations sites proposed for land application are selected by the applicant; DEQ does not have a roll in the site selection process. The proposed sites are then reviewed and approved by the county in which the site is located before a request for site approval is submitted to the SWS. Each licensee is responsible for following the Administrative Rules of Montana (ARM) for Cesspool, Septic Tank, and Privy Cleaners and other restrictions and requirements put in place by the county in which the land application site is located.

**Purpose of the Environmental Assessment:**

In accordance with 75-1-102, Montana Code Annotated (MCA), the Montana Environmental Policy Act (MEPA) is procedural and requires the “adequate review of state actions in order to ensure that environmental attributes are fully considered by the legislature in enacting laws to fulfill constitutional obligations; and the public is informed of the anticipated impacts in Montana of potential state actions.” According to MEPA, EA’s are the procedural documents that communicate the process agencies follow in their decision-making. An EA does not result in a certain decision; but rather, it serves to identify the potential effect of a state action within the confines of existing laws and rules governing such proposed activities so that agencies make balanced decisions. The MEPA process does not provide regulatory authority beyond the authority explicitly provided in the existing statute.

The Septage Disposal and Licensure regulations establish the minimum requirements for the land application of septage wastes. The EA is the mechanism that DEQ uses to: 1) Disclose whether a proposed land application site meets the minimum requirements for compliance with the current laws and rules; 2) Assist the public in understanding the licensing laws of the Septage Disposal and Licensure program; 3) Identify and discuss the potential environmental effects of the proposed land application activity if it is approved and becomes operational; 4) Discuss actions taken by the applicant and the enforceable measures and conditions of the license designed to mitigate the effects identified by DEQ during the review of the application; and 5) Seek public input to ensure DEQ has identified all the substantive environmental effects associated with the proposed land application of septage, portable toilet waste, and graywater at the proposed location.

**Benefits and Purpose of Project:**

Septage is the liquid and solid material removed from a septic tank, cesspool, portable toilet, or similar treatment works that receives only waste and wastewater from humans or household operations. Septage is not Class B sewage sludge that has undergone treatment at a waste water treatment plant. The land application of septage is an economical and environmentally sound practice. When properly managed, septage is a resource. When used as a valuable soil conditioner, septage contains nutrients that can reduce reliance on chemical fertilizers for agriculture. A properly managed land application program recognizes the benefits of septage and employs practices to maximize the value of the material – and minimize the establishment and growth of weeds. Land application of septage benefits agricultural land by the addition

of moisture, organic matter and nutrients to the soil without adversely affecting public health. When the septage is being applied as a soil conditioner; the use is considered an application rather than the disposal due to the benefits the materials provide. The land application of septage, portable toilet waste, grease trap waste, sump pumpings, and graywater at this site will add nutrients, organic matter, and moisture. This will improve the soil productivity and tilth for the continued production and enhancement of agricultural crops and grasses at the site.

**SECTION 2.0 – PROJECT DESCRIPTION:**

Ray Smail of South West Septic (applicant) has submitted an application for the approval of a site for the land application of septage, portable toilet waste, grease trap waste, sump pumpings, and graywater on approximately 145 acres of Ray and Mary Smail property in Madison County. At the present time, the property is being used for production of pasture grass. Land application will occur at this site only as-needed.

**Site Location:**

The proposed land application site is located on private property in the southwest quarter of Section 33, Township 3 South, Range 5 West, Montana Principal Meridian, Madison County, Montana (Figures 2.1 and 2.2). Figures 2.3 through 2.6 provide photographs of the property that were taken during DEQ’s site visit.

**Site Setback Requirements:**

The applicant will maintain the setbacks noted in Table 2.1 during land application activities.

**Table 2.1: Land Application Site Setback Requirements**

<b>ARM Reference</b>	<b>Setback Requirements</b>
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(7)	Pumpings may not be applied to land through subsurface injection on slopes greater than 12%.
17.50.809(8)	Pumpings may not be applied to land where seasonally high ground water is 6 feet or less below ground surface.

**Figure 2.1: Proposed Land Application Site Location**

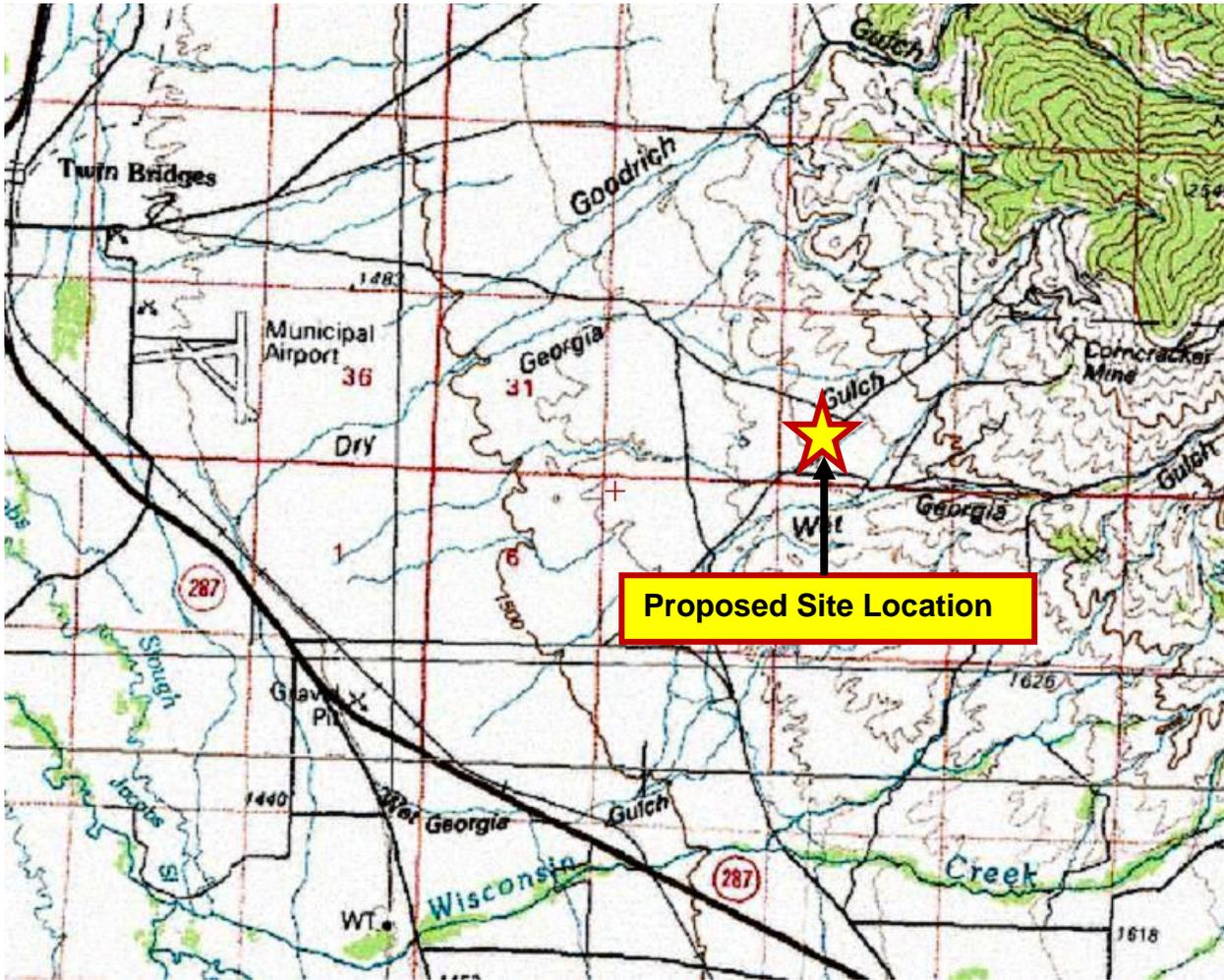
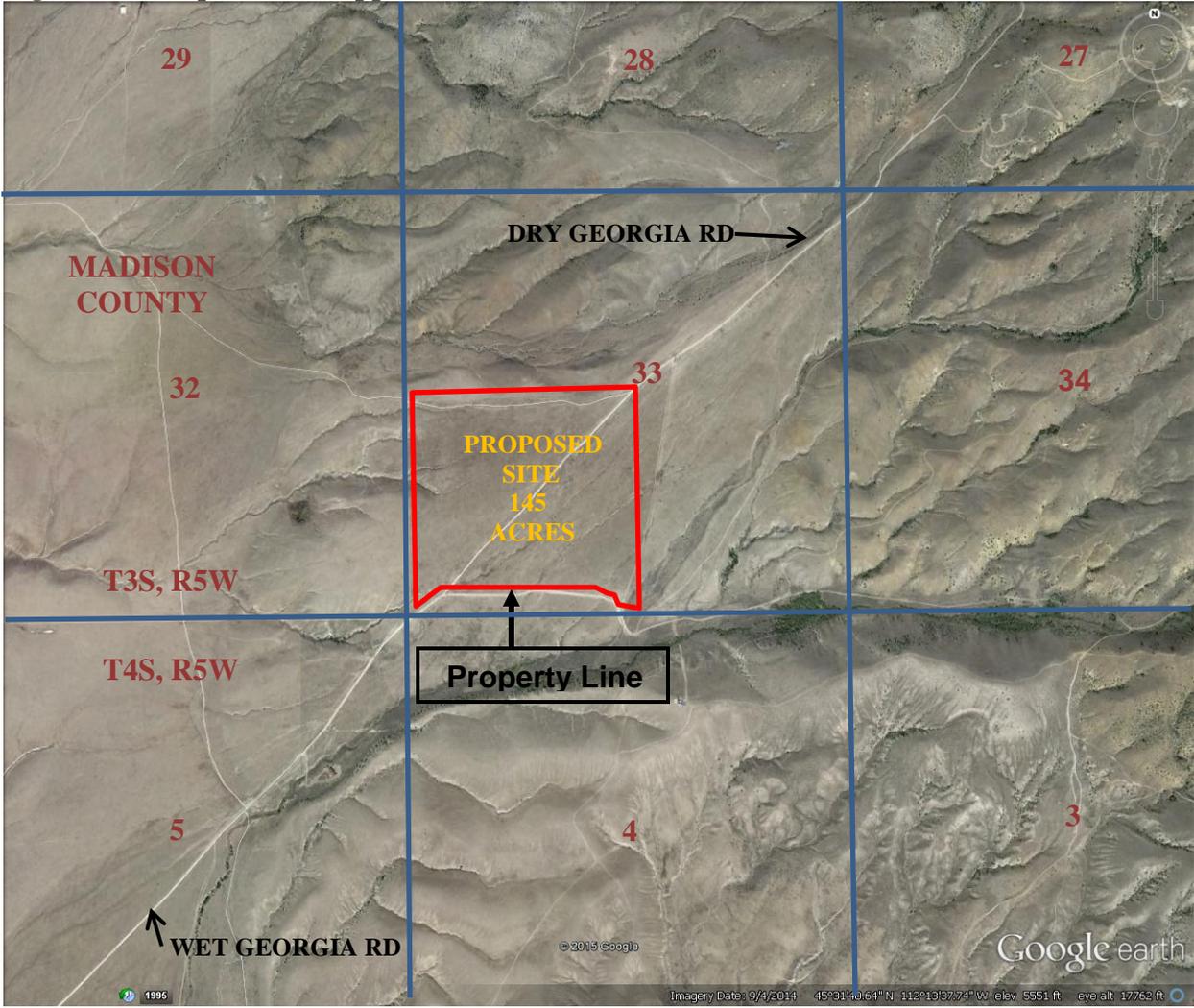


Figure 2.2: Map of Land Application Site Boundaries (outlined in red).



**Figure 2.3: Looking West From Northeast Corner of Site**



**Figure 2.4: Looking Southwest From Northeast Corner of Site**



**Figure 2.5: Looking South From Northeast Corner of Site**



**Figure 2.6: Looking West From Northeast Corner of Site**



**Site Operation and Maintenance Requirements:**

The land application of septage, portable toilet waste, grease trap waste, sump pumpings, and graywater is considered the beneficial use of a waste product when the material is applied in accordance with the laws and rules governing land application. The operational requirements for land application are outlined in Table 2.2.

**Table 2.2: Land Application Site Operational Requirements**

<b>ARM Reference</b>	<b>Site Restrictions/Requirements</b>
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"><li>• injection below the land surface so no significant amount remains on the land surface within one-hour of injection;</li><li>• incorporation into the soil surface plow layer within 6 hours of application;</li><li>• 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,</li><li>• management as required by 17.50.810 when the ground is frozen</li></ul>

The acreage available for land application will be rotated on an annual basis, so that parcels used one year will be inactive the next year. This rotation allows the vegetation or crop of choice to utilize the nitrogen and other nutrients added from the land application process.

Septage will be land applied using a splash plate to disperse the waste in a wide, thin, even layer. This activity does not create an aerosol, but ensures septage is applied at a beneficial rate and will not pond or run off. Septage will be incorporated into the soil surface plow layer with a harrow on native grassland and tillage equipment on crop land within six-hours of application. Injection will be used on slopes greater than 6%, but less than 12%. All septage will be screened through a stainless steel trough prior to land application to remove all non-putrescible litter.

Land application will occur as-needed at a rate not exceeding the Annual Application Rate (AAR) in gallons per acre. For septage and portable toilet waste, the AAR is calculated based upon the production of a specific crop or grass, as follows:

$$\text{AAR} = \text{Crop Nitrogen Requirement} / 0.0026 \text{ for septage waste.}$$

$$\text{AAR} = \text{Crop Nitrogen Requirement} / 0.0052 \text{ for portable toilet waste.}$$

In this case, the landowner currently uses the property for the production of native grasses. The Fertilizer Guidelines for Montana Crops, published by the Montana State University Extension Service show that native grass at this location has a nitrogen requirement of 60 pounds/acre. The resulting AAR for septage is 23,076 gallons per acre and is equal to approximately 0.82 inches of liquid applied per acre per year for septage. The resulting AAR for portable toilet waste is 11,538 gallons per acre, and is equal to approximately 0.41 inches of liquid applied per acre per year. For comparison, the

average annual precipitation received during the month of April is approximately equal to the volume of septage that would be land applied per acre per year; the average annual precipitation received during the month of March is approximately equal to the volume of portable toilet waste that would be land applied per acre per year (see Table 2.9).

**Site Climate:**

The climate in the area proposed for land application is typical of the semi-arid regime in the Twin Bridges area. Table 2.3 provides a summary of monthly climate information. The winters in the Twin Bridges area are long and moderately snowy; the summers are hot and dry. The average annual precipitation is approximately 9.62 inches. The majority of precipitation typically falls during the months of May and June, while February is typically the driest month.

**Table 2.3: Monthly Climate Summary**

<b>TWIN BRIDGES, MONTANA (248430)</b>													
<b>Period of Record Monthly Climate Summary</b>													
<b>Period of Record: 6/ 1/1950 to 12/31/2005</b>													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	34.4	40.3	47.6	57.1	66.9	75.1	84.1	82.2	72.2	60.6	44.1	35.3	58.3
Average Min. Temperature (F)	11.2	14.8	20.5	27.6	35.6	42.3	45.8	43.1	35.3	27.3	19.1	12.4	27.9
Average Total Precipitation (in.)	0.26	0.21	0.45	0.84	1.71	1.94	1.04	1.01	0.94	0.55	0.37	0.28	9.62
Average Total SnowFall (in.)	1.7	1.9	2.1	0.8	0.1	0.0	0.0	0.1	0.0	0.3	1.1	0.9	9.1
Average Snow Depth (in.)	0	0	0	0	0	0	0	0	0	0	0	0	0

*Source: Western Regional Climate Center*

## **SECTION 3.0 – ALTERNATIVES CONSIDERED:**

**The following provides a description of reasonable alternatives whenever alternatives are reasonably available and prudent to consider:**

A decision by DEQ is triggered when the applicant upholds the request for approval of the proposed activity at the proposed location. The applicants, however, may at any time choose to withdraw the application. This would result in DEQ selecting the “no-action” alternative, because a DEQ decision would not be necessary. If the applicant withdraws the application, the applicant could seek to locate a land application site elsewhere.

**Alternative A:** The “no action” alternative. This alternative will be implemented when a final decision by DEQ is not required because the applicant has withdrawn the application for approval of the land application site.

**Alternative B:** The ‘license application denied’ alternative. This alternative will be implemented if the application does not meet the minimum requirements of the Septage Disposal Licensure Act and could not continue to be processed as submitted. If denied, the applicant may modify the application for the current site and reapply for licensure, or could locate, investigate, and apply for a licensure of another site.

**Alternative C:** The ‘license application approved’ alternative. This alternative will be implemented when DEQ approves the application for licensure of the new disposal site if the application meets the requirements of the Septage Disposal Licensure Act.

In consideration of these alternatives, DEQ has not received a request by the applicant to withdraw the application for licensure. DEQ has determined the application meets the requirements of the Septage Disposal and Licensure Laws. Therefore, the potential environmental effects of Alternative C were evaluated for the proposed project based on the information provided, DEQ’s research on the site and area surrounding the proposed site, and DEQ’s site visit. The results of DEQ’s evaluation of potential environmental effects related to the proposed land application site are summarized in Section 4.0.

## **SECTION 4.0 - EVALUATION OF POTENTIAL EFFECTS**

Tables 4.1 and 4.3 of this section identify and evaluate the potential environmental effects that may occur to human health and the environment if the land application site is approved. The discussion of the potential impacts only includes those resources potentially affected. If there is no effect on a resource, it may not be mentioned in the analysis.

Direct and indirect impacts are those effects that occur in or near the proposed project area and might extend over time. Often, the distinction between direct and indirect effects is difficult to define, thus in the following discussion, impact or effect means both types of effects.

**TABLE 4.1: POTENTIAL IMPACTS OF THE PROPOSED LAND APPLICATION SITE ON THE PHYSICAL ENVIRONMENT**

<u>PHYSICAL ENVIRONMENT</u>	Major	Moderate	Minor	None	Unknown	Attached
1. TERRESTRIAL, AND AQUATIC LIFE AND HABITATS				✓		✓
2. WATER QUALITY, QUANTITY & DISTRIBUTION				✓		✓
3. GEOLOGY				✓		✓
4. SOIL QUALITY, STABILITY, AND MOISTURE			✓			✓
5. VEGETATION COVER, QUANTITY & QUALITY			✓			✓
6. AESTHETICS				✓		✓
7. AIR QUALITY				✓		
8. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES			✓			✓
9. HISTORICAL AND ARCHAEOLOGICAL SITES				✓		✓
10. DEMANDS ON ENVIRONMENTAL RESOURCES ON LAND, WATER, OR ENERGY				✓		

## **ANALYSIS OF TABLE 4.1 – POTENTIAL IMPACTS TO THE PHYSICAL ENVIRONMENT**

*This section evaluates the potential environmental effects that may occur on the physical environment if the proposed land application site is approved. The number on each of the underlined resource headings corresponds to a resource listed in the tables. Generally, only those resources potentially affected by the proposal are discussed. Therefore, if there is no effect on a resource, it may not be discussed.*

### **1.0 Terrestrial, Avian, and Aquatic Life and Habitats**

There are no wetlands or permanent surface water bodies located on the proposed site, but there is an intermittent drainage that is mapped that roughly bisects the proposed land application site in a northeast to southwest direction. Since this is only an intermittent drainage, and there are no other continuously active aquatic systems within the boundary of the proposed site, it is unlikely that there is any significant aquatic life or habitat anywhere on the site. Therefore, the impact to aquatic species is none.

An intensive survey was not performed to verify the presence of or impact to terrestrial or avian species within the land application site. However, the site is actively used for grazing of the pasture grasses and will be farmed. The proposed site will only be used as needed. Further, as a result of the limited development and lack of human population in the area, there remains adequate acreage of similar habitat available in the vicinity of the proposed site to accommodate any terrestrial or avian species that would be forced to relocate. Therefore, there is no additional impact anticipated as a result of the proposed land application activities.

### **2.0 Water Quality, Quantity, and Distribution**

#### *Surface Water*

The proposed application site is located on the northeast side of the Ruby valley. The Ruby valley is an intermontane valley located between the Tobacco Root Mountains to the east, the Highland Mountains to the north, and the Ruby Range to the south. The main drainages mapped on the United States Geological Survey (USGS) Old Baldy Mountain MT 1:24,000 quadrangle in the vicinity of the proposed land application site are the Dry Georgia Gulch and the Wet Georgia Gulch. The proposed site is located south of Dry Georgia Gulch and north of Wet Georgia Gulch.

There is an intermittent drainage mapped on the Old Baldy Mountain MT 1:24,000 quadrangle that roughly bisects the proposed land application site in a northeast to southwest direction. Surface water flows may occur in this intermittent drainage only during periods of heavy rainfall or rapid snowmelt. Natural surface water drainage from the site is toward the south and west. Septage will not be applied to land within 150 feet of any state surface water feature, including intermittent drainages. Therefore, there is no anticipated impact to surface water resources from the proposed land application activity.

#### *Groundwater*

The local aquifer is hosted by locally-derived Tertiary and Quaternary-aged valley fill sediments. These deposits include alluvial fan material and younger river deposits comprised of re-worked river channel sands and gravels. The older, deeper, coarse-grained silt, sand, and gravel formations are punctuated by volcanic ash fall beds that are reported in well logs as grey or brown to white clay or claystone. In many places locally, the ash beds serve as hydraulic barriers in the relatively complex groundwater system. While there are significant differences in the host material and hydraulic characteristics of groundwater from place to place, the valley-fill groundwater system as a whole may be treated as a single aquifer with significant hydraulic barriers reducing vertical migration.

The aquifer in the immediate vicinity of the site is typical of the region. Groundwater is contained within unconsolidated and partially consolidated silt, sand, and gravel. Prominent features include strata and lenses of very fine-grained material of variable extent, prolific sand and gravel water-bearing zones, and zones of cemented sand and gravel in which water flow is controlled by fractures. In general, most of the water-bearing zones in the Beaverhead and Ruby River valleys are interconnected to some degree. As noted above, the entire system is considered to be a single aquifer on a regional scale, but contains fine-grained strata that clearly act as barriers to vertical flow. There appears to be good lateral flow through the horizontal beds.

#### *Nearby Groundwater Supply Wells*

The Montana Bureau of Mines and Geology, Groundwater Information Center (GWIC) database identifies seven water wells within 1½ miles of the site. Because the GWIC database locates wells by section, all wells in the sections containing the site and those surrounding the sites were included in this analysis (Figure 4.1). Some of the wells shown on Figure 4.1 may be located greater than one-mile from the land application site.

Table 4.2 summarizes the well information by section. Because the data in GWIC is based on well drillers' records, the details are not field-verified for accuracy. Further, the GWIC database contains well information only for those drilling records that have been submitted; there may be additional wells in the area that are not contained in the database because the records have not been submitted to GWIC. Therefore, this analysis is based only on information contained in the GWIC database.

There is only one GWIC-documented well, identified as a combined domestic and stockwater well, located in Section 33. Sections 28 and 29, both located to the north of the proposed land application site in Section 33, each have one GWIC-documented domestic well and one GWIC-documented stock well; Section 4, south of Section 33, has one GWIC-documented domestic well; Section 5, south and west of Section 33, has two GWIC-documented stock wells and one GWIC-documented domestic well.

The wells nearest to the land application sites are greater than 49 feet deep and have static water levels greater than 17 feet below ground surface. Septage will be land applied in a wide, thin, even layer at rate not exceeding the AAR, and will be incorporated into the soil surface plow layer within six-hours of application or will be injected into the upper six inches of soil. As previously discussed in the site operation and maintenance requirements section on page 8, the average annual precipitation received during the month of April is approximately equal to the volume of septage that would be land applied per acre per year. It is unlikely that septage applied at this rate on a yearly basis will percolate to the depth of the uppermost aquifer. As a result, there is no anticipated impact to the groundwater or groundwater supply wells.



**Table 4.2: Summary of Nearby Wells**

Township	Range	Section	Total Depth	Static Water Level	Yield (gallons per minute)	Date	Use
3 South	5 West	33	204	66	10	5/4/15	Domestic and Stockwater
3 South	5 West	29	505	326	20	9/27/13	Domestic and Stockwater
3 South	5 West	28	240	188	12	3/28/08	Stockwater
4 South	5 West	4	240	34	15	1/21/09	Domestic
4 South	5 West	5	140	25	20	3/27/08	Stockwater
4 South	5 West	5	140	48	12	3/30/06	Domestic
4 South	5 West	5	49	17	20	11/6/72	Stockwater

*(Source: Montana Bureau of Mines and Geology)*

*The total depth column is the depth drilled, which may be deeper than the bottom of the well as completed. Static water level is the level of water measured in the well at the time of installation. Yield is the amount of water the well is expected to be capable of producing as reported by the well driller. All data is based upon driller's logs and may not be reported for every well.*

### **3.0 Geology**

The proposed land application site is located in the south portion of the Ruby Valley in west central Madison County. The Ruby Valley is bounded on the east by the Tobacco Root Mountains and on the western side by the Ruby Range and opens up to join the Ruby Valley on the north. The general topography of the area is characterized by mountains that surround the valley to the west, east, and south.

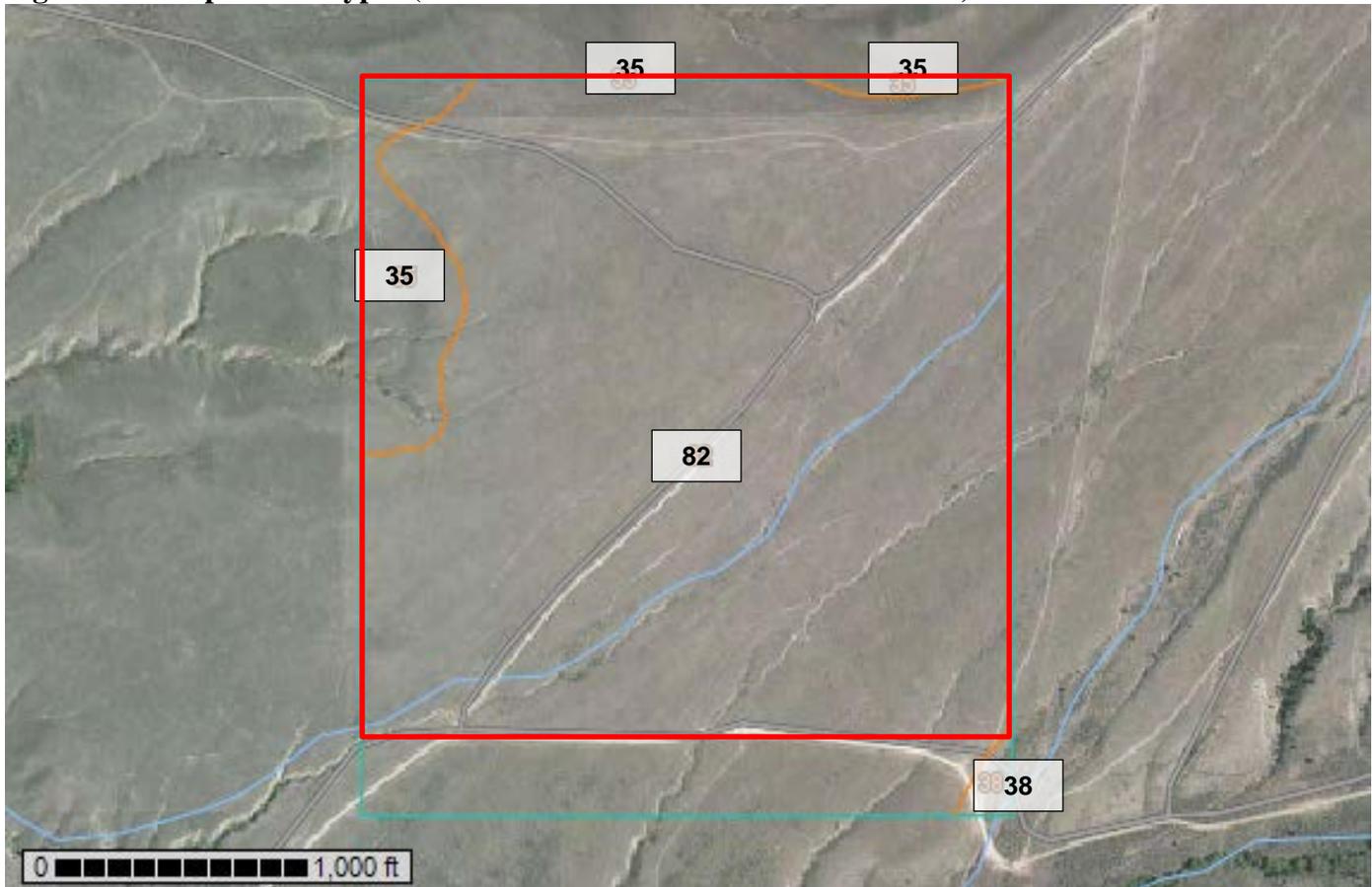
The Ruby Valley basin is filled with Tertiary basin fill alluvial deposits. Alluvium is the loose, unconsolidated sediments that have been eroded from upgradient areas and redeposited by rivers and streams. Near Alder, the alluvial deposits are over 4,000 feet thick (MBMG, 1982). The bedrock that outcrops along the basin's borders consists of Pre-Cambrian metamorphic rocks, Paleozoic and Mesozoic sediments, Cretaceous-Tertiary intrusives, and early Tertiary volcanics. This bedrock is generally less permeable than the unconsolidated alluvium. Because land application of septage is confined to the soil plow layer, there will be no impact to the geology in the area.

### **4.0 Soil Quality – Stability & Moisture**

The areas proposed for land application within the 145-acre parcel are shown in Figure 4.2. The primary soil type is the Musselshell loam, 2 to 8% slopes. The Crago very stony loam, 2 to 45% slopes, and the Cryaquolls soils, comprise a very small portion of the site. The Musselshell loam is characterized as a loam, gravelly loam to very gravelly sandy loam. The Musselshell loam soils are well-drained with a moderate water capacity and moderately-high to high permeability. The Crago very stony loam soils are characterized as a very stony loam to a very cobbly loam. These soils are well-drained with a low water capacity and moderately high to high permeability. The Musselshell loam and the Crago very stony loam are suitable for the proposed land application activities and not limited by the various soil properties that affect absorption, plant growth, and microbial activity. All of the soils in the area have a depth to groundwater greater than 60 feet. Septage will be land applied in a wide, thin, even layer at rate not exceeding the AAR, and will be incorporated into

the soil surface plow layer within six-hours of application or will be injected into the upper six inches of soil. As previously discussed in the site operation and maintenance requirements section on page 8, the average annual precipitation received during the month of April is approximately equal to the volume of septage that would be land applied per acre per year. The soil, pasture grasses, and crop at the site will benefit from the land application of septage. The septage will increase the soil tilth and add organic matter and moisture. This impact will result in an increase in the production of the pasture grasses at the site from the added moisture, organic matter, and nutrients.

**Figure 4.2: Map of Soil Types (Generalized Site location outlined in red)**



(From: USDA-NRCS, Web Soil Survey, Madison County, Montana)

<b>Soil Key (Figure 4.5)</b>	
<b>82:</b>	Musselshell loam , 0 to 8 percent slopes
<b>35:</b>	Crago very stony loam, 2 to 45 percent slopes
<b>38:</b>	Cryaquolls, nearly level

## **5.0 Vegetation Cover, Quantity and Quality**

The quality and quantity of the vegetative cover at the site will be enhanced by the proposed activity. When properly managed, septage is a resource used as a valuable soil conditioner containing nutrients that can reduce the reliance on chemical fertilizers for agriculture. A good land

disposal program recognizes the potential benefits of septage and employs practices to maximize these benefits. The acreage available for land application will be rotated on an annual basis, so that parcels used one year will be inactive the next year. This rotation allows the vegetation or crop of choice to utilize the nitrogen and other nutrients added from the land application process. When applied as a soil conditioner, septage provides benefits to agricultural land by the addition of moisture, organic matter and nutrients to the soil without adversely affecting public health. The land application of septage, portable toilet waste, grease trap waste, sump pumpings, and graywater at this site will have a positive minor impact on the site. The activity will add nutrients, moisture, and improve the soil tilth for the continued production and enhancement of agricultural crops.

## **6.0 Aesthetics**

This proposed site is located on grazing land and is not located on a prominent topographical feature. It is not visible from a highly populated area. The application of septage is similar to the day to day activities of farming and ranching in the area and will not cause a change in the overall aesthetics of the area.

## **8.0 Unique, Endangered, Fragile, Or Limited Environmental Resources**

A search of the Montana Natural Heritage Program indicated the Townsend's Big-eared Bat, Wolverine, Hoary Bat, Little Brown Myotis, Golden Eagle, Great Blue Heron, Mountain Plover, Peregrine Falcon, McCown's Longspurs, Westslope Cutthroat Trout are listed as animal species of concern. The Sitka Columbine is listed as a plant 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 resource conservation. There are no wetlands or permanent surface water bodies located on the proposed site, so aquatic species will not be impacted. An intensive site survey was not conducted to verify the presence of, or impact to, sensitive, unique, endangered, or fragile species within or adjacent to the proposed land application site because the site is currently used for grazing and will be farmed. As a result of the limited development and low of human population in the area, there remains adequate acreage of similar habitat available in the vicinity of the proposed site to accommodate any species that would have been forced to relocate from the current and proposed site activities. Therefore, there is no additional impact to resources anticipated as a result of the proposed land application activities.

## **9.0 Historical and Archaeological Site**

A cultural resource file search was conducted for the proposed land application sites. Records indicate there have been no previously recorded historical or archaeological sites within Section 33, T3S, R5W. The State Historic Preservation Office stated that there is a low likelihood that cultural sites will be impacted and therefore a cultural resource inventory is unwarranted at this time. However, should cultural materials be inadvertently discovered during land application activities at this proposed site, the State Historic Preservation Office will be notified immediately.

**TABLE 4.2: POTENTIAL IMPACTS OF THE PROPOSED LAND APPLICATION SITE ON THE HUMAN ENVIRONMENT**

<u>HUMAN ENVIRONMENT</u>	Major	Moderate	Minor	None	Unknown	Attached
1. SOCIAL STRUCTURES & MORES:				✓		
2. CULTURAL UNIQUENESS & DIVERSITY:				✓		
3. DENSITY & DISTRIBUTION OR POPULATION & HOUSING:				✓		
4. HUMAN HEALTH & SAFETY:				✓		✓
5. COMMUNITY & PERSONAL INCOME:				✓		
6. QUANTITY & DISTRIBUTION OF EMPLOYMENT:				✓		
7. LOCAL & STATE TAX BASE REVENUES:				✓		
8. DEMAND FOR GOVERNMENT SERVICES:			✓			✓
9. INDUSTRIAL, COMMERCIAL, & AGRICULTURAL ACTIVITIES & PRODUCTION:				✓		
10. ACCESS TO & QUALITY OF RECREATIONAL & WILDERNESS ACTIVITIES:				✓		
11. LOCALLY ADOPTED ENVIRONMENTAL PLANS & GOALS:				✓		
12. TRANSPORTATION:				✓		✓

## **ANALYSIS OF TABLE 4.2 - POTENTIAL IMPACTS ON HUMAN ENVIRONMENT**

*This section evaluates the potential environmental effects that may occur on the human environment if the proposed land application site is approved. The number on each of the underlined resource headings corresponds to a resource listed in the tables. Generally, only those resources potentially affected by the proposal are discussed. Therefore, if there is no effect on a resource, it may not be discussed.*

### **4.0 Human Health & Safety**

The septage, portable toilet waste, grease trap waste, sump pumpings, and graywater will be land applied at the site, on an as-needed basis, using a dispersive mechanism or an injector. The dispersive mechanism applies the waste in a wide, thin, even layer at a beneficial rate. The injector equipment injects the waste into the soil plow layer. Septage that is land applied using the dispersive mechanism will be incorporated into the soil with a tractor and tillage equipment within six-hours of application. There are no additional health or safety concerns when the site is operated in accordance with the Septage Disposal regulations. Therefore, there are no anticipated impacts on human health and safety.

### **8.0 Demand for Government Services**

The Madison County Sanitarian and DEQ Solid Waste Section will conduct periodic inspections of land application activities at the site. Therefore, there is a minor impact for demand for government services.

### **12.0 Transportation**

The proposed land application site will be accessed off Wet Georgia and Dry Georgia Roads. Wet Georgia and Dry Georgia Roads currently supports traffic to rural homes, ranches, and mines, including equipment associated with the current agricultural and mining activities in the area. The site will be used by the applicant on an as-needed basis and will not cause a significant increase in traffic on Wet Georgia or Dry Georgia Roads. There are no additional anticipated impacts to transportation.

## **SECTION 5.0 - CONCLUSIONS AND RECOMMENDATIONS**

### **Evaluation of mitigation, stipulations, and other controls enforceable by the agency or another government agency:**

The proposed land application site and Operation and Maintenance (O&M) Plan will meet the requirements of the Montana Septage Disposal and Licensure Law, Air and Water Quality Acts, and other applicable Montana environmental laws and regulations, as well as county ordinances. Adherence to the regulations and the DEQ-approved O&M Plan will mitigate the potential for harmful releases and impacts to human health and the environment by the proposed activity at the site.

### **Findings:**

DEQ has determined that the proposed site, located on rural, private property, operated and monitored according to the Montana Septage Disposal and Licensure Law will have a minor impact on the physical and human environment. All land application activities will be performed according to the DEQ-approved O&M Plan to ensure the land application activities will be conducted in compliance with all applicable rules and regulations. Site activities will be verified by periodic inspections performed by DEQ and/or Madison County personnel to ensure that the potential risk of adverse effects on human health and the environment resulting from land application activities at the site are minimized. This treatment option is a beneficial reuse of a waste product.

### **Other groups or agencies contacted or which may have over-lapping jurisdiction:**

Madison County Public Health Department  
Montana Department of Environmental Quality

### **Individuals or groups contributing to this EA:**

Ray Smail of South West Septic  
Montana Natural Heritage Program  
Montana Historical Society State Historic Preservation Office  
Natural Resource Information System

### **References:**

Western Regional Climate Center, 2215 Raggio Parkway, Reno NV 89512-1095  
Montana Tech of the University of Montana, 2012, Montana Bureau of Mines and Geology, Groundwater Information Center, <http://mbmaggwic.mtech.edu/>  
United States Department of Agriculture, 2012, Natural Resources Conservation Service, Web Soil Survey, <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>  
United States Geological Survey, Old Baldy Mountain MT 1:24,000 quadrangle

### **EA prepared by:**

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**Date:** December 10, 2015



