

**DECISION RECORD**  
**Categorical Exclusion 3 (CX3), WY-070-390CX3-13-190 to -199**  
**Section 390, Energy Policy Act of 2005, Applications for Permit to Drill (APDs)**  
**Anadarko E&P Onshore LLC, Culp Draw Deep North POD**  
**Bureau of Land Management, Buffalo Field Office, Wyoming**

**DECISION.** The BLM approves 8 applications for permit to drill (APDs) and 5 rights of ways and denies 2 APDs from Anadarko E&P Onshore LLC (Anadarko) to drill 10 horizontal oil and gas wells and construct the associated access road and infrastructure as described in the consolidated Categorical Exclusion 3 (CX3), WY-070-CX3-13-190 to -199, incorporated here by reference.

**Compliance.** This decision complies with or supports:

- 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 Final Environmental Impact Statements (FEISs), 1985, 2003 (2011).
- Buffalo Resource Management Plan (RMP) 1985, Amendments 2001, 2003, 2011.

**A summary of the details of the approval follows.** The CX3 for the oil and gas wells, above, includes the project description, including site-specific mitigation measures which are incorporated by reference into this CX3 from earlier analysis. The project area is 32 miles southwest of Gillette, Johnson County, Wyoming. Anadarko’s proposal has 10 APDs with associated access road and infrastructure, to develop and produce oil and gas from the Shannon Formation. The wells are horizontal bores proposed on a 640 acre spacing pattern.

**Approvals.** BLM approves the following 8 APDs and associated infrastructure:

#	Culp Draw Deep Well Name & #	Qtr/Lot	Sec	Twp	Rng	Lease	CX3 #: WY-070-
1	CD Ender 4777-28-21SH-H	12	28	47N	77W	WYW151958	390CX3-13-199
2	CD Ender 4777-29-31SH-H	12	28	47N	77W	WYW151958	390CX3-13-198
3	CD Federal 4677-5-31SH-H	8	8	46N	77W	WYW146303	390CX3-13-191
4	CD Fed 4677-9-44SH-H	8	8	46N	77W	WYW89848	390CX3-13-190
5	CD Federal 4677-26-11SH-H	2	35	46N	77W	WYW89858	390CX3-13-195
6	CD Federal 4677-35-44SH-H	2	35	46N	77W	WYW89865	390CX3-13-196
7	CDFU 4677-24-31SH-H	2	25	46N	77W	WYW112380	390CX3-13-194
8	CDFU 4677-26-31SH-H	NWNW	36	46N	77W	WYW16066	390CX3-13-197

**List of Approved Rights-of-Ways (ROW) (NTE – not to exceed).**

ROW Grant	ROW Action	Section	Twp	Rng	Lengths	Width
WYW-168425	Well Pad	35	46N	77W	10.78 acres	
WYW-168425A	Road	35	46N	77W	2,270 ft	NTE 50ft
WYW-168424	Well Pad	8	46N	77W	12.650 acres	
WYW-168424A	Road	8	46N	77W	590 ft	NTE 50ft
WYW-168423	Road	3-4,9-11,23,35,33	46N,47N	77W	7.325 mi	50 ft
					Acres of Disturbance	
					75.106 acres	

**Denials.** BLM denies the following 2 APDs and associated infrastructure:

#	Culp Draw Deep Well Name & #	Qtr/Lo t	Sec	Twp	Rng	Lease	CX3 #: WY-070-
1	CDFU 4677-23-14SH-H	3	23	46N	77W	WYW0266642	390CX3-13-192
2	CDFU 4677-14-41SH-H	3	23	46N	77W	WYW85360	390CX3-13-193

**Limitations.** See conditions of approval (COAs) and see, above, ROWs for which BLM issues separate approvals prior those surface disturbances.

The Culp Draw Deep CDFU 4677-23-14SH-H and Culp Draw Deep CDFU 4677-14-41SH-H Well Pad and Engineered Road B are denied due to the lack of reclamation potential, likelihood of mass soil movement, and irrecoverable soil loss.

**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 analysis process and its limiting parameters. This consolidated CX3 analysis tiers to NEPA analyses which received a FONSI, thus a new FONSI or EIS are not required.

**Summary of New Information.** BLM posted the APDs for 30 days and received no public comments. Since BLM received this APD it also received a clarification of the Greater Sage-Grouse (GSG) Density and Disturbance Calculation Tool, Instruction Memorandum (IM)-WY-2013-035.

**DECISION RATIONALE.** The approval of this project is because:

1. The denial of Culp Draw Deep CDFU 4677-23-14SH-H and Culp Draw Deep CDFU 4677-14-41SH-H APDs, their well pad, and Engineered Road B and associated infrastructure are outside the parameters found in the PRB RMP FEIS ROD to prevent unnecessary and undue degradation (p. 11-12, A-19 to A-20, A-24, A-31), Onshore Oil and Gas Order #1, IV.C, and the Wyoming BLM Reclamation Policy to avoid highly erodible areas when possible and when these cannot be avoided they must be mitigated. Here the Operator did not avoid an area with little-to-no reclamation potential and offered no mitigation (see CX3, pp. 6-8, and the correspondence section of the administrative record). BLM recommended Anadarko propose an alternative site yet received none to evaluate. BFO would consider new APDs.
2. Mitigation measures and COAs analyzed in the CX3 analysis, in environmental impact statements, or environmental analysis to which the CX3 analysis tiers or incorporates by reference, will reduce environmental impacts while meeting the BLM’s need.
3. The approved project conditioned by its design features and COAs, will not result in any undue or unnecessary environmental degradation. The PRB FEIS analyzed and predicted that the PRB oil and gas development would have significant impacts to the region’s GSG population. The impact of this development cumulatively contributes to the potential for GSG local extirpation; 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 this APD complies with the Energy Policy Act of 2005, Section 390, 43 CFR 1610.5, 40 CFR 1508.4, and 43 CFR 46.215.
4. To reduce the likelihood of a “take” under the Migratory Bird Treaty Act, BLM sensitive species nesting habitat removal will occur outside of the breeding season or be cleared by survey.
5. 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.
6. The selected alternative will help meet the nation’s energy need, revenues, and stimulate local economies by maintaining workforces.

7. The operator, in their APDs, 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 APD (PRB FEIS ROD, p. 7).
  - Provide water analysis from a designated reference well in each coal zone.
8. The project is clearly lacking in wilderness characteristics as it is amidst existing developments.
9. This decision does not foreclose the lessee or operator to propose a new or supplementary plan for developing the federal oil and gas leases 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.
10. Anadarko certified it has a surface use access agreement with the landowners or it posted a bond.
11. This approval is subject to adherence with all of the operating plans, design features, and mitigation measures contained in the surface use plan of operations and drilling plan information in the individual APDs.

**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: 2/26/14

**Categorical Exclusion 3 (CX3), WY-070-390CX3-13-190 to -199**  
**Section 390, Energy Policy Act of 2005**  
**Anadarko E&P Onshore LLC, Culp Draw Deep North POD**  
**Bureau of Land Management, Buffalo Field Office, Wyoming**

**Description of the Proposed Action.**

Anadarko E&P Onshore LLC (Anadarko) proposes to drill 10 oil and gas wells and construct associated infrastructure as follows:

**Table 1.1. Proposed Well**

#	Culp Draw Deep: Well Name #	Qtr/ Lot	Sec	Twp	Rng	Lease	CX3 #: WY-070-
1	CD Ender 4777-28-21SH-H	12	28	47N	77W	WYW151958	390CX3-13-199
2	CD Ender 4777-29-31SH-H	12	28	47N	77W	WYW151958	390CX3-13-198
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4	CD Fed 4677-9-44SH-H	8	8	46N	77W	WYW89848	390CX3-13-190
5	CD Federal 4677-26-11SH-H	2	35	46N	77W	WYW89858	390CX3-13-195
6	CD Federal 4677-35-44SH-H	2	35	46N	77W	WYW89865	390CX3-13-196
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8	CDFU 4677-24-31SH-H	2	25	46N	77W	WYW112380	390CX3-13-194
9	CDFU 4677-26-31SH-H	NWNW	36	46N	77W	WYW16066	390CX3-13-197
10	CDFU 4677-14-41SH-H	3	23	46N	77W	WYW85360	390CX3-13-193

The proposed horizontal wells are in the 14,664 acre Culp Draw Deep North POD boundary. The POD is 32 miles southwest of Gillette, Johnson County, Wyoming. Project elevation ranges from 4,300 to 4,900 feet. The topography has rolling terrain with deeply incised drainages. The project area is sparse dry herbaceous rangeland and sagebrush east of the Powder River. The area climate is semi-arid, averaging 10-14 inches of precipitation annually, about 60% of which occurs between April and September. The wells jurisdiction is split estate (mixed federal, state and private surface) with underlying federal minerals, and the targeted formation for extraction is in federal leases. The surface owners are BLM, Wyoming Office of State Lands & Investments, Larry Brubaker, Roma and Delmar Reinitz Trustees.

Reasonably foreseeable development in the Crazy Cat East POD Environmental Assessment (EA), WY-070-EA13-028, 2013 and its locality to include but not limited to the approved Culp Draw Deep North POD, will fill-in to 640-acre spacing. This supports the development anticipated in the PRB FEIS, (see narrative in Section 2, No Action Alternative).

The BLM's need for this project is to determine whether, and if so, and under what conditions to support the Buffalo Resource Management Plan's (RMP) goals, objectives, and management actions with permitting the operator's exercising of conditional lease rights to develop federal fluid minerals. APD information is an integral part of this EA, which BLM incorporates here by reference. Conditional fluid mineral development supports the RMP, the Mineral Leasing Act of 1920, the Federal Land Policy Management Act (FLPMA), and other laws and regulations.

Anadarko submitted notices of staking (NOSs) on December 18, 2012, to the BLM. Anadarko and BLM completed onsite evaluations on February 26-27, March 6, and July 10, 2013. Anadarko converted its NOSs to applications for permit to drill (APDs) (incorporated here by reference) which BLM received on May 6, 2013. The onsites evaluated the proposal and modified it to mitigate environmental impacts. The BLM sent a post-onsite deficiency letter to Anadarko on August 20, 2013.

Full effects of the action and recommended mitigation measures are in the Culp Draw Deep North POD Surface Use Plan of Operations (SUPO), the Crazy Cat East EA, WY-070-EA13-028, and BLM Conditions of Approval (COAs) for Conventional Application for Permit to Drill, Appendix A.

Drilling, Construction & Production design features include:

- Anadarko anticipates completing drilling and construction in 2 years; see the Crazy Cat EA 070-EA13-028, p. 13, Table 2-5.
- A road network that will consist of existing improved all-weather roads; existing primitive (2-track) roads to be upgraded to all-weather improved roads; and proposed improved well access roads. The operator will use approximately 9.9 miles of existing, privately owned, crown and ditched oil and gas access roads shared with multiple oil and gas operators and the private landowners. Upgrades by widening roads to 20 feet running surface, surfacing with aggregate and adding turnouts (150 feet long by 10 feet wide) every 1,000 feet or intervisible will be made to improve overall safety and match Operator's anticipated use for larger trucks and increased traffic. During construction and drilling phases, truck traffic will exceed 3,200 trips including rig and ancillary equipment mobilization, drilling water and completion water hauling, and delivery of large production facility equipment such as 500 barrel fluid storage tanks, etc. Estimated average daily traffic (ADT) on existing and improved roads is 223 ADT during construction, drilling and well completion; an ADT of 4 is estimated during production activities.
- The Operator proposes to drill wells using water-based mud (WBM). There will be no drilling reserve pit at the well location. Instead, an on location drilling mud system comprised of a closed loop mud system utilizing lined cutting collections area as designated on the individual well pad diagrams.
- Hydraulic fracturing (HF) operations are planned as a 'plug & perf' operation done in stages. The Operator anticipates up to 30 days to prepare for the HF operations. All water used for drilling and HF will come from the Table Mountain Pump Station located NENE Section 22, T45N/R77W, approximately 6.7 road miles from the project area. Water for cementing may also come from municipal water supplies in Buffalo or Gillette, Wyoming. All fresh water will be contained in 120-170, 500 bbl rental HF tanks or an 18,000-44,000bbl water storage tank with 30bbl rental HF tanks all stored on location. No surface pits will be used to hold this water. No additional well pad disturbance is anticipated for HF operations. Approximately 22,500-37,500bbl of completion flowback water is anticipated and will be held in several HF tanks on location and trucked offsite to a disposal facility permitted by Wyoming Department of Environmental Quality (WDEQ); See Table 4-1 on p. 5 of the SUPO for a full list of disposal facilities to be used.
- Pump trucks and chemical mixing equipment arrives and, when ready, operations continue for 5-8 days to complete the well stimulation.
- Sand is continuously brought on site in semi-truck loads during pumping. Pumping water may require heating in the winter months.
- No off-site ancillary facilities are planned for this project. No staging areas, man camps/housing facilities are anticipated to be used off-site. Working trailers and sleeping trailers will be placed on the well pad during the drilling and completion of the well.
- If the well becomes a producer, production facilities will be located at the well site and will include a pumping unit, storage tanks, buildings, oil-water separator (heater-treater). There will be no pits at this producing oil well location.
- An existing and proposed above ground powerline will be utilized if the well becomes a producer. Power will be provided by 3rd party contactor. It is anticipated that new construction of power will begin at the existing 3-phase overhead lines at 5 locations within the project area and continue adjacent to the nearest well pad.
- Disturbance during construction and drilling for the 6 well pads will be approximately 65.8 acres. Once a well is completed, any area of the well pad not needed for production will be reclaimed for interim reclamation.

All locations require extensive earthwork for creating sufficient area to complete the well. Anadarko will then reduce the initial well site with interim reclamation. Individual well designs are in the individual APDs. Anadarko states that the proposed size is necessary to safely accommodate the equipment necessary for an effective well completion.

**Table 1.2. Disturbance Summary Culp Draw Deep North POD:**

<b>Facility</b>	<b>Number or Miles</b>	<b>Factor</b>	<b>Disturbance</b>
<b>Engineered Well Pad</b>	6	Varies	
4677-9-44SH-H and 4677-5-31SH-H			12.50 acres
4677-23-14SH-H and 4677-14-41SH-H			10.45 acres
4677-24-31SH-H			11.43 acres
4677-26-11SH-H and 4677-35-44SH-H			10.52 acres
4677-26-31SH-H			11.58 acres
4777-29-31SH-H and 4777-28-21SH-H			9.28 acres
			<b>65.76 acres</b>
<b>Proposed Roads</b>			
Improved Template Roads	2,450 feet	45feet	2.5 acres
Engineered Roads	5,141 feet	50 feet	5.9 acres
	<b>7,591 feet (1.4 miles)</b>		<b>8.4 acres</b>
Water Discharge Pipeline	8,420 feet (1.6 miles)	45 ft	8.7 acres
Proposed Overhead Power-3rd Party	6,870 feet (1.3 mile)	30 ft	4.7 acres
<b>Total Surface Disturbance</b>			<b>91.3 acres</b>

**Off Well Pad**

Anadarko will install 1.6 miles of water pipeline to move produced water from 3 locations and 4 wells to existing facilities for reinjection. Produced water from the other 3 locations and 6 wells will be trucked to reinjection and disposal facilities. See p. 5 of the SUPO and p. 10 of the Crazy cat East EA for more details on the Operator’s plans for produced water.

There are existing gas gathering facilities in the vicinity of the Culp Draw Deep North POD. Anadarko did not include plans for gas pipelines with the APDs and it is anticipated that those will be submitted under sundry notice at a later date. See pp. 11-12 of the Crazy Cat East EA for more details of what Anadarko anticipates for gas pipeline the project area. Anadarko plans to move water needed for drilling and completion operations to the well locations via a surface water pipeline. Water will be piped from existing CBNG wells, existing pipelines and the Table Mountain Pump Station. Filling the water storage tanks on location will be done prior drilling and/or completion operations and may take up to 2 weeks.

Anadarko requires approximately 6,870 feet of 3rd party electrical power installation from existing utility lines to the proposed wells. The electric run to the wells will be overhead powerlines to the edge of the pad and buried power run to the pumping unit electric motor and other electrically powered devices on site to power the well. Anadarko will propose any alternation to the power route via sundry application or right-of-way application and BLM will analyze such proposal in a separate NEPA analysis. Anadarko does anticipate requiring the use of generators for this project for up to 4 months during initial well production. See pp. 10 and 17 of the Crazy Cat East EA for more details of what Anadarko anticipates for electrical power in the project area.

**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 consolidated CX3 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, BFO, 1985, the PRB FEIS, 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. The Culp Draw Deep North and area are clearly lacking in wilderness characteristics as they are amidst existing oil and 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) The proposed APDs are in a developed oil or gas field (any field with a completed confirmation well).

Table 1.3 is a list of approved NEPA analyses that envelop the Culp Draw Deep North project area. This shows the reader that BLM conducted analysis and that the field is developed. (The field also has many older oil and gas wells not reflected in this table; see WYOGCC well data base, 2014.)

**Table 1.3. Overlapping Oil & Gas NEPA Analyses Accounting for Reasonable Foreseeable Activity and Approved within 5 Years of Spudding the N Tree POD Phase 2 Proposals**

#	POD / Well Name	NEPA Analysis #	# Wells / Type / # Drilled	Approved
1	APC Crazy Cat East	WY-070-EA13-028	~36 / Oil / 0	3/4/2013
2	APC Table Mountain Phase 2	WY-070-390CX1-14-19 WY-070-EA10-376	86 / CBNG / 5	11/15/2013 9/30/2010
3	WPX Kingsbury 3 & 4	WY-070-390CX5-11-277 WY-070-07-220 WY-070-EA-06-260 WY-070-05-347	82 / CBNG / 39 90 / CBNG / 46	7/28/2011 10/26/2007 7/10/2006 9/16/2005
4	BBC Willow Creek	WY-070-CX1-11-267 WY-070-CX3-10-196 to -225 WY-070-06-211	88 / CBNG / 32	7/22/2011 6/14/2010 9/13/2006
5	WPX Kingwood 2 & 3	WY-070-EA09-148 WY-070-EA07-143	2 / CBNG / 2 33 / CBNG / 17 67 / CBNG / 37	11/8/2011 9/29/2009 7/27/2007

See also: SDR WY-2013-005, particularly noting pp. 2-3, incorporating the entirety here by reference.

- 2) There are existing NEPA analyses (and the RMP) containing reasonably foreseeable activity scenario for this action. BLM also notes from Table 1.3, above, that at this time of the 485 analyzed APDs, 178 are drilled, thus 307 analyzed APDs contribute to the available reasonably foreseeable activity. 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. 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 and 3,200 oil wells. The Culp Draw Deep North POD wells are in the foreseeable development scenario of 80 acre well-spacing that was analyzed in EAs in Table 1.3 and in the PRB FEIS's Appendix A.

- 3) The tiered NEPA analyses were finalized or supplemented (approved) within 5 years of spudding (drilling) the proposed wells. The Culp Draw Deep North CX3 tiers to the NEPA analyses in Table 1.3.

### **Culp Draw Deep North POD**

In summary the NEPA analyses in Table 1.3 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 Culp Draw Deep North POD is within the area of analysis covered in the Crazy Cate East Oil and Gas Proposal EA. The BFO reviewed the EA and found that the EA considered potential environmental effects associated with the proposal at a programmatic level. The Culp Draw Deep North POD will share roads and other infrastructure for Table Mountain Phase 2 POD. The SUPO and drilling plans associated with the Culp Draw Deep North POD are incorporated here by reference and show adequate protection of surface lands and ground water, including the Fox Hills Formation.

### **Plan of Operations**

The proposal conforms, in part, to Bureau standards and incorporates appropriate best management practices, required and designed mitigation measures determined to reduce the effects on the environment. BLM reviewed Anadarko's general SUPO and site specific reclamation plans describing all proposed surface-disturbing activities associated with the pursuant to Section 17 of the Mineral Leasing Act, as amended. The CX3 analysis also incorporates and analyzes the implementation of committed mitigation measures contained in the SUPO, drilling plan, in addition to the Standard COAs found in the PRB FEIS ROD, Appendix A.

### **Soils and Vegetation**

The soil and ecological site descriptions prepared by the Natural Resources Conservation Service (NRCS) for the project area fall across 3 survey areas, North Johnson County, South Johnson County and South Campbell County. The descriptions show the project area is dominated by Shallow Loamy (45.9%) and Loamy (35.1%) soils in the 10-14 inch Northern Precipitation Zone. Other prevalent soils in the project area are Sands (9.6%) and Sandy (4.0%). The interpretive vegetative plant communities are a mixed sage brush/grass plant community in the Shallow Loamy/Loamy soils and needleandthread/prairie sandreed plant community in the Sands/Sandy soils. Anadarko and BKS Environmental Associates Inc. (2013) prepared a reclamation plan that includes detailed soil, ecological site, and vegetative community descriptions of the project area, incorporated here by reference; see the administrative record (AR).

The Shallow Loamy ecological site in the project area consists of 4 map symbol units that make up the majority of the proposed disturbance area (42.6%) – and also hold the soils with the most limiting chemical and physical soil properties, Shingle-Tassel association, Shingle-Cushman association, Shingle-Taluce association and Shingle-Taluce-Badland complex, 6 to 45% slopes. The Sands and Sandy ecological sites make up far less of the project area but the map symbol units in them also hold soils with limiting chemical and physical soil properties. All these soils are rated as poor sources for topsoil and reclamation material due to shallow depth to bed rock, droughtiness, low organic matter content, and moderate to severe erosion potential.

Shallow soils dominate the project area. Anadarko's reclamation plan show salvageable topsoil depth ranging from 0 to 8 inches with low throughout the project area. The soil is non-saline. The NRCS' SSURGO data shows the soil components of greatest concern being the lack of organic matter (0 to 3%), droughtiness, shallow depth to bedrock and high erosion potential. Additional information on the impacts to soils, and its influence on cumulative effects from energy development are in the affected environment and environmental effects sections of the Crazy Cate East Oil and Gas Proposal EA, Sections 3.2 and 4.22, incorporated here by reference.

All the proposed surface disturbance lies over soils 8 inches or less in depth as described in Anadarko's Reclamation Plan-Culp Draw Deep, incorporated here by reference. This was confirmed by onsite field evaluation. Soil scientists consider soil depths less than 10 inches to be very shallow soils. Three of the well locations (5 wells) lie over soils of 2 inches or less. The operator staked the 9 of the 10 wells on locations with soil susceptible to severe erosion. Portions of the Operators plans would disturb areas of low reclamation potential with badlands, rock outcroppings, and slopes that exceed 25%. These soil limitations are overlapping across the landscape where all or a single limiting factor may be present at any one site. Any one of these soil limitations by itself is cause to avoid surface disturbance as successful reclamation may be unachievable. The soil limitations by well location are listed below.

*CD Fed 4677-9-44SH-H and 4677-5-31SH-H Well Pad*

Anadarko originally staked the wells on a location overlying an area with low reclamation potential (LRP) and filling trough a drainage at the northwest pad corner. Anadarko shifted the wells to the south and redesigned the well pad. The current design shows impact slopes that exceed 25% near the SE corner of the pad's cut slope. There are 6 ridge lines and 5 broad finger drainages within the foot print of the well pad. There are 5 deeply incised channels down slope of the well pad that the Operator will avoid by adequate buffer of 20 feet or more. The entire disturbance area for the well pad and associated access road falls over Shallow Loamy soils (*Shingle-Tassel association*). Topsoil depth as mapped by the Operator ranges from 1-6 inches with most of the pad in the 2-6 inch soil depth. Approximately 1/3 of the disturbance area is bare ground where soil depth is 1-2 inches.

*CDFU 4677-23-14SH-H and 4677-14-41SH-H Well Pad and Engineered Road B*

The Operator staked the wells that will impact slopes that exceed 25% across the pad perimeter particularly where fill slopes are proposed. Pushing fill material over these steep slopes is a poor practice and is likely to lead to irrecoverable soil loss from the pad. This location will disturb a total of 11 small, finger draws that drain into 6 deeply eroded unnamed drainages tributary of Curtis Draw. Topsoil depth as mapped by the Operator ranges from 1-4 inches with over half the disturbance area with 1 inch of soil, bare ground and fragmented rock. Over half of the well pad and the entire access road set over Sands soils (*Valent-Cushman association*) prone to wind and water erosion. These soils are poorly rated as suitable construction materials as excavation walls are unstable and limited compaction. Signs of mass soil movement surround the location in the way of large sand blowouts and deeply incised channels. The Kingsbury IV Fed 21-23 (CBNG) well pad adjacent to the site was unsuccessfully revegetated since completed September 2008 with reoccurring gullyng of the well pad. BLM recommended Anadarko consider an alternate well location or reduce the foot print of the proposed wells pad; but received no viable options. Due to the lack of successful reclamation achieved in past oil and gas actions adjacent to this site, the likelihood of mass soil movement occurring, and irrecoverable soil loss, it is recommended that the Culp Draw Deep CDFU 4677-23-14SH-H and Culp Draw Deep CDFU 4677-14-41SH-H APDs, their well pad, and Engineered Road B be denied as these components are outside the parameters of the Buffalo RMP and Onshore Oil and Gas Order #1, IV. C. See also, below, the analysis of soils susceptible to erosion, limited reclamation potential, and slopes exceeding 25% – all applying to these locations.

*CDFU 4677-24-31SH-H Well Pad and Engineered Road C*

The operator staked the well on a contiguous 10% slope with a northeast aspect. The site is well vegetated with sage brush and upland grasses. Topsoil depth as mapped by the Operator is 6 inches or more across the well pad and access road disturbance area. The entire well pad and access road set over Loamy soils (*Cushman-Briggsdale association*) 30 inches in depth. The site is well vegetated with sage brush and upland grasses.

*CD Fed 4677-26-11SH-H and 4677-35-44SH-H Well Pad and Engineered Road D*

The operator staked the well on a contiguous, 8-12% slope with a north aspect. The site is well vegetated with sage brush and upland grasses. Topsoil depth as mapped by the Operator is 6-8 inches or more

across the well pad area and 2-8 along the access road. The entire well pad and access road set over Sands soils (*Valent-Cushman association*) 30 inches in depth. The site is well vegetated with sage brush and upland grasses.

#### *CDFU 4677-26-31SH-H Well Pad*

The operator staked the wells on a location with 2 small drainages and 3 north-south finger ridges across it. Slopes range from 5-20% on multiple aspects. The drainages and half of the disturbance area have Shallow Loamy soils (*Shingle-Tassel association*) with 4-6 inches of topsoil covered by sage brush and upland grasses. The finger ridges are sparsely vegetated and have Sands soils (*Valent-Cushman association*) with 4-6 inches of topsoil as mapped by Anadarko.

#### *CD Ender 4777-29-31SH-H and 4777-28-21SH-H Well Pad and Engineered Road A*

The Operator staked the wells on a location with 2 small drainages and 3 East-West finger ridges East-West across it. Slopes range from 10-15% on multiple aspects. The entire well pad and access road set over Loamy soils (*Theedle-Shingle loams, 3 to 30% slopes*) covered by sage brush and upland grasses. The finger ridges are well vegetated with 6-8 inches topsoil where the drainages are sparsely vegetated with 2-6 inches of topsoil as mapped by Anadarko.

### **Soils Susceptible to Erosion**

Soils susceptible to erosion are found throughout the project area. Impacts related to soils susceptible to erosion are materially similar to those in the Napier Road EA, WY-070-EA10-280, p. 12, incorporated here by reference due the similarities in soils, slopes, erosion, and challenges to potential reclamation. See also, State Director Review (SDR) WY-2013-001, pp. 2-4, incorporated here, and below, by reference.

Loss in productivity is likely to occur on most soils if erosion continues unchecked. Because soil formation is a very slow process, most soils cannot renew their eroded surface while erosion continues. The development of a favorable rooting zone by the weathering of parent rock is much slower than development of the surface horizon. One estimate of this renewal rate is 0.5 ton per acre per year for unconsolidated parent materials and much less for consolidated materials. These very slow renewal rates support the philosophy that any soil erosion is too much. Loss of organic matter, resulting from erosion and tillage, is one of the primary causes for reduction in production yields. When organic matter decreases, soil aggregate stability, the soil's ability to hold moisture, and the cation exchange capacity decline. (Soil Quality-Agronomy Technical Note #7, USDA, Aug 1998.)

### **Limited Reclamation Potential (LRP)**

The onsite investigation found LRP areas in the project boundary have minor component described as miscellaneous areas as described in the Napier Road EA, WY-070-EA10-280, pp. 12, and the LRP, pp. 36-38, incorporated here by reference. Miscellaneous areas have essentially no soil and support little or no vegetation. They can result from active erosion, washing by water, unfavorable soil conditions, or human activities. Some miscellaneous areas can be made productive, but only after major reclamation efforts. (430-VI-NSSH, 1996)

Badlands: A landscape which is intricately dissected and characterized by a very fine drainage network with high drainage densities and short, steep slopes with narrow interfluves. Badlands develop on surfaces with little or no vegetative cover, overlying unconsolidated or poorly cemented materials (clays, silts, or in some cases sandstones) sometimes with soluble minerals such gypsum or halite. (430-VI-NSSH, 1996)

Rock outcrop: Consists of exposures of bare bedrock. Most rock outcrops are hard rock, but some are soft. (430-VI-NSSH, 1996)

### **Slopes in Excess of 25 Percent**

A well location placed on slopes that exceed 25% is prone to site failure due to mass soil movement and/or severe erosion - as described in the Williams Draw Unit Gamma/Delta EA, WY-0700EA08-042, pp. 32-38; 76-84; and consolidated SDRs WY-2011-021 and WY-2010-026 (Part 2) pp. 6-17, all incorporated here by reference due to the material similarities in soils, slopes, erosion, and challenges to potential reclamation.

Other contributing factors to slope stability include slope length, slope aspect and colluviums. Slope length has considerable control over runoff and potential accelerated water erosion. Slope aspect is the direction toward which the surface of the soil faces. Slope aspect may affect soil temperature, evapotranspiration, winds received and soil moisture. Colluvium is poorly sorted debris that has accumulated at the base of slopes, in depressions, or along small streams through gravity, soil creep, and local wash. It consists largely of material that has rolled, slid or fallen down the slope under the influence of gravity. The rock fragments in colluvium are usually angular, in contrast to the rounded, water-worn cobbles and stones in alluvium and glacial outwash. These factors in combination with slope determine soil stability and the potential for mass soil movement.

Geomorphic effects of roads and other surface disturbance range from chronic and long-term contributions of sediment into waters of the state to catastrophic effects associated with mass failures of road fill material during large storms. Roads can affect geomorphic processes primarily by: accelerating erosion from the road surface and prism itself through mass failures and surface erosion processes; directly affecting stream channel structure and geometry; altering surface flow paths, leading to diversion or extension of channels onto previously unchannelized portions of the landscape; and causing interactions among water, sediment, and debris at road-stream crossings.

These impacts, singly or in combination, would increase the potential for valuable soil loss due to increased water and wind erosion, invasive plant establishment, and increased sedimentation and salt loads to the watershed system.

### **Poor Reclamation Suitability**

Currently soil conditions in the project area are impacted by CBNG development as well as traditional activities, including livestock grazing. Much of the area is covered with soils that are easily damaged by use or disturbance or are difficult to re-vegetate or otherwise reclaim. Soil impacts (e.g., roads, linear pipeline scars, and artificial wet areas) can be readily observed in the area. In the absence of recoverable topsoil as is common throughout the project area, the surface organic matter in the form of vegetation, litter and biological crust are critical to maintaining the integrity and viability of the soil.

Reclamation potential of soils varies throughout the project area. The main soil limitations in the project area include: depth to bedrock, low organic matter content, and high erosion potential especially in areas of steep slopes. Many of the soils and landforms of this area present distinct challenges for development.

These impacts, singly or in combination, increase the potential for valuable soil loss due to increased water and wind erosion, invasive/noxious/poisonous plant spread, invasion and establishment, and increased sedimentation and salt loads to the watershed system, absent applicable mitigation measures.

The appropriate mitigation measures using BLM applied mitigation to reduce impacts to vegetation and soils from surface disturbance are well described in the Barlow Ranch Federal 074974-3NH, WY-070-EA12-173, incorporated here by reference as well as the BLM Wyoming Reclamation Policy. These practices, as well as other mitigation measures identified in the SUPO and COAs, will result in less surface disturbance and overall environmental impacts.

### Rights-of-Way (ROWs)

Anadarko submitted applications for rights of ways for 2 of the well pads and 3 access roads for use of BLM surface. Table 1.4 below lists the locations of the rights-of-way requested and the respective surface disturbance associated with each. The disturbance associated with the rights-of-way is included in the total surface disturbance listed in Table 1.2.

**Table 1.4. List of Approved Rights-of-Way (ROW) (NTE: not to exceed).**

ROW Grant	ROW Action	Section	Twp	Rng	Lengths	Width
WYW-168425	Well Pad	35	46N	77W	10.78 acres	
WYW-168425A	Road	35	46N	77W	2,270 ft	NTE 50ft
WYW-168424	Well Pad	8	46N	77W	12.650 acres	
WYW-168424A	Road	8	46N	77W	590ft	NTE 50ft
WYW-168423	Road	3-4,9-11,23,35,33	46N,47N	77W	7.325 mi	50 ft
					Acres of Disturbance	
					75.106 acres	

### Locatable Minerals

There are 60 individual mining claims within 3-miles of the proposals. These mining claims likely targeted uranium. One active and proposed uranium mining project (using in-situ recovery, ISR) occurs within 3 miles of the proposals. Conflicts may occur between uranium projects planned/underway and these proposed wells. It is important that both companies potentially affected take the initiative to keep the others informed about their status and design plans for pipelines, electrical power, roads, so they may optimize their own project without impeding the others' project, or create redundant surface disturbances, and thus preclude the imposition of top-down federal or state solutions. Additional information on the impacts to locatable minerals, and its influence on cumulative effects from energy development are in Sections 3.1.4. and 4.2.4 of the Crazy Cate East Oil and Gas Proposal EA, incorporated here by reference.

### Wildlife

Big Horn Environmental Consultants (BHEC) completed a habitat assessment and wildlife surveys for Anadarko including 3 raptor nest surveys between April 19 and June 7, 2013 and 3 wintering bald eagle surveys between December 9, 2012 and February 4, 2013. Western Land Services and ICF International completed Greater Sage-Grouse (GSG) surveys in March and April 2013. BHEC completed for sharp-tailed grouse, raptor nests, mountain plover, and prairie dog colonies as well as other BLM special status (sensitive) species (SSS). Surveys were conducted per the PRB Interagency Working Group's protocols; see: [http://www.blm.gov/wy/st/en/field\\_offices/Buffalo/wildlife.html](http://www.blm.gov/wy/st/en/field_offices/Buffalo/wildlife.html).

The affected environment within 4 miles of the proposed wells (115.8 square miles) has 833 existing oil and gas wells (46 of which are plugged and abandoned) and associated access roads and infrastructure to support the wells' production. There are also 166 pending APDs for new wells. Habitat quality in the area is highly impacted by oil and gas development with an average of 7.2 wells square mile currently on the landscape.

BLM reviewed the proposed APDs and determined that the proposed APDs, combined with the COAs (and design features), is: (1) consistent with the FEIS and its supplements, the RMP and the above tiered EAs; and (2) consistent with the programmatic biological opinion (ES-6-WY-02-F006), which is an update from the PRB FEIS, Appendix K. The biologist performed onsite visits to the project area on February 26-27, March 6 and July 10, 2013. The proposed well and infrastructure are a result of attempts by Anadarko and the BLM to reduce impacts to GSG, ferruginous hawks and other migratory birds, and incorporates recommendations provided to the BLM by the U.S. Fish and Wildlife Service (FWS). The affected environment and environmental effects for wildlife are discussed in, and anticipated to be similar

to the Mufasa Fed 11-31H Well EA, WY-070-EA12-062 and the Sahara POD EA, WY-070-EA13-72, 2013, Sections 3.7.2.2 (pp. 16-17) and 4.6.2.2 (pp. 31-33), incorporated here by reference.

### **Raptors**

There are 10 raptor nests within 0.5 mile of the proposed 10 Culp Draw Deep North wells, their access roads and proposed produced water pipeline. None of the nests are in line of sight of the wells and none are ferruginous hawk nests. Another 39 raptor nests are within 0.5 miles of a proposed above ground, water delivery pipeline. Suitable nesting habitat and prey species are present throughout the area. The PRB FEIS analyzed direct and indirect effects to raptors, pp. 4-216 to 4-221. This project will result in a direct loss of foraging habitats (approximately 9.1 acres). The cumulative effects associated with the project are within the analysis parameters and impacts described in the PRB FEIS. Refer to the PRB FEIS for details on expected cumulative impacts, p. 4-221.

Effects to raptors were analyzed in the Crazy Cat East EA, pp. 51-52. Proposed facilities within 0.5 miles to raptor nests (see administrative record) include: Culp Draw Deep CD Federal 4677-5-31SH-H, Culp Draw Deep CD Fed 4677-9-44SH-H, Culp Draw Deep CD Federal 4677-26-11SH-H, Culp Draw Deep CD Federal 4677-35-44SH-H, and Culp Draw Deep CDFU 4677-26-31SH-H. No surface-disturbing 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 also applies to surface disturbing activities located in SESE and NWNW Section 4, SENE Section 8, S2 Section 9, SENW and SESW Section 25, NE Section 35, and NWNW Section 36 of T46N/R77W.

BLM will also require known raptor nest to be surveyed following the current BLM protocol. All survey results shall be submitted in writing to a Buffalo BLM biologist. A 0.5 mile timing restriction (February 1 through July 31) will be applied if a nest is identified as active. Measures intended to avoid, minimize, and mitigate impacts to raptors are outlined in the COAs, including operator committed measures and site-specific COAs. For example, to reduce the risk of adverse impacts to nesting raptors, no surface-disturbing activity will occur within 0.5 mile of all identified raptor nests from February 1 through July 31, annually, prior to a raptor nest occupancy survey.

### **Greater Sage-Grouse (GSG)**

General effects to GSG within the vicinity of the project area were analyzed in the Crazy Cate East Oil and Gas Proposal EA, pp. 54-56. Effects to GSG from surface disturbing and disruptive activities associated with development of horizontal oil wells were analyzed in the Sahara POD EA, WY-070-EA13-72, 2013, Section 4.6.4.1, pp. 34-37, incorporated here by reference. The BLM typically applies a controlled surface use buffer of 0.25 miles for GSG leks but none of the wells or associated roads fall within 0.25 of a GSG lek. The Pumpkin Creek II Lek is the nearest lek at nearly 2.2 miles from the nearest well location. The entire project area is in sagebrush grassland habitat that has been mapped and modeled (using a geospatial habitat model) as suitable GSG nesting and brood rearing habitat. The onsite inspection confirmed that the sage brush habitat at the well location is of a stand height to meet the habitat needs of the species. There are existing oil and gas access roads and overhead powerlines throughout the project area. Construction of the well pad, access road and buried utilities will result in the removal of sagebrush. Drilling, HF activities and well production are also anticipated to negatively impact GSG nesting in suitable habitat within 0.6 mile of the proposed activities because nesting GSG avoid infrastructure by up to 0.6 miles.

In March, 2012, BLM-contracted population viability analysis for the Northeast Wyoming GSG found there remains a viable population of GSG in the PRB (Taylor et al. 2012). Threats from energy development and West Nile Virus (WNV) are impacting future viability (Taylor et al. 2012). The study indicated that effects from energy development, as measured by male lek attendance, are discernible out to a distance of 12.4 miles. There are 33 known GSG leks within 12.4 miles of the 10 proposed wells, 6 of

these GSG leks lay inside GSG Priority Habitat. The distribution of existing and proposed wells in relation to those 33 leks that occur within 12.4 miles of the 10 Culp Draw Deep North wells proposed is 3.9 wells per square mile. 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 of the Mufasa Fed 11-31H Well EA, WY-070-EA12-062, incorporated here by reference.

The nearest lek to the Culp Draw Deep North is the Pumpkin Creek II Lek, 2 miles west of the proposals. To reduce the impacts to GSG associated with noise, construction, and human disturbance resulting from implementation of the proposed project, BLM will implement a timing limitation (March 15-June 30) on surface-disturbing activities within 2 miles of known GSG leks as well as on surface-disturbing activities in and adjacent to identified nesting habitat across the project area. The intent of this timing restriction is to decrease the likelihood that GSG will avoid these areas and increase habitat quality by reducing noise and human activities during the nesting season. The leks within 4 miles of the proposals are Christensen Ranch 4, County Line, County Line N, Gilkie Ranch, Innes, Negro Butte, Pumpkin Creek II and Willow Creek. The Crazy Cat East EA found that, “leks within a 4-mile buffer of the CCE area, are extremely impacted by oil and gas development”, p. 55. The application of the timing limitation will minimize the impacts that would reduce connectivity between the 8 GSG leks within 4 miles and 33 GSG leks 12.4 miles of the proposals. A clearance survey for breeding and/or nesting GSG, within 0.5 of planned surface disturbance is required prior to surface disturbance. The Operator is required to ensure that noise from their facilities at any nearby GSG leks does not exceed 49 decibels (10 dBA above background noise) at the display grounds.

### **Migratory Birds**

The PRB FEIS discussed direct and indirect effects to migratory birds on pp. 4-231 to 4-235. The PRB FEIS states on p. 4-231, “Surface disturbance associated with construction, operation, and abandonment of facilities, including roads, has the potential to result in direct mortality of migratory birds. Most birds would be able to avoid construction equipment; however, nests in locations subject to disturbance would be lost, as would any eggs or nestlings.” Direct mortality of a bird or destruction of an active nest due to construction activities could result in a “take” as defined (and prohibited) by the Migratory Bird Treaty Act (MBTA), a nondiscretionary statute. Additional information on the impacts to migratory birds, and its influence on cumulative effects from energy development can be found in the affected environment and environmental effects of the Sahara POD EA, WY-070-EA13-72, 2013, Sections 3.7.2.2 (p. 16-17) and 4.6.2.2 (p. 31-33) incorporated here by reference.

BHEC identified suitable habitat for several BLM sensitive sagebrush obligates including loggerhead shrike, Baird’s sparrow, Brewer’s sparrow, sage sparrow, and sage thrasher. During the onsite, the BLM confirmed sagebrush habitat including suitable nesting habitat, with shrubs in excess of 2 feet at proposed sites of surface disturbances. Brewer’s sparrows and sage thrashers both nest in sagebrush shrubs and occur in the area. Construction of the well pads, access roads and associated infrastructure will remove sagebrush habitat and could result in a “take” (as described above) of BLM sensitive migratory birds if removal occurs during the nesting season.

In an effort to apply the least restrictive measures to be in compliance with the MBTA, while still conforming to Executive Order (EO) 13186 and the BLM/FWS MOU regarding conservation of species of concern, the BLM prohibits habitat removal for only those habitats where BLM SSS migratory birds are likely to occur. The BLM has been applying a conditional surface use stipulation for all special status species to all oil and gas leases since 2008 (IM WY-2013-005, p. 2). To reduce the likelihood of a “take” under the MBTA, the BLM biologist recommends that well pad, access road, and pipeline construction (vegetation removal) occur outside of the breeding season for the greatest quantity of BLM SSS migratory birds (May 1- July 31) where suitable nesting habitat for sagebrush obligates is present. The

timing limitation would apply to habitat removal, unless a pre-construction clearance survey (within approximately 10 days of construction planned May 1-July 31) is completed. If surveys will be conducted, the Operator will coordinate with BLM biologists to determine a protocol. At a minimum, the surveys will consist of nest searches in areas where vegetation will be removed or destroyed. The BLM recommends construction activities for the 6 Culp Draw Deep North POD well pads supporting: Culp Draw Deep CD Ender 4777-28-21SH-H, Culp Draw Deep CD Ender 4777-29-31SH-H, Culp Draw Deep CD Federal 4677-5-31SH-H, Culp Draw Deep CD Fed 4677-9-44SH-H, Culp Draw Deep CD Federal 4677-26-11SH-H, Culp Draw Deep CD Federal 4677-35-44SH-H, Culp Draw Deep CDFU 4677-24-31SH-H, and Culp Draw Deep CDFU 4677-26-31SH-H well pads as well as the entire length of the proposed access roads. This condition applies to surface disturbing activities in SWSW Section 28, S2 Section 33 of T47N/R77W; SESE and NWNW Section 4, SENE Section 8, S2 Section 9, NWNE, SENW and SESW Section 25, NE Section 35, and NWNW Section 36 of T46N/R77W. The timing limitations are applied for during the nesting season for sagebrush obligate passerines (May 1 to July 31). Timing limitations for active raptor nests (Feb 1 to July 31) which begins prior to timing limitations for sagebrush obligates, may provide additional protection where migratory bird nesting periods and habitats overlap.

Anadarko proposes using heater treaters in the production phase of the Culp Draw Deep North POD. Heater treaters, and similar facilities with vertical open-topped stacks or pipes, can attract birds. Facilities without exclusionary devices pose a mortality risk. Once birds crawl into the stack, escape is difficult and the bird may become trapped (U.S. v. Apollo Energies Inc., 611 F.3d 679 (10th Cir. 2010); see also Colorado Oil and Gas Commission, Migratory Bird Policy, accessed February 13, 2012). The BLM recommends taking measures to ensure that migratory birds are excluded from all facilities that pose a mortality risk, including, but not limited to, heater treaters, flare stacks, secondary containment, and standing water or chemicals where escape may be difficult or toxic substances are present.

If the timing limitation on habitat removal is applied, it is unlikely that active nests (of BLM sensitive species) will be destroyed, as most nestlings will have fledged by the beginning of August. Nests initiated after the first week in July may be destroyed by construction after August 1st. Ground nesting birds using grassland habitats in the Culp Draw Deep North POD proposed disturbance areas, may have nests or young destroyed if construction occurs during the nesting season; BLM sensitive migratory bird species are not anticipated to nest in the disturbance area for the well post construction. Migratory birds nesting adjacent to the well pad or road may be displaced, abandon nests, or suffer reduced reproductive success due to construction and production activities. A timing limitation does nothing to mitigate loss and fragmentation of habitat. Suitability of the project area for migratory birds will be negatively affected due to habitat loss and fragmentation, and proximity of human activities from oil and gas development.

### **Water Resources**

The area's historical use for groundwater is for stock or domestic water. A search of the Wyoming State Engineer's Office (WSEO) Ground Water Rights Database showed 2 stock water wells within 1 mile of the 10 proposed wells-with depths of 800 and 7,200 feet. There are also 34 CBNG wells dual permitted as stock water wells. For additional information on groundwater, refer to the PRB FEIS, pp. 3-1 to 3-36.

Adherence to the drilling COAs, the setting of casing at appropriate 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. The Operator will run surface casing to 2,000 feet, total vertical depth to protect shallow aquifers. The Fox Hills, the deepest known fresh water zone in the PRB lies well above the target Shannon formation. The Culp Draw Deep Drilling Plan shows the depths where the drill hole will have casing set. The intermediate casing will be cemented in place approximately 1,500 feet below ground surface with the top of the Fox Hills ranging from 6,598 to 7,010 feet at the 10 well

locations. The operator will verify that cement is set above the Fox Hills with a cement bond log. This will ensure that ground water will not be adversely impacted by well drilling and completion.

At the time of permitting, the volume of water that will be produced in association with these federal minerals is unknown. The Operator will have to produce the well for a time to be able to estimate the water production. In order to comply with the requirements of Onshore Oil and Gas Order #7, Disposal of Produced Water, the Operator will submit a sundry to the BLM within 90 days of first production which includes a representative water analysis.

Historically, the quality of water produced in association with conventional oil and gas has been such that surface discharge would not be possible without treatment. Initial water production is quite low in most cases. There are 3 common alternatives for water management: re-injection, deep disposal, or disposal into pits. All alternatives would be protective of groundwater resources when performed in compliance with state and federal regulations.

### **Cultural.**

A Class III cultural resource inventory was performed for the Culp Draw Deep POD prior to on-the-ground project work (BFO project no. 70130015). A Class III cultural resource inventory following 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* was provided to BFO by Anadarko (operator). Seth Lambert, BLM Archaeologist, reviewed the report for technical adequacy and compliance with BLM standards, and determined it to be adequate. Previously reviewed and accepted cultural reports (70030043, 70050150, 70060282, 70080021, and 70080160) cover the remainder of the project area. Not-eligible site 48JO3615 is in the project area but will not be impacted by the project as permitted. Following the Wyoming State Protocol Section VI (A) (1) the BLM notified the Wyoming State Historic Preservation Officer (SHPO) on December 5, 2013 that no historic properties exist in the area of potential effects. If any cultural values [sites, artifacts, human remains (Appendix L PRB FEIS and ROD)] are observed 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) (2).

### **Social and Economic**

The Crazy Cat East EA, WY-070-EA13-028 describes the social and economic conditions associated with the proposed oil and gas development in section 3.17, p. 38. Social and economic effects are discussed in the Crazy Cat East EA in section 4.2.13, pp. 62-63; included here by reference. BLM finds the Culp Draw Deep North POD remains viable without CDFU 4677-23-14SH-H and 4677-14-41SH-H, their well pad, and Engineered Road B. Anadarko retains the right to submit a new APD with a new pad and road plan that supports the parameters of the Buffalo RMP, other regulations, and laws to develop the lease.

### **List of Preparers. Persons and Agencies Consulted (BLM BFO unless otherwise noted)**

<b>Position/Organization</b>	<b>Name</b>	<b>Position/Organization</b>	<b>Name</b>
NRS/Team Lead/Wildlife Biologist	Jim Verplancke	Supr NRS-Resources	Bill Ostheimer
Supr NRS-Minerals	Casey Freise	NEPA Coordinator	John Kelley
Petroleum Engineer	Will Robbie	Archaeologist	Seth Lambert
LIE	Sharon Soule	Geologist	Kerry Aggen
Soils	Arnie Irwin	Assistant Field Manager	Clark Bennett
Realty Specialist	Amber Haverlock	Field Office Manager	Duane Spencer
Assistant Field Manager	Chris Durham	Legal Assistant	Penny Loughan

**Decision and Rationale on the Proposal.**

**BLM Will Approve the Following 8 APDs:**

#	Culp Draw Deep Well Name & #	Qtr/Lot	Sec	Twp	Rng	Lease	CX3 #: WY-070-
1	CD Ender 4777-28-21SH-H	12	28	47N	77W	WYW151958	390CX3-13-199
2	CD Ender 4777-29-31SH-H	12	28	47N	77W	WYW151958	390CX3-13-198
3	CD Federal 4677-5-31SH-H	8	8	46N	77W	WYW146303	390CX3-13-191
4	CD Fed 4677-9-44SH-H	8	8	46N	77W	WYW89848	390CX3-13-190
5	CD Federal 4677-26-11SH-H	2	35	46N	77W	WYW89858	390CX3-13-195
6	CD Federal 4677-35-44SH-H	2	35	46N	77W	WYW89865	390CX3-13-196
7	CDFU 4677-24-31SH-H	2	25	46N	77W	WYW112380	390CX3-13-194
8	CDFU 4677-26-31SH-H	NWNW	36	46N	77W	WYW16066	390CX3-13-197

**BLM will Deny 2 APDs, their pad, and Engineered Road B on the above rationale:**

#	Culp Draw Deep Well Name & #	Qtr/Lot	Sec	Twp	Rng	Lease	CX3 #: WY-070-
1	CDFU 4677-23-14SH-H	3	23	46N	77W	WYW0266642	390CX3-13-192
2	CDFU 4677-14-41SH-H	3	23	46N	77W	WYW85360	390CX3-13-193

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 Culp Draw Deep North POD CX3 APDs, associated infrastructure and Rights-of-Way grants conform to the applicable land use plan, 43 CFR 1610.5, 40 CFR 1508.4, and 43 CFR 46.215. I reviewed the proposal to ensure the appropriate exclusion category as described in Section 390 of the Energy Policy Act of 2005 is correct. I determined that there is no requirement for further environmental analysis.

  
 \_\_\_\_\_  
 Field Manager

2/26/14  
 \_\_\_\_\_  
 Signature Date

Contact Person, Jim Verplancke, Natural Resource Specialist, Buffalo Field Office, 1425 Fort Street, Buffalo WY 82834, 307-684-1100