

SECTION 6

SOUTH PORCUPINE LBA TRACT

S6-1 TOPOGRAPHY AND PHYSIOGRAPHY

The general analysis area for the South Porcupine tract is located in the southern portion of the general Wright analysis area. Nearly all of the tract's general analysis area lies within North Antelope Rochelle Mine's current permit area. The South Porcupine LBA Tract is essentially surrounded by the North Antelope Rochelle and Antelope mine's existing federal coal leases. The topography of the tract's general analysis area is relatively rugged, dominated by relatively steep draws and gullies formed by the headwaters of unnamed ephemeral tributaries of Antelope Creek, Horse Creek, and Porcupine Creek. The central portion of the South Porcupine LBA Tract is located at the divide between these three drainages. The northern and eastern portions of the tract drain north and east to Porcupine Creek via several ephemeral tributary draws. The southern portion of the tract drains south to Antelope Creek via Chyr Draw. The western portion of the tract drains west to Horse Creek via Eagle Draw and other unnamed draws.

Elevations range from 4,675 feet to 4,950 feet within the LBA tract as applied for, the BLM study area, and the tract's general analysis area. The steepest slopes within the relatively rugged and erosionally dissected general analysis area for the South Porcupine tract are slightly over 30 percent (a maximum of about 36 percent) and they occur in the draws and gullies formed by the headwaters of the ephemeral tributaries described above. The slopes of the gently rolling uplands, which comprise most (about 51 percent) of the general analysis area, seldom exceed 5 percent.

S6-2 GEOLOGY

Stratigraphic units in the general analysis area include, in descending order, recent (Holocene age) alluvial and eolian deposits, the Eocene age Wasatch Formation (the overburden), and the Paleocene age Fort Union Formation (which contains the target coal beds).

The majority of the recent surficial deposits in the tract's general analysis area are reworked Wasatch Formation residuum or deposits that are of mixed alluvial, residual, and eolian nature, including sheetwash re-deposition of weathered Wasatch material. The lithologies of these unconsolidated deposits represent materials eroded locally and reflect relatively near-source deposition. Mapping of the surficial geology in this area (Reheis and Coates 1987, PRC 2004) shows that thin alluvial deposits of minor areal extent occur only along Mike's Draw, an ephemeral tributary of Porcupine Creek. These recent alluvial deposits are comprised of stream-channel and overbank deposits of sand, silt and clay. Isolated, thin deposits of sheetwash colluvium consisting of sands, silts, and clays also occur in areas of unchanneled flow on hillslopes.

The Eocene Wasatch Formation directly overlies the recoverable coal seam and thus forms most of the overburden. Wasatch rocks are exposed on the surface in some locations, particularly along steeper slopes formed by the more erosionally resistant strata and along the breaks or the broken land dissected

by small ravines and gullies. The Wasatch overburden consists of interbedded, lenticular sands/sandstones, silts/siltstones, clays and shales with thin discontinuous coal seams. Typically, units are gradational mixtures of these sediments. There is no distinct boundary between the Wasatch Formation and the underlying Paleocene Fort Union Formation. From a practical standpoint, however, the top of the mineable coal zone is considered as the contact between the two formations. In general, overburden thickness decreases in the gullies and draws where the Wasatch has been removed by erosion. The average overburden thickness in the South Porcupine tract is 346 feet in the LBA tract as applied for, and 347 feet in the BLM study area (the tract configured under Alternative 2).

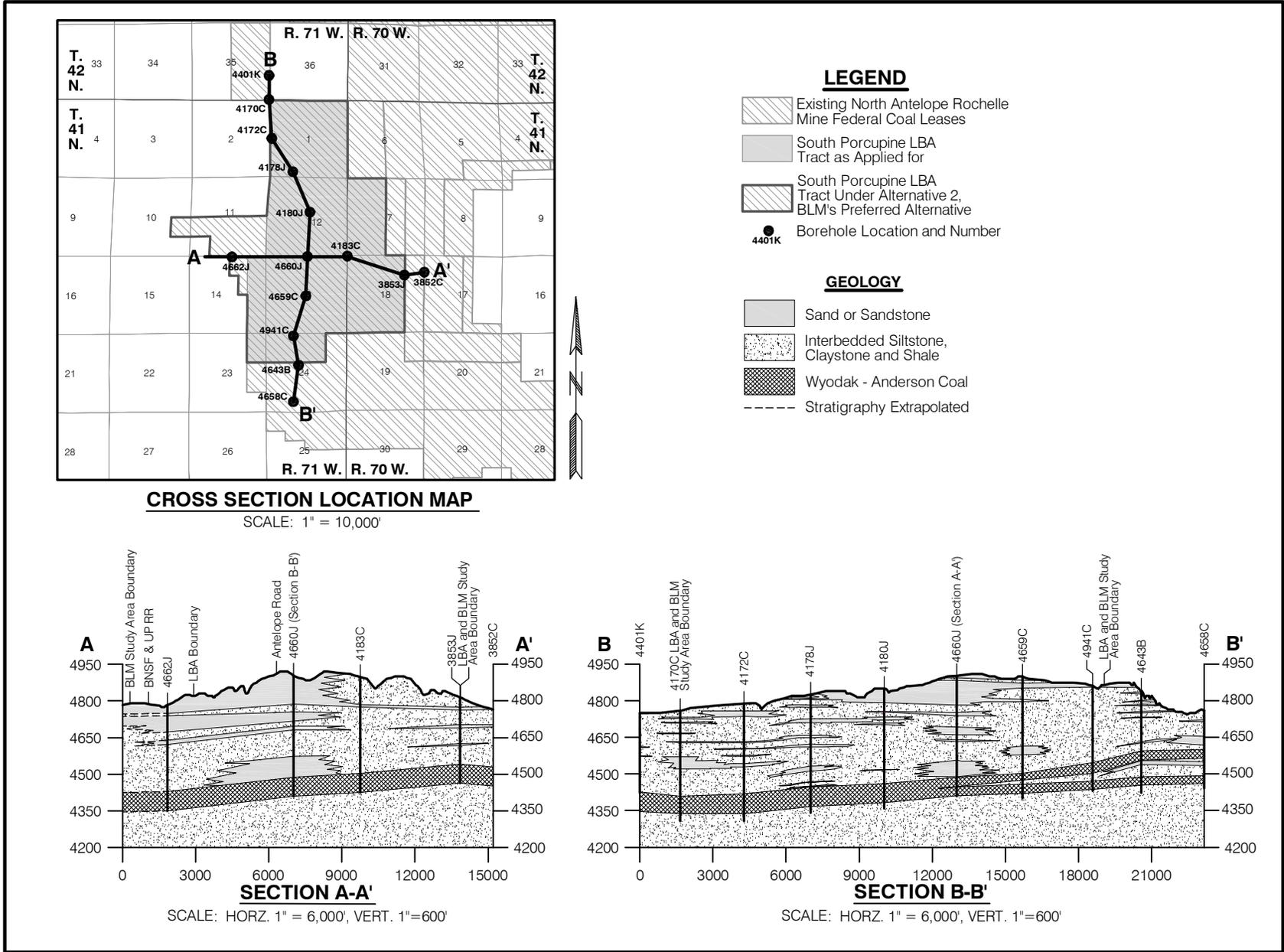
Underlying the Wasatch Formation is the Paleocene Fort Union Formation. The Fort Union Formation (which contains the targeted coal seam) consists primarily of non- to highly-carbonaceous mudstones, siltstones, sandstones, and coal. One mineable coal seam (referred to as the Wyodak-Anderson) averaging 76 feet thick occurs throughout most of the BLM study area for the South Porcupine LBA Tract (Alternative 2 configuration), although it splits into two mineable seams (referred to as the Wyodak-Anderson 1 and Wyodak-Anderson 2) in the southern portion of the study area while maintaining a total thickness of 76 feet. The interburden thickness ranges from zero to around 82 feet, but averages approximately 11 feet in the LBA tract as applied for and approximately 10 feet in the Alternative 2 tract configuration. Table S6-1 presents the average thickness of the overburden, interburden, and the coal seams for the South Porcupine LBA Tract. Figure S6-1 depicts two geologic cross sections (one north-south and one east-west) drawn through the LBA tract's BLM study area.

Table S6-1. Average Overburden and Coal Thicknesses in the South Porcupine LBA Tract.

Mining Unit	Proposed Action (ft)	Alternative 2 (ft)
Overburden	346.0	347.0
Coal	76.0	76.0
Interburden	11.0	10.0

The Fort Union coal seams are subbituminous and are generally low-sulfur, low-ash coals. Typically, the coal being mined in the PRB has a lower heating value and higher sulfur content north of Gillette than south of Gillette. According to the analyses (which were done on an as-received basis) of exploration drilling samples collected in the South Porcupine LBA Tract as applied for and the area added under Alternative 2, the average heating value of the coal ranges from 8,727 to 9,054 British thermal units per pound (Btu/lb), with 0.18 to 0.23 percent sulfur, 3.81 to 6.48 percent ash, fixed carbon of 50.0 to 53.2 percent, and 25.5 to 27.3 percent moisture.

Figure S6-1. Geologic Cross Sections for the South Porcupine LBA Tract.



S6-3 PALEONTOLOGY

Although the Eocene Wasatch Formation is known to produce fossil vertebrates of scientific significance in Wyoming, outcrops of the Wasatch Formation in the PRB are not generally well exposed and the conditions of deposition of the formation have contributed to a low preservation potential for fossils.

Geologic mapping by the U.S. Geological Survey and Wyoming State Geological Survey have documented that the general Wright analysis area is underlain by sedimentary deposits of the Wasatch Formation. Geologic maps depict bedrock units that would occur at the surface in the absence of recent, unconsolidated colluvial and eolian deposits that occur widespread over the general analysis area. These surficial materials in the general Wright analysis area are derived primarily from the underlying bedrock, which consists mainly of soft shale, sandstone and coal beds, and most of these rocks weather to fine-grained material. The physical properties of the weathered materials depend largely on the mode of transportation and deposition, whether by water, gravity, or wind that account for the position of the weathered materials. Actual outcrops of the Wasatch and underlying Fort Union formations that could be prospected for fossils occur infrequently and are found most commonly in areas having the steepest slopes (i.e., rough breaks between upland areas and drainage channels). The landscape of the LBA tract's general analysis area is not particularly suited to paleontological exposure. The general analysis area is generally rolling sagebrush shrubland and grassland. No substantial areas of bedrock exposures are found in this vicinity.

Vertebrate fossils that have been described from the Wasatch Formation include mammals such as early horses, tapiroids, condylarths, primates, insectivores, marsupials, creodonts, carnivores, and multituberculates; reptiles such as crocodylians, alligators, lizards, and turtles; birds; eggs; amphibians; and fish. Non-marine invertebrates such as mollusks and ostracods have also been described from the Wasatch.

Fossil plant material is common in the Wasatch Formation. The fossil plants inventoried are primarily leaves and fossilized wood. The leaves usually occur as lignitic impressions in sandstone and siltstone and as compact masses in shale. Leaves are the most abundant fossils found during paleontological surveys and are frequently encountered during mining operations. Fossilized wood often occurs near the top of a coal seam, in carbonaceous shale or within channel sandstone. Exposures of fossil logs are common, but usually very fragmentary. Like fossil leaves, fossil logs can be readily collected in the PRB.

Professional archeologists, in effort to locate unique pockets of fossilized bone such as those reported elsewhere in the Wasatch Formation in the PRB, closely examined outcrop localities in conjunction with the intensive pedestrian surveys for cultural resources. Due the ubiquitous nature of fossilized tree remains and bivalve fragments in the Wasatch Formation, the recording of fossil locations was confined to unique finds. The only observed fossils were of

petrified wood fragments. Fossilized wood and leaves are common and can be observed at many unrecorded locations, particularly in associated with coal outcrops. No Wasatch Formation outcrop localities produced exceptional examples and no unique finds were located within the LBA tract’s general analysis area.

S6-4 AIR QUALITY

S6-4.1 Existing Emission Sources

In the vicinity of the South Porcupine LBA Tract, the main sources of air pollution are surface coal mining activities, vehicular traffic, railroad traffic, and various sources associated with oil and gas production and farming and ranching activities. The closest existing coal-fired power plants to the LBA tracts are the Dave Johnston plant (approximately 45 miles south-southwest) and the Wyodak Complex (approximately 63 miles north), which consists of the 90-Mw WyGen No. 1, the 335-Mw Wyodak No. 1, the 21.8-Mw Neil Simpson No. 1, the 80-Mw Neil Simpson No. 2, and two 40-Mw natural gas-fired power plants.

S6-4.2 Proposed Emission Sources

All of the currently proposed emission sources in the eastern PRB are discussed in Chapter 4 of the WAC DEIS document. There are currently 12 pending LBA applications, including the South Porcupine tract. Table S6-2 provides the approximate distances from the South Porcupine tract to each of the other 11 pending LBA tracts.

Table S6-2. Distances to Pending LBA Tracts.

LBA Tract	Adjacent Mine	Distance from South Porcupine
Hay Creek II	Buckskin	63 miles northwest
Caballo West	Caballo	38 miles north
Belle Ayr North	Belle Ayr	38 miles north
West Coal Creek	Coal Creek	25 miles north
Maysdorf II	Cordero Rojo	28 miles north
West Jacobs Ranch	Jacobs Ranch	11 miles north
North Hilight Field	Black Thunder	10 miles north
West Hilight Field	Black Thunder	6 miles north
South Hilight Field	Black Thunder	5 miles north
North Porcupine	North Antelope Rochelle	Proximate
West Antelope II	Antelope	Proximate

S6-4.3 Historical Ambient Air Quality: Particulate Emissions

Refer to the discussions on historical particulate emission producing activities, monitoring results, and control measures at the North Antelope Rochelle Mine in Section S5-4.3.

S6-4.4 Historical Ambient Air Quality: NO₂ Emissions

Refer to the discussions on historical NO₂ emission producing activities, monitoring results, and control measures at the North Antelope Rochelle Mine in Section S5-4.4.

S6-5 WATER RESOURCES

South Porcupine LBA Tract lies within the North Antelope Rochelle Mine's existing permit area; therefore, both the regional and site-specific baseline water resources around and within the South Porcupine LBA Tract are extensively characterized in the mine's Wyoming Department of Environmental Quality/Land Quality Division (WDEQ/LQD) mine permit (PRC 2004).

S6-5.1 Groundwater

The South Porcupine LBA Tract overlies two geologic water-bearing strata that have been or would be directly affected by mining. In descending order, these units are the Wasatch Formation overburden and the Fort Union Formation Wyoming coal seam that will be mined. The underlying subcoal Fort Union Formation and Lance-Fox Hills Sandstone are utilized for industrial water supply at the nearby coal mines, but these units are not physically disturbed by mining activities. Baseline hydrogeologic conditions within and around the North Antelope Rochelle Mine are characterized in the WDEQ/LQD mine permit (PRC 2004), and ongoing groundwater monitoring data (depth to water and water quality) are included in the mine permit and annual reports. North Antelope Rochelle Mine's current groundwater monitoring program is addressed in their 2007 WDEQ Annual Report (PRC 2007), and Figure 3-22 in the Wright Area Coal Leases Draft EIS (WAC DEIS) depicts the locations of the currently active monitoring wells.

Recent Alluvium

The South Porcupine LBA Tract's general analysis area is drained by minor tributaries of Porcupine Creek, Horse Creek, and Antelope Creek. Mapping of the surficial geology within the tract's general analysis area (Reheis and Coates 1987, PRC 2004) shows that alluvial deposits occur along Mike's Draw, a north-flowing, third order ephemeral tributary of Porcupine Creek (Figure S6-2). These recent alluvial deposits are comprised of stream-channel and overbank deposits of sand and silt. Because the thickness and areal extent of these materials are very limited, and they infrequently receive recharge from

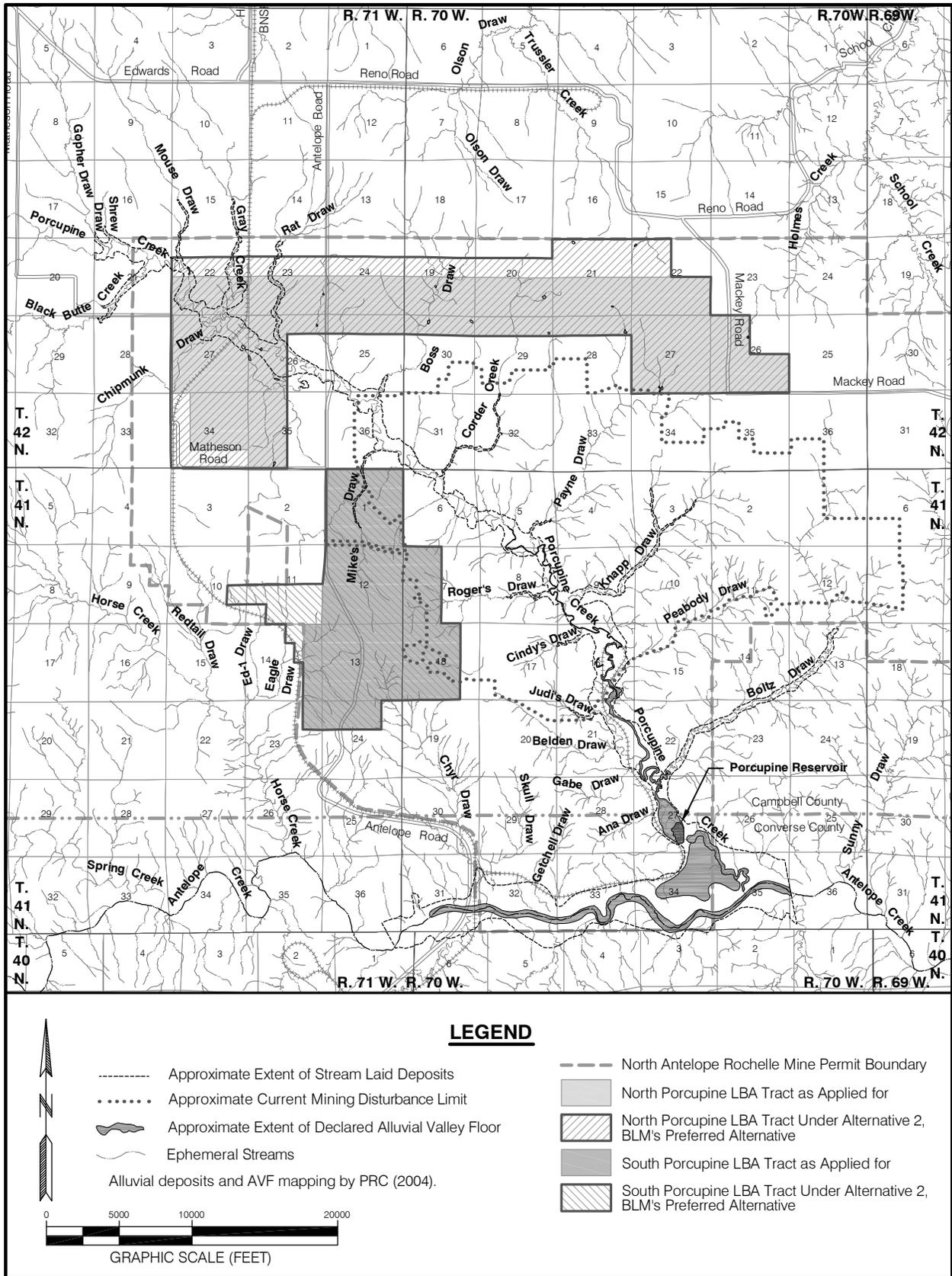


Figure S6-2. Declared Alluvial Valley Floors and Stream Laid Deposits Within and Adjacent to the North and South Porcupine LBA Tract.

the infiltration of precipitation and surface flow within the stream channel, they do not yield groundwater.

No other recent alluvial deposits are associated with the other minor surface drainages within the LBA tract's general analysis area.

Wasatch Formation

No significant differences in the physical and water-bearing characteristics of the Wasatch Formation strata (overburden) within the North Porcupine and South Porcupine LBA Tract's general analysis areas are known to exist. Therefore, refer to the Wasatch Formation discussion in Section S5-5.1.

Wyodak Coal

With the exception of the coal seam's average thicknesses (76 feet thick in the South Porcupine tract versus 75 feet thick in the North Porcupine tract), no significant differences in the physical and water-bearing characteristics of the Wyodak coal aquifer within the North Porcupine and South Porcupine LBA Tract's general analysis areas are known to exist. Therefore, refer to the Wyodak Coal discussion in Section S5-5.1.

Subcoal Fort Union Formation and Lance-Fox Hills Aquifer

Refer to the discussion on these subcoal aquifers that are used for industrial water supply by many PRB surface coal mines, including the North Antelope Rochelle Mine, in Section S5-5.1.

S6-5.2 Surface Water

The North Antelope Rochelle Mine site is situated near the eastern margin of the PRB, which is a broad structural trough that lies between the Big Horn Mountains and the Black Hills. The PRB is drained by three separate drainage systems: the Powder/Little Powder, the Cheyenne, and the Belle Fourche rivers. The North Antelope Rochelle Mine and South Porcupine LBA Tract lie mostly within the Porcupine Creek watershed, which is a tributary of Antelope Creek, which is a tributary of the Cheyenne River. The southwestern-most portions of the mine's permit area and the South Porcupine tract are drained by Horse Creek and Chyr Draw, tributaries of Antelope Creek. The topography of the Cheyenne River drainage basin is typified by broad, flat, inter-stream uplands and a wide, level expanse of eastward-sloping plains broken by a few isolated buttes.

The South Porcupine LBA Tract is situated at the drainage divides separating the Porcupine Creek and Horse Creek watersheds. Figure 3-31 in the WAC DEIS depicts the surface water features within and adjacent to the South Porcupine LBA Tract. The northern and eastern portions of the tract drain north and east into Porcupine Creek via Mike's Draw and Roger's Draw,

respectively. The southern portion of the tract drains south directly into Antelope Creek via Chyr Draw, and the western portion of the tract drains west into Horse Creek via Eagle Draw, ED-1 Draw, and Redtail Draw.

Mike's Draw is a north-flowing, third order ephemeral tributary of Porcupine Creek. Near the headwaters of Mike's Draw, the stream channel elevation is about 4,900 feet. Total topographic relief in the stream's basin is 240 feet and the channel thalweg length is about 2.9 miles. The channel originates within the LBA tract and has an elevation of approximately 4,660 feet where it enters Porcupine Creek. Mike's Draw has a total drainage area of approximately 2.3 square miles and it drains about 26 percent of the South Porcupine LBA Tract as applied for.

Roger's Draw is an east-flowing, second order ephemeral tributary of Porcupine Creek. Near the headwaters of Roger's Draw, the stream channel elevation is about 4,870 feet. Total topographic relief in the stream's basin is 340 feet and the channel thalweg length is about 2.5 miles. The channel originates within the LBA tract and has an elevation of approximately 4,600 feet where it enters Porcupine Creek. Roger's Draw has a total drainage area of approximately 1.8 square miles and it drains about 14 percent of the South Porcupine LBA Tract as applied for.

Chyr Draw is a south/southeast-flowing, third order ephemeral tributary of Antelope Creek. Near the headwaters of Chyr Draw, the stream channel elevation is about 4,860 feet. Total topographic relief in the stream's basin is 340 feet and the channel thalweg length is about 4.5 miles. The channel originates within the LBA tract and has an elevation of approximately 4,520 feet where it enters Antelope Creek. Chyr Draw has a total drainage area of approximately 4.3 square miles and it drains about 12 percent of the South Porcupine LBA Tract as applied for.

Eagle Draw is a southwest-flowing, third order ephemeral tributary of Horse Creek. Near the headwaters of Eagle Draw, the stream channel elevation is about 4,860 feet. Total topographic relief in the stream's basin is 230 feet and the channel thalweg length is about 2.4 miles. The channel originates within the LBA tract and has an elevation of approximately 4,720 feet where it leaves the LBA tract. Eagle Draw has a total drainage area of approximately 2.5 square miles and it drains about 24 percent of the South Porcupine LBA Tract as applied for.

ED-1 Draw is a south-flowing, second order ephemeral tributary of Eagle Draw. Near the headwaters of ED-1 Draw, the stream channel elevation is about 4,860 feet. Total topographic relief in the stream's basin is 210 feet, the channel thalweg length is about 2 miles. The channel elevation is about 4,850 feet where it enters the LBA tract and approximately 4,820 feet where leaves the LBA tract. ED-1 Draw has a total drainage area of approximately 0.5 square miles and it drains about 2 percent of the South Porcupine LBA Tract as applied for.

A first order unnamed tributary to Redtail Draw, a south-flowing, third order ephemeral tributary of Horse Creek (which is a tributary of Antelope Creek), drains the western portion of the South Porcupine tract. Near the headwaters of Redtail Draw, the stream channel elevation is about 4,900 feet. Total topographic relief in the stream's basin is 230 feet, the channel thalweg length is about 1.9 miles. Redtail Draw has a total drainage area of approximately 1.9 square miles and it drains about 1 percent of South Porcupine LBA Tract as applied for. Other minor non-contributing areas and smaller tributaries covers the balance (21 percent) of the LBA tract as applied for.

All of these minor streams and draws within and adjacent to the LBA tract are typical for the region, in that flow events are ephemeral. Stream runoff is typically of short duration and exhibits temporal patterns similar to precipitation events. All ephemeral streams in the region show the characteristic extreme low-flow period from October through January. Flow events frequently result from snowmelt during the late winter and early spring. Although peak discharges from such events are generally small, the duration and therefore the percentage of annual runoff volume can be considerable. During the spring, general storms (both rain and snow) are more frequent; hence increasing soil moisture and decreasing infiltration capacity, and subsequent rainstorms can result in higher runoff volumes and peak discharges.

S6-5.3 Water Rights

The Wyoming State Engineer's Office (SEO) administers water rights in Wyoming. Water rights are granted for both groundwater and surface water appropriations. Prior to development of water resources associated with energy development, water appropriations (either groundwater or surface water) in the PRB were typically for livestock use.

Records of the SEO have been searched for groundwater rights within a 3-mile radius of the BLM study area for the South Porcupine LBA Tract. This information is required for WDEQ permitting. The summary of the most recent search is provided below. Currently, mining companies and coal bed natural gas (CBNG) development companies hold the majority of the water rights in the search area. A more detailed listing of the non-coal mine related groundwater rights within a 3-mile radius of the LBA tract is presented in Table S6-3.

Wyoming SEO data indicate that, as of August 2008, there are 779 permitted water wells within 3 miles of the South Porcupine LBA Tract, of which, 388 are owned by coal mining companies. The other 391 non-coal mine related, permitted water wells, which include 324 wells permitted for uses related to CBNG development, are permitted for the following uses:

- 173 CBNG only
- 70 CBNG and miscellaneous
- 57 stock and CBNG

- 37 stock
- 20 CBNG and reservoir supply
- 18 monitoring
- 6 domestic and stock
- 3 dewatering and CBNG
- 3 industrial
- 2 miscellaneous
- 1 stock and miscellaneous
- 1 stock, miscellaneous, and CBNG

Of the non-coal mine related wells within the search area, approximately 83 percent have permits related to CBNG development; 26 percent have permits related to livestock use; 19 percent have permits related to miscellaneous use; five percent have permits related to monitoring; and two percent have permits related to domestic uses. As the above numbers indicate, most of these 391 wells are permitted for multiple uses.

SEO records have been searched for surface water rights within a 3-mile radius of the BLM study area for the South Porcupine LBA Tract. Like the groundwater rights, this information is also required for WDEQ permitting. A summary of the most recent search is provided below. A more detailed listing of the non-coal mine related surface water rights is presented in Table S5-4.

For the South Porcupine LBA Tract, SEO records indicate that as of August 2008, there are 223 non-coal mine related, permitted surface water rights within the search area. These surface water rights are permitted for the following uses:

- 157 stock
- 37 irrigation
- 7 undefined
- 4 industrial and flood control
- 4 temporary and industrial
- 4 temporary, industrial, and miscellaneous
- 3 irrigation and stock
- 3 stock and irrigation
- 2 industrial and pollution control
- 1 industrial
- 1 industrial and temporary

Supplementary Information on the Affected Environment

Table S6-3. Groundwater Rights for the South Porcupine LBA Tract.

Permit	Priority	T	R	S	QQ	Applicant	Facility Name	Status	Uses	Static WL	T.D.
P44332W	7/20/1978	40	70	6	NWSE	USDA FOREST SERVICE	MARG #7	GST	STO	-4	722
P8967P	5/1/1965	40	71	1	SESE	USDA FOREST SERVICE	MORTON #T B 93	GST	STO	-6	565
P37364W	4/19/1977	40	71	3	NESW	USA USDA FOREST SERVICE	ISENBERGER # TB 206	GST	STO	130	585
P25607P	1/14/1974	41	70	6	NWSE	PAUL & EDITH RUTH WILKINSON	WILKINSON #3	GST	STO	-4	805
P2314W	7/18/1951	41	70	9	SWNW	JOHN C. DILTS, JR.	DILTS #21	GST	STO	0	700
P112G	7/25/1951	41	70	16	SESE	JOHN C. DILTS, JR.	JOHN DILTS #3 WELL	GST	STO	230	260
P33290W	5/17/1976	41	70	18	SESW	USDA FOREST SERVICE	BELL #T B 199 (DEEPENED)	GST	STO	300	644
38/10/350W	11/21/2005	41	70	22	NENW	E.H. OFTEDAL & SONS INC.	WILKERSON #1	GSI	IND		
P25936W	2/19/1974	41	70	27	NWNE	JOHN C. DILTS, JR.	DILTS #27-41-70	GST	STO	-6	845
P48737W	6/18/1979	41	70	31	NWSE	JOHN C. DILTS, JR.** ANTELOPE COAL COMPANY	OWAL-44	GST	MON	9.25	25
P2301W	4/14/1950	41	70	33	NESW	JOHN C. DILTS, JR.	DILTS #8	GST	STO	0	540
P161756W	8/23/2004	41	71	1	SWNW	CONTINENTAL INDUSTRIES LC	PORK S FED 12-1-41-71	GSI	CBM,MIS		
P161757W	8/23/2004	41	71	1	SWSW	CONTINENTAL INDUSTRIES LC	PORK S FED 14-1-41-71	GSI	CBM,MIS		
P161758W	8/23/2004	41	71	1	NENW	CONTINENTAL INDUSTRIES LC	PORK S FED 21-1-41-71	GSI	CBM,MIS		
P161759W	8/23/2004	41	71	1	NESW	CONTINENTAL INDUSTRIES LC	PORK S FED 23-1-41-71	GSI	CBM,MIS		
P108419W	12/16/1997	41	71	1	NWSW	REDSTONE RESOURCES, INC	FEDERAL 13AC-111	UNA	STO,MIS,CBM		
P71738W	1/14/1986	41	71	1	SWNW	USA USDA FOREST SERVICE	WILKINSON SPRING TB #55	UNA	STO		
P152730W	7/2/2003	41	71	2	SWNE	BILL BARRETT CORPORATION	H. Putnam 32-2-4171	GST	CBM	457.28	486.53
P152731W	7/2/2003	41	71	2	SWSE	BILL BARRETT CORPORATION	H. Putnam 34-2-4171	GST	CBM	434	464
P152733W	7/2/2003	41	71	2	NESE	BILL BARRETT CORPORATION	H. Putnam 43-2-4171	GST	CBM	440	486
P153120W	7/28/2003	41	71	2	SWNW	BILL BARRETT CORPORATION	FEDERAL 12-2-41-71	GST	CBM	464.65	507.71
P153123W	7/28/2003	41	71	2	NESW	BILL BARRETT CORPORATION	FEDERAL 23-2-41-71	GST	CBM	474.7	505.54
P95332W	2/12/1986	41	71	2	NENE	FRANCES PUTNAM	JINX #3	GST	DOM,STO	50	480
P95333W	7/30/1981	41	71	2	NENE	FRANCES PUTNAM	JINX #2	GST	DOM,STO	45	360
P183669W	10/29/2007	41	71	2	SWSW	SIoux RANCH INC.	SIoux RANCH-2-1	GSI	STO		
P156299W	11/28/2003	41	71	3	NESE	BILL BARRETT CORPORATION	PORK S FED 43-3-41-71	GST	CBM	488	550
P156300W	11/28/2003	41	71	3	NENE	BILL BARRETT CORPORATION	PORK S FED 41-3-41-71	GST	CBM	478	545
P156301W	11/28/2003	41	71	3	SWSE	BILL BARRETT CORPORATION	PORK S FED 34-3-41-71	GST	CBM	499	583
P156302W	11/28/2003	41	71	3	SWNE	BILL BARRETT CORPORATION	PORK S FED 32-3-41-71	GST	CBM	510	577
P156303W	11/28/2003	41	71	3	NESW	BILL BARRETT CORPORATION	PORK S FED 23-3-41-71	GST	CBM	487	540
P156304W	11/28/2003	41	71	3	NENW	BILL BARRETT CORPORATION	PORK S FED 21-3-41-71	GST	CBM	530	600
P156305W	11/28/2003	41	71	3	SWSW	BILL BARRETT CORPORATION	PORK S FED 14-3-41-71	GST	CBM	518	577
P156306W	11/28/2003	41	71	3	SWNW	BILL BARRETT CORPORATION	PORK S FED 12-3-41-71	GST	CBM	508	562
P12754P	12/30/1951	41	71	3	NESW	USDA FOREST SERVICE	MATHESON #TB 42	GST	STO	-1	122
P44330W	7/20/1978	41	71	3	NWSE	USDA FOREST SERVICE	MARG #5	GST	STO	94	163
P152258W	6/2/2003	41	71	4	SWNE	BILL BARRETT CORPORATION** WY STATE BOARD OF LAND COMMISSIONERS	STATE 32-4-4171	GST	CBM	519.62	646
P152259W	6/2/2003	41	71	4	NENW	BILL BARRETT CORPORATION** WY STATE BOARD OF LAND COMMISSIONERS	STATE 21-4-4171	GST	CBM	529.37	650

Table S6-3. Groundwater Rights for the South Porcupine LBA Tract (Continued).

Permit	Priority	T	R	S	QQ	Applicant	Facility Name	Status	Uses	Static WL	T.D.
P152260W	6/2/2003	41	71	4	SWNW	BILL BARRETT CORPORATION** WY STATE BOARD OF LAND COMMISSIONERS	STATE 12-4-4171	GST	CBM	496.86	640
P152261W	6/2/2003	41	71	4	NENE	BILL BARRETT CORPORATION** WY STATE BOARD OF LAND COMMISSIONERS	STATE 41-4-4171	GST	CBM	324	619
P179982W	2/23/2007	41	71	4	NESE	COLEMAN OIL & GAS, INC.**JEANNE JAROSH	JAROSH FEDERAL #43-8	GSI	CBM		
P179983W	2/23/2007	41	71	4	NENE	COLEMAN OIL & GAS, INC.**JEANNE JAROSH	JAROSH FEDERAL #41-8	GSI	CBM		
P179984W	2/23/2007	41	71	4	SESW	COLEMAN OIL & GAS, INC.**JEANNE JAROSH	JAROSH FEDERAL #24-4	GSI	CBM		
P179985W	2/23/2007	41	71	4	SWSW	COLEMAN OIL & GAS, INC.**JEANNE JAROSH	JAROSH FEDERAL #14-4	GSI	CBM		
P151087W	4/28/2003	41	71	4	SWSW	WILLIAMS PRODUCTION RMT** WY STATE BOARD OF LAND COMMISSIONERS	STATE FEDERAL 14-4-4171	GST	STO,CBM	512	647
P151088W	4/28/2003	41	71	4	NESW	WILLIAMS PRODUCTION RMT** WY STATE BOARD OF LAND COMMISSIONERS	STATE FEDERAL 23-4-4171	GST	STO,CBM	502	620
P151089W	4/28/2003	41	71	4	SWSE	WY STATE BOARD OF LAND COMMISSIONERS** LANCE OIL & GAS COMPANY, INC	STATE FEDERAL 34-4-4171	GST	STO,CBM	466	586
P151090W	4/28/2003	41	71	4	NESE	WY STATE BOARD OF LAND COMMISSIONERS** LANCE OIL & GAS COMPANY, INC	STATE FEDERAL 43-4-4171	GST	STO,CBM	450	573
P159417W	5/12/2004	41	71	5	SWNW	COLEMAN OIL & GAS, INC.	BRIDLE BIT FEDERAL #12-5	GST	CBM,RES	574	645
P159418W	5/12/2004	41	71	5	SWSW	COLEMAN OIL & GAS, INC.	BRIDLE BIT FEDERAL #14-5	GST	CBM,RES	463	584
P159419W	5/12/2004	41	71	5	NENW	COLEMAN OIL & GAS, INC.	BRIDLE BIT FEDERAL #21-5	GST	CBM,RES	629	706
P159420W	5/12/2004	41	71	5	NESW	COLEMAN OIL & GAS, INC.	BRIDLE BIT FEDERAL #23-5	GST	CBM,RES	540	614
P151091W	4/28/2003	41	71	5	SWNE	LANCE OIL & GAS	BRIDLE BIT FEDERAL 32-5-4171	GST	STO,CBM	551	665
P151092W	4/28/2003	41	71	5	SWSE	LANCE OIL & GAS	BRIDLE BIT FEDERAL 34-5-4171	GST	STO,CBM	443	566
P151093W	4/28/2003	41	71	5	NENE	LANCE OIL & GAS COMPANY, INC	BRIDLE BIT FEDERAL 41-5-4171	GST	STO,CBM	553	687
P151094W	4/28/2003	41	71	5	NESE	LANCE OIL & GAS COMPANY, INC	BRIDLE BIT FEDERAL 43-5-4171	GST	CBM	492	606
P143886W	3/28/2002	41	71	5	SWNW	REDSTONE RESOURCES INC.	FEDERAL 12W-511	GSI	CBM		
P143887W	3/28/2002	41	71	5	SWSW	REDSTONE RESOURCES INC.	FEDERAL 14LW-511	GSI	CBM		
P143890W	3/28/2002	41	71	5	SWSW	REDSTONE RESOURCES INC.	FEDERAL 14UW-511	GSI	CBM		
P143895W	3/28/2002	41	71	5	NENW	REDSTONE RESOURCES INC.	FEDERAL 21W-511	GSI	CBM		
P143898W	3/28/2002	41	71	5	NESW	REDSTONE RESOURCES INC.	FEDERAL 23LW-511	GSI	CBM		
P143901W	3/28/2002	41	71	5	NESW	REDSTONE RESOURCES INC.	FEDERAL 23UW-511	GSI	CBM		
P149739W	2/19/2003	41	71	6	SWNW	LANCE OIL & GAS COMPANY, INC	LITTON FED 12-6-4171	GSI	CBM	656	768
P149742W	2/19/2003	41	71	6	SWSW	LANCE OIL & GAS COMPANY, INC	LITTON FED 14-6-4171	GSI	CBM	597	714
P149738W	2/19/2003	41	71	6	NESW	LANCE OIL & GAS COMPANY, INC	LITTON FED 23-6-4171	GST	CBM	637	753
P149738W	2/19/2003	41	71	6	NESW	LANCE OIL & GAS COMPANY, INC	LITTON FED 23-6-4171	GST	CBM	637	753
P149740W	2/19/2003	41	71	6	NENW	LANCE OIL & GAS COMPANY, INC	LITTON FED 12-6-4171	GST	CBM	650	765
P5611P	5/2/1960	41	71	6	SWNW	ROBERT E. ISENBERGER	LY #1	GST	STO	280	344
P171805W	8/18/2005	41	71	6	SWNE	YATES PETROLEUM CORP.	BEARCAT CS FEDERAL #2	GSI	CBM,MIS		
P171806W	8/18/2005	41	71	6	NESE	YATES PETROLEUM CORP.	BEARCAT CS FEDERAL #3	GSI	CBM,MIS		
P171807W	8/18/2005	41	71	6	SWSE	YATES PETROLEUM CORP.	BEARCAT CS FEDERAL #4	GSI	CBM,MIS		
P171804W	8/18/2005	41	71	6	NENE	YATES PETROLEUM CORP.	BEARCAT CS FEDERAL #1	GST	CBM,MIS	694	716
P159421W	5/12/2004	41	71	7	SWNW	COLEMAN OIL & GAS, INC.**PATRICIA LITTON	ISENBERGER FEDERAL #12-7	GST	CBM,RES	595	662
P159422W	5/12/2004	41	71	7	SWSW	COLEMAN OIL & GAS, INC.**PATRICIA LITTON	ISENBERGER FEDERAL #14-7	GST	CBM,RES	505	584

Supplementary Information on the Affected Environment

Table S6-3. Groundwater Rights for the South Porcupine LBA Tract (Continued).

Permit	Priority	T	R	S	QQ	Applicant	Facility Name	Status	Uses	Static WL	T.D.
P159423W	5/12/2004	41	71	7	NENW	COLEMAN OIL & GAS, INC.**PATRICIA LITTON	ISENBERGER FEDERAL #21-7	GST	CBM,RES	555	648
P159424W	5/12/2004	41	71	7	NESW	COLEMAN OIL & GAS, INC.**PATRICIA LITTON	ISENBERGER FEDERAL #23-7	GST	CBM,RES	472	658
P149741W	2/19/2003	41	71	7	NWNE	LANCE OIL & GAS COMPANY, INC	LITTON FED 31-7-4171	GST	STO,CBM	520	646
P162910W	9/21/2004	41	71	7	NESE	LANCE OIL AND GAS COMPANY	P LITTON FEDERAL 43-7-4171 WY	GSE	CBM		
P162900W	9/21/2004	41	71	7	SWSE	LANCE OIL AND GAS COMPANY	P LITTON FEDERAL 34-7-4171CA	GSI	CBM		
P23598W	7/25/1973	41	71	7	NWSE	PATRICIA L. ISENBERGER	LY #3	GST	STO	100	252
P23603P	7/25/1973	41	71	7	NWSW	PATRICIA L. ISENBERGER	SPRING #8	GST	STO	-1	8
P143882W	3/28/2002	41	71	7	SWNW	REDSTONE RESOURCES INC.	FEDERAL 12LW-711	GSI	CBM		
P143884W	3/28/2002	41	71	7	SWNW	REDSTONE RESOURCES INC.	FEDERAL 12UW-711	GSI	CBM		
P143888W	3/28/2002	41	71	7	SWSW	REDSTONE RESOURCES INC.	FEDERAL 14LW-711	GSI	CBM		
P143891W	3/28/2002	41	71	7	SWSW	REDSTONE RESOURCES INC.	FEDERAL 14UW-711	GSI	CBM		
P143893W	3/28/2002	41	71	7	NENW	REDSTONE RESOURCES INC.	FEDERAL 21UW-711	GSI	CBM		
P143896W	3/28/2002	41	71	7	NENW	REDSTONE RESOURCES INC.	FEDERAL 21W-711	GSI	CBM		
P143899W	3/28/2002	41	71	7	NESW	REDSTONE RESOURCES INC.	FEDERAL 23LW-711	GSI	CBM		
P143902W	3/28/2002	41	71	7	NESW	REDSTONE RESOURCES INC.	FEDERAL 23UW-711	GSI	CBM		
P171808W	8/18/2005	41	71	7	NENE	YATES PETROLEUM CORP.	BEARCAT CS FEDERAL #5	GSI	CBM,MIS		
P159425W	5/12/2004	41	71	8	SWNW	COLEMAN OIL & GAS, INC.	BRIDLE BIT FEDERAL #12-8	GST	STO,CBM	421	543
P159426W	5/12/2004	41	71	8	SWSW	COLEMAN OIL & GAS, INC.	BRIDLE BIT FEDERAL #14-8	GST	CBM,RES	436	522
P159427W	5/12/2004	41	71	8	NENW	COLEMAN OIL & GAS, INC.	BRIDLE BIT FEDERAL #21-8	GST	CBM,RES	413	544
P161325W	8/3/2004	41	71	8	NESE	COLEMAN OIL & GAS, INC.**JERRY DILTS	BRIDLE BIT RANCH STATE #43-8	GSI	CBM		
P159428W	5/12/2004	41	71	8	NESW	COLEMAN OIL & GAS, INC.**JERRY J. AND THE BRIDLE BIT RANCH COMPANY DILTS	BRIDLE BIT FEDERAL #23-8	GST	CBM,RES	415	508
P159429W	5/12/2004	41	71	8	SWNE	COLEMAN OIL & GAS, INC.**JERRY J. AND THE BRIDLE BIT RANCH COMPANY DILTS	BRIDLE BIT FEDERAL #32-8	GST	CBM,RES	393	518
P159430W	5/12/2004	41	71	8	NENE	COLEMAN OIL & GAS, INC.**JERRY J. AND THE BRIDLE BIT RANCH COMPANY DILTS	BRIDLE BIT FEDERAL #41-8	GST	CBM,RES	455	567
P108190W	12/4/1997	41	71	8	SWNE	JERRY DILTS** KEY PRODUCTION CO. INC.	SAPELO #1	UNA	STO,MIS	110	780
P143883W	3/28/2002	41	71	8	SWNW	REDSTONE RESOURCES INC.	FEDERAL 12LW-811	GSI	CBM		
P143885W	3/28/2002	41	71	8	SWNW	REDSTONE RESOURCES INC.	FEDERAL 12UW-811	GSI	CBM		
P143889W	3/28/2002	41	71	8	SWSW	REDSTONE RESOURCES INC.	FEDERAL 14LW-811	GSI	CBM		
P143892W	3/28/2002	41	71	8	SWSW	REDSTONE RESOURCES INC.	FEDERAL 14UW-811	GSI	CBM		
P143894W	3/28/2002	41	71	8	NENW	REDSTONE RESOURCES INC.	FEDERAL 21UW-811	GSI	CBM		
P143897W	3/28/2002	41	71	8	NENW	REDSTONE RESOURCES INC.	FEDERAL 21W-811	GSI	CBM		
P143900W	3/28/2002	41	71	8	NESW	REDSTONE RESOURCES INC.	FEDERAL 23LW-811	GSI	CBM		
P143903W	3/28/2002	41	71	8	NESW	REDSTONE RESOURCES INC.	FEDERAL 23UW-811	GSI	CBM		
P143907W	3/28/2002	41	71	8	SWNE	REDSTONE RESOURCES INC.	FEDERAL 32LW-811	GSI	CBM		
P143911W	3/28/2002	41	71	8	SWNE	REDSTONE RESOURCES INC.	FEDERAL 32UW-811	GSI	CBM		
P143919W	3/28/2002	41	71	8	NENE	REDSTONE RESOURCES INC.	FEDERAL 41LW-811	GSI	CBM		
P143923W	3/28/2002	41	71	8	NENE	REDSTONE RESOURCES INC.	FEDERAL 41UW-811	GSI	CBM		
P171809W	8/18/2005	41	71	8	SWSE	YATES PETROLEUM CORP.	BEARCAT CS FEDERAL #6	GSI	CBM,MIS		

Table S6-3. Groundwater Rights for the South Porcupine LBA Tract (Continued).

Permit	Priority	T	R	S	QQ	Applicant	Facility Name	Status	Uses	Static WL	T.D.
P151096W	4/28/2003	41	71	9	NENW	LANCE OIL & GAS	BRIDLE BIT FEDERAL 21-9-4171	GST	STO,CBM	512	623
P151095W	4/28/2003	41	71	9	SWNW	LANCE OIL & GAS COMPANY, INC	BRIDLE BIT FEDERAL 12-9-4171	GST	STO,CBM	379	503
P151097W	4/28/2003	41	71	9	NESE	LANCE OIL & GAS COMPANY, INC	BRIDLE BIT FEDERAL 43-9-4171	GST	STO,CBM	371	486
P171822W	8/18/2005	41	71	9	NENE	YATES PETROLEUM CORP.	GLOSTER CS FEDERAL #1	GSI	CBM,MIS		
P171823W	8/18/2005	41	71	9	SWNE	YATES PETROLEUM CORP.	GLOSTER CS FEDERAL #2	GSI	CBM,MIS		
P171824W	8/18/2005	41	71	9	SWSW	YATES PETROLEUM CORP.	GLOSTER CS FEDERAL #4	GSI	CBM,MIS		
P171824W	8/18/2005	41	71	9	SWNE	YATES PETROLEUM CORP.	GLOSTER CS FEDERAL #4	GSI	CBM,MIS		
P171825W	8/18/2005	41	71	9	SWSE	YATES PETROLEUM CORP.	GLOSTER CS FEDERAL #5	GSI	CBM,MIS		
P171841W	9/7/2005	41	71	9	NESW		GLOSTER CS FEDERAL #3	GSI	CBM,MIS		
P151098W	4/28/2003	41	71	10	SWNW	LANCE OIL & GAS COMPANY, INC	BRIDLE BIT FEDERAL 12-10-4171	GST	CBM	423	533
P171813W	8/18/2005	41	71	10	SWSE	YATES PETROLEUM CORP.	BLENHEIM CS FEDERAL #1	GSI	CBM,MIS		
P171826W	8/18/2005	41	71	10	NENE	YATES PETROLEUM CORP.	GLOSTER CS FEDERAL #6	GSI	CBM,MIS		
P171835W	8/18/2005	41	71	10	SWSW	YATES PETROLEUM CORP.	HAWKER CS FEDERAL #3	GSI	CBM,MIS		
P171836W	8/18/2005	41	71	10	NESW	YATES PETROLEUM CORP.	HAWKER CS FEDERAL #2	GSI	CBM,MIS		
P171837W	8/18/2005	41	71	10	NESE	YATES PETROLEUM CORP.	GLOSTER CS FEDERAL #8	GSI	CBM,MIS		
P171838W	8/18/2005	41	71	10	SWNE	YATES PETROLEUM CORP.	GLOSTER CS FEDERAL #7	GSI	CBM,MIS		
P58121W	5/18/1981	41	71	11	NENE	BIG HORN FRACTIONATION	B H FRAC #1		MIS	250	396
P152734W	7/2/2003	41	71	11	SWNW	BILL BARRETT CORPORATION	H. PUTNAM 12-11-4171	GST	CBM	443	533
P152735W	7/2/2003	41	71	11	NENW	BILL BARRETT CORPORATION	H. PUTNAM 21-11-4171	GST	CBM	472	501
P152736W	7/2/2003	41	71	11	SWNE	BILL BARRETT CORPORATION	H. PUTNAM 32-11-4171	GST	CBM	468	481
P153124W	7/28/2003	41	71	11	SWSE	BILL BARRETT CORPORATION	PORK S FED 34-11-41-71	GST	CBM	344	439
P153125W	7/28/2003	41	71	11	NESE	BILL BARRETT CORPORATION	PORK S FED 43-11-41-71	GST	CBM	427	492
P162923W	9/21/2004	41	71	11	NENW	LANCE OIL AND GAS COMPANY	SIoux RANCH FEDERAL 21-11-4172 CA	GSE	CBM		
P171814W	8/18/2005	41	71	11	NESW	YATES PETROLEUM CORP.	BLENHEIM CS FEDERAL #2	GSI	CBM,MIS		
P171815W	8/18/2005	41	71	11	SWSW	YATES PETROLEUM CORP.	BLENHEIM CS FEDERAL #3	GSI	CBM,MIS		
P160414W	7/2/2004	41	71	12	SWNW	BILL BARRETT CORPORATION	PORK S FED 12-12-4171	GST	STO,CBM	455	490
P160416W	7/2/2004	41	71	12	NESW	BILL BARRETT CORPORATION	PORK S FED 23-12-4171	GST	STO,CBM	441	483
40/7/494W	1/11/2008	41	71	12	NWSE	UNITED STATES FOREST SERVICE	NARC - SW 12	UNA	STO		
P67807W	6/27/1984	41	71	13	NWNW	USA USDA FOREST SERVICE	WILKINSON SPRING #T B 39	GST	STO	8	8
P171868W	11/10/2005	41	71	13	SWSW	YATES PETROLEUM CORP	GEEBEE CS FEDERAL #1	GSI	CBM,MIS		
40/7/421W	10/29/2007	41	71	14	SWSE	LANCE OIL & GAS CO.	ANTELOPE COAL FED 34-14-4171CA	UNA	CBM		
P149569W	2/4/2003	41	71	14	SWNW	LANCE OIL & GAS COMPANY, INC	BRIDLE BIT RANCH 12-14-4171	GSE	STO,CBM		
P177329W	9/11/2006	41	71	14	SWNW	LANCE OIL & GAS COMPANY, INC.	BRIDLE BIT RANCH 12-14-4171	GSI	CBM		
P162909W	9/21/2004	41	71	14	SWSE	LANCE OIL AND GAS COMPANY	ANTELOPE COAL FEDERAL 34-14-4171 WY	GSI	CBM		
P44331W	7/20/1978	41	71	14	SESE	USDA FOREST SERVICE	MARG #6	GST	STO	100	605
P171839W	9/7/2005	41	71	14	NESW	YATES PETROLEUM CORP	GEEBEE CS FEDERAL #2	GSI	CBM,MIS		
P171840W	9/7/2005	41	71	14	SWSW	YATES PETROLEUM CORP	GEEBEE CS FEDERAL #3	GSI	CBM,MIS		
41/1/136W	6/16/2008	41	71	15	SWSE	LANCE OIL & GAS	BRIDLE BIT RANCH STA 34-15-4171	UNA	CBM		

Supplementary Information on the Affected Environment

Table S6-3. Groundwater Rights for the South Porcupine LBA Tract (Continued).

Permit	Priority	T	R	S	QQ	Applicant	Facility Name	Status	Uses	Static WL	T.D.
P151106W	4/28/2003	41	71	15	NENW	LANCE OIL & GAS COMPANY, INC	BRIDLE BIT FEDERAL 21-15-4171	GST	STO,CBM	255	365
P151107W	4/28/2003	41	71	15	SWNE	LANCE OIL & GAS COMPANY, INC	ANTELOPE COAL FEDERAL 32-15-4171	GST	STO,CBM	248	355
P156944W	3/8/2004	41	71	15	NESW	LANCE OIL & GAS COMPANY, INC.	MATHESON 23-15-4171	GSI	CBM		
P147637W	10/4/2002	41	71	15	SWSE	LANCE OIL & GAS COMPANY, INC.	BRIDLE BIT RANCH 34-15-4171	GST	CBM	205	286
P151108W	4/28/2003	41	71	15	NENE	LANCE OIL & GAS COMPANY, INC.	BRIDLE BIT FEDERAL 41-15-4171	GST	STO,CBM	334	430
P147635W	10/4/2002	41	71	15	SWNW	LANCE OIL AND GAS COMPANY	BRIDLE BIT RANCH 12-15-4171	GST	CBM	235	310
P147636W	10/4/2002	41	71	15	SWSW	WILLIAMS PRODUCTION RMT COMPANY	BRIDLE BIT RANCH 14-15-4171	GSI	CBM		
P152881W	7/25/2003	41	71	15	NWSW	WILLIAMS PRODUCTION RMT COMPANY	ANTELOPE COAL 13-15-4171	GSI	STO,CBM		
P155721W	11/13/2003	41	71	15	SWSE	WILLIAMS PRODUCTION RMT COMPANY	BRIDLE BIT RANCH 34-15-4171	GSI	STO,CBM		
P171842W	9/7/2005	41	71	15	NESE	YATES PETROLEUM CORP.	GLOSTER CS FEDERAL #9	GSI	CBM,MIS		
P150123W	3/14/2003	41	71	16	NESE	LANCE OIL & GAS COMPANY, INC	STATE 43-16-4171	GST	STO,CBM	320.05	428
P150118W	3/14/2003	41	71	16	NENW	WY STATE BOARD OF LAND COMMISSIONERS** LANCE OIL & GAS COMPANY, INC	STATE 21-16-4171	GSI	STO,CBM	329.15	437
P150116W	3/14/2003	41	71	16	SWNW	WY STATE BOARD OF LAND COMMISSIONERS** LANCE OIL & GAS COMPANY, INC	STATE 12-16-4171	GST	STO,CBM	426.26	534
P150117W	3/14/2003	41	71	16	SWSW	WY STATE BOARD OF LAND COMMISSIONERS** LANCE OIL & GAS COMPANY, INC	STATE 14-16-4171	GST	STO,CBM	473.15	582
P150119W	3/14/2003	41	71	16	NESW	WY STATE BOARD OF LAND COMMISSIONERS** LANCE OIL & GAS COMPANY, INC	STATE 23-16-4171	GST	CBM	423.8	571
P150120W	3/14/2003	41	71	16	SWNE	WY STATE BOARD OF LAND COMMISSIONERS** LANCE OIL & GAS COMPANY, INC	STATE 32-16-4171	GST	STO,CBM	304.95	415
P150121W	3/14/2003	41	71	16	SWSE	WY STATE BOARD OF LAND COMMISSIONERS** LANCE OIL & GAS COMPANY, INC	STATE 34-16-4171	GST	STO,CBM	340.2	451
P150122W	3/14/2003	41	71	16	NENE	WY STATE BOARD OF LAND COMMISSIONERS** LANCE OIL & GAS COMPANY, INC	STATE 41-16-4171	GST	STO,CBM	268.55	0
P159431W	5/12/2004	41	71	17	SWNE	COLEMAN OIL & GAS, INC.**JERRY J. AND THE BRIDLE BIT RANCH COMPANY DILTS	BRIDLE BIT FEDERAL #32-17	GST	CBM,RES	471	577
P159432W	5/12/2004	41	71	17	NENE	COLEMAN OIL & GAS, INC.**JERRY J. AND THE BRIDLE BIT RANCH COMPANY DILTS	BRIDLE BIT FEDERAL #41-17	GST	CBM,RES	425	560
P143916W	3/28/2002	41	71	17	NENE	REDSTONE RESOURCES INC.	FEDERAL 41LW-1711	GSI	CBM		
P143920W	3/28/2002	41	71	17	NENE	REDSTONE RESOURCES INC.	FEDERAL 41UW-1711	GSI	CBM		
P143904W	3/28/2002	41	71	17	SWNE	REDSTONE RESOURCES INC.** WY STATE BOARD OF LAND COMMISSIONERS	FEDERAL 32LW-1711	GSI	CBM		
P143908W	3/28/2002	41	71	17	SWNE	REDSTONE RESOURCES INC.** WY STATE BOARD OF LAND COMMISSIONERS	FEDERAL 32UW-1711	GSI	CBM		
P171810W	8/18/2005	41	71	17	NENW	YATES PETROLEUM CORP.	BEARCAT CS FEDERAL #7	GSI	CBM,MIS		
P171811W	8/18/2005	41	71	17	SWNW	YATES PETROLEUM CORP.	BEARCAT CS FEDERAL #8	GSI	CBM,MIS		
P171812W	8/18/2005	41	71	17	NESE	YATES PETROLEUM CORP.	BEARCAT CS FEDERAL #9	GSI	CBM,MIS		
P171845W	9/7/2005	41	71	17	SWSW	YATES PETROLEUM** WY STATE BOARD OF LAND COMMISSIONERS	BEARCAT CS FEDERAL #11	GSI	CBM,MIS		
P171846W	9/7/2005	41	71	17	SWSE	YATES PETROLEUM** WY STATE BOARD OF LAND COMMISSIONERS	BEARCAT CS FEDERAL #12	GSI	CBM,MIS		
P171844W	9/7/2005	41	71	17	NESW		BEARCAT CS FEDERAL #10	GSI	CBM,MIS		
P159436W	5/12/2004	41	71	18	NESE	COLEMAN OIL & GAS, INC.	ISENBERGER FEDERAL #43-18	GSI	CBM,RES		
P125697W	5/16/2000	41	71	18	SENE	COLEMAN OIL & GAS, INC.	FEDERAL #42-18	GST	CBM	300	631

Table S6-3. Groundwater Rights for the South Porcupine LBA Tract (Continued).

Permit	Priority	T	R	S	QQ	Applicant	Facility Name	Status	Uses	Static WL	T.D.
P159435W	5/12/2004	41	71	18	NENE	COLEMAN OIL & GAS, INC.	ISENBERGER FEDERAL #41-18	GST	CBM,RES	543	662
P159433W	5/12/2004	41	71	18	SWNE	COLEMAN OIL & GAS, INC.**PATRICIA LITTON	ISENBERGER FEDERAL #32-18	GST	CBM,RES	498	588
P159434W	5/12/2004	41	71	18	SWSE	COLEMAN OIL & GAS, INC.**PATRICIA LITTON	ISENBERGER FEDERAL #34-18	GST	CBM,RES	443	516
P163491W	10/29/2004	41	71	18	SWNW	LANCE OIL & GAS COMPANY, INC	LITTON 12-18-4171	GSI	CBM		
P171405W	11/4/2005	41	71	18	SWSW	LANCE OIL & GAS COMPANY, INC.	LITTON 14-18-4171	GSI	CBM,MIS		
P171406W	11/4/2005	41	71	18	NENW	LANCE OIL & GAS COMPANY, INC.	LITTON 21-18-4171	GSI	CBM,MIS		
P171407W	11/4/2005	41	71	18	NESW	LANCE OIL & GAS COMPANY, INC.	LITTON 23-18-4171	GSI	CBM,MIS		
P143905W	3/28/2002	41	71	18	SWNE	REDSTONE RESOURCES INC.	FEDERAL 32LW-1811	GSI	CBM		
P143909W	3/28/2002	41	71	18	SWNE	REDSTONE RESOURCES INC.	FEDERAL 32UW-1811	GSI	CBM		
P143912W	3/28/2002	41	71	18	SWSE	REDSTONE RESOURCES INC.	FEDERAL 34LW-1811	GSI	CBM		
P143914W	3/28/2002	41	71	18	SWSE	REDSTONE RESOURCES INC.	FEDERAL 34UW-1811	GSI	CBM		
P143917W	3/28/2002	41	71	18	NENE	REDSTONE RESOURCES INC.	FEDERAL 41LW-1811	GSI	CBM		
P143921W	3/28/2002	41	71	18	NENE	REDSTONE RESOURCES INC.	FEDERAL 41UW-1811	GSI	CBM		
P143924W	3/28/2002	41	71	18	NESE	REDSTONE RESOURCES INC.	FEDERAL 43LW-1811	GSI	CBM		
P143926W	3/28/2002	41	71	18	NESE	REDSTONE RESOURCES INC.	FEDERAL 43UW-1811	GSI	CBM		
P162905W	9/21/2004	41	71	20	NESW	LANCE OIL & GAS	P LITTON FEDERAL 23-20-4171 CA	GST	CBM	386	493
P162906W	9/21/2004	41	71	20	NENW	LANCE OIL & GAS	P LITTON FEDERAL 21-20-4171 CA	GST	CBM	495	606
P162908W	9/21/2004	41	71	20	SWNW	LANCE OIL & GAS	P LITTON FEDERAL 12-20-4171 CA	GST	CBM	471	582
P162903W	9/21/2004	41	71	20	SWSE	LANCE OIL & GAS COMPANY	P LITTON FEDERAL 34-20-4171 CA	GSI	CBM		
P162901W	9/21/2004	41	71	20	NESE	LANCE OIL AND GAS COMPANY	P LITTON FEDERAL 43-20-4171CA	GSI	CBM		
P162902W	9/21/2004	41	71	20	NENE	LANCE OIL AND GAS COMPANY	STATE FEDERAL 41-20-4171 CA	GSI	CBM		
P162904W	9/21/2004	41	71	20	SWNE	LANCE OIL AND GAS COMPANY	BRITTLE BIT FEDERAL 32-20-4171 CA	GSI	CBM		
P162907W	9/21/2004	41	71	20	SWSW	LANCE OIL AND GAS COMPANY	P LITTON FEDERAL 14-20-4171 CA	GST	CBM	357	461
P162918W	9/21/2004	41	71	21	NENW	LANCE OIL AND GAS COMPANY	BRIDLE BIT FEDERAL 21-21-4171 CA	GSE	CBM		
P162920W	9/21/2004	41	71	21	SWNW	LANCE OIL AND GAS COMPANY	BRIDLE BIT FEDERAL 12-21-4171 CA	GSI	CBM		
P162917W	9/21/2004	41	71	21	NESW	LANCE OIL AND GAS COMPANY	P LITTON FEDERAL 23-21-4171 CA	GST	CBM	351	460
P162919W	9/21/2004	41	71	21	SWSW	LANCE OIL AND GAS COMPANY	P LITTON FEDERAL 14-21-4171 CA	GST	CBM	318	423
P23604P	7/25/1973	41	71	21	SESW	PATRICIA L. ISENBERGER	SPRING #9	GST	STO	-1	8
P171843W	9/7/2005	41	71	21	NENE	YATES PETROLEUM CORP.	LYSANDER CS FEDERAL #1	GSI	CBM,MIS		
41/2/136W	6/16/2008	41	71	22	NENE	LANCE OIL & GAS	BRIDLE BIT RANCH STA 41-22-4171	UNA	CBM		
P151109W	4/28/2003	41	71	22	SWNW	LANCE OIL & GAS COMPANY, INC	BRIDLE BIT FEDERAL 12-22-4171	GSI	STO,CBM		
P151110W	4/28/2003	41	71	22	NENW	LANCE OIL & GAS COMPANY, INC	BRIDLE BIT FEDERAL 21-22-4171	GSI	STO,CBM		
P151111W	4/28/2003	41	71	22	NESW	LANCE OIL & GAS COMPANY, INC	ANTELOPE COAL FEDERAL 23-22-4171	GSI	STO,CBM		
P168479W	6/13/2005	41	71	22	NESW	LANCE OIL & GAS COMPANY, INC	ANTELOPE COAL FED 23-22-4171	GSI	CBM		
P151112W	4/28/2003	41	71	22	SWNE	LANCE OIL & GAS COMPANY, INC	BRIDLE BIT FEDERAL 32-22-4171	GST	STO,CBM	184	297
P151113W	4/28/2003	41	71	22	NESE	LANCE OIL & GAS COMPANY, INC	ANTELOPE COAL FEDERAL 43-22-4171	GST	CBM	163	264

Supplementary Information on the Affected Environment

Table S6-3. Groundwater Rights for the South Porcupine LBA Tract (Continued).

Permit	Priority	T	R	S	QQ	Applicant	Facility Name	Status	Uses	Static WL	T.D.
P147639W	10/4/2002	41	71	22	NENE	LANCE OIL & GAS COMPANY, INC.	BRIDLE BIT RANCH 41-22-4171	GST	CBM	167	270
P162915W	9/21/2004	41	71	22	SWSE	LANCE OIL AND GAS COMPANY	ANTELOPE COAL FEDERAL 34-22-4171CA	GST	CBM	286	391
P162916W	9/21/2004	41	71	22	SWSW	LANCE OIL AND GAS COMPANY	ANTELOPE COAL FEDERAL 14-22-4171 CA	GST	CBM	309	418
P147638W	10/4/2002	41	71	22	SWNE	WILLIAMS PRODUCTION RMT COMPANY	BRIDLE BIT RANCH 32-22-4171	GSI	CBM		
P152880W	7/25/2003	41	71	22	NWNE	WILLIAMS PRODUCTION RMT COMPANY	ANTELOPE COAL 31-22-4171	GSI	STO,CBM		
P155720W	11/13/2003	41	71	22	NENE	WILLIAMS PRODUCTION RMT COMPANY	BRIDLE BIT RANCH 41-22-4171	GSI	STO,CBM		
P63112W	2/11/1983	41	71	24	SWNE	BRIDLE BIT RANCH	BRIDLE BIT RANCH #1	GST	STO	230	442
P159603W	5/28/2004	41	71	24	SWSE	COLEMAN OIL & GAS, INC.	ISENBERGER #34-24	GSI	CBM		
P96882W	8/24/1994	41	71	24	NENW	WESCO, INC	WESCO #1	UNA	MIS	288	596
P171867W	10/4/2005	41	71	24	NESW	YATES PETROLEUM CORP	GEEBEE CS FEDERAL #5	GSE	CBM,MIS		
P159596W	5/28/2004	41	71	26	NENE	COLEMAN OIL & GAS, INC.	ISENBERGER #41-26	GST	CBM	289	575
P136801W	7/9/2001	41	71	27	SWNE	CONOCO PHILLIPS COMPANY	ANTELOPE CREEK #32-27-41-71	GST	CBM	148	425
P23605P	7/25/1973	41	71	27	SWSW	PATRICIA L. ISENBERGER	SPRING #10	GST	STO	-1	8
P67899W	7/10/1984	41	71	27	NESW	USA USDA FOREST SERVICE	ISENBERGER SPRING #T B 63	GST	STO	8	8
P153938W	9/4/2003	41	71	28	SWSW	BOWERS OIL/GAS, INC.	BOG-FED #1-28	GST	CBM	97	344
P153939W	9/4/2003	41	71	28	NESW	BOWERS OIL/GAS, INC.	BOG-FED #2-28	GST	CBM	62	300
P153940W	9/4/2003	41	71	28	SWNW	BOWERS OIL/GAS, INC.	BOG-FED #3-28	GST	CBM	81	354
P153941W	9/4/2003	41	71	28	NENW	BOWERS OIL/GAS, INC.	BOG-FED #4-28	GST	CBM	74	385
P151359W	5/14/2003	41	71	29	SWSE	BOWERS OIL/GAS, INC.	BOG-FEE #1-29	GST	CBM	106	346
P151360W	5/14/2003	41	71	29	NESW	BOWERS OIL/GAS, INC.	BOG-FEE #2-29	GST	CBM	90	366
P151361W	5/14/2003	41	71	29	SWNW	BOWERS OIL/GAS, INC.	BOG-FEE #3-29	GST	CBM	76	390
P153936W	9/4/2003	41	71	29	SWSW	BOWERS OIL/GAS, INC.	BOG-FED #4-29	GST	CBM	38	350
P153937W	9/4/2003	41	71	29	NESE	BOWERS OIL/GAS, INC.	BOG-FED #5-29	GST	CBM	65	366
P162914W	9/21/2004	41	71	29	NENW	LANCE OIL & GAS	P LITTON FEDERAL 21-29-4171 CA	GSI	CBM	338	445
P162913W	9/21/2004	41	71	29	SWNE	LANCE OIL & GAS	ANTELOPE COAL FEDERAL 32-29-4171 CA	GST	CBM	277	387
P162911W	9/21/2004	41	71	29	NESE	LANCE OIL AND GAS COMPANY	P LITTON FEDERAL 43-29-4171 CA	GSI	CBM		
P162912W	9/21/2004	41	71	29	NENE	LANCE OIL AND GAS COMPANY	P LITTON FEDERAL 41-29-4171 CA	GSI	CBM		
P23601P	7/25/1973	41	71	29	SWNW	PATRICIA L. ISENBERGER	LY #6	GST	STO	-1	250
P163378W	10/18/2004	41	71	33	SWNW	BOWERS OIL AND GAS, INC.	BOG- FEE #1-33	GST	CBM	166	245
P23602P	7/25/1973	41	71	33	NWNW	PATRICIA L. ISENBERGER	LY #7	GST	STO	-1	600
P9571W	6/30/1971	41	71	33	SWSE	USDA FOREST SERVICE	JACOBS #T.B. 161	GST	STO	0	495
P139742W	10/1/2001	41	71	33	NESW	YATES PETROLEUM CORP.	ROCHELLE HILLS CS FEDERAL #1	GSE	STO,CBM		
P23594W	7/25/1973	41	71	34	SWNE	PATRICIA L. ISENBERGER	ARTESIAN #3	GST	STO	-4	640
P23596P	7/25/1973	41	71	35	NENE	PATRICIA L. ISENBERGER	ARTESIAN #4	GST	DOM,STO	-4	-1
P23597P	7/25/1973	41	71	35	SWSE	PATRICIA L. ISENBERGER	SCHOOL HOUSE #1	GST	DOM,STO	-1	550
P11652W	8/1/1954	41	71	35	SENE	ROBERT E. ISENBERGER	COAL MINE #1	GST	STO	8	30
P16602W	9/1/1972	41	71	35	SWNW	WYOMING BOARD OF LAND COMM.**H. R. MATHESON	STATE-MATHESON #1		IND	-1	50

Table S6-3. Groundwater Rights for the South Porcupine LBA Tract (Continued).

Permit	Priority	T	R	S	QQ	Applicant	Facility Name	Status	Uses	Static WL	T.D.
P46168W	12/14/1978	41	71	36	NESW	WY BOARD OF LAND COMMISSIONERS**PATRICIA EISENBERGER	EISENBERGER-STATE #1	GST	STO		
P157826W	4/9/2004	42	70	19	NESW	BILL BARRETT CORPORATION	PRCC 23-19-4270	GST	CBM	383	465
P157827W	4/9/2004	42	70	19	SWNE	BILL BARRETT CORPORATION	PRCC 32-19-4270	GST	CBM	390	451
P160421W	7/2/2004	42	70	19	SWSW	BILL BARRETT CORPORATION	PORK NE FEDERAL 14-19-4270	GST	STO,CBM	397	467
P160422W	7/2/2004	42	70	19	NENW	BILL BARRETT CORPORATION	PORK NE FEDERAL 21-19-4270	GST	STO,CBM	418	492
P160423W	7/2/2004	42	70	19	NESE	BILL BARRETT CORPORATION	PORK NE FEDERAL 43-19-4270	GST	STO,CBM	409	476
P162373W	9/10/2004	42	70	19	NENE	BILL BARRETT CORPORATION	PORK NE FEDERAL 41-19-4270	GST	STO,CBM	410	490
P25605P	1/14/1974	42	70	19	NESW	PAUL & EDITH RUTH WILKINSON	WILKINSON #1	GST	DOM,STO	3	12
P160424W	7/2/2004	42	70	20	SWNW	BILL BARRETT CORPORATION	PORK NE FEDERAL 12-20-4270	GST	STO,CBM	420	486
P160425W	7/2/2004	42	70	20	SWSW	BILL BARRETT CORPORATION	PORK NE FEDERAL 14-20-4270	GST	STO,CBM	401	450
P160426W	7/2/2004	42	70	20	NENW	BILL BARRETT CORPORATION	PORK NE FEDERAL 21-20-4270	GST	STO,CBM	430	480
P160427W	7/2/2004	42	70	20	NESW	BILL BARRETT CORPORATION	PORK NE FEDERAL 23-20-4270	GST	CBM	414	455
P160428W	7/2/2004	42	70	20	SWSE	BILL BARRETT CORPORATION	PORK NE FEDERAL 34-20-4270	GST	STO,CBM	192	443
P160429W	7/2/2004	42	70	20	NENE	BILL BARRETT CORPORATION	PORK NE FEDERAL 41-20-4270	GST	CBM	439	500
P162367W	9/10/2004	42	70	21	SWNW	BILL BARRETT CORPORATION	PORK NE FEDERAL 12-21-4270	GST	STO,CBM	466	527
P162368W	9/10/2004	42	70	21	SWSW	BILL BARRETT CORPORATION	PORK NE FEDERAL 14-21-4270	GST	STO,CBM	423	436
P162369W	9/10/2004	42	70	21	NESW	BILL BARRETT CORPORATION	PORK NE FEDERAL 23-21-4270	GST	STO,CBM	447	523
P40092W	8/22/1977	42	70	21	SWSE	USDA FOREST SERVICE	SEAM MONITORING WELL #1-D	GST	MON	162	255
P40093W	8/22/1977	42	70	21	SWSE	USDA FOREST SERVICE	SEAM MONITORING WELL #1-F	GST	MON	175	200
P42620W	3/10/1978	42	70	21	SESE	USDA FOREST SERVICE	SEAM MONITOR WELL #23	GST	MON	-1	200
P161772W	8/26/2004	42	70	29	SWNW	CONTINENTAL INDUSTRIES LC	PORK NE FED 12-29-42-70	GSI	CBM,MIS		
P161773W	8/26/2004	42	70	29	NENW	CONTINENTAL INDUSTRIES LC	PORK NE FED 21-29-42-70	GSI	CBM,MIS		
P161774W	8/26/2004	42	70	29	NENE	CONTINENTAL INDUSTRIES LC	PORK NE FED 41-29-42-70	GSI	CBM,MIS		
P161775W	8/26/2004	42	70	30	NENE	CONTINENTAL INDUSTRIES LC	PORK NE FED 41-30-42-70	GSI	CBM,MIS		
P138035W	8/15/2001	42	70	30	SWNW	PEABODY NATURAL GAS, LLC** WY STATE BOARD OF LAND COMMISSIONERS	VEG STATE # 12-30	GST	CBM	316	405
P138036W	8/15/2001	42	70	30	NENW	PEABODY NATURAL GAS, LLC** WY STATE BOARD OF LAND COMMISSIONERS	VEG STATE # 21-30	GST	CBM	309	424
P139209W	8/21/2001	42	70	30	SENE	PEABODY NATURAL GAS, LLC** WY STATE BOARD OF LAND COMMISSIONERS	VEG FEDERAL # 22-30	GST	CBM	280	379
P139210W	8/21/2001	42	70	30	NWNW	PEABODY NATURAL GAS, LLC** WY STATE BOARD OF LAND COMMISSIONERS	VEG FEDERAL #11-30	GST	CBM	300	420
P40094W	8/22/1977	42	70	33	SESW	USDA FOREST SERVICE	SEAM MONITORING WELL #1-H	GST	MON	53	80
P40096W	8/22/1977	42	70	33	SWNE	USDA FOREST SERVICE	SEAM MONITORING WELL #2-J	GST	MON	-1	50
P40098W	8/22/1977	42	70	33	SENE	USDA FOREST SERVICE	SEAM MONITORING WELL #2-L	GST	MON	-1	50
P40099W	8/22/1977	42	70	33	SESE	USDA FOREST SERVICE	SEAM MONITORING WELL #3-M	GST	MON	-1	220
P40100W	8/22/1977	42	70	33	SWNE	USDA FOREST SERVICE	SEAM MONITORING WELL #3-N	GST	MON	-1	260
P40101W	8/22/1977	42	70	33	SENE	USDA FOREST SERVICE	SEAM MONITORING WELL #3 D	GST	MON	-1	260
P40102W	8/22/1977	42	70	33	SENE	USDA FOREST SERVICE	SEAM MONITORING WELL #3-P	GST	MON	46	80
P42622W	3/10/1978	42	70	33	SESW	USDA FOREST SERVICE	SEAM MONITOR WELL #25	GST	MON	-1	220

Supplementary Information on the Affected Environment

Table S6-3. Groundwater Rights for the South Porcupine LBA Tract (Continued).

Permit	Priority	T	R	S	QQ	Applicant	Facility Name	Status	Uses	Static WL	T.D.
P42624W	3/10/1978	42	70	33	SESW	USDA FOREST SERVICE	SEAM MONITORING WELL #27	GST	MON	-1	80
P42625W	3/10/1978	42	70	33	SWNE	USDA FOREST SERVICE	SEAM MONITOR WELL #28	GST	MON	-1	160
P42626W	3/10/1978	42	70	33	SESW	USDA FOREST SERVICE	SEAM MONITOR WELL #29	GST	MON	-1	264
P42627W	3/10/1978	42	70	33	SWSE	USDA FOREST SERVICE	SEAM MONITOR WELL #30	GST	MON	-1	255
P42630W	3/10/1978	42	70	33	SESW	USDA FOREST SERVICE	SEAM MONITOR WELL #33	GST	MON	-1	80
P111943W	4/1/1998	42	70	34	NWNE	NORTH AMERICAN LAND & LIVESTOCK LLC/TWO ELK GENERATION PARTNERS, LIMITED PARTNERSHIP	GRASS 5	GSE	IND		
P40095W	8/22/1977	42	70	34	NENE	USDA FOREST SERVICE	SEAM MONITORING WELL #2-1	GST	MON	121	160
P153131W	7/28/2003	42	71	22	NESW	BILL BARRETT CORPORATION	FEDERAL 23-22-4271	GSI	CBM		
P153132W	7/28/2003	42	71	22	SWNE	BILL BARRETT CORPORATION	PORK NW FED 32-22-42-71	GST	CBM	455	507
P153133W	7/28/2003	42	71	22	SWSE	BILL BARRETT CORPORATION	PORK NW FED 34-22-42-71	GST	CBM	412	462
P153134W	7/28/2003	42	71	22	NENE	BILL BARRETT CORPORATION	PORK NW FED 41-22-42-71	GST	CBM	455	503
P153135W	7/28/2003	42	71	22	NESE	BILL BARRETT CORPORATION	PORK NW FED 43-22-42-71	GST	CBM	418	467
P160444W	7/2/2004	42	71	23	SWSW	BILL BARRETT CORPORATION	PORK NW FEDERAL 14-23-4271	GST	STO,CBM	407	460
P160445W	7/2/2004	42	71	23	NENW	BILL BARRETT CORPORATION	PORK NW FEDERAL 21-23-4271	GST	CBM,MIS	429	469
P160446W	7/2/2004	42	71	23	NESW	BILL BARRETT CORPORATION	PORK NW FEDERAL 23-23-4271	GST	STO,CBM	404	449
P160448W	7/2/2004	42	71	23	NENE	BILL BARRETT CORPORATION	PORK NW FEDERAL 41-23-4271	GST	STO,CBM	434	491
P160447W	7/2/2004	42	71	23	SWNE	BILL BARRETT CORPORATION** WY STATE BOARD OF LAND COMMISSIONERS	PORK NW FEDERAL 32-23-4271	GST	CBM,MIS	408	498
P160449W	7/2/2004	42	71	23	NESE	BILL BARRETT CORPORATION** WY STATE BOARD OF LAND COMMISSIONERS	PORK NW FEDERAL 43-23-4271	GST	STO,CBM	415	460
P157828W	4/9/2004	42	71	24	SWNW	BILL BARRETT CORPORATION	PRCC 12-24-4271	GST	CBM	441	503
P157829W	4/9/2004	42	71	24	NENW	BILL BARRETT CORPORATION	PRCC 21-24-4271	GST	CBM	446	527
P162376W	9/10/2004	42	71	24	SWSE	BILL BARRETT CORPORATION	PORK NW FED 34-24-4271	GST	STO,CBM	454	520
P61754W	8/11/1982	42	71	24	NWSE	USDA FOREST SERVICE	PCC WILKINSON RANCH #1	GST	STO	56	110
P161760W	8/23/2004	42	71	25	NENE	CONTINENTAL INDUSTRIES LC	PORK NW FED 41-25-42-71	GSI	CBM,MIS		
P161761W	8/23/2004	42	71	26	NENW	CONTINENTAL INDUSTRIES LC	PORK NW FED 21-26-42-71	GSI	CBM,MIS		
P161762W	8/23/2004	42	71	26	SWNE	CONTINENTAL INDUSTRIES LC	PORK NW FED 32-26-42-71	GSI	CBM,MIS		
P161763W	8/23/2004	42	71	26	NENE	CONTINENTAL INDUSTRIES LC	PORK NW FED 41-26-42-71	GSI	CBM,MIS		
P146184W	7/19/2002	42	71	26	SENE	CONTINENTAL INDUSTRIES, L.C.	PORK 22-26	GSI	CBM		
P146185W	7/19/2002	42	71	26	SESW	CONTINENTAL INDUSTRIES, L.C.	PORK 24-26	GSI	CBM		
P146187W	7/19/2002	42	71	26	NWSW	CONTINENTAL INDUSTRIES, L.C.	PORK 13-26	GSI	CBM		
P146192W	7/19/2002	42	71	26	SESE	CONTINENTAL INDUSTRIES, L.C.	PORK 44-26	GSI	CBM		
P146193W	7/19/2002	42	71	26	SWSE	CONTINENTAL INDUSTRIES, L.C.	PORK 34-26	GSI	CBM		
P146186W	7/19/2002	42	71	26	NESW	CONTINENTAL INDUSTRIES, L.C.	PORK 23-26	GST	CBM	279	402
P146188W	7/19/2002	42	71	26	SWNW	CONTINENTAL INDUSTRIES, L.C.	PORK 12-26	GST	CBM	302	423
P146189W	7/19/2002	42	71	26	SWSW	CONTINENTAL INDUSTRIES, L.C.	PORK 14-26	GST	CBM	264	382
P146190W	7/19/2002	42	71	26	NWSE	CONTINENTAL INDUSTRIES, L.C.	PORK 33-26	GST	CBM	247	363
P146191W	7/19/2002	42	71	26	NESE	CONTINENTAL INDUSTRIES, L.C.	PORK 43-26	GST	CBM	270	392
P25606P	1/14/1974	42	71	26	NESE	PAUL & EDITH RUTH WILKINSON	WILKINSON #2	GST	DOM,STO	100	220

Table S6-3. Groundwater Rights for the South Porcupine LBA Tract (Continued).

Permit	Priority	T	R	S	QQ	Applicant	Facility Name	Status	Uses	Static WL	T.D.
P25608P	1/14/1974	42	71	26	SWNW	PAUL & EDITH RUTH WILKINSON	WILKINSON #4	GST	STO	-4	110
P5848W	6/16/1970	42	71	26	SWNW	PAUL WILKINSON	MIDDLE PASTURE #1	GST	STO	0	140
P153136W	7/28/2003	42	71	27	SWNW	BILL BARRETT CORPORATION	PORK NW FED 12-27-42-71	GST	CBM	428	495
P153137W	7/28/2003	42	71	27	SWSW	BILL BARRETT CORPORATION	PORK NW FED 14-27-42-71	GST	CBM	448	489
P153138W	7/28/2003	42	71	27	NENW	BILL BARRETT CORPORATION	PORK NW FED 21-27-42-71	GST	CBM	414	472
P153139W	7/28/2003	42	71	27	NESW	BILL BARRETT CORPORATION	PORK NW FED 23-27-42-71	GST	CBM	413	484
P29746W	5/7/1975	42	71	27	NENW	USDA FOREST SERVICE	WRIGHT #T B 195	GST	STO	30	175
P152660W	6/23/2003	42	71	28	SWNE	BILL BARRETT CORPORATION	J DILTS 32-28-4271	GST	CBM	480	500
P152661W	6/23/2003	42	71	28	SWSE	BILL BARRETT CORPORATION	J DILTS 34-28-4271	GST	CBM	494.26	520
P152662W	6/23/2003	42	71	28	NENE	BILL BARRETT CORPORATION	J DILTS 41-28-4271	GST	CBM	438	502
P152663W	6/23/2003	42	71	28	NESE	BILL BARRETT CORPORATION	J DILTS 43-28-4271	GST	CBM	460	480
P153140W	7/28/2003	42	71	28	NENW	BILL BARRETT CORPORATION	FEDERAL 21-28-4271	GST	CBM	503	525
P149899W	2/21/2003	42	71	28	SWNW	COLEMAN OIL & GAS, INC.**JERRY J/BARBARA H DILTS & BRIDLE BIT RANCH	BRIDLE BIT RANCH #12-28	GST	STO,CBM	383	536
P149901W	2/21/2003	42	71	28	SWSW	COLEMAN OIL & GAS, INC.**JERRY J/BARBARA H DILTS & BRIDLE BIT RANCH COMPANY	BRIDLE BIT RANCH #14-28	GST	STO,CBM	402	574
P149902W	2/21/2003	42	71	28	NESW	COLEMAN OIL & GAS, INC.**JERRY J/BARBARA H DILTS & BRIDLE BIT RANCH COMPANY	BRIDLE BIT RANCH #23-28	GST	STO,CBM	366	525
P153143W	7/28/2003	42	71	32	SWNE	BILL BARRETT CORPORATION	PORK NW FED 32-32-42-71	GST	CBM	624.72	667
P153144W	7/28/2003	42	71	32	NENE	BILL BARRETT CORPORATION	PORK NW FED 41-32-42-71	GST	CBM	589.88	662
P53195W	8/4/1981	42	71	32	NWNW	DILTS BROS.	DILTS BROS. #1	GST	STO	200	735
P161949W	7/22/2004	42	71	32	NESW	LANCE OIL & GAS COMPANY, INC	BRITTLER BIT FED 23-32-4271	GSI	CBM		
P161952W	7/22/2004	42	71	32	SWNW	LANCE OIL & GAS COMPANY, INC	BRITTLER BIT FED 12-32-4271	GSI	CBM,RES		
P151099W	4/28/2003	42	71	32	SWNW	LANCE OIL & GAS COMPANY, INC	BRIDLE BIT FEDERAL 12-32-4271	GST	STO,CBM	609	721
P151100W	4/28/2003	42	71	32	SWSW	LANCE OIL & GAS COMPANY, INC	BRIDLE BIT FEDERAL 14-32-4271	GST	STO,CBM	580	711
P151101W	4/28/2003	42	71	32	NENW	LANCE OIL & GAS COMPANY, INC	BRIDLE BIT FEDERAL 21-32-4271	GST	CBM	565	678
P151102W	4/28/2003	42	71	32	NESW	LANCE OIL & GAS COMPANY, INC	BRIDLE BIT FEDERAL 23-32-4271	GST	STO,CBM	545	712
P151103W	4/28/2003	42	71	32	SWSE	LANCE OIL & GAS COMPANY, INC	BRIDLE BIT FEDERAL 34-32-4271	GST	STO,CBM	594	718
P151104W	4/28/2003	42	71	32	NESE	LANCE OIL & GAS COMPANY, INC	BRIDLE BIT FEDERAL 43-32-4271	GST	CBM	528	643
P153116W	7/28/2003	42	71	33	SWNW	BILL BARRETT CORPORATION	J DILTS 12-33-42-71	GST	CBM	480.77	590
P153117W	7/28/2003	42	71	33	SWSW	BILL BARRETT CORPORATION	J DILTS 14-33-42-71	GST	CBM	489.36	605
P153118W	7/28/2003	42	71	33	NENW	BILL BARRETT CORPORATION	J DILTS 21-33-42-71	GST	CBM	501.04	567
P153119W	7/28/2003	42	71	33	NESW	BILL BARRETT CORPORATION	J DILTS 23-33-42-71	GST	CBM	468	601
P153145W	7/28/2003	42	71	33	SWNE	BILL BARRETT CORPORATION	JWS FED-DL COOK 32-33-42-71	GST	CBM	506	591
P153146W	7/28/2003	42	71	33	SWSE	BILL BARRETT CORPORATION	JWS FED-DL COOK 34-33-42-71	GST	CBM	577	648
P153147W	7/28/2003	42	71	33	NENE	BILL BARRETT CORPORATION	JWS FED-DL COOK 41-33-42-71	GST	CBM	465	488
P153148W	7/28/2003	42	71	33	NESE	BILL BARRETT CORPORATION	JWS FED-DL COOK 43-33-42-71	GST	CBM	493	530
P12758P	12/30/1963	42	71	33	SENE	USDA FOREST SERVICE	MATHESON #TB 72	GST	STO	-1	-1
P156293W	11/28/2003	42	71	34	SWNE	BILL BARRETT CORPORATION	JWS FED 32-34-42-71 DL COOK	GST	CBM	416	451
P156294W	11/28/2003	42	71	34	NENW	BILL BARRETT CORPORATION	JWS FED 21-34-42-71 DL COOK	GST	CBM	432	483

Supplementary Information on the Affected Environment

Table S6-3. Groundwater Rights for the South Porcupine LBA Tract (Continued).

Permit	Priority	T	R	S	QQ	Applicant	Facility Name	Status	Uses	Static WL	T.D.
P156295W	11/28/2003	42	71	34	SWNW	BILL BARRETT CORPORATION	JWS FED 12-34-42-71 DL COOK	GST	CBM	442	483
P156296W	11/28/2003	42	71	34	NENE	BILL BARRETT CORPORATION	JWS FED 41-34-42-71 DL COOK	GST	CBM	391	428
P44329W	7/20/1978	42	71	34	NWSE	USDA FOREST SERVICE	MARG #4	GST	STO	95	183
P161764W	8/23/2004	42	71	35	SWNW	CONTINENTAL INDUSTRIES LC	PORK NW FED 12-35-42-71	GSI	CBM,MIS		
P161765W	8/23/2004	42	71	35	NENW	CONTINENTAL INDUSTRIES LC	PORK NW FED 21-35-42-71	GSI	CBM,MIS		
P161766W	8/23/2004	42	71	35	SWNE	CONTINENTAL INDUSTRIES LC	PORK NW FED 32-35-42-71	GSI	CBM,MIS		
P161767W	8/23/2004	42	71	35	NENE	CONTINENTAL INDUSTRIES LC	PORK NW FED 41-35-42-71	GSI	CBM,MIS		
P161768W	8/23/2004	42	71	35	SWSW	CONTINENTAL INDUSTRIES LC	JWS FED 14-35-42-71	GSI	CBM,MIS		
P161769W	8/23/2004	42	71	35	NESW	CONTINENTAL INDUSTRIES LC	JWS FED 23-35-42-71	GSI	CBM,MIS		
P161770W	8/23/2004	42	71	35	SWSE	CONTINENTAL INDUSTRIES LC	JWS FED 34-35-42-71	GSI	CBM,MIS		
P161771W	8/23/2004	42	71	35	NESE	CONTINENTAL INDUSTRIES LC	JWS FED 43-35-42-71	GSI	CBM,MIS		
P12756P	12/30/1966	42	71	35	SWSE	USDA FOREST SERVICE	WILKINSON #TB 129	GST	STO	-1	20
P138478W	8/2/2001	42	71	36	NWNE	CONTINENTAL INDUSTRIES LC** POWDER RIVER COAL CO. NORTH ANTELOPE/ROCHELLE COMPLEX** WY STATE BOARD OF LAND COMMISSIONERS	DW-36-32	GST	DEW,CBM	259	360
P138479W	8/2/2001	42	71	36	NENW	CONTINENTAL INDUSTRIES LC** POWDER RIVER COAL CO. NORTH ANTELOPE/ROCHELLE COMPLEX** WY STATE BOARD OF LAND COMMISSIONERS	DW-36-31	GST	DEW,CBM	250	349
P138480W	8/2/2001	42	71	36	NWNW	CONTINENTAL INDUSTRIES LC** POWDER RIVER COAL CO. NORTH ANTELOPE/ROCHELLE COMPLEX** WY STATE BOARD OF LAND COMMISSIONERS	DW-36-30	GST	DEW,CBM	315	416
P138408W	8/21/2001	42	71	36	NENE	CONTINENTAL INDUSTRIES LC** POWDER RIVER COAL COMPANY** WY STATE BOARD OF LAND COMMISSIONERS	STATE # 41-36	GST	CBM,MIS	250	357
P138409W	8/21/2001	42	71	36	SWNE	CONTINENTAL INDUSTRIES LC** POWDER RIVER COAL COMPANY** WY STATE BOARD OF LAND COMMISSIONERS	STATE # 32-36	GST	CBM,MIS	230	339
P138410W	8/21/2001	42	71	36	SENE	CONTINENTAL INDUSTRIES LC** POWDER RIVER COAL COMPANY** WY STATE BOARD OF LAND COMMISSIONERS	STATE # 42-36	GST	CBM,MIS	260	366
P138411W	8/21/2001	42	71	36	NESE	CONTINENTAL INDUSTRIES LC** POWDER RIVER COAL COMPANY** WY STATE BOARD OF LAND COMMISSIONERS	STATE # 43-36	GST	CBM,MIS	220	319
P138412W	8/21/2001	42	71	36	SESE	CONTINENTAL INDUSTRIES LC** POWDER RIVER COAL COMPANY** WY STATE BOARD OF LAND COMMISSIONERS	STATE # 44-36	GST	CBM,MIS	230	336
P138417W	8/21/2001	42	71	36	SWNW	CONTINENTAL INDUSTRIES LC** POWDER RIVER COAL COMPANY** WY STATE BOARD OF LAND COMMISSIONERS	STATE #12-36	GST	CBM,MIS	300	403
P138418W	8/21/2001	42	71	36	NWSW	CONTINENTAL INDUSTRIES LC** POWDER RIVER COAL COMPANY** WY STATE BOARD OF LAND COMMISSIONERS	STATE #13-36	GST	CBM,MIS	300	400
P138419W	8/21/2001	42	71	36	SWSW	CONTINENTAL INDUSTRIES LC** POWDER RIVER COAL COMPANY** WY STATE BOARD OF LAND COMMISSIONERS	STATE #14-36	GST	CBM,MIS	320	420
P138420W	8/21/2001	42	71	36	SENW	CONTINENTAL INDUSTRIES LC** POWDER RIVER COAL COMPANY** WY STATE BOARD OF LAND COMMISSIONERS	STATE #22-36	GST	CBM,MIS	270	373

Table S6-3. Groundwater Rights for the South Porcupine LBA Tract (Continued).

Permit	Priority	T	R	S	QQ	Applicant	Facility Name	Status	Uses	Static WL	T.D.
P138424W	8/21/2001	42	71	36	SWSE	CONTINENTAL INDUSTRIES LC** POWDER RIVER COAL COMPANY** WY STATE BOARD OF LAND COMMISSIONERS	STATE #34-36	GST	CBM,MIS	280	381
P138421W	8/21/2001	42	71	36	NESW	POWDER RIVER COAL COMPANY** CONTINENTAL INDUSTRIES LC** WY STATE BOARD OF LAND COMMISSIONERS	STATE #23-36	GST	CBM,MIS	280	388
P138422W	8/21/2001	42	71	36	SESW	POWDER RIVER COAL COMPANY** CONTINENTAL INDUSTRIES LC** WY STATE BOARD OF LAND COMMISSIONERS	STATE #24-36	GST	CBM,MIS	290	397
P138423W	8/21/2001	42	71	36	NWSE	POWDER RIVER COAL COMPANY** CONTINENTAL INDUSTRIES LC** WY STATE BOARD OF LAND COMMISSIONERS	STATE #33-36	GST	CBM,MIS	250	349

Supplementary Information on the Affected Environment

Notes for Non Mining-related Groundwater Rights within 3 Miles of the South Porcupine LBA Tract

Search Conducted August 2, 2008

Groundwater Right Search Area:

Township	Range	Sections
40N	70W	5-6
40N	71W	1-3
41N	70W	3-10, 15-22, 27-33
41N	71W	1-18, 20-29, 33-36
42N	70W	19-21, 28-34
42N	71W	22-28, 32-36

Water rights were searched to the nearest quarter-quarter of each section listed above. Any part of a quarter-quarter that lies within three miles of the LBA tract is included.

Permit number suffixes are denoted as follows:

"A" Adjudicated (finalized) rights; unless the right is a territorial appropriation, there will be a match in the reference column from one of the following permit types for the unadjudicated portion:

"P" Stock and domestic use wells completed prior to May 24, 1969 and registered with the State Engineer's Office prior to December 31, 1972

"W" Permits are for wells with a priority date for the date of filing with the State Engineer

Status Codes

ADJ	Adjudicated
GSE	Good standing, permitted time limits have been extended
GSI	Good standing incomplete; required notices not received; not yet expired
GSM	Good standing but map is still required
GST	Good standing
UNA	Unadjudicated

Approximately 420 separate water rights with a status code of ABA (Abandoned), A&C (Abandoned and Cancelled), CAN (Cancelled), or EXP (Expired) have been eliminated from the listing provided above, as none of these well codes represent a valid current right.

Use Codes

CBM	Coal Bed Methane	IRR	Irrigation
DEW	Dewatering	MIS	Miscellaneous
DOM	Domestic	MON	Monitoring
DRI	Drilling	RES	Reservoir Supply
IND	Industrial	TEM	Temporary Use
STO	Stock		

Lands described in these copies are the water rights of record in the SEO database and may or may not reflect the actual situation on the ground. Failure to exercise a water right for five years, when water is available, may constitute grounds for forfeiture.

Table S6-4. Surface Water Rights for the South Porcupine LBA Tract.

Permit	Priority	T	R	S	QQ	Applicant	Facility Name	Status	Uses	Source
P27435D	12/17/1981	42	71	36	SWSW	CAMPBELL COUNTY ROAD & BRIDGE	PORCUPINE CREEK WATER HAUL	PU	TEM,IND,MIS	PORCUPINE CREEK
P27435D	12/17/1981	42	71	36	NWNW	CAMPBELL COUNTY ROAD & BRIDGE	PORCUPINE CREEK WATER HAUL	PU	TEM,IND,MIS	PORCUPINE CREEK
P27435D	12/17/1981	42	71	36	SWNW	CAMPBELL COUNTY ROAD & BRIDGE	PORCUPINE CREEK WATER HAUL	PU	TEM,IND,MIS	PORCUPINE CREEK
P27435D	12/17/1981	42	71	36	NWSW	CAMPBELL COUNTY ROAD & BRIDGE	PORCUPINE CREEK WATER HAUL	PU	TEM,IND,MIS	PORCUPINE CREEK
P15515S	3/20/2002	41	71	18	SWNE	COLEMAN OIL & GAS, INC.**GENE AND PATRICIA LITTON	OXYOKE STOCK RESERVOIR	UNA	STO	OX DRAW
P15515S	3/20/2002	41	71	18	SWNE	COLEMAN OIL & GAS, INC.**GENE AND PATRICIA LITTON	OXYOKE STOCK RESERVOIR	UNA	STO	OX DRAW
P15516S	6/20/2002	41	71	5	SWSW	COLEMAN OIL & GAS, INC.**JERRY DILTS	UPPER HORSE CREEK STOCK RESERVOIR	UNA	STO	MIKES DRAW
P15516S	6/20/2002	41	71	6	SESE	COLEMAN OIL & GAS, INC.**JERRY DILTS	UPPER HORSE CREEK STOCK RESERVOIR	UNA	STO	MIKES DRAW
P17602S	7/8/2002	41	71	7	NESE	COLEMAN OIL & GAS, INC.**PATRICIA LITTON	TOMAHAWK STOCK RESERVOIR	UNA	STO	GIRARD DRAW
P17602S	7/8/2002	41	71	8	NWSW	COLEMAN OIL & GAS, INC.**PATRICIA LITTON	TOMAHAWK STOCK RESERVOIR	UNA	STO	GIRARD DRAW
P33348D	11/2/2005	42	71	27	SENE	E.H. OFTEDAL & SONS, INC.	PORCUPINE CREEK WATER HAUL	UNA	IND,TEM	PORCUPINE CREEK
P19382D	5/8/1940	41	70	27	SESE	FRED DILTS	WATER SPREADING DITCH	ADJ	STO,IRR	PORCUPINE CREEK
P19382D	5/8/1940	41	70	27	SWSE	FRED DILTS	WATER SPREADING DITCH	ADJ	STO,IRR	PORCUPINE CREEK
P5292R	5/8/1940	41	70	27	SWSE	FRED DILTS	PORCUPINE RESERVOIR	PU	STO	PORCUPINE CREEK
P5292R	5/8/1940	41	70	27	NWSE	FRED DILTS	PORCUPINE RESERVOIR	PU	STO	PORCUPINE CREEK
P5292R	5/8/1940	41	70	27	SENE	FRED DILTS	PORCUPINE RESERVOIR	PU	STO	PORCUPINE CREEK
P5292R	5/8/1940	41	70	27	SWNE	FRED DILTS	PORCUPINE RESERVOIR	PU	STO	PORCUPINE CREEK
P5292R	5/8/1940	41	70	27	SESW	FRED DILTS	PORCUPINE RESERVOIR	PU	STO	PORCUPINE CREEK
P5292R	5/8/1940	41	70	27	NESW	FRED DILTS	PORCUPINE RESERVOIR	PU	STO	PORCUPINE CREEK
P19382D	5/8/1940	41	70	27	SWSE	FRED DILTS	WATER SPREADING DITCH	PUD	STO,IRR	PORCUPINE CREEK
P5292R	5/8/1940	41	70	27	SWSE	FRED DILTS	PORCUPINE RESERVOIR	PUO	STO	PORCUPINE CREEK
P2210S	1/30/1958	41	71	6	NESE	INC. KANE'S RANCH	MIKE #1 STOCK RESERVOIR	PU	STO	MIKES DRAW
P2210S	1/30/1958	41	71	6	NESE	INC. KANE'S RANCH	MIKE #1 STOCK RESERVOIR	PUO	STO	MIKES DRAW
P25857D	8/8/1978	41	71	25	NWNW	INDUSTRIAL PIPELINES SOUTH-CENTRAL, INC.	INDUSTRIAL PIPELINES NO. 1 WATER HAUL	PU	TEM,IND	ANTELOPE CREEK
P25857D	8/8/1978	41	71	25	SENE	INDUSTRIAL PIPELINES SOUTH-CENTRAL, INC.	INDUSTRIAL PIPELINES NO. 1 WATER HAUL	PU	TEM,IND	ANTELOPE CREEK
P25857D	8/8/1978	41	71	25	NENW	INDUSTRIAL PIPELINES SOUTH-CENTRAL, INC.	INDUSTRIAL PIPELINES NO. 1 WATER HAUL	PU	TEM,IND	ANTELOPE CREEK
P25857D	8/8/1978	41	71	25	SWNE	INDUSTRIAL PIPELINES SOUTH-CENTRAL, INC.	INDUSTRIAL PIPELINES NO. 1 WATER HAUL	PU	TEM,IND	ANTELOPE CREEK
P17714S	1/30/2006	42	71	32	SENE	JERRY & BARBARA DILTS FAMILY LTD. PARTNERSHIP	DILTS 22-32-4271 STOCK RESERVOIR	UNA	STO	CAMERON CREEK
P17714S	1/30/2006	42	71	32	SWNW	JERRY & BARBARA DILTS FAMILY LTD. PARTNERSHIP	DILTS 22-32-4271 STOCK RESERVOIR	UNA	STO	CAMERON CREEK
P15973S	6/14/2004	41	71	14	NWSW	JERRY J. DILTS	SHOE HORN STOCK RESERVOIR	UNA	STO	BIG BOY DRAW
P15972S	6/14/2004	41	71	14	NESW	JERRY J. DILTS	PARALLEL STOCK RESERVOIR	UNA	STO	DENNEL DRAW
P15968S	6/14/2004	41	71	17	SWSW	JERRY J. DILTS	TWO PUDDLES STOCK RESERVOIR	UNA	STO	DOS CHARCOS DRAW
P15968S	6/14/2004	41	71	17	NWSW	JERRY J. DILTS	TWO PUDDLES STOCK RESERVOIR	UNA	STO	DOS CHARCOS DRAW
P15969S	6/14/2004	41	71	22	NWNW	JERRY J. DILTS	CALM STOCK RESERVOIR	UNA	STO	CALM DRAW
P15941S	6/14/2004	41	71	10	SESW	JERRY J. DILTS FAMILY LTD. PARTNERSHIP & BRIDLE BIT RANCH CO.	LONG PULL STOCK RESERVOIR	UNA	STO	GRADE DRAW

Supplementary Information on the Affected Environment

Table S6-4. Surface Water Rights for the South Porcupine LBA Tract (Continued).

Permit	Priority	T	R	S	QQ	Applicant	Facility Name	Status	Uses	Source
P15967S	6/14/2004	41	71	9	NWNE	JERRY J. DILTS FAMILY LTD. PARTNERSHIP AND BRIDLE BIT RANCH COMPANY	SAND ROCK STOCK RESERVOIR	UNA	STO	LOVE POTION DRAW
P15942S	6/14/2004	41	71	10	NENE	JERRY J. DILTS FAMILY LTD. PARTNERSHIP AND BRIDLE BIT RANCH COMPANY	LIVE WIRE STOCK RESERVOIR	UNA	STO	OHMS DRAW
P15943S	6/14/2004	41	71	10	NESE	JERRY J. DILTS FAMILY LTD. PARTNERSHIP AND BRIDLE BIT RANCH COMPANY	IRON HORSE STOCK RESERVOIR	UNA	STO	SPUR DRAW
P15966S	6/14/2004	41	71	13	SWSW	JERRY J. DILTS FAMILY LTD. PARTNERSHIP AND BRIDLE BIT RANCH COMPANY	WALKABOUT STOCK RESERVOIR	UNA	STO	DENNEL DRAW
P15965S	6/14/2004	41	71	24	NESW	JERRY J. DILTS FAMILY LTD. PARTNERSHIP AND BRIDLE BIT RANCH COMPANY	SOUTH ANTELOPE STOCK RESERVOIR	UNA	STO	GOAT DRAW
P15934S	6/14/2004	41	71	8	SWSE	JERRY J. DILTS LTD. PARTNERSHIP	HORSE SPRING STOCK RESERVOIR	UNA	STO	STACIA DRAW
P15935S	6/14/2004	41	71	17	NENW	JERRY J. DILTS LTD. PARTNERSHIP	LITTLE BEAR STOCK RESERVOIR	UNA	STO	MR. CLEAN DRAW
P15970S	6/14/2004	41	71	14	SWNW	JERRY J. DILTS	NICE END STOCK RESERVOIR	UNA	STO	BIG BOY DRAW
P15971S	6/14/2004	41	71	23	SEW	JERRY J. DILTS	NIFTY STOCK RESERVOIR	UNA	STO	FIFTY DRAW
P20778D	6/11/1951	41	70	27	SWSE	JOHN C. DILTS, JR.	WATER-SPREADING DITCH	ADJ	IRR	PORCUPINE CREEK
P20778D	6/11/1951	41	70	27	SESE	JOHN C. DILTS, JR.	WATER-SPREADING DITCH	ADJ	IRR	PORCUPINE CREEK
P5866R	6/11/1951	41	70	27	NESW	JOHN C. DILTS, JR.	PORCUPINE RESERVOIR,,FIRST ENLARGEMENT OF THE	PU	IRR	PORCUPINE CREEK
P5866R	6/11/1951	41	70	27	SWSE	JOHN C. DILTS, JR.	PORCUPINE RESERVOIR,,FIRST ENLARGEMENT OF THE	PU	IRR	PORCUPINE CREEK
P5866R	6/11/1951	41	70	27	SWNE	JOHN C. DILTS, JR.	PORCUPINE RESERVOIR,,FIRST ENLARGEMENT OF THE	PU	IRR	PORCUPINE CREEK
P5866R	6/11/1951	41	70	27	SEW	JOHN C. DILTS, JR.	PORCUPINE RESERVOIR,,FIRST ENLARGEMENT OF THE	PU	IRR	PORCUPINE CREEK
P5866R	6/11/1951	41	70	27	SESW	JOHN C. DILTS, JR.	PORCUPINE RESERVOIR,,FIRST ENLARGEMENT OF THE	PU	IRR	PORCUPINE CREEK
P5866R	6/11/1951	41	70	27	NWSE	JOHN C. DILTS, JR.	PORCUPINE RESERVOIR,,FIRST ENLARGEMENT OF THE	PU	IRR	PORCUPINE CREEK
P5962R	9/8/1952	41	70	27	SWSE	JOHN C. DILTS, JR.	PORCUPINE RESERVOIR,,2ND ENLARGEMENT OF THE	PU	IRR	PORCUPINE CREEK
P5962R	9/8/1952	41	70	27	NWSE	JOHN C. DILTS, JR.	PORCUPINE RESERVOIR,,2ND ENLARGEMENT OF THE	PU	IRR	PORCUPINE CREEK
P5962R	9/8/1952	41	70	27	SEW	JOHN C. DILTS, JR.	PORCUPINE RESERVOIR,,2ND ENLARGEMENT OF THE	PU	IRR	PORCUPINE CREEK
P5962R	9/8/1952	41	70	27	SWNE	JOHN C. DILTS, JR.	PORCUPINE RESERVOIR,,2ND ENLARGEMENT OF THE	PU	IRR	PORCUPINE CREEK
P5962R	9/8/1952	41	70	27	SESW	JOHN C. DILTS, JR.	PORCUPINE RESERVOIR,,2ND ENLARGEMENT OF THE	PU	IRR	PORCUPINE CREEK
P5962R	9/8/1952	41	70	27	NESW	JOHN C. DILTS, JR.	PORCUPINE RESERVOIR,,2ND ENLARGEMENT OF THE	PU	IRR	PORCUPINE CREEK
P20778D	6/11/1951	41	70	27	SWSE	JOHN C. DILTS, JR.	WATER-SPREADING DITCH	PUD	IRR	PORCUPINE CREEK
P5866R	6/11/1951	41	70	27	SWSE	JOHN C. DILTS, JR.	PORCUPINE RESERVOIR,,FIRST ENLARGEMENT OF THE	PUO	IRR	PORCUPINE CREEK
P5962R	9/8/1952	41	70	27	SWSE	JOHN C. DILTS, JR.	PORCUPINE RESERVOIR,,2ND ENLARGEMENT OF THE	PUO	IRR	PORCUPINE CREEK
P15211S	10/2/2003	41	71	15	NENW	LANCE OIL & GAS CO., INC.	DILTS #9 STOCK RESERVOIR	UNA	STO	NO. 9 DRAW
P15209S	8/25/2003	41	71	20	SENE	LANCE OIL & GAS CO., INC.	DILTS #14 STOCK RESERVOIR	UNA	STO	NO. 14 DRAW
P16261S	8/20/2004	41	71	20	NESW	LANCE OIL & GAS CO., INC.**PATRICIA LITTON	SUN DOG STOCK RESERVOIR	UNA	STO	SPRUNG DRAW
P15962S	6/14/2004	41	71	6	SESE	PARTICIA L. ISENBERGER LITTON	FAIRWAY STOCK RESERVOIR	UNA	STO	PING DRAW
P15960S	6/14/2004	41	71	6	NESE	PATRICIA L. ISENBURGER-LITTON	ENLARGEMENT OF MIKE #1 (P2210S) STOCK RESERVOIR	UNA	STO	MIKES DRAW
P15963S	6/14/2004	41	71	6	NESE	PATRICIA L. ISENBURGER-LITTON	ISENBURGER STOCK RESERVOIR	UNA	STO	MIKES DRAW

Table S6-4. Surface Water Rights for the South Porcupine LBA Tract (Continued).

Permit	Priority	T	R	S	QQ	Applicant	Facility Name	Status	Uses	Source
P15961S	6/14/2004	41	71	6	SESE	PATRICIA L. ISENBURGER-LITTON	SAND TRAP STOCK RESERVOIR	UNA	STO	MIKES DRAW
P15963S	6/14/2004	41	71	6	SENE	PATRICIA L. ISENBURGER-LITTON	ISENBURGER STOCK RESERVOIR	UNA	STO	MIKES DRAW
P15961S	6/14/2004	41	71	6	NESE	PATRICIA L. ISENBURGER-LITTON	SAND TRAP STOCK RESERVOIR	UNA	STO	MIKES DRAW
P2379S	8/29/1958	41	70	8	SESW	PAUL WILKINSON	ROGERS #1 STOCK RESERVOIR	UNA	STO	ROGERS DRAW
P1978S	11/6/1957	41	70	17	NWNW	PAUL WILKINSON	STEVE #1 STOCK RESERVOIR	GST	STO	STEVE DRAW
P2815S	8/12/1959	42	71	24	SESW	PAUL WILKINSON	SLONT STOCK PIT STOCK RESERVOIR	UNA	STO	NATURAL DEPRESSION DRAW
P2378S	9/10/1958	42	71	26	SESW	PAUL WILKINSON	HORSEPASTURE #1 STOCK RESERVOIR	UNA	STO	PORCUPINE CREEK
P15944S	10/25/2004	41	71	11	SWSE	SIOUX RANCH, INC.	CHOO CHOO STOCK RESERVOIR	UNA	STO	DEPOT DRAW
P15946S	10/25/2004	41	71	11	SWSE	SIOUX RANCH, INC.	SANDY SWALE STOCK RESERVOIR	UNA	STO	PORTER DRAW
P15945S	10/25/2004	41	71	11	SESW	SIOUX RANCH, INC.	LOCOMOTIVE STOCK RESERVOIR	UNA	STO	BIG BOY DRAW
P15944S	10/25/2004	41	71	11	SESW	SIOUX RANCH, INC.	CHOO CHOO STOCK RESERVOIR	UNA	STO	DEPOT DRAW
P15944S	10/25/2004	41	71	11	NESW	SIOUX RANCH, INC.	CHOO CHOO STOCK RESERVOIR	UNA	STO	DEPOT DRAW
P15944S	10/25/2004	41	71	11	NWSE	SIOUX RANCH, INC.	CHOO CHOO STOCK RESERVOIR	UNA	STO	DEPOT DRAW
P15946S	10/25/2004	41	71	11	NWSE	SIOUX RANCH, INC.	SANDY SWALE STOCK RESERVOIR	UNA	STO	PORTER DRAW
P15945S	10/25/2004	41	71	11	NWSW	SIOUX RANCH, INC.	LOCOMOTIVE STOCK RESERVOIR	UNA	STO	BIG BOY DRAW
P15945S	10/25/2004	41	71	11	NESW	SIOUX RANCH, INC.	LOCOMOTIVE STOCK RESERVOIR	UNA	STO	BIG BOY DRAW
P15945S	10/25/2004	41	71	11	SWSW	SIOUX RANCH, INC.	LOCOMOTIVE STOCK RESERVOIR	UNA	STO	BIG BOY DRAW
P4943R	9/12/1938	42	71	26	NWSW	STEVE NIEMCYK	PORCUPINE RESERVOIR	ADJ	STO	PORCUPINE CREEK
P4943R	9/12/1938	42	71	27	SWNE	STEVE NIEMCYK	PORCUPINE RESERVOIR	ADJ	STO	PORCUPINE CREEK
P4943R	9/12/1938	42	71	27	SENE	STEVE NIEMCYK	PORCUPINE RESERVOIR	ADJ	STO	PORCUPINE CREEK
P4943R	9/12/1938	42	71	27	NESE	STEVE NIEMCYK	PORCUPINE RESERVOIR	ADJ	STO	PORCUPINE CREEK
P15228S	8/25/2003	41	71	9	SWNW	THUNDER BASIN NATIONAL GRASSLAND** LANCE OIL & GAS CO., INC.	DILTS #11 STOCK RESERVOIR	UNA	STO	NO. 11 DRAW
P15210S	10/1/2003	41	71	22	NESW	THUNDER BASIN NATIONAL GRASSLAND** LANCE OIL & GAS CO., INC.	DILTS #8 STOCK RESERVOIR	UNA	STO	NO. 7 DRAW
P15210S	10/1/2003	41	71	22	NESW	THUNDER BASIN NATIONAL GRASSLAND** LANCE OIL & GAS CO., INC.	DILTS #8 STOCK RESERVOIR	UNA	STO	NO. 7 DRAW
P2208S	1/30/1958	40	71	3	NWNW	U.S.D.A.	TOM #1 STOCK RESERVOIR	PU	STO	TOMS DRAW
P2208S	1/30/1958	40	71	3	NWNW	U.S.D.A.	TOM #1 STOCK RESERVOIR	PUO	STO	TOMS DRAW
P5059R	2/17/1939	41	71	8	NWSW	U.S.D.A.	THUNDER BASIN RESERVOIR NO. 45	PU	STO	GIRARD DRAW
P5059R	2/17/1939	41	71	8	NESW	U.S.D.A.	THUNDER BASIN RESERVOIR NO. 45	PU	STO	GIRARD DRAW
P5059R	2/17/1939	41	71	8	NESW	U.S.D.A.	THUNDER BASIN RESERVOIR NO. 45	PUO	STO	GIRARD DRAW
P4237S	1/31/1964	40	71	1	SESE	U.S.D.A. FOREST SERVICE	MORTON #F .S. 9-231-9 STOCK RESERVOIR	PU	STO	FISHER DRAW
P4237S	1/31/1964	40	71	1	SESE	U.S.D.A. FOREST SERVICE	MORTON #F .S. 9-231-9 STOCK RESERVOIR	PUO	STO	FISHER DRAW
P4898R	7/30/1938	42	71	22	NENE	U.S.D.A. FOREST SERVICE	THUNDER BASIN NO. 32 RESERVOIR	PU	STO	GRAY CREEK
P4898R	7/30/1938	42	71	22	NENE	U.S.D.A. FOREST SERVICE	THUNDER BASIN NO. 32 RESERVOIR	PUO	STO	GRAY CREEK
P9853S	1/14/1986	42	70	20	NENW	USDA, FOREST SERVICE	MACKEY #9-223-4 STOCK RESERVOIR	GST	STO	PLAYA DRAW

Supplementary Information on the Affected Environment

Table S6-4. Surface Water Rights for the South Porcupine LBA Tract (Continued).

Permit	Priority	T	R	S	QQ	Applicant	Facility Name	Status	Uses	Source
P9854S	1/14/1986	42	70	21	SESE	USDA, FOREST SERVICE	MACKEY #9-223-5 STOCK RESERVOIR	GST	STO	PARAKEET DRAW
P9991S	9/3/1986	42	71	27	SWSE	USDA, FOREST SERVICE	WILKINSON #9-264-9 STOCK RESERVOIR	GST	STO	PEARL DRAW
P9992S	9/3/1986	42	71	34	SWNW	USDA, FOREST SERVICE	WILKINSON #9-264-10 STOCK RESERVOIR	GST	STO	SODERBERG DRAW
P4907R	7/30/1938	42	70	29	SWNE	USDA FARM SECURITY ADMINISTRATION	THUNDER BASIN NO. 28 RESERVOIR	PU	STO	CORDER CREEK
P4907R	7/30/1938	42	70	29	NESW	USDA FARM SECURITY ADMINISTRATION	THUNDER BASIN NO. 28 RESERVOIR	PU	STO	CORDER CREEK
P4907R	7/30/1938	42	70	29	NWSE	USDA FARM SECURITY ADMINISTRATION	THUNDER BASIN NO. 28 RESERVOIR	PU	STO	CORDER CREEK
P4907R	7/30/1938	42	70	29	NESW	USDA FARM SECURITY ADMINISTRATION	THUNDER BASIN NO. 28 RESERVOIR	PUO	STO	CORDER CREEK
P4993R	2/17/1939	42	70	34	NWNW	USDA FARM SECURITY ADMINISTRATION	THUNDER BASIN RESERVOIR NO. 29	PU	STO	PAYNE DRAW
P4993R	2/17/1939	42	70	34	NWNW	USDA FARM SECURITY ADMINISTRATION	THUNDER BASIN RESERVOIR NO. 29	PUO	STO	PAYNE DRAW
P6890S	2/2/1971	41	70	7	SWSW	USDA FOREST SERVICE	WILKINSON #F.S. 9-264-8 STOCK RESERVOIR	PU	STO	ROGERS DRAW
P6890S	2/2/1971	41	70	7	SWSW	USDA FOREST SERVICE	WILKINSON #F.S. 9-264-8 STOCK RESERVOIR	PUO	STO	ROGERS DRAW
P5949S	2/27/1967	41	70	9	NESE	USDA FOREST SERVICE	DILTS #F.S.9-205-8 STOCK RESERVOIR	PU	STO	RED DRAW
P5949S	2/27/1967	41	70	9	NESE	USDA FOREST SERVICE	DILTS #F.S.9-205-8 STOCK RESERVOIR	PUO	STO	RED DRAW
P5950S	2/27/1967	41	70	20	NENW	USDA FOREST SERVICE	DILTS #F.S.9-205-7 STOCK RESERVOIR	PU	STO	GLASSER DRAW
P5950S	2/27/1967	41	70	20	NENW	USDA FOREST SERVICE	DILTS #F.S.9-205-7 STOCK RESERVOIR	PUO	STO	GLASSER DRAW
P4199S	1/31/1964	41	71	13	NENE	USDA FOREST SERVICE	WILKINSON # F. S. 9-264-5 STOCK RESERVOIR	PU	STO	SCOTT'S DRAW
P4199S	1/31/1964	41	71	13	NENE	USDA FOREST SERVICE	WILKINSON # F. S. 9-264-5 STOCK RESERVOIR	PUO	STO	SCOTT'S DRAW
P6207S	3/25/1968	41	71	14	NESE	USDA FOREST SERVICE	MATHESON #F.S.9-228-10 STOCK RESERVOIR	PU	STO	DENNELL DRAW
P6207S	3/25/1968	41	71	14	NESE	USDA FOREST SERVICE	MATHESON #F.S.9-228-10 STOCK RESERVOIR	PUO	STO	DENNELL DRAW
P5967S	3/20/1967	42	70	20	NESE	USDA FOREST SERVICE	MACKEY #F.S.9-223-2 STOCK RESERVOIR	PU	STO	DURBIN DRAW
P5967S	3/20/1967	42	70	20	NESE	USDA FOREST SERVICE	MACKEY #F.S.9-223-2 STOCK RESERVOIR	PUO	STO	DURBIN DRAW
P5968S	3/20/1967	42	70	21	NENW	USDA FOREST SERVICE	MACKEY #F.S.9-223-3 STOCK RESERVOIR	PU	STO	TRUSSLER DRY LAKE BED.
P5968S	3/20/1967	42	70	21	NENW	USDA FOREST SERVICE	MACKEY #F.S.9-223-3 STOCK RESERVOIR	PUO	STO	TRUSSLER DRY LAKE BED.
P6340S	4/29/1969	42	70	31	NWNE	USDA FOREST SERVICE	WILKINSON #F.S.9-264-7 STOCK RESERVOIR	PU	STO	CALLAN DRAW
P6340S	4/29/1969	42	70	31	NWNE	USDA FOREST SERVICE	WILKINSON #F.S.9-264-7 STOCK RESERVOIR	PUO	STO	CALLAN DRAW
P5051S	12/28/1964	42	70	34	NENE	USDA FOREST SERVICE	TECKLA #F.S.9-298-2 STOCK RESERVOIR	PU	STO	SOUTH FORK PAYNE DRAW
P5051S	12/28/1964	42	70	34	NENE	USDA FOREST SERVICE	TECKLA #F.S.9-298-2 STOCK RESERVOIR	PUO	STO	SOUTH FORK PAYNE DRAW
P3888S	8/8/1962	42	71	22	SWNW	USDA FOREST SERVICE	MATHESON #228-2 STOCK RESERVOIR	PU	STO	PORCUPINE CREEK

Table S6-4. Surface Water Rights for the South Porcupine LBA Tract (Continued).

Permit	Priority	T	R	S	QQ	Applicant	Facility Name	Status	Uses	Source
P3888S	8/8/1962	42	71	22	NWSW	USDA FOREST SERVICE	MATHESON #228-2 STOCK RESERVOIR	PU	STO	PORCUPINE CREEK
P3888S	8/8/1962	42	71	22	NWSW	USDA FOREST SERVICE	MATHESON #228-2 STOCK RESERVOIR	PUO	STO	PORCUPINE CREEK
P7065S	9/20/1971	42	71	23	NESW	USDA FOREST SERVICE	MATHESON #F.S. 9-228-12 STOCK RESERVOIR	PU	STO	STUART DRAW
P7065S	9/20/1971	42	71	23	NESW	USDA FOREST SERVICE	MATHESON #F.S. 9-228-12 STOCK RESERVOIR	PUO	STO	STUART DRAW
P3915S	8/8/1962	42	71	26	NENE	USDA FOREST SERVICE	WILKINSON #264-2 STOCK RESERVOIR	PU	STO	WINDMILL DRAW
P3915S	8/8/1962	42	71	26	NENE	USDA FOREST SERVICE	WILKINSON #264-2 STOCK RESERVOIR	PUO	STO	WINDMILL DRAW
P11307R	1/14/2002	42	70	30	NESW	USDA, NATIONAL FOREST SERVICE** POWDER RIVER COAL COMPANY	BOSS DRAW FLOOD CONTROL RESERVOIR	UNA	IND,FLO	BOSS DRAW
P11307R	1/14/2002	42	70	30	SEW	USDA, NATIONAL FOREST SERVICE** POWDER RIVER COAL COMPANY	BOSS DRAW FLOOD CONTROL RESERVOIR	UNA	IND,FLO	BOSS DRAW
P11307R	1/14/2002	42	70	30	SWNW	USDA, NATIONAL FOREST SERVICE** POWDER RIVER COAL COMPANY	BOSS DRAW FLOOD CONTROL RESERVOIR	UNA	IND,FLO	BOSS DRAW
P11307R	1/14/2002	42	70	30	NWNW	USDA, NATIONAL FOREST SERVICE** POWDER RIVER COAL COMPANY	BOSS DRAW FLOOD CONTROL RESERVOIR	UNA	IND,FLO	BOSS DRAW
P17731S	10/1/2003	41	71	4	NWSW	WILLIAMS PRODUCTION RMT CO.** WYO STATE OFFICE OF LANDS & INVESTMENTS	DILTS #12 STOCK RESERVOIR	UNA	STO	NO. 12 DRAW
P32524D	7/17/2000	42	71	36	NWNE	WY STATE LANDS & INVESTMENTS** POWDER RIVER COAL CO. NORTH ANTELOPE/ROCHELLE COMPLEX	NARC SECTION 36 ALLUVIAL DEWATERING SUMPS K-T	UNA	IND,PCT	LITTLE GROS VENTRE RIVER/ FLAT CREEK
P32523D	7/17/2000	42	71	36	NWNE	WY STATE LANDS & INVESTMENTS** POWDER RIVER COAL CO. NORTH ANTELOPE/ROCHELLE COMPLEX	NARC SECTION 36 ALLUVIAL DEWATERING SUMPS A-J	UNA	IND,PCT	LITTLE GROS VENTRE RIVER/ FLAT CREEK
P10870R	5/13/1999	41	70	6	SWNW	WYO STATE OFFICE OF LANDS & INVESTMENTS**NORTH ANTELOPE ROCHELLE COMPLEX POWDER RIVER COAL CO.	SYDNEY NO. 1 RESERVOIR	UNA	IND	SYDNEY DRAW
CR4/308A	1/31/1964	40	71	1	SESE	USDA, FOREST SERVICE	MORTON #F .S. 9-231-9 STOCK RESERVOIR	PU	STO	FISHER DRAW
CR4/308A	1/31/1964	40	71	1	SESE	USDA, FOREST SERVICE	MORTON #F .S. 9-231-9 STOCK RESERVOIR	PUO	STO	FISHER DRAW
CR2/477A	1/30/1958	40	71	3	NWNW	USDA, FOREST SERVICE	TOM #1 STOCK RESERVOIR	PU	STO	TOMS DRAW
CR2/477A	1/30/1958	40	71	3	NWNW	USDA, FOREST SERVICE	TOM #1 STOCK RESERVOIR	PUO	STO	TOMS DRAW
27/3/128R		41	70	5	SWSW			UNA		
CR6/368A	2/2/1971	41	70	7	SWSW	USDA, FOREST SERVICE	WILKINSON #F.S. 9-264-8 STOCK RESERVOIR	PU	STO	ROGERS DRAW
CR6/368A	2/2/1971	41	70	7	SWSW	USDA, FOREST SERVICE	WILKINSON #F.S. 9-264-8 STOCK RESERVOIR	PUO	STO	ROGERS DRAW
CR3/304A	1/31/1964	41	70	8	NESW	USDA, FOREST SERVICE	WILKINSON # F. S. 9-264-4 STOCK RESERVOIR	ADJ	STO	NANCY DRAW
CR4/301A	2/27/1967	41	70	9	NESE	USDA, FOREST SERVICE	DILTS #F.S.9-205-8 STOCK RESERVOIR	PU	STO	RED DRAW
CR4/301A	2/27/1967	41	70	9	NESE	USDA, FOREST SERVICE	DILTS #F.S.9-205-8 STOCK RESERVOIR	PUO	STO	RED DRAW
99/2/205D		41	70	9	NENE			UNA		
99/1/205D		41	70	9	NENE			UNA		
CU16/351A		41	70	16	NESW			ADJ		
CU16/351A		41	70	16	NWSW			ADJ		
CR4/300A	2/27/1967	41	70	20	NENW	USDA, FOREST SERVICE	DILTS #F.S.9-205-7 STOCK RESERVOIR	PU	STO	GLASSER DRAW

Supplementary Information on the Affected Environment

Table S6-4. Surface Water Rights for the South Porcupine LBA Tract (Continued).

Permit	Priority	T	R	S	QQ	Applicant	Facility Name	Status	Uses	Source
CR4/300A	2/27/1967	41	70	20	NENW	USDA, FOREST SERVICE	DILTS #F.S.9-205-7 STOCK RESERVOIR	PUO	STO	GLASSER DRAW
C72/193A	6/11/1951	41	70	27	SESE	USDA, FOREST SERVICE/JOHN C. DILTS	WATER-SPREADING DITCH	ADJ	IRR	PORCUPINE CREEK
C72/193A	6/11/1951	41	70	27	SESE	USDA, FOREST SERVICE/JOHN C. DILTS	WATER-SPREADING DITCH	ADJ	IRR	PORCUPINE CREEK
C72/193A	6/11/1951	41	70	27	SWSE	USDA, FOREST SERVICE/JOHN C. DILTS	WATER-SPREADING DITCH	ADJ	IRR	PORCUPINE CREEK
C72/193A	6/11/1951	41	70	27	SWSE	USDA, FOREST SERVICE/JOHN C. DILTS	WATER-SPREADING DITCH	ADJ	IRR	PORCUPINE CREEK
C60/057A	5/8/1940	41	70	27	SWSE	FRED DILTS ESTATE	WATER SPREADING DITCH	ADJ	IRR,STO	PORCUPINE CREEK
C60/057A	5/8/1940	41	70	27	SESE	FRED DILTS ESTATE	WATER SPREADING DITCH	ADJ	IRR,STO	PORCUPINE CREEK
CR1/297A	5/8/1940	41	70	27	NWSE	FRED DILTS ESTATE	PORCUPINE RESERVOIR	PU	STO	PORCUPINE CREEK
CR1/297A	5/8/1940	41	70	27	SESW	FRED DILTS ESTATE	PORCUPINE RESERVOIR	PU	STO	PORCUPINE CREEK
CR1/297A	5/8/1940	41	70	27	SESW	FRED DILTS ESTATE	PORCUPINE RESERVOIR	PU	STO	PORCUPINE CREEK
CR1/297A	5/8/1940	41	70	27	NESW	FRED DILTS ESTATE	PORCUPINE RESERVOIR	PU	STO	PORCUPINE CREEK
CR1/297A	5/8/1940	41	70	27	SWNE	FRED DILTS ESTATE	PORCUPINE RESERVOIR	PU	STO	PORCUPINE CREEK
CR1/297A	5/8/1940	41	70	27	SWSE	FRED DILTS ESTATE	PORCUPINE RESERVOIR	PU	STO	PORCUPINE CREEK
CR5/136A	6/11/1951	41	70	27	SWNE	JOHN C. DILTS	PORCUPINE RESERVOIR,, ENL.	PU	IRR	PORCUPINE CREEK
CR5/136A	6/11/1951	41	70	27	SESW	JOHN C. DILTS	PORCUPINE RESERVOIR,, ENL.	PU	IRR	PORCUPINE CREEK
CR5/136A	6/11/1951	41	70	27	NESW	JOHN C. DILTS	PORCUPINE RESERVOIR,, ENL.	PU	IRR	PORCUPINE CREEK
CR5/136A	6/11/1951	41	70	27	SESW	JOHN C. DILTS	PORCUPINE RESERVOIR,, ENL.	PU	IRR	PORCUPINE CREEK
CR5/136A	6/11/1951	41	70	27	NWSE	JOHN C. DILTS	PORCUPINE RESERVOIR,, ENL.	PU	IRR	PORCUPINE CREEK
CR5/136A	6/11/1951	41	70	27	SWSE	JOHN C. DILTS	PORCUPINE RESERVOIR,, ENL.	PU	IRR	PORCUPINE CREEK
CR8/549A	9/8/1952	41	70	27	SWSE	JOHN C. DILTS	PORCUPINE RESERVOIR,, ENL.	PU	IRR	PORCUPINE CREEK
CR8/549A	9/8/1952	41	70	27	SWNE	JOHN C. DILTS	PORCUPINE RESERVOIR,, ENL.	PU	IRR	PORCUPINE CREEK
CR8/549A	9/8/1952	41	70	27	SESW	JOHN C. DILTS	PORCUPINE RESERVOIR,, ENL.	PU	IRR	PORCUPINE CREEK
CR8/549A	9/8/1952	41	70	27	NESW	JOHN C. DILTS	PORCUPINE RESERVOIR,, ENL.	PU	IRR	PORCUPINE CREEK
CR8/549A	9/8/1952	41	70	27	NWSE	JOHN C. DILTS	PORCUPINE RESERVOIR,, ENL.	PU	IRR	PORCUPINE CREEK
CR8/549A	9/8/1952	41	70	27	SESW	JOHN C. DILTS	PORCUPINE RESERVOIR,, ENL.	PU	IRR	PORCUPINE CREEK
C72/193A	6/11/1951	41	70	27	SWSE	USDA, FOREST SERVICE/JOHN C. DILTS	WATER-SPREADING DITCH	PUD	IRR	PORCUPINE CREEK
C72/193A	6/11/1951	41	70	27	SWSE	USDA, FOREST SERVICE/JOHN C. DILTS	WATER-SPREADING DITCH	PUD	IRR	PORCUPINE CREEK
C60/057A	5/8/1940	41	70	27	SWSE	FRED DILTS ESTATE	WATER SPREADING DITCH	PUD	IRR,STO	PORCUPINE CREEK
CR1/297A	5/8/1940	41	70	27	SWSE	FRED DILTS ESTATE	PORCUPINE RESERVOIR	PUO	STO	PORCUPINE CREEK
CR5/136A	6/11/1951	41	70	27	SWSE	JOHN C. DILTS	PORCUPINE RESERVOIR,, ENL.	PUO	IRR	PORCUPINE CREEK
CR8/549A	9/8/1952	41	70	27	SWSE	JOHN C. DILTS	PORCUPINE RESERVOIR,, ENL.	PUO	IRR	PORCUPINE CREEK
CR3/126A	1/30/1958	41	71	6	NESE	KANE'S RANCH, INCORPORATED	MIKE #1 STOCK RESERVOIR	PU	STO	MIKES DRAW
CR3/126A	1/30/1958	41	71	6	NESE	KANE'S RANCH, INCORPORATED	MIKE #1 STOCK RESERVOIR	PUO	STO	MIKES DRAW
CR2/476A	2/17/1939	41	71	8	NESW	USDA, FOREST SERVICE	THUNDER BASIN RESERVOIR NO. 45	PU	STO	GIRARD DRAW
CR2/476A	2/17/1939	41	71	8	NWSW	USDA, FOREST SERVICE	THUNDER BASIN RESERVOIR NO. 45	PU	STO	GIRARD DRAW
CR2/476A	2/17/1939	41	71	8	NESW	USDA, FOREST SERVICE	THUNDER BASIN RESERVOIR NO. 45	PUO	STO	GIRARD DRAW
CR3/305A	1/31/1964	41	71	13	NENE	USDA, FOREST SERVICE	WILKINSON # F. S. 9-264-5 STOCK RESERVOIR	PU	STO	SCOTT'S DRAW
CR3/305A	1/31/1964	41	71	13	NENE	USDA, FOREST SERVICE	WILKINSON # F. S. 9-264-5 STOCK RESERVOIR	PUO	STO	SCOTT'S DRAW
CR6/372A	3/25/1968	41	71	14	NESE	USDA, FOREST SERVICE	MATHESON #F.S.9-228-10 STOCK RESERVOIR	PU	STO	DENNELL DRAW

Table S6-4. Surface Water Rights for the South Porcupine LBA Tract (Continued).

Permit	Priority	T	R	S	QQ	Applicant	Facility Name	Status	Uses	Source
CR6/372A	3/25/1968	41	71	14	NESE	USDA, FOREST SERVICE	MATHESON #F.S.9-228-10 STOCK RESERVOIR	PUO	STO	DENNEL DRAW
CR4/302A	3/20/1967	42	70	20	NESE	USDA, FOREST SERVICE	MACKEY #F.S.9-223-2 STOCK RESERVOIR	PU	STO	DURBIN DRAW
CR4/302A	3/20/1967	42	70	20	NESE	USDA, FOREST SERVICE	MACKEY #F.S.9-223-2 STOCK RESERVOIR	PUO	STO	DURBIN DRAW
CR4/252A	3/20/1967	42	70	21	NENW	USDA, FOREST SERVICE	MACKEY #F.S.9-223-3 STOCK RESERVOIR	PU	STO	
CR4/252A	3/20/1967	42	70	21	NENW	USDA, FOREST SERVICE	MACKEY #F.S.9-223-3 STOCK RESERVOIR	PUO	STO	
31/5/228R		42	70	28	SWSE			UNA		
27/2/199R		42	70	28	NWSE			UNA		
CR2/472A	7/30/1938	42	70	29	NWSE	USDA, FOREST SERVICE	THUNDER BASIN NO. 28 RESERVOIR	PU	STO	CORDER CREEK
CR2/472A	7/30/1938	42	70	29	SWNE	USDA, FOREST SERVICE	THUNDER BASIN NO. 28 RESERVOIR	PU	STO	CORDER CREEK
CR2/472A	7/30/1938	42	70	29	NESW	USDA, FOREST SERVICE	THUNDER BASIN NO. 28 RESERVOIR	PU	STO	CORDER CREEK
CR2/472A	7/30/1938	42	70	29	NESW	USDA, FOREST SERVICE	THUNDER BASIN NO. 28 RESERVOIR	PUO	STO	CORDER CREEK
CR6/370A	4/29/1969	42	70	31	NWNE	USDA, FOREST SERVICE	WILKINSON #F.S.9-264-7 STOCK RESERVOIR	PU	STO	CALLAN DRAW
CR6/370A	4/29/1969	42	70	31	NWNE	USDA, FOREST SERVICE	WILKINSON #F.S.9-264-7 STOCK RESERVOIR	PUO	STO	CALLAN DRAW
CR2/471A	2/17/1939	42	70	34	NWNW	USDA, FOREST SERVICE	THUNDER BASIN RESERVOIR NO. 29	PU	STO	PAYNE DRAW
CR3/307A	12/28/1964	42	70	34	NENE	USDA, FOREST SERVICE	TECKLA #F.S.9-298-2 STOCK RESERVOIR	PU	STO	SOUTH FORK PAYNE DRAW
CR2/471A	2/17/1939	42	70	34	NWNW	USDA, FOREST SERVICE	THUNDER BASIN RESERVOIR NO. 29	PUO	STO	PAYNE DRAW
CR3/307A	12/28/1964	42	70	34	NENE	USDA, FOREST SERVICE	TECKLA #F.S.9-298-2 STOCK RESERVOIR	PUO	STO	SOUTH FORK PAYNE DRAW
CR3/302A	8/8/1962	42	71	22	SWNW	USDA, FOREST SERVICE	MATHESON #228-2 STOCK RESERVOIR	PU	STO	PORCUPINE CREEK
CR3/302A	8/8/1962	42	71	22	NWSW	USDA, FOREST SERVICE	MATHESON #228-2 STOCK RESERVOIR	PU	STO	PORCUPINE CREEK
CR2/473A	7/30/1938	42	71	22	NENE	USDA, FOREST SERVICE	THUNDER BASIN NO. 32 RESERVOIR	PU	STO	GRAY CREEK
CR3/302A	8/8/1962	42	71	22	NWSW	USDA, FOREST SERVICE	MATHESON #228-2 STOCK RESERVOIR	PUO	STO	PORCUPINE CREEK
CR2/473A	7/30/1938	42	71	22	NENE	USDA, FOREST SERVICE	THUNDER BASIN NO. 32 RESERVOIR	PUO	STO	GRAY CREEK
CR9/373A	9/20/1971	42	71	23	NESW	USDA, FOREST SERVICE	MATHESON #F.S. 9-228-12 STOCK RESERVOIR	PU	STO	STUART DRAW
CR9/373A	9/20/1971	42	71	23	NESW	USDA, FOREST SERVICE	MATHESON #F.S. 9-228-12 STOCK RESERVOIR	PUO	STO	STUART DRAW
CR3/308A	8/8/1962	42	71	26	NENE	USDA, FOREST SERVICE	WILKINSON #264-2 STOCK RESERVOIR	PU	STO	WINDMILL DRAW
CR3/308A	8/8/1962	42	71	26	NENE	USDA, FOREST SERVICE	WILKINSON #264-2 STOCK RESERVOIR	PUO	STO	WINDMILL DRAW

Supplementary Information on the Affected Environment

Notes for Non Mining-related Surface Water Rights within 3 Miles of the South Porcupine LBA Tract

Search Conducted August 2, 2008

Surface Water Right Search Area:

Township	Range	Sections
40N	70W	5-6
40N	71W	1-3
41N	70W	3-10, 15-22, 27-33
41N	71W	1-18, 20-29, 33-36
42N	70W	19-21, 28-34
42N	71W	22-28, 32-36

Water rights were searched to the nearest quarter-quarter of each section listed above. Any part of a quarter-quarter that lies within three miles of the LBA tract is included.

Record suffixes are denoted as follows:

"A"	Adjudicated (finalized) rights; unless the right is a territorial appropriation, there will be a match in the reference column from one of the following permit types for the unadjudicated portion
"D"	Ditch or pipeline permit
"E"	Enlargement of a ditch or pipeline permit
"R"	Reservoir permit
"S"	Stock reservoir permit

Status Codes

ABA	Abandoned	A&C Abandoned and Cancelled
		ADJ Adjudicated
AME	Amended (moved)	DSC Description
CAN	Cancelled	EXP Expired
ELI	Eliminated	REJ Rejected
GST	Good standing	TRA Transferred
PU	Point of use non irrigation (not actual status)	IRR Irrigation
PUD	Point of diversion (not actual status)	STO Stock
PUO	Point of reservoir outlet (not actual status)	TEM Temporary
UNA	Unadjudicated	

Use Codes

DOM	Domestic
RES	Reservoir supply

Approximately 24 separate water rights with a status code of ABA, A&C, AME, CAN, ELI, EXP, REJ, or TRA have been eliminated from the search area listing provided above (including those belonging to the mining companies), as none of these use codes represent a valid current right.

The following quarter-quarters are designated by the "QQ" field:

1	NE $\frac{1}{4}$ NE $\frac{1}{4}$	9	NE $\frac{1}{4}$ SW $\frac{1}{4}$
2	NW $\frac{1}{4}$ NE $\frac{1}{4}$	10	NW $\frac{1}{4}$ SW $\frac{1}{4}$
3	SW $\frac{1}{4}$ NE $\frac{1}{4}$	11	SW $\frac{1}{4}$ SW $\frac{1}{4}$
4	SE $\frac{1}{4}$ NE $\frac{1}{4}$	12	SE $\frac{1}{4}$ SW $\frac{1}{4}$
5	NE $\frac{1}{4}$ NW $\frac{1}{4}$	13	NE $\frac{1}{4}$ SE $\frac{1}{4}$
6	NW $\frac{1}{4}$ NW $\frac{1}{4}$	14	NW $\frac{1}{4}$ SE $\frac{1}{4}$
7	SW $\frac{1}{4}$ NW $\frac{1}{4}$	15	SW $\frac{1}{4}$ SE $\frac{1}{4}$
8	SE $\frac{1}{4}$ NW $\frac{1}{4}$	16	SE $\frac{1}{4}$ SE $\frac{1}{4}$

S6-6 ALLUVIAL VALLEY FLOORS

Under the Surface Mining Control and Reclamation Act of 1977 (SMCRA), surface coal mining operations that would interrupt, discontinue, or preclude farming on alluvial valley floors (AVFs) is prohibited unless the affected AVF is undeveloped rangeland that is not significant to farming or if the affected AVF is of such small acreage that it would have a negligible impact on a farm's agricultural production. These restrictions also apply if AVFs that are downstream of the area proposed for mining would be affected by disruptions in streamflow. Provided Wyoming Department of Environmental Quality/Land Quality Division (WDEQ/LQD) determines that an AVF is not significant to agriculture, it can be disturbed by mining but must be restored as part of the reclamation process. For any designated AVF, regardless of its significance to agriculture, it must be demonstrated that the essential hydrologic functions of the AVF, both within and outside the mine area, will be protected.

WDEQ regulations define AVFs as unconsolidated stream laid deposits where water availability is sufficient for subirrigation or flood irrigation agricultural activities. Guidelines established by the Office of Surface Mining Reclamation and Enforcement (OSM) and WDEQ/LQD for the identification of AVFs require detailed studies of geomorphology, soils, hydrology, vegetation, and land use. These studies are used to identify: 1) the presence of unconsolidated stream-laid deposits, 2) the possibility for artificial flood irrigation, 3) past and/or present flood irrigation, and 4) apparent subirrigated areas and the possibility for natural flood irrigation. Areas that are identified as AVFs following these studies are evaluated for their significance to farming by WDEQ/LQD.

In a decision by the U.S. District Court for the District of Columbia, Civil Action Number 69-1144 (1980) (known as the Flannery Decision), the court noted that an AVF must satisfy both geologic criteria (unconsolidated stream laid deposits) and hydrologic criteria (water sufficient to sustain agriculture). Therefore, the court emphasized that the key to the existence of an AVF is the presence of both geologic and water availability characteristics, which together sustain agricultural activities.

The South Porcupine LBA Tract is situated at the drainage divides separating Porcupine Creek and Horse Creek watersheds. The northern and eastern portions of the tract drain north and east into Porcupine Creek via Mike's Draw and Roger's Draw, respectively. The southern portion of the tract drains south directly into Antelope Creek via Chyr Draw, and the western portion of the tract drains west into Horse Creek via Eagle Draw, ED-1 Draw, and Redtail Draw. All of these minor streams and draws within and adjacent to the LBA tract are typical for the region, in that flow events are ephemeral. Stream runoff is typically of short duration and exhibits temporal patterns similar to precipitation events. All ephemeral streams in the region show the characteristic extreme low-flow period from October through January. Flow events frequently result from snowmelt during the late winter and early spring. Although peak discharges from such events are generally small, the duration

and therefore the percentage of annual runoff volume can be considerable. During the spring, general storms (both rain and snow) are more frequent; hence increasing soil moisture and decreasing infiltration capacity, and subsequent rainstorms can result in higher runoff volumes and peak discharges.

Investigations have been conducted by PRC to determine the presence of AVFs within and immediately adjacent to the North Antelope Rochelle Mine permit area. The identification of AVFs was extended to areas adjacent to the current permit area, extending from ½ mile upstream of the current permit boundary on Porcupine Creek downstream on Porcupine Creek to its confluence with Antelope Creek, and along 4 miles of Antelope Creek adjacent to the railroad spur (PRC 2004). All but about 140 acres of the general analysis area for the South Porcupine LBA Tract lies within North Antelope Rochelle Mine's current permit area. The drainages within the South Porcupine LBA Tract were not fully investigated for the presence of an AVF because few or no stream laid deposits were found to be present along those drainages. Alluvial deposits have been mapped within Mike's Draw, but because the thickness and areal extent of these materials are very limited, they do not yield groundwater that can be put to beneficial use. No declared AVFs occur within the South Porcupine LBA Tract.

The results of PRC's AVF studies are contained in North Antelope Rochelle Mine's WDEQ/LQD mine permit (PRC 2004). Figure S6-2 depicts the approximate extent of stream laid deposits and declared AVFs along Porcupine and Antelope creeks within and adjacent to the mine's permit area. Refer to the discussion on the results of PRC's AVF investigations within Section S5-6.

S6-7 WETLANDS

The federal and state regulatory programs, which are administered by the U.S. Army Corps of Engineers (COE) and Wyoming Department of Environmental Quality/Land Quality Division (WDEQ/LQD), respectively, that require special permitting procedures to assure that after mining there are no net loss of wetlands are described in Section S1-7. A description of wetland types and Other Waters of the United States (OWUS) from a permitting perspective is also given in Section S1-7.

As described in Section S6-5.2, the South Porcupine LBA Tract is situated at the drainage divides separating the Porcupine Creek and Horse Creek watersheds. Figure 3-31 in the WAC DEIS depicts the surface water features within and adjacent to the South Porcupine LBA Tract. The northern and eastern portions of the tract drain north and east into Porcupine Creek via Mike's Draw and Roger's Draw, respectively. The southern portion of the tract drains south directly into Antelope Creek via Chyr Draw, and the western portion of the tract drains west into Horse Creek via Eagle Draw, ED-1 Draw, and Redtail Draw.

Formal jurisdictional wetland delineation surveys covering North Antelope Rochelle Mine's current permit area and some additional adjacent lands were completed by PRC and submitted to the COE for verification in 1996, 1997, 2000 and 2004. These wetland delineations and the COE's respective letters of verification summarizing the acreage figures of approved jurisdictional determinations are included in Appendix D-10 of the mine's permit (PRC 2004). According to the COE's latest (October 12, 2004) jurisdictional determination, there is a total of 219.71 acres of jurisdictional wetlands and OWUS within the mine's current permit area. Of those 219.71 acres, there are 77.84 acres of riverine wetlands, 26.99 acres of stockpond wetlands, 11.42 acres of riverine open water OWUS, 44.62 acres of stockpond open water OWUS, and 58.84 acres of ephemeral stream channel OWUS. There are also 20.92 wetland acres and 1.33 open water acres of non-jurisdictional playa/depressional features.

All but about 140 acres of the general analysis area for the South Porcupine LBA Tract lies within North Antelope Rochelle Mine's current mine permit area. Therefore, these previous wetland delineation surveys provide an estimate of the acreages of wetlands and OWUS that exist within the LBA tract's general analysis area, with the caveat that some wetland areas previously mapped may have been altered by coal bed natural gas (CBNG)-related water production within and upstream of the general analysis area. In addition to the effects from CBNG-related water discharges, the PRB has experienced a moderate to severe drought cycle that has persisted since 2000, which may have also altered previously-mapped wetland and OWUS areas. The boundaries of some wetlands and OWUS could, therefore, vary to a greater or lesser extent from the boundaries that existed at the time that the formal wetland delineation surveys were conducted.

Within the general analysis area for the South Porcupine LBA Tract (4,020.5 acres), there are an estimated 12.3 acres of jurisdictional wetlands and OWUS, which are primarily associated with Mike's Draw and the Horse Creek tributaries. Of those 12.3 acres, there are approximately 6.8 acres of riverine wetlands, approximately 0.4 acres of stockpond wetlands, approximately 0.2 acres of stockpond open water OWUS, and approximately 4.9 acres of ephemeral stream channel OWUS. There are also approximately 0.2 wetland acres of non-jurisdictional playa/depressional features. The vegetated wetland areas consist primarily of palustrine emergent herbaceous wet meadow or marsh along ephemeral stream channels and around ponds, playas and depressions, whereas the OWUS consist of dry ephemeral drainages and open water. Figure S6-3 depicts the wetlands mapping within the LBA tract's general analysis area taken from Appendix D-10 in North Antelope Rochelle Mine's permit (PRC 2004).

S6-8 SOILS

The South Porcupine tract lies within North Antelope Rochelle Mine's current mine permit area. Therefore, the entire general analysis area for the tract (4,020.5 total acres) has been covered by baseline soil surveys completed to an

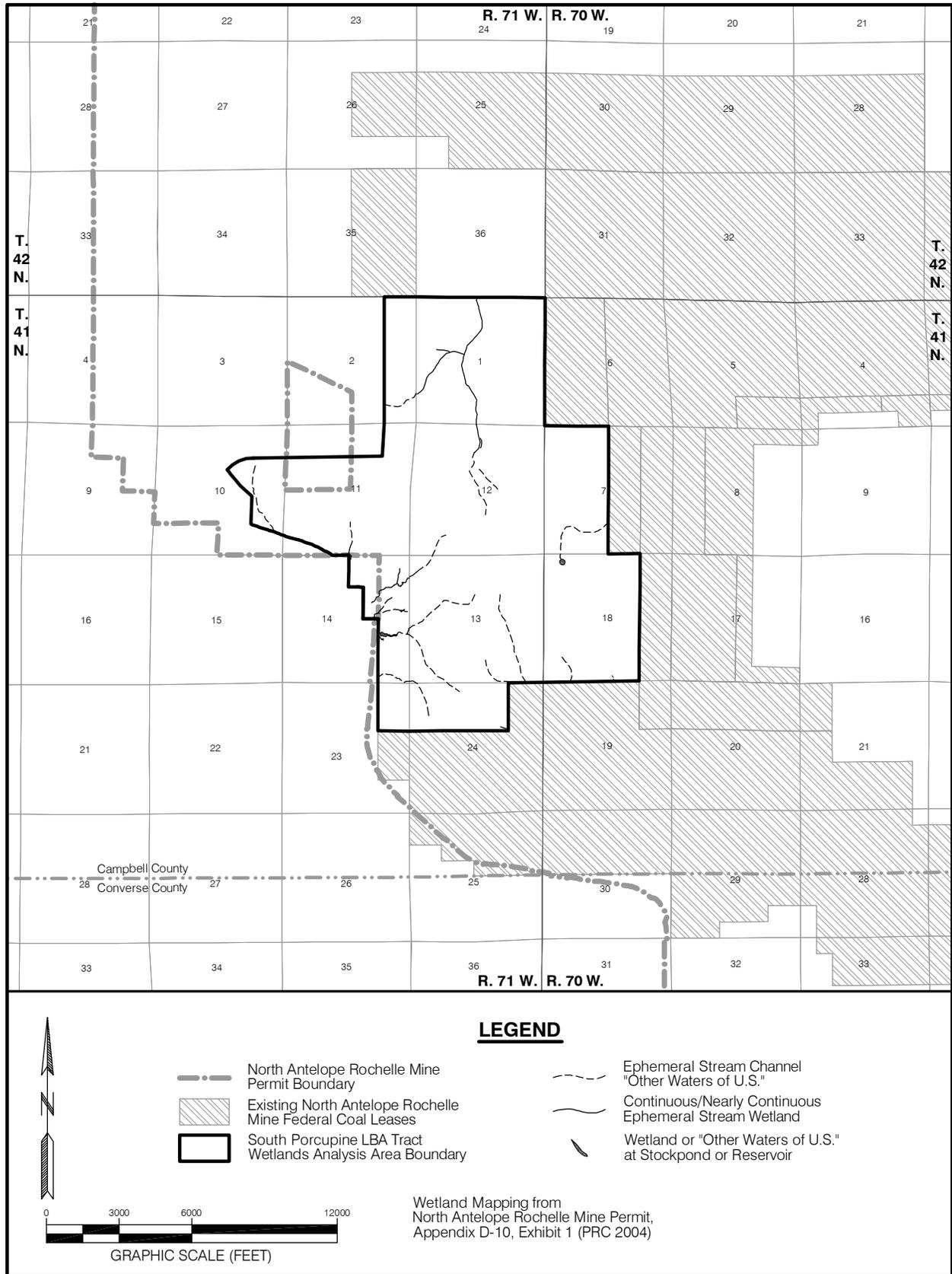


Figure S6-3. Wetlands Within the General Analysis Area for the South Porcupine LBA Tract.

Order 1-2 resolution in accordance with WDEQ/LQD Guideline No.1, which outlines required soils information necessary for a coal mining operation. Three soil surveys, which were completed in 1991, 1996 and 2001, cover most of the tract's general analysis area and are included in the mine's approved WDEQ/LQD mine permit. Only a small portion (approximately 60 acres) of the tract's general analysis area was not covered by these Order 1-2 soil surveys, although those acres are within the Burlington Northern Santa Fe & Union Pacific Railroad right-of-way and associated no-disturbance buffer zone and therefore would not be disturbed by future mining operations. In addition, the entire general analysis area for the South Porcupine tract has been covered by the Natural Resource Conservation Service (NRCS) Order 3 survey of southern Campbell County (Prink et al. 2004).

Soils vary depending upon where and how they were formed. Major factors involved in the formation of soils include whether or not the material was transported and how the material was weathered during transportation. Four primary soil formation processes causing different soil types were noted in this area: 1) those soils developing predominantly in thin residuum from sandstone or shale on upland ridges, 2) those soils developing predominantly in slopewash, colluvium, or alluvial fan deposits from mixed sources on gently sloping uplands, 3) those soils developing predominantly in coarse-textured alluvium or sandy eolian deposits on rolling uplands, and 4) soils developing in mixed stream laid alluvium on terraces and channels, and in fine-textured playa deposits in depressions and closed basins.

Soils within the general analysis area were identified by series, which consist of soils that have similar horizons in their profile. Horizons are soil layers having similar color, texture, structure, reaction, consistency, mineral and chemical composition, and arrangement in the profile. These inventories included field sampling and observations at the requisite number of individual sites, and laboratory analysis of representative collected samples. The soil depths and types in the general analysis area for the South Porcupine tract are similar to soils currently being salvaged and utilized for reclamation at the North Antelope Rochelle Mine and other mines in the eastern PRB.

The following is a list of the soil types delineated in the tract's general analysis area. The major soils series encountered within the soil survey areas were grouped according to the primary soil formation processes and are listed as follows:

Soils developing predominantly in thin residuum from sandstone or shale on upland ridges and hills

- Shingle-Rock Outcrop Complex 10-60 percent slopes
- Shingle-Samday-Rock Outcrop, 10-30 percent slopes
- Shingle clay loam, 10-30 percent slopes
- Taluce sandy loam, 10-30 percent slopes
- Taluce-Rock Outcrop, 10-60 percent slopes

- Ustic Torrfluvents-Lithic Ustic Torrfluvents-Rock Outcrop, 10-80 percent slopes

Soils developing predominantly in slopewash, colluvium, or alluvial fan deposits from mixed sources on gently sloping uplands

- Absted-Openay-Arvada Complex, 0-5 percent slopes
- Arvada (Absted) loam, 0-6 percent slopes
- Arvada loam, 0-6 percent slopes
- Bidman loam, 0-10 percent slopes
- Bidman loam, loamy substratum, 0-6 percent slopes
- Bidman-Parmleed (Briggsdale) Complex, 0-6 percent slopes
- Bidman-Ulm loams, 0-6 percent slopes
- Bowbac sandy loam, 0-6 percent slopes
- Bowbac sandy loam, 6-15 percent slopes
- Cambria clay loam, 6-15 percent slopes
- Cushman fine sandy loam, 6-15 percent slopes
- Forkwood loam, 0-6 percent slopes
- Forkwood-Ulm loams, 0-6 percent slopes
- Haverdad loam, 0-3 percent slopes
- Kishona clay loam, 0-6 percent slopes
- Parmleed clay loam, 6-15 percent slopes
- Parmleed loam, 0-6 percent slopes
- Parmleed (Briggsdale) loam, 0-6 percent slopes
- Parmleed (Briggsdale)-Cushman Complex, 0-6 percent slopes
- Parmleed-Renohill Complex, 3-15 percent slopes
- Renohill clay loams, 3-15 percent slopes
- Renohill-Worfka clay loam, 3-15 percent slopes
- Silhouette clay loam, 0-15 percent slopes
- Theedle loam, 6-15 percent slopes
- Ulm loam, 0-6 percent slopes
- Ulm loam, 1-8 percent slopes
- Ulm-Renohill clay loams, 0-6 percent slopes
- Worfka clay loam, 3-15 percent slopes
- Zigweid loam, 0-20 percent slopes

Soils developing predominantly in coarse-textured alluvium and sandy eolian deposits on rolling uplands

- Clarkelen, 0-3 percent slopes
- Decolney sandy loam, 0-6 percent slopes
- Decolney-Hiland fine sandy loam, 0-6 percent slopes
- Decolney-Hiland sandy loam, 0-6 percent slopes
- Hiland-Vonalee fine sandy loam, 0-6 percent slopes
- Hiland fine sandy loam, 0-6 percent slopes
- Hiland sandy loam, 0-6 percent slopes
- Keeline-Tulloch-Niobrara complex, 3-30 percent slopes
- Keeline loamy sands, 6-15 percent slopes

- Maysdorf fine sandy loam, 0-6 percent slopes
- Maysdorf sandy loam, 1-8 percent slopes
- Pugsley fine sandy loam, 6-15 percent slopes
- Rauzi sandy loam, 0-6 percent slopes
- Terro fine sandy loam, 4-10 percent slopes
- Terro-Taluce sandy loam, 6-30 percent slopes
- Tullock loamy sands, 6-30 percent slopes
- Turnercrest sandy loam variant, 6-20 percent slopes
- Vona very fine sandy loam, 6-15 percent slopes
- Vonalee sandy loam, 0-10 percent slopes

Drainage soils developing in mixed stream laid alluvium on terraces and channels and in fine-textured playa deposits in depressions and closed basins

- Aeric Haplaquipts, 6 percent slopes

Table S6-5 provides the extent of five depth classes of suitable topsoil within the soils analysis area.

Table S6-5. Acres of Topsoil Available for Reclamation Within the General Analysis Area for the South Porcupine LBA Tract.

Thickness of Suitable Topsoil (inches)	Acres	Percent
0	22.61	0.57
0 - 12	731.37	18.30
12 - 30	976.39	24.42
30 - 48	1,311.89	32.82
48 - 60	955.29	23.89
> 60	0.00	0.00
Total	3,997.55	100.00

Preliminary estimates indicate the average redistributed soil thickness would be about 24 inches (2.0 feet) across the entire reclaimed surface; however, soil redistribution depths would vary to mimic the premine conditions. This conservatively assumes that all acres within the analysis area would be disturbed. Areas of unsuitable soils include sites with high alkalinity, salinity, clay content, coarse fragments, and lands previously disturbed by other activities. The tract is expected to have adequate quantity and quality of soil for reclamation.

S6-9 VEGETATION

The South Porcupine LBA Tract lies within North Antelope Rochelle Mine's current mine permit area. Portions of the tract's general analysis area (4,020.5 total acres) were previously mapped and sampled in accordance with the current Wyoming Department of Environmental Quality/Land Quality Division

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(WDEQ/LQD) mine permitting requirements. The balance of the vegetation communities in this area were appraised and mapped in 2008 by BKS Environmental Associates, Inc. of Gillette, Wyoming. Only a small portion (approximately 23 acres) of the tract's general analysis area was not covered by these efforts, although those acres are within the Burlington Northern Santa Fe & Union Pacific Railroad right-of-way and associated no-disturbance buffer zone and therefore would not be disturbed by future mining operations.

Vegetation within the LBA tract's general analysis area consists of species common to eastern Wyoming. A total of seven native vegetation types have been identified and mapped within the LBA tract's general analysis area. Table S6-6 presents the acreage and percent of the general analysis area encompassed by each vegetation type. The vegetation types (and land use) include Upland Grassland, Breaks Grassland, Big Sagebrush Grassland, Meadow Grassland, Undeveloped Pastureland, Salt Grassland, and Playa Grassland. Disturbed and Water areas were also mapped.

Table S6-6. Vegetation Types Identified and Mapped Within the South Porcupine LBA Tract.

Vegetation Type	Acres	Percent of Area
Upland Grassland	2,226.11	55.69
Breaks Grassland	940.81	23.53
Big Sagebrush Grassland	658.28	16.47
Meadow Grassland	108.07	2.70
Disturbed	22.57	0.56
Undeveloped Pastureland	19.01	0.48
Salt Grassland	13.42	0.34
Playa Grassland	7.45	0.19
Water	1.84	0.05
Total	3,997.55	100.00

In terms of total acres of occurrence in the general analysis area, the predominant vegetation types are Upland Grassland (roughly 56 percent) and Breaks Grassland (roughly 24 percent), which occur primarily on the rolling upland terrain. Due to heavy rain in the spring and early summer 2007, there was an abundance of vegetation in the North Antelope Rochelle Mine area and the South Porcupine LBA Tract than has not been observed in recent years.

These types are described as follows:

The **Upland Grassland** vegetation type is characterized by the strong dominance of needleandthread (*Hesperostipa comata*) and upland sedges, especially threadleaf sedge (*Carex filifolia*) and needleleaf sedge (*Carex stenophylla*). Minor species of grass include blue grama (*Bouteloua gracilis*), western wheatgrass (*Elymus smithii*), prairie junegrass (*Koeleria macrantha*),

purple threeawn (*Aristida purpurea*), and Sandberg bluegrass (*Poa secunda*). Domesticated species such as crested wheatgrass (*Agropyron cristatum*) and smooth brome (*Bromus inermis*) are also present. Introduced annual grasses, Japanese brome (*Bromus japonicus*) and cheatgrass (*Bromus tectorum*), are also present.

As in the Big Sagebrush vegetation type, forbs do not contribute a major portion of the ground cover. Besides scarlet globemallow (*Sphaeralcea coccinea*), which is also frequent in Big Sagebrush, more commonly encountered perennial forbs include hairy goldenaster (*Heterotheca villosa*), American vetch (*Vica americana*), rush skeleton weed (*Lygodesmia juncea*), scarlet gaura (*Gaura coccinea*) and field chickweed (*Cerastium arvense*). Plains prickly pear cactus (*Opuntia polyacantha*) is frequently present; however, it is less abundant than in the Big Sagebrush vegetation type. The native subshrub fringed sagewort (*Artemisia frigida*) is commonly present. Scattered individuals of Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*) may be present on some sites.

Environments in which this vegetation type occurs are upland, mostly convex sites that are relatively wind-exposed and are more often snow free. Soils are usually coarser in texture than in the Big Sagebrush type.

In the **Breaks Grassland** vegetation mapping units, erosional loss of soil exceeds its formation rate and the result is a "badlands" surface in which plant cover is sparser than in the Upland Grassland and Big Sagebrush Grassland vegetation types. Although the total vegetation cover on these sites is lower, the diversity of vascular plant species is greater. Grasses present may include most of those found in the more extensive upland types described in the Upland Grassland and Big Sagebrush Grassland. In addition, such species as bluebunch wheatgrass (*Elymus spicatus*) and Indian ricegrass (*Achnatherum hymenoides*) are present. Forbs comprise slightly greater cover than elsewhere, and they are much more conspicuous. They may include species such as Louisiana sagewort (*Artemisia ludoviciana*), scarlet gaura, Hooker sandwort (*Eremogone hookeri*), scarlet globemallow, Hoods phlox (*Phlox hoodii*), hairy goldenaster, and slimflower scurfpea (*Psoraleidium tenuifolium*). Sub-shrubs are diverse also and often include birdsfoot sagewort (*Artemisia pedatifida*), winterfat (*Krascheninnikovia lanata*), and broom snakeweed (*Gutierrezia sarothrae*) along with the widespread fringed sagewort. Shrubs include Wyoming big sagebrush, four-wing saltbush (*Atriplex canescens*), and rubber rabbitbrush (*Ericameria nauseosus*).

The **Big Sagebrush Grassland** vegetation type is characterized by moderate to heavy presence of Wyoming big sagebrush in addition to the upland grasses of the region such as needleandthread, blue grama, and prairie junegrass. The introduced forage plant crested wheatgrass is frequently present as a minor grass, having been interseeded in some locations and having spread in other areas. Introduced winter annual grasses, Japanese brome and cheatgrass may be variably abundant depending on the late season moisture of the previous

year or early in the current year. Plains prickly pear cactus is frequently a large component of this vegetation cover, particularly in dry years.

Although forbs are a minor component, the most consistent species present are scarlet globemallow, American vetch, Hoods phlox, and slimflower scurfpea. The native sub-shrub fringed sagewort is usually present in small amounts.

Narrow, relatively moist environments associated with shallow depressions and swales that hold runoff water from uplands are included in the Big Sagebrush vegetation type. Such areas not only have supplemental water but also receive soil transported from the nearby convex sites and thereby often possess greater topsoil depths. The result is higher productivity of grasses such as western wheatgrass and needleandthread.

The presence of sagebrush is often related to several topographic and environmental factors. Sagebrush areas are generally concave surface topography or leeward sides of hills and contain generally finer-textured soils. Sagebrush often enhances the accumulation of snow in winter, allows greater effective soil moisture that allows deeper soil development.

The **Meadow Grassland** vegetation type is confined to ephemeral drainage bottoms and terraces. The vegetation in this type is very similar to the Upland Grassland. This vegetation type is characterized by a strong dominance of western wheatgrass. Other species that may occur include crested wheatgrass, bluebunch wheatgrass, common spikerush (*Eleocharis acicularis*), foxtail barley (*Hordeum jubatum*), blue grama, purple threeawn, needleandthread, prairie chordgrass (*Spartina pectinata*), scarlet gaura, dandelion (*Taraxacum officinale*), prairie coneflower (*Ratibida columnifera*), Louisiana sagewort, and American vetch. Shrubs include Wyoming big sagebrush, four-wing saltbush and silver sagebrush (*Artemisia cana*).

With the abundance of both CBNG development and traditional oil and gas extraction in the area, networks of **Disturbed Area** are present that overlay much of the Big Sagebrush and Upland Grassland vegetation types. Disturbance consists primarily of major roads and well pads that are stabilized with gravel or reclaimed. There are also small tank batteries and numerous miles of pipeline disturbance that, to varying degrees, are recovering vegetation cover.

The **Undeveloped Pastureland** vegetation type is located in the western portions of the South Porcupine tract. This vegetation type is described as previously developed land that was used for livestock grazing. This type has not been maintained and has been allowed to return to its naturally undeveloped state. Crested wheatgrass is the dominant plant species in this vegetation type. These areas probably were originally part of the Big Sagebrush vegetation type. The purpose of the conversion in general has been to elicit greater livestock forage production capability and eliminate non-palatable species such as sagebrush and cactus. With the passage of time, native plants

including sagebrush and cactus as well as most of the native grasses return slowly and the area begins to resemble the Big Sagebrush Grassland vegetation type again. The areas included in this mapping unit within this resource report area are dominated by crested wheatgrass.

The **Salt Grassland** vegetation type is confined to locations where the soil parent materials is apparently derived from a stratum with higher inherent salt content and is located near minor drainages or areas with a seasonally high water table. As a consequence, the Salt Grassland vegetation type resembles Big Sagebrush Grassland with less shrub cover and is instead co-dominated by inland saltgrass, western wheatgrass and blue grama. In some slightly concave sites, the inland saltgrass (*Distichlis stricta*) cover is dense and may be accompanied by substantial amounts of alkali sacaton (*Sporobolus airoides*). Salt efflorescence is present on the soil surface in occasional portions of this type.

The term **Playa Grassland** is applied, as is the custom in the Northern Great Plains, to relatively small interior draining sites in which runoff from adjacent gentle slopes accumulates along with transported clay-size soil particles. Over time, the build-up of fines in the bottoms of these depressions produces a very heavy soil that supports nearly pure stands of western wheatgrass, a grass particularly well-adapted to heavy clay soil. Other species that may occur in minor amounts include Sandberg bluegrass, foxtail barley, common spikerush (*Eleocharis palustris*), slender spikerush, scarlet globemallow, American vetch, and dandelion.

Open **Water** is, to a large degree, a recent development related to the onset of CBNG development in the area. Extracted groundwater from coal seams has largely been liberated on the surface within ephemeral drainages and/or dams.

S6-10 WILDLIFE

S6-10.1 Wildlife Resources

Background information on wildlife in the vicinity of the general analysis area for the South Porcupine LBA Tract was obtained from several sources, including the South Powder River Basin Coal FEIS (BLM 2003), the original baseline inventories for the North Antelope and Rochelle mines prior to their merger, annual wildlife monitoring and periodic wildlife baseline reports submitted by the mine to the WDEQ/LQD from 1984 through 2007, the West Antelope II Coal Lease Application FEIS (BLM 2008), records from the WGFD, BLM, USFWS and USFS, and personal contact with biologists from those four agencies. The South Porcupine LBA Tract wildlife study area has been included in annual wildlife monitoring efforts for the nearby North Antelope Rochelle Mine, Antelope Mine, and/or Black Thunder Mine for many years. Consequently, site-specific data for the South Porcupine tract were available from several sources, including previous WDEQ/LQD mine permit applications and long-term annual wildlife monitoring reports for the applicant mine and

adjacent properties. Powder River Coal, LLC (PRC) commissioned Thunderbird, Jones & Stokes (J&S) to conduct baseline wildlife surveys from 2006 through early 2008 expressly for the South Porcupine LBA Tract. These surveys covered the tract's general analysis area, and surveys for selected wildlife information such as raptor nests, sage-grouse leks, and prairie dog colonies included in a 2-mile perimeter surrounding the general analysis area.

The LBA tract and adjacent areas consist primarily of uplands. The topography of the general analysis area, like the areas within the adjacent mines' existing permit areas, is relatively subdued. The landscape consists primarily of gently rolling terrain broken by minor drainages and internally-drained playa areas. Drainage densities are quite low, and the playas are common topographic and hydrologic features. Much of the land surface does not contribute runoff to any stream, and playas have formed in the lowest portion of these non-contributing drainage areas. Of the six LBA tracts included in this analysis, the topography of the South Porcupine tract is somewhat unique due to the presence of more pronounced gullies and deeper tributary draws that are formed by the headwaters of Antelope, Horse, and Porcupine creeks. Land surface elevations in the tract's general analysis area range from 4,675 to 4,950 feet, and approximately 51 percent of the land surface area has a slope of less than 5 percent. The average land surface slope over the entire general analysis area for the tract is approximately 6.2 percent. Surface mine lands, both active and reclaimed, dominate the landscape north, south and east of the South Porcupine LBA Tract.

Based on total acreages, the predominant vegetation types in the general analysis area for the South Porcupine tract are Upland Grassland (55.7 percent) and Breaks Grassland (23.5 percent), both of which occur primarily on the rolling upland terrain. Other habitat types common to South Porcupine include Salt Grassland, Playa Grassland, Disturbed, and Water areas. Disturbed areas are characterized primarily by a network of major roads and well pads that are stabilized with gravel or reclaimed. There are also small tank batteries and numerous miles of pipeline disturbance that, to varying degrees, are recovering vegetation cover. Those disturbances are associated with both CBNG and traditional oil and gas development in the area, though similar existing disturbance has occurred from ongoing surface mining activities. No designated crucial or unique wildlife habitats are present.

The South Porcupine tract is located at the headwaters of tributaries to Antelope, Horse, and Porcupine creeks. With the exception of about 60 acres, the entire BLM study area for the South Porcupine LBA Tract is within the existing North Antelope Rochelle Mine's permit area. The North Antelope Rochelle Mine disturbs Porcupine Creek and several of its tributaries as well as several of Antelope Creek's unnamed ephemeral tributaries. Numerous small in-channel reservoirs/stock ponds are scattered throughout the general Wright analysis area. Most of these stock ponds are many decades old and are constructed with earthen berms or dams. There are also a number of playas within the area. Those water bodies provide short-term habitat of variable

quality for migrating waterfowl, shorebirds, and other aquatic species (birds, fish, herptiles) during spring but are less reliable, and often dry, during other seasons.

S6-10.2 Big Game

The two big game species that are common in suitable habitat throughout the general analysis area for the South Porcupine tract are pronghorn (*Antilocapra americana*) and mule deer (*Odocoileus hemionus*). Elk (*Cervus elaphus*) wander from the protection of the Rochelle Hills to forage in native and reclaimed grasslands in the vicinity of the LBA tract, but spend most of the year in the Rochelle Hills located east and northeast of the general analysis area. White-tailed deer (*Odocoileus virginianus*) are transients in the area due to their preference for riparian woodlands and irrigated agricultural lands. No crucial big game habitat or migration corridors are recognized by the WGFD in this area.

No significant differences in the occurrence of big game and their habitats within the general analysis areas for the North Porcupine and South Porcupine LBA Tracts are known to exist (refer to Section S5-10.2). The South Porcupine tract is located within the WGFD Cheyenne River Pronghorn Herd Unit (Hunt Area 27) and the Thunder Basin Mule Deer Herd Unit (Hunt Area 10).

S6-10.3 Other Mammals

With the exception of the number and locations of prairie dog colonies, no significant differences in the occurrence of small- and medium-sized mammals and their habitats within the general analysis areas for the North Porcupine and South Porcupine LBA Tracts exist (refer to Section S5-10.3). Qualified wildlife biologists with J&S have mapped the current acreage of prairie dog colonies in the vicinity of the North Antelope Rochelle Mine by walking the perimeter of colonies and delineating them using hand-held global positioning system (GPS) receivers and/or by visually mapping them on topographic maps.

Surveys conducted within 2 miles of the general analysis area for the South Porcupine LBA Tract located ten prairie dog colonies that cover a total of approximately 476.3 total acres (the colonies are depicted on Figure 3-37 in the WAC DEIS). No prairie dog colonies were present within the general analysis area itself in 2007. The largest colony was approximately 345.3 acres; this colony is within both the North and South Porcupine wildlife survey areas. The remaining nine colonies were all less than 40 acres, with an average size of about 15 acres.

S6-10.4 Raptors

Raptor species that are known or expected to occur in suitable habitat and commonly nest in the general Wright analysis area are discussed in Section S5-10.4.

The North Antelope Rochelle and Antelope mines' raptor monitoring areas include their respective permit areas and a surrounding 1- or 2-mile perimeter. Due to the proximity of the South Porcupine LBA Tract to those adjacent mines, the entire South Porcupine tract's general analysis area and most of the tract's wildlife survey area have been included in annual monitoring surveys since the early 1980s. Previous information regarding nests, including their historical use by nesting raptors is available in the annual wildlife reports for the North Antelope Rochelle and Antelope mines. A total of seven raptor species have nested within the South Porcupine tract's wildlife survey area. Six of the seven species have regularly nested within this area since annual monitoring began. Swainson's hawks began nesting in the area more recently, and have been a consistent breeder ever since.

Surveys completed in 2007 by J&S identified a total of 32 intact raptor nests within the wildlife survey area for the South Porcupine LBA: 12 ferruginous hawk nests (9 territories), four burrowing owl nest sites (four territories), four Swainson's hawk nests (four territories), two red-tailed hawk nests (two territories), two great horned owl nests (two territories), and eight nests that have been used by multiple raptor species (refer to Figure 3-37 in the WAC DEIS for nest locations). Six of the 32 intact nests were within the general analysis area itself, all six of which (three ferruginous hawk, one Swainson's hawk, and two multiple species nests) were present within the LBA tract as applied for. No additional intact nests were present on the additional lands evaluated by BLM under Alternative 2 or the ¼-mile disturbance buffer. Thirteen of the 32 intact nests encompassed by the South Porcupine wildlife survey area were active during 2007; three active nests were within the general analysis area.

S6-10.5 Upland Game Birds

Upland game bird species that have historically been documented in the general Wright analysis area are discussed in Section S5-10.5. With the exception of sage-grouse habitat use and sage-grouse lek descriptions, no significant differences in the upland game bird discussion within the North Porcupine and South Porcupine LBA tracts' general analysis areas are known to exist.

The historical and recently conducted sage-grouse surveys conducted by the North Antelope Rochelle Mine, including the baseline survey conducted by J&S in 2007 specific to this EIS, are also discussed in Section S5-10.5.

The South Porcupine tract is dominated by grassland habitat (approximately 56 percent of the general analysis area is covered by upland grassland and 24 percent of the general analysis area is covered by breaks grassland). No sage-grouse leks have been documented within the wildlife study area for the South Porcupine LBA Tract. The Payne lek, which is nearly 5 miles to the northeast, is the closest sage-grouse lek to the South Porcupine LBA Tract. Figure 3-37

in the WAC DEIS depicts the locations of the closest leks to this proposed lease area, all of which are discussed in Section S5-10.5.

S6-10.6 Migratory Bird Species of Management Concern in Wyoming

Surveys conducted by the North Antelope Rochelle Mine for migratory birds of concern are discussed in Section S5-10.6. The general analysis area for the South Porcupine LBA Tract is largely within the North Antelope Rochelle Mine's existing mine permit area and has therefore been included in annual surveys for avian species of concern since at least 1984.

Thirty of the 40 listed Level I and II species have historically been observed within the northeastern Wyoming (Latilong 13) and 19 species have been recorded in the vicinity of the South Porcupine LBA Tract (Table S6-7). The USFWS considers Level I species as in need of conservation action, which includes having a monitoring and mitigation plan for those birds. The 15 Level I and II species that historically have been recorded, or are suspected of nesting in the South Porcupine tract's general analysis area include the McCown's longspur, ferruginous hawk, Brewer's sparrow, Swainson's hawk, short-eared owl, burrowing owl, upland sandpiper, lark bunting, chestnut-collared longspur, sage thrasher, grasshopper sparrow, loggerhead shrike, vesper sparrow, lark sparrow, and merlin. The other non-nesting species documented less often and that have only been observed as migrants in the area include the long-billed curlew, peregrine falcon, mountain plover, and bald eagle. Peregrine falcons have been observed but nesting has not been documented in Latilong 13 (Cerovski et al. 2004). Only one confirmed nesting attempt by mountain plovers, which was an active nest discovered inside the current North Antelope Rochelle Mine permit area in 2004, fledging two young. The survey area, which include the mine's permit area and a ½-mile perimeter, is inventoried for suitable mountain plover habitat annually. No other mountain plovers have been documented in this area or the entire general Wright analysis area before or after that year.

The remaining migratory bird species of management concern are not likely to occur in the South Porcupine tract's general analysis area. Suitable habitat that would support these species like coniferous woodlands, large expanses of native prairie, lush riparian corridors, and large persistent bodies of water are scarce if not absent on the general analysis area.

S6-10.7 Other Species

Refer to Section S5-10.7.

S6-11 LAND USE AND RECREATION

Approximately 54 percent of the surface estate on the South Porcupine LBA Tract as applied for and the area added under Alternative 2 (the BLM study area) is privately owned and 46 percent of the tract is owned by the U.S.

Supplementary Information on the Affected Environment

Table S6-7. Migratory Bird Species of Management Concern in Wyoming: Their Regional Status, and Expected and Actual Occurrence on or Near the South Porcupine LBA Tract.

Species¹ (Scientific Name)	Seasonal Status/Breeding Records in Northeastern WY¹	Historical Occurrence in the Vicinity of the LBA²	Occurrence and Status in the LBA in 2007³
LEVEL I (species need conservation action)			
Mountain plover (<i>Charadrius montanus</i>)	Summer/Observed	Uncommon	None
Greater sage-grouse (<i>Centrocercus urophasianus</i>)	Resident/Breeder	Not Expected	None
McCown's longspur (<i>Calcarius mccownii</i>)	Summer/Breeder	Uncommon	None
Baird's sparrow (<i>Ammodramus bairdii</i>)	Summer/Observed	Not Expected	None
Ferruginous hawk (<i>Buteo regalis</i>)	Resident/Breeder	Common	None
Brewer's sparrow (<i>Spizella breweri</i>)	Summer/Breeder	Uncommon	None
Sage sparrow (<i>Amphispiza belli</i>)	Summer/Breeder	Not Expected	None
Swainson's hawk (<i>Buteo swainsoni</i>)	Summer/Breeder	Uncommon	Breeder
Long-billed curlew (<i>Numenius americanus</i>)	Summer/Observed	Uncommon	None
Short-eared owl (<i>Asio flammeus</i>)	Resident/Breeder	Uncommon	None
Peregrine falcon (<i>Falco peregrinus</i>)	Resident/Observed	Rare	None
Burrowing owl (<i>Athene cunicularia</i>)	Summer/Breeder	Uncommon	None
Bald eagle (<i>Haliaeetus leucocephalus</i>)	Resident/Breeder	Common	None
Upland sandpiper (<i>Bartramia longicauda</i>)	Summer/Breeder	Uncommon	None
LEVEL II (species need monitoring)			
Cassin's kingbird (<i>Tyrannus vociferans</i>)	Never Recorded	Not Expected	None
Lark bunting (<i>Calamospiza melanocorys</i>)	Summer/Breeder	Common	Common Breeder
Dickcissel (<i>Spiza americana</i>)	Summer/Observed	Not Expected	None
Chestnut-collared longspur (<i>Calcarius ornatus</i>)	Summer/Breeder	Uncommon	None
Black-chinned hummingbird (<i>Archilochus alexandri</i>)	Never Recorded	Not Expected	None
Pygmy nuthatch (<i>Sitta pygmaea</i>)	Never Recorded	Not Expted	None
Marsh wren (<i>Cistothorus palustris</i>)	Never Recorded	Not Expected	None
Western bluebird (<i>Sialia mexicana</i>)	Summer/Breeder	Not Expected	None
Sage thrasher (<i>Oreoscoptes montanus</i>)	Summer/Breeder	Uncommon	None
Grasshopper sparrow (<i>Ammodramus savannarum</i>)	Summer/Breeder	Uncommon	None
Bobolink (<i>Dolichonyx oryzivorus</i>)	Summer/Observed	Not Expected	None
Common loon (<i>Gavia immer</i>)	Summer/Observed	Not Expected	None

Supplementary Information on the Affected Environment

Table S6-7. Migratory Bird Species of Management Concern in Wyoming: Their Regional Status, and Expected and Actual Occurrence on or Near the South Porcupine LBA Tract (Continued).

Species¹ (Scientific Name)	Seasonal Status/Breeding Records in Northeastern WY¹	Historical Occurrence in the Vicinity of the LBA²	Occurrence and Status in the LBA in 2007³
Black-billed cuckoo (<i>Coccyzus erythrophthalmus</i>)	Never Recorded	Not Expected	None
Red-headed woodpecker (<i>Melanerpes erythrocephalus</i>)	Summer/Breeder	Not Expected	None
Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	Summer/Observed	Not Expected	None
Eastern screech-owl (<i>Megascops asio</i>)	Never Recorded	Not Expected	None
Western screech-owl (<i>Megascops kennicottii</i>)	Never Recorded	Not Expected	None
Western scrub-jay (<i>Aphelocoma californica</i>)	Never Recorded	Not Expected	None
Loggerhead shrike (<i>Lanius ludovicianus</i>)	Summer/Breeder	Uncommon	Potential Breeder
Vesper sparrow (<i>Poocetes gramineus</i>)	Summer/Breeder	Common	Common Breeder
Lark sparrow (<i>Chondestes grammacus</i>)	Summer/Breeder	Uncommon	None
Ash-throated flycatcher (<i>Myiarchus cinerascens</i>)	Summer/Observed	Not Expected	None
Bushtit (<i>Psaltriparus minimus</i>)	Never Recorded	Not Expected	None
Merlin (<i>Falco columbarius</i>)	Resident/Breeder	Uncommon	None
Sprague's pipit (<i>Anthus spragueii</i>)	Never Recorded	Not Expected	None
Barn owl (<i>Tyto alba</i>)	Summer/Observed	Not Expected	None

¹ Latilong 13 - Atlas of Birds, Mammals, Amphibians, and Reptiles in Wyoming (Cеровski et al. 2004).

² Historical Occurrence/Status in the South Porcupine LBA survey area is based on records from annual monitoring conducted at the North Antelope Rochelle Mine since 1984.

³ Sighting records were derived from actual occurrence on or within ½ mile of the LBA tract and the Alternative 2 tract configuration area or from observations related to North Antelope Rochelle Mine's baseline and annual monitoring.

Department of Agriculture and administered by the Forest Service (USFS). The surface ownership of the South Porcupine tract is shown in detail in Figure 3-45 and the distribution of surface ownership is given in Table 3-14 in the WAC DEIS document. Livestock grazing is the primary land use within the LBA tract as applied for and the area added under Alternative 2, while oil and gas production, wildlife habitat, and recreation are secondary land uses for the private lands. All but approximately 60 acres of the BLM study area for the South Porcupine tract lies within North Antelope Rochelle Mine's existing mine permit area and is therefore not accessible to the general public for recreational activities.

Areas of disturbance within and near the South Porcupine tract include roads, oil and gas wells and associated production facilities (including numerous buried pipelines), surface mine-related facilities and activities, and activities associated with ranching operations. The Antelope Road (County Road 4), a paved improved road that runs north-south, borders and crosses the South Porcupine tract. The primary access road to the North Antelope Rochelle Mine,

which is accessed from the Antelope Road, also crosses the LBA tract. Several unnamed two-track roads also traverse and provide public and private access within and near the proposed lease area. The Burlington Northern Santa Fe & Union Pacific (BNSF & UP) railroad right-of-way (ROW) borders the southwestern edge of the LBA tract as applied for, and overlies portions of the lands added under Alternative 2 (Figure 3-1 in the WAC DEIS document).

The oil and gas estate within the South Porcupine LBA Tract as applied for and the area added under Alternative 2 is federally and privately owned, with the majority (approximately 96 percent) being federally owned. The ownership of the South Porcupine oil and gas estate is shown in the WAC DEIS document on Figure 3-51. A listing of the current federal oil and gas lessees of record is included as Table 3-20 in the WAC DEIS document.

According to the Wyoming Oil and Gas Conservation Commission (WOGCC) records as of May 14, 2008, there was one conventional gas well on lands included in the South Porcupine LBA Tract as proposed and the lands added under Alternative 2 that was producing and two oil wells that had been plugged and abandoned (refer to Figure 3-51 in the WAC DEIS document for locations). The most recent conventional gas well in the general analysis area was drilled in 1981 (WOGCC 2008a). Conventional oil and gas wells capable of production within the BLM study area for the South Porcupine tract are listed in Appendix E of the WAC DEIS document.

According to the WOGCC records as of May 14, 2008, 10 coal bed natural gas (CBNG) wells were producing and two CBNG wells were shut-in within the lands encompassed by the South Porcupine LBA Tract as applied for and the lands added under Alternative 2 (refer to Figure 3-51 in the WAC DEIS document for locations). Extensive CBNG development has occurred on lands north, south, and west of the tract. CBNG wells capable of production within the BLM study area for the South Porcupine LBA Tract are listed in Appendix E of the WAC DEIS document.

Refer to the discussion on mining and recreational land uses in the general Wright analysis area within Section S5-11.

S2-12 CULTURAL RESOURCES

The entire general analysis area for the South Hilight Field LBA Tract has been intensively surveyed at a Class III level. Cultural resource inventories in this area began in the early 1980s and continued with numerous projects associated with oil and gas field development as well as surface mining operations throughout the 1990s and 2000s. Thunder Basin Coal Company, LLC (TBCC) contracted with GCM Services, Inc., of Butte, Montana to perform Class I inventories of all previous surveys and Class III surveys of all unsurveyed areas within the general analysis area for the South Hilight Field LBA Tract. GCM completed the Class III level inventory of the tract's general analysis area in the summer of 2007 (reports not yet accessioned by the

SHPO). The 2007 survey included a total of approximately 6,840 acres within the combined general analysis areas for the North, South and West Hilight Field LBA Tracts.

A review of the Wyoming Cultural Resource Information System (WYCRIS) produced information from a total of 24 large-scale (40 acres or larger) Class III cultural resource inventory projects that have been conducted within the general analysis areas for the South and West Hilight Field tracts. Seventeen large-scale studies encompass the South Hilight Field tract and 16 studies encompass the West Hilight Field tract (many of these studies occur in both tracts). In addition, several small-scale inventories were reported in these areas. Small-scale inventories include seismic grids, well pads, access routes, utility corridors and drill holes associated with oil and gas development. These small projects were not listed in the large block inventory summary table (Table S6-8); however, any sites associated with small projects are included on the site summary table (Table S6-9).

Within the general analysis areas for the North, South and West Hilight Field tracts, a total of 147 cultural properties (sites) have been recorded. Of these, 110 sites were previously recorded and were identified during record searches. An additional 37 sites were located during the 2007 Class III inventories of the remaining unsurveyed lands. The State Historic Preservation Office (SHPO) has not made National Register of Historic Places (NRHP) eligibility determinations for these sites at this time. Some of the cultural site's eligibility determinations are pending remote sensing (magnetometer surveys) work and formal testing.

A total of 21 cultural sites have been documented in the general analysis area for the South Hilight Field tract. Of these, 14 are prehistoric and seven are historic. Prehistoric sites consist primarily of lithic scatters and campsites. Historic sites consist primarily of trash dumps. Twelve of the prehistoric sites and four of the historic sites have been determined *not eligible* for the NRHP by the SHPO. Two of the prehistoric sites and three historic sites are considered *unevaluated* or not reviewed for eligibility by the SHPO. There are no NRHP-*eligible* sites documented in the general analysis area for the South Hilight Field LBA Tract at this time. Table S2-9 lists the cultural sites, the site type (prehistoric or historic), the NRHP status (eligible, not eligible, or undetermined), the recommended action, and the recorder's affiliation.

Supplementary Information on the Affected Environment

Table S6-8. Summary of Cultural Resource Inventories in the General Analysis Area for the South Porcupine LBA Tract.

Survey Location	Class III Survey – Survey Organization, Date
T41N, R70W, Section 7, NE¼NW¼	Class III Inventory of Areas Adjacent to the Rochelle and (North) Antelope Mines - Mariah Associates, July 1991
Section 7, NW¼NW¼, S½NW¼	Class III Inventory of Areas Adjacent to the Rochelle and (North) Antelope Mines - Mariah Associates, July 1991
Section 7, N½SW¼	Tract B Class III Inventory – GCM Services, September 1993
Section 7, S½SW¼	Tract C Class III Inventory – GCM Services, September 1993
Section 18, W½, W½SE¼	Tract C Class III Inventory – GCM Services, September 1993
Section 18, W½NE¼	Class III Inventory of Areas Adjacent to the Rochelle and (North) Antelope Mines - Mariah Associates, July 1991
T41N, R71W, Section 1, All	Tract B Class III Inventory – GCM Services, September 1993
Section 2, E¼	Tract B Class III Inventory – GCM Services, September 1993
Section 2, E½NW¼NE¼	Tract C Class III Inventory – GCM Services, September 1993
Section 10, SE¼NE¼, NE¼SE¼, N½SE¼SE¼ (partial)	Tract L Class III Inventory – GCM Services, June 2004
Section 11, NE¼NE¼	Tract B Class III Inventory – GCM Services, September 1993
Section 11, S½N½, N½SW¼, S½SW¼ (partial), SE¼	Tract L Class III Inventory – GCM Services, June 2004
Section 12, N¼, SE¼NE¼, NE¼SE¼	Tract B Class III Inventory – GCM Services, September 1993
Section 12, SW¼NE¼	Tract C Class III Inventory – GCM Services, September 1993
Section 12, S½NW¼, SW¼, NW¼SE¼, S½SE¼	Tract L Class III Inventory – GCM Services, June 2004

Supplementary Information on the Affected Environment

Table S6-8. Summary of Cultural Resource Inventories in the General Analysis Area for the South Porcupine LBA Tract (Continued).

Survey Location	Class III Survey - Survey Organization, Date
T41N, R71W, Section 13, All	Tract M Class III Inventory - GCM Services, June 2004
Section 14, E¼	Tract M Class III Inventory - GCM Services, June 2004
Section 14, NW¼NE¼, E½SW¼NE¼	Tract M1Class Inventory - GCM Services, November 2005
Section 23, E½NE¼	Tract M Class III Inventory - GCM Services, June 2004
Section 24, W½NE¼ (partial), NE¼NW¼ (partial), NW¼NW¼, N½SW¼NW¼, N½SE¼NW¼ (partial)	Tract M Class III Inventory - GCM Services, June 2004
Section 24, W½NE¼ (partial), NE¼NW¼ (partial), N½SE¼NW¼ (partial)	Tract C Drilling Areas Class III Inventory - GCM Services, July 1994

Table S6-9. Cultural Resource Sites in the General Analysis Area for the South Porcupine LBA Tract.

Prehistoric sites:	
Lithic Scatter:	48CA2789, 48CA2790, 48CA3585, 48CA3588
Camp & Lithic Scatter:	48CA1276, 48CA2867
Stone Circle:	48CA132
Cairn:	48CA3583
Historic sites:	
Homestead Remains:	48CA694, 48CA2793, 48CA2868, 48CA2870**, 48CA3586, 48CA4785*, 48CA5012
Debris:	48CA5011
Livestock/Ranching:	48CA5013
Cairn:	48CA949, 48CA2869
Multi-component sites:	48CA3582

* NHRP eligible

** Site occurs on both North and South Porcupine tracts.