

DECISION RECORD
Categorical Exclusion 3 (CX3), WY-070-390CX3-12-236 to WY-070-390CX3-12-250
Section 390, Energy Policy Act of 2005
Bill Barrett Corporation, South Butte Plan of Development (POD)
Bureau of Land Management, Buffalo Field Office, Wyoming

DECISION: The BLM approves the applications for permit to drill (APDs) from Bill Barrett Corporation (BBC) to drill 15 coal bed natural gas (CBNG) wells and construct their associated infrastructure as described in the CX3 worksheet, WY-070-390CX3-12-236 to WY-070-390CX3-12-250 which BLM incorporates here by reference.

Compliance. This decision complies with:

- Federal Land Policy and Management Act of 1976 (FLPMA) (43 USC 1701); DOI Order 3310.
- National Environmental Policy Act of 1969 (NEPA) (42 USC 4321).
- National Historic Preservation Act of 1966 (16 USC 470).
- Endangered Species Act of 1974 (16 USC 1531).
- Buffalo and Powder River Basin (PRB) Final Environmental Impact Statement (FEIS), 1985, 2003.
- Buffalo Resource Management Plan (RMP) 1985, Amendments 2001, 2003, 2011.
- Programmatic Agreement (PA): BLM and Wyoming State Historic Preservation Officer (SHPO) regarding mitigation of adverse effects to the Pumpkin Buttes Traditional Cultural Property (TCP).

A summary of the details of the approval follows. The CX worksheet, WY-070-390CX3-12-236 to WY-070-390CX3-12-250 includes the project description, including site-specific mitigation measures which are incorporated by reference into that worksheet from earlier analysis. The proposed wells are approximately 40 miles southeast of Gillette, Campbell County, Wyoming. The South Butte POD proposal had 15 APDs to develop and produce natural gas from the coal formations of the PRB. All wells are vertical bores proposed on an 80 acre spacing pattern with 1 well per location. Each well will produce from the Big George Coal geologic mineral formations.

Approvals: BLM approves the following 15 CBNG APDs and associated infrastructure:

#	Well Name	Well #	TWP	RNG	Sec	QTR	Lease #	CX#
1	BBC SOUTH BUTTE	14-21BG*	43N	75W	21	SWSW	WYW153067	WY-070-390CX3-12-236
2	BBC SOUTH BUTTE	32-21BG	43N	75W	21	SWNE	WYW127121	WY-070-390CX3-12-237
3	BBC SOUTH BUTTE	34-21BG	43N	75W	21	SWSE	WYW127121	WY-070-390CX3-12-238
4	BBC SOUTH BUTTE	43-21BG	43N	75W	21	NESE	WYW127121	WY-070-390CX3-12-239
5	BBC SOUTH BUTTE	12-22BG	43N	75W	22	SWNW	WYW153066	WY-070-390CX3-12-240
6	BBC SOUTH BUTTE	14-22BG	43N	75W	22	SWSW	WYW153066	WY-070-390CX3-12-241
7	BBC SOUTH BUTTE	23-22BG	43N	75W	22	NESW	WYW153066	WY-070-390CX3-12-242
8	BBC SOUTH BUTTE	12-28BG	43N	75W	28	SWNW	WYW50755	WY-070-390CX3-12-243
9	BBC SOUTH BUTTE	14-28BG	43N	75W	28	SWSW	WYW50755	WY-070-390CX3-12-244
10	BBC SOUTH BUTTE	21-28BG	43N	75W	28	NENW	WYW50755	WY-070-390CX3-12-245
11	BBC SOUTH BUTTE	23-28BG	43N	75W	28	NESW	WYW50755	WY-070-390CX3-12-246
12	BBC SOUTH BUTTE	32-28BG	43N	75W	28	SWNE	WYW50755	WY-070-390CX3-12-247
13	BBC SOUTH BUTTE	34-28BG	43N	75W	28	SWSE	WYW50755	WY-070-390CX3-12-248
14	BBC SOUTH BUTTE	41-28BG	43N	75W	28	NENE	WYW50755	WY-070-390CX3-12-249
15	BBC SOUTH BUTTE	43-28BG	43N	75W	28	NESE	WYW50755	WY-070-390CX3-12-250

Limitations: See the conditions of approval, (COAs).

THE FINDING OF NO SIGNIFICANT IMPACT (FONSI). Congress, the Department of Interior and BLM affirmed there was no significant impact of a like-structured project when they created this CX3 worksheet process and its limiting parameters. Thus a FONSI and an EIS is not required.

COMMENT OR NEW INFORMATION SUMMARY. Since implementation of this CX3 proposal BFO received a new Interior Department policy on wilderness, a new Greater Sage-Grouse (GSG) policy, maintained that policy into the Buffalo RMP, and received a population viability study.

DECISION RATIONALE. The approval of this project is because:

1. Mitigation measures and COAs analyzed in the CX3 worksheet, in environmental impact statements or environmental analysis to which the CX3 worksheet tiers or incorporates by reference, will reduce environmental impacts while meeting the project's need.
2. The approved project conditioned by its design features and COAs, will not result in any undue or unnecessary environmental degradation. The impact of this development cumulatively contributes to the potential for local extirpation of the area's GSG, yet its effect is acceptable because it is outside priority habitats and is within the parameters of the PRB FEIS/ROD and current BLM and Wyoming GSG conservation strategies. There are no conflicts anticipated or demonstrated with current uses in the area. This decision approving the South Butte POD complies with the Energy Policy Act of 2005, Section 390, 43 CFR 1610.5, 40 CFR 1508.4, and 43 CFR 46.215.
3. Approval of this project conforms to the terms and the conditions of the 1985 Buffalo RMP (BLM 1985) and subsequent update (BLM 2001) and amendments (BLM 2003, 2011). This project complies with the breadth and constraints of CX3, Energy Policy Act of 2005, and subsequent policy.
4. The selected alternative will help meet the nation's energy need, revenues, and stimulate local economies by maintaining workforces.
5. The operator, in their POD, shall:
 - Comply with all applicable federal, state, and local laws and regulations.
 - Offer water well agreements to the owners of record for permitted water wells within 0.5 mile of a federal producing well in the POD (PRB FEIS ROD, p. 7).
 - Provide water analysis from a designated reference well in each coal zone.
6. The project is clearly lacking in wilderness characteristics because it is amidst mineral development.
7. This decision does not foreclose the lessee or operator to propose a new or supplementary plan for developing the federal oil and gas lease(s) in this project area, including submission of additional APDs to drain minerals in accord with lease rights and law. This decision does not foreclose the lessee or operator to propose using external pumping units via a sundry application process.
8. Bill Barrett Corporation certified there is a surface use access agreement with the landowners.
9. This approval is subject to adherence with all of the operating plans, design features, and mitigation measures contained in the Master Surface Use Plan of Operations, Drilling Plan, Water Management Plan, and information in individual APDs.
10. All stipulations of the Programmatic Agreement (PA) between BLM and Wyoming State Historic Preservation Officer (SHPO) regarding mitigation of adverse effects to the Pumpkin Buttes Traditional Cultural Property (TCP) are applied to the South Butte POD project.

ADMINISTRATIVE APPEAL: This decision is subject to administrative appeal in accord with 43 CFR 3165. Request for administrative appeal must include information required under 43 CFR 3165.3(b) (State Director Review), including all supporting documentation. Such a request must be filed in writing with the State Director, Bureau of Land Management, P.O. Box 1828, Cheyenne, Wyoming 82003, no later than 20 business days after this Decision Record is received or considered to have been received. Any party who is adversely affected by the State Director's decision may appeal that decision to the Interior Board of Land Appeals, as provided in 43 CFR 3165.4.

Field Manager:  Date: 9/28/12

Categorical Exclusion 3 (CX3), WY-070-390CX3-12-236 to WY-070-390CX3-12-250
Section 390, Energy Policy Act of 2005
Bill Barrett Corporation, South Butte Plan of Development (POD)
Bureau of Land Management, Buffalo Field Office, Wyoming

Description of the Proposed Action

Bill Barrett Corporation (BBC) proposes to drill 15 coal bed natural gas (CBNG) wells and construct their associated infrastructure. The proposed wells are approximately 40 miles southeast of Gillette, Campbell County, Wyoming (see Table 1.1 for legal descriptions). BBC's South Butte POD area is approximately 1,547 acres. The topography varies from gently rolling slopes, with deeply incised draws to rugged breaks throughout the South Butte POD. The project area drains from north to south into North Cottonwood Creek (ephemeral), then into Cottonwood Creek, eventually converging with the Dry Fork of the Powder River. Elevations range from 5,100 to 5,500 feet above sea level.

Vegetation is a sagebrush grassland habitat type. Wyoming big sagebrush (*Artemisia tridentate*) dominance varies from sparse to dense throughout the area. In areas of dense sagebrush habitat, the sagebrush components consist of mainly older sagebrush plants. The area experienced historic conventional oil and gas production, and recent CBNG development, documented with environmental assessments (EAs). The area is in a 10-14 inch precipitation zone, with most of the precipitation falling during late winter and spring. Surface owners: Dale Ruby; Patricia Clark, T-Chair Land Company.

The proposal is to explore by drilling for, and possibly develop, natural gas reserves in the Big George Coal geologic mineral formations at about 1350 to 1425 feet depth leased by BBC. BBC submitted the South Butte POD as applications for permit to drill (APDs) on February 2, 2009. The POD was shelved at the operator's request from March 2011 until April 2012. Onsites were conducted on May 1 and 2, 2012, and the proposal was evaluated and modified it as necessary to mitigate environmental impacts. The BLM sent a post-onsite deficiency letter to BBC on May 16, 2012. BBC submitted revisions on July 13, 2012.

The South Butte POD has 15 APDs to develop and produce natural gas from the coal formations of the Powder River Basin (PRB). All wells are vertical bores proposed on an 80 acre spacing pattern with 1 well per location. Each well will produce from the Big George coal seams. Proposed well house dimensions are 6.0 feet wide x 8.0 feet length x 6.5 feet height. A list of proposed wells is in Table 1.1.

Table 1.1. Proposed Wells

#	Well Name	Well #	Twp	Rng	Sec	Qtr	Lease #	CX#
1	BBC SOUTH BUTTE	14-21BG*	43N	75W	21	SWSW	WYW153067	WY-070-390CX3-12-236
2	BBC SOUTH BUTTE	32-21BG	43N	75W	21	SWNE	WYW127121	WY-070-390CX3-12-237
3	BBC SOUTH BUTTE	34-21BG	43N	75W	21	SWSE	WYW127121	WY-070-390CX3-12-238
4	BBC SOUTH BUTTE	43-21BG	43N	75W	21	NESE	WYW127121	WY-070-390CX3-12-239
5	BBC SOUTH BUTTE	12-22BG	43N	75W	22	SWNW	WYW153066	WY-070-390CX3-12-240
6	BBC SOUTH BUTTE	14-22BG	43N	75W	22	SWSW	WYW153066	WY-070-390CX3-12-241
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8	BBC SOUTH BUTTE	12-28BG	43N	75W	28	SWNW	WYW50755	WY-070-390CX3-12-243
9	BBC SOUTH BUTTE	14-28BG	43N	75W	28	SWSW	WYW50755	WY-070-390CX3-12-244
10	BBC SOUTH BUTTE	21-28BG	43N	75W	28	NENW	WYW50755	WY-070-390CX3-12-245
11	BBC SOUTH BUTTE	23-28BG	43N	75W	28	NESW	WYW50755	WY-070-390CX3-12-246
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14	BBC SOUTH BUTTE	41-28BG	43N	75W	28	NENE	WYW50755	WY-070-390CX3-12-249
15	BBC SOUTH BUTTE	43-28BG	43N	75W	28	NESE	WYW50755	WY-070-390CX3-12-250

Table 1.2 lists the water management facilities inspected and approved for the use of federal water in association with this POD. For the facilities' full legal locations, see the South Butte POD WMP, Attachment B, WYPDES Permits.

Table 1.2. Water Management Facilities

Facility Name	Twn	Rng	Sec	Qtr	WYPDES Permit	Surface Disturbance	Comments
Pumpkin #3 Reservoir (Secondary)	43N	75W	21	NESW	WY0055751-002	1.5 acres	Existing on-channel reservoir not previously attached to a federal project. Proposed outfall.
North Black Butte Reservoir (Secondary)	43N	75W	27	NWSE	WY0055751-003	2.0 acres	Existing on-channel reservoir previously attached to Yates Petroleum's All Day POD. Proposed outfall.
P22-3 (Secondary)	43N	75W	22	SESW	WY0055751-001	0.5 acres	Proposed on-channel reservoir not previously attached to a federal project. Proposed outfall.
Fourmile Creek Outfall (Primary)	43N	75W	10	SWSE	WY0053473-001	0.01 acres	Existing outfall not previously attached to a federal project.

Operations would include the following performed by company name and/or their contractors:

- Drilling of 15 federal CBNG wells in Big George coal zone is to depths of approximately 1350 to 1425 feet. All 15 locations will not use constructed pads.
- The operator has voluntarily committed to minimizing mowing radius on all wells to a 35 foot radius around the wellhead, and to minimize mowing width on new proposed primitive roads to 20 feet. This mitigation will minimize habitat disturbance at locations in proximity to Sage grouse leks.
- BBC anticipates completing drilling and construction within 2 years. Drilling and construction occurs year-round in the PRB. Weather may cause delays lasting several days but rarely do delays last multiple weeks. Timing limitations in the form of COAs and/or agreements with surface owners impose longer temporal restrictions on portions of this POD, but rarely do these restrictions affect an entire POD.
- Water for drilling operations will be from the 16-1 Reservoir located in Section 16 of T43N, R75W. An estimated 600bbls of water will be required to drill each well. Water will be hauled to drilling rigs by truck.
- The operator voluntarily commits to only construct project components outside of the migratory bird breeding season unless a survey has been completed and reviewed by BLM.
- BBC will accomplish well metering by a combination of telemetry and well visitation. Metering will entail 2-3 visits per week to each well in the summer and up to 4 visits per week in the winter.
- **Water Management:** BBC will use existing and proposed water management infrastructure to manage the produced water generated from South Butte wells listed in Table 1.1, above. The South Butte POD will use an existing direct discharge outfall to Fourmile Creek, which is in the Belle Fourche River watershed, as the primary water management strategy. Two existing, and 1 proposed full containment, on-channel reservoirs, with 1 existing, and 2 proposed outfalls will be used as secondary water management.
- All effluent discharged from the South Butte POD will be via outfalls permitted through the Wyoming Pollution Discharge Elimination System (WYPDES) permit, administered by the Wyoming Department of Environmental Quality (WDEQ). (See WYPDES Permits WY0053473, and

WY0055751). WDEQ does not require water discharged to the Belle Fourche drainage to be fully contained. Because of this condition BBC will use their existing outfall in the SWSE of Section 10, Township 43 North, 75 West, as their primary water management strategy. This outfall discharges to Fourmile Creek, which is a tributary of the Belle Fourche River. BBC proposes to use 2 existing and 1 proposed reservoir as a secondary water management strategy if the Fourmile Creek discharge is insufficient to handle all the produced water because of WYPDES permit limits. Because the impoundments are a secondary water management strategy, BBC has not provided reclamation bonds for the impoundments. Therefore, as a condition of approval (COA), BBC must submit reclamation bonds via sundry notice prior to their construction or use.

- A road network consisting of existing improved and existing primitive roads, and 1.1 miles of proposed primitive roads with spot upgrades and low water crossings.
- The operator has committed to restricting all drilling, construction, and operations traffic as shown on the Surface Use Plan Project Work Map for restricted access roads. In addition, these roads will not be used for pipeline corridors. Signage prohibiting oil & gas traffic will be placed at appropriate locations.
- There are no overhead powerlines proposed for this project. The operator will use existing overhead lines to avoid any additional habitat fragmentation by upgrading single phase to 3 phase lines as indicated on project maps. There is no additional disturbance associated with this upgrade.
- Any construction materials used will be river rock (not scoria) to avoid creating any visual resource conflicts with Pumpkin Buttes Programmatic Agreement.
- There are no staging areas or other facilities planned for this project.

BBC will install a buried gas and water line network along existing or proposed disturbances. For a detailed description of design features, construction practices, and water management strategies associated with the proposal, refer to the master surface use plan (MSUP), drilling plan, and WMP in the POD and individual APDs. Also see the POD for maps of the proposed well locations and the associated facilities described above. Information on CBNG well drilling, production, and standard practices also is in the Powder River Basin Final Environmental Impact Statement (PRB FEIS), pp. 2-9 to 2-40. For a detailed description of design features, construction practices, and water management strategies associated with the proposed action, refer to the MSUP, Drilling Plan, and WMP in the POD and in individual APDs. Also see the POD proposal for maps showing proposed well locations and associated facilities described above. More information on CBNG well drilling, production, and standard practices also is available in the PRB FEIS, pp. 2-9 to 2-40.

Table 1.3. Disturbance Summary for South Butte POD Proposal

Facility	# or Mileage	Factor	Disturbance	Duration
Well Pads	15 150 ft. x 150 ft.	W*L/43560 acre	7.80 acres	Long term
Proposed 2-track Roads with utility corridors	5,884 ft	30 ft.	4.05 acres	Long term
Existing 2-track Roads with proposed utility corridor (Water, gas, electric)	27,502	30 ft.	18.94 acres	Long term
Buried power	1,863ft.	15 ft.	0.64 acres	Short term
Pipelines(gas, water, electric)not within a corridor	415 ft	30 ft.	0.29 acres	Short term
Proposed reservoirs	1		4 acres	Long term
Proposed outfalls	3		0.04 acres	Long term
Total			32.24 acres	

In February of 2009, a programmatic agreement (PA) was signed between BLM and Wyoming State Historic Preservation Officer (SHPO) regarding mitigation of adverse effects to the Pumpkin Buttes Traditional Cultural Property (TCP) from anticipated federal minerals development in Campbell County, Wyoming. The South Butte POD is within the setting of the TCP and all stipulations of the PA between BLM and Wyoming SHPO regarding mitigation of adverse effects to the Pumpkin Buttes TCP are applied to the project. The site specific mitigation measures this project is required to adhere to are in Appendices A through G of the PA. These mitigation measures incorporate standard BMPs to reduce visual contrast and are incorporated during all phases (drilling, construction, operation, reclamation) of all wells and their associated infrastructure. Appendices A through G of the Pumpkin Buttes PA are site specific mitigation measures which address:

- Surface reclamation
- Access roads
- Gathering pipelines
- Well locations
- Power lines
- Water discharge
- Other facilities

A visual contrast rating (VCR) analysis on all proposed surface disturbance within 2 miles of the Pumpkin Buttes TCP boundary was performed and BLM determined that the project will result in a weak contrast to the setting of the TCP. This analysis, described in *BLM Handbook H-8431-1, Visual Resource Contrast Rating*, determines the potential visual impacts from the proposed surface disturbing activities by comparing the project features with the major features in the existing landscape using basic design elements of form, line, color, and texture. The weak contrast was achieved through the application of the mitigation measures outlined in the PA and resulted in a finding of “no adverse effect” to the TCP. The Pumpkin Buttes PA with Appendixes A through G is Attachment 2 in this CX worksheet.

Plan Conformance, Compliance, and Justification with the Energy Policy Act of 2005.

The Energy Policy Act of 2005, Section 390(a) subjects oil or gas exploration or development to a rebuttable presumption that the use of a categorical exclusion under the National Environmental Policy Act (NEPA) applies. Thus BLM must use an Energy Policy Act, Section 390(b), CX unless BLM rebuts the presumption. This CX worksheet is NEPA compliance categorically excluded from an EA or EIS or their analysis; it is not an exclusion from all analysis. (40 CFR 1508.4 and BLM H-1790, p. 17.) The proposed action conforms with the terms and conditions of the Approved Resource Management Plan (RMP) for the public lands administered by the BLM, Buffalo Field Office (BFO), 1985, the PRB FEIS, January 2003, and the Record of Decision (ROD) and Resource Management Amendments for the Powder River Oil and Gas Project, Amendments of 2001, 2011 as required by 43 CFR 1610.5, 40 CFR 1508.4, and 43 CFR 46.215. The South Butte POD APDs and area are clearly lacking in wilderness characteristics as they are amidst extensive natural gas development. BLM finds that the conditions and environmental effects found in the senior EA and PRB FEIS remain valid.

The applicable categorical exclusion from the Energy Policy Act of 2005, Section 390, is exclusion number (b)(3) which is *drilling an oil or gas well within a developed field for which an approved land use plan or any environmental document prepared pursuant to NEPA analyzed such drilling as a reasonably foreseeable activity, so long as such plan or document was approved within 5 years prior to the date of spudding the well.*

BLM has 3 requirements to use a Section 390 CX3, (BLM H-1790, Appendix 2, #3, p. 143):

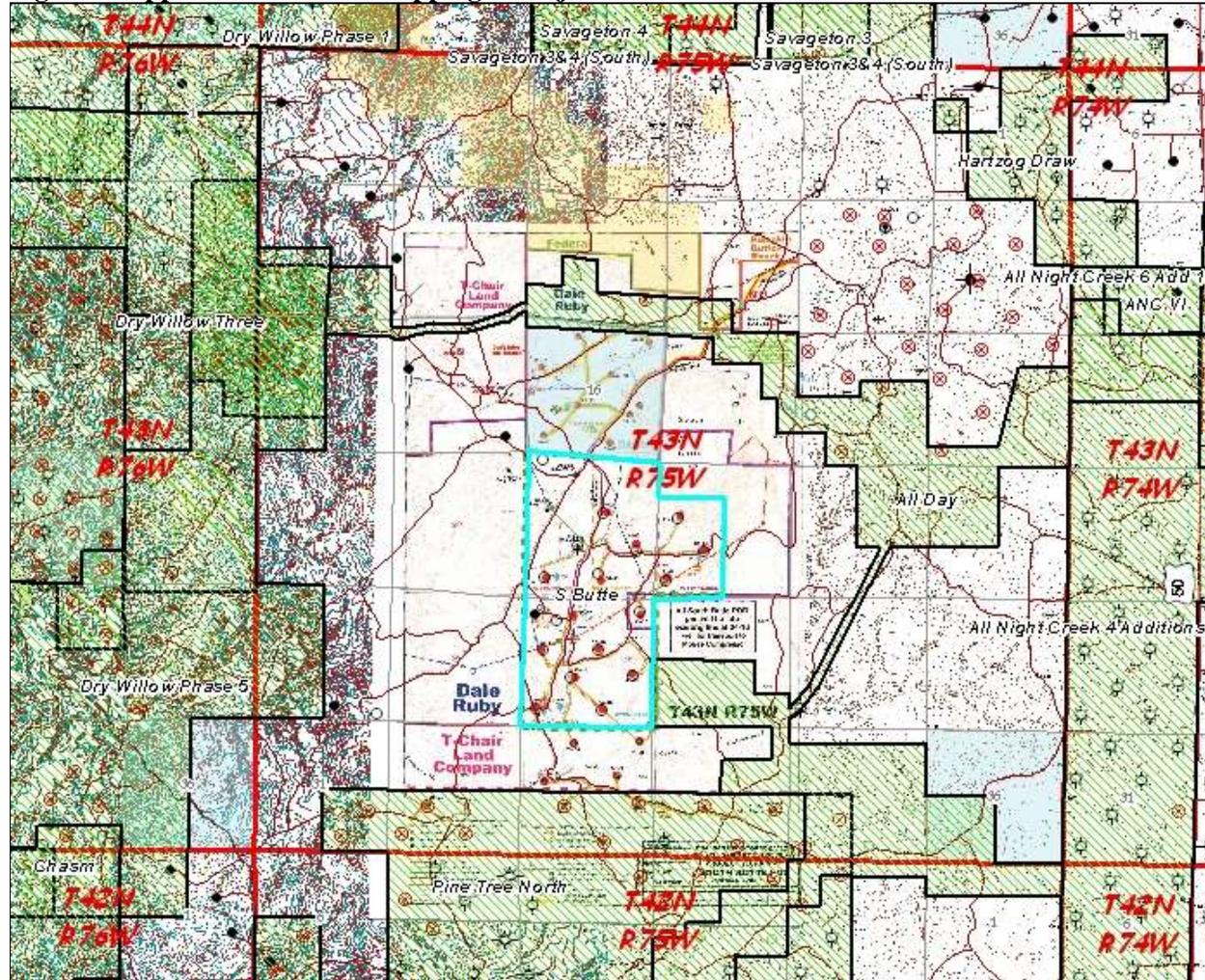
- 1) Each proposed APD is in a developed oil or gas field (any field with a completed confirmation well).

Table 1.4 is a list of existing/approved PODs that are within or adjacent to the South Butte POD. This information is provided for informational use and shows the reader that BLM conducted analysis.

Table 1.4. Adjacent or Overlapping CBNG POD Development

#	POD Name	NEPA Document #	#/Type of Wells	Decision Date
1	All Day POD	WY-070-EA08-026	35 CBNG	8/28/2009
2	Dry Willow Phase 5	WY-070-EA10-186	27 CBNG	8/12/2010
3	Table Mountain Phase 4	WY-070-EA10-258	52 CBNG	9/30/2010
4	Dry Willow Phase 3	WY-070-EA08-036	43 CBNG	9/24/2008

Figure 1. Approved PODs Overlapping or Adjacent to South Butte POD



- 2) There is an existing NEPA document (and the RMP) containing reasonably foreseeable development scenario for this action. There are several existing NEPA documents that reasonably foresaw development to spud additional wells to fill in 80 acre well-spacing. BLM reviewed these documents and determined they considered the potential environmental effects associated with the proposed activity at a site specific level. In addition, all approved EAs tier into the PRB FEIS (2003). The PRB EIS analyzed foreseeable development in the PRB. The PRB foreseeable development included 3,200 oil wells and drilling CBNG wells on 80 acre-spacing resulting in about 51,000 CBNG wells. The South Butte POD is in the foreseeable development scenario that was analyzed in EAs in Table 1.4.

Table 1.5. EAs Which Account for Reasonably Foreseeable Development Scenario

#	POD Name	NEPA Document #	#/Type of Wells	Decision Date
1	All Day POD	WY-070-EA08-026	35 CBNG	8/28/2009
2	Dry Willow Phase 5	WY-070-EA10-186	27 CBNG	8/12/2010

- 3) The tiered NEPA document was finalized or supplemented within 5 years of spudding (drilling) the proposed wells.

The South Butte POD APD CX3s tier to the following approved EAs listed above in Table 1.5.

In summary the EAs in Tables 1.4 to 1.5 analyzed in detail the anticipated direct, indirect, residual, and cumulative effects that would result from the approval of these APDs and associated support structure in South Butte POD. South Butte POD is similar to both the qualitative and quantitative analysis in the above mentioned EAs. The BFO reviewed these EAs and found that the EAs considered potential environmental effects associated with the proposed activity at a site specific level. Confirmation wells for South Butte POD will be those wells drilled and completed in All Day POD and Dry Willow Phase 5 POD approved on August 28, 2009, and August 12, 2010.

Plan of Operations

The proposal conforms to all Bureau standards and incorporates appropriate best management practices, required and designed mitigation measures determined to reduce the effects on the environment. BLM reviewed and approved a surface use plan of operations describing all proposed surface-disturbing activities pursuant to Section 17 of the Mineral Leasing Act, as amended. This CX3 worksheet also incorporates and analyzes the implementation of committed mitigation measures contained in the MSUP, drilling plan, and WMP, in addition to the Standard COAs found in the PRB FEIS ROD, Attachment 1.

Soils, Ecological Sites & Vegetation

Soils, Ecological Sites, and vegetation found in South Butte POD are similar to those occurring in All Day POD and Dry Willow Phase 5 POD approved on August 28, 2009, and August 12, 2010. Impacts anticipated occurring and mitigation considered with the implementation of the proposed action will be similar to those analyzed in the following EAs which are adjacent or overlapping to the South Butte POD and are incorporated here by reference:

1. All Day EA WY-070-EA08-026, Direct and Indirect Effects, Cumulative Effects, Residual Effects (pp. 29-32).
2. Dry Willow Phase 5 WY-070-EA10-186 Direct and Indirect Effects, Cumulative Effects, Residual Effects (pp. 29-33).

Wildlife

BLM reviewed the proposed APDs. The wildlife biologist determined that the proposed APDs, combined with the COAs are: (1) consistent with the FEIS and its supplements, the RMP and its Amendments, and the above tiered EAs; and (2) consistent with the effects analyzed in the site specific Endangered Species Act section 7 consultation and does not change the determinations in that consultation. The biologist performed onsite visits to the project area on May 1 and 2, 2012. The proposed well and infrastructure are a result of attempts by BBC and the BLM to reduce impacts to Greater Sage-Grouse (GSG), raptors, and migratory birds, and incorporates recommendations provided to the BLM by the U.S. Fish and Wildlife Service. The affected environment and environmental impacts to wildlife are anticipated to be similar, and discussed in the following EAs: Dry Willow Phase 5 POD EA (WY-070-EA10-186) (pp. 14-23 and 34-42), All Day POD EA (WY-070-EA08-026) (pp. 11-23 and 32-49). Site-specific wildlife issues amplified here are migratory birds, raptors, and GSG.

Migratory Birds

Impacts to migratory birds will be similar to those analyzed in the following EAs which are adjacent or overlapping to the South Butte POD and are incorporated here by reference:

1. Dry Willow Phase 5 POD EA WY-070-EA10-186 Direct and Indirect Effects (pp. 39-40); Cumulative Effects (p. 40); Residual Effects (p. 40)
2. All Day POD EA WY-070-EA08-026 Direct and Indirect Effects (pp. 33-34); Cumulative Effects (p. 34)

In order to reduce impacts to migratory birds, the following design features have been incorporated into the South Butte MSUP:

- a) BBC has committed to completing the project outside of the nesting season (February 1 – July 31) for migratory birds unless a survey is conducted. A condition of approval consistent with BBC's commitment for migratory birds will be applied with the approval of the wells.
- b) BBC commits to a mowing radius on all wells of 35 feet at well heads, and 20' on new proposed two-track roads in order to reduce sage-brush loss.

Raptors

Impacts to raptors and recommended mitigation will be similar to those analyzed in the following EAs which are adjacent or overlapping to the South Butte POD and are incorporated here by reference:

- 1) Dry Willow Phase 5 POD EA WY-070-EA10-186 Direct and Indirect Effects (pp. 41-42); Cumulative Effects (p. 42); Residual Effects (p. 42)
- 2) All Day POD EA WY-070-EA08-026 Direct and Indirect Effects (pp. 34-37); Cumulative Effects (p. 37)

There are 20 known nests that occur within 0.5 miles of the South Butte POD (WR 2012). A list of these nests can be found in the South Butte 2012 Wildlife Report (prepared by Wildlife Resources (WR)), included in the project file. In order to reduce impacts to raptors, the following design features have been incorporated into the South Butte MSUP:

- a) BBC has committed to completing the project outside of the nesting season (February 1 – July 31) for migratory birds, including raptors.
- b) Well 21-28 was moved west, approximately 470 feet, behind a small hill, in order to create a biologic buffer for nests 3127, 6538, 12788, and 12789.
- c) BBC agreed to eliminate use of the north/south road in Sections 21 and 28, because of its proximity and reduce impacts to nests 3127, 6538, 12788, and 12789.
- d) BBC will only utilize existing overhead power, by upgrading to 3 phase and burying new lines where needed.

Greater Sage-Grouse (GSG)

There are 9 leks that occur within 4 miles of the South Butte POD: Brown Ranch, Collins North, Hines, Hines NW, Little Black Butte, Pumpkin, South Butte, T-Chair, and Windmill. BLM analyzed and considered mitigation for these leks in the following EAs which are adjacent or overlapping to the name South Butte POD and this analysis is incorporated here by reference:

1. Dry Willow Phase 5 POD EA WY-070-EA10-186 Direct and Indirect Effects (p. 35-37); Cumulative Effects (pp. 37-38); Residual Effects (p. 38)
2. All Day POD EA WY-070-EA08-026 Direct and Indirect Effects (p. 44-45); Cumulative Effects (p. 45-48);

In March, 2010, the FWS warranted that the GSG justified listing across its range, but precluded listing due to higher priorities (FWS 2010). The GSG is now a candidate for listing under the Endangered Species Act. In March, 2012, WY BLM released the report, "Viability analyses for conservation of GSG populations: Buffalo Field Office, Wyoming," indicating that a viable population of GSG remains in the

PRB, but the combined impacts of multiple stressors, including West Nile virus (WNV) and energy development, threaten that viability (Taylor et al 2012). The information in the report identified that the effects of energy development are detectable at a larger spatial scale than had been analyzed in the Dry Willow Phase 5 and All Day PODs, referenced above. Additional information regarding the population viability analysis, and its influence on cumulative effects from energy development is found in the affected environment and environmental effects sections (Section 3.7.12 and 4.8.2 – Candidate Species – Greater Sage-grouse (GSG)) of the Mufasa Fed 11-31H Well EA, WY-070-EA12-062, incorporated here by reference. This new information does not substantially change the analysis included in the POD EAs listed in Table 1.2.

The South Butte POD wells are within mapped and modeled suitable nesting habitat for GSG. The BLM confirmed that the project area contained high quality habitat during onsite, and observed GSG sign in several areas. Implementation of the project will result in approximately 24 acres of direct habitat loss. In order to reduce impacts to GSG, these design features were incorporated in the South Butte MSUP:

- a) BBC commits to a mowing radius on all wells of 35 feet at well heads, and 20 feet on new proposed two-track roads in order to reduce sage-brush loss.
- b) BBC will only utilize existing overhead power, by upgrading to 3 phase and burying new lines where needed. No use of generators is anticipated.
- c) BBC dropped 3 proposed reservoirs, and revised the water management plan, in order to reduce potential breeding habitat for mosquitoes and decrease the risk of West Nile virus in the area.

The BLM WY policy is to manage GSG habitats consistent with the provisions set forth by the State of Wyoming, and as found in Instruction Memorandum (IM) No. WY-2012-019, Greater Sage-Grouse Habitat Management Policy on Wyoming BLM Administered Public Lands Including the Federal Mineral Estate. IM 2012-019 states that for areas outside of core and connectivity habitats, “surface occupancy and/or disruptive activities are prohibited on or within one-quarter (0.25) mile radius of the perimeter of occupied sage-grouse [GSG] leks.” The IM reads that Field Offices must consider an alternative that does not authorize new surface facilities within a 0.25 mile buffer of leks, including roads. The BFO amended their RMP with a maintenance action on September 17, 2010 to include a similar provision and to be consistent with guidance set forth in the preceding IM, WY-2010-012. The management action reads: “Surface disturbing activities or surface occupancy is prohibited or restricted on or within one quarter (0.25) mile radius of the perimeter of occupied or undetermined [GSG] leks.” All wells in the South Butte POD can be accessed via existing and proposed two-track roads outside of the 0.25 mile CSU on the South Butte lek. The BLM recommends that the improved road directly through the CSU on the lek is not authorized for use and that no upgraded roads be approved at this time. No surface occupancy will be permitted within 0.25 miles of the South Butte Lek.

Water Resources

The operator submitted a comprehensive WMP for this project. It is incorporated-by-reference into this CX3 pursuant to 40 CFR 1502.21. The WMP incorporates sound water management practices, monitoring of downstream impacts within the Upper Powder River and Upper Belle Fourche River watersheds and commitment to comply with Wyoming State water laws/regulations. It also addresses potential impacts to the environment and landowner concerns. Qualified hydrologists, in consultation with the BLM, developed the water management plan. Adherence with the plan, in addition to BLM applied mitigation (in the form of COAs), would reduce project area and downstream impacts from proposed water management strategies.

The water extracted in the production of CBNG is water of the state, per Wyoming Law (W.S. 41-3-101). BLM policy 1982 directs the BLM’s cooperation and full compliance with State water laws. The WDEQ permits and regulates the disposal of produced water. The BLM is responsible for analyzing the proposed

action with available data provided in the WMP for the POD and disclose potential impacts of the proposed action. The surface access agreement (SUA) was self-certified.

Bill Barrett and BLM predicted the maximum water production to be 10 gpm per well or 150 gpm (0.33 cubic feet per second (cfs) or 242 acre-feet per year) for this POD. The PRB FEIS projected the total amount of water that anticipated from CBNG development per year, (Table 2-8, Projected Amount of Water Produced from CBNG Wells under Alternatives 1, 2A, and 2B p. 2-26). For the Upper Powder River drainage, the projected volume produced in the watershed area was 23,697 acre-feet in 2012 (maximum production is estimated in 2006 at 171,423 acre-feet). For the Upper Belle Fourche River drainage, the projected volume produced in the watershed area was 21,215 acre-feet in 2012 (maximum production is estimated in 2006 at 85,761 acre-feet). As such, if all the water produced by the South Butte POD was discharged to the Upper Belle Fourche River drainage, the volume would be 1.1% of the total volume projected for 2012. Alternatively, if all the water produced by the South Butte POD was discharged to the Upper Powder River drainage, the volume would be 1.0% of the total volume projected for 2012. This volume of produced water is within the predicted parameters of the PRB FEIS.

Groundwater

This project will add an additional 150 gpm to existing and proposed infrastructure. Anticipated impacts, and mitigation considered will be similar to those analyzed in the EAs listed in Table 1.3 which are near or overlapping the South Butte POD and is incorporated here by reference.

The PRB FEIS predicts an infiltration rate of 40% to groundwater aquifers and coal zones in the Upper Powder River drainage area and 28% in the Upper Belle Fourche drainage area (PRB FEIS, p. 4-5). For this project, using the Upper Powder River value, BLM assumes that a maximum of 60 gpm would infiltrate at or near the discharge points and impoundments (97 acre feet per year). This water will saturate the near surface alluvium and deeper formations prior to mixing with the groundwater used for stock and domestic purposes. According to the PRB FEIS, “the increased volume of water recharging the underlying aquifers of the Wasatch and Fort Union Formations would be chemically similar to alluvial groundwater.” (PRB FEIS, p. 4-54) Therefore, the chemical nature and the volume of the discharged water may not degrade the groundwater quality.

The PRB FEIS predicts that one of the environmental consequences of CBNG production is possible impacts to the groundwater. “The effects of development of CBNG on groundwater resources would be seen as a drop in the water level (drawdown) in nearby wells completed in the developed coal aquifers and underlying or overlying sand aquifers.” (PRB FEIS, p. 4-1) In the process of dewatering the coal zone to increase natural gas recovery rates, this project may have some effect on the static water level of wells in the area. The permitted CBNG wells produce from depths which range between 1350 and 1425 feet compared to 6 to 960 feet deep in the eight water wells within one mile of the South Butte POD. The operator committed to offer water well agreements to holders of properly permitted domestic and stock wells in the circle of influence (0.5 mile of a Federal CBNG producing well) of the proposed wells.

The PRB FEIS anticipated that recovery of the coal bed aquifer as follows: “. . . storage areas outside the areas of CBNG development would resaturate and repressurize the areas that were partially depressurized during operations. The amount of groundwater stored within the coals and sands units above and below the coals is enormous. Almost 750 million acre-feet of recoverable groundwater are stored within the Wasatch-Tongue River sands and coals (Table 3-5). Redistribution is projected to result in a rapid initial recovery of water levels in the coal. The model projects that this initial recovery period would occur over 25 years.” (PRB FEIS, p. 4-38)

Adherence to the requirement in Onshore Order #2, the drilling COAs, setting casing at appropriate permitted depths, following safe remedial procedures in the event of casing failure, and using proper

cementing procedures should protect any fresh water aquifers above the target coal zone. This will ensure that ground water will not be adversely impacted by well drilling and completion operations.

Surface Water

BBC did not identify any springs/seeps in proposed POD or within 0.5 mile radius of the POD boundary. Anticipated impacts, and mitigation considered will be similar to those analyzed in the EAs in Table 1.3 which are near or overlapping the South Butte POD and is incorporated here by reference. For more information refer to the South Butte POD’s WMP and the WMP’s for the PODs in Table 1.3.

Produced Water Quality

Average values of EC and SAR as measured at selected USGS stream gauging stations at high and low monthly flows as well as the Wyoming groundwater quality standards for TDS and SAR for Class I to Class III water (there is no current standard for EC) are in Table 1.6. It also shows constituent limits for TDS, SAR, and EC detailed in the project area WYPDES permit, and the concentrations in the POD’s representative water sample.

Table 1.6. Comparison of Regulated Water Quality Parameters to Predicted Water Quality

Sample location or Standard	TDS mg/l	SAR	EC µmhos/cm
Belle Fourche Watershed at Moorehead, MT Gauging Station			
Historic Data Average at Maximum Flow		3.92	1,421
Historic Data Average at Minimum Flow		4.62	2,154
WDEQ Quality Standards for WY Groundwater (Chapter 8)			
Drinking Water (Class I)	500		
Agricultural Use (Class II)	2,000	#	
Livestock Use (Class III)	5,000		
WDEQ Water Quality Requirement for WYPDES Permit # WY0053473			
At discharge point	5000	10	2000
Predicted Produced Water Quality from the Big George coal zone	1190	9.6	1860

Based on the analysis in the PRB FEIS, the primary beneficial use of the surface water in the PRB is the irrigation of crops (p. 4-69). The water quality projected for this POD is within the WDEQ criteria for agricultural use (2,000 mg/l TDS). However, direct land application is not included in the WMP. If at any future time the operator entertains the possibility of irrigation or land application with the water produced from these wells, the proposal must be submitted as a sundry notice for separate environmental assessment and decision by the BLM.

BLM analyzed the results from a representative water sample from a well drilled to the same coal zone near to the South Butte POD. BLM predicts the water quality for the water produced from the Big George coal zone from these wells to be similar to the sample water quality collected. For complete analysis and results see the company laboratory analytical report in the WMP’s Attachment G.

Based on the analysis performed in the PRB FEIS, the primary beneficial use of the surface water in the PRB is the irrigation of crops, (p. 4-69). However, irrigation use is not proposed in the WMP, rather the water will be stored in on channel reservoirs or discharge to tributaries of the Upper Belle Fourche River.

Surface discharge of the produced water provides passive treatment through the aeration supplied by the energy dissipation configuration at each discharge point outfall. Aeration adds dissolved oxygen to the produced water which can oxidize susceptible ions, which may then precipitate. This is particularly true

for dissolved iron. Because iron is one of the key parameters for monitoring water quality, the precipitation of iron oxide near the discharge point will improve water quality at downstream locations. The operator has obtained WYPDES permits (Permit WY0055751, WY0053473) from the WDEQ for the discharge of water produced from this project. Those permits' maximum effluent limits are in Table 1.7. In order to determine the actual water quality of the producing formations in this POD and to verify the water analysis submitted for the pre-approval evaluation, the operator committed to designate a reference well to each coal zone within the POD. The operator is required to sample the reference well at the wellhead for analysis within 60 days of initial production and submit a copy of the water analysis to the BLM Authorized Officer. For more information refer to this POD's WMP.

Table 1.7. Applicable WYPDES Permit Limits (WY0053473)

Effluent Characteristic	Daily Maximum
	Permit #
pH	6.5 to 9.0
Specific Conductance (µS/cm)	2000
Dissolved Iron (µg/l)	1000
Total Barium (µg/l)	1800
Total Arsenic (µg/l)	3.1
Chlorides (mg/l)	46
Total Flow (million gallons per day)	0.35

Cultural

A Class III cultural resource inventory was conducted for the South Butte POD prior to on-the-ground project work (BFO project no. 070090005A). BBC provided BLM with the inventory which follows the Archeology and Historic Preservation, Secretary of the Interior's Standards and Guidelines (48CFR190) and the *Wyoming State Historic Preservation Office Format, Guidelines, and Standards for Class II and III Reports*. G. L. "Buck" Damone III, BLM Archaeologist, reviewed the report for technical adequacy and compliance with BLM standards and determined it adequate. Table 1.8 lists the resources located in or near the project area.

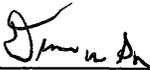
Table 1.8. Cultural Resources

Site Number	Site Type	Eligibility
48CA268	Pumpkin Buttes TCP	Eligible
48CA1568	Deadwood Road	Eligible (non-contributing segments)
48CA1570	Sawyers Expedition	Eligible (non-contributing segments)
48CA4975	Crook's 1876 Belle Fourche River Scout Route	Eligible (non-contributing segments)
48CA5326	Prehistoric and Historic Site	Not Eligible
48CA5327	Prehistoric and Historic Site	Not Eligible
48CA5333	Prehistoric and Historic Site	Not Eligible
48CA5334	Prehistoric Site	Not Eligible
48CA5335	Historic Site	Unevaluated
48CA5336	Prehistoric and Historic Site	Not Eligible
48CA5337	Prehistoric and Historic Site	Not Eligible
48CA5338	Historic Site	Not Eligible
48CA5339	Prehistoric and Historic Site	Not Eligible
48CA5340	Historic Site	Not Eligible
48CA6625	Prehistoric Site	Not Eligible
48CA6647	Prehistoric Site	Eligible
48CA6648	Prehistoric Site	Not Eligible
48CA6649	Prehistoric Site	Not Eligible

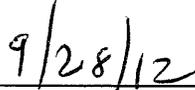
No historic properties will be physically impacted by the project. Eligible sites 48CA1568, 48CA1570 and 48CA4975 (historic trails) are near the project areas, but no segments that contribute to their eligibility were located. The setting of site 48CA268 (Pumpkin Buttes TCP) will be impacted, but the project will create a weak contrast (see above) resulting in a finding of "no adverse effect". Following the Pumpkin Buttes PA and the Wyoming State Protocol Section VI (B) (1) the BLM electronically notified the Wyoming State Historic Preservation Officer (SHPO) on September 28, 2012 of the finding of no adverse effect. If operators observe any cultural values [sites, artifacts, human remains (Appendix L PRB FEIS and ROD)] during operation of this lease/permit/right-of-way, they will be left intact and the Buffalo Field Manager notified. Further discovery procedures are in the Standard COA (General)(A)(1).

Decision and Rationale on Action

The COAs provide mitigation and further the justification for this decision and may not be segregated from project implementation without further NEPA review. I reviewed the plan conformance statement and determined that the proposed South Butte CX3 APDs and infrastructure conform to the applicable land use plans. I reviewed the proposal to ensure the appropriate exclusion category as described in Section 390 of the Energy Policy Act of 2005 is correct. It is my determination that there is no requirement for further environmental analysis.



Field Manager



Signature Date

Note: The CX3's approval requires a separate decision record (DR) and the DR must include appropriate appeal language that comports to the appropriate 43 CFR part authorizing the project. There is decision space in the CX3 and in the DR to apply limitations, mitigation, and conditions of approval – however mitigation and COAs must comply with those published in the 2003 ROD or thoroughly analyzed in an EA this CX3 worksheet tiers to or incorporates an analysis here by reference or is supported in this CX3 worksheet with an analysis.

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