

## 3.0 Pipeline Construction and Installation

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The following section provides a description of each phase of standard construction along the right-of-way. Also included in this section are mitigation requirements that would be implemented by the Contractor. These mitigation measures are industry standards and should be used in conjunction with site specific plans included in the appendices and permit stipulations included in Appendix A.

### 3.1 Pre- Construction

By the time of construction, all biological and cultural impacts and permit stipulations will be determined. Contractors should know of any designated avoidance areas and seasonal restrictions. These designated areas will be included on the alignment sheets (included separately). Permit stipulations are included in Appendix A.

Civil engineering surveys will identify the centerline of the pipeline and the boundaries of both sides of the approved working limits before construction activities commence. Greencore's Construction Inspectors will be responsible for verifying that the limits of authorized construction work areas are staked prior to construction. Flagged or painted lath will be set at 200-foot intervals (maximum), or as required to maintain line of sight, along the proposed centerline. The edges of the work limits will be marked at 200-foot intervals (maximum), or as required to maintain line of sight, with flagged or painted lath. All ATWs will be marked in a similar fashion and all four corners of each temporary use area will be flagged or painted lath. This staking will clearly demark the boundary of the area that can be used or accessed by construction personnel. Equipment will not be parked or driven beyond these stakes.

Prior to earth moving activities, Best Management Practices (BMPs) should be installed to limit sediment transport and erosion. General areas requiring BMPs will be designated on the alignment sheets. BMPs are usually site specific and depend on current site and weather conditions. The Environmental Inspectors (EIs) will also be responsible for designating areas that need BMPs or make adjustments to BMPs, as needed. The Stormwater Pollution Prevention Plan (SWPPP) contains specific BMP information and installation. The SWPPP should be referred to throughout the project to ensure proper sediment and erosion control and reporting procedures (Appendix E).

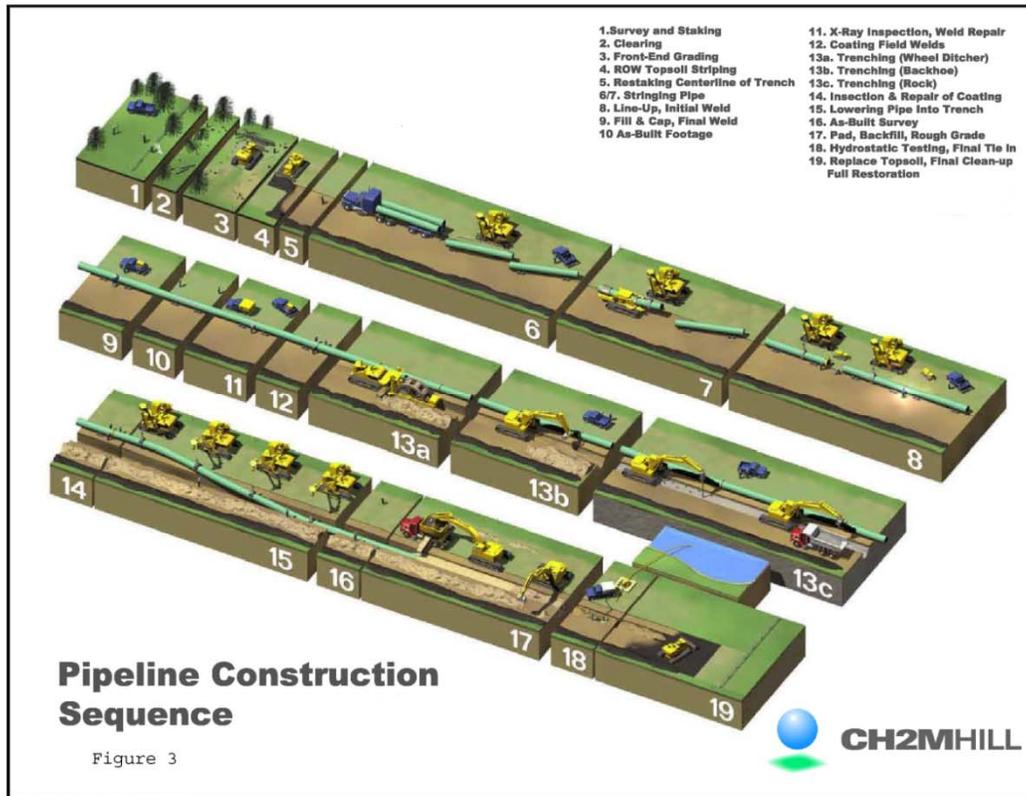
### 3.2 Construction Equipment and Construction Sequence

Typical construction equipment for this type of project includes pickup trucks, loaders, various sized dozers, shovels and backhoes, side booms, generators, and bending machines (Table 3.2-1). Most of the equipment to be used during right-of-way reclamation will consist of dozers, blades, and trackhoes. Typical schematics for construction, including wetland and stream crossings, are included in Appendix F. Figure 3 demonstrates the typical pipeline construction sequence.

Table 3.2-1  
EQUIPMENT LIST

Equipment List	Estimated Number Required
Dozer with Ripper	1
Dozer with Winch and Angle Blade	4
Tow Tractor	1
Sideboom	8
Back hoe (3/4-yard)	4
Ditching Machine	1
Padding Machine	1
Motor Grader	1
Motor Crane	1
Bending Machine	1
Boring Machine	1
Air Compressor	2
Pipe Coating Trucks	1
Pumps	3
Flatbed Truck w/ Winch	4
Pickup	60
Stringing Truck	6
Crew Truck	11
Skid Truck	1
Dump Truck	2
Tractor with Lowboy	2
Mechanic's Truck	2
Fuel/Grease Truck	1
Water Truck with Sprinkler	1
Office Trailer	3
Warehouse Trailer	1
Welding Machines (200 amp, tractor-mounted)	1
Welder's Trucks (1 ton )	17
Tractor (reclamation)	2-4
Disc ploughs (reclamation)	2-4
Chisel ploughs (reclamation)	2-4
Reseeding equipment (reclamation)	2-4

FIGURE 3 PIPELINE SEQUENCE



If construction occurred during a storm event, vehicle traffic and equipment would be restricted to prevent rutting in excess of approximately 4 inches deep, except in areas where topsoil has been stripped and saved for reclamation.

### 3.3 Clearing, Grading, and Topsoiling

There will be several right-of-way configurations depending on proximity to other lines and available working space. The nominal right-of-way width would be 50' permanent and 50' temporary. Schematics for these different configurations are included in Appendix G.

During clearing, tree limbs and brush will be windrowed or piled for use during reclamation. Stumps will be left in place except over the trench line or removed as necessary to create a safe and level workspace. The Environmental Inspector (EI) will coordinate with the appropriate agency or landowner to locate areas for stump disposal. Trees will be felled inside the approved right-of-way boundaries. Greencore will acquire the appropriate timber sale agreement/permits from BLM prior to cutting or removing trees. Grading will not occur over historic trails, drainages, wetlands or ATWS.

Construction activity and ground disturbance will be limited to approved, staked areas. Whenever possible, grading will be limited to help preserve vegetation and reduce impact which will limit erosion and improve reclamation success. In mountain or hilly terrain where slopes run across the right-of-way, a level work area must be cut out of the hillside for safe construction. These areas should be reclaimed to the natural contours as much as possible.

Where grading is needed to create a safe, level, working area, approximately 4" – 6" of topsoil will be stripped from the full construction right-of-way prior to cut fill or grading operations. There may be some areas where the contractor would not need to grade and topsoil. For example, level fields or pastures may not need to be graded for construction. In these cases, the contractor can avoid topsoiling, except over the trench line, which would preserve the root system and increase reclamation success. Available topsoil will vary across the project. No matter the amount of topsoil removed, topsoil will be stockpiled separately from subsoil and will not be used to pad the trench or construct trench breakers. Topsoil will be used as the final layer of soil during the reclamation process.

In wetlands, only the topsoil on the trench line would be removed (dug) and segregated before digging and removing the subsoil (double-ditching method). The wetland boundaries will be flagged prior to construction. Topsoil removal in wetlands can range between 12-18 inches. In floodplains, the topsoil depth can range from 6-12 inches. Dry drainages or washes that cross the right-of-way will not be blocked with topsoil piles. Topsoil will be placed on the banks of the drainage so natural flows are not impeded and topsoil is not washed away.

### 3.4 Survey Monuments

All survey monuments found within the right-of-way will be protected. Survey monuments include, but are not limited to, General Land Office and BLM Cadastral Survey Corners, reference corners, witness points, U.S. Coastal and Geodetic benchmarks and triangulation stations, military control monuments, and recognizable civil (both public and private) survey monuments. If any survey monuments found within the right-of-way or temporary use areas are disturbed or obliterated during the course of the project, the Contractor will immediately report it to Greencore. Greencore will report the incident in writing to the Authorized Officer and the respective installing authority, if known.

### 3.5 Trenching

Construction methods used to excavate a trench will vary depending on soils, rock, terrain, and related factors. Construction schematics in Appendix F provide more details for the situations and techniques discussed below.

Excavated subsoil will be stored separately from windrowed topsoil piles (Section 3.3). Like topsoil, subsoil will not be stored in flowing water bodies, dry drainages or washes that cross the right-of-way. Gaps will be left periodically in the subsoil piles to avoid ponding and excess diversion of natural runoff during storm events, where necessary.

Measures will be taken to ensure that access is provided for private landowners or tenants to move vehicles, equipment, and livestock across the ditch where necessary. Adequate precautions will also be taken to ensure that livestock are not prevented from reaching water sources because of the open ditch. Measures to be taken include contacting livestock operators and providing adequate crossing locations. The EI would determine the need and placement of soft plugs for livestock and wildlife travel. If installed, the soft plugs would be of minimal compaction and installed with ramps.

The depth and width of the ditch will vary depending upon pipe diameter and soil types. A typical ditch will be excavated approximately 3-4 feet wide at the bottom and the sides will be sloped to Occupational Safety and Health Administration (OSHA) specifications (up to approximately 8 feet wide).

The minimum cover will vary depending on soil type and existing conditions. Table 3.5-1 stipulates the different cover requirements. These stipulations may change depending on the existence of other utilities.

Table 3.5-1  
COVER REQUIREMENTS

Minimum Cover	No Rock	Rock Trench
Standard Trench	36"	30"
*Agricultural Land	60"	60"
Water Crossings (> 100' wide)	60"	60"
Drainage or Ephemeral waterways	60"	60"
Road Crossings	60"	60"
Drainage Ditch at Public Road Crossing	48"	48"

\*Note: Double ditching required for agricultural areas.

Occasionally, the ditch could be excavated to depths greater than the minimum values specified to achieve specific cover. Greater depths of cover could be required at unpaved road crossings, foreign pipeline crossings, water bodies, and other obstructions (Appendix F). Machine excavation will not be performed closer than 5 feet from any existing pipeline encountered in the right-of-way unless authorized by the pipeline owners/operators. Existing pipeline locations will be marked in the field and 48-hour prior notification given to the operator of the underground utility. Where the pipeline traverses locations for which there are definite plans to level the land for irrigation or other purposes, the pipe will be buried at a depth to accommodate these plans.

### 3.6 Blasting

Where rock is encountered, tractor-mounted mechanical rippers or rock trenching equipment may be used to facilitate excavation. In areas where rippers or trenchers are not practical or sufficient, blasting may be employed. Blasting will be used only where necessary and conducted by a fully licensed operator. All necessary authorizations will be obtained and all safety precautions observed. All blasting work will be conducted in compliance with federal, state, and local laws, rules, and regulations. The Contractor is responsible for obtaining permits to store blasting materials.

### 3.7 Road and Railroad Crossings

Installation of road crossings shall be achieved by boring or open cut techniques depending upon local regulations, traffic, construction equipment availability and cost. Crossings at two track roads and gravel roads will typically be open cut. All County roads and state highways will be crossed via slick bore or small directional drill bore method. A means for mechanical protection for barrow ditches of County roads. Set-on concrete pipe weights will be used to cover the pipeline in these ditches. Road crossings shall not be cased.

All road and railroad crossings shall be designed in accordance with ASME B31.4 and API RP 1102. Table 3.7-1 below shows the anticipated major road and railroad crossings and crossing techniques. Road and railroad crossings have been identified on the Alignment Sheets (included separately).

Table 3.7-1  
MAJOR ROAD AND RAILROAD CROSSINGS

Name	Location (MP)	Type of Surface	Width	Crossing Method
Burlington Northern Railroad	19.1	Tracks	240	Bore
Highway 20/26	33.1	Asphalt	576	Bore
Highway 20/26	45.4	Asphalt	360	Bore
Burlington Northern Railroad	46.0	Tracks	300	Bore
I-25 and Service Road	86.9	Asphalt	910	Bore
Highway 192 /Sussex Rd	107.0	Asphalt	360	Bore
I-90	149.8	Asphalt	960	Bore
Burlington Northern Railroad	166.0	Tracks	1020	Bore
Highway 14/16	178.9	Asphalt	240	Bore
Highway 59	201.2	Asphalt	300	Bore

### 3.8 Water Body Crossings

All water crossings and wetlands are identified on the Alignment Sheets (included separately) and totals by county are included in Table 3.8-1. A Nationwide Permit will be obtained from the Army Corps of Engineers for crossing jurisdictional waters. Four crossings methods are discussed below and the permit stipulations are included in Appendix A. Within jurisdictional boundaries, right-of-way clearing would be limited to 75 feet. BMP’s will be used to protect water resources (Appendix E). ATWS have been designated in these areas to provide extra work space (Appendix C).

Construction equipment working in wetlands and waterbodies will be limited to that which is essential for right-of-way clearing, trench excavation, pipe fabrication and installation, and backfilling. In areas where there is no reasonable access to the right-of-way except through wetlands, non-essential equipment will be allowed to travel through wetlands only if the ground is firm enough or construction matting has been installed for a driving lane. All wetland and stream boundaries will be flagged or staked prior to clearing and grading. An EI will be present during the construction phase to ensure all BMPs are installed correctly. The EI and contractor should coordinate closely during these procedures to ensure permit compliance.

Water and wetland crossings should be reclaimed as soon as possible to protect water quality. Any material that has accumulated in an intermittent/ephemeral stream will be removed and all drainages will be returned as close as possible to pre-construction form. Unless otherwise required by permit, wetlands will not be reseeded. Seed will come from the wetland topsoil that has been segregated for reclamation. However, stream banks that contain upland vegetation shall be reseeded. Certified weed free mulch can be applied to wetlands that are temporarily dry. Stream banks and slopes leading directly to streams and wetlands will be

reseeded and natural ground matting will be installed to limit erosion and promote seed germination. Please refer to the Reclamation Plan in Appendix J for detailed procedures.

Table 3.8-1  
CROSSING TOTALS BY COUNTY

	Ephemeral	Intermittent	Open Water	Perennial	Grand Total
<b>Wyoming</b>					
Fremont	5	1	0	0	6
Natrona	83	22	0	2	107
Johnson	26	4	2	8	40
Campbell	41	20	1	8	70
Subtotal	155	47	3	18	223
<b>Montana</b>					
Powder River	0	0	0	2	2
Subtotal	0	0	0	2	2
<b>Total</b>	<b>155</b>	<b>47</b>	<b>3</b>	<b>20</b>	<b>225</b>

### 3.8.1 HDD

Greencore will contract with firms that specialize in horizontal directional drilling (HDD). The selection and supervision of this drilling contractor will be the responsibility of Greencore.

The advantage of horizontal directional drilling is minimal surface impact, limited to the established entry (25 ft X 50 ft) and exit sites (15 ft X 20 ft) for drilling equipment which can be located outside the environmentally sensitive area. The entry and exit sites vary in size depending on the diameter of the drill and associated equipment required (see HDD Typical Crossing). No surface ground disturbance will occur between the entry and exit drill path locations. The typical minimum depth of the drill will be 25 ft or 6 ft below the stream bed whichever provides the highest margin of safety. There is always a potential for a frac-out situation. Procedures for controlling this situation are described in the Frac-out Contingency Plan in (Appendix H).

This method of crossing will eliminate any future ground surface disturbance associated with an operating company's required annual maintenance for bank stabilization and depth of cover control typically for an open ditch crossing. In some cases, equipment may still need to cross these areas to continue construction flow. In these cases, temporary bridges would be constructed and wetlands would be matted (Appendix F). Table 3.8-2 list all of the proposed HDD crossings. This method may be used at other locations if deemed necessary. Estimated water consumption at each crossing is described in the Frac-out Contingency Plan (Appendix H).

Table 3.8-2  
HDD CROSSINGS: WATERBODIES, WETLANDS, RAILROADS, AND ROAD

Name	Milepost (MP)	Footage
Lost Cabin Rd/CR 158	0.20	120 FT
Diagonal HDD Crossing of Foreign Line, Arminto Road/CR 104 and Foreign Line	25.2	780 FT
HWY 20/26	33.10	550 FT
I-25 Service Rd, I-25 North & South Bound Lanes	86.90	785 FT
I-90	149.8	1732 FT
Wild Horse Creek-Extended Wetland	160.0	1400 FT
BNSF Railroad	165.9	450 FT
Horse Creek	199.5	1300 FT
Little Powder River	203.1	100 FT
Donner Reservoir	218.3	300 FT

### 3.8.2 Flume and Trench

The flume and trench method will be used in most situations where there is flowing water. Depending on the size of the drainage, the contractor will determine the proper size and number of flumes needed to handle expected volumes of water. The flumes would be placed in the drainage and sand bags would be placed around the inlet to direct flow into the pipes. The flumes could also utilize wing-walls to direct water to the inlet. Sandbags should also be placed around the outlet of the flumes to reduce backflow into the working area. During the placement of the flumes, the channel and banks should be disturbed as little as possible.

The pipeline trench would be dug beneath the flumes. Spoils from the trench would be placed in an upland area that is protected with BMPs to prevent discharge back into the channel. When backfilling the trench, no foreign material should be added to the stream channel and the channel should be recontoured as close as possible to original condition. An EI should be present during all water and wetland crossings and should coordinate closely with the contractor to ensure permit compliance. These areas should be reclaimed as soon as possible to protect water quality. A detailed schematic of this method is included in Appendix F

### 3.8.3 Open Cut

The open cut method will be used while crossing dry arroyos, swales, and minor drainages that are not carrying water. Spoils from the trench would be placed in an upland area. The channel should not be blocked in case a storm event results in flowing water. When backfilling the trench, no foreign material should be added to the channel and the channel should be recontoured as close as possible to original condition. These areas should be reclaimed as soon as possible to protect water quality. A detailed schematic of this method is included in Appendix F

### 3.8.4 Wetlands

The wetland boundaries will be flagged or staked prior to construction. Clearing would be kept to the minimum amount needed for safe pipeline construction. In wetlands, only the topsoil on the trench line would be removed (dug) and segregated before digging and removing the subsoil (double-ditching method). Topsoil removal in wetlands can range between 12-18 inches. BMPs will be installed along the construction perimeter to retain spoils on site

Pipeline construction operations within wetland boundaries will be reduced to a travel lane, ditchline and spoil storage area. Mats will be installed along the travel lane in saturated wetlands to support equipment and prevent soil compaction. Shrubs and trees interfering with travel lane installation will be cut at grade level to leave root systems intact. Tracked excavators will operate off “ditching mats” to excavate the trench across the wetland. Foreign material (upland soil, rock, tree stumps, etc.) will not be imported into the wetland to stabilize the working area.

If the trench fills with water and interferes with installation, the trench could be dewatered. Trench water would be disposed of in accordance with the Wyoming Department of Environmental Quality (WDEQ) or Montana Department of Environmental Quality (MDEQ) regulations (Appendix A). Any trench dewatering would be coordinated with the EI to ensure permit compliance.

After the pipe is installed, the trench line would be backfilled and the topsoil replaced on top. No crown would be left over the trench. These crossings should be reclaimed as soon as possible to protect water quality. A detailed schematic of this method is included in Appendix F.

## 3.9 Areas with Special Conditions

The project area has been surveyed and studied for potential impacts to environmental and cultural resources. The results of the study and mitigation measures are included in the Environmental Assessment (EA) that was prepared for the BLM, Casper Field Office. The pipeline has been routed to avoid impacts to special environmental and cultural resources, as much as possible. However, some areas are not avoidable entirely. To construct through these areas, timing restrictions and construction stipulations have been established to help protect these resources. Areas with special conditions have been identified on the Alignment Sheets (included separately) and environmental restraints are presented in Table 2-3 of the EA. Permit stipulations are included in Appendix A. The project does not cross any Wilderness Study Areas (WSAs) or Areas of Critical Environmental concern (ACECs). Other areas that require special considerations are described below.

### 3.9.1 Close Proximity to Collocated Facilities

The Greencore Pipeline is collocated with existing utilities for approximately 90 percent of the pipeline route. In certain areas Greencore is required to be within 20 feet of the utility. When this situation occurs, Greencore would take added precautions to support pipeline construction. Adjacent utilities would be staked the entire length and their representative would be notified prior to the initiation of construction. Construction activity would be limited over the adjacent utility.

### 3.9.2 Surface Slumping

The Greencore Pipeline right-of-way will be reviewed for surface slumping in the detailed engineering design phase of the project. If the problem is shallow surface slumping, no action is planned if outside the construction right-of-way as it would pose no threat to Greencore's proposed project. If the problem is more severe than shallow surface slumping, a design would be developed to address future surface slumping.

### 3.9.3 Bank Erosion

Water body crossings will be reviewed during the detailed design phase to insure all potential bank erosion issues are addressed. Crossing approaches will be tapered to gradual slopes and water bars installed, if required, to eliminate small abrupt changes in elevation. The new gradual slope would taper to match the undisturbed terrain. BMPs would be initiated as described in the Stormwater Management Plan to reduce erosion and limit sediment transport (Appendix E). Additional reclamation measures are described in the Reclamation Plan (Appendix J).

### 3.9.4 Highly Eroded Areas

The pipeline route crosses a variety of terrain with different existing erosion potentials. In highly erodible areas, the EI should designate or modify BMPs for these areas to increase stability. This may include additional BMPs, seeding and mulching. Different reclamation measures are described in the Reclamation Plan (Appendix J).

### 3.9.5 Active Faults

Active faults along the pipeline right-of-way would be studied during the detailed engineering phase of the project. If active faults exist, a design would be developed that would mitigate the effects from fault movement.

### 3.9.6 Areas of Historic or Cultural Significance

The Historic Texas Trail and Historic Bozeman Trail would also be crossed by this project and will be identified on the alignment sheets. Historic trails would not be graded. Trail crossings would be trenched and an archaeological monitor would be present during construction activities. Identified cultural sites may also require construction monitoring (Appendix A).

### 3.9.5 Paleontological Resources

Areas with potential paleontological resources may require construction monitoring. Refer to stipulations included in Appendix A.

## 3.10 Pipe Installation

Pipe installation will include stringing, bending for horizontal or vertical angles in the alignment, welding the pipe segments together, inspection, coating the joint areas to prevent corrosion, and then lowering-in and padding as described in greater detail below.

### 3.10.1 Stringing

Line pipe will be shipped directly from the manufacturer by rail to off-loading areas on private land and then hauled to staging areas where stringing trucks collect and deliver the pipeline to the right-of-way. Each individual joint of pipe will be unloaded with a side-boom or trackhoe

and placed (strung) parallel to the ditch in a continuous line. Sufficient pipe for road or waterbody crossings will be stockpiled at temporary use areas near the crossings.

Stringing operations will be coordinated with trenching and installation activities in order to properly manage the construction time at a particular tract of land. Gaps will be left at access points across the ditch to allow crossing of the right-of-way.

### **3.10.2 Bending**

After joints of pipe are strung along the ditch but before the joints are welded or pressed together, individual joints of pipe will be bent to accommodate horizontal and vertical changes in direction. Field bends will be made utilizing a hydraulically operated bending machine. Where the deflection of a bend exceeds the allowable limits for a field-bent pipe, factory (induction) bends will be installed.

### **3.10.3 Welding**

After pipe joints are bent, the pipe joints will be lined up end-to-end and clamped into position. The pipeline joints will be welded together in conformance with 49 CFR Part 195 Subpart D (Construction).

### **3.10.4 Welding Inspection**

Welds will be visually inspected by an American Welding Society (AWS) certified inspector who is part of the construction management staff. Non-destructive radiographic inspection methods will be conducted in accordance with DOT requirements. Percentage of welds radiographically inspected will be according to 49 CFR Chapter 1, (192.243 Nondestructive testing). A specialized contractor, AWS certified to perform radiographic inspection, will be employed to perform this work. Any defects will be repaired or cut out as required under the specified regulations and standards. Documents that verify the integrity of the pipeline will be kept on file by Grencore for inspection by the Office of Pipeline Safety, US Department of Transportation.

### **3.10.5 Coating**

To prevent corrosion, the pipe will be externally coated with fusion bonded epoxy coating prior to delivery. After welding, field joints will be coated with a tape wrap, shrinkable sleeve wrap, or field-applied fusion bond epoxy. This step is not necessary for pressure fitted pipe. Before the pipe is lowered into the ditch, the pipeline coating will be visually inspected and tested with an electronic detector, and any faults or scratches will be repaired.

### **3.10.6 Cathodic Protection**

Cathodic protection test sites shall be installed at accessible locations, at intervals of 2 miles or less, to measure the pipe to soil potential for the establishment and maintenance of an effective cathodic protection system. Cathodic protection schematic is included in Appendix F.

### **3.10.7 Lowering-in and Padding**

Before the pipe section is lowered into the ditch, inspection will be conducted to verify that the pipe is properly fitted and installed into the ditch, minimum cover is provided, and the trench bottom is free of rocks and other debris that could damage the external pipe coating. Side-boom tractors will be used to simultaneously lift the pipe section, position it over the ditch, and lower it in place. Specialized padding machines may be used to sift soil fines from the

excavated subsoils to provide rock-free pipeline padding and bedding. Sandbags may be used to pad the bottom of the ditch instead of, or in combination with, padding with soil fines. In rocky areas, padding material or a rock shield will be used to protect the pipe. No topsoil will be used to pad the pipe.

### 3.11 Backfilling

Backfilling will begin after a section of pipe has been successfully placed in the ditch. Trench breakers would then be installed, as needed. Prior to backfilling the trench, the equipment operator will check the trench for wildlife and/or livestock and will be sure any wildlife or livestock found in the trench is removed before backfilling begins. Backfill will be conducted using a bulldozer, rotary auger backfiller, padding machine, or other suitable equipment. Backfilling the trench will generally use the subsoil previously excavated from the trench, except in rocky areas where imported select fill material may be needed.

Backfill will be graded and compacted, where necessary for ground stability, by tamping or walking with a wheeled or tracked vehicle. Compaction will be performed to the extent that there are no voids in the trench. Backfill of trenches will not be performed where the soil is frozen to the extent that large consolidated masses are formed that will not break down. In irrigated agricultural areas, the backfill will be replaced at the same compaction density as the adjacent undisturbed soil. Backfill of trench at road crossings will be in accordance with the crossing permit. Any excavated materials or materials unfit for backfill will either be utilized elsewhere or properly disposed of in conformance with applicable laws or regulations. The Contractor will place a mound over the trench approximately 0.5-feet in height to account for subsidence (except for at road crossings where compaction will be adequate to keep roadway flat). Written authorization from the private landowner is required to eliminate the mound.

### 3.12 Pressure Testing and Water Use

Each pipeline will be tested in compliance with DOT regulations (49 CFR Parts 195). Prior to filling the pipeline for a pneumatic or hydrostatic test, each section of the pipeline will be cleaned by passing reinforced poly pigs through the interior of the line. The entire pipeline would be hydrostatically tested to at least 125 percent of maximum operating pressure. The test water would be obtained from a permitted source through a Water Use Agreement with the State Engineer and/or as negotiated with water rights owners or commercial wells. A detailed description of pressure testing procedures is included in Appendix I (Hydrotest Plan).

Consumptive water use would be required for directional drilling and dust abatement. Water would be obtained from a permitted source for mixing with bentonite during directional drilling at the HDD crossings (Table 3.8-2). Details on water use for HDD activities are described in the Frac-out Contingency Plan (Appendix H). Additional water would be obtained from permitted sources (irrigation companies or municipal sources) for dust abatement. The dust abatement contractor would be responsible for obtaining any necessary permits.

### 3.13 Cleanup and Reclamation

All construction debris and miscellaneous items will be removed from the construction site and disposed of properly by the contractor. No trash will be buried. All fences and roads will be replaced/rebuilt as negotiated with the landowner. Good housekeeping measures are also described in the Stormwater Pollution prevention Plan (Appendix E).

Disturbed portions of the construction workspace (including the right-of-way, travel lane, and ATWS) will be returned to pre-construction grades and contours as close as possible. Original drainage patterns will be reestablished and contours will be returned as close as possible to original condition. Topsoil will then be replaced over the right-of-way from the approximate area in which it was stripped. Reseeding and mulching will usually be completed as soon as possible, but may be dependent upon permit stipulations, weather conditions, and guidance from the agencies and fee-landowners. All disturbed areas will be seeded and mulched. Any temporary BMPs will be removed and final BMPs (water-bars, berms, slash material) will be installed as described in the Stormwater Pollution Prevention Plan (Appendix E). Details on reclamation procedures are also described in the Reclamation Plan (Appendix J).

Reclamation of lands disturbed by construction would be in accordance with applicable regulations and permit requirements. Species and seeding rates effective in controlling erosion would be used to revegetate the disturbed areas. Species would be selected after consideration of climatic adaptation, species adaptation to soil texture, possible adverse conditions such as drought or saline soils, palatability to wildlife, and shrub cover for wildlife. Seed would be planted by drilling or broadcasting. The use of a rangeland drill would be the preferred seeding method. Areas not accessible to a rangeland drill would be broadcast-seeded. Broadcast-seeding rates would be double those of drill application. Seeding would be performed during the appropriate period when the seeds would receive the benefit of winter or spring moisture.

BMPs for final reclamation are described in the Stormwater Management Plan and will be utilized to control erosion and promote seed growth (Appendix E). These BMPs may include, but are not limited to, water bars, biodegradable wattles and ground matting, mulch, and berms. Logs, limbs, shrubs, and excess rock may be randomly distributed across the right-of-way to block illegal use of motorized vehicles, help stabilize the disturbed ground, and present a more natural view. Details are described in the Reclamation Plan (Appendix I).

### 3.14 Livestock Barrier and Other Livestock Issues

Fences crossing the right-of-way will be braced, cut, and temporarily fitted with gates to permit construction traffic passage. During construction, the opening will be controlled as necessary (including use of cattle guards) to prevent the escape of livestock. Existing fences will be replaced and braces left in place upon completion of construction activities. During construction, the Contractor will take care not to obstruct or damage gates or cattle guards. Those damaged or made inoperable will be repaired to BLM and/or private landowner satisfaction. The Contractor will repair all damaged livestock facilities (corrals, fences, water sources, etc.) to BLM or private landowner's specifications.

### 3.15 Health and Safety

Greencore's Construction Inspectors will ensure that the Contractor implements the following health and safety measures:

- The Contractor will cease pipeline construction activities, with the exception of pneumatic or hydrostatic testing operations, by sunset. Nighttime construction (with the exception of pneumatic or hydrostatic testing) will not be permitted unless approved by Greencore.
- No burning of brush or debris, and no campfires, lunch fires, or warming fires will be allowed on the right-of-way.

- Water or chemical soil binders would be used to control dust along the right-of-way and access roads during construction in accordance with federal, state, and local requirements. Any dust control water would be used only at the landowner's request. Any dust control water would be obtained by permits or purchased through contracts with owners with valid, existing water rights. Dust abatement may be employed near the State Highway 26 corridor if dusty conditions impacts visibility.
- The Contractor will ensure that equipment is properly maintained to reduce emissions and noise. Vehicles and equipment will be operated at safe speeds at all times on the right-of-way.
- Camping is prohibited on the right-of-way.

### 3.16 Waste Disposal

Greencore Construction Inspectors will ensure that the Contractor implements the following waste disposal measures:

- No littering will be allowed on the right-of-way. Construction and operations sites will be maintained in a sanitary condition at all times and waste materials at these sites will be disposed of promptly at an appropriate waste disposal site. Waste is defined as all discarded matter including, but not limited to: human waste, discarded food, trash, garbage, refuse, oil drums, petroleum products, blasting boxes, and equipment.
- The Contractor will dispose of excess or unsuitable materials at commercial disposal sites, commercial recycling centers, and disposal sites approved by Greencore.
- The Contractor will comply with all hazardous waste disposal requirements.
- Human wastes, temporarily located within self-contained facilities (portable toilets), will be removed from the right-of-way and disposed of in accordance with applicable laws and regulations. These facilities will not be placed within 100' of a drainage or water body.