

DECISION RECORD
ANADARKO E&P ONSHORE LLC,
Table Mountain 5 Plan of Development (POD)
Categorical Exclusion 3 (CX3), WY-070-390CX3-15-197 through WY-070-390CX3-15-214
Bureau of Land Management, Buffalo Field Office, Wyoming

DECISION. The BLM approves Anadarko E&P Onshore LLC (Anadarko) 18 well applications for permit to drill (APDs) described in Alternative B of the CX3 (WY-070-390CX3-15-197 through WY-070-390CX3-15-214). This approval includes the wells’ support facilities.

Compliance. This decision complies with:

- Federal Land Policy and Management Act of 1976 (FLPMA) (43 USC 1701).
- 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).
- Powder River Basin Oil and Gas Project Final Environmental Impact Statements (FEIS), 2003.
- Buffalo Resource Management Plan (RMP) 1985, Amendments 2001, 2003, 2011.
- Greater Sage-Grouse Habitat Management Policy on Wyoming BLM Administered Public Lands (WY-IM-2012-019) and Greater Sage-Grouse Interim Management Policies and Procedures (WO-IM-2012-043).

BLM summarizes the details of the approval of Alternative B, below. The CX3 includes the project description, including specific changes made at the onsite, and site-specific mitigation measures.

Table 1: Well Site. BLM approves the following APDs and support facilities:

	Well Name	Well No.	TWP	RNG	SEC	Qtr/Qtr	Lease	CX 3 No.
1	TM-CBM	4477 3-41	44N	77W	3	NENE	WYW0311396A	WY-070-390CX3-15-197
2	TM-CBM	4477 3-42	44N	77W	3	SENE	WYW13956	WY-070-390CX3-15-198
3	TM-CBM	4477 11-34	44N	77W	11	SWSE	WYW603	WY-070-390CX3-15-199
4	TM-CBM	4477 12-14	44N	77W	12	SWSW	WYW64500	WY-070-390CX3-15-200
5	TM-CBM	4477 12-23	44N	77W	12	NESW	WYW64500	WY-070-390CX3-15-201
6	TM-CBM	4477 12-34	44N	77W	12	SWSE	WYW35222	WY-070-390CX3-15-202
7	TM-CBM	4576 6-14	45N	76W	6	SWSW	WYW0266651	WY-070-390CX3-15-203
8	TM-CBM	4576 6-23	45N	76W	6	NESW	WYW0266651	WY-070-390CX3-15-204
9	TM-CBM	4576 6-41	45N	76W	6	NENE	WYW0266651	WY-070-390CX3-15-205
10	TM-CBM	4576 7-12	45N	76W	7	SWNW	WYW0266651	WY-070-390CX3-15-206
11	TM-CBM	4576 7-21	45N	76W	7	NENW	WYW0266651	WY-070-390CX3-15-207
12	TM-CBM	4576 18-21	45N	76W	18	NENW	WYW89851	WY-070-390CX3-15-208
13	TM-CBM	4577 10-14	45N	77W	10	SWSW	WYW0275186	WY-070-390CX3-15-209
14	TM-CBM	4577 10-23	45N	77W	10	NESW	WYW0275186	WY-070-390CX3-15-210
15	TM-CBM	4577 10-34	45N	77W	10	SWSE	WYW0275186	WY-070-390CX3-15-211
16	TM-CBM	4577 10-43	45N	77W	10	NESE	WYW0275186	WY-070-390CX3-15-212
17	TM-CBM	4577 15-12	45N	77W	15	SWNW	WYW0275186	WY-070-390CX3-15-213
18	TM-CBM	4577 15-21	45N	77W	15	NENW	WYW0275186	WY-070-390CX3-15-214

Left column administrative numbering is consistent in the CX, COAs, and DR.

Limitations. There are no denials or deferrals. Also 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 and its limiting parameters. Thus a FONSI and an EIS is not required.

COMMENT OR NEW INFORMATION SUMMARY. BLM publically posted the APDs for 30 days, received no comments, and then internally scoped them. BLM incorporated all new or clarified BLM NEPA-relevant policies in the processing of the Table Mountain 5 POD.

DECISION RATIONALE. BLM bases the decision authorizing the selected project on:

1. BLM and Anadarko included design features and mitigation measures (conditions of approval (COAs)) to reduce environmental impacts while meeting the BLM's need. For a complete description of all site-specific COAs, see the COAs.
 - a. The impact of this development cumulatively contributes to the potential for local extirpation of the Greater Sage Grouse (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 (WO-IM-2012-043) and Wyoming (WY-IM-2012-019) GSG conservation strategies.
 - b. With application of Standard Operating Procedures (SOPs), applied mitigation, Required Design Features, and COAs identified for Greater Sage-Grouse under the proposed action, impacts caused by surface-disturbing and disruptive activities would be minimized.
 - c. There are no conflicts anticipated or demonstrated with current uses in the area.
2. The Resource Management Plan (RMP) for the Buffalo Field Office is currently undergoing revision. The Proposed RMP and Final Environmental Impact Statement were released in May 2015. The proposed action was screened against the Final EIS to ensure that the proposed action would not preclude BLM's ability to select any alternative in a ROD. The proposed action was also determined to not be inconsistent with the direction outlined in the RMP's Proposed Alternative.
3. The selected alternative will help meet the nation's energy needs, and help stimulate local economies by maintaining workforce stability.
4. The operator committed to:
 - Comply with the approved APD, applicable laws, regulations, orders, and notices to lessees.
 - Obtain necessary permits from agencies.
 - Offer water well agreements to the owners of record for permitted wells.
 - Incorporate measures to alleviate resource impacts into their submitted surface use and drilling plans.
6. The operator certified it has a surface access agreement.
7. The project lacks wilderness characteristics. A wilderness characteristics inventory was completed in 2013; no lands with wilderness characteristics were identified outside the Big Horn Mountains. The inventory is available at: <http://www.blm.gov/wy/st/en/programs/Planning/rmps/buffalo/docs.html>. These APDs are pursuant to the Mineral Leasing Act for developing oil or gas and do not satisfy the categorical exclusion directive of the Energy Policy Act of 2005; Section 390 because of older NEPA is uncurrent with the scientific analysis and management for greater sage-grouse.

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: /s/ Duane W. Spencer

Date: September 11, 2015

Categorical Exclusion 3 (CX3), WY-070-390CX3-15-197 through WY-070-390CX3-15-214
Section 390, Energy Policy Act of 2005
ANADARKO E&P ONSHORE LLC,
Table Mountain 5 Plan of Development (POD)
Bureau of Land Management, Buffalo Field Office, Wyoming

Description of the Proposed Action.

ANADARKO E&P ONSHORE LLC (Anadarko) requests BLM’s approval for 18 applications for permit to drill (APDs). BLM incorporates the APDs here by reference; see the administrative record (AR). Anadarko proposes to drill coalbed natural gas (CBNG) wells as vertical bores proposed on an 80 acre spacing pattern with 1 well per location. Each well will produce from Big George, Werner, and Smith coal seams. Proposed well house dimensions are 8ft wide x 8ft length x 8ft height. Alternatively, depending on the water production rate, the use of pumping units may be a more effective lift for dewatering the wells. The height of these units at maximum angle is 10.5ft". The base of the unit is 9'4" x 3'. Pumping units, if needed, would be used from three to five years into the well’s life, or once the rate of water disposal is around 100 barrels per day.

All of the proposed wells are on split estate with the exception of 4 wells which are on federal BLM surface.

Anadarko proposes an initial disturbance including pad disturbance, cuts, fills, spoil piles, top soil piles, access roads, overhead power (OHP), and buried utilities, of approximately 159.28 acres; disturbance summary in Table 2. Please refer to the AR for further detail in regards to how and why the Table Mountain 5 wells are replacing the said Table Mountain 2 and 4 expired APDs and will be using the previously approved locations and infrastructure. Table 1. below illustrates the proposed wells.

Table 1: Table Mountain 5 POD Proposed Wells

	Well Name	Well No.	TWP	RNG	SEC	Qtr/Qtr	Lease	CX 3 No.
1	TM-CBM	4477 3-41	44N	77W	3	NENE	WYW0311396A	WY-070-390CX3-15-197
2	TM-CBM	4477 3-42	44N	77W	3	SENE	WYW13956	WY-070-390CX3-15-198
3	TM-CBM	4477 11-34	44N	77W	11	SWSE	WYW603	WY-070-390CX3-15-199
4	TM-CBM	4477 12-14	44N	77W	12	SWSW	WYW64500	WY-070-390CX3-15-200
5	TM-CBM	4477 12-23	44N	77W	12	NESW	WYW64500	WY-070-390CX3-15-201
6	TM-CBM	4477 12-34	44N	77W	12	SWSE	WYW35222	WY-070-390CX3-15-202
7	TM-CBM	4576 6-14	45N	76W	6	SWSW	WYW0266651	WY-070-390CX3-15-203
8	TM-CBM	4576 6-23	45N	76W	6	NESW	WYW0266651	WY-070-390CX3-15-204
9	TM-CBM	4576 6-41	45N	76W	6	NENE	WYW0266651	WY-070-390CX3-15-205
10	TM-CBM	4576 7-12	45N	76W	7	SWNW	WYW0266651	WY-070-390CX3-15-206
11	TM-CBM	4576 7-21	45N	76W	7	NENW	WYW0266651	WY-070-390CX3-15-207
12	TM-CBM	4576 18-21	45N	76W	18	NENW	WYW89851	WY-070-390CX3-15-208
13	TM-CBM	4577 10-14	45N	77W	10	SWSW	WYW0275186	WY-070-390CX3-15-209
14	TM-CBM	4577 10-23	45N	77W	10	NESW	WYW0275186	WY-070-390CX3-15-210
15	TM-CBM	4577 10-34	45N	77W	10	SWSE	WYW0275186	WY-070-390CX3-15-211
16	TM-CBM	4577 10-43	45N	77W	10	NESE	WYW0275186	WY-070-390CX3-15-212
17	TM-CBM	4577 15-12	45N	77W	15	SWNW	WYW0275186	WY-070-390CX3-15-213
18	TM-CBM	4577 15-21	45N	77W	15	NENW	WYW0275186	WY-070-390CX3-15-214

Left column administrative numbering is consistent in the EA, COAs, and DR.

*All of the above wells listed in Table 1 are part of the expired APD's from the previously approved Table Mountain 2 and 4 POD's.

The Table Mountain 5 POD NOSs were assigned on October 14, 2014 and the onsites were scheduled for December 10-11, 2014 & January 20, 2015. The Table Mountain 5 POD APD package was received on April 7, 2015 and the remainder of the POD (cementing program) was received on April 13, 2015. The BLM Post APD Deficiency Letter was sent to Anadarko on May 11, 2015. Anadarko responded to the deficiency letter on July 3, 2015. However, there still remained cultural deficiencies. On August 27, 2015 the cultural deficiencies was addressed and SHPO was notified.

To access the Table Mountain 5 Plan of Development (POD), beginning at the Gillette/State Highway 50 turnoff from Interstate 90 (Exit 124), proceed in a southerly direction along State Highway 50 approximately 25.0 miles to the intersection of Black and Yellow Road to the southwest. Turn right onto Black and Yellow Road and proceed in a southwesterly direction approximately 12.1 miles to the intersection of an existing improved road to the northwest. Turn right onto the existing improved road and proceed in a northwesterly direction approximately 0.3 miles to an existing improved road to the northwest. Turn right onto the existing improved road and proceed in a northwesterly, then southwesterly, then southeasterly direction approximately 14.5 miles to the Table Mountain pump station.

Total distance from the Gillette/State Highway 50 turnoff of Interstate 90 (Exit 124) to the Table Mountain pump station is approximately 51.9 miles.

Due to the topography in the project area, a total of fifteen proposed locations will require dirt work in the form of (11) well pads and four (4) slots. Three locations will not require any additional dirt work aside from the reserve pits. A small pit for drill cuttings would be dug and buried as soon as practical. There are typically two pits thirty-six (36) feet long, by sixteen (16) feet wide that are excavated at a maximum depth of twenty (20) feet. Two (2) feet of freeboard would be maintained for pits and the edge of the reserve pits would be located a minimum of thirty-two (32) feet from the borehole. The reserve pit would be constructed with a minimum of one-half (0.5) the total depth below the original ground surface on the lowest point within the pit. The pit would be unlined unless permeable soils are encountered at the drill site.

Pad sizes will be approximately one-hundred and fifty (150) feet by one-hundred and seventy (170) feet. Proposed locations not requiring a pad as well as slots will utilize typical work area that is approximately one-hundred and fifty (150) feet by one-hundred and seventy (170) feet; however, this may vary slightly according to terrain. For example, should a well be placed on a narrow ridge, the area may encompass less width but more length, or vice-versa. Anadarko would mow locations in a 75' radius of the well-bore to minimize tripping and fire hazards, depending on the vegetation, wildlife and location.

Table 2. Construction Disturbance Associated with the Table Mountain 5 POD

Facility	Operator Proposed After Onsites in miles (acres)
Number of CBNG Wells	18 (11.15 acres)
Engineered Pads	11
Slots or No Pad No Slot	7 (4 slots and 3 no pads)
Engineered Roads/utility corridor	0.14 miles (0.86 acres)
Template Roads/utility corridor	20.70 miles (112.92 acres)
Template road	0.81 miles (4.47 acres)
Stand-alone Utilities (gas, water, electric)	4.37 miles (18.56)
Power Drops	11

Facility	Operator Proposed After Onsites in miles (acres)
Overhead Power	2.89 miles (10.51 acres)
Direct Discharge Outfall and Pipeline	1 (0.1 acres)
Total Acre Disturbance (construction/drilling)	159.38 acres

Interim/ Production Disturbance

Reclamation would be conducted on disturbed surface that is not necessary for continued production and operation. Interim reclamation would reduce pad sizes from 0.64 acres on average to 0.33 acres typically, and reclamation of well sites, utility corridors, and access roads (from construction width ~45ft to ~16ft) would result in approximately 90 acres less disturbance during the life of the wells.

Anadarko 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.

Well metering shall be accomplished by a combination of telemetry and well visitation. Metering would entail 2-3 visits per week during the summer and up to 4 visits per week during the winter to each well location. A road network consisting of 21.66 miles of improved road will be needed.

Anadarko does not anticipate requiring the use of generators for this project. An underground electrical distribution line network would be constructed by Anadarko contractors as well as a total of approximately 2.89 miles of overhead power (OHP). Twelve new proposed transformers would be needed for this POD, as well as nine proposed power drops, two existing power drop upgrades, and two proposed sectionalizers. The size of the disturbance for power equipment is included within the disturbance area calculated for electric lines

Anadarko 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 proposed action, refer to the master surface use plan (MSUP), drilling plan, and WMP in the POD and individual APDs. Also see the POD for maps showing the proposed wells and the associated facilities described above. More information on CBNG well drilling, production, and practices is available 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 proposal, 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.

Anadarko anticipates that up to 15 truckloads of water per well would be required for drilling wells, and three truckloads per well would be required for the cementing of production casing. Anadarko expects to use 2,000 barrels to fill pits and approximately 1,000 additional barrels to drill each well.

Water Wells: 28 water wells total within 1-mile radius of the 18 proposed wells:

- 15 Industrial: ranging 285’ – 800’ (all for uranium in-situ recovery projects).
- 3 Miscellaneous: ranging 300’ – 600’ (all for uranium in-situ recovery projects).
- 10 Stock: ranging 150’ – 733’.

Table 3: Surface Ownership

Land owner(s)
Federal Surface – BLM
State of Wyoming Office of State Lands and Investments c/o Anne M. Harris
Larry Brubaker
John O. Christensen
Robert F. & Janet K. Christensen
Dry Fork Land & Livestock LP c/o Dee Johnson
Edwin J. and Dixie Lee Streeter

Water Management Proposal.

The Table Mountain 5 project will use existing and proposed water management infrastructure to dispose of the produced water generated from project wells listed in Table 1, above. The Table Mountain 5 POD will use the same water management (WMP) strategies as proposed and approved in the Table Mountain 2 POD, which is to inject all of the produced water into the Madison aquifer through a previously approved injection well located near Midwest, Wyoming. Additionally, a new direct discharge outfall will be constructed to allow discharge to Willow Creek in accordance with the operators Wyoming Department of Environmental Quality issued WYPDES permits. The outfall will be used by all wells in the Table Mountain 1, 2, 4, and 5 PODs. Less than 20 feet of new pipeline will be required to attach the new outfall to existing pipeline.

Anadarko submitted a new Water Management Plan that proposed the use of two new direct discharge outfalls, one in the NWNW, Sec 9, Twn 45N, Rng 77W, and one in SESW, Sec 14, Twn 45N, Rng 77W. During the onsite inspection on 9/2/2015, the operator withdrew the proposal for the Section 9 outfall, so only the Section 14 outfall will be approved.

Table 1.2. Proposed Water Management Facilities WYPDES Permit

Facility Name	NEPA Analysis	Permit #	Facilities in WYPDES Permit and Locations
Class V Injection Well System	WY-070-10376	WYDEQ 08-144	Water will be piped to the injection well system in Sections 12, 13, 24 of Township 40N, Range 79W.
Direct Discharge Outfall	WY-070-10376	WY0094544 -002	Outfall will be constructed adjacent to Willow Creek in the SE¼SW¼, Sec 14, Twn 45N, Rng 77W

BLM here incorporates by reference the above NEPA analyses.

For complete legal locations of these facilities see Table Mountain 5 WMP, Attachment C, and Injection Well Permits.

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 analysis 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 proposal 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 (2011), 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. 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 NEPA analyses that are within 4 miles or adjacent to the Table Mountain 5 POD. This information shows that BLM conducted analysis and is incorporated here by reference.

Table 1.4. Adjacent or Overlapping CBNG POD NEPA Analyses Sorted by Decision Date

	POD Name	OPERATOR	Approval Date	EA #
1	Willow Creek	Bill Barrett	9/13/2006	WY-070-06-211
2	Table Mountain Phase I	Anadarko	9/14/2006	WY-070-06-288
3	Jepson Draw II	Windsor	4/27/2007	WY-070-07-209
4	Kingwood 2	Williams	7/27/2007	WY-070-07-143
5	Ridgeline	Williams	9/22/2009	WY-070-09-150
6	Kingwood 3	Williams	9/29/2009	WY-070-09-148
7	Table Mountain Phase 4	Anadarko	9/30/2010	WY-070-10-258
8	Storm	Yates	4/30/2010	WY-070-08-034
9	Culp Draw_Hartzog Draw	Williams	5/27/2010	WY-070-10-121
10	Congaree	Yates	7/15/2010	WY-070-10-195
11	Table Mountain Phase 2	Anadarko	9/30/2010	WY-070-10-376
12	Willow Creek Add III	Encore Energy	2/3/2015	WY-070-390CX 3-15-43

*All of the associated projects above are CBNG.

- 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 drilling about 51,000 CBNG wells CBNG wells on 80 acre-spacing. The Table Mountain 5 POD is foreseeable development scenario that was analyzed in EAs in Table 1.5. 140 CBNG wells were approved between the Table Mountain 2 and 4 POD. Of the 86 CBNG wells approved in Table Mountain 2 only 5 wells were ever drilled leaving the remaining 81 approved wells to expire. Of the approved 54 wells approved in the Table Mountain 4 POD only 10 wells were ever drilled leaving the remaining 44 wells to expire. The combined total of expired wells between Table Mountain 2 and 4 POD's that were originally analyzed is 125 CBNG wells left as foreseeable development.

Table 1.5. EAs Which Account for Reasonably Foreseeable Development Scenario

	POD Name	OPERATOR	Approval Date	EA #	# Wells
1	Table Mountain Phase 4	Anadarko	9/30/2010	WY-070-10-258	54
2	Table Mountain Phase 2	Anadarko	9/30/2010	WY-070-10-376	86

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

The Table Mountain 5 POD CX3s tier to the following approved EAs listed below in Table 1.6.

Table 1.6. NEPA Documents Finalized Within Anticipated Spud Date of Table Mountain 5 POD

	POD Name	OPERATOR	Approval Date	EA #
1	Table Mountain Phase 4	Anadarko	9/30/2010	WY-070-10-258
2	Table Mountain Phase 2	Anadarko	9/30/2010	WY-070-10-376

In summary the EAs in Tables 1.4 to 1.6 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 Table Mountain 5 POD. Table Mountain 5 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. Additionally, Table Mountain 5 POD wells will use the same previously approved infrastructure from the expired wells that they are replacing within the Table Mountain 2 and 4 POD's.

Plan of Operations

The proposal conforms to all BLM 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 analysis 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, Appendix A.

Soils

Soils within the project area were identified from the *South Campbell (WY605) and South Johnson (WY619) County Survey Areas, Wyoming*. NRCS performed the soil survey according to National Cooperative Soil Survey standards. The BLM uses county soil survey information to predict soil behavior, limitations, or suitability for a given activity or action. The agency's long term goal for soil resource management is to maintain, improve, or restore soil health and productivity, and to prevent or minimize soil erosion and compaction. Soil management objectives are to ensure that adequate soil protection is consistent with the resource capabilities. Many of the soils and landforms of this area present distinct challenges for development, and /or eventual site reclamation.

A tabulated summary of the dominant and important soil map units follows, along with their individual acreage and percentage of the area within the POD boundary, Table 1.7.

Table 1.7. Dominant or Important Soils by Map Unit Symbol (MUS)

Map Unit	Map Unit Name	Acres	Percent
SNe	Shingle-Tassel association	10418.3	39%
233	Ustic Torriorthents, gullied	2096.3	8%
VC	Valent-Cushman association	1102.2	4%
210	Shingle-Taluce complex, 3 to 30 percent slopes	946.4	4%
SNb	Shingle-Cushman association	775.9	3%
217	Theedle-Shingle loams, 3 to 30 percent slopes	693.9	3%
146	Forkwood-Cushman loams, 0 to 6 percent slopes	673.5	3%

Ecological site descriptions provide site and vegetation information needed for resource identification, management and reclamation recommendations. BLM specialists used NRCS published soil survey information, verified through onsite field reconnaissance, to determine the appropriate ecological sites for this POD area. Table 1.8 summarizes the project area’s ecological sites.

Table 1.8. Summary of Ecological Sites

Ecological site	Percent
SHALLOW LOAMY (10-14NP)	45%
LOAMY (10-14NP)	27%
SANDY (10-14NP)	10%
MISCELLANEOUS AREAS	8%
SANDS (10-14NP)	6%

Impacts anticipated occurring and mitigation considered with the implementation of the proposal will be similar to those analyzed in the following EAs which are adjacent or overlapping to the Table Mountain 5 POD and are incorporated here by reference:

1. Table Mountain 2 WY-070-10-376 Direct and Indirect Effects (pp. 38); Cumulative Effects (p. 38); Residual Effects (p. 39)
2. Table Mountain 4 WY-070-10-258 Direct and Indirect Effects (pp. 35); Cumulative Effects (pp. 36); Residual Effects (pp. 36)

Vegetation and Ecological Sites

Impacts anticipated occurring and mitigation considered will be similar to those analyzed in the following EAs which are adjacent or overlapping to the Table Mountain 5 POD and are incorporated here by reference:

1. Table Mountain 2 WY-070-10-376 Direct and Indirect Effects (p. 36); Cumulative Effects (pp. 37); Residual Effects (p.38)
2. Table Mountain 4 WY-070-10-258 Direct and Indirect Effects (p. 33); Cumulative Effects (p. 33); Residual Effects (p. 34)

Wetlands/Riparian

The project area is primarily upland environments. Upper ephemeral drainages flow into the larger ephemeral creeks namely: Upper and Lower Willow Creek (will be minimally impacted by a pipeline crossing).The ephemeral swales and side drainages consist of upland and limited wetland vegetation. In addition, resource-specific measures described for groundwater, surface water, and wetland/riparian areas (Section B.2 of Table Mountain 4 EA) would avoid or mitigate impacts to these resources when implemented by the operator.

Impacts anticipated occurring and mitigation considered will be similar to those analyzed in the following EAs which are adjacent or overlapping to the Table Mountain 5 POD and are incorporated here by reference:

1. Table Mountain 2 WY-070-10-376 See Table 4.5 on Page 55
2. Table Mountain 4 WY-070-10-258 Direct and Indirect Effects (p. 34); Cumulative Effects (p. 34); Residual Effects (p. 34)

Invasive Species

BFO found the following state-listed noxious weed and/or weed species of infestation concern for the project area in the WERIC database (www.weric.info): Spotted knapweed along Interstate 90.

Impacts anticipated occurring and mitigation considered will be similar to those analyzed in the following EAs which are adjacent or overlapping to the Table Mountain 5 POD and are incorporated here by reference:

1. Table Mountain 2 EA WY-070-10-376 Direct and Indirect Effects (p. 38); Cumulative Effects (p. 38); Residual Effects (p. 39)
2. Table Mountain 4 WY-070-10-258 Direct and Indirect Effects (p. 35); Cumulative Effects (p. 35); Residual Effects (p. 35)

Wildlife

A BLM wildlife biologist reviewed the proposed APDs and determined that they, combined with the COAs and design features, are: (1) consistent with the PRB FEIS, the Buffalo RMP and the above tiered NEPA analyses; and (2) consistent with the programmatic biological opinion (ES-6-WY-07-F012), from the PRB FEIS. The BLM biologist performed an onsite inspection of the project area on 12/9/2014 and 6/19/2015. The BLM wildlife biologist also consulted databases compiled and managed by BLM BFO wildlife staff, the PRB FEIS, WY Game and Fish Department (WGFD) datasets, and the Wyoming Natural Diversity Database (WYNDD) to evaluate the affected environment for wildlife species that may occur in the area. The proposed wells and infrastructure are a result of attempts by Anadarko and the BLM to reduce impacts to identified wildlife resources. The affected environment and environmental effects for wildlife are discussed in, and anticipated to be similar to the approved projects in Table 1.4., specifically Table Mountain 2 & 4 PODs, and are incorporated here by reference. Also, a wildlife report was submitted by the operator which was performed by Big Horn Environmental Consultants in 2014. The Wildlife Report is available in the administrative record. Rationale for species not discussed in detail below can be referenced in the administrative record Table W.1. Summary of Special Status Species Habitat and Project Effects.

Greater Sage-Grouse (GSG)

Nesting GSG habitat exists within the proposal area. The majority of the sagebrush stands have been fragmented by oil and gas development. There are eight GSG leks within the POD buffer (see the wildlife report in the administrative record). The affected environment and impacts for this proposal to GSG from surface disturbing and disruptive activities associated with development of CBNG wells were described in the Table Mountain 2 & 4 POD EAs and the analyses are incorporated here by reference. The BLM IM WY-2012-019 establishes interim management policies for proposed activities on BLM-administered lands, including federal mineral estate, until RMP updates are complete.

Anadarko elected to omit two well locations and their infrastructure (TM-CBM 4576-18-23 and TM-CBM 4576 18-14) to reduce impacts to the Christensen Ranch 4 GSG lek. Well pads and associated infrastructure within 2 miles of leks will have a timing limitation applied as a COA to reduce negative impacts to the local GSG population and to be in compliance with WY BLM policy, the State of Wyoming's Greater Sage-Grouse conservation strategy (Executive Order (EO) 2015-4 Greater Sage-grouse Core Area Protection), and the BFO RMP.

Raptors

The affected environment and impacts for this proposal to raptors from surface disturbing and disruptive activities associated with development of coal-bed methane wells are the same as the previously approved Table Mountain 2 and 4 POD EAs. Therefore Table Mountain 2 and 4 POD EA analyses are incorporated here by reference. Big Horn Environmental Consultants surveys in 2014 found 12 active raptor nests within 0.5 miles of the POD area, including five red-tailed hawk nests, three great-horned owl nests, three golden eagle nests, and one American kestrel nest. To reduce the risk of decreased productivity or nest failure during breeding and nesting season, BFO will implement a timing limitation (February 1 – July 31) within 0.5 mile of an active nest as a COA for surface disturbing activities (construction of well pad, associated buried pipelines, and for the associated access road). This timing restriction, however, will not apply to completion activities or maintenance actions (for example, work over operations). Traffic and construction activities that are not prohibited by the timing limitations may degrade habitat quality sufficiently to render the area unsuitable for some raptors. Timing limitations do nothing to mitigate habitat loss, therefore drilling and construction that takes place outside of nesting season will still result in habitat loss for these species.

BLM will apply further COAs to the 15-21 and 10-34 wells because of their proximity to the active 3915 golden eagle nest. The 3915 nest was reported to be an “inactive”, unknown raptor nest at the time of the TM 2 & 4 approvals. Since that time, a pair of golden eagles have been using the nest. The 10-34 well is approximately 0.30 miles from the nest and in line of sight. It is approximately 128 yards off of the main road into the existing TMFU deep well pad and 200 yards from the pad. The placement of the well at the main road was considered but the terrain would have required much more work and disturbance. Given the existing disturbance at the location which the eagles have tolerated, the addition of a CBNG well with limited visitation would be minor in terms of “added disturbance”.

The 15-21 well is approximately 170 yards off of a main road approximately 0.46 miles west of the nest. While the well location is within line of sight of the nest, there are cottonwood trees in between that provide partial “masking” along the line of sight path. The biologist determined that between the distance and partial masking that the additional disturbance from the well will be minimal.

Anadarko agreed to restrict well visits during the timing limitation dates (TLS) to emergencies. Any maintenance during the active nesting period needs to be approved by BLM. This includes well “work-over”. Anadarko will have a biologist monitor the nest and stop work if the birds show agitation.

Migratory Birds

Impacts to migratory birds will be similar to those described in the Table Mountain 2 & 4 POD EAs, incorporated here by reference. Suitable habitat for migratory birds is present throughout the proposal area. A timing limitation (May 1 – July 31) will be applied as a condition of approval (COA) for surface disturbing activities (construction of well pad, associated buried pipelines, and for the associated access road) where suitable habitat will be disturbed.

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 watershed 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 Wyoming Department of Environmental Quality (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.

Anadarko and BLM predicted the maximum water production to be 20 gpm per well or 360 gpm (0.8 cubic feet per second (cfs) or 581 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 CBM[NG] 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 2,242 acre-feet in 2015 (maximum production is estimated in 2006 at 171,423 acre-feet). As such, the volume of water resulting from the production of these wells is 26% of the total volume projected for 2015. This volume of produced water is within the predicted parameters of the PRB FEIS.

Groundwater

This project will add an additional 360 gpm to existing infrastructure. The capacity of the existing infrastructure is expected to be able to handle the increase water flow. Impacts anticipated occurring and mitigation considered will be similar to those analyzed in the following EA which is adjacent or overlapping to the Table Mountain 2 POD and is incorporated here by reference:

1. Table Mountain 2 EA, WY-070-10-376 Direct and Indirect Effects (p. 48-53)

The first well drilled in the Table Mountain 5 POD will become the POD reference well. A nearby well, located SENW Section 36, T44N, R76W was sampled and analyzed for reference water quality. The TDS for the sample was 1,940 mg/l. The water quality for the water produced from the Big George target coal zone from these wells is predicted to be similar to the sample water quality collected. For complete analysis and results see the Table Mountain 5 analytical report in the WMP Attachment C. 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 in the POD boundary. BLM will consider having sample the reference well at the wellhead for analysis in 60 days of initial production and submit a copy of the water analysis to the BLM Authorized Officer.

Surface Water

The operator did not find or identify any springs/seeps within the Table Mountain 5 POD boundary or within 0.5 mile radius of the POD boundary.

Impacts anticipated occurring and mitigation considered will be similar to those analyzed in the following EA which is adjacent or overlapping to the Table Mountain 2 POD and that analysis is incorporated here by reference:

1. Table Mountain 2 EA, WY-070-10-376 Direct and Indirect Effects (p. 48-53)
For more information refer to this POD's WMP.

Cultural

In accordance with section 106 of the National Historic Preservation Act, BLM must consider impacts to historic properties (sites that are eligible for or listed on the National Register of Historic Places (NRHP)). For an overview of cultural resources that are generally found within BFO the reader is referred to the Draft Cultural Class I Regional Overview, Buffalo Field Office (BLM, 2010). The majority of the project occurs in previous adequate Class III (intensive) inventory, but one well (4576 6-23) did require new inventory (BFO project no. 70150095) which was performed in order to locate specific historic properties

