

## 2.0 Project Overview

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Greencore will construct and operate approximately 231.1 miles of 20 inch-diameter CO<sub>2</sub> pipeline from the Conoco Philips Lost Cabin Gas Plant in Fremont County, Wyoming to a point in the Belle Creek Field oil field in Powder River County, Montana. The proposed pipeline would transport CO<sub>2</sub> as a dense-phase fluid for a proposed Enhanced Oil Recovery (EOR) project at the Belle Creek Field and, potentially to other delivery points when markets develop.

The pipeline route follows existing pipeline corridors wherever possible to minimize the surface impact, and traverses BLM approved utility corridors to support accelerating the BLM NEPA permitting process.

The pipeline will be designed to flow initial start up volumes of 50 million standard cubic feet per day (MMSCFD) from Lost Cabin. Future CO<sub>2</sub> supplies up to 775 MMSCFD will require additional facilities to be installed at the Natrona Hub and the potential addition of a Mid-point pump station.

The pipeline will be federally regulated by the Department of Transportation under 49 Code of Federal Regulations Part 195: Transportation of Hazardous Liquid by Pipeline. It will be designed in accordance with the applicable requirements of DOT 195 and will incorporate pig launching and receiving facilities, mainline block valves, meter station, cathodic protection, and supervisory control field equipment. Denbury Resources Inc. (DRI) will provide the existing SCADA Control Center inclusive of leak detection monitoring system. The pipeline is to operate below 2220 psig, Maximum Operating Pressure (MOP). The minimum operating pressure to ensure the CO<sub>2</sub> remains in the dense phase (liquid) is 1,200 psig.

### 2.1 Project Location

Greencore proposes to construct from a point in Township 38 North (T38N), Range 90 West (R90W), Section 11 at the Lost Cabin Gas Plant to a point in the Belle Creek Field, T8S, R54E, Section 27 (Figure 1) and Alignment Sheets (included separately).

### 2.2 Project Facilities and Associated Appurtenances

There would be a launcher and meter at the receipt point and a receiver and meter at the delivery point. Two temporary pipe yards (approximately 40 acres) would be required and will be shown on separate maps. Scraper traps, block valves, and takeoff valves are listed in Table 2.2-1. Facility schematics are included in Appendix B.

Table 2.2-1  
VALVE OPERATORS / ACTUATORS

Type	MP	Location
Lost Cabin – meter run and Block Valve	0.0	T38N, R90W
Block Valve	19.7	T37N, R87W
Block Valve	32.8	T36N, R85W
Natrona Hub – Scraper Receipt Trap/Launcher Trap, Tee Block	39.5	T35N, R84W

Type	MP	Location
Valve		
Block Valve	45.1	T35N, R84W
Block Valve	64.6	T37N, R81W
Block Valve	83.0	T40N,R80W
Future Interconnect – Scraper Receipt Trap/Launcher Trap, Tee and Block Valve	87.2	T41N,R79W
Block Valve	100.5	T42N,R78W
Block Valve	117.6	T45N,R78W
Block Valve	138.5	T47N,R76W
Future Mid Point Pump Station – Block Valve, Scraper Receipt Trap/Launcher Trap, Tee Block Valve	144.0	T48N, R76W
Block Valve	148.6	T49N,R75W
Block Valve	149.3	T49N,R75W
Block Valve	158.5	T50N,R74W
Block Valve	178.4	T52N,R73W
Block Valve	178.9	T52N,R73W
Pigging station – Block Valve, Scraper Receipt Trap/Launcher Trap, Tee	200.4	T55N,R71W
Block Valve	203.5	T57N,R70W
Block Valve	217.9	T57N,R70W, SEC12
Belle Creek Unit C Delivery/Terminus Point – Block valve, Scraper Receipt Trap, Tee and meter run	231.1	T8S,R54E

At approximate MPs 39.5, 144.0, and 231.1, Greencore would purchase land for future pump stations. At these locations, Greencore would install branch tees at mainline block valves to facilitate the future tie-in of these stations. These pump stations would be constructed when product volumes exceed 150 MMSCFD and would include valve manifolds, pumps, pigging equipment, power distribution, and control buildings. Each station would be within an approximate 3- to 10-acre fenced area.

Scraper traps, which include block valves, would be installed at the following locations: one at the Lost Cabin (MP 0.0), two at the future Natrona Hub (MP 39.5), two at the future Interconnect Station (MP 87.2), two at the future Mid Point Pump Station (MP 144.0), two at MP 200.4, and one at Belle Creek (MP 231.1). Block valves would be installed at approximately 15- to 20-mile intervals along the entire length of the pipeline with exception of additional block valves installed at major interstate and state highways for emergency response. The additional tees and valves would be installed at potential future delivery/receipt locations. Each scraper trap and block valve area would be graveled and enclosed using a chain link fence. Access would be year-round, depending upon winter weather.

The Belle Creek Delivery Facility would be constructed on an approximately 5-acre site located at the terminus of the pipeline. The site would consist of a meter building (35 feet wide x 75 feet long x 24 feet high), receiving scraper trap, flow control valve, communications and satellite dish, CO<sub>2</sub> vent, and an electric service pole with a pad-mounted transformer. A 72-inch-high, brown, plastic-coated, chain-link security fence would be installed around the facility.

## 2.3 Land Requirements

Nominal construction area includes a 50 foot wide ATWS strip parallel and adjacent to the 50 foot permanent right-of-way. The pipeline impacts are described in detail in Table 2.3-1. Landownership is included in Table 2.3-2. ATWS would be needed at most road crossings, water crossings, arroyos, turnaround places, and areas with difficult terrain. These ATWS will vary in dimension depending on the need and terrain. All ATWS would be reclaimed and are identified on the alignment sheets and are listed in Appendix C.

Two pipe yard work areas would be used to store pipe prior to transport to the right-of-way. The pipe storage yards would be located near Casper and Gillette, Wyoming. Pipe would be transferred to the yard via the Burlington Northern Railroad or truck. After pipe unloading from rail cars, the pipe would be transported to the ROW by truck. The estimated number of trucks per day for pipe transport would be 5 to 6 during a 2-month period.

Table 2.3-1  
ACRES DISTURBED, REMOVED, AND RECLAIMED

Component/Facility	Acres Disturbed	Acres Removed	Acres Reclaimed <sup>1</sup>
CO <sub>2</sub> Pipeline, 231.1 miles <sup>2</sup>	2,801.2	0.0	2,801.2
Lost Cabin (MP 0.0) – 2.9 acres Future Natrona Hub (MP 39.5) – 10.0 acres Future Interconnect Station (MP 87.2) – 0.4 acre Future Mid Point Pump Station (MP 144.0) – 5.0 acres Launcher/Receiver Facility (MP 200.4) – 0.4 acre Belle Creek Pump Station and Delivery Point (MP 231.1) – 5.0 acres	23.7	23.7	0.0
Block Valves and Take-off Valves, 20 at 0.2 acre <sup>3</sup>	0.0	4.0	0.0
Measurement Facilities with Scraper Traps, 2 at 0.3 acre; Interconnect Station at 0.8 acre	1.4	1.4	0.0
Casper Pipeyard	21.5	0.0	0.0
Upton Pipeyard <sup>4</sup>	14.9	0.0	0.0
Additional Temporary Workspace	377.1	0.0	377.1
Overall Total <sup>4</sup>	3,224.9	29.1	3,178.3

Table 2.3-2  
APPROXIMATE LAND OWNERSHIP

Land Status	Pipe Length (Ft.)	Pipe Length (Mi.)	Permanent Easement (acres)	Workspace (acres)	Additional Temp. Work Space (acres)
Wyoming	70775.5	13.4	48.7	113.7	26.1
Montana	7996.4	1.5	5.5	12.9	1.5
Private	796916	150.9	914.7	914.7	236.6
BLM	347268	65.8	398.6	398.6	124.2
<b>Totals</b>	<b>1222955.9</b>	<b>231.6</b>	<b>1367.5</b>	<b>1439.9</b>	<b>388.4</b>

## 2.4 Access Roads

Greencore proposes to use a combination of existing state, county, and BLM roads to gain access to the right-of-way during construction. Hauling equipment and materials will be done in accordance with state and local requirements. Modifications, including grading, may be required on some of these roads. Following construction completion, roadways will be returned to as good or better condition than prior to construction. Temporary access along the right-of-way will be reclaimed at the end of construction. Operations and maintenance activities could require year-round access post construction. The access roads are identified in Appendix D.

## 2.5 Pipeline Markers

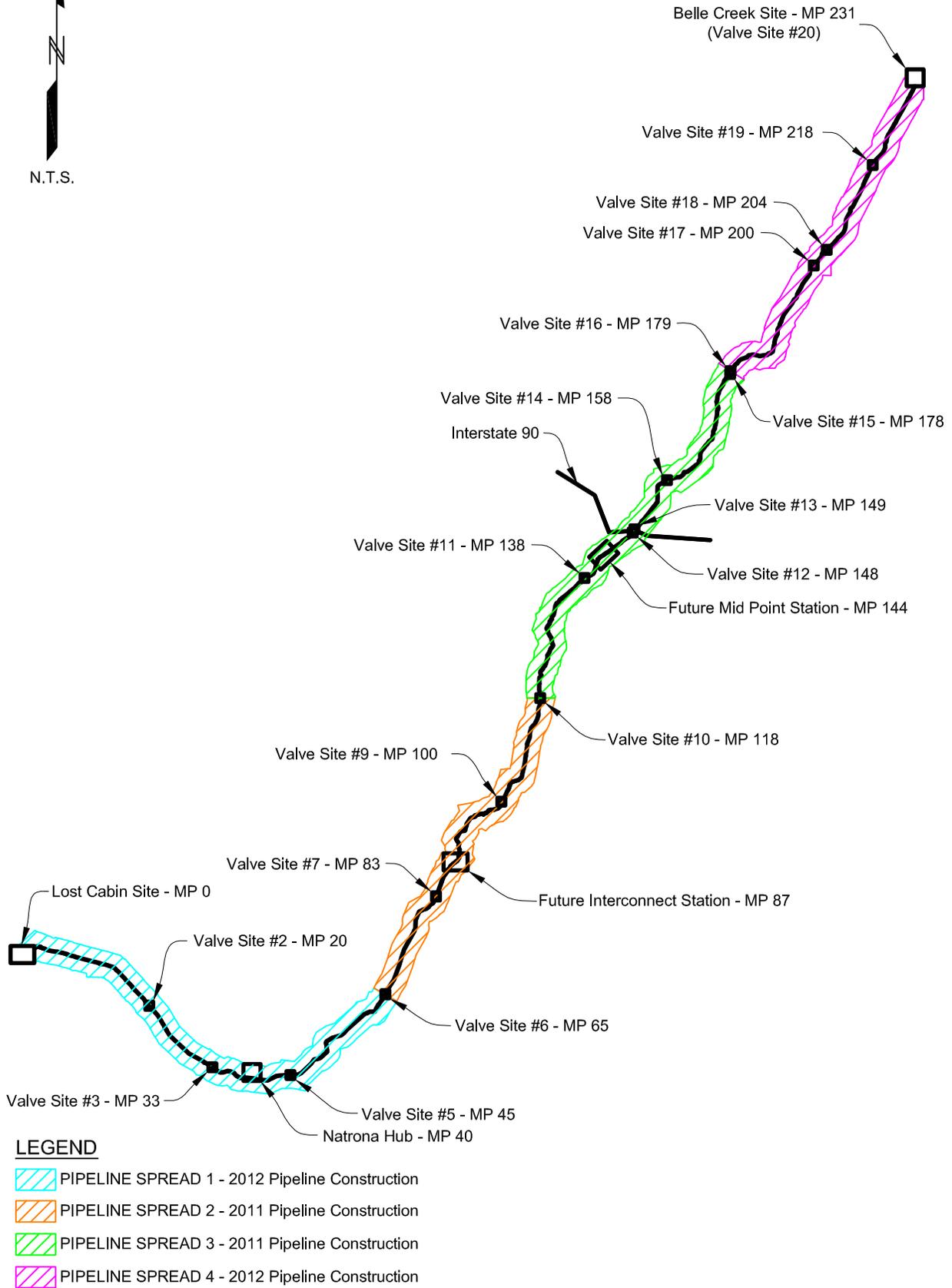
The line would be identified by pipeline markers placed at each public road crossing, railroad crossing and in accordance with CFR 195.410.

## 2.6 Construction Schedule and Transportation

Construction of the Project would be scheduled to begin upon receipt of BLM's Notice to Proceed (NTP). Construction would be completed over a two year period in spreads. Construction timeframe of the second and third spreads is anticipated to extend from August 1, 2011 through December 31, 2011. Construction timeframe of the first and fourth spreads is anticipated to extend from August 1, 2012 through December 31, 2012. Construction is anticipated to take approximately 15 to 20 weeks to complete in each year of construction. Reclamation may last an additional 4 weeks. This does not account for weather delays, holidays, or seasonal construction restrictions. The spread breakdown is listed below:

- 2012 Pipeline Construction Spread #1- MP 0- 65
- 2011. Pipeline Construction Spread #2 - MP 65- 118.
- 2011 Pipeline Construction Spread #3 - MP 118- 179.
- 2012 Pipeline Construction Spread #4- MP 179 - 232.

Construction flow is shown in Figure 1.



Transportation is expected to be provided by the pipeline contractor from Casper and Gillette with appropriately sized vehicles. Local resident workers from other parts of the project area would be expected to supply their own transportation to the work site; they would not be expected to report to Casper or Gillette. It is assumed that up to 61 percent of the workers would drive personal vehicles or work vehicles (e.g., welding truck, foreman's pickups) to the work site. At 1.8 persons per vehicle (BLM 1985), 163 workers per spread would generate 101 vehicle trips per spread during the morning and afternoon peak hours.