

**A Petition to the Environmental Quality Council  
for Designation of an Area Known as Adobe Town  
as Very Rare or Uncommon**

Under the Authority of the Wyoming Environmental Quality Act,  
W.S. §35-11-112

and

Chapter VII of the Wyoming Department of Environmental Quality  
Rules of Practice and Procedure

Submitted to the Chairman of the Environmental Quality Council

on

November 6, 2006

Submitted by

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### **A. Location**

The proposed Very Rare boundary encompasses 180,910 acres, as shown on the accompanying map, but this petition applies only to the state and federal holdings within this boundary. Because the boundaries follow pipelines and vehicle routes that were not surveyed in along section lines, but rather randomly aligned on the landscapes, legal descriptions at the Section level are approximate. The accompanying maps (Attachments 1 and 2) should be considered the primary authority in determining boundaries.

T17N R 97W: Approximately the south half of Section 36, bounded to the north by a buried pipeline;

T17N R96W: Bounded to the north by a buried pipeline, as follows: A portion of the southeastern third of Section 22; the southwestern third of Section 24; the southeast half (diagonally) of Section 28; the southern two-thirds of Section 30; and all of Sections 25, 26, 34, and 36.

T17N R95W: Bounded to the north by a buried pipeline, the southwest diagonal halves of Sections 30 and 32.

T16N R97W: Bounded to the northwest by a buried pipeline, the southeastern corner of Section 8; the southeastern third diagonally of Section 18; the southern Half of Section 25; the southeastern eighth of Section 23; the southeast  $\frac{1}{4}$  of Section 33; and all of Sections 2, 10, 12, 14, 16, 20, 22, 24, 26, 28, 30, 32, 34, 35, and 36.

T16N R 95W: The southern  $\frac{1}{2}$  of Section 29; the southeastern  $\frac{7}{8}$  of Section 27; and all of Section 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 25, 26, 28, 30, 31, 32, 33, 34, 35, and 36.

T16N R95W: Bounded to the east by a buried pipeline and a gas-field trunk road; the western  $\frac{1}{3}$  of Section 8; the western  $\frac{1}{3}$  of Section 20; the southeastern  $\frac{5}{8}$  of Section 19; the western  $\frac{1}{3}$  of section 29; and, bounded to the north by a gas-field trunk road, the southeastern  $\frac{1}{5}$  of Section 29 and southwestern  $\frac{1}{3}$  of Section 28; and bounded to the east by a gas-field trunk road, the western  $\frac{2}{3}$  of Section 33; and all of Sections 6, 18, 30, 31, and 32.

T15N R98W: Bounded to the west by a buried pipeline, the eastern  $\frac{5}{8}$  of Section 1; the eastern roughly one-half of Section 12; the southeastern  $\frac{1}{2}$  diagonally of Section 13; the northeastern roughly  $\frac{3}{4}$  of Section 24; the eastern  $\frac{1}{3}$  of Section 25; and the eastern  $\frac{1}{3}$  of Section 36.

T15N R95W: Bounded to the northeast by gas-field access roads, the southwest  $\frac{7}{8}$  of Section 4, the south half of section 3, the southwest  $\frac{1}{8}$  of Section 2, the southwest  $\frac{2}{3}$  of Section 11, the southwest  $\frac{1}{4}$  of Section 13, the southeast corner and northwest  $\frac{1}{4}$  of Section 14, the northwestern  $\frac{7}{8}$  of Section 15, the southwest  $\frac{7}{8}$  of Section 22, the southeast  $\frac{2}{3}$  of Section 23, the southwest  $\frac{2}{3}$  of Section 24, the southwest  $\frac{15}{16}$  of

Section 25, and all of Sections 4, 5, 6, 7, 8, 9, 10, 16, 17, 18, 19, 20, 21, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, and 36.

T15N R94W: Bounded to the northeast by a gas-field road, the southwest 1/8 of Section 30 and the western 1/3 of Section 31.

T14N R94W: Bounded to the east by a gas-field trunk road, the northwest 1/4 of Section 6.

T14N R95W: Bounded to the southeast by improved gravel vehicle routes, the northwest 7/8 of Section 1, the northwest 2/3 of Section 10, the northern 1/3 of Section 11, the northwest 1/8 of Section 12, the northwest 1/3 of Section 16, the northwest 7/8 of Section 17, the northeast 3/4 of Section 19, the northwest 1/2 of Section 20, and all of Sections 2, 3, 4, 5, 6, 7, 8, and 18.

T14N R96W: Bounded to the south and east by gas-field trunk roads, the northwest 1/3 of Section 24, the northwest 1/3 of Section 25, the northern 1/3 of Section 26, the northern 1/3 and southwestern corner of Section 27, the western 1/2 (diagonally) of Section 34, and all of Sections 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 28, 29, 30, 31, 32, and 33.

T14N R97W: Bounded to the west by a buried pipeline and an improved gravel road, the northeast 3/4 (diagonally) of Section 18, the northeast 1/16 of Section 19, the northeast 2/3 of Section 20, the northeast 1/3 of Section 29, the southern 1/2 of Section 31, the southeast 3/4 (diagonally) of Section 32, and all of Sections 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 21, 22, 23, 24, 25, 26, 27, 28, 33, 34, 35, and 36.

T14N R98W: Bounded to the west by a buried pipeline, the eastern 1/3 of Section 1, the eastern 2/3 of Section 12, the northeast 1/3 of Section 13, and the southeast 1/3 of Section 36.

T13N R98W: Bounded to the west by an improved gravel road, the eastern 3/8 of Section 1 and the northeast 1/8 of Section 12.

T13N R97W: Bounded to the west by an improved gravel road, the northeast 2/3 of Section 7, the eastern 1/2 of Section 18, the northeast 1/8 of Section 19, the eastern 3/4 of Section 29, the northeast 1/3 of Section 32, the northern 2/3 of Section 33, the northeast 15/16 of Section 34, and all of Sections 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 20, 21, 22, 23, 24, 25, 26, 27, 28, 35, and 36.

T13N R96W: Bounded to the east by an improved gravel road and to the south by a well-worn two-track jeep trail, the western 3/4 of Section 3, the northwest 2/3 of Section 10, the northwest 1/4 of Section 15, the northern 2/3 of Section 16, the northwest 15/16 of Section 17, the western 1/2 of Section 20, the western 1/3 of Section 29, the northeastern 7/8 of Section 31, the southwest 2/3 of Section 32, and all of Sections 4, 5, 6, 7, 8, 9, 18, 19, and 30.

T12N R96W: Bounded to the south by a well-worn two track jeep trail, the northern ¼ of Section 5 and the northeast 1/8 of Section 6.

T12N R97W: Bounded to the south by a well-worn jeep trail, the northwest 1/8 of Section 1, the northern 1/3 of Section 2, and the northeast 1/6 of Section 3.

All of the following townships: T15N R97W; T15N R96W.

**B. Names by which the area is known locally**

The area described is known generally as Adobe Town, with portions of the area known as the Adobe Town Rim, The Haystacks, Manuel Gap, Horseshoe Bend, Haystack Wash, Sand Creek, Monument Valley, Skull Creek, the Skull Creek Rim, East Fork Point, Willow Creek, the Willow Creek Rim, Salazar Butte, and the northwest corner of the Powder Rim.

**C. Distance to Nearest Town:** The proposed Very Rare or Uncommon area is located in Sweetwater County, 20 miles south-southwest of Wamsutter, Wyoming.

**D. Surface and Mineral Estate Owners:**

Bureau of Land Management, owner of 167,517 acres within the boundary (including all lands not specifically listed by legal description below), about evenly split between the Rock Springs and Rawlins Field Offices:

Rawlins Field Office, P.O. Box 2407, Rawlins, WY 82301;

Rock Springs Field Office, 280 Highway 191 North, Rock Springs, WY 82901.

Rock Springs Grazing Association, Rock Springs National Bank, P.O. Box 880, Rock Springs, Wyoming 82902.

Owners of 11,105.51 acres private surface within the boundary. These lands include T17N R97W Section 35; T17N R96W Sections 23, 25, 27, 29, 31, 33, and 35; T17N R 95W Sections 29, 31, and 33; T16N R98W Section 25; T16N R97W Sections 1, 3, 9, 11, 13, 15, 13, 15, 17, 19, 21, 23, 25 (N ½), 27 (N ½, SW ¼, SWSE, NWSE), 29, 31, and 33 (N ½, SW); T16N R96W Sections 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 27 (NWNW, SENW), 29 (N ½); T16N R96W Sections 5, 7, 17, and 19 (NW ¼, NWNE, SWNE); T15N R98W Section 1; and T15N R97W Section 5 (N ½, NWSW, SWSW).

Anadarko Petroleum Corporation, 1201 Lake Robbins Drive, The Woodlands, Texas 77380.

Owners of 11,105.51 acres private minerals within the boundary. These private mineral interests include T17N R97W Section 35; T17N R96W Sections 23, 25, 27, 29, 31, 33, and 35; T17N R 95W Sections 29, 31, and 33; T16N R98W Section 25; T16N R97W Sections 1, 3, 9, 11, 13, 15, 13, 15, 17, 19, 21, 23, 25 (N ½), 27 (N ½, SW ¼, SWSE, NWSE), 29, 31, and 33 (N ½, SW); T16N R96W Sections 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 27 (NWNW, SENW), 29 (N ½); T16N R96W Sections 5, 7, 17, and 19 (NW ¼, NWNE, SWNE); T15N R98W Section 1; and T15N R97W Section 5 (N ½, NWSW, SWSW).

Raftopoulos Brothers Livestock Company, 893 Stout Street, Craig, CO 81625.

Owners of 162.86 acres of private surface within the boundary. These lands include T14N R97W Section 31 NWSE and SESW; T13N R 97W Section 6 SESW; and T13N R98W Section 1 SENE and small portions of NWNE.

State of Wyoming, Office of State Lands and Investments, 122 West 25<sup>th</sup> Street, Herschler Bldg., 3<sup>rd</sup> Floor West, Cheyenne, WY 82002.

Owners of 2,124.7 acres within the boundary, including T15N R97W Section 16; T15N R96W Section 16; T14N R98W Section 36; T13N R97W Section 6 SWNW, NWSW, SWSW and Section 7 SWNW, and Section 36; T13N R96W Section 19 SENE and Section 20 SESW.

Federal mineral lease holders or part-holders (not required for Very Rare or Uncommon petitions), according to the Bureau of Land Management's LR 2000 database, are nonetheless listed in Appendix A of this petition.

#### **E. Very Rare or Uncommon Features of Adobe Town**

The Adobe Town Area contains Very Rare or Uncommon Features including geological formations, abundant fossil resources, historical and prehistoric sites and features, rare and sensitive (including crucial) wildlife habitats, and scenic values comparable to or eclipsing existing national park units. All of these values are very rare nationwide and, if left unprotected, are at risk of elimination.

#### **Historical, Prehistorical, and Archaeological Values**

Adobe Town has a number of historical, prehistorical and archaeological values that meet the criteria for Very Rare or Uncommon designation. It is mentioned prominently in the journals of the Geological Exploration of the 40<sup>th</sup> Parallel (circa 1869), and was used as a hideout for fresh horses by Butch Cassidy and his gang during the Tipton train robbery of 1900. The area has a high density of archaeological sites dating back 12,000 years, and is still used as an important religious site by Native Americans today.

Adobe Town is mentioned prominently in the Report of the Geological Exploration of the 40<sup>th</sup> Parallel, a federal document authored by eminent geologist Clarence King in 1869. This area was identified by King as the most superlative geological landscape found along the survey route. King described the general landscapes as follows:

“From twelve to fourteen miles southwest of the head of Bitter Creek are seen exposures of the soft green clays, marls, and whitish-gray sands of which the upper beds of the Bridger group are made. Passing eastward of Pine Bluffs [known today as Pine Butte], the country is covered with more or less drifting sand, which forms noticeable trains of dunes. The sand suddenly gives way to the soft Bridger beds which are intricately eroded into branching ravines [Adobe Town and Skull Rims]. This bad-land

country extends southeastward to the mouth of a dry valley [Sand Creek] north of Cherokee Ridge [Powder Rim/Cherokee Rim], and from that point a chain of bluff escarpments extends northeasterly for twelve or fourteen miles.”

The Adobe Town and Skull Creek Rims received the highest praise from King:

“This escarpment is the most remarkable example of the so-called bad-land erosion within the limits of the Fortieth Parallel Exploration...Along the walls of these ravines the same picturesque architectural forms occur, so that a view of the whole front of the escarpment, with its salient and reentrant angles, reminds one of the ruins of a fortified city. Enormous masses project from the main wall, the stratification-lines of creamy, gray, and green sands and marls are traced across their nearly vertical fronts like courses of immense masonry, and every face is scored by innumerable narrow, sharp cuts, which are worn into the soft material from top to bottom of the cliff, offering narrow galleries which give access for a considerable distance into this labyrinth of natural fortresses. At a little distance, these sharp incisions seem like the spaces between series of pillars, and the whole aspect of the region is that of a line of Egyptian structures. Among the most interesting bodies are those of the detached outliers, points of spurs, or isolated hills, which are mere relics of the beds that formerly covered the whole valley. These blocks, often reaching 100 feet in height, rise out of the smooth surface of a level plain of clay, and are sculptured into the most remarkable forms, surmounted by domes and ornamented by many buttresses and jutting pinnacles. But perhaps the most astonishing single monument here is the isolated column shown in the frontispiece of this volume. It stands upon a plain of gray earth, which supports a scant growth of desert sage, and rises to a height of fully sixty feet. It could hardly be a more perfect specimen of an isolated monumental form if sculptured by the hand of man.”

The wonders of The Haystacks are described by King as follows:

“To the south of the stage-road, west of Barrel Springs, is a narrow, east and west ridge, whose irregular, serrated outline forms a striking contrast to the usual level summit line of the bluff ridges of this region....This ridge rises toward the east, having its culminating point in Haystack Mountain, which has an elevation of about 900 or 1,000 feet above the surrounding plains.”

King also noted the prevalence of fossilized wood in the Haystacks area:

“On the northern face of Haystack Mountain was found the petrified trunk of a large coniferous tree, lying across one of the narrow ravines, a length of about 15 feet being thus exposed, either end being still imbedded in the

sandstone. The woody appearance is very well preserved, the exterior being whitened, so that the resemblance to the weathered trunk of a dead tree is almost perfect; portions of the bark are covered with yellow spots, apparently of exuding gum, retaining their original coloring. The interior is a black, compact siliceous material, and, where the heart of the tree has decayed out, is loosely filled by crystalline quartz, still preserving some of the general fibre of decayed wood.”

The region surrounding the Willow Creek Rim, at the eastern end of the unit, is described by King as follows:

“In the region of Church Buttes outliers of the Bridger group constitute detached bodies rising above the Plains in the most picturesque forms, eroded in the characteristic bad-land shapes; domed mounds and buttressed blocks remind one of a variety of architectural designs.”

In addition to the historical noteworthiness of the Geological Exploration, Adobe Town is also unusually rich in archaeological sites. According to BLM (1991, p. 188),

“Significant archaeological resources are found throughout the [Adobe Town] WSA, representing continuous occupation from Paleo Indian through late Prehistoric periods, that is, for the past 12,000 years. The cultural site density of the WSA is estimated to be 30 surface sites per square mile, which is unusually high.”

### **Geological Values**

Adobe Town is a geological masterpiece, dominated by outcroppings of the Washakie formation, a deep bed of volcanic ash deposited 50 million years ago during the Yellowstone eruptions as airborne ash and fluvial desposits of ash interbedded with reddish sandstone that forms rimrock. BLM (1981, p. 4) describes the geology of the rims as follows:

“They are composed of green, gray, and red tuffaceous and arkosic sandstone and minor beds of green shale, light-gray and green tuff, gray siltstone and conglomerate. The exposed beds have created the colorful landscape the Adobe Town Area is known for.”

These are the epitome of fragile lands, with highly erodible soils (both the tuffaceous sandstone and the stabilized sand dunes mantled with a fragile veneer of vegetation) and the towers, arches, and balanced rocks which would easily be toppled by mechanical disturbance.

Above the rims, unique geological features include desert pavement and stabilized sand dunes. The rims have been whittled by erosion into spires and pinnacles, solifluction caves (known locally as ‘mud caves’) large enough to walk through (see Attachment 19),

natural arches, lone towers, groups of castellated pillars, window rocks, grottoes, buttes, caprocks, mushrooms, hat rocks, and eroded badlands banded with pink, red, and purple tones (all of which are shown in photographs in Attachment 6). According to BLM (1991, p.184), “Skull Creek Rim, in the core of the area recommended for wilderness, contains some of the most unique and extensive badlands formations in Wyoming.” BLM (1981, p. 4) described the effect of this surreal landscape as follows:

“Many of the spires take on strange life-like forms – stone sentinals (sic) frozen in time standing guard over their silent desert domain. Walking amidst groups of these strange spires gives one the eerie feeling of being watched – by beings who have witnessed the evolution of Adobe Town for millennia.”

The paleontological resources of Adobe Town are among the finest deposits of Eocene mammals and reptiles in the world. According to BLM (1991, p. 187), “The Adobe Town area is known as one of the three most valuable sites in North America for certain types of mammalian fossils.” BLM (1991, p. 188) further noted,

“The WSA is nationally known for the educational and scientific study of paleontological resources. Fossil remains of mammals are numerous and widely distributed throughout the area. Two notable mammalian fossils found in the area are the Uintathere and Titanother. The Uintathere was a large mammal about the size and configuration of an African rhinoceros. The species of Titanother found in the WSA was a tapir-like mammal, about 40 inches in height. This area has been identified as one of the premiere sites in North America for paleontological resources.”

The abundance of fossils in this area was first identified by the Geological Exploration of the Fortieth Parallel. Geologist Clarence King wrote in 1869,

“These bluffs are extremely rich in the remains of vertebrate fossils. At the base of almost every cliff were observed the bones of *Mammalia*, and frequent [turtle] shells of *Testudinata*.”

Several examples of reprinted scientific studies from the Adobe Town Very Rare or Uncommon area have been attached to this petition (Attachments 31 and 32). In addition, the paleontology of Adobe Town has been researched in a number of additional scientific studies (Turnbull 1978, Krishtalka et al. 1989, Turnbull 1993, Lillegraven 1993, Turnbull 1995, McCarroll et al. 1996a, b, Turnbull 2004); included in Literature Cited section of this petition.

### **Wildlife Values**

The Adobe Town Very Rare or Uncommon proposed area has a host of sensitive wildlife habitats that are crucial or vital (including nest sites, sage grouse lek sites, prairie dog colonies, and big game crucial winter ranges) meeting very rare or uncommon designation criteria. The cliffs and pillars found throughout Adobe



Towns provide ideal nesting habitat for raptors, offering a myriad of nesting platforms out of the reach of ground-based nest predators. Raptor nest sites, sage grouse lek sites, and big game crucial winter ranges are exceptionally sensitive because even temporary disturbances can lead to nest failure (for the birds) or displacement of big game onto marginal ranges where they may not be able to survive. Avoidance of areas where industrial activity occurs has been shown for elk (Powell 2003, Sawyer et al. in press), sage grouse (Holloran 2005, Naugle 2006a, b, Kaiser 2006), mule deer (Sawyer et al. 2004, 2005) and pronghorn (Berger et al. 2006). The sensitivity of nesting raptors to disturbance has been shown by Parrish et al. (1994) and White and Thurow (1985).

The mountain plover is recognized as a BLM Sensitive Species and as a Sensitive Species by the Wyoming Game and Fish Department. Until recently, it was listed as Threatened under the Endangered Species Act. The Horseshoe Bend area south of The Haystacks contains vital mountain plover nesting habitat with a number of confirmed plover sightings (BLM 2003, Figure 3-2, p. I-10); see also attachments 3 and 4. Mountain plovers have also been sighted atop the Adobe Town Rim at T15N R98W Section 25 NE ¼ (see photo, Attachment 33), and at the southern edge of the Adobe Town Rim (map, attachment 3).

The white-tailed prairie dog is a BLM Sensitive Species and also is recognized as a Sensitive Species by the Wyoming Game and Fish Department. There is a small white-tailed prairie dog colony observed at T 14N R97W sec. 12, SE ¼, which has been active at least between 2001 and 2006; white-tailed prairie dogs were also observed in Section 13 NW ¼ of the same township in 2006. Active white-tailed prairie dog colonies also occur in Horseshoe Bend south of the Haystacks (BLM 2003, Figure 3-1, page I-7).

There are a number of known golden eagle nest sites within the proposed Very Rare or Uncommon area, including two nest sites along the western end of The Haystacks (T16N R97W Sec. 10 NE ¼ and T16N R97W Sec. 15 SW ¼), one along Haystack Wash as it leaves the rimrock area (T16N R96W Sec. 30 NW ¼), and one on the lower rim (T15N R96W Sec. 18 NW ¼) (BLM 2001; see map, Attachment 4). In the Rawlins Field Office, two golden eagle nests occur in the southern end of the Wilderness Study Area, with additional nests known from the Willow Creek Rim in the eastern proposed expansion unit and on outcrops to the west of Sand Creek in the southeastern proposed expansion unit (see map, Attachment 3).

The greater sage grouse is a BLM Sensitive Species and also is listed as a Sensitive Species by the Wyoming Game and Fish Department. There are two known sage grouse leks (traditional breeding sites used year after year) in the Very Rare or Uncommon proposed area, one in the southeastern proposed expansion and one in the northeastern lobe of the Wilderness Study Area (see map, Attachment 3). Sage grouse leks are the hub of nesting activity, and

typically most of the hens bred at a lek nest within 3 miles of the lek site. Thus, the area around each lek also constitutes important nesting habitat.

There is a desert elk herd, known to the Wyoming Game and Fish Department as the Petition Herd, which is one of the few true desert elk herds in North America, spending the entire year in the Red Desert. This elk herd is therefore very rare indeed.

Known prairie falcon nest sites within the proposed Very Rare or Uncommon area include one at T16N R95W Sec. 19 NW ¼; two near Manuel Gap (T16N R97W Sec. 27 SW ¼ and T16N R97W Sec. 28 SW ¼); and T15N R96W Sec. 19 NE 1/4 (BLM 2001, map Attachment 4). Prairie falcons with fledgling young were observed roosting on a pinnacle just off the Skull Creek Rim at T13N R97W during the early summer of both 2005 and 2006. Prairie falcons with fledgling young were also sighted at T15N R97W Section 19 SW ¼ on July 9, 2006. A known prairie falcon nest also was recorded by BLM on the bluffs above Willow Creek in the eastern proposed expansion (see map, Attachment 3).

Several other raptors are on the BLM and Wyoming Game and Fish Department Sensitive Species Lists. The burrowing owl, which is a prairie dog obligate species that nests in burrows of prairie dog towns, has one known nest location in the southwestern corner of the Adobe Town Wilderness Study Area (see Attachment 3). The ferruginous hawk, the largest hawk in Wyoming, has nest sites confirmed by BLM two miles south of Manuel Gap (see Attachment 3) and in the southeastern proposed expansion (see Attachment 4).

Due to the rugged and inaccessible nature of much of Adobe Town, no thorough and systematic inventory of nesting raptors has ever been performed. For instance, there are several known nest sites of ferruginous hawks active in recent years which are not in the BLM's database, even in accessible areas. An occupied and active ferruginous hawk nest was observed by Erik Molvar and Joel Sartore on the eroded walls far below East Fork Point at T14N R96W Section 8 SWSE on May 4, 2004. In addition, an active and occupied ferruginous hawk nest was documented in the Haystacks at T17N R96W Section 33 SWSE by Liz Howell and separately by Erik Molvar during summer of 2005, and the same nest was found to be active again in 2006 by Erik Molvar.

The Great Basin gopher snake is listed as a BLM Sensitive Species. This species has been photographed along the Adobe Town Rim at T15N R97W Section 19, NW ¼ (see photograph in Adobe Town Briefing Book, Attachment 6 at page 9).

The Haystacks is identified by the Wyoming Game and Fish Department as crucial mule deer winter habitat (BLM 2001, see map at Attachments 3, 4). There is also a substantial amount of pronghorn crucial winter range south of Horseshoe Bend along the branches of Haystack Creek (Id., and see map, Attachment 4). In addition, portions of the Rare and Uncommon area on the north slope of the

Powder Rim are mule deer crucial winter range (BLM 2005, see also map, Attachment 3).

### **Scenic Values**

The scenic values of Adobe Town are the most impressive of any desert landscape in Wyoming (see Attachment 6). It has long attracted the attention of writers and authors. In the 2006-2007 edition of *Wilderness* magazine, writer Allen Best characterizes Adobe Town as “a giant museum of geological curiosities” (Best 2006, Attachment 9). In 2004, Kerry Brophy wrote of Adobe Town in *Wyoming Wildlife* magazine as “about as lonesome and lovely a place as you’re likely to find” (Brophy 2004, Attachment 7). Adobe Town is also featured in the guidebook *Wild Wyoming* (Falcon Publishing, 2001, excerpts at Attachment 34), which characterized the area as “a landscape worthy of National Park status.” World-renowned author Annie Proulx has authored a book on the Red Desert, currently in press, which includes Adobe Town. The BLM (1991, p. 184) has described Adobe Town as follows: “The maze of badland formations, mesas, and buttes combine with brilliantly colored rock strata to create spectacular canyonland scenery.”

Artistic appreciation for Adobe Town dates back to the 1860s, when lithographer Gilbert Munger, accompanying the Geological Exploration of the 40<sup>th</sup> Parallel, executed several scenic lithographs of Adobe Town. These lithographs have been reproduced on page 3 in the attached Briefing Book (Attachment 6).

More recently, Adobe Town has become a mecca for photographers, both professional and amateur. Adobe Town photographs have been included in calendars (see Attachment 36), coffee table books such as *Wind River Wilderness* (see Attachment 35). A scenic photograph of Adobe Town that appeared in the July 2005 issue of *National Geographic*, and a reproduction of this photograph is attached as Attachment 11 to this petition. Photographs of Adobe Town have also appeared in glossy magazines such as *Wyoming Wildlife*, *Trail & Timberline*, *Bugle*, and *Wilderness* (see Attachments 7, 8, 9, and 10). Internationally known nature photographer Tom Mangelson noted, “Adobe Town is truly one of the crown jewels of the West, one of the signature Red Desert landscapes that cannot be allowed to fall under the blade of the bulldozer.” *Protect Adobe Town, today*, Rawlins Daily Times, January 19, 2006, p.7 (Attachment 27). Photographer Ron Marquart described Adobe Town as follows: “Its landscape is comparable to Bryce Canyon, Canyonlands and Badlands National Parks, and represents the most intricate, outstanding badlands topography in the U.S.” (Attachment 27). Colorado-based photographers Wendy Shattil and Bob Rozinski currently have a Red Desert coffee-table book in the works which also will feature Adobe Town. Each year since 2004, an annual Red Desert Photo Show has been held in Laramie, and each year there have been award-winning entries featuring Adobe Town landscapes (see news clipping, Attachment 30). Among the award-winning photographers that have placed Adobe Town images in the show include Scott Smith, Ken Driese, and Ron Marquart.

### **F. Current and Historical Uses**

Currently, the Adobe Town area is used primarily for recreation. Hikers and photographers concentrate their efforts along the Adobe Town Rim, in The Haystacks,

and atop the Skull Creek Rim. Camping occurs at several sites at the end of the jeep trail that travels to the top of The Haystacks. The unit is an excellent rockhounding area, with moss agates and other semiprecious stones to be found, especially atop the Adobe Town Rim. The flats along the eastern end of the unit are a well-known trophy antelope hunting area (see public comments, BLM 2001b). The area of The Haystacks, Adobe Town Rim, and Powder Rim are also known mule deer hunting areas. Due to the tangled web of gas field roads to the east of Adobe Town, most visitors approach from the north and west.

The area has seen livestock grazing (primarily cattle) throughout the length of its history. The Rock Springs Grazing Association has fee title to the surface estate of most of the private checkerboard holdings at the northern end of the unit; cattle have not been grazed on this pasture in the last several years, although it has been used historically. Cattle are rarely encountered in the proposed Very Rare or Uncommon area, as there are few water sources and the grass is typically sparse. According to Biodiversity Conservation Alliance's *A Citizens' Wilderness Inventory of Adobe Town*, field inventoried in 2001, there are 19 small livestock ponds or reservoirs within the Very Rare or Uncommon unit, both in the Wilderness Study Area and outside of it. Some of these reservoirs hold water for parts of the year, while others are breached and abandoned. There also are several fences in the unit. An allotment boundary fence is located at the western end of the unit; it is collapsed along most of its length and it is no longer functional. There are several additional fences at the far southern end of the unit, which are in good repair.

The Adobe Town area holds a wild horse herd of approximately 1,000 head, and wild horse roundups have occurred in the area for many years. In the early 1900s, local ranchers turned out their studs to breed with the wild horses, and gathered animals and broke them for riding. Also during this period, wild horses were gathered to sell their meat for pet food or human consumption. There are several wild horse traps dating from this era scattered across the Very Rare or Uncommon area. More recently, wild horse "gathers" are undertaken by the BLM to reduce herd numbers and maintain wild horse populations within herd management objectives. These gathers are accomplished using temporarily erected pens and with herders on horseback supplemented by helicopters.

There is also mineral leasing activity within the Adobe Town Very Rare or Uncommon area. When the Adobe Town Wilderness Study Area was first established, most of the area was leased for oil and gas development (BLM no date; see map, Attachment 5). Based on the distribution of existing leases, the BLM recommended only 10,920 acres for wilderness status at the time. One well was drilled (the Conwest Adobe Town #1) as these leases ran their course, and this well was plugged and abandoned in November 2004. A number of gas wells, mostly dry holes, were drilled within the Wilderness Study Area and elsewhere in the Very Rare or Uncommon proposed area. Today, all leases within the Wilderness Study Area have expired, most without and exploration and production activity. Today, oil and gas corporations currently hold leases across most of the proposed Very Rare or Uncommon area outside the Wilderness Study Area (see BLM 2002a, Attachment 37).

Anadarko Petroleum commissioned a seismic oil and gas survey of 135 square miles across northern Adobe Town in 2002 (see BLM 2001b). Subsequent to this seismic project, only one well was ever drilled within the project area (the Questar Spike #1), despite natural gas wholesale prices peaking above \$14 per thousand cubic feet (up from \$2 per thousand cubic feet in 2002). This indicates a failure of the seismic survey to locate significant reserves. In 2006, Kerr-McGee sponsored a seismic exploration project (the Cherokee West Seismic Project) covering the southern fifth of the proposed Very Rare or Uncommon Area. In 2004, BLM approved the Desolation Flats Natural Gas Field Development Project (BLM 2003), which covers approximately 50,000 acres of the proposed Very Rare or Uncommon area along its eastern flank. According to the EIS, if the Rawlins BLM withdraws the area from oil and gas leasing under the revised Rawlins Resource Management Plan, these areas would also be withdrawn from the Desolation Flats Field Development Project. So far, one well (the Samson Barricade 44-1) has been drilled within the Very Rare or Uncommon proposed area pursuant to this project, with several additional well proposed in the same area. Under one of its Alternatives for the Rawlins RMP Draft EIS, the BLM would withdraw approximately 40,000 acres of the proposed Very Rare or Uncommon area from oil and gas leasing. It is expected that these leases, like the leased lands within the Adobe Town WSA at the time of its establishment, would expire with very little active development within a decade or two of the leasing moratorium going into effect.

According to Dr. Ron Surdam, Director of the Wyoming State Geological Survey, a modern wildcat well in the Adobe Town area, would have to bring in over 2 billion cubic feet (BCF) of natural gas to cover the costs of drilling fracturing, and completion in order to break even (personal communication, 11/7/06). An older well would have a lower cost of completion, and a well would need to produce 1 billion cubic feet to cover its costs before it became profitable. An examination of the Wyoming Oil and Gas Conservation Commission records for well production inside or adjacent to the Adobe Town (see Appendix B) indicate that according to these criteria, of the 39 wells ever drilled within the proposed Very Rare or Uncommon area, not a single one has ever come even close to paying for itself (much less becoming profitable). Indeed, almost two-thirds were dry holes, never producing any oil or gas at all.

The area encompassed by the Very Rare or Uncommon petition is underlain by oil shale deposits of the Green River formation. This area is encompassed by the Bureau of Land Management's Oil Shale Programmatic EIS, and oil shale leasing may occur in the Washakie Basin, where this Very Rare or Uncommon candidate area is found, in the future. Wyoming's oil shale has a maximum kerogen (an oil precursor) content of 30 gallons per ton, half of the 60 gallons per ton of the most productive oil shales in Colorado. The average kerogen content of Wyoming oil shale is probably closer to 15 gallons per ton (Dr. Ron Surdam, Director of the Wyoming State Geological Survey, personal communication). However, despite the low productivity of oil shale in this region, it is not inconceivable that oil shale leasing (and subsequent strip mining) may move forward in the foreseeable future.

There has been a considerable amount of paleontological research performed in Adobe Town since the 1950s, primarily by Dr. William Turnbull of the Chicago Field Museum (*see, e.g.*, Attachments 31 and 32). This research focused on The Haystacks area as well as other bedrock outcrops farther south throughout the Adobe Town area (Dr. William Turnbull, personal communication).

### **G. Special Designations and Agency Descriptions**

In their *Inventory of Significant Geologic Areas in the Wyoming Basin Natural Region* (McGrew et al. 1974), compiled under contract with the National Park Service, the authors noted that “The greatest natural value of this area is that it is still a ‘howling wilderness.’” (at p. 187). The authors of this report gave the Washakie Basin the highest rating for priority in evaluation for National Natural Landmark designation. A later study titled *Potential Natural Landmarks in the Wyoming Basin* (Knight et al. 1976), rated the area as having the highest rating for ecological and geological values, a rating that reflects “high degree of national significance, recommended without reservation.” at pp. 216-218. In 1979, the National Park Service and the Heritage Conservation and Recreation Service identified the resources of the Washakie Basin (which includes the Very Rare or Uncommon proposed area) as possessing nationally significant and threatened natural-ecological-geological features and listed the basin as a possibility for new study and potential inclusion as a national park, underscoring the outstanding natural attributes of the area.

The Bureau of Land Management designated a little less than half of Adobe Town, some 85,710 acres, as a Wilderness Study Area (shown in light blue on the map, Attachment 2). This designation prohibits surface mining and future oil and gas leasing (although pre-existing oil and gas leases were allowed to run their course). The entire WSA, both lands recommended for wilderness and lands not recommended for wilderness by BLM, are manageable as wilderness (BLM 1991, p. 190).

In describing the naturalness of the features, BLM (1991, p. 187) described the Wilderness Study Area as follows:

“Skull Creek Rim, in the core of the recommended area, is a very colorful and rugged desert badland area, which consists of a series of highly eroded drainages and colorful badland rims. To the north of the Skull Creek Rim is Monument Valley and Adobe Town Rim. These areas also contain badlands and formations similar to Skull Creek, but are more dispersed. To the east (the majority of the nonsuitable area) is a broad, relatively undisturbed plain that is covered with stabilized sand dunes and alluvium.”

In 2001, Biodiversity Conservation Alliance submitted *A Citizens’ Wilderness Inventory of Adobe Town* pursuant to the BLM’s Wilderness Inventory Study Procedures Handbook. In response to this exhaustive field inventory, BLM re-assessed areas neighboring the Wilderness Study Area and identified approximately 40,000 additional

acres in Inventory Areas A, C, D, E, and F under the category, “The area has wilderness character” (BLM 2002b, Attachment 38; see also BLM’s map, Attachment 37 at 3). BLM committed to studying protection for these areas during the Great Divide RMP Revision (BLM 2002a).

In 2004, Governor Dave Freudenthal asked the BLM to examine boundary extensions for the Adobe Town Wilderness Study Area and sought protections for these lands potentially including withdrawal from oil and gas leasing (Attachment 39). The Governor also called for stronger protections for Adobe Town in 2005 through the Great Divide plan revision process (*see* Attachment 18, p.2). During the Great Divide RMP revision process, the WGFD (2005, p. 28) recommended that all Wilderness Study Areas (including Adobe Town) also be designated as Areas of Critical Environmental Concern in order to protect their special values should the WSA lose their protective designation in the future.

In addition, the BLM established the Monument Valley Management Area under its Green River Resource Management Plan in 1997, deferring establishment of an Area of Critical Environmental Concern here pending additional study (BLM 1997, p. 37). The MVMA encompasses 69,940 acres, including approximately the northern half of the proposed Adobe Town Very Rare and Uncommon Area. The primary result of this designation was to apply more restrictive Visual Resources Management Class II status on these lands, which impose additional restrictions on potential projects.

#### **H. Contiguous Landowners**

The contiguous landowners to the proposed Very Rare or Uncommon unit are identical to the list of those owning lands within the unit (the Bureau of Land Management, Rock Springs Grazing Association, State of Wyoming, and Raftopoulos Brothers Land and Livestock Company). See Section

#### **Conclusion**

Given the national park quality scenery, the fragile nature of the arches, pinnacles, and window rocks, and the sensitive wildlife habitats (particularly nesting habitat for birds of prey), Adobe Town is perhaps the ultimate example of lands worthy of Very Rare or Uncommon designation. Adobe Town is Very Rare not only on a statewide basis, but is also very rare and irreplaceable at the national scale. We urge the Environmental Quality Council to grant Adobe Town the protection of Very Rare status at the soonest possible time.

## **I. List of Attachments**

### ***Maps***

**Attachment 1** – Official BLM Map with land ownerships showing Adobe Town proposed Very Rare or Uncommon area boundary in pink

**Attachment 2** – Topographic map showing proposed Very Rare or Uncommon area at a larger scale, with vehicle routes from Biodiversity Conservation Alliance’s intensive field inventory of the area.

**Attachment 3** – Map showing Rawlins Field Office raptor nesting sites and sage grouse leks within the proposed Very Rare or Uncommon boundary, and all big game crucial winter ranges within the proposed Very Rare or Uncommon boundary.

**Attachment 4** – Map from BLM’s Veritas Haystacks Seismic Project file showing raptor nest sites and crucial wildlife habitats in the Rock Springs Field Office portion of the proposed Very Rare or Uncommon area.

**Attachment 5** – Map from BLM’s Adobe Town Wilderness Inventory, showing pre-existing leases within Adobe Town Wilderness Study Area prior to its establishment.

### ***Pictorial Synopsis of Special Qualities of the Adobe Town***

**Attachment 6** – Adobe Town: Crown Jewel of Wyoming’s Desert Wilderness. A Briefing Book

### ***Magazine Articles on Adobe Town***

**Attachment 7** – Adobe Town; excerpted from *Wyoming Wildlife Magazine*.

**Attachment 8** – Adobe Town: Remote, rugged, and untouched – but for how long? Excerpted from *Trail and Timberline Magazine*.

**Attachment 9** – Can we save this western wilderness? Excerpted from *Wilderness Magazine*.

**Attachment 10** – Adobe Town, Wyoming. Excerpted from *Bugle Magazine*.

**Attachment 11** – Photograph of Adobe Town from *National Geographic*’s ‘Tapping the Rockies’ article, July 2005.

### ***Newspaper Articles on Adobe Town***

**Attachment 12** – Conservationists want expanded Adobe Town protections, Rawlins Daily Times, 7/21/01



**Attachment 13** – Citadel in the sand, Casper Star-Tribune, 7/2/03

**Attachment 14** – Venturing into Wyoming’s surreal desert, CNN/AP, 7/23/03

**Attachment 15** – The last untouched wild frontier: Red Desert offers wilderness diversity with Adobe Town as the crown jewel, Laramie Boomerang, 6/23/04

**Attachment 16** – Adobe Town ‘a labyrinth of natural fortresses,’ Rawlins Daily Times, 6/26/04

**Attachment 17** – Groups seek to limit impact on Adobe Town, Rock Springs Rocket-Miner, 9/3/04

**Attachment 18** – Governor raps Great Divide plan, Casper Star-Tribune, 3/17/05

**Attachment 19** – Adobe Town (photo essay), Rawlins Daily Times, 7/30/05

***Newspaper Editorials on Adobe Town***

**Attachment 20** – BLM should err on side of wildlife, Casper Star-Tribune, 12/21/01

**Attachment 21** – Wyo still a place of discovery, Casper Star-Tribune, 3/13/05

**Attachment 22** – BLM has the space to meet many needs, Rawlins Daily Times 3/16/05

**Attachment 23** – Protect Adobe Town, Rawlins Daily Times, 1/20/06

**Attachment 24** – Preserving Adobe Town comes first, Casper Star-Tribune, 1/24/06

***Selected Opinion Pieces on Adobe Town***

**Attachment 25** – BLM is ignoring Great Divide native sites (Dick Baldes, Eastern Shoshone), Rawlins Daily Times 2/9/05

**Attachment 26** – Protect lands, church group says (Wyoming Ass’n of Churches), Rawlins Daily Times, 2/16/05

**Attachment 27** – Protect Adobe Town from the drilling rigs (Ron Marquart, photographer)/Protect Adobe Town, today (Tom Mangelsen, photographer), Rawlins Daily Times 1/19/06

***Newspaper Articles on Adobe Town Events***

**Attachment 28** – Group sets trek schedule, Rawlins Daily Times, 5/10/06

**Attachment 29** – Protect Adobe Town, conferees agree, Rawlins Daily Times, 8/1/06

**Attachment 30** – Photo contest, Laramie Boomerang, 8/25/06

### ***Scientific Articles on Adobe Town***

**Attachment 31** – Turnbull, W.D., and D.M. Martill. 1988. Taphonomy and preservation of a monospecific titanotheres assemblage from the Washakie formation (late Eocene), southern Wyoming. An ecological accident in the fossil record. *Palaeogeography, Palaeoclimatology, Palaeoecology* 63:91-108.

**Attachment 32** – Turnbull, W.D. 1991. *Protoptychus hatcheri* Scott, 1895. The mammalian faunas of the Washakie formation, Eocene Age, of southern Wyoming. Part II. The Adobetown Member, Middle Division (= Washakie B), Twka/2 (In Part). *Fieldiana Geology* 21: 1-33.

### ***Photograph***

**Attachment 33** – Photograph of male mountain plover in breeding plumage, Adobe Town Rim, early summer 2004.

### ***Book Excerpts***

**Attachment 34** – Adobetown, pp. 321-328 in *Wild Wyoming* by Erik Molvar (Falcon Publishing, 2001)

**Attachment 35** – Excerpt from *Wind River Wilderness*, Ron Chilcote, editor (Laguna Wilderness Press, 2006)

### ***Calendar Photograph of Adobe Town***

**Attachment 36** – Calendar photograph from WaterWorks calendar, 2005

### ***Additional Documents***

**Attachment 37** – BLM Response to BCA wilderness inventory, 2002, with maps

**Attachment 38** – Adobe Town Citizens' Proposal Inventory Area Evaluation, Rawlins Field Office, 2001.

**Attachment 39** – Final letter from Governor Dave Freudenthal to the Rawlins BLM concerning the Desolation Flats Natural Gas Field Development Project, 2004.

**J. Potential Witnesses**

Larry Apple, Biologist, BLM Miles City Montana Field Office, 111 Garryowen Rd., Miles City, MT 59301

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Andy Blair, Community Organizer, Wyoming Outdoor Council; 262 Lincoln, Lander, WY 82520

Mac Blewer, National Park Conservation Association, 1300 19<sup>th</sup> Street NW, Suite 300, Washington, DC 20036

Tex Boggs, Western Wyoming Community College administrator, 2520 College Dr., Rock Springs, WY

Mike Burd, USWA Union Representative, 1580 Nebraska, Green River, WY 82935

Tim Chesnut, Photographer and Albany County Commissioner, 2142 Thornburgh Dr., Laramie, WY 82070

Ron Chilcote, Photographer and Publisher, 48 Rim Top Rd., Pinedale, WY 72841  
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82001

Pat Gabriel, Albany County Commissioner, 1801 Beaufort, Laramie, WY 82070

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Tom Mangelsen, Photographer, Images of Nature, P.O. Box 2935 Jackson, WY 83001

Ron Marquart, Photographer, 3300 E. Red Stone Road, Boise, ID 83712

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Mary Lou Morrison, 845 E 3rd. St., Casper, WY 82601

Rev. Warren Murphy, 1131 13th St., Cody, WY 82414

Dan Neal, Equality State Policy Center, 340 W B St., #203, Casper, WY 82601

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Al Sammons, Backcountry Horsemen, P.O. Box 407, Riverton, WY 82501

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Ken Driese, Professional Photographer, 500 S 11<sup>th</sup> St., Laramie, WY 82070

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Paige Smith, State Planning Office, State Capitol, 200 West 24<sup>th</sup> St., Cheyenne, WY 82002

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Gary Trauner, P.O. Box 2133, Casper, WY 82602

Mark Jenkins, Outside Magazine columnist, 1102 Grand Ave., Laramie, WY 82070

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Sawyer, H., R. Nielson, F. Lindzey, R. Nielson, L. Keith, J. Powell, and A. Abraham. In press. Habitat selection of Rocky Mountain elk in a non-forested environment. *Journal of Wildlife Management* 71: In Press.

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## APPENDIX A

### Federal Lease Holders or Part-Holders in Adobe Town Very Rare or Uncommon Area

Yates Petroleum and subsidiaries at same address (Abco Petro Corp., Myco Industries, Sharbro Oil Ltd., Yates Drilling Co.), 105 S. 4<sup>th</sup> St., Artesia, NM 88210

Andex Resources, 700 Louisiana #1100, Houston, TX 77002

Kerr-McGee, 1999 Broadway, Denver, CO 80202

Samson Resources, 370 17<sup>th</sup> St. #3000, Denver, CO 80202

Questar Exploration and Production Co., 1050 17<sup>th</sup> St. #500, Denver, CO 80202

Anadarko E & P Co., 1201 Lake Robbins Dr., The Woodlands, TX 77380

Lario Oil & Gas Co., 301 S. Market St., Wichita, KS 67202

BP America, P.O. Box 3092, Houston, TX 77253

Chevron USA Prod. Co., 1013 W. Cheyenne Dr., Evanston, WY 82903

Marathon Oil Co., 1501 Stampede Ave., Cody, WY 82414

Liberty Energy LLC, 90 Corona St. #300, Denver, CO 80218

Strata Oil & Gas Co., LLC, 910 16<sup>th</sup> St. #850, Denver CO 80202

Don Parsons, 2150 Chambers Dr., Bozeman, MT 59715

True Oil LLC, P.O. Box 2360, Casper, WY 82602

Kathleen Rubenstein, 6350 Palmas Bay Cir., Port Orange, FL 32127

Continental Resources, Inc., P.O. Box 1032, Enid, OK 73702

Encana Oil and Gas, 370 17<sup>th</sup> St. #1700, Denver, CO 80202

Enerplus Resources, 1700 Lincoln St. #1300, Denver, CO 80203

Desert Mining Inc., 4328 Hwy. 66, Longmont, CO 80504

John Cox, P.O. Box 2217, Midland, TX 79702

W.A. Moncrief Jr., 950 Commerce St., Ft. Worth, TX 76102

Ruth Calvert, P.O. Box 65, Artesia, NM 82111

Georgie Johnson, 1606 Castleberry, Artesia, NM 88210

Swepi LP, P.O. Box 576, Houston, TX 77001

## Appendix 2

### Well Records for All Wells Within Proposed Very Rare or Uncommon Area

<b>Well Name</b>	<b>Drilled (Spud Date)</b>	<b>Status</b>	<b>Production to Date (BCF; BO = barrels oil)</b>	<b>Relative Location</b>
Yates Adobe Reservoir#1	1996	abandoned	none-dry hole	within south unit
Questar Pectin Creek Unit #2	2000	abandoned	none-dry hole	within S unit
Oxy USA Govt #1	1945	abandoned	no record	within S unit
CIG 4-6-13-96	1980	abandoned	no record	within SE unit
Husky Federal 1-17	1975	abandoned	none - dry hole	within WSA
Sun Oil Jenkins Govt B-1	1967	abandoned	none - dry hole	within WSA
Husky Federal 1-17	1975	abandoned	none-dry hole	within WSA
Conwest Twin Forks 1	1979	abandoned	0.135081 (6,879 BO)	inside SW unit
Swepi Unit 1	1952	abandoned	none - dry hole	inside WSA inside eastern unit
Samson Barricade 44-1	2006	active?	none	unit
Lyc0 Desert Rose 1	1996	abandoned	0.068004	inside SE unit
Stone Energy Polar Bar 1	1992	abandoned	0.142624	inside SE unit
Swepi Shell Creek 42-28	1953	abandoned	none	inside SE unit
CIG Haystack Unit 1-28	1977	abandoned	0.115136	inside SE unit
Encana West Slope 41-05	2005	abandoned	none-dry hole	inside E unit
Samson Cepo Federal 23-7	2005	active	0.291905	inside E unit
Samson Cepo Federal 20-17	2005	unknown	none	inside E unit
Conwest Adobe Town 1	1978	abandoned	0.041492	inside WSA
Koch Adobe Town 1-30	1980	abandoned	none-dry hole	inside WSA
Gulf Trappers Trail 1	1972	abandoned	none - dry hole	inside WSA
Husky Federal 4-35	1976	abandoned	none - dry hole	inside WSA
Husky State 4-36	1975	abandoned	none - dry hole	inside WSA
Interline AUSA Century 1-2	1981	abandoned	none - dry hole	inside WSA
Questar Mulligan Draw 19	1992	abandoned	0.090080 (27 BO)	inside E unit
Encana West Slope Unit 33-32	2003	active	0.021865 (282 BO)	inside E unit
Encana Desolation Flats 33-33	2000	abandoned	none - dry hole	inside E unit
Gary Samuel Mulligan Draw 1`	1987	abandoned	0.000689	inside E unit
Sands-American Federal 1-14	1973	abandoned	none - dry hole	inside N unit
Questar Spike 1	2005	active	0.005556 (126 BO)	inside N unit
Interline Emigrant Trail 3	1981	abandoned	0.000500	inside N unit
Ladd & Lukowicz Federal 1-10-6	1975	abandoned	none - dry hole	inside N unit
BP Willow Reservoir 5	1992	abandoned	0.001270	inside N unit
Celsius Jeep Trail 3	1993	abandoned	none - dry hole	inside N unit
Anadarko Willow Reservoir 12	1992	abandoned	0.000448	inside N unit
Anadarko Willow Reservoir 11	1992	abandoned	none - dry hole	inside N unit
BP Emigrant Trail Unit 2	1980	abandoned	0.017259 (292 BO)	inside N unit
Phillips Nix 1-36	1981	abandoned	none	inside N unit
BP Champlin 230 Amoco A 1	1976	abandoned	none - dry hole	inside N unit