

**APPENDIX A:**  
**RECLAMATION PLAN**

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**APPENDIX A:**  
**RECLAMATION PLAN FOR THE**  
**CAVE GULCH INFILL DEVELOPMENT PROJECT**

Prepared for

**Bureau of Land Management**  
**Casper Field Office**  
**Casper, Wyoming**

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**ACRONYMS AND ABBREVIATIONS**

APD	Application for Permit to Drill
BLM	Bureau of Land Management
CGIDP	Cave Gulch Infill Development Project
ft	Foot/feet
LOP	Life-of-project
POD	Plan of Development
PLS	Pure Live Seed
RMP	Resource Management Plan
SUP	Surface Use Plan

## **A-1.0 INTRODUCTION**

This reclamation plan will serve as guidance to achieve successful reclamation on federal lands, administrated by the Bureau of Land Management (BLM), within the Cave Gulch Infill Development Project (CGIDP) area. Alternate reclamation procedures may be implemented on federal lands as directed by the BLM, or on private and state lands by the respective landowners. This plan complies with BLM reclamation and management directives specified in the Platte River Resource Management Plan (RMP) (BLM 1995) for the Casper Field Office, and complies with on *Executive Order* 13112 (control of invasive species).

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## **A-2.0 RECLAMATION REQUIREMENTS AND SUCCESS STANDARDS**

### **A-2.1 RECLAMATION REQUIREMENTS**

BLM's reclamation requirements include the following major goals:

- recontour the land surface and implement other soil conservation, surface manipulation, and water management techniques to establish stable slopes, water courses, and drainage features to minimize erosion and sedimentation (also protecting surface and ground water resources);
- revegetate disturbed areas to establish self-perpetuating native plant communities capable of supporting existing and future land uses; and
- minimize visual contrasts.

### **A-2.2 RECLAMATION SUCCESS STANDARDS**

The following reclamation success standards are the measures that would be used to assess whether BLM's reclamation requirements are being met. The procedures presented below are designed to achieve the success standards and, in doing so, to meet BLM's requirements. Reclamation would be implemented, managed, and monitored by the Operators with BLM oversight/approval. Alternatives to all or portions of this reclamation plan may be implemented if the following standards would be met.

- 1) No contaminated materials would be left at or near the surface, and all such buried materials would be encapsulated in impermeable material (sealed pit liners, concrete) and covered with at least 4 ft of soil material.
  - 2) The subsurface would be stabilized. Holes would be plugged and no indications of subsidence, slumping, and/or significant downward movement of surface soil materials would be visible.
  - 3) Reclaimed areas would be free of trash, debris, and other solid wastes.
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- 4) Reclaimed areas would be free from rills or gullies greater than 2 inches deep, actively eroding rills or gullies, perceptible soil movement or head cutting in drainages, and/or slope instability on or adjacent to reclaimed areas.
  - 5) Soil surfaces would have adequate surface roughness to reduce runoff and to capture rainfall and snow melt.
  - 6) Vegetative canopy cover, production, and species diversity of desirable species would approximate the surrounding undisturbed areas. Vegetation would help stabilize the site, would support post-disturbance land uses, and would be self-sustaining. Revegetated areas would exhibit vegetative reproduction and would be as free as practicable from noxious, non-native, and invasive species.
  - 7) The reclaimed landscape would approximate the visual quality of adjacent areas with regard to line, form, and texture, contour, color, and orientation of major landscape features, and would support pre-disturbance land uses.
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### **A-3.0 RECLAMATION PLAN**

#### **A-3.1 PREDISTURBANCE PLANNING AND SITE PREPARATION**

Predisturbance planning would minimize the amount of reclamation at a site by minimizing surface disturbance, and would include planning for salvaging and stockpiling topsoil and spoil separately, locating facilities away from cut-and-fill slopes, and minimizing the area occupied by facilities to facilitate reclamation success.

##### **A-3.1.1 Predisturbance Planning**

Operators would avoid the following areas, where practical, during selection of drill sites, roads, pipelines, and ancillary facilities:

- areas with high erosion potential (e.g., rugged topography, steep slopes [ $>25\%$ ], stabilized sand dunes, floodplains);
- areas with saturated soils;
- areas within 500 ft of wetland or riparian areas; and
- areas within 100 ft of ephemeral channels.

The Operators would cooperate with the BLM, as part of the application for permit to drill (APD) and right-of-way (ROW) grant process, in on-site inspections of areas proposed for disturbance to determine the suitability of proposed locations with regard to the above-listed avoidance areas. In addition, Operators would submit for BLM approval, as appropriate, surface use plans (SUP) and/or plans of development (POD) for each proposed surface disturbance.

These plans would include the following components:

- project administration, time frames, and responsible individuals;
  - a commitment to adhere to this reclamation plan;
  - detailed descriptions of all deviations from this plan that may be required due to site-specific conditions, and the rationale for such changes; and
  - a commitment to meet the reclamation success standards previously described.
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### **A-3.1.2 Site Preparation**

Topsoil would be salvaged and stockpiled from all areas proposed for disturbance unless the BLM deems that leaving topsoil in place would facilitate reclamation. Vegetation would be salvaged and stockpiled with topsoil to incorporate native seeds and organic matter. The volume of topsoil or other suitable plant growth material to be salvaged, proposed topsoil replacement depth, and topsoil storage areas would be determined during the on-site inspection and subsequently specified in the APD. If less than 6 inches of topsoil is available, topsoil would be added to an appropriate quantity of suitable subsoil, with BLM approval, so that a minimum of 6 inches of plant growth material would be available during revegetation operations. Only suitable subsoil (Table A-3.1) would be salvaged and used for revegetation purposes. Suitable subsoil that might be used for revegetation would be stockpiled separately and would not be mixed with topsoil. Signs with the words “topsoil” and “subsoil” would be placed on each appropriate topsoil and subsoil pile.

Operators would (to the extent practicable) balance the volumes of cut versus fill material, where cut-and-fill construction technique is required, to minimize the volume of excess spoil material that would be stockpiled and to minimize the amount of surface disturbance.

Table A-3.1 Criteria to Establish Suitability as Topsoil (or Topsoil Substitutes).<sup>1</sup>

Parameter	Suitability		
	Suitable	Marginal	Unsuitable
PH	5.5-8.5	5.0-5.5	<5.0 >9.0
EC (conductivity) mmhos/cm	0-4	8-12	>12
SAR	0-10	10-12	>12
Boron	<5.0 ppm		>5.0 ppm
Coarse Frag. (% volume)	<25%	25-35%	>35%

<sup>1</sup> Adapted from Wyoming Department of Environmental Quality Land Quality Division (1984).

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Topsoil would be salvaged from all areas to be disturbed for pipelines and access roads constructed on slopes of less than 15%. The topsoil would be stockpiled in windrows within the construction right-of-way by sidecasting with a grader. Where pipelines and roads are to be constructed on slopes greater than 15%, topsoil would be transported to more level terrain for stockpiling.

Topsoil and suitable subsoil stockpiles would be constructed to remain stable until they are used for reclamation. Whenever practicable, topsoil would be replaced at the first seasonal opportunity. All soil material stockpiled for 10 months or longer would be signed and stabilized with vegetation by seeding with annual ryegrass (*Lolium multiflorum*) at a rate of 10 pound/acre. If topsoil or suitable subsoil is to be stockpiled for more than 2 years, the piles would be seeded with the appropriate seed mixture (Table A-3.2). Stockpiles would have a maximum slope of 5:1 or less on the long axis and a maximum of 1:1 on the side slopes. If a topsoil stockpile is located on or adjacent to ground that slopes 3:1 or more, runoff would be diverted around the stockpile via interceptor ditches. Interceptor ditches would be V-shaped--1 ft deep and 3 ft wide with gently sloping sides--and would empty onto native, undisturbed vegetation. All stockpiles would be placed to avoid impacts to existing drainage channels.

### **A-3.2 RECLAMATION TIMING**

Temporary and permanent reclamation would occur in the first seasonal opportunity (after the frost has left the ground and prior to May 15 in the spring or from September 1 to ground frost in the fall). Spring seeding would be conducted only if fall seeding is not feasible following completion of construction activities.

Relying solely on fall seeding, however, may not be appropriate during the continued drought. In normal years, the presumption is that seasonal snow cover would protect the seed and would provide a source of early spring moisture to facilitate germination and seeding success. Because we have not had prolonged seasonal snow cover for several years, seed planted in the fall has been subjected to severe dispersion due to the scouring effect of the high winds. This may explain poor seeding success in Cave Gulch. As long as the present weather patterns continue,

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spring seeding is probably more conducive to successful reclamation as long as the seeding occurs as soon as possible following the thaw.

### A-3.3 TEMPORARY RECLAMATION

Temporary reclamation would be conducted on areas that would be redisturbed prior to final project abandonment, such as topsoil and subsoil stockpiles. The Operators may elect to conduct either temporary or permanent reclamation on pad cut-and-fill slopes on operating wells; however, the Operators would not use temporary reclamation to delay permanent reclamation on areas that would not be redisturbed.

Temporary reclamation areas would be regraded and recontoured to slopes of 3:1 or less. Regraded surfaces would be scarified (ripped) to a depth of 1 ft, if necessary (e.g., on roads) to reduce soil compaction. Topsoil would not be replaced on temporary reclamation areas. The temporary reclamation areas would then be seeded using the temporary seed mixture (Table A-3.2).

Table A-3.2 Temporary Seed Mixture.<sup>1</sup>

Species	Approximate Seeding Rate (PLS/acre) <sup>2</sup>
Western wheatgrass ( <i>Elymus smithii</i> )	3.0
Slender wheatgrass ( <i>Elymus trachycaulus</i> )	3.0
Streambank wheatgrass ( <i>Elymus lanceolatus</i> var. <i>riparius</i> )	3.0
Total	9.0

<sup>1</sup> It is anticipated that this seed mixture primarily would be used on topsoil and subsoil stockpiles designated for long-term storage.

<sup>2</sup> PLS/acre = pounds of pure live seed per acre; alternate seeding rates may be applied in some areas as deemed appropriately by BLM and specified in the approved APD.

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### **A-3.4 PERMANENT RECLAMATION**

Permanent reclamation would be implemented on all disturbed areas that are no longer required for ongoing field operations, such as portions or all of well pads, road out-slopes, and pipeline corridors. Because permanent reclamation would occur throughout the life of project (LOP), this plan does not differentiate between "interim" and "final" reclamation. All permanent reclamation is considered final unless monitoring shows that it needs to be augmented or repeated. Operators would permanently reclaim all portions of well pads not required for production operations, access road out-slopes, and pipeline corridors following construction operations, as well as abandoned well locations. If reclamation involves facility removal, regrading and reseeding would occur at the first seasonal opportunity following facility removal.

#### **A-3.4.1 Facility Removal**

Some facilities would reach the end of their operational life during the LOP, whereas others would remain in use until field production is complete. When the Operators determine that a well or other facility is no longer required for ongoing operations it would be removed and the area would be permanently reclaimed.

Wells would be abandoned in accordance with BLM and/or Wyoming Oil and Gas Conservation Commission regulations. Underground pipelines would be purged of gas or liquid materials, plugged, and abandoned in place. All surface facilities would be removed and either reused, recycled, or taken to an approved disposal facility. Any liquid or solid wastes remaining at well locations would be tested and properly disposed in accordance with appropriate state and federal regulations. Concrete foundations, pads, or footings would be broken-up and removed to an approved disposal site or buried on-site. Aggregates used for well pad, road, and other facility construction activities would be removed or buried on-site. Operators would obtain BLM approval for the on-site burial of any material.

Road reclamation would include the removal of fill material, any surface materials, culverts, sediment control structures, and signs not required for ongoing operations. Drainage-crossing sideslopes would be reduced to no more than 4:1 to reduce bank erosion and ensure stable

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sideslopes. Barriers, such as water bars, would be used to discourage travel on reclaimed roads and pipeline ROWs until permanent reclamation is deemed successful.

### **A-3.4.2 Surface Preparation**

#### **A-3.4.2.1 Backfilling and Grading**

Areas requiring backfilling include reserve pits, cut slopes, pipeline trenches, borrow ditches, and facility foundations. Pipeline trenches would be backfilled so that the spoil berm is approximately 3 inches higher than the natural ground. Soil material (subsoil) to be used for backfill would be obtained from material excavated from the trenches.

Areas to be reclaimed would be graded to approximate original contours to blend with adjacent topography. Area-wide drainage would be restored so that surface runoff flows and gradients are returned to the pre-disturbance conditions to the extent practicable. Graded surfaces would be suitable for the replacement of a uniform depth of topsoil/suitable subsoil that would promote cohesion between subsoil and topsoil layers, would reduce wind erosion, and would facilitate moisture retention. Specialized grading techniques would be applied at the Operators' discretion and may include slope rounding, bench grading, stair-step grading, and/or contour furrowing. Bulldozers, loaders, scrapers, and/or motor graders would typically be used for backfilling and regrading operations.

#### **A-3.4.2.2 Ripping**

Compacted areas such as roads and wellpads would be scarified (ripped) to a depth of approximately 1 to 2 ft to improve soil aeration, water infiltration, and root penetration. Scarification (ripping) would typically be accomplished using motor graders or tractors equipped with ripping shanks. Ripper shanks would be set approximately 3 to 4 ft apart.

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### **A-3.4.3 Seedbed Preparation**

Seedbed preparation maximizes seeding efficiency and improves reclamation success. It includes topsoil replacement and discing. Surface roughening procedures, including pitting and gouging, also may be applied at the discretion of Operators.

#### **A-3.4.3.1 Topsoil Replacement**

Waterbars and erosion control devices would be installed on reclaimed areas prior to topsoil replacement, as necessary, to reduce storm water runoff and control topsoil erosion and.

The depth of topsoil/suitable subsoil to be replaced would be dependant on the amount of material that was previously salvaged and stockpiled. If the stockpile for a specific location contains insufficient topsoil to meet the required 6-inch minimum, suitable subsoil would be replaced first and then the available topsoil would be placed on the surface. Topsoil and suitable subsoil would not be mixed prior to final placement.

#### **A-3.4.3.2 Seedbed Preparation**

After topsoil replacement and prior to commencement of seeding operations, the seedbed would be prepared by disking on the contour to a depth of 4 to 6 inches, leaving no depressions that would trap water or form ponds. This would reduce soil compaction, break up soil clods, improve root penetration and water retention/infiltration, and provide a suitable seedbed. The surface would be left rough to reduce wind and water erosion and to promote moisture retention and infiltration.

#### **A-3.4.3.3 Fertilizer and Soil Amendments**

Operators have the discretion to conduct soil fertility tests and/or use fertilizers or other soil amendments necessary to help establish a permanent vegetation community. However, fertilization and/or the addition of soil amendments would generally not be required at the first attempt at permanent revegetation. Fertilizers generally are not effective in semi-arid climates and typically promote establishment and growth of various invasive, non-native, and noxious

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species. If, after two growing seasons, initial revegetation efforts are unsuccessful, the Operators may conduct soil fertility tests to determine if soil fertility is an issue. If soil fertility is an issue, appropriate fertilizers would be applied in consultation with the affected landowner(s). Fertilizers would not be used near open water.

#### **A-3.4.4 Revegetation**

##### **A-3.4.4.1 Seeding**

Once the seedbed has been prepared, seeding would occur within 2 weeks unless the ground is wet or frozen, in which case seeding would be delayed until the ground dries or thaws to the point where the soil is friable. Reclaimed areas would be seeded using the permanent seed mixtures presented in Tables A-3.3 through A-3.5. These seed mixtures were developed based on general conditions within the analysis area, species adaptations to site conditions, usefulness of the species for rapid site stabilization, species success in past revegetation efforts, seed costs and availability, and compliance with *Executive Order* 13112 and BLM Manual Section 1745 (i.e., use of native species). Alternative species and seeding rates may be used at Operator discretion and with BLM/landowner approval if warranted by site-specific conditions or seed availability, provided that the alternative species/seeding rates facilitate achieving reclamation success. All seeds used for revegetation purposes would be certified weed-free.

Operators, in consultation with BLM and the landowner, would determine which seed mixture to use and which substitute species may be appropriate to include in the mixture in consultation with BLM/landowner. Operators may also elect to use interseeding/reseeding techniques if initial vegetation establishment is not successful.

Seeding would be conducted in the fall (after September 1 and prior to ground frost). If fall seeding is not feasible, seeding may occur in the spring after the frost has left the ground but prior to May 15. Seeds would be planted on the contour using a rangeland-type seed drill equipped with an agitator and depth regulator to mix seed and ensure proper seeding depths. Seeds would be planted at depths of 0.25-0.50 inch. Fluffy seeds, such as winterfat, would be broadcast seeded. Broadcast seeding may be used at the Operators' discretion for other shrub and forb species, and may utilize either hand or specialized broadcast seeders.

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Table A-3.3 Permanent Reclamation Seed Mixture for Sagebrush-dominated Communities with Sandy Soils.<sup>1</sup>

Species	Drill Seeding Rate (PLS/acre) <sup>2</sup>
<b>Grasses</b>	
Thickspike wheatgrass ( <i>Elymus lanceolatus</i> var. <i>lanceolatus</i> )	2.00
Western wheatgrass ( <i>Elymus smithii</i> )	2.00
Bluebunch wheatgrass ( <i>Elymus spicatum</i> )	2.00
Indian ricegrass ( <i>Oryzopsis hymenoides</i> )	3.00
Needle-and-thread ( <i>Stipa comata</i> )	3.00
<b>Forbs</b> (select one or more of the following forb species)	
Desert Indian paintbrush ( <i>Castilleja chromosa</i> )	1.00
Scarlet globemallow ( <i>Sphaeralcea coccinea</i> )	1.00
<b>Shrubs</b> (select 2 or more of the following shrub species)	
Wyoming big sagebrush ( <i>Artemisia tridentata wyomingensis</i> )	0.25
Common winterfat ( <i>Krascheninnikovia lanata</i> ) <sup>3</sup>	1.00
Four-wing saltbush ( <i>Atriplex canescens</i> )	3.00
Antelope bitterbrush ( <i>Purshia tridentata</i> )	1.00
Total	14.25-19.25

<sup>1</sup> Operators may submit for approval alternative site-specific seed mixtures.

<sup>2</sup> PLS/acre = pounds of pure live seed per acre. Seeding rates would be doubled if seed is to be broadcast.

<sup>3</sup> Winterfat seed would be broadcast simultaneously with drill-seeding other species.

Table A-3.4 Permanent Reclamation Seed Mixture for Sagebrush-dominated Communities with Alkaline Soils.<sup>1</sup>

Species	Approximate Seeding Rate (PLS/acre) <sup>2</sup>
<b>Grasses</b>	
Western wheatgrass ( <i>Elymus smithii</i> )	3.00
Thickspike wheatgrass ( <i>Elymus lanceolatus</i> var. <i>lanceolatus</i> )	3.00
Alkaligrass ( <i>Puccinellia distans</i> )	3.00
Alkali sacaton ( <i>Sporobolus airoides</i> )	3.00
<b>Forbs</b> (select one or more of the following forb species)	
Scarlet globemallow ( <i>Sphaeralcea coccinea</i> )	1.00
Evening primrose ( <i>Oenothera</i> sp.)	1.00
<b>Shrubs</b> (select two or more of the following shrub species)	
Wyoming big sagebrush ( <i>Artemisia tridentata wyomingensis</i> )	0.25
Common winterfat ( <i>Krascheninnikovia lanata</i> ) <sup>3</sup>	1.00
Four-wing saltbush ( <i>Atriplex canescens</i> )	3.00
Gardner saltbush ( <i>Atriplex gardneri</i> )	1.00
Total	14.25-19.25

<sup>1</sup> Operators may submit for approval alternative site-specific seed mixtures.

<sup>2</sup> PLS/acre = pounds of pure live seed per acre. Seeding rates would be doubled if seed is to be broadcast.

<sup>3</sup> Winterfat seed would be broadcast simultaneously with drill-seeding other species.

Table A-3.5 Permanent Reclamation Seed Mixture for Saltbush Communities.<sup>1</sup>

Species	Approximate Seeding Rate (PLS/acre) <sup>2</sup>
<b>Grasses</b>	
Sandberg bluegrass ( <i>Poa sandbergii</i> )	1.0
Western wheatgrass ( <i>Elymus smithii</i> )	2.0
Thickspike wheatgrass ( <i>Elymus lanceolatus</i> var. <i>lanceolatus</i> )	2.0
Alkaligrass ( <i>Puccinellia distans</i> )	3.0
Alkali sacaton ( <i>Sporobolus airoides</i> )	3.0
<b>Forbs</b> (select one or more of the following forb species)	
Gooseberryleaf globemallow ( <i>Sphaeralcea grossulariaefolia</i> )	1.0
Northern sweetvetch ( <i>Hedysarum boreale</i> )	1.0
Evening primrose ( <i>Oenothera</i> sp.)	1.0
<b>Shrubs</b> (select two or more of the following shrub species)	
Four-wing saltbush ( <i>Atriplex canescens</i> )	3.0
Shadscale ( <i>Atriplex confertifolia</i> )	1.0
Gardner saltbush ( <i>Atriplex gardneri</i> )	1.0
Common winterfat ( <i>Krascheninnikovia lanata</i> ) <sup>3</sup>	1.0
Total	16-20

<sup>1</sup> Operators may submit for approval alternative site-specific seed mixtures.

<sup>2</sup> PLS/acre = pounds of pure live seed per acre. Seeding rates would be doubled if seed is to be broadcast.

<sup>3</sup> Winterfat seed would be broadcast seeded.

When drill-seeding is not practical due to steep slopes, rocky surfaces, or wet soil conditions, seeding rates would be doubled, seeds would be broadcast, and the area would be raked or chained to cover the seed. Operators may also elect to broadcast seed after applying and crimping the mulch.

#### A-3.4.4.2 Mulching

Areas determined to require mulching to ensure successful reclamation would be uniformly mulched with certified weed-free native grass, hay, or small grain straw at a rate of 2 tons/acre. Cotton, jute, or synthetic netting may be applied in steep areas where erosion would be a problem. Mulch would be crimped 2-4 inches into the soil on the contour, tackified, or incorporated into erosion control blankets to prevent it from blowing or washing away and from entering waterways. Mulch would protect the soil from wind and water erosion, raindrop impact, and surface runoff, and would help hold seeds in place. Mulching may occur prior to or after broadcast seeding but must not occur before drill seeding.

Hydromulch, biodegradable erosion control netting, or matting would be firmly attached to the soil surface on steep slopes where it is unsafe to operate equipment, at sites where soils have 35% or more surface rock content, or on notably unstable areas.

### **A-3.5 EROSION CONTROL**

All reclaimed surfaces would be left rough and would be mulched as described above to reduce wind and water erosion. Erosion and sediment control structures would be installed on reclaimed areas wherever slopes exceed 3:1 and where monitoring demonstrates that erosion control structures are needed.

Runoff from reclaimed areas on hillsides with 3:1 or greater slopes (and where monitoring suggests that it is warranted) would be controlled using standard structures including, but not limited to, waterbars, silt fences, geotextile, and/or energy dissipaters. Areas with concentrated development with closely spaced pads (more than 1/40 acres) would be subject to reclamation efforts that address cumulative runoff, regardless of slope. Waterbars would be installed in accordance with standard BLM specifications. Prior to commencement of reseeding activities on/along reclaimed well locations and access roads, waterbars would be constructed at least 1 ft deep, on the contour, with approximately 2 ft of drop per 100 ft of waterbar to ensure drainage, and extended into established vegetation. All waterbars would be constructed with the berm on the downhill side to prevent the soft material from silting in the trench. The initial waterbar would be constructed at the top of the backslope. Subsequent waterbars would follow the spacing guidelines in Table A-3.6. Silt fences would be placed downslope from reclaimed areas where erosion may impact a waterbody, and would be installed according to manufacturers' instructions. Energy dissipaters would be used to slow flows wherever water is channelized (e.g., by a waterbar or an interceptor ditch). All runoff and erosion control structures would be inspected and maintained by the Operators on a regular basis until the site is determined to be stable.

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Table A-3.6 Spacing Guidelines for Waterbar Installations.

% Slope	Spacing Intervals (feet)
2% or <	200
2% - 4%	100
4% - 5%	75
5% or >	50

### A-3.6 WEED CONTROL

Operators would be responsible for the control of non-native, invasive, and noxious weeds from all project activities for the LOP. Weed control could include one or more of the following techniques:

1. cultural controls, such as prompt seeding, plowing, reseeding, and use of certified weed-free revegetation materials (seed and mulch);
2. physical controls, such as hand-pulling, hoeing, or mowing with weed cutting machines or tractor mower; and
3. chemical controls--the use of herbicides.

If the Operators or BLM determines that the use of herbicides is necessary, a *Pesticide Use Proposal* (form WY-04-9222-1) and pesticide label would be submitted to the Authorized Officer no later than December 1st for use during the following spring/summer period. All herbicides would be used only in the season or growth stage during which they are most effective, and subject to the following conditions.

1. Application applicators will have their Commercial Pesticide Applicator License.
2. Applicators will fill out daily pesticide use logs.
3. Application operations will be suspended when any of the following conditions exist on the treatment area:
  - a) wind velocity exceeds 6 mph for applications of liquids or 15 mph for the application of granular herbicides, or as specified on the label;
  - b) precipitation is occurring or is imminent within 24 hours;

- c) snow, ice or frost covers the treatment area; and
  - d) fog significantly reduces visibility.
4. During operations, radio contact will be maintained to link all parts of the project.
  5. All individuals involved in the herbicide handling or application will be instructed on the safety plan and spill procedures.
  6. Protective buffer zones will be provided along important riparian habitat not designated for treatment and along streams, rivers, lakes, wetlands, and xeroriparian areas. Protective buffer zones will also be provided around non-target plant species.
  7. Applicators will not apply herbicides at rates higher than the maximum application rates allowed for on Federal Land and higher than the herbicide labels recommendations.

Use of certified weed-free seeds and mulches would minimize the potential for weed introduction. Prompt reclamation of disturbed sites would minimize potential for weed infestations.

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#### **A-4.0 FENCING**

In order to protect newly revegetated areas, the Operators (with the approval of the BLM/landowner) may install fencing around any reclaimed areas that may receive grazing pressure that would interfere with the successful reestablishment of native vegetation. The fences would prevent cattle from entering a specific area, but would not interfere with the movement of wildlife. All fences would comply with appropriate RMP guidance and BLM Manual Handbook H-1471-1.

Because of livestock grazing on previously revegetated areas within the core area of the CGIDP area, the Operators would fence portions of some private surface within the core area until such time as the newly established vegetation is capable of withstanding grazing pressure. One proposed fencing alternative would have a perimeter of 0.73 mi, would enclose approximately 23 acres, and would include adequate gates and/or cattle guards that would comply with appropriate RMP guidelines and BLM Manual Handbook H-1471-1 (Figure A-4.1).

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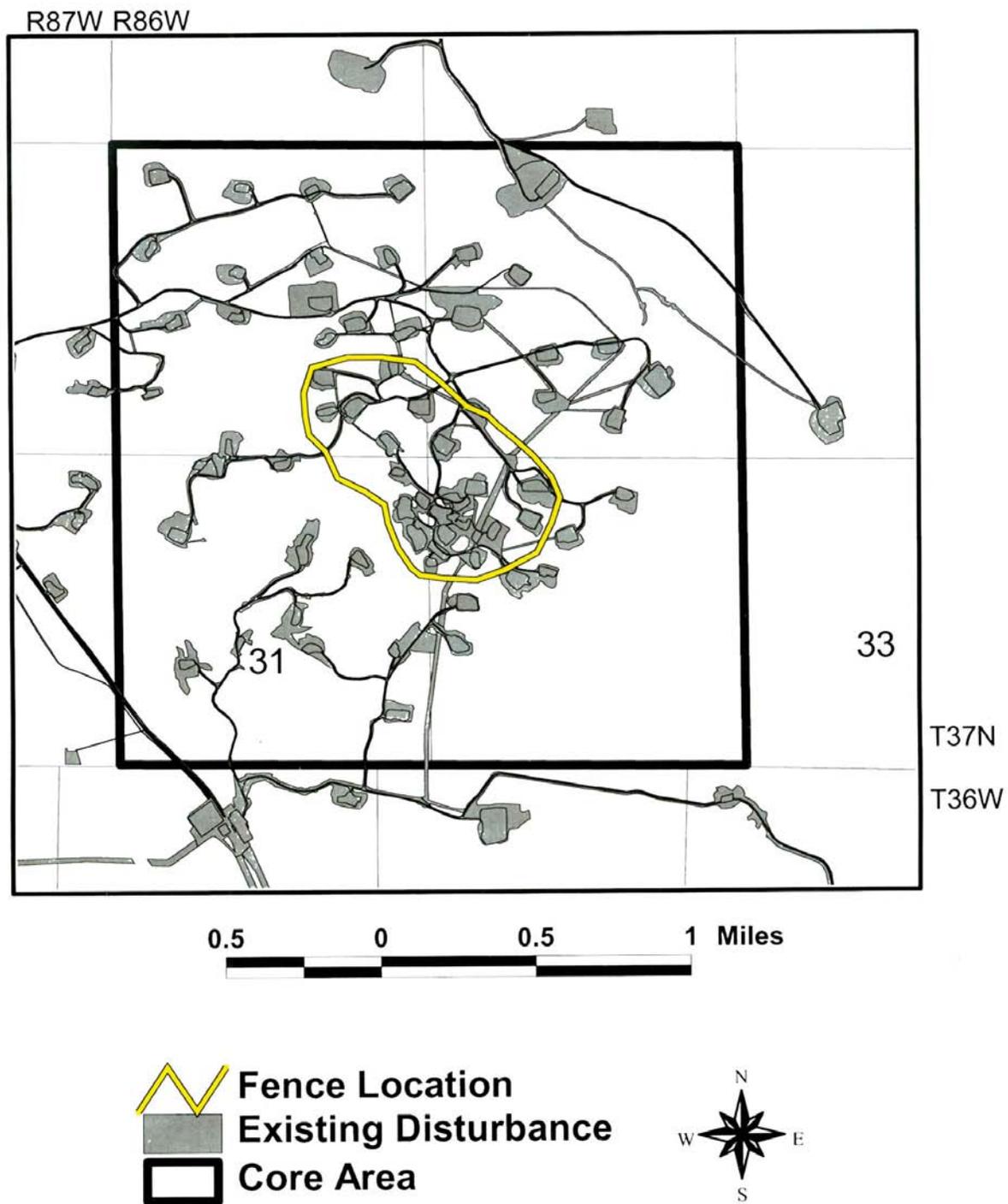


Figure A-4.1 Location of Area Proposed for Fencing to Exclude Livestock to Encourage Revegetation Success.

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### **A-5.0 REMEDIAL WEED CONTROL PROGRAM**

As part of the on-going monitoring plan for the CGIDP, the Operators and BLM have monitored reclamation success and weed establishment on numerous reclaimed areas. As a result, the Operators and BLM have identified numerous areas within the CGIDP area that require reseeding and/or remedial actions to control the establishment and spread of weeds. It is acknowledged that drought in the project area has contributed to poor establishment of desirable species and the establishment and spread of weeds on some reclaimed areas. To correct this problem, the Operators would undertake a 3-year remediation program to reseed or interseed areas and/or to control weeds on previously reclaimed areas. Approximately 1/3 of the areas would be evaluated and remediated in each of 2005, 2006, and 2007. The Operators would document which areas have been remediated in an annual report to BLM.

The Operators would utilize the following decision points to guide remedial management actions.

#### Seeding Decisions and Actions

- In areas with two or more years of growth and there are more than two planted seedlings per square foot but the area contains only one of the three types of reclamation life forms (e.g., grasses, forbs, or shrubs), the area would be interseeded with an appropriate seed mixture utilizing the seed mixtures presented above to guide species selection and application rate. Interseeding would be conducted during the first fall opportunity.
  - In areas with two or more years of growth and there are less than two desirable seedlings per square foot, the areas would be disked or harrowed and reseeded with the complete and appropriate seed mixture. The Operators would follow the permanent reclamation guidance presented above. Reseeding would be conducted during the first fall opportunity.
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Weed Control Decisions and Actions

- In areas with less than 1 year of growth, the Operators would mow the area but would not reseed, interseed, or apply any herbicide.
- In areas with more than 1 year of growth and less than 30% of the area is covered with weeds, the Operators would spot spray the target areas with the appropriate herbicide.
- In areas with more than 1 year of growth and more than 30% of the area is covered with weeds, the Operators would spray the entire effected area with the appropriate herbicide.

If the Operators or BLM determines that the use of herbicides is necessary, a *Pesticide Use Proposal* would be submitted to the BLM for approval as discussed in Section A-3.6.

The Operators would monitor all previously reclaimed areas and would implement remedial seeding and weed control actions at the same time on any given area. The Operators would continue to monitor the status of all permanently reclaimed areas and would implement appropriate remediation actions until such time as the BLM determines that they meet reclamation standards.

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**A-6.0 RECLAMATION SUCCESS MONITORING****A-6.1 MONITORING TEMPORARY RECLAMATION**

Temporary reclamation would be monitored annually and would include visual inspections for vegetation establishment, soil stability, the effectiveness of erosion control practices, and weed invasion. When practicable, the Operators would correct problems within 3 weeks of discovery and reseeding and/or interseeding would be conducted, as necessary, at the first seasonal opportunity utilizing the procedures previously presented in this document.

**A-6.2 MONITORING PERMANENT RECLAMATION**

Permanent reclamation success would be monitored annually and would include visual inspection for vegetation establishment, soil stability, effectiveness of erosion control practices, and weed invasion. When practicable, the Operators would correct any problem within 3 weeks of discovery and reseeding and/or interseeding would be conducted, as necessary, at the first seasonal opportunity utilizing the procedures previously presented in this document.

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### **A-7.0 REFERENCES**

Bureau of Land Management. 1995. Platte River Resource Area Resource Management Plan Final Environmental Impact Statement and Record of Decision. Bureau of Land Management, Wyoming State Office, Cheyenne, WY. BLM-WY-ES-84-020-4410. July 1995. 249 pp.

Wyoming Department of Environmental Quality, Land Quality Division. 1984. Guideline No. 1, Topsoil and Overburden. Wyoming Department of Environmental Quality, Cheyenne, Wyoming. 23 pp.

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