

**UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Buffalo Field Office
Buffalo, Wyoming**

**SURFACE USE
CONDITIONS OF APPROVAL**

POD Name: Carr Draw II Additions II

Operator: Williams Production RMT Co

List of Wells:

	Well Name	Well #	Qtr/Qtr	Sec	Twp	Rng	Lease #
1	CARR DRAW II ADD II J MAYCOCK	32-2BG	SWNE	2	49N	75W	WYW147302
2	CARR DRAW II ADD II J MAYCOCK	32-2GW	SWNE	2	49N	75W	WYW147302
3	CARR DRAW II ADD II THRONE	23-3GW	NESW	3	50N	75W	WYW162026
4	CARR DRAW II ADD II THRONE	34-3GW	SWSE	3	50N	75W	WYW162026
5	CARR DRAW II ADD II THRONE	43-3GW	NESE	3	50N	75W	WYW162026
6	CARR DRAW II ADD II M MAYCOCK	23-4BG	NESW	4	49N	75W	WYW149966
7	CARR DRAW II ADD II M MAYCOCK	23-4GW	NESW	4	49N	75W	WYW149966
8	CARR DRAW II ADD II M MAYCOCK	32-4BG	SWNE	4	49N	75W	WYW149966
9	CARR DRAW II ADD II M MAYCOCK	32-4GW	SWNE	4	49N	75W	WYW149966
10	CARR DRAW II ADD II M MAYCOCK	34-4BG	SWSE	4	49N	75W	WYW149966
11	CARR DRAW II ADD II M MAYCOCK	34-4GW	SWSE	4	49N	75W	WYW149966
12	CARR DRAW II ADD II FEDERAL	43-4BG	NESE	4	49N	75W	WYW149966
13	CARR DRAW II ADD II FEDERAL	43-4GW	NESE	4	49N	75W	WYW149966
14	CARR DRAW II ADD II FEDERAL	12-5GW	SWNW	5	49N	75W	WYW149966
15	CARR DRAW II ADD II FEDERAL	12-5BG	SWNW	5	49N	75W	WYW149966
16	CARR DRAW II ADD II FEDERAL	21-5BG	NENW	5	49N	75W	WYW149966
17	CARR DRAW II ADD II FEDERAL	21-5GW	NENW	5	49N	75W	WYW149966
18	CARR DRAW II ADD II M MAYCOCK	12-11BG	SWNW	11	49N	75W	WYW147302
19	CARR DRAW II ADD II M MAYCOCK	12-11GW	SWNW	11	49N	75W	WYW147302
20	CARR DRAW II ADD II M MAYCOCK	14-11BG	SWSW	11	49N	75W	WYW147302
21	CARR DRAW II ADD II M MAYCOCK	14-11GW	SWSW	11	49N	75W	WYW147302
22	CARR DRAW II ADD II M MAYCOCK	21-11BG	NENW	11	49N	75W	WYW147302
23	CARR DRAW II ADD II M MAYCOCK	21-11GW	NENW	11	49N	75W	WYW147302
24	CARR DRAW II ADD II M MAYCOCK	23-11BG	NESW	11	49N	75W	WYW147302
25	CARR DRAW II ADD II M MAYCOCK	23-11GW	NESW	11	49N	75W	WYW147302
26	CARR DRAW II ADD II M MAYCOCK	12-14BG	SWNW	14	49N	75W	WYW147306
27	CARR DRAW II ADD II M MAYCOCK	12-14GW	SWNW	14	49N	75W	WYW147306
28	CARR DRAW II ADD II M MAYCOCK	21-14BG	NENW	14	49N	75W	WYW147306
29	CARR DRAW II ADD II M MAYCOCK	21-14GW	NENW	14	49N	75W	WYW147306
30	CARR DRAW II ADD II CARU	14-21BG	SWSW	21	50N	75W	WYW154404
31	CARR DRAW II ADD II CARU	14-21GW	SWSW	21	50N	75W	WYW154404
32	CARR DRAW II ADD II CARU	23-21BG	NESW	21	50N	75W	WYW154404
33	CARR DRAW II ADD II CARU	23-21GW	NESW	21	50N	75W	WYW154404
34	CARR DRAW II ADD II CARU	34-21BG	SWSE	21	50N	75W	WYW154404

	Well Name	Well #	Qtr/Qtr	Sec	Twp	Rng	Lease #
35	CARR DRAW II ADD II CARU	34-21GW	SWSE	21	50N	75W	WYW154404
36	CARR DRAW II ADD II CARU	43-21GW	NESE	21	50N	75W	WYW154404
37	CARR DRAW II ADD II CARU	43-21BG	NESE	21	50N	75W	WYW154404
38	CARR DRAW II ADD II M MAYCOCK	14-22GW	SWSW	22	50N	75W	WYW39563
39	CARR DRAW II ADD II M MAYCOCK	23-22BG	NESW	22	50N	75W	WYW39563
40	CARR DRAW II ADD II M MAYCOCK	23-22GW	NESW	22	50N	75W	WYW39563
41	CARR DRAW II ADD II M MAYCOCK	34-22GW	SWSE	22	50N	75W	WYW39563
42	CARR DRAW II ADD II M MAYCOCK	14-23GW	SWSW	23	50N	75W	WYW39563
43	CARR DRAW II ADD II M MAYCOCK	34-23GW	SWSE	23	50N	75W	WYW39563
44	CARR DRAW II ADD II M MAYCOCK	14-26BG	SWSW	26	50N	75W	WYW128096
45	CARR DRAW II ADD II M MAYCOCK	14-26GW	SWSW	26	50N	75W	WYW128096
46	CARR DRAW II ADD II M MAYCOCK	23-26BG	NESW	26	50N	75W	WYW146810
47	CARR DRAW II ADD II M MAYCOCK	23-26GW	NESW	26	50N	75W	WYW146810
48	CARR DRAW II ADD II M MAYCOCK	34-26GW	SWSE	26	50N	75W	WYW146810
49	CARR DRAW II ADD II M MAYCOCK	12-27BG	SWNW	27	50N	75W	WYW125542
50	CARR DRAW II ADD II M MAYCOCK	12-27GW	SWNW	27	50N	75W	WYW125542
51	CARR DRAW II ADD II M MAYCOCK	14-27BG	SWSW	27	50N	75W	WYW125542
52	CARR DRAW II ADD II M MAYCOCK	14-27GW	SWSW	27	50N	75W	WYW125542
53	CARR DRAW II ADD II M MAYCOCK	43-27BG	NESE	27	50N	75W	WYW125542
54	CARR DRAW II ADD II M MAYCOCK	43-27GW	NESE	27	50N	75W	WYW125542
55	CARR DRAW II ADD II M MAYCOCK	11-27GW	NWNW	27	50N	75W	WYW146810
56	CARR DRAW II ADD II M MAYCOCK	23-27BG	NESW	27	50N	75W	WYW146810
57	CARR DRAW II ADD II M MAYCOCK	23-27GW	NESW	27	50N	75W	WYW146810
58	CARR DRAW II ADD II M MAYCOCK	32-27BG	SWNE	27	50N	75W	WYW146810
59	CARR DRAW II ADD II M MAYCOCK	32-27GW	SWNE	27	50N	75W	WYW146810
60	CARR DRAW II ADD II M MAYCOCK	34-27BG	SWSE	27	50N	75W	WYW146810
61	CARR DRAW II ADD II M MAYCOCK	34-27GW	SWSE	27	50N	75W	WYW146810
62	CARR DRAW II ADD II M MAYCOCK	41-27BG	NENE	27	50N	75W	WYW146810
63	CARR DRAW II ADD II M MAYCOCK	41-27GW	NENE	27	50N	75W	WYW146810
64	CARR DRAW II ADD II M MAYCOCK	12-28BG	SWNW	28	50N	75W	WYW146810
65	CARR DRAW II ADD II M MAYCOCK	12-28GW	SWNW	28	50N	75W	WYW146810
66	CARR DRAW II ADD II M MAYCOCK	14-28BG	SWSW	28	50N	75W	WYW146810
67	CARR DRAW II ADD II M MAYCOCK	14-28GW	SWSW	28	50N	75W	WYW146810
68	CARR DRAW II ADD II M MAYCOCK	23-28BG	NESW	28	50N	75W	WYW146810
69	CARR DRAW II ADD II M MAYCOCK	23-28GW	NESW	28	50N	75W	WYW146810
70	CARR DRAW II ADD II M MAYCOCK	43-28BG	NESE	28	50N	75W	WYW146810
71	CARR DRAW II ADD II M MAYCOCK	43-28GW	NESE	28	50N	75W	WYW146810
72	CARR DRAW II ADD II M MAYCOCK	43-29BG	NESE	29	50N	75W	WYW125979
73	CARR DRAW II ADD II M MAYCOCK	43-29GW	NESE	29	50N	75W	WYW125979
74	CARR DRAW II ADD II CARU	32-29BG	SWNE	29	50N	75W	WYW129538
75	CARR DRAW II ADD II CARU	32-29GW	SWNE	29	50N	75W	WYW129538
76	* CARR DRAW II ADD II CARU	42-29 BG	SENE	29	50N	75W	WYW129538
77	* CARR DRAW II ADD II CARU	42-29 GW	SENE	29	50N	75W	WYW129538
78	* CARR DRAW II ADD II CARU	42-29 SW	SENE	29	50N	75W	WYW129538
79	CARR DRAW II ADD II M MAYCOCK	23-29BG	NESW	29	50N	75W	WYW157699
80	CARR DRAW II ADD II M MAYCOCK	23-29GW	NESW	29	50N	75W	WYW157699
81	CARR DRAW II ADD II CARU	43-31BG	NESE	31	50N	75W	WYW146812

	Well Name	Well #	Qtr/Qtr	Sec	Twp	Rng	Lease #
82	CARR DRAW II ADD II CARU	43-31GW	NESE	31	50N	75W	WYW146812
83	CARR DRAW II ADD II ME JONES	14-32BG	SWSW	32	50N	75W	WYW149234
84	CARR DRAW II ADD II ME JONES	14-32GW	SWSW	32	50N	75W	WYW149234
85	CARR DRAW II ADD II M MAYCOCK	12-33BG	SWNW	33	50N	75W	WYW146810
86	CARR DRAW II ADD II M MAYCOCK	12-33GW	SWNW	33	50N	75W	WYW146810
87	CARR DRAW II ADD II M MAYCOCK	14-33BG	SWSW	33	50N	75W	WYW146810
88	CARR DRAW II ADD II M MAYCOCK	14-33GW	SWSW	33	50N	75W	WYW146810
89	CARR DRAW II ADD II M MAYCOCK	23-33BG	NESW	33	50N	75W	WYW146810
90	CARR DRAW II ADD II M MAYCOCK	23-33GW	NESW	33	50N	75W	WYW146810
91	CARR DRAW II ADD II M MAYCOCK	34-33BG	SWSE	33	50N	75W	WYW146810
92	CARR DRAW II ADD II M MAYCOCK	34-33GW	SWSE	33	50N	75W	WYW146810
93	CARR DRAW II ADD II M MAYCOCK	41-33BG	NENE	33	50N	75W	WYW146810
94	CARR DRAW II ADD II M MAYCOCK	41-33GW	NENE	33	50N	75W	WYW146810
95	CARR DRAW II ADD II M MAYCOCK	43-33BG	NESE	33	50N	75W	WYW146810
96	CARR DRAW II ADD II M MAYCOCK	43-33GW	NESE	33	50N	75W	WYW146810

- Indicates APD is for a monitoring well

List of Impoundments:

	IMPOUNDMENT NAME	Qtr/Qtr	SEC	TWP	RNG	LEASE #
1	41-3-4975	NENE	3	49N	75W	FEE
2	MAYCOCK 41-33-5075	NENE	33	50N	75W	WYW146810
3	MIDDLETON #2	SWSE	21	50N	75W	WYW154404
4	MIDDLETON #1	NENW	27	50N	75W	WYW146810
5	43-34-5075	NWSE	34	50N	75W	FEE
6	42-3-4975	SENE	3	49N	75W	FEE
7	13-2-4975	NWSW	2	49N	75W	FEE
8	44-3-4975	SESE	3	49N	75W	FEE
9	14-2-4975D	SWSW	2	49N	75W	WYW147302
10	14-2-4975A	SWSW	2	49N	75W	WYW147302
11	12-11-4975	SWNW	11	49N	75W	WYW147302
12	33-10-4975	NWSE	10	49N	75W	WYW147305
13	HANNAH	SENE	21	50N	75W	WYW154404
14	42-26-5075	SENE	26	50N	75W	FEE
15	34-26-5075	SWSE	26	50N	75W	WYW146810
16	NEW ORLEANS	SWSW	26	50N	75W	WYW128096
17	MARLEY	SENE	27	50N	75W	WYW146810
18	YELLOW HAT	NESW	27	50N	75W	WYW146810
19	FOGGY	SENE	27	50N	75W	WYW146810
20	JONES GULLEY	NESW	32	50N	75W	WYW149234

List of approved right-of-way grants:

ROW Grant	Type	Sections	TWP/RNG
WYW-169689	Access road, water pipeline and buried power line	Section 4: NE $\frac{1}{4}$ SE $\frac{1}{4}$; Section 6: Lot 1, E $\frac{1}{2}$ E $\frac{1}{2}$; Section 9: E $\frac{1}{2}$ E $\frac{1}{2}$.	T. 49 N., R. 75 W.
WYW-169691	Gas pipeline.	Section 4: NE $\frac{1}{4}$ SE $\frac{1}{4}$; Section 6: Lot 1, E $\frac{1}{2}$ E $\frac{1}{2}$; Section 9: E $\frac{1}{2}$ E $\frac{1}{2}$.	T. 49 N., R. 75 W.

I Programmatic mitigation measures identified in the PRB FEIS ROD

Groundwater

1. In order to address the potential impacts from infiltration on shallow ground water, the Wyoming DEQ has developed a guidance document, "Compliance Monitoring for Ground Water Protection Beneath Unlined Coalbed Methane Produced Water Impoundments" (June 14, 2004) which can be accessed on their website. This guidance document became effective August 1, 2004. For WYPDES permits received by DEQ after the August 1st effective date, the BLM will require that operators comply with the latest DEQ standards and monitoring guidance.

In order to address the potential impacts from infiltration on shallow ground water, the Wyoming DEQ has developed a guidance document, "Compliance Monitoring for Ground Water Protection Beneath Unlined Coalbed Methane Produced Water Impoundments" (June 14, 2004) which can be accessed on their website. The BLM will require that operators comply with the latest DEQ standards and monitoring guidance.

Surface Water

1. Channel Crossings:
 - a) Minimize channel disturbance as much as possible by limiting pipeline and road crossings.
 - b) Avoid running pipelines and access roads within floodplains or parallel to a stream channel.
 - c) Channel crossings by road and pipelines will be constructed perpendicular to flow. Culverts will be installed at appropriate locations for streams and channels crossed by roads as specified in the BLM Manual 9112-Bridges and Major Culverts and Manual 9113-Roads. Streams will be crossed perpendicular to flow, where possible, and all stream crossing structures will be designed to carry the 25-year discharge event or other capacities as directed by the BLM.
 - d) Channel crossings by pipelines will be constructed so that the pipe is buried at least four feet below the channel bottom.
2. Low water crossings will be constructed at original streambed elevation in a manner that will prevent any blockage or restriction of the existing channel. Material removed will be stockpiled for use in reclamation of the crossings.
3. Concerns regarding the quality of the discharged CBNG water on downstream irrigation use may require operators to increase the amount of storage of CBNG water during the irrigation months and allow more surface discharge during the non-irrigation months.
4. The operator will be required to provide a reclamation bond for impoundments over federal minerals in the amount specified by a qualified Professional Engineer for the impoundments to be used for the management of CBNG water. The bond amount will be submitted within 90 days after POD approval and will be approved by the BLM prior to commencing construction.
5. The operator will supply a copy of the complete approved SW-4, SW-3, or SW-CBNG permits to BLM as they are issued by WSEO for impoundments. The operator will supply a copy of the complete approved Chapter 3 permit to construct associated with treatment facilities to BLM as they are issued by WDEQ.

Soils

1. The Companies, on a case by case basis depending upon water and soil characteristics, will test sediments deposited in impoundments before reclaiming the impoundments. Tests will include the standard suite of cations, ions, and nutrients that will be monitored in surface water testing and any trace metals found in the CBNG discharges at concentrations exceeding detectable limits.

Vegetation

1. Temporarily fence reseeded areas, if not already fenced, for at least two complete growing seasons to

insure reclamation success on problematic sites (e.g. close to livestock watering source, erosive soils etc.).

Wetland/Riparian

1. Power line corridors will avoid wetlands, to the extent possible, in order to reduce the chance of waterfowl hitting the lines. Where avoidance can't occur, the minimum number of poles necessary to cross the area will be used.
2. Wetland areas will be disturbed only during dry conditions (that is, during late summer or fall), or when the ground is frozen during the winter.
3. No waste material will be deposited below high water lines in riparian areas, flood plains, or in natural drainage ways.
4. The lower edge of soil or other material stockpiles will be located outside the active floodplain.
5. Disturbed channels will be re-shaped to their approximate original configuration or stable geomorphological configuration and properly stabilized.
6. Reclamation of disturbed wetland/riparian areas will begin immediately after project activities are complete.

Wildlife

1. For any surface-disturbing activities proposed in sagebrush shrublands, the Companies will conduct clearance surveys for sage grouse breeding activity during the sage grouse's breeding season before initiating the activities. The surveys must encompass all sagebrush shrublands within 0.5 mile of the proposed activities.
2. The Companies will construct power lines to minimize the potential for raptor collisions with the lines. Potential modifications include burying the lines, avoiding areas of high avian use (for example, wetlands, prairie dog towns, and grouse leks), and increasing the visibility of the individual conductors.
3. The Companies will locate aboveground power lines, where practical, at least 0.5 mile from any sage grouse breeding or nesting grounds to prevent raptor predation and sage grouse collision with the conductors. Power poles within 0.5 mile of any sage grouse breeding ground will be raptor-proofed to prevent raptors from perching on the poles.
4. Containment impoundments will be fenced to exclude wildlife and livestock. If they are not fenced, they will be designed and constructed to prevent entrapment and drowning.
5. The Companies will limit the construction of aboveground power lines near streams, water bodies, and wetlands to minimize the potential for waterfowl colliding with power lines.
6. All stock tanks shall include a ramp to enable trapped small birds and mammals to escape. See Idaho BLM Technical Bulletin 89-4 entitled Wildlife Watering and Escape Ramps on Livestock Water Developments: Suggestions and Recommendations.

Aquatics Species

1. In ponds developed where the primary objective is as a fishery, water quality will be sampled by the Companies on an annual basis for selenium, Total Dissolved Solids (TDS), salinity, temperature, pH, dissolved oxygen, and sodium bicarbonate.

Threatened, Endangered, or Sensitive Species

Bald Eagle

1. Additional mitigation measures may be necessary if the site-specific project is determined by a BLM biologist to have adverse effects to bald eagles or their habitat.

Black-footed Ferret

1. Prairie dog colonies will be avoided wherever possible.

2. If any black-footed ferrets are located, the USFWS will be consulted. Absolutely no disturbance will be allowed within prairie dog colonies inhabited by black-footed ferrets.
3. Additional mitigation measure may be necessary if the site-specific project is determined by a BLM biologist to have adverse effects to black-footed ferrets or their habitat. In the event that a mountain plover is located during construction or operation, the USFWS' Wyoming Field Office (307-772-2374) and the USFWS' Law Enforcement Office (307-261-6365) will be notified within 24 hours.

Mountain Plover

1. In the event that a mountain plover is located during construction or operation, the USFWS' Wyoming Field Office (307-772-2374) and the USFWS' Law Enforcement Office (307-261-6365) will be notified within 24 hours.
2. A mountain plover nesting survey shall be conducted following U.S. Fish and Wildlife Service protocol within occupied black-tailed prairie dog colonies prior to permit authorization.
3. Outside of occupied black-tailed prairie dog colonies, a mountain plover nesting survey following U.S. Fish and Wildlife Service protocol is encouraged prior to construction initiation, as project modifications can be made if necessary to protect nesting plovers and natural gas production. If requested in writing, then authorization may be granted for construction activities to occur between August 1 and March 15, outside the mountain plover breeding season. A mountain plover nesting survey following U.S. Fish and Wildlife Service protocol shall be conducted during the first available survey period (May 1 – June 15). Additional measures such as monitoring and activity restrictions may be applied if mountain plovers are documented.
4. A disturbance-free buffer zone of 0.25 mile will be established around all occupied mountain plover nesting habitat between March 15 and July 31.
5. Work schedules and shift changes will be set to avoid the periods from 30 minutes before to 30 minutes after sunrise and sunset during June and July, when mountain plovers and other wildlife are most active.
6. Creation of hunting perches or nest sites for avian predators within 0.5 mile of identified nesting areas will be avoided by burying power lines, using the lowest possible structures for fences and other structures and by incorporating perch-inhibiting devices into their design.
7. When above ground markers are used on capped and abandoned wells they will be identified with markers no taller than four feet with perch inhibiting devices on the top to avoid creation of raptor hunting perches within 0.5 mile of nesting areas.
8. Reclamation of areas of previously suitable mountain plover habitat will include the seeding of vegetation to produce suitable habitat for mountain plover.

Visual Resources

1. The Companies will mount lights at compressor stations on a pole or building and direct them downward to illuminate key areas within the facility while minimizing the amount of light projected outside the facility.

Noise

1. Noise mufflers will be installed on the exhaust of compressor engines to reduce the exhaust noise.
2. Where noise impacts to existing sensitive receptors are an issue, noise levels will be required to be no greater than 55 decibels measured at a distance of one-quarter mile from the appropriate booster (field) compressor. When background noise exceeds 55dBA, noise levels will be no greater than 5dBA above background. This may require the installation of electrical compressor motors at these locations.

Air Quality

1. During construction, emissions of particulate matter from well pad and resource road construction will be minimized by application of water, or other dust suppressants, with at least 50 percent control efficiency. Roads and well locations constructed on soils susceptible to wind erosion could be appropriately surfaced or otherwise stabilized to reduce the amount of fugitive dust generated by traffic or other activities, and dust inhibitors (surfacing materials, non-saline dust suppressants, and water) could be used as necessary on unpaved collector, local and resource roads that present a fugitive dust problem. The use of chemical dust suppressants on BLM surface will require prior approval from the BLM authorized officer.

II Site Specific Conditions of Approval

1. All changes made at the onsite will be followed. They have all been incorporated into the operator's POD.
2. The pipeline corridors to the 12-11-4975, 14-21-5075, 23-28-5075, 23-22-5075 and the 34-33-5075 well locations will be limited to 25 feet in width to reduce surface disturbance through sagebrush. Exceptions may be necessitated by subsurface rock and/or where safety is an issue.
3. Due to the proximity of drainage, Williams will provide silt mitigation on the fill side on the 34-4-4975 location.
4. With the surface owner concurrence, Williams will reclaim the old access road near the 43-27-5075 location.
5. Pits will be lined at the following locations in addition to any other location where permeable material and or free water is encountered as a result of excavation:
 - Well 14-27
 - Well 43-4
 - Well 14-32
6. All permanent above-ground structures (e.g., production equipment, tanks, etc.) not subject to safety requirements will be painted to blend with the natural color of the landscape. The paint used will be a color which simulates "Standard Environmental Colors." The color selected for the Carr Draw II Addition II POD is Carlsbad Canyon, 2.5Y 6/2.
7. The 3 monitor wells (located in SENE, Section 29, T50N, R75W) associated with the Carr Draw II Additions II POD will be drilled and completed 30 days prior to initiating pumping of production wells in the Carr Draw II Additions II POD. Please see monitor well drilling guidelines (Section F) in the associated Conditions of Approval.
8. The approval of this project does not grant authority to use off lease federal lands. No surface disturbing activity, or use of off-lease federal lands, is allowed on affected leases until right-of-way grants become effective on the date in which the right-of-way grant is signed by the authorized officer of the BLM.
9. This POD approval includes the application of an Integrated Pest Management Plan that includes an annual weed control program. The operator must submit a Pesticide Use Proposal (PUP) to the BLM Authorized Officer prior to the application of pesticides on federal lands.

10. The operator will drill seed on the contour to a depth of 0.5 inch, followed by cultipaction to compact the seedbed, preventing soil and seed losses. To maintain quality and purity, the current years tested, certified seed with a minimum germination rate of 80% and a minimum purity of 90% will be used. On BLM surface or in lieu of a different specific mix desired by the surface owner, use the following:

Loamy Seed Mix (All Locations)

Species	% in Mix	Lbs PLS*
Western Wheatgrass (Pascopyrum smithii)/or Thickspike Wheatgrass (Elymus lanceolatus ssp. lanceolatus)	30	3.6
Bluebunch Wheatgrass (Pseudoroegneria spicata ssp. Spicata)	10	1.2
Green needlegrass (Nassella viridula)	25	3.0
Slender Wheatgrass (Elymus trachycaulus ssp. trachycaulus)	20	2.4
Prairie coneflower (Ratibida columnifera)	5	0.6
White or purple prairie clover (Dalea candidum, purpureum)	5	0.6
Rocky Mountain beoplant (Cleome serrulata) /or American vetch (Vicia americana)	5	0.6
Totals	100%	12 lbs/acre

*Varieties planted will be suitable/adaptable to the Powder River Basin

11. The operator will follow the guidance provided in the Wyoming Policy on Reclamation (IM WY-90-231) specifically the following:

Reclamation Standards:

- C. 3 The reclaimed area shall be stable and exhibit none of the following characteristics:
- a. Large rills or gullies.
 - b. Perceptible soil movement or head cutting in drainages.
 - c. Slope instability on, or adjacent to, the reclaimed area in question.
- C.4. The soil surface must be stable and have adequate surface roughness to reduce runoff and capture rainfall and snow melt. Additional short-term measures, such as the application of mulch, shall be used to reduce surface soil movement.
- C.5. Vegetation canopy cover (on unforested sites), production and species diversity (including shrubs) shall approximate the surrounding undisturbed area. The vegetation shall stabilize the site and support the planned post disturbance land use, provide for natural plant community succession and development, and be capable of renewing itself. This shall be demonstrated by:
- a. Successful onsite establishment of species included in the planting mixture or other desirable species.
 - b. Evidence of vegetation reproduction, either spreading by rhizomatous species or seed production.

- C.6. The reclaimed landscape shall have characteristics that approximate the visual quality of the adjacent area with regard to location, scale, shape, color and orientation of major landscape features and meet the needs of the planned post disturbance land use.

Roads

1. Verify that all sight distances (both horizontal and vertical) on higher use roads meet BLM standards.
2. The culvert locations will be staked prior to construction. The culvert invert grade and finished road grade will be clearly indicated on the stakes. Culverts will be installed on natural ground, or on a designed flow line of a ditch. The minimum cover over culverts will be 12” or one-half the diameter whichever is greater. Drainage laterals in the form of culverts or waterbars shall be placed according to the following spacing:

<u>Grade</u>	<u>Drainage Spacing</u>
2-4%	310 ft
5-8%	260 ft
9-12%	200 ft

3. The operator is responsible for having the licensed professional engineer(s) certify that the actual construction of the road meets the design criteria and is constructed to Bureau standards.
4. Provide 4” of aggregate where grades exceed 8%.

Wildlife

1. If any dead or injured sensitive species is located during construction or operation, the BLM Buffalo Field Office (307-684-1100) shall be notified within 24 hours.
2. The Record of Decision for the Powder River Basin EIS includes a programmatic mitigation measure that states, “The companies will conduct clearance surveys for threatened and endangered or other special-concern species at the optimum time” (M32). The measure requires companies to coordinate with the BLM before November 1 annually to review the potential for disturbance and to agree on inventory parameters. If the project is not completed by November 1st of the following year, Williams Production will coordinate with the BLM (Buffalo Field Office) to determine if these following surveys will be required:
 - a. Raptor nesting survey.
 - b. Sage grouse and sharp-tailed grouse survey.
 - c. Mountain Plover survey.
 - The contract biologist shall contact the BLM prior to initiating any wildlife surveys.
3. No project related activities are permitted in suitable mountain plover habitat from March 15-July 31, unless a mountain plover nesting survey has been conducted during the current breeding season. A mountain plover survey will be required prior to any project related activities. The surveys will be conducted in suitable habitat (i.e. prairie dog colonies, roads, pipelines, reservoirs under construction or recently constructed and any short grass prairie areas) throughout the “**Entire**” project area. The prairie dog colonies are listed below:

Prairie Dog Colony Locations and Sizes

Legal Location Township, Range and Section	Size Acres	Location to Project Area
T49N, R75W, NW ¼ Sec 2	164	Occurs within the project area.
T50N, R75W, NESE of Sec 33 and the SW ¼ Sec 34	76	Occurs within the project area.

T50N, R75W, NENE Sec 32	7	Occurs within the project area.
T50N, R75W, NWNE Sec28	31	Occurs within the project boundary.
T50N, R75W, NESW Sec21	22	Occurs within and adjacent to the project area.
T49N, R75W, SESW Sec 10	5	Occurs within and adjacent to the project area.
T49N, R75W, NESW Sec 9	7	Occurs adjacent to the project area.
T50N, R75W, NESW Sec 21	2	Occurs within the project area.
T50N, R75W, SWNE Sec 26	35	Occurs within the project area.
T50N, R75W, SESE Sec 22	3	Occurs within the project area.
T50N, R75W, NESW Sec 29	3	Occurs within the project area.
T50N, R75W, NWNW Sec 29	3	Occurs within and adjacent to the project area.
T50N, R75W, SWNE Sec 29	4	Occurs within the project area.
T49N, R75W, NWSW Sec 3	30	Occurs within the project area.
T50N, R75W, SW Sec 23	41	Occurs just outside of the project area.
T49N, R75W, SESW Sec 3	30	Occurs within the project area.

- a. Mountain plover nesting surveys shall be conducted by a biologist following the most current U.S. Fish and Wildlife Service Mountain Plover Survey Guidelines (the survey period is May 1-June 15). All survey results must be submitted in writing to the BFO and approved prior to initiation of gas development related activities (i.e. drilling, road/pipeline construction and overhead powerline construction, etc.).
 - b. If a mountain plover is identified, then a seasonal disturbance-free buffer of 0.25 mile shall be maintained between March 15 and July 31. If no mountain plovers are identified, then surface disturbing activities may be permitted within suitable habitat until the following breeding season (March 15).
4. No project related activity shall occur within 0.5 mile of all identified raptor nests from February 1 through July 31, annually, prior to a raptor nest occupancy survey for the current breeding season. This condition will be implemented on an annual basis for the duration of surface disturbing activities. This timing limitation will affect the following proposed wells and their associated infrastructure:

Township/Range	Section	Affected Wells and Infrastructure
T50N,R75W	29	All project related activities in the section.
T50N,R75W	28	All project related activities in the section.
T50N,R75W	27	12-27, 12-27/11-27, 14-27 and all project related activities in the section.
T50N,R75W	33	41-33, 12-33 and all project related activities in the section..
T50N,R75W	31	43-31 and All project related activities in the section..
T49N,R75W	2	The two proposed water lines and 2 discharge points in the southwest portion of the section.
T49N,R75W	3	One waterline in the southeast portion of Section 3
T49N,R75W	4	32-4, 23-4, 34-4, 43-4, and all project related activities in the section.
T49N,R75W	5	12-5 and its associated infrastructure.
T49N,R75W	6	Resource road/pipeline in the eastern portion of Sec 6.
T49N,R75W	10	Proposed water, gas, electric lines in the southern portion and the water line in the southeast quarter.
T49N,R75W	11	14-11 and its associated infrastructure.

- a. Surveys to document nest occupancy shall be conducted by a biologist following BLM protocol, between April 15 and June 30. All survey results shall be submitted in writing to a Buffalo BLM biologist and approved prior to surface disturbing activities. Surveys outside this window may not depict nesting activity. If a survey identifies active raptor nests, a 0.5 mile timing buffer will be implemented. The timing buffer restricts surface disturbing activities within 0.5 mile of occupied raptor nests from February 1 to July 31.
- b. Nest productivity checks shall be completed for the first five years following project completion. The productivity checks shall be conducted no earlier than June 1 or later than June 30 and any evidence of nesting success or production shall be recorded. Survey results will be submitted to a Buffalo BLM biologist in writing no later than July 31 of each survey year. Nests to be checked are within a 0.5 mile or less of the proposed development. The nests are listed below:

BLM ID #	UTM N	UTM E	Legal
3435	4897684	431271	T49N,R75W SWSE Sec 10
No BLM#	4900554	430983	T50N,R75W NENW Sec 3

- c. If an undocumented raptor nest is located during project construction or operation, the Buffalo Field Office (307-684-1100) shall be notified within 24 hours.
5. Well metering, maintenance and other site visits within 0.5 miles of raptor nests shall be minimized as much as possible during the breeding season (February 1 – July 31), and restricted to between 0900 and 1500 hours.
 6. The following conditions will minimize the impacts to sage grouse:
 - a. No project related surface disturbing activities are permitted within 2 miles of the following leks between March 1 and June 15, prior to completion of a greater sage-grouse lek survey:
Hayden I, Hayden Sat A, Hayden Sat B, Watsabaugh I, Watsabaugh II, Watsabaugh III, Watsabaugh IV, Watsabaugh IV Site A, Watsabaugh IV Site B
*** This timing limitation will affect the “Entire” Carr Draw II Additions II project area.**
 - b. If an active lek is identified during the survey, the 2 mile timing restriction (March 1-June 15) will be applied and disturbing activities will not be permitted until after the nesting season. If surveys indicate that the identified leks are inactive during the current breeding season, surface disturbing activities may be permitted within the 2 mile buffer until the following breeding season (March 1). The required sage grouse survey will be conducted by a biologist following the most current WGFD protocol. All survey results shall be submitted in writing to a Buffalo BLM biologist and approved prior to surface disturbing activities.
 - c. Creation of raptor hunting perches will be avoided within 0.5 mile of documented sage grouse lek sites. Perch inhibitors will be installed to deter avian predators from preying on sage grouse.
 7. Power lines will be buried whenever possible in the project area to protect bald eagles and other important wildlife. When it is not possible to bury them, overhead power lines will be constructed to standards identified by the Avian Power Line Interaction Committee and the additional measures outlined in the PRBEIS to minimize raptor electrocution potential (T&C 6).

8. All other conservation measures and terms and conditions identified in the Powder River Basin Oil and Gas Project Biological Opinion (WY6633) shall be complied with.

Please contact Jennifer Spagon Natural Resource Specialist, @ (307) 684-1059, Bureau of Land Management, Buffalo, if there are any questions concerning these surface use COAs.

III Standard Conditions of Approval

A. General

1. If any cultural values [sites, artifacts, human remains (Appendix L FEIS)] are observed during operation of this lease/permit/right-of-way, they will be left intact and the Buffalo Field Manager notified. The authorized officer will conduct an evaluation of the cultural values to establish appropriate mitigation, salvage or treatment. The operator is responsible for informing all persons in the area who are associated with this project that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during construction, the operator is to immediately stop work that might further disturb such materials, and contact the authorized BLM officer (AO). Within five working days the AO will inform the operator as to:
 - whether the materials appear eligible for the National Register of Historic Places;
 - the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary); and,
 - a time-frame for the AO to complete an expedited review under 36 CFR 800.11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction measures.
2. If paleontological resources, either large or conspicuous, and/or a significant scientific value are discovered during construction, the find will be reported to the Authorized Officer immediately. Construction will be suspended within 250 feet of said find. An evaluation of the paleontological discovery will be made by a BLM approved professional paleontologist within five (5) working days, weather permitting, to determine the appropriate action(s) to prevent the potential loss of any significant paleontological values. Operations within 250 feet of such a discovery will not be resumed until written authorization to proceed is issued by the Authorized Officer. The applicant will bear the cost of any required paleontological appraisals, surface collection of fossils, or salvage of any large conspicuous fossils of significant scientific interest discovered during the operation.
3. The operator shall restrict travel on unimproved two-track roads during periods of inclement weather or spring thaw when the possibility exists for excessive surface resource damage (e.g., rutting in excess of 4-inches, travel outside two-track roadway, etc.).
4. The first producing well drilled to each targeted coal zone will be designated as the POD "Reference Well". Reference wells will not be required for PODs within a 6 mile radius of the first reference well designated by the operator, nor for co-mingled coal zones. The designated reference well must be equipped to be sampled at the well head. A reference well sample will be collected from the wellhead and submitted for analysis; using the list of

analytes identified in WDEQ WYPDES Application for Permit to Surface Discharge Produced Water from CBM New Discharges, Renewals, or Major Modifications, within 30 to 60 days of initial water production. Results of the analysis will be submitted to the BFO-BLM authorized Officer as they become available.

5. By November 1 each year, companies will provide georeferenced spatial data depicting as-built locations of all facilities, wells, roads, pipelines, power lines, reservoirs, discharge points, and other related facilities to the BLM for all PODs where construction and development have been completed.
6. If any dead or injured threatened, endangered, proposed, or candidate species is located during construction or operation, the U.S. Fish and Wildlife Service's Wyoming Field Office (307-772-2374), their law enforcement office (307-261-6365), and the BLM Buffalo Field Office (307-684-1100) shall be notified within 24 hours. If any dead or injured sensitive species is located during construction or operation, the BLM Buffalo Field Office (307-684-1100) shall be notified within 24 hours.
7. Wildlife species are dynamic and new individuals may have moved into the Carr Draw II Additions II POD area after the initial wildlife surveys were completed. The Record of Decision for the PRB FEIS includes a programmatic mitigation measure that states, "The companies will conduct clearance surveys for threatened and endangered or other special-concern species at the optimum time". The measure requires companies to coordinate with the BLM before November 1 annually to review the potential for disturbance and to agree on inventory parameters. Should this project not be completed by January 15, and surface disturbance is planned for that year, a Williams Production RMT Co representative will coordinate with the BLM to discuss required surveys.
8. All other conservation measures and terms and conditions identified in the Powder River Basin Oil and Gas Project Biological Opinion (WY6633) shall be complied with.
9. If an undocumented raptor nest is located during project construction or operation, the Buffalo Field Office (307-684-1100) shall be notified within 24 hours.
10. All contractors will have a copy of the pod map and conditions of approval with them at all times.

B. Construction

1. A pre-construction field meeting shall be conducted prior to beginning any dirt work approved under this POD. The operator shall contact the BLM Authorized Officer Jennifer Spegon @ 307-684-1059 at least 4-days prior to beginning operations so that the meeting can be scheduled. The operator is responsible for having all contractors present (dirt contractors, drilling contractor, pipeline contractor, project oversight personnel, etc.) including the overall field operations superintendent, and for providing all contractors copies of the approved POD, project map and BLM Conditions of Approval pertinent to the work that each will be doing.
2. The operator will limit vegetation removal and the degree of surface disturbance wherever possible. Where surface disturbance cannot be avoided, all practicable measures will be utilized to minimize erosion and stabilize disturbed soils.
3. Construction and drilling activity will not be conducted using frozen or saturated soil material during periods when watershed damage or excessive rutting is likely to occur.
4. Remove all available topsoil (depths vary from 4 inches on ridges to 12+ inches in bottoms) from constructed well locations including areas of cut and fill, and stockpile at the site.

Topsoil will also be salvaged for use in reclamation on all other areas of surface disturbance (roads, pipelines, etc.). Clearly segregate topsoil from excess spoil material. Any topsoil stockpiled for one year or longer will be signed and stabilized with annual ryegrass or other suitable cover crop.

5. The operator will not push soil material and overburden over side slopes or into drainages. All soil material disturbed will be placed in an area where it can be retrieved without creating additional undue surface disturbance and where it does not impede watershed and drainage flows.
6. Construct the backslope no steeper than 1½:1, and construct the foreslope no steeper than 2:1, unless otherwise directed by the BLM Authorized Officer.
7. Maintain a minimum 20-foot undisturbed vegetative border between toe-of-fill of pad and/or pit areas and the edge of adjacent drainages, unless otherwise directed by the BLM Authorized Officer.
8. With the overall objective of minimizing surface disturbance and retaining land stability and productivity, the operator shall utilize equipment appropriate to the scope and scale of work being done for roads and well pads (utilize equipment no larger than needed for the job).
9. To minimize electrocution potential to raptors, all overhead electrical power lines will be constructed to Avian Power Line Interaction Committee (1996) standards and additional standards identified in the PRB FEIS Biological Opinion (Volume 3, Appendix K, page 43).
10. The operator shall utilize wheel trenchers or ditchers to construct all pipeline trenches, except where extreme topography or other environmental factors preclude their use.
11. Reserve pits will be adequately fenced during and after drilling operations until pit is reclaimed so as to effectively keep out wildlife and livestock. Adequate fencing, in lieu of more stringent requirements by the surface owner, is defined as follows:
 - Construction materials will consist of steel or wood posts. Three or four strand wire (smooth or barbed) fence or hog panel (16-foot length by 50-inch height) or plastic snow fence must be used with connectors such as fence staples, quick-connect clips, hog rings, hose clamps, twisted wire, etc. Electric fences will not be allowed.
 - Construction standards: Posts shall be firmly set in ground. If wire is used, it must be taut and evenly spaced, from ground level to top wire, to effectively keep out animals. Hog panels must be tied securely into posts and one another using fence staples, clamps, etc. Plastic snow fencing must be taut and sturdy. Fence must be at least 2-feet from edge of pit. 3 sides fenced before beginning drilling, the fourth side fenced immediately upon completion of drilling and prior to rig release. Fence must be left up and maintained in adequate condition until pit is closed.
12. The reserve pit will be oriented to prevent collection of surface runoff. After the drilling rig is removed, the operator may need to construct a trench on the uphill side of the reserve pit to divert surface drainage around it. If constructed, the trench will be left intact until the pit is closed.
13. The reserve pit will be lined with an impermeable liner if permeable subsurface material is encountered. An impermeable liner is any liner having a permeability less than 10^{-7} cm/sec. The liner will be installed so that it will not leak and will be chemically compatible with all substances that may be put in the pit. Liners made of any man-made synthetic material will be of sufficient strength and thickness to withstand normal installation and pit use. In gravelly or rocky soils, a suitable bedding material such as sand will be used prior to installing the liner.

14. The reserve pit will be constructed so that at least half of its total volume is in solid cut material (below natural ground level).
15. Culverts will be placed on channel bottoms on firm, uniform beds, which have been shaped to accept them, and aligned parallel to the channel to minimize erosion. Backfill will be thoroughly compacted.
16. The minimum diameter for culverts will be 18 inches. However, all culverts will be appropriately sized in accordance with standards in BLM Manual 9113.
17. Construction and other project-related traffic will be restricted to approved routes. Cross-country vehicle travel will not be allowed.
18. Maximum design speed on all operator-constructed and maintained roads will not exceed 25 miles per hour.
19. Pipeline construction shall not block nor change the natural course of any drainage. Pipelines shall cross perpendicular to drainages. Pipelines shall not be run parallel in drainage bottoms. Suspended pipelines shall provide adequate clearance for maximum runoff.
20. Pipeline trenches shall be compacted during backfilling. Pipeline trenches shall be routinely inspected and maintained to ensure proper settling, stabilization and reclamation.
21. During construction, emissions of particulate matter from well pad and road construction would be minimized by application of water or other non-saline dust suppressants with at least 50 percent control efficiency. Dust inhibitors (surfacing materials, non-saline dust suppressants, and water) will be used as necessary on unpaved roads that present a fugitive dust problem. The use of chemical dust suppressants on public surface will require prior approval from the BLM Authorized Officer.
22. Operators are required to obtain a National Pollution Discharge Elimination System (NPDES) Storm Water Permit from the Wyoming DEQ for any projects that disturb five or more acres (changing to one acre in March 2005). This general construction storm water permit must be obtained from WDEQ prior to any surface disturbing activities and can be obtained by following directions on the WDEQ website at <http://deq.state.wy.us>. Further information can be obtained by contacting Barb Sahl at (307) 777-7570.
23. The operator shall submit a Sundry Notice (Form 3160-5) to BLM for approval prior to construction of any new surface disturbing activities that are not specifically addressed in the approved APD or POD Surface Use Plan.
24. Weed educational material will be reviewed with operators during pre-construction on-site meetings with operators, subcontractors, and landowners and will also be attached to approved APDs and PODs.
25. Companies will contact the counties to pursue development of maintenance agreements to ensure county roads are adequately maintained for the projected increase in use.

C. Operations/Maintenance

1. The operator shall complete coal bed natural gas wells (case, cement and under ream) as soon as possible, but no later than 30 days after drilling operations, unless an extension is given by the BLM Authorized Officer.
2. If in the process of air drilling the wells there is a need to utilize mud, all circulating fluids will be contained either in an approved pit or in an aboveground containment tank. The pit or containment tank will be large enough to safely contain the capacity of all expected fluids

without danger of overflow. Fluid and cuttings will not be squeezed out of the pit, and the pit will be reclaimed in an expedient manner.

3. Confine all equipment and vehicles to the access road(s), pad(s), and area(s) specified in the approved APD or POD.
4. All waste, other than human waste and drilling fluids, will be contained in a portable trash cage. This waste will be transported to a State approved waste disposal site immediately upon completion of drilling operations. No trash or empty barrels will be placed in the reserve pit or buried on location. All state and local laws and regulations pertaining to disposal of human and solid waste will be complied with.
5. Rat and mouse holes shall be filled and compacted from the bottom to the top immediately upon release of the drilling rig from the location.
6. The operator will be responsible for prevention and control of noxious weeds and weeds of concern on all areas of surface disturbance associated with this project (well locations, roads, water management facilities, etc.) Use of pesticides shall comply with the applicable Federal and State laws. Pesticides shall be used only in accordance with their registered uses and within limitations imposed by the Secretary of Interior. Prior to the use of pesticides on public land, the holder shall obtain from the BLM authorized officer written approval of a plan showing the type and quantity of material to be used, pest(s) to be controlled, method of application, location of storage and disposal of containers, and any other information deemed necessary by the authorized officer to such use.
7. Sewage shall be placed in a self-contained, chemically treated porta-potty on location.
8. The operator and their contractors shall ensure that all use, production, storage, transport and disposal of hazardous and extremely hazardous materials associated with the drilling, completion and production of these wells will be in accordance with all applicable existing or hereafter promulgated federal, state and local government rules, regulations and guidelines. All project-related activities involving hazardous materials will be conducted in a manner to minimize potential environmental impacts. In accordance with OSHA requirements, a file will be maintained onsite containing current Material Safety Data Sheets (MSDS) for all chemicals, compounds and/or substances which are used in the course of construction, drilling, completion and production operations.
9. Produced fluids shall be put in test tanks on location during completion work. Produced water will be put in the reserve pit during completion work per Onshore Order #7.
10. The only fluids/waste materials which are authorized to go into the reserve pit are RCRA exempt exploration and production wastes. These include:
 - drilling muds & cuttings
 - rigwash
 - excess cement and certain completion & stimulation fluids defined by EPA as exemptIt does not include drilling rig waste, such as:
 - spent hydraulic fluids
 - used engine oil
 - used oil filter
 - empty cement, drilling mud, or other product sacks
 - empty paint, pipe dope, chemical or other product containers
 - excess chemicals or chemical rinsate

Any evidence of non-exempt wastes being put into the reserve pit may result in the BLM Authorized Officer requiring specific testing and closure requirements.

11. Reserve pits will be closed as soon as possible, but no later than 90 days from time of drilling/well completion, unless the BLM Authorized Officer gives an extension. Squeezing of pit fluids and cuttings is prohibited. Pits must be dry of fluids or they must be removed via vac-truck or other environmentally acceptable method prior to backfilling, re-contouring and replacement of topsoil. Mud and cuttings left in pit must be buried at least 3-feet below re-contoured grade. The operator will be responsible for re-contouring any subsidence areas that develop from closing a pit before it is sufficiently dry.
12. Operators are advised that prior to installation of any oil and gas well production equipment which has the potential to emit air contaminants, the owner or operator of the equipment must notify the Wyoming Department of Environmental Quality, Air Quality Division (phone 307-777-7391) to determine permit requirements. Examples of pertinent well production equipment include fuel-fired equipment (e.g., diesel generators), separators, storage tanks, engines and dehydrators.
13. If this well is drilled during the fire season (June-October), the operator shall institute all necessary precautions to ensure that fire hazard is minimized, including but not limited to mowing vegetation on the access route(s) and well location(s), keeping fire fighting equipment readily available when drilling, etc.

D. Dry Hole/Reclamation

1. All disturbed lands associated with this project, including the pipelines, access roads, water management facilities, etc will be expediently reclaimed and reseeded in accordance with the surface use plan and any pertinent site-specific COAs.
2. Disturbed lands will be re-contoured back to conform with existing undisturbed topography. No depressions will be left that trap water or form ponds.
3. The fluids and mud must be dry in the reserve pit before re-contouring pit area. The operator will be responsible for re-contouring of any subsidence areas that develop from closing a pit before it is completely dry. The plastic pit liner (if any) will be cut off below grade and properly disposed of at a state authorized landfill before beginning to re-contour the site.
4. Before the location has been reshaped and prior to redistributing the topsoil, the operator will rip or scarify the drilling platform and access road on the contour, to a depth of at least 12 inches. The rippers are to be no farther than 24 inches apart.
5. Distribute the topsoil evenly over the entire location and other disturbed areas. Prepare the seedbed by disking to a depth of 4-to-6 inches following the contour.
6. Phased reclamation plans will be submitted to BLM for approval prior to individual POD facility abandonment via a Notice of Intent (NOI) Sundry Notice. Individual facilities, such as well locations, pipelines, discharge points, impoundments, etc. need to be addressed in these plans as they are no longer needed. Individual items that will need to be addressed in reclamation plans include:
 - Pit closure (Close ASAP after suitably dry, but no later than 90 days from time of drilling unless an extension is given by BLM Authorized Officer.) BLM may require closure prior to 90 days in some cases due to land use or environmental concerns.
 - Configuration of reshaped topography, drainage systems, and other surface manipulations

- Waste disposal
 - Revegetation methods, including specific seed mix (pounds pure live seed/acre) and soil treatments (seedbed preparation, fertilization, mulching, etc.). On private surface, the landowner should be consulted for the specific seed mix.
 - Other practices that will be used to reclaim and stabilize all disturbed areas, such as water bars, erosion fabric, hydro-mulching, etc.
 - An estimate of the timetables for beginning and completing various reclamation operations relative to weather and local land uses.
 - Methods and measures that will be used to control noxious weeds, addressing both ingress and egress to the individual well or POD.
 - Decommissioning/removal of all surface facilities
 - Closure and reclamation of areas utilized or impacted by produced CBM water, including discharge points, reservoirs, off-channel pits, land application areas, livestock/wildlife watering facilities, surface discharge stream channels, etc
7. BLM will not release the performance bond until all disturbed areas associated with the APD/POD have been successfully revegetated (evaluation will be made after the second complete growing season) and has met all other reclamation goals of the surface owner and surface management agency.
 8. A Notice of Intent to Abandon and a Subsequent Report of Abandonment must be submitted for abandonment approval.
 9. For performance bond release approval, a Final Abandonment Notice (with a surface owner release letter on split-estate) must be submitted prior to a final abandonment evaluation by BLM.
 10. Soil fertility testing and the addition of soil amendments may be required to stabilize some disturbed lands.
 11. Any mulch utilized for reclamation needs to be certified weed free.
 12. Waterbars are to be constructed at least one (1) foot deep, on the contour with approximately two (2) feet of drop per 100 feet of waterbar to ensure drainage, and extended into established vegetation. All waterbars are to be constructed with the berm on the downhill side to prevent the soft material from silting in the trench. The initial waterbar should be constructed at the top of the backslope. Subsequent waterbars should follow the following general spacing guidelines:

Slope (percent)	Spacing Interval (feet)
$\leq 2 - 4$	310
5 - 8	260
9 - 12	200

E. Producing Well

1. Landscape those areas not required for production to the surrounding topography as soon as possible. The fluids and mud must be dry in the reserve pit before re-contouring pit area. The operator will be responsible for re-contouring and reseeding of any subsidence areas that develop from closing a pit before it is completely dry.

2. Reduce the backslope to 2:1 and the foreslope to 3:1, unless otherwise directed by the BLM Authorized Officer. Reduce slopes by pulling fill material up from foreslope into the toe of cut slopes.
3. Production facilities (including dikes) must be placed on the cut portion of the location and a minimum of 15 feet from the toe of the back cut unless otherwise approved by the BLM Authorized Officer.
4. Any spilled or leaked oil, produced water or treatment chemicals must be reported in accordance with NTL-3A and immediately cleaned up in accordance with BLM requirements. This includes clean-up and proper disposition of soils contaminated as a result of such spills/leaks.
5. Distribute stockpiled topsoil evenly over those areas not required for production and reseed as recommended.
6. Upgrade and maintain access roads and drainage control (e.g., culverts, drainage dips, ditching, crowning, surfacing, etc.) as necessary and as directed by the BLM Authorized Officer to prevent soil erosion and accommodate safe, environmentally-sound access.
7. Prior to construction of production facilities not specifically addressed in the APD/POD, the operator shall submit a Sundry Notice to the BLM Authorized Officer for approval.
8. If not already required prior to constructing and drilling the well location, the operator shall immediately upgrade the entire access road to BLM standards (including topsoiling, crowning, ditching, drainage culverts, surfacing, etc.) to ensure safe, environmentally-sound, year-round access. This requirement does not supercede or apply where specific road requirements are addressed in the APD/POD surface use plan (e.g., two track road, spot upgrade, etc.)
9. Waterbars shall be installed on all reclaimed pipeline corridors per the guidelines in D #12.

F. Monitor Well Drilling Guidelines

As part of the approval of this POD, the operator will be responsible for drilling, completing, and equipping a set of monitoring wells, as described below. The specific location will be determined in consultation with the BLM, and may only be drilled in a location where the oil and gas mineral estate is owned by the Federal Government.

USBLM CBNG groundwater monitoring sites in the Powder River Basin generally consist of two types of wells and a common data collection platform. The two types of wells are: 1) coal or production zone completion(s) and 2) under- or over-burden sand zone completions. Descriptions of these three components are as follows:

1. Coal Zone Monitor Wells

There could be one or more of these wells at each monitor site, depending on the number of CBNG producing zones. Because of the presence of methane, and potential for significant well head pressure, these wells must be shut in (not open to the atmosphere). These wells are completed the same as actual production wells and are subject to the same Conditions of Approval (COA) associated with CBNG production wells. The finished well will include the following:

The well(s) will be drilled to the top of the production zone(s) and 5 1/2" OD (minimum) API steel casing will be set and cemented from the top of coal to the surface. The coal will then

be drilled out, leaving an open-hole completion. The well will then be circulated with fresh water to remove any remaining drilling fluids and solids, and air lifted to get a yield estimate. If the coal doesn't appear to be making water during the clean up of the well bore, water enhancement (and possibly under reaming) may be required. The well must be completed on top with a standard well head, i.e. KVF 'Gillette Special' well head (2x2 or 2x4 with a 2", centered tubing port and threaded auxiliary access port in the mandrel).

Standard equipment includes:

- a. KVF wellhead as described above
- b. downhole transducer to measure total head (gas + water) - we are currently using Druck PTX1835, 250 psig pressure transmitters
- c. wellhead pressure transducer to measure well head pressure (this allows separation of gas and water pressures) - we are currently using Druck PTX621 transmitters (10, 100, up to 900 psig, depending on anticipated well head pressure)
- d. an airline consisting of 1/8" ID by 3/8" OD poly tubing, running from the surface to near the bottom of the hole, suspending a weight to keep the line taught. This arrangement allows verification measurements without opening the wellbore.
- e. access ports to allow for pressure testing, sampling (gas and water), and detection of methane.

2. Sand Zone Monitor Wells

There could be one or more of these wells at each monitor site, depending on parameters of interest, local concerns, etc. Typically there is a well completed in an overburden sand to monitor leakage of the shallower, generally more accessible sands. Wells are completed in under-burden sands when the under-burden sands are of more local interest or are of more significant thickness and quality, and some sites are established with wells in each of the sands from the surface down to the production zone to study recharge/discharge relationships, inter-aquifer communication, and changes in water quality. In addition, some sites will require shallow alluvial wells along ephemeral drainages receiving CBM discharge water - again to look at recharge. These wells are completed as follows:

The depth of the sand well(s) will be determined in the field utilizing the geophysical logs from the adjacent coal well(s). On wells where coal is penetrated (as determined from the logs from the adjacent coal well(s)) and on wells greater than 500 feet in depth, drilling and casing will be done as described above for the coal zone well(s). One of two completion methods may be used. The decision on which method to use will be determined by the authorized officer depending on the objectives and use of the well.

Method 1: Steel casing will be set through the sand zone, cemented to surface, and perforated, 4 shots per foot, through the sand zone.

Method 2: On wells where water quality sampling is a primary concern, steel casing will be set above the sand zone and cemented to the surface. The sand zone will then be drilled out and a screened or slotted casing string set through the sand zone. This screened casing string can either be placed using packers (i.e. K-packer) or hung on a string of casing from the surface.

On wells not penetrating coals and less than 500 feet (and optionally on wells from 500 to approximately 700 feet), the hole must be drilled with a minimum of a 9" bit to accommodate SDR17, 5 inch ID (minimum) PVC casing and 1" (minimum) flush joint

tremie pipe allowing for proper placement of gravel pack and bentonite grout. If larger casing is used, a larger hole will have to be drilled. Upon completion of drilling, geophysical logs will be run to determine the exact placement of the well screen. The well casing will include 10 to 20 feet of blank pipe on the bottom (capped), .020 slot well screen open to the selected sand zone, and blank pipe to the surface. The well will then be gravel packed with 10-20 silica sand to cover the well screen (and associated sand zone).

On very shallow wells (less than 200 feet) the annulus above the gravel pack will be backfilled with bentonite gravel (or pellets) to the surface. On wells from 200 to approximately 700 feet total depth, the annulus above the gravel pack must be grouted from the bottom to the surface using a tremie. The top of the well casing must have threads (slip to thread adapter) and a vented cap.

The well(s) will then be cleaned up by air lifting until all drilling fluids and solids are removed, clear water is produced, and a yield is estimated.

Standard equipment includes:

Either a submersible transducer as in the coal wells (we generally use these if depth to water is greater than 400 feet or so) or a shaft encoder (Handar, Sutron, Stevens) and float-tape-weight arrangement.

3. Data collection platform and miscellaneous support equipment.

All wells are linked to a central data logger (Campbell CR10 or CR510) located in a central shelter and powered via 12 volt batteries and solar modules.

All wells are enclosed in secure, weather proof shelters and fenced in to protect from livestock and wildlife damage.

Attached are photo examples of two and four well setups.

Other Requirements:

1. Equipment Funding: The methane operator will be required to provide the BLM with \$5000 for each monitoring well bore (i.e. \$10,000 for a typical two well setup, \$15,000 for a three well setup, etc.).
2. Schedule: Wells must be completed and funding provided 30 days prior to initiating pumping of production wells in proximity of the monitoring wells.
3. Access: If no public access exists to the monitor well site, the CBM operator must provide access in the form of a right of way or access agreement with the private landowners involved.
4. The operator shall submit APDs to BLM for the monitor wells. The APDs should include the completed APD cover sheet (Form 3160-3), survey plats, a drilling plan and a surface use plan (including a map). The monitor wells will require a cultural clearance report. In addition, they are subject to the same spud notification requirements and completion report requirements as regular federal wells (see General Conditions of Approval). If you have any questions concerning this stipulation and for information on locating and equipping of the wells, please contact Mike Brogan, BLM Hydrologist, at (307) 261-7600.

5. Monitor wells are subject to the same standard COA applied to CBNG production wells.
6. Prior to installation of monitoring equipment by the BLM, the operator will submit to the BLM copies of the following:
 - State Engineers Well Permit (U.W. 5) and Well Completion (U.W. 6) forms
 - Signed landowner access agreement (if applicable)
 - Final copies of all well logs