

APPENDIX H
Correspondence with the Wyoming Natural Diversity Database

UNIVERSITY OF WYOMING

Wyoming Natural Diversity Database
Department 3381 • 1000 E. University Avenue • Laramie, WY 82071
(307) 766-3023 • fax (307) 766-3026 • e-mail: wndd@uwyo.edu • www.uwyo.edu/wyndd

12 July 2005

Jim Dunder
Wildlife Management Biologist
USDI Bureau of Land Management
280 Highway 191 North
Rock Springs, WY 82901

Dear Jim,

The attached files fill your request for information regarding rare species occurrences in T17-18N R101W, Sweetwater Co, WYunty, Wyoming. Of the species that you were interested in, only one record was found in the within the request area: White-Tailed Prairie Dog ([tr_pod.xls](#)). However, several of the species you are interested in are documented in the surrounding townships; these records can be found in the files with “buffer” in the file name and are also addressed in the attached zoological and botanical comments.

For additional information, especially about codes, abbreviations, and our data dictionary (describes field headings), or for additional data requests, please consult the data request portion of our website listed under the “Products” heading at <http://www.uwyo.edu/wyndd/>

Recommended citation:

Wyoming Natural Diversity Database. 2005. Data compilation for J. Dunder, completed July 12, 2005. Unpublished report. Wyoming Natural Diversity Database, University of Wyoming, Laramie, Wyoming.

Thank you for your data request. Please do not hesitate to call if you have any questions about the search. We ask that you not disseminate these data, except for your environmental assessment, without our permission.

Sincerely,
Melanie Arnett, Database Specialist, (307) 766-2296, arnett@uwyo.edu

¹Doug Keinath will be out of the office doing field work during the summer months. During this period Melanie Arnett will prepare the zoological comments.

ZOOLOGICAL COMMENTS

Wyoming Natural Diversity Database

Prepared for:
Jim Dunder – USDI Bureau of Land Management

14 July 2005
Project Description:
T17-18N R101W, Sweetwater County, Wyoming

Habitat Notes:
Towns: Request area is approximately 20-30 miles east/southeast of Rock Springs.
Water: Black Butte Creek runs through the western portion of the request area.
Habitat: The request area consists of Wyoming Big Sage Steppe, Juniper, Desert Shrub, and Basin Rock & Soil.

Approximate Elevation: 7,000 – 8,000 feet

Zoology Comments:

Please report new occurrences of any of these species to WYNDD so that our database continues to be current and useful to future requesters. Thank you!

This data represents what we currently have in the database as well as our informed opinion on what might occur in the request area if local habitat is appropriate. Please note that absence of a species occurrence in our database is not proof that the species in question does not exist there. It is highly possible that people have never looked for, or reported, information on the species in question in the request area. Our data for private land is particularly sparse, so absence of observations on private parcels should be viewed with caution. Also, please note that (in general) only animals likely to breed or winter near the project area have been included in this list. Other animals, particularly migratory birds, may use portions of the study area in other seasons. Finally, this list includes only species that we actively track in our database, the full list of which can be found on our website (<http://uwadmnweb.uwyo.edu/wyndd/>).

Animals for which we have records in our Biotics database are presented in bold face type. Biotics records generally represent observations for which information is available to suggest persistent recurrence in the area. Animals for which we have records in our Point Observation Database (POD) are presented in italics. Point observations mean that the animal in question has been documented in the area at one time, but sufficient information is not available to conclude persistence. It is particularly important to our database that people report occurrences of populations that would allow us to add Biotics records.

Prepared by: Melanie Arnett, Database Specialist, arnett@uwyo.edu
Direct questions to: Doug Keinath, Zoologist; dkeinath@uwyo.edu

SENSITIVE BIRDS POTENTIALLY IN REQUEST AREA				
Common Name	Scientific Name	Heritage Rank	Management Status	Habitat Notes
Ferruginous hawk	<i>Buteo regalis</i>	G4/S4B/S5 N	USFS R2 Sensitive, Wyoming BLM Sensitive, WYGF NSS3	Open grasslands and shrublands
Golden eagle	<i>Aquila chrysaetos</i>	G5/S3B		Open grasslands and shrublands esp. around cliffs and canyons
Merlin	<i>Falco columbarius</i>	G5/S4	WYGF NSS3	Open woodlands, grasslands, and shrublands sometimes in cities in winter
Greater sage grouse	<i>Centrocercus urophasianus</i>	G4/S4	USFWS ESA Listing Denied, USFS R2 Sensitive, Wyoming BLM Sensitive	Sagebrush basins and foothills, generally close to water
Snowy plover	<i>Charadrius alexandrinus</i>	G4/SA	USFS R2 Sensitive	Sandy beaches and shores of alkaline ponds
Mountain plover	<i>Charadrius montanus</i>	G2/S2	USFWS ESA Listing Denied, USFS R2 Sensitive, WYGF NSS4	Sparse shortgrass or milesxed grass prairie. Also in short-sagebrush plains. Often associated with prairie

SENSITIVE BIRDS POTENTIALLY IN REQUEST AREA				
Common Name	Scientific Name	Heritage Rank	Management Status	Habitat Notes
				dog towns.
American avocet	<i>Recurvirostra americana</i>	G5/S3B		Marshes, ponds, and shores, esp. alkaline areas
Long-billed curlew	<i>Numenius americanus</i>	G5/S3B	USFS R2 Sensitive, Wyoming BLM Sensitive, WYGF NSS3	Meadows, pastures, shorelines, and marshes
Short-eared owl	<i>Asio flammeus</i>	G5/S2	USFS R2 Sensitive	Open grasslands, meadows, marshes, and farmland, especially around tall grass or weeds
Burrowing owl*	<i>Athene cunicularia</i> [Speotyto cunicularia]	G4/S3	USFS R2 Sensitive, Wyoming BLM Sensitive, WYGF NSS4	Plains and basins, often associated with prairie dog towns
Loggerhead shrike	<i>Lanius ludovicianus</i>	G4/S3	USFS R2 Sensitive, Wyoming BLM Sensitive	Open country with scattered trees and shrubs
Ash-throated flycatcher	<i>Myiarchus cinerascens</i>	G5/S3B	WYGF NSS3	Juniper woodlands
Western scrub-jay	<i>Aphelocoma californica</i> [Aphelocoma coerulescens]	G5/S1	WYGF NSS3	Juniper woodlands
Juniper titmouse [Plain titmouse]	<i>Baeolophus griseus</i> [Parus inornatus]	G5/S1	WYGF NSS3	Juniper woodlands
Bushtit	<i>Psaltriparus milesnimus</i>	G5/S1	WYGF NSS3	Juniper woodlands
Canyon wren	<i>Catherpes mexicanus</i>	G5/S2S3		Rocky canyons and cliffs
Sage thrasher*	<i>Oreoscoptes montanus</i>	G5/S5	Wyoming BLM Sensitive	Tall sagebrush and greasewood
Black-throated gray warbler	<i>Dendroica nigrescens</i>	G5/S2		Juniper woodlands
Sage sparrow*	<i>Amphispiza belli</i>	G5/S3	USFS R2 Sensitive, Wyoming BLM Sensitive	Medium to tall sagebrush shrubland
Brewer's sparrow*	<i>Spizella breweri</i>	G5/S5	USFS R2 Sensitive, Wyoming BLM Sensitive	Sagebrush foothills and medium-height sagebrush in basins. Also, mountain mahogany hills.
Scott's oriole	<i>Icterus parisorum</i>	G5/S1	WYGF NSS3	Juniper woodlands

SENSITIVE MAMMALS POTENTIALLY IN REQUEST AREA				
Common Name	Scientific Name	Heritage Rank	Management Status	Habitat Notes
Silver-haired bat	<i>Lasionycteris noctivagans</i>	G5/S3		Occur in a wide variety of habitats across Wyoming. Roosts: trees, caves, milesnes, houses
Long-eared myotis*	<i>Myotis evotis</i>	G5/S4	Wyoming BLM Sensitive, WYGF NSS2	Found in conifer forests, especially ponderosa pine. Forage over water holes and possible openings in conifer forest. Roosts: caves, buildings, milesnes.
Hoary bat	<i>Lasiurus cinereus</i>	G5/S4		Widespread and mobile, hoary bats are found in shrublands, grasslands, and aspen-pine forests near roosting habitat. Roosts: deciduous trees.
Spotted bat	<i>Euderma maculatum</i>	G4/S3	USFS R2 Sensitive, USFS R4 Sensitive, Wyoming BLM Sensitive, WYGF	Cliff roosting, generally near perennial water in a variety of habitats (including desert, shrub-

SENSITIVE MAMMALS POTENTIALLY IN REQUEST AREA				
Common Name	Scientific Name	Heritage Rank	Management Status	Habitat Notes
			NSS2	steppe, and evergreen forest).
Townsend's big-eared bat	Corynorhinus townsendii [Plecotus townsendii]	G4/S2	USFS R2 Sensitive, USFS R4 Sensitive, Wyoming BLM Sensitive, WYGF NSS2	Hibernates and day-roosts in caves and milesnes and will use buildings as day roosts. Typical habitat includes desert shrublands, pinyon-juniper woodlands, and dry conifer forests, generally near riparian or wetland areas.
Pallid bat	Antrozous pallidus	G5/S1	WYGF NSS2	Generally found in desert and grassland habitats. Roosts in small crevices in buildings, rocks and other open places.
Wyoming ground squirrel	Spermophilus elegans	G5/S3S4		Found in open habitats from sage grasslands to alpine meadows.
White-tailed prairie dog	Cynomys leucurus	G4/S3	USFWS ESA Listing Denied, USFS R2 Sensitive, Wyoming BLM Sensitive, WYGF NSS3	Found in grassland and shrub-grass communities, often with loose, sandy soils. Colonies are usually not as large or dense as black-tailed prairie dog colonies.
Wyoming pocket gopher	Thomomys clusius [Thomomys talpoides]	G2/S2	USFS R2 Sensitive, Wyoming BLM Sensitive	Dry upland areas (ridgetops, etc.) characterized by loose, gravel-like soil. Endemic to Wyoming, they are often observed near Bidger's Pass.
Olive-backed pocket mouse	Perognathus fasciatus	G5/S4	WYGF NSS3	Dry habitats ranging from gravelly soils to sandy areas of short grass prairies to sand dunes.
Canyon mouse	Peromyscus crinitus	G5/S1	WYGF NSS3	Rangewide canyon mice are found in and near rock crevices. In Wyoming they have been found in a few localities around sandstone outcrops near limber and juniper woodlands, typically with sandy soils.
Swift fox	Vulpes velox	G3/S2	USFWS ESA Listing Denied, USFS R2 Sensitive, Wyoming BLM Sensitive, WYGF NSS3	Swift foxes occupy shortgrass prairie, but can be found in sage-grasslands. They are particularly found in sparely vegetated areas such as prairie dog towns.
Black-footed ferret*	Mustela nigripes	G1/S1	USFWS Endangered, WYGF NSS1	Black-footed ferrets always occur in or near prairie dog colonies, generally on short or mixed-grass prairie.

SENSITIVE HERPTILES POTENTIALLY IN REQUEST AREA				
Common Name	Scientific Name	Heritage Rank	Management Status	Habitat Notes
Tiger salamander	Ambystoma tigrinum	G5/S4	WYGF NSS4	Tiger salamanders can be found in fairly moist environments ranging from rodent burrows to window wells to burrows in sand dunes. Larvae found in intermittent streams, ponds, and lakes.
Great Basin spadefoot	Spea intermontana [Scaphiopus]	G5/S3	Wyoming BLM Sensitive, WYGF NSS4	Great Basin spadefoot toads inhabit sagebrush communities at lower

toad*	intermontanus]			elevations. Wyoming occurrences are mostly in the Wyoming Basin and the Green River Valley.
Northern leopard frog	Rana pipiens	G5/S3	USFS R2 Sensitive, Wyoming BLM Sensitive, WYGF NSS4	Found near permanent water in areas up to about 9,000 feet Lower elevation sites are usually swampy cattail marshes and higher ones tend to be beaver ponds.
Great Basin gopher snake	Pituophis melanoleucus deserticola	G5/T5/S3		Great Basin gopher snakes inhabit sagebrush communities in arid habitats in southwestern Wyoming.

SENSITIVE FISH POTENTIALLY IN REQUEST AREA				
Common Name	Scientific Name	Heritage Rank	Management Status	Habitat Notes
Bluehead sucker	Catostomus discobolus	G4/S3	USFS R2 Sensitive, Wyoming BLM Sensitive, WYGF NSS1	Occurs rarely in larger streams and rivers of the Little Snake, Bear, Green and Snake River drainages.

Botany Comments
Wyoming Natural Diversity Database

Prepared for:
Jim Dunder – USDI Bureau of Land Management
12 July 2005

Project Description:

T17-18N R101W, Sweetwater Co, WYunty, Wyoming

There are no known Rock Springs Field Office Special Status Species plant species in the request area. However, in the adjacent townships there are two known Rock Springs Field Office Special Status Species plant species: Astragalus nelsonianus (Nelson’s mileslkvetch) and Descurainia torulosa (Wyoming tansymustard).

Astragalus nelsonianus is a regional endemic of Wyoming, Colorado, and Utah. Over half of its range is in Wyoming. It is usually found in sparsely vegetated shrub and grassland communities and on disturbed or eroded soils.

Descurainia torulosa is a Wyoming state endemic restricted to the Rock Springs Uplift and southern Absaroka Range in Sweetwater, Fremont, Park, and Teton counties. It is found in sandy soil at the base of cliffs composed of volcanic breccia or sandstone, under slight overhangs, in cavities in the volcanic rock, or on ledges.

Species abstracts providing description, more complete habitat characterization, distribution, and references are available on the WYNDD homepage (<http://www.uwyo.edu/WYNDD/>).

The table below provides a summary of each species with its status and ranks.

SCIENTIFIC NAME	COMMON NAME	TRACKED?	GLOBAL RANK	STATE RANK	FEDERAL STATUS
Astragalus nelsonianus	Nelson’s mileslkvetch	Watch	G3	S3	Wyoming BLM Sensitive
Descurainia torulosa	Wyoming tansymustard	Y	G1	S1	U.S. Forest Service Regions 2 & 4 and Wyoming BLM Sensitive

Please note that the absence of a species or occurrence from this list does not mean it does not occur in the area, simply that no known observations have been made there. Many locations in Wyoming, particularly on private lands, have not been botanically surveyed.

If you have any questions about the plant species or the data provided, please feel free to contact WYNDD.

Please report new occurrences of any of these species to WYNDD so that our database continues to be current and useful to future requesters. Thank you!

Prepared by:
Joy Handley, Assistant Botanist
thuja@uwyo.edu

Data Request Data Dictionary and File Naming Conventions Wyoming Natural Diversity Database

This Data Dictionary describes the column headings (see table) and file naming conventions (bold words on this page) for ArcView shapefiles and Excel spreadsheets generated for from our Biotics and POD databases.

ArcView shapefiles are in geographic (decimal degrees) North American Datum 1983.

A species or natural community is referred to as an Element.

Biotics Element Occurrence Representation

An Element Occurrence is an area of land and/or water in which a species or natural community is, or was, present. An Element Occurrence should have practical conservation value for the Element as evidenced by potential continued (or historical) presence and/or regular recurrence at a given location. For species Elements, the Element Occurrence often corresponds with the local population, but when appropriate may be a portion of a population (e.g., long distance dispersers) or a group of nearby populations (e.g., metapopulation). For community Elements, the Element Occurrence may represent a stand or patch of a natural community, or a cluster of stands or patches of a natural community. Because they are defined on the basis of biological information, EOs may cross jurisdictional boundaries.

An Element Occurrence Representation (EOREP) is a data management tool that has both spatial and tabular components including a mappable feature and its supporting database. Element Occurrences are typically represented by bounded, mapped areas (polygons) of land and/or water. Element Occurrence Representations are most commonly created for current or historically known occurrences of natural communities or native species of conservation interest. They may also be created, in some cases, for extirpated occurrences. All Element Occurrence REPs encompass one or more observations (Source Features).

Biotics source (Source Feature)

Source Features represent individual observations of a specific element at a specific place and time. They can be represented by points, lines, or polygons. If certain criteria (e.g. “evidence of breeding” or “within X kilometers of another Source Feature of the same Element with no separation barriers”) are met, individual Source Features are incorporated into an Element Occurrence Representation. Source Features that do not qualify for inclusion in an Element Occurrence REP remain independent (INDEPEN_SF = Y).

The source feature attribute table will be populated with observation/survey data as each record is revised according to the new data methodology in Biotics. Until the records are revised, they will only contain identification numbers and the text “HDMS DEFAULT CONVERSION VALUES” in the DESCRIPTOR field. Also, please note that the point source feature for these unrevised records is equivalent to the centroid of the Element Occurrence (from the old BCD methodology). Observation and survey data for these records can still be found in the Element Occurrence _DATA field in Element Occurrence REP files (the EOREP and related SOURCE files can be cross-referenced using the ‘Element Occurrence _ID’ field). Please bear with us during this transitional period.

Point Observation Database

Point Observation Database point locations are carried over from our previous system; they are animal Elements comparable to Source Features but not yet detailed in Biotics. Please note that files containing negative survey data (the Element was searched for but not found: POS_NEG = 0) are in separate files with the naming convention pod_negative. Note also that some fields are longer than the 254-character limit imposed on dbase files. If you are missing information that you require, please contact us with the RECNUM for the record(s) you are interested in.

Sensitive

Separate shapefiles are made for data that are sensitive in both Biotics and POD. These records are provided at the township scale only. Data are considered sensitive if they meet one or more of the following criteria:

- Records of source features and/or element occurrences on private land that are not documented in publicly available references, but for which WYNDD has permission from the land owner to archive and disseminate at the township level.
- Records of source features and/or element occurrences submitted to WYNDD by an outside party who has requested that the data be treated as sensitive.
- Source features and/or element occurrences that are especially sensitive to disturbance, over-harvest, over-collection, intentional destruction, or unintentional destruction.
- Element occurrences that encompass one or more source features that are considered sensitive for any reason.

- tr (township/range) Refers to the township and range of request area.
- buffer (buffer) Refers to the buffer (of townships) around request area, if any.
- boundary (boundary of township/range and/or buffer).
- Italics indicate that data are sensitive and specific location information is not released.
- .xls only = data are in Excel spreadsheets, but not ArcView shapefiles.

BIOTICS SOURCE	BIOTICS EOREP	POD	DEFINITION
FEATURE_ID	FEATURE_ID		A unique identification code for the shape in Biotics.
EO_ID	EO_ID		Identification number for the Element Occurrence (EO) in Biotics.
SOURCE_ID			Identification number for the Source Feature in Biotics.
		RECNUM	A unique record number in POD.
SHAPE_TYPE .xls only		SHAPE	Whether the shape is a point, line, or polygon.
		POS_NEG (negative records are in a separate shapefile)	Species presence: 1 - present 0 - absent Records with a negative value indicate that a survey was conducted but the Element was not found.
ELCODE	ELCODE	ELCODE	Element code assigned to each species by NatureServe.
SNAME	SNAME	SNAME	Scientific name.
COMNAME	COMNAME	CNAME	Common name.
EO_NUM	EO_NUM		Element Occurrence number for the element.
INDEPEN_SF			Independent Source Feature: Y - Yes, Source Feature did not qualify for inclusion in an EOREP. N - No, Source Feature is part of an EOREP.
DATA_SENS	DATA_SENS	SENSITIVE	Data are sensitive: Y - Yes. Specific location is not released. N - No.
ID_CONFIRM	ID_CONFIRM	IDENTIFIED	Indicates whether identification has been confirmed by a reliable individual: Y - Yes N - No ?/Q - Questionable U - Unknown

BIOTICS SOURCE	BIOTICS EOREP	POD	DEFINITION
BUFFERDIST DIST_UNIT	PRECISION ACCURACY	PRECISION	SOURCE - BUFFERDIST Estimated accuracy of the location given as a buffered distance (represented in the EOREP shapefile). SOURCE - DIST_UNIT Unit of distance measure for BUFFERDIST. EOREP and POD - PRECISION Estimated precision of the data (old method, carried over from previous system; as records are updated in Biotics this value is deleted and the next field is populated): G - Low - within 7.5 km M - Medium - within 700 S - High - within 20 m EOREP – ACCURACY Estimated accuracy of the data (new method, populated as data are updated in Biotics): Very High (>95%) High (>80%, <=95%) Medium (>20%, <=80%) Low (>0%, <=20%) Unknown
OBSERVER .xls only		OBSERVER	Observer.
OBS_DATE (If multiple observations are documented at one location, more than one date will appear in this field. Observation data can be found in the supplemental Excel spreadsheet).	SURVEYDATE FIRST_OBS LAST_OBS	YEAR MONTH DAY	SOURCE - OBS_DATE Observation date(s). EOREP - SURVEY DATE Date of the last known survey at this location. EOREP - FIRST_ - and LAST_OBS The first and last date, respectively, the element was observed at this location. POD - YEAR, MONTH, and Day Year of observation. Month of observation. Day of observation.
OBS_DATA .xls only	EO_DATA	BIOLOGICAL	Details of each observation, including biological.
LITERATURE .xls only	BESTSOURCE	LITERATURE	SOURCE and POD - LITERATURE Literature source for specific observation. EOREP - BESTSOURCE The best source of information for the EOREP.
COUNTY .xls only	COUNTY	COUNTY	County. POD - the first four letters only.
LOCATOR	TOWN_RANGE	TOWN RANGE SECTION	SOURCE - LOCATOR Township/Range/Section (format: 045N118W Sec 23 SE4) and sometimes a brief description of specific location. EOREP - TOWN_RANGE Township/Range. POD - TOWN, RANGE, and SECTION Township, Range, Section.
TRS_NOTE .xls only	TRS_NOTE	TRS_COM	Quarter quarter sections.

BIOTICS SOURCE	BIOTICS EOREP	POD	DEFINITION
	MAPSHEET		USGS 1:24000 state quad code.
	DIRECTIONS	LOCATION	Directions to, or description of, the location.
	MIN_ELEV		Minimum elevation in feet
	MAX_ELEV		Maximum elevation in feet
	GEN_DESC		General habitat description for the location.
TRACKSTAT	TRACKSTAT	SEOTRACK	Tracking Status: Y - Element tracked by WYNDD. W - Element watched for potential tracking by WYNDD.
G_RANK	G_RANK	GRANK	Global Heritage rank assigned by NatureServe.
S_RANK	S_RANK	SRANK	State Heritage rank assigned by WYNDD biologists.
USES_A	USES_A	USFWS_ESA	Status under the Endangered Species Act.
		ESA_CODE	Endangered Species Act status code.
AGENCYSTAT	AGENCYSTAT	USFS_R2 USFS_R4 WY_BLM WGFD	Status assigned by: U.S. Forest Service (Region 2 and 4) Wyoming BLM Wyoming Game and Fish Department
		DOCUMENTAT	Documentation comments.
DESCRIPTOR	EO_TYPE	PO_TYPE	A brief description of the Source Feature or Element Occurrence. When the DESCRIPTOR field in Biotics SOURCE files is populated with "HDMS DEFAULT CONVERSION VALUES", use the EOREP file to view data by cross-referencing EO_ID. We are currently in transition from the old BCD methodology to Biotics.
	MANAGED_AREA		Land management area (i.e. agency land ownership).
	SPECIMEN		Specimen or voucher information.
	SURVEYTYPE		Survey type.
	SIZE_OF_EO		Size of Element Occurrence in acres unless otherwise noted.
	INVENT_COM		Inventory comments.

APPENDIX I
Cumulative Personal Earnings by Industry for 2000

INDUSTRY TYPE	EARNINGS IN \$1,000s
Farm earnings	305
Nonfarm earnings	952,591
Private earnings	813,637
Agricultural services, forestry, fishing & other	1,390
Agricultural services	1,336
Forestry, fishing, and other	54
Forestry	0
Fishing	54
Other	0
Mining	318,679
Metal Mining	(D)
Coal Mining	(D)
Oil and gas extraction	151,471
Nonmetallic minerals, except fuels	130,377
Construction	56,715
General building contractors	7,748
Heavy construction contractors	28,349
Special trade contractors	20,618
Manufacturing	115,381
Durable goods	2,911
Lumber and wood products	0
Furniture and fixtures	0
Stone, clay, and glass products	1,843
Primary metal industries	0
Fabricated metal products	0
Industrial machinery and equipment	1,063
Electronic and other electric equipment	0
Motor vehicles and equipment	0
Other transportation equipment	(D)
Instruments and related products	0
Miscellaneous manufacturing industries	(D)
Ordnance	(N)
Nondurable goods	112,470
Food and kindred products	(D)
Tobacco products	0
Textile mill products	(D)
Apparel and other textile products	0
Paper and allied products	0
Printing and publishing	1,605
Chemicals and allied products	109,600
Petroleum and coal products	0
Rubber and miscellaneous plastics products	0
Leather and leather products	0
Transportation and public utilities	100,301
Railroad transportation	(D)
Trucking and warehousing	21,492
Water transportation	(D)

INDUSTRY TYPE	EARNINGS IN \$1,000s
Other transportation	5,714
Local and interurban passenger transit	1,846
Transportation by air	1,965
Pipelines, except natural gas	0
Transportation services	1,903
Communications	7,787
Electric, gas, and sanitary services	44,935
Wholesale trade	21,856
Retail trade	67,451
Building materials and garden equipment	4,677
General merchandise stores	8,439
Food stores	10,978
Automotive dealers and service stations	18,342
Apparel and accessory stores	1,250
Home furniture and furnishings stores	3,496
Eating and drinking places	15,581
Miscellaneous retail	4,688
Finance, insurance, and real estate	26,455
Depository and nondepository institutions	(D)
Other finance, insurance, and real estate	(D)
Security and commodity brokers	(D)
Insurance carriers	1,209
Insurance agents, brokers, and services	2,629
Real estate	9,273
Combined real estate, insurance, etc.	(N)
Holding and other investment offices	2,761
Services	105,409
Hotels and other lodging places	10,987
Personal services	5,011
Private households	(D)
Business services	22,288
Automotive repair, services, and parking	6,235
Miscellaneous repair services	4,138
Amusement and recreation services	1,384
Motion pictures	578
Health services	22,721
Legal services	3,910
Educational services	(D)
Social services	6,136
Museums, botanical, zoological gardens	0
Membership organizations	3,596
Engineering and management services	13,744
Miscellaneous services	(D)
Government and government enterprises	138,954
Federal, civilian	16,575
Military	3,208
State and local	119,171

INDUSTRY TYPE	EARNINGS IN \$1,000s
State government	9,240
Local government	109,931

(E) The estimate shown here constitutes the major portion of the true estimate.
(D) Not shown to avoid disclosure of confidential information, but the estimates for this item are included in the totals.
(L) Less than \$50,000
(N) Data not available for this year.

Source: U.S. Bureau of Economic Analysis

APPENDIX J
Federal and State Mitigation and Monitoring
Requirements Inherent to the Proposed Action

In the case of surface coal mining, various federal and state law require mitigation and monitoring designed to ensure that reclamation standards are met following mining. The major mitigation measure and monitoring measure that are required by state or federal regulation are summarized in the following table. More specific information about some of these mitigation and monitoring measures have been described in Chapter 2 – Proposed Action.

Measures that are required by regulation are considered to be part of the Proposed Action. These requirements, mitigation plans, and monitoring plans are in place as part of the current approved mining and reclamation plan for the existing Black Butte Mine. If the LBA tract is leased, these requirements, mitigation plans, and monitoring plans would be included in the mining and reclamation plan amendment required for the LBA tract and the project area as a whole. This mining and reclamation plan would have to be approved before mining could occur on the tract, regardless of who acquires the tract.

If impacts are identified during the leasing process that are not mitigated by existing required mitigation measures, BLM can include additional mitigation measures (stipulations) on the new lease within the limits of its regulatory authority. In general, the levels of mitigation and monitoring required for surface coal mining by SMCRA and Wyoming state law are more extensive than those required for other surface disturbing activities; however, concerns are periodically identified that are not monitored or mitigated under existing procedures.

The following page presents a table of required mitigation and monitoring measures inherent in the Proposed Action for resources with identified issues.

Required Mitigation and Monitoring Measures Inherent in the Proposed Action for Resources with Identified Issues

RESOURCE	REGULATORY COMPLIANCE OR MITIGATION REQUIRED BY STIPULATIONS, STATE, OR FEDERAL LAW	MONITORING
Air Quality	Dispersion modeling of Mining plan for annual average particulate pollution impacts on ambient air; Using particulate pollution control technologies; Using work practices designed to minimize fugitive particulate emissions; Using EPA- or state-mandated BACT, watering or using chemical dust suppression on haul roads and exposed soils, Containment of truck dumps and primary crushers; Revegetation of exposed soils, Watering of active work areas, Reclamation plan to minimize surface disturbances subject to wind erosion, Paving of access roads, Haul truck speed limits, Following voluntary and required measures to avoid exposing the public to NO ₂ from blasting clouds, including: Monitoring weather and atmospheric conditions prior to decisions to blast, Minimizing blast sizes, Posting signs on public roads.	On-site air quality monitoring for PM ₁₀ ; off-site ambient monitoring for PM ₁₀ ; meteorological monitoring; on-site compliance inspections.
Geology & Minerals	Identifying and selectively placing or mixing chemically or physically unsuitable overburden materials to minimize adverse effects to vegetation or groundwater. Restoring to approximate original contour or other approved topographic configuration.	LQD requires monitoring in advance of mining to detect unsuitable overburden. LQD checks as-built vs. approved topography with each annual report.
Soil	Salvaging soil suitable to support plant growth for use in reclamation; Protecting soil stockpiles from disturbance and erosional influences; Selectively placing at least four feet of suitable overburden on the graded backfill surface below replaced topsoil to meet guidelines for vegetation root zones.	Monitoring vegetation growth on reclaimed areas to determine need for soil amendments.
Surface Water	Building and maintaining sediment control ponds or other devices during mining; restoring approximate original drainage patterns during reclamation;	Monitoring quality of discharges;
Groundwater	Evaluating cumulative impacts to water quantity and quantity associated with proposed mining; Replacing existing water rights that are interrupted, discontinued, or diminished by mining with water of equivalent quantity and quality.	Monitoring wells track water levels in overburden, coal, interburden, underburden, and backfill.

RESOURCE	REGULATORY COMPLIANCE OR MITIGATION REQUIRED BY STIPULATIONS, STATE, OR FEDERAL LAW	MONITORING
Vegetation	Permanently revegetate reclaimed areas according to a comprehensive revegetation plan using approved permanent reclamation seed mixtures consisting predominantly of species native to the area; Reclaiming 20 percent of reclaimed area with native shrubs at a density of one per square meter; Controlling erosion on reclaimed lands prior to seeding with final seed mixture using mulching, cover crops, or other approved measures; Chemically and mechanically controlling weed infestation; Direct hauling of topsoil, whenever possible; Planting sagebrush; Creating depressions and rock piles; Using special planting procedures around rock piles; Posting reclamation bond covering the cost of reclamation. Monitoring revegetation growth and diversity until release of final reclamation bond (minimum 10 years).	Monitoring erosion to determine need for corrective action during establishment of vegetation. Using annual monitoring during revegetation evaluation to determine suitability for postmining land uses.
Wildlife (including special status species)	Restoring pre-mining topography to the maximum extent possible; Planting a diverse mixture of grasses, forbs and shrubs in configurations beneficial to wildlife; Raptor-proofing power transmission poles; Increasing habitat diversity by creating rock clusters and shallow depressions on reclaimed land; Reducing vehicle speed limits to minimize mortality; Instructing employees not to harass or disturb wildlife; Avoiding bald eagle disturbance; Using raptor safe power lines; Preparing raptor mitigation plans.	Baseline and annual wildlife monitoring surveys; Annual monitoring for MBHFI.
Wild Horses	Suitably restoring reclaimed areas	No specific monitoring program.
Land Use	Suitably restoring reclaimed area for historic uses (grazing and wildlife).	Revegetation evaluation to determine suitability for post mining land uses.
Visual Resources	Restoring landscape character during reclamation through return to approximate original contour and revegetation with native species.	No specific monitoring program.
Cultural Resources	Conducting Class I and III surveys to identify cultural properties on all state and federal lands and on private lands affected by federal undertakings; Consulting with SHPO to evaluate eligibility of cultural properties for the NRHP; Avoiding or recovering data from significant cultural properties identified by surveys, according to an approved plan; Notifying appropriate federal personnel if historic or prehistoric materials are uncovered during mining operations; Instructing employees of the importance of and regulatory obligations to protect cultural resources. Notifying Native American tribes with known interest in this area of leasing action and request for help in identifying potentially significant religious or cultural sites	Monitoring mining activities during topsoil stripping; Cessation of activities and notification of authorities if unidentified sites are encountered during topsoil removal.
Socioeconomics	Paying royalty and taxes as required by federal, state, and local regulations.	Surveying and reporting to document volume of coal removed.

APPENDIX K
Near-Field Monitoring Protocol and Results

POLLUTANT DISPERSION MODEL ASSUMPTIONS

General Assumptions

Several key assumptions will apply to the inventorying of emissions and performance of atmospheric dispersion modeling for the Pit 14 EIS:

- The entire Black Butte mine will be analyzed for emissions and modeled for ambient impacts, with Pit 14 included as a maintenance tract to extend existing mining operations.
- PM₁₀ and NO_x emissions will be projected for the maximum-production-case of 7 million tons per year, based on the existing permit limit. Within this scenario, the year with maximum PM₁₀ emissions will be modeled for ambient impacts.
- Average annual concentrations of the criteria pollutants PM₁₀ and NO₂ will be modeled.

Dispersion Modeling Assumptions and Proposed Protocol

The purpose of the modeling will be to predict air quality impacts from the proposed project. Impacts will be predicted in the form of annual average ambient concentrations of PM₁₀ and NO₂, using the ISCLT3 dispersion model (version 95250). Assumptions and model options used in the analysis include:

- Calculations for annual concentration
- Emission rates do not vary temporally
- Rural dispersion
- Regulatory default option:
- Final plume rise
- Stack-tip downwash
- Buoyancy induced dispersion
- Default wind profile exponents
- Default vertical potential temperature gradients
- No exponential decay for rural mode
- Flat terrain
- No flagpole receptors
- No dry deposition algorithms to be used
- Pollutant types: PM₁₀, NO₂

Point sources are not located near buildings. Therefore, building downwash effect on point sources will not be considered in the analyses.

Emission Sources

This modeling study treats the proposed lease as a maintenance tract; therefore all sources will be included in the impact analyses. These include both Pit 14 sources and existing Black Butte mine sources as identified in the mine plan. PM₁₀ and NO_x emission sources will each be quantified and spatially coordinated for the worst-case (i.e. highest emissions) year during the projected life of Pit 14. Emission factors from Wyoming DEQ Air Quality Division and EPA AP-42 guidance documents will be used to quantify annual PM₁₀ and NO_x emissions. Where emission control technologies are employed, applicable control efficiencies will be applied to these emission factors.

Some of the PM₁₀ sources are best represented in the model as point sources. They include a truck dump and hopper at Pit 8, a crusher and train loadout at the Mine headquarters, and conveyor transfer points. For modeling, the emissions from these sources will be represented as coming from a 1 meter diameter stack at ambient temperature and having no exit velocity.

PM₁₀ sources treated as area sources will include:

- The active pit areas for topsoil stripping, blasting, overburden excavation and coal loading.
- Haul roads used for coal and overburden haulage.

- Total disturbed areas subject to wind erosion such as access roads, storage and parking facilities, pre-stripped topsoil areas, etc.
- Overburden backfill areas and stockpiles, if applicable.
- Topsoil stockpiles.

Potential sources of NO_x will be identified and quantified for the projected, worst-case PM₁₀ year. All NO_x sources from the proposed project will be treated as area sources, including equipment tailpipe emissions and blasting emissions. NO_x emissions will be quantified in terms of total NO_x and NO₂. The criteria pollutant NO₂ will be modeled using ISC3LT. The modeled sources of NO₂ emissions in Pit 14 will include:

- Gases produced from blasting (NO_x emissions from blasting will be assumed to contain 1 ton of NO for every 2.4 tons of NO₂) (Chaiken et al 1974).
- Gases released from tailpipes of diesel-powered mobile equipment and gasoline-powered service vehicles (equipment NO_x emissions are assumed to be 90% NO and 10% NO₂) (Cole and Summerhays 1979, EPA 1997).

Receptors

PM₁₀ and NO₂ impacts will be estimated at receptors on a 500-meter, rectangular grid, emanating outward from the combined boundaries of the Pit 14 lease and the existing mine permit. The receptor grid will extend at least 5 kilometers in all directions from these boundaries. If the model predicts significant impacts (concentrations greater than 1 µg/m³) beyond 5 kilometers, the receptor grid will be expanded accordingly. Grid spacing beyond 5 kilometers will be 1000 meters. In addition, points around the lease/permit boundary, spaced 250 meters apart, will form a boundary receptor grid. Receptors will be on flat terrain (no elevation input).

Meteorological Data

Near-surface meteorological data used in this impact analysis were collected at the Black Butte Mine during a three-year period from 1/1/2002 through 12/31/2004. This measurement site is located approximately 8 miles northeast of the Pit 14 site, at an elevation of approximately 6,600 ft. above sea level. Anemometer height is 10 meters. All meteorological instruments meet or exceed EPA specifications. The quality assurance and processing of meteorological data also meet EPA requirements. A wind speed summary and wind rose will be generated from the meteorological data.

Meteorological data from the Black Butte monitoring site will be input to the ISC3LT model. Pasquill-Gifford stability class will be determined for each hour of data using the lateral turbulence criteria (σ_0) for the initial estimate, then wind-speed adjusted for determining the final estimate. Hourly data will be processed to produce a joint frequency distribution (JFD) for the year 2004. Averaging period will be three full years. Average mixing heights will be taken from annual average values for Wyoming, obtained from the Wyoming DEQ Air Quality Division. Ambient temperatures will be input in the form of 3-year averages for each of the six stability classes.

Modeling Outputs

- ISC3 main output print file, containing receptor concentrations as annual average PM₁₀ and NO₂ (µg/m³) for worst-case year.
- Top 10 receptor concentrations of annual average PM₁₀ and NO₂ in worst-case year.
- ISC3 plot file with receptor concentrations and coordinates, from which to generate isopleth maps for worst-case year.
- Isopleth maps (contour lines of constant concentration) will be generated for PM₁₀ and NO₂. Isopleths will be overlain on the area map, which will show the Pit 14 lease boundary, mine permit boundary, and receptor grid area.

2010 PM₁₀ Emission Source Inventory

Source	Area or Point Source Name	Allocation Basis	Units	Aggregate PM10 tpy	Allocated PM10 tpy	Total PM10 tpy by Source
Primary Crusher	Primary Crusher	2,269,000	tons	1.53	1.53	1.53
Secondary Crusher	Secondary Crusher	7,000,000	tons	4.73	4.73	4.73
Train Loadout	Train Loadout	7,000,000	tons	29.40	29.40	29.40
Uncontrolled Conveyor Belt Transfer	Belt Transfer	4,731,000	tons	12.06	12.06	12.06
Pit 8 Truck Dump Hopper	Pit 8 Truck Dump	4,731,000	tons	9.05	9.05	
Pit 8 Feeder Breaker	Pit 8 Truck Dump	4,731,000	tons	3.19	3.19	12.24
Main Stockpile	Main Stockpile	1,500,000	tons	43.55	43.55	43.55
Blade	Pit 10 Haul Road	12,319	hours	22.44	5.37	
Coal Haul Truck	Pit 10 Haul Road	1,863,000	tons	41.47	18.70	
Light Vehicles	Pit 10 Haul Road	50,000	hours	123.52	8.23	
Water Truck	Pit 10 Haul Road	2,591	hours	0.83	0.20	32.50
Highwall Miner Coal Discharge	Pit 10 Production	1,863,000	tons	3.56	3.56	
Coal Loading	Pit 10 Production	1,863,000	tons	2.36	0.63	4.19
Blade	Pit 11 Haul Road	12,319	hours	22.44	6.55	
Coal Haul Truck	Pit 11 Haul Road	2,269,000	tons	41.47	22.77	
Light Vehicles	Pit 11 Haul Road	200,000	hours	123.52	32.94	
Water Truck	Pit 11 Haul Road	2,591	hours	0.83	0.24	62.50
Coal Blasting	Pit 11 Production	2,269,000	tons	0.40	0.18	
Dozer	Pit 11 Production	16,020	hours	10.56	10.56	
Coal Loading	Pit 11 Production	2,269,000	tons	2.36	0.77	
OB Blasting	Pit 11 Production	19,240,000	bcy	0.12	0.07	
OB Dragline Excavation	Pit 11 Production	19,240,000	bcy	76.49	76.49	88.06
Blade	Pit 14 Haul Road	12,319	hours	22.44	8.27	
Coal Haul Truck	Pit 14 Haul Road	2,868,000	tons	26.57	26.57	
Light Vehicles	Pit 14 Haul Road	200,000	hours	123.52	32.94	
Water Truck	Pit 14 Haul Road	2,591	hours	0.83	0.31	68.09
Coal Blasting	Pit 14 Production	2,868,000	tons	0.40	0.23	
Dozer	Pit 14 Production	16,025	hours	10.56	10.56	
Coal Loading	Pit 14 Production	2,868,000	tons	2.36	0.97	
OB Blasting	Pit 14 Production	11,925,000	bcy	0.12	0.05	
OB Dragline Excavation	Pit 14 Production	11,925,000	bcy	76.51	76.51	88.31
Dozer	Pit 3 Reclamation	7,310,000	bcy	6.58	6.58	6.58
Dozer	Pit 8 Reclamation	1,270,000	bcy	1.14	1.14	1.14
Pit 8 Stockpile	Pit 8 Stockpile	918,000	tons	42.34	42.34	42.34
Light Vehicles	Service Road	300,000	hours	123.52	49.41	
Blade	Service Road	12,319	hours	22.44	2.24	
Water Truck	Service Road	2,591	hours	0.83	0.08	51.73
Disturbed Acreage Wind Erosion	Disturbed Acres	7,013	acres	525.98	525.98	525.98
				Totals	1074.94	1074.94

2010 NO₂ Emission Source Inventory

Source	Area or Point Source Name	Allocation Basis	Units	Aggregate NO ₂ tpy	Allocated NO ₂ tpy	Total NO ₂ by Area
Light Vehicles	Access Road	180,000	hours	0.29	0.06	0.06
Diesel Locomotive	Main Stockpile			7.64	7.64	
Dozer	Main Stockpile	1,500,000	tons	8.03	0.87	8.51
Blade	Pit 10 Haul Road (highwall)	1,863,000	tons	0.81	0.22	
Coal Haul Truck	Pit 10 Haul Road (highwall)	1,863,000	tons	11.47	3.05	
Light Vehicles	Pit 10 Haul Road (highwall)	180,000	hours	0.29	0.06	
Water Truck	Pit 10 Haul Road (highwall)	1,863,000	tons	0.57	0.15	3.48
Dozer	Pit 10 Production (highwall)	328,117	tons	8.03	0.19	0.19
Blade	Pit 11 Haul Road	2,269,000	tons	0.81	0.26	
Coal Haul Truck	Pit 11 Haul Road	2,269,000	tons	11.47	3.72	
Light Vehicles	Pit 11 Haul Road	180,000	hours	0.29	0.06	
Water Truck	Pit 11 Haul Road	2,269,000	tons	0.57	0.19	4.23
Coal Blasting	Pit 11 Production	2,269,000	tons	110.12	3.44	
DMM3 Drill	Pit 11 Production	(total)		4.50	4.50	
Dozer	Pit 11 Production	1,224,000	tons	8.03	0.71	
Front End Loader	Pit 11 Production	2,269,000	tons	4.55	2.01	
OB Blasting	Pit 11 Production	19,240,000	bcy	110.12	64.89	75.55
Blade	Pit 14 Haul Road	2,868,000	tons	0.81	0.33	
Coal Haul Truck	Pit 14 Haul Road	2,868,000	tons	11.47	4.70	
Light Vehicles	Pit 14 Haul Road	180,000	hours	0.29	0.06	
Water Truck	Pit 14 Haul Road	2,868,000	tons	0.57	0.23	5.33
Backhoe	Pit 14 Production	(total)		0.12	0.12	
Coal Blasting	Pit 14 Production	1,030,000	tons	110.12	1.56	
DM45 Drill	Pit 14 Production	(total)		1.15	1.15	
Dozer	Pit 14 Production	1,307,000	tons	8.03	0.76	
Front End Loader	Pit 14 Production	2,868,000	tons	4.55	2.54	
OB Blasting	Pit 14 Production	11,925,000	bcy	110.12	40.22	46.35
Dozer	Pit 3 Reclamation	7,310,000	bcy	8.03	4.24	4.24
Dozer	Pit 8 Reclamation	1,270,000	bcy	8.03	0.74	0.74
Dozer	Pit 8 Stockpile	918,000	tons	8.03	0.53	0.53
Light Vehicles	Service Road	180,000	hours	0.29	0.06	0.06
				Total	149.26	

MODEL OUTPUTS

PM10

*** THE MAXIMUM 10 ANNUAL AVERAGE CONCENTRATION VALUES FOR GROUP: ALL ***
 INCLUDING SOURCE(S): MASTK , P3REC , P8REC , P8STK , P10R1 , P10R2 , P10R3 , P10R4 ,
 P10R5 , P10R6 , P10R7 , P10PR , P11R1 , P11R2 , P11R3 , P11R4 , P11R5 , P11R6 , P11R7 , P11R8 , P11PR ,
 P14R1 , P14R2 , P14R3 , P14R4 , P14R5 , P14PR , SVRD1 , SVRD2 , SVRD3 , ... ,

** CONC OF TOXICS IN MICROGRAMS/CUBIC-METER **

RANK	CONC	AT	RECEPTOR (XR,YR) OF TYPE	RANK	CONC	AT	RECEPTOR (XR,YR) OF TYPE
1.	25.371775	AT	(682786.19, 4592271.50) DC				
2.	6.978081	AT	(697038.56, 4612395.50) DC				
3.	6.647432	AT	(697039.94, 4612145.50) DC				
4.	6.464054	AT	(685193.38, 4593576.00) DC				
5.	6.174025	AT	(696094.69, 4612899.00) DC				
6.	6.070236	AT	(697043.88, 4608774.00) DC				
7.	5.876761	AT	(697500.00, 4609000.00) GC				
8.	5.766881	AT	(696344.69, 4612898.00) DC				
9.	5.707059	AT	(697037.19, 4612645.50) DC				
10.	5.559469	AT	(682792.13, 4592022.00) DC				

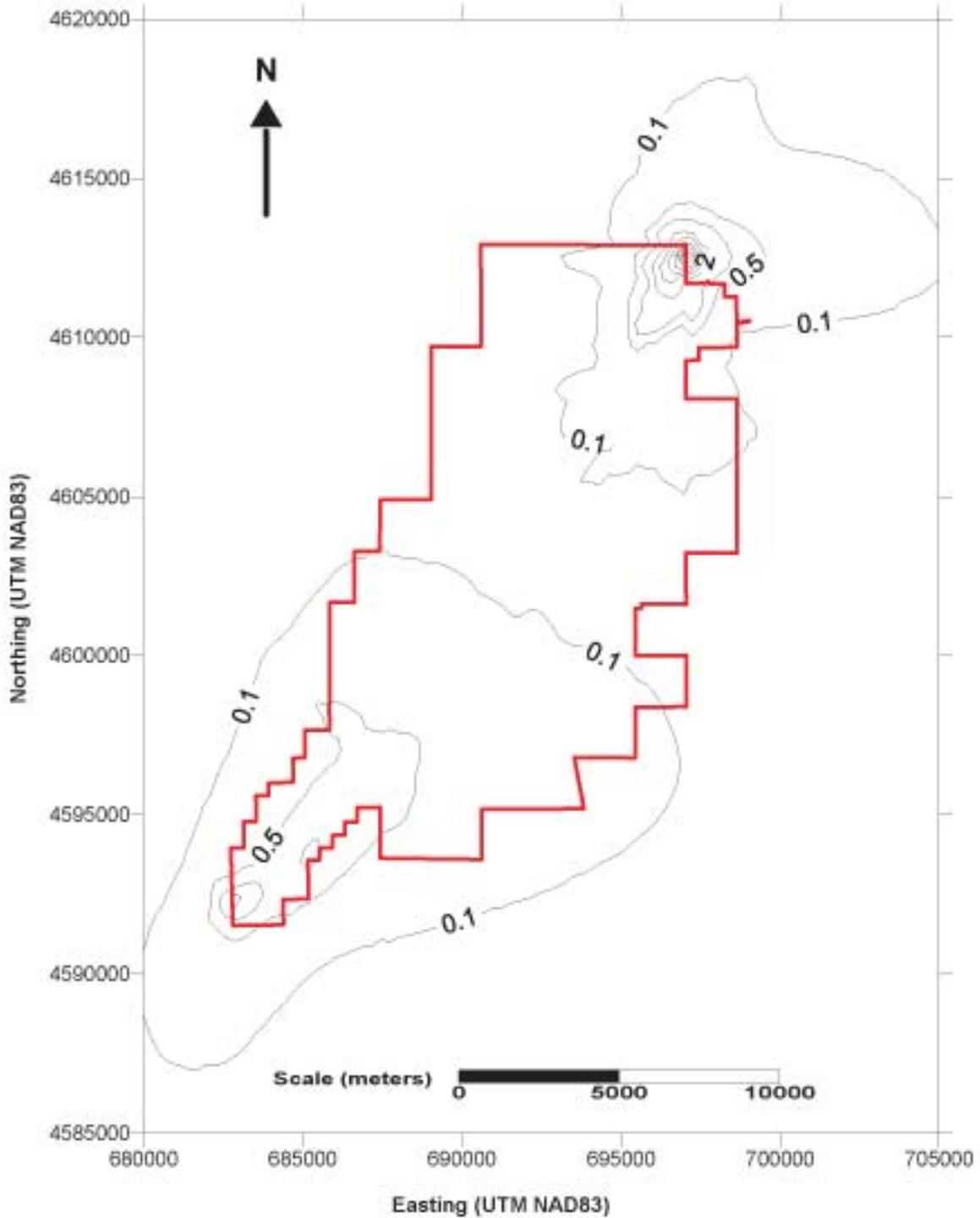
NO2

*** THE MAXIMUM 10 ANNUAL AVERAGE CONCENTRATION VALUES FOR GROUP: ALL ***
 INCLUDING SOURCE(S): ACRD1 , ACRD2 , ACRD3 , ACRD4 , ACRD5 , ACRD6 , ACRD7 ,
 MASTK , P3REC , P8REC , P8STK , P10R1 , P10R2 , P10R3 , P10R4 , P10R5 , P10R6 , P10R7 , P10PR ,
 P11R1 , P11R2 , P11R3 , P11R4 , P11R5 , P11R6 , P11R7 , P11R8 , P11PR , P14R1 , P14R2 , ... ,

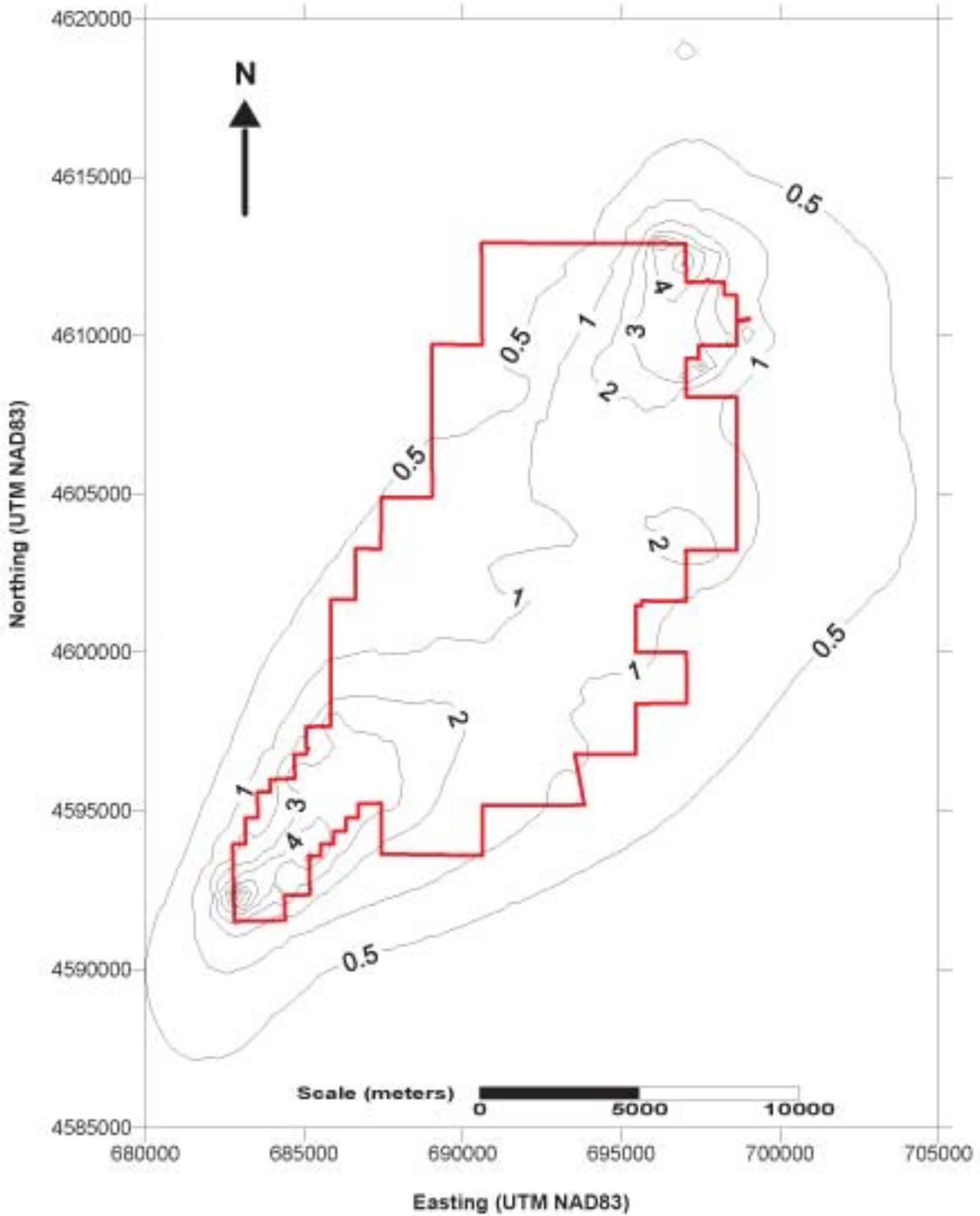
** CONC OF TOXICS IN MICROGRAMS/CUBIC-METER **

RANK	CONC	AT	RECEPTOR (XR,YR) OF TYPE	RANK	CONC	AT	RECEPTOR (XR,YR) OF TYPE
1.	12.864506	AT	(697038.56, 4612395.50) DC				
2.	11.360383	AT	(697037.19, 4612645.50) DC				
3.	7.337164	AT	(682786.19, 4592271.50) DC				
4.	4.566653	AT	(697039.94, 4612145.50) DC				
5.	4.167009	AT	(696844.69, 4612896.00) DC				
6.	3.629278	AT	(697500.00, 4612500.00) GC				
7.	2.537692	AT	(696594.69, 4612897.00) DC				
8.	1.666575	AT	(698000.00, 4612500.00) GC				
9.	1.587512	AT	(697041.38, 4611895.50) DC				
10.	1.520051	AT	(697500.00, 4613000.00) GC				

Black Butte Mine Projected Annual Average NO₂ (ug/m³)



Black Butte Mine Projected Annual Average PM10 (ug/m3)



APPENDIX L
COMMENTS ON DEIS AND RESPONSES

Introduction

The DEIS was mailed to the public in March 2006 and copies were made available for review at the BLM offices in Rock Springs and Cheyenne. The document was also available on the internet at <http://www.wy.blm.gov/nepa/rsfdocs/pit14/index.htm>. The EPA published a notice announcing the availability of the DEIS in the *Federal Register* on March 24, 2006. BLM published a Notice of Availability and Notice of Public Hearing in the *Federal Register* on the same day (March 24, 2006). A 60-day comment period on the DEIS commenced with publication of the EPA Notice of Availability and ended on May 23, 2006.

The BLM's *Federal Register* notice announced the date and time of a public hearing, as required under 43 CFR 3425.4 (a) (1). The public hearing was held at the BLM's Rock Springs Field Office in Rock Springs, Wyoming, at 2:00 p.m., on May 10, 2006. The purpose of the public hearing was to solicit public comments on the DEIS and on the fair market value, the maximum economic recovery, and the proposed competitive sale of federal coal from the LBA tract. Two comments were recorded at the public hearing. A transcript of the hearing can be viewed at the BLM offices in Rock Springs and Cheyenne and are included below. In addition to the comments recorded at the public hearing, seven (one repeated oral comments made at the hearing) letters were received during the public comment period. Comments are shown in **bold** font and responses are reflected in regular font.

1. B. Sachau

Black Butte Coal Company lease for surface mining, a really destructive process that is so complete and so destructive that it should be banned! Look at West Virginia where the tops of the mountains are blown off - and the silt comes down and drowns people in the valleys. What is going on in the mining industry is absolutely outrageous - people are dying in the mines, and the industry is so cheap.

Surface mining, in this case using draglines with other support equipment, is an accepted mining method throughout the United States. The dragline spoil is moved to the last previously mined pit and only a small area is utilized at any one time for coal removal. Reclamation of the surface is a constant and ongoing process, which is employed from the very beginning of the mining process. Sedimentation ponds are planned in strategic areas surrounding the pit to avoid runoff and suspended solids in any effluent discharged from the mined area.

There should be underground or nothing. I also don't see why any profiteer who doesn't use coal washing is allowed to bid.

Underground mining is not suitable for this LBA due to the geology of the coal deposit. The overburden is too thin, which could create an underground caving hazard to the mine personnel. There are numerous thin seams, which overlie each other and pinch out rapidly, making the coal deposit unmineable by any practical underground mining method.

I oppose this lease sale in full. I want the land kept open for wild horses and wildlife. The wild horses are gathered up and slaughtered in grisly ways in slaughterhouses - this is completely unacceptable. I want protection of the wild horses over this kind of environmental destruction. I don't want this wildlife habitat destroyed, as this plan does. There is no question that going to these plans mean destruction for all wildlife and birds in this area. To say otherwise, as if the birds and wildlife can live there with this work going on is a lie. They die with a plan like this.

Please refer to Section 1.6, Section 3.8, and Section 4.12 for discussions specific to wild horses. The BLM has determined that local wildlife, wild horses, and livestock would be temporarily displaced and habitat would be altered during active mining operations.

This is national land owned by national taxpayers. BLM, please treat it with more respect than you have here. National taxpayers have paid for this land for years with their taxes. Stop allowing this kind of cheap destruction. I think Americans are injured with this potential lease.

Find new bidders who can work better.

All qualified bidders are invited to bid on the LBA in a competitive lease sale to be held by BLM after the EIS, Fair Market Value, and Maximum Economic Recovery determinations are completed.

2. Kent Porenta, Sweetwater Economic Development Association

The Board of Directors of the Sweetwater Economic Development Association (SWEDA) supports Black Butte Coal Company (BBCC) in their coal lease application for a maintenance tract known as Pit 14 Coal Lease-by-Application.

SWEDA represents many facets of the community in our common goal of enhancing economic opportunities in Sweetwater County.

BBCC has been a prime source of economic development in Sweetwater County for many years. Their proven ability to produce and market coal for national and regional markets is and will be one of the more important factors in maintaining the economic health of our community. Numerous local industries depend on coal from BBCC and the approval of this tract would permit BBCC to continue to aid these industries to contribute to the economic health of our area.

Thank you for your comment.

3. Dave McCarthy, Black Butte Coal Company (Letter and Statement at Public Hearing)

I'm David McCarthy. Address, P. O. Box 98, Point of Rocks, Wyoming. I'm with Black Butte Coal Company. That good? Okay. First off, I'd like to congratulate Teri, Joanna, Shawn, Dave, Mike, Jeff, Steve, all the people who worked on the Draft Environmental Impact Statement. Very professional looking document. I know a lot of hours went into it. Thank you very much for that.

And now I'll comment a little bit on, on Black Butte itself. Coal mining around Black Butte has existed for actually over a century. The original Black Butte Coal Mine was an underground operation near Point of Rocks. Jack Moore and a group of investors from Omaha funded the project and produced over a hundred tons a day, delivered to the Railroad.

Another group of investors from Omaha, Union Pacific Railroad, and Peter Kiewit and Sons invested in what we now know as Black Butte. This happened in the early '70s. Since 1978, Black Butte has produced over a hundred million tons of coal and in 2003 celebrated 25 years in business. Now, Black Butte is regulated by the Wyoming DEQ. Both the DEQ and Black Butte share a common goal to monitor the land and wildlife during mining and to restore the mine lands to as close to pre-mine conditions as possible. Working together, Black Butte has reclaimed over 4,200 acres, and continues to look for new and innovative ways to improve an enhance reclamation.

Black Butte currently ships four million tons per year. Almost 75 percent of this coal is shipped locally to Jim Bridger Power Plant. The remainder is shipped to power plants in Utah and Nevada. Over the years, Black Butte has also sold coal to the local trona industries, the University of Wyoming, and even pickup loads to local residents.

Financially, Black Butte has been an important part of southwest Wyoming. Over the past five years, Black Butte has averaged over \$10 million per year in state and federal taxes and royalties. Our current payroll generates \$9 million per year in households and neighborhoods. Support industries for the mine were estimated to employ over 500 people, and generated over \$8 million in additional income.

Our strength in both our business and our community is our people. Black Butte currently employs 165. They are actively involved in community activities, and give generously of their time and money to many community organizations. One example is a, the recognition Black Butte employees receive each year for their outstanding contributions to the United Way.

We are really a family out there at Black Butte. Being in business for 25 years has actually allowed sons and daughters the ability to work side-by-side with their parents.

Black Butte has had the privilege of being an important part of Sweetwater County for over 25 years. The sale of this lease will allow Black Butte to continue to be a dependable supplier of quality coal, provide good jobs for local families, and significantly contribute to the state and federal tax base.

The Black Butte encourages the BLM to approve the sale of this lease, and looks forward to another 25 years of contributing to the community. Thank you.

Thank you for your comments.

4. Don Hartly, Southwest Wyoming Industrial Association (Statement at Public Hearing)

I'm Don Hartley, with the Southwest Wyoming Industrial Association. Since I sometimes get misquoted, that will help both of us.

The industrial association is made up of many of the many employers and taxpayers in Sweetwater County, and Black Butte Coal Company one of the members of that organization. I myself am a retired coal miner, having spent 20 years at Bridger Coal Company, competing with Black Butte Coal for many of those years. One among the responsibilities I had was wildlife flyovers. I always took an extra loop to the southern end of Bridger Coal Mine to look over Black Butte Coal Company, so I know a lot about their operations for 25 years.

I echo what Dave said before about the contributions of Black Butte to this community over the last 25 years, and hopefully to the next 25 years. They're in a unique position to continue to deliver coal locally to the developing markets that are here within our area.

I think, as noted before, the power plant and the trona industry needs coal. There are other industries that may need coal. Black Butte is unique in their ability to deliver that coal. I believe the preferred alternative as identified by the BLM is the acceptance of the LBA from Black Butte for the Pit 14, and I recommend that they go with their approved alternative.

Thank you for your comments.

5. Bill Wichers, Wyoming Game and Fish Department

The staff of the Wyoming Game and Fish Department has reviewed the DEIS for the Pit 14 LBA for Black Butte Coal Company. We offer the following comments.

Terrestrial Considerations

The western boundary of the proposed LBA area is within crucial winter range for the South Rock Springs deer herd. The LBA also lies within yearlong range for the Petition elk herd and the Bitter Creek antelope herd. The nearest active sage grouse leks are found in sections 15 and 25, T17N, R101W. The lek in section 15 is within ¼ -mile of the southeast boundary of the LBA. It is unknown if any sage grouse winter concentration areas exist in the proposed project location.

The wildlife analysis discloses loss of wildlife habitat and impact to existing species, with no mitigation. If the LBA is granted, we assume the entire LBA area will be impacted by mining. Under the necessary Wyoming Department of Environmental Quality mining permit, a reclamation

plan will be implemented for the mined area. However, during mining, the habitat function of the area, including deer crucial winter range and sage grouse habitat, will be nonexistent. Crucial winter ranges and sage grouse habitats are, under the Wyoming Game and Fish Commission's mitigation policy, designed as "vital" habitats. Our Department is directed by the Commission to recommend no loss of habitat function for these habitats. Since the habitats will be destroyed by mining, we recommend that BLM require mitigation for the loss, and are available (Grant Frost, 875-3225) to discuss enhancing lost vegetation values.

The LBA has an estimated active mining life of 20 years, with an additional 10-20 years allotted for reclamation liability. Disturbance over that 20 years would affect an estimated 2,250 acres (refer to Section 2.2.3.1 and Table 2.2), or 52 percent of the total LBA, which is 4,359 acres in size. Only a portion of the planned affected area would be disturbed at any one time. By year 20 of active mining, major portions of the earlier-affected lands would be reclaimed with vegetation establishing, per WDEQ/LQD requirements. Please refer to discussion in Section 1.3, Section 2.2.3.12, and Section 4.3.

Section 2.2.3.12 describes reclamation procedures and standards that would be required in the WDEQ/LQD permitting process. In addition to the information provided, it is important to note that all coal mine lands affected after 1996 must meet a "shrub standard" of 1 shrub/m² on 20 percent of the affected land. This standard, developed in conjunction with WDEQ/LQD and WGFD, is designed to promote the re-establishment of wildlife habitat with the establishment of shrubs. Section 2.2.3.12 states "special consideration of post mining habitat establishment for mule deer crucial winter range and sagebrush obligate species would be performed in coordination with the WDEQ/LQD and WGFD and BLM," thus giving WGFD a voice in habitat mitigation and habitat establishment techniques. Sections 2.2.4.3 and 2.2.4.4 commit to focusing reclamation efforts on habitat restoration.

The WDEQ/LQD would request input from the WGFD as part of the permitting of this amendment to the existing Black Butte WDEQ/LQD permit. At that time, specific mitigation and habitat enhancement standards can be added to the permit.

Aquatic Considerations

In Chapter 3.0, Section 3.7.3.9 Fisheries, as follows, suggests flannelmouth suckers do not occur within the portion of Bitter Creek that flows through Black Butte Mine:

"Two BLM sensitive fish species, the bluehead and flannelmouth suckers, are known to occur within the Green River watershed, which is supported, via the perennial Bitter Creek, by ephemeral flows from within the project area. The Green River watershed is a component of the Upper Colorado River Basin. The bluehead sucker is found in larger rivers and streams of the Green River watershed, but has not been recorded within the portion of Bitter Creek that runs through the existing Black Butte Mine and near the project area. The flannelmouth sucker is known to occur within the portion of Bitter Creek between the towns of Bitter Creek and Rock Springs, Wyoming. However, in a search conducted by the WNDD for this project, no records of occurrence of the flannelmouth sucker were identified in that portion of Bitter Creek."

In a letter dated February 3, 2005, we identified the presence and need for preservation of the flannelmouth sucker population in Bitter Creek within the Black Butte mine.

Several of the ephemeral drainages located within the proposed coal lease drain into Bitter Creek. Of specific concern are the drainages that enter Bitter Creek in the vicinity of the Black Buttes Union Pacific stop. The segment of Bitter Creek between the Towns of Bitter Creek and Rock Springs supports one of the only known populations of genetically pure flannelmouth suckers remaining in the upper Green River basin upstream of Flaming Gorge Dam (Gill et al. 2004, 2005). Our Department has categorized the flannelmouth sucker as a Status 1 species. Status 1 species are

physically isolated and/or exist at extremely low densities throughout their range, and habitat conditions are declining or vulnerable. Therefore, our Department has been directed by the Game and Fish Commission to recommend that no loss of habitat function occur. Some modification of the habitat may occur, provided that habitat function is maintained (i.e., the location, essential features, and species supported are unchanged).

The Natural Heritage Program assigns the flannelmouth sucker the global ranking of G3/G4, suggesting its existence to be uncertain (Fertig and Beauvais 1999). Gill et al. (2004, 2005) found the other known populations of flannelmouth suckers in the Upper Green River Basin are sympatric with white suckers and at risk of hybridization. The Bitter Creek population of flannelmouth suckers and the associated native fish assemblage are unique and need to be conserved.

Your comment is noted. The DEIS recognizes that flannelmouth sucker populations do exist within the portion of the Bitter Creek drainage between Bitter Creek and Rock Springs, and that there is habitat for this species within the existing Black Butte Mine permit area. Please refer to Section 3.7.3.9 and Section 4.11.3.3 for discussions and analyses of this species. Also, Section 2.2.3.5 provides discussion for how runoff water is to be handled on the mine site. Section 4.9.2.3 provides the analysis of potential water depletion that may occur within this portion of the watershed.

Following are areas of concern and needs to be addressed in the EIS, until such time as drainages may be mined through:

- **Spills of toxic fluids that may enter Bitter Creek either directly or indirectly.**
- **Increased sediment levels in Bitter Creek resulting from increase sediment yield from disturbed lands.**
- **Changes to the hydrology in Bitter Creek drainage resulting in either increases or decreases in stream flows that would negatively impact flannelmouth suckers or the habitat they depend upon.**

Potential water depletion for Pit 14 and cumulatively for the entire mine is described in Section 4.11.3.5 states, “Approximately 160 acre-feet of water are depleted annually from surface water sources (by mining) within the fisheries cumulative IAA (comprising approximately 271,169 acres of land). Approximately, an additional 17 acre-feet would be depleted annually from the assessment area if the Proposed Action were implemented. This would increase the total depletion by approximately 11 percent to approximately 177 acre-feet annually. Regardless of size, any water depletions are considered to be detrimental to the four endangered Colorado River fishes and, as such, are likely to contribute to adverse effects upon them.”

This depletion is more in relation to the threatened and endangered (Federally listed) species of the Colorado River drainage. However, it is recognized that surface water runoff would be captured on the mine site and is calculated for Pit 14 as a quantity of about 17 acre-feet per year due to evaporative losses (see Section 4.9.2.3). This loss could have some effect on overall flows in Bitter Creek. No disturbance is proposed in, or adjacent to the Bitter Creek channel. Surface water runoff from the Pit 14 mine area generally drains northeasterly and across some existing disturbances and into Bitter Creek. Runoff water from the project area is not anticipated to drain into Bitter Creek until after mine reclamation.

The Black Butte Mine is a “full containment mine”. That is, all sediment and run-off from mine-affected lands passes through sediment ponds before discharging to ephemeral streams and/or Bitter Creek. This contains any toxic spills that might occur in the LBA area. Because Bitter Creek drains into the Colorado River system, any water lost to Bitter Creek due to storage in sediment control ponds upstream is also calculated. The U.S. Fish and Wildlife Service will review the Colorado River Depletion calculations before WDEQ/LQD will approve mining in the LBA. In addition, the WDEQ/LQD will look at the Probable Hydrologic Consequences of mining at the LBA, which includes an analysis of surface and groundwater impacts on water quantity and quality. Any significant impacts would be addressed prior to

WDEQ/LQD issuing a permit amendment for the LBA area. The WGFD would have an opportunity to comment on any impacts or mitigations necessary to maintain flannelmouth suckers and their habitat at the beginning of the WDEQ/LQD permitting process.

To minimize impacts to the aquatic resources we recommend the following as appropriate for the future mining operation:

- **Watershed function should be preserved by either maintaining or rerouting Bitter Creek during mining and reclaimed as necessary after mining.**

Bitter Creek would not be directly affected by mining within the LBA as it is located approximately 1.4 miles from Bitter Creek.

- **Equipment should be serviced and fueled away from streams and riparian areas. Equipment staging areas should be at least 150 feet from riparian areas.**

Please refer to Section 2.2.3.11 for how hazardous materials would be managed under the Proposed Action.

- **Buffer zones of undisturbed vegetation should be provided along each side of standing waters and water courses to minimize sedimentation and direct fish habitat impacts. Factors such as slope stream channel stability and fish habitat should be considered when determining appropriate buffer zone width.**

The LBA is located approximately 1.4 miles away from Bitter Creek. Thus, mining or equipment servicing would not occur within 150 feet of Bitter Creek-

- **All stream channel crossings (intermittent and perennial) should be located in areas and constructed in ways which do not decrease channel stability or increase water velocity.**

No intermittent or perennial stream crossings would be constructed as part of mining on this LBA.

- **Disturbed areas other than those associated with road construction or reconstruction should be reseeded with appropriate plant varieties as soon as practically possible after the disturbance.**

The WDEQ/LQD permit would include standards for contemporaneous reclamation. Please refer to Section 2.2.4.4 which provides a discussion for reclamation on habitats of sagebrush obligate species. Also, Appendix J of the DEIS provides additional details for federal and state mitigation and monitoring requirements inherent to the Proposed Action that would be required for approval of this project.

- **To prevent ditch erosion, cross drainage in the form of grade dips or culverts should be used to drain water from the roads. If needed within 100 feet of live streams, riprap or discharge pipes with energy dissipaters should be installed to the bottom of the fill to dispose of road drainage.**
- **Sediment production is initially high following road construction and decreases over time as more easily dislodged materials are eroded. Because of this potential sedimentation impacts are greatest during and immediately after road construction. To minimize potential fishery impacts, all disturbed areas (except roadbeds) associated with road construction activities and especially cut and fill slopes, should be stabilized concurrent with any road construction authorized for this project.**
- **Soil erosion from cut and fill slopes should be controlled. Several effective methods include a) straw mulch with asphalt tackifier, b) straw used in combination with erosion mats or nets, and c) erosion mats alone. A preferred approach involves use of straw mulch (2 tons/acre) with asphalt tackifier (250 gallons/acre) with appropriate grass seed for the area (25 pounds/acre) and fertilizer (24-16-0) applied at 100 pounds/acre.**

- **Filter windrows constructed of logging slash are an effective method of slowing surface runoff and causing deposition of sediments. We recommend that at least two rows of windrows spaced no more than 25 feet apart be placed parallel to the contour of the slope along new or rebuilt roads located above (uphill from) and within 150 feet of streams.**
- **Anchored straw bale dams should be placed in drainage ditches within 25 feet of lateral drainage culverts or dips to catch sediment during road construction activities within 150 feet of live streams. When straw dams attain 50% of their capacity, they should be cleaned and the resulting material deposited in undisturbed areas with vegetative cover, slopes less than 15% and in locations at least 500 feet from any live stream.**
- **A rock blanket or riprap should be used for erosion control in ditches within 100 feet of the uphill side of live streams containing game fish or sensitive species. The size of rock material used for riprapping should be determined on the basis of anticipated flow rate, channel slope and channel shape. Jute or excelsior matting may also be used; however, this material is generally less effective than properly placed riprap.**
- **Disturbed banks should be stabilized with angular rock riprap with an average size of at least 12 inches in one dimension and a minimum size of 6 inches. Hard, durable rock such as granite should be used if possible. The rock should be from a non-streambed source.**
- **If broken concrete is used for riprap, large slabs should be broken so that the longest dimension is no greater than three times the shortest. The average size of concrete pieces should equal or exceed 2 feet at their widest point. All protruding rebar and metal should be cut off flush with the face of the concrete.**
- **Any riparian canopy or bank stabilizing vegetation removed as result of construction activities should be reintroduced and protected from grazing until the new growth is well established.**

Please refer to Section 2.2.3.5 and Section 2.2.4.6 which provide discussions on methods to control soil erosion and ambient or fugitive dust. These measures are analyzed as part of the Proposed Action. Some of the resource protection measures provided by WGFD represent best management practices for disturbances around streams and riparian areas. As described in the DEIS, no perennial or intermittent streams or riparian areas are found within the project area. Ephemeral drainages do connect with Bitter Creek.

The resource protection measures provided in your letter may be relevant to the specific mine-related actions to be described in the anticipated WDEQ/LQD mine permit. These measures should be provided to the WDEQ/LQD during processing that component of the permitting process.

LITERATURE CITED

Fertig, W. and G. Beauvais. 1999. Wyoming Plant and Animal Species of Special Concern. Wyoming Natural Diversity Database, Laramie, Wyoming. Unpublished report.

Gill, C., K. Gelwicks and Keith, R. 2004. Green River watershed native non-game fish species research: phase II. Period covered January 2003 to December 2003. Progress report submitted to the Bureau of Reclamation, agreement number 02-FC-40-6870. 51 pp.

Gill, C., K. Gelwicks and Keith, R. 2005. Green River watershed native non-game fish species research: phase II. Period covered January 2004 to December 2004. Progress report submitted to the Bureau of Reclamation, agreement number 02-FC-40-6870. 64 pp.

6. Patrick Navratil, Anadarko

Bitter Creek Coal Company, a wholly owned subsidiary of Anadarko Petroleum Corporation, is pleased to have the opportunity to review and provide comments on the above referenced

environmental impact statement. Anadarko believes these resources will play an important role in developing energy supplies to meet the growing demands of the United States while reducing our nation's dependence on foreign supplies. Furthermore, Anadarko firmly believes coal resources can and should be developed in an economically reasonable manner while protecting the environmental resources in a sensible manner.

Additionally, coal development will provide both direct and indirect economic benefits in terms of revenue to both the federal and state governments from royalty and taxes and indirect benefits from hiring of a well paid workforce. After a thorough review of the document, Anadarko fully supports and encourages the BLM to issue a Record of Decision in favor of the proposed action, BLM's preferred alternative.

Thank you for your comments.

7. John Etchepare, Wyoming Department of Agriculture

Our comments are specific to our mission: to be dedicated to the promotion and enhancement of Wyoming's agriculture, natural resources, and quality of life. As this proposed project affects our agriculture industry, our natural resources, and the welfare of our citizens, it's important that you continue to inform us of your proposed actions and provide us the opportunity to express pertinent issues and concerns.

The Environmental Impact Statement (EIS) needs to better emphasize the critical importance of timely and effective reclamation and weed control to offset harmful effects of this project. We are concerned about the unsuccessful reclamation that has occurred with other energy development projects in BLM planning areas in southern Wyoming. Prompt and beneficial reclamation and weed control must occur throughout the life of this project. The EIS also needs to specify those actions that will ensure successful reclamation and weed control and the consequences if they do not occur. Those assurances and consequences are not evident in the DEIS.

Regarding reclamation, we recommend the requirement to use locally adapted seed whenever possible. In the past, energy companies have used native, but non-local, seed for reclamation. Because this seed was not adapted to the growing conditions in the area, the result often was unsuccessful reclamation.

Please refer to Section 2.2.3.12 and Section 2.2.3.17 which provide a discussion of interim and final reclamation and weed management proposed for operational and post-mining actions within the project area. Reclamation of mined and ancillary disturbed lands would be concurrent with on-going mining throughout the life of the project and would meet federal SMCRA requirements as regulated by the WDEQ/LQD as discussed in Section 1.3.

Also, Section 4.10.1.3 states "prior to release of the reclamation bond (a minimum of 10 years following closure of the pit), establishment of a diverse, productive and permanent vegetative community would be required. To achieve this, reclamation would be designed to facilitate the return of current, and/or anticipated post-mine land uses. Reclamation could produce range sites of equal or greater productivity than those found within the project area prior to mining development."

The WDEQ/LQD requires native seed and recommends that companies request that seed be from plants grown within 300 miles of the reclamation site. LQD rules also require that noxious weeds be controlled on affected lands for five years after disturbance. Increased communication between the Weed and Pest control district, Black Butte Mine, and WDEQ/LQD would help increase the effectiveness of weed control efforts at Black Butte Mine.

The EIS and Record of Decision need to specifically reflect the Congressional intent expressed in the Federal Land Policy and Management Act of 1976 that the BLM needs to manage federal lands in the planning area in a manner that will provide adequate food and habitat for fish and wildlife

and domestic animals (our emphasis). While the DEIS emphasizes the adverse effects upon big game wildlife of loss of life from animal/vehicle collisions, harassment, increased stress and competition for remaining resources, possible reductions in reproduction rates, and a decline in physical condition, the DEIS fails to mention that these same consequences affect livestock. The DEIS also fails to recognize these other potential adverse effects: dead and ailing livestock from introduced and proliferating noxious weeds; cut fences; opened gates; destroyed cattle guards; unpalatable forage from traffic and construction dust; reduced water yield from springs, seeps, and wells; hydrology and desertification impacts; damaged range improvements; interference with, herding and animal movement, and decreased forage lost to displaced wildlife and wild horses.

FLPMA requires that public lands be managed on the basis of multiple use and for sustained yield, and in a manner which recognizes the nation's need for domestic sources of minerals, food, etc. As discussed in Section 1.4, the project area was deemed suitable and acceptable for further coal leasing consideration, with appropriate mitigation. Actions associated with this Proposed Action are in conformance with the Green River RMP. Also, Section 4.2 discusses the relationship of short-term use of the environment versus long-term productivity is discussed as it relates to the extraction of coal and resource use sustainability.

As discussed in Section 4.13.2, the Proposed Action would close the project area for grazing until reclamation revegetation is established to a level where grazing would not interfere with reclamation success. Since grazing would not be anticipated during active operations within the project area, no impact to livestock from vehicular collisions and/or other detrimental impacts would occur. No range improvement projects are known to be authorized in the project area which includes fences with gates, cattle guards, or water improvements. Therefore, no impacts to these types of projects would occur under the Proposed Action.

The Proposed Action incorporates the following regulatory standards:

- Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for Public Lands Administered by the BLM in the State of Wyoming, August 12, 1997.
- Site specific post-mining reclamation plan to be developed by BBCC in coordination with WDEQ/LQD, BLM RSFO, WGFD, and other federal, state, and local agencies.

We are also concerned about the mounting impacts of the many energy development projects that are, or soon will be, occurring across the southern tier of Wyoming. These cumulative impacts magnify the penalties and costs of development upon grazing permittees mentioned above. These accumulating impacts significantly decrease revenues and increase costs for grazing permittees and can significantly impede their ability to help meet Wyoming BLM Standards and Guidelines for Healthy Rangelands. Although the impacts of a project may not critically harm a particular livestock operation in a specific project area, the cumulative impacts of all of these projects may jeopardize the livelihoods of individual grazing permittees and livestock grazing within this area of our state.

The accumulating impacts of all of these projects further emphasizes the critical significance of prompt and effective reclamation and weed control, and the need to consider other mitigation techniques by energy development companies.

Table 4.2 presents existing, proposed, and foreseeable future actions cumulative disturbance levels within the livestock grazing impact assessment area (updated from DEIS). Assuming all foreseeable actions are implemented, surface disturbance would occur on less than three percent of the livestock grazing impact assessment area. It should be noted here this table does not recognize on-going reclamation efforts associated with actions such as pipeline construction, well abandonment, etc. In addition, BLM and State of Wyoming agencies, which regulate mining and other surface disturbing activities, require swift and

quality reclamation to maintain Wyoming's rangeland resources for wildlife habitat, domestic animal forage, and economic considerations.

8. Larry Svoboda, Region 8, Environmental Protection Agency

In accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, Region 8 of the Environmental Protection Agency (EPA) has reviewed and rated the Pit 14 Coal Lease-by-Application Draft Environmental Impact Statement (DEIS), dated March 2006. This DEIS is for a Lease-by-Application (LBA) filed by the Black Butte Coal Company, which would allow them to access federal coal reserves located adjacent to the existing Black Butte Mine in Sweetwater County, Wyoming. The existing mine and the LBA are located approximately 28 miles southeast of Rock Springs, Wyoming.

Specific Comments:

- **Pg. 55, Section 3.2.1.2 -Air Pollutant Concentrations -EPA is pleased to see the discussion of the indirect air quality impacts of coal mining, which is the release of air contaminants including carbon dioxide and mercury by way of coal combustion from power plants. We recommend that a statement be included showing the range of mercury concentrations found in Black Butte coal and comparing this concentration with other coal mined in Wyoming and the United States.**

BLM appreciates EPA's recognition of the discussion of indirect impacts. BLM has corrected the text in Section 3.2.1.2, *Other Concerns* including new **Table 3.8** with typical values of mercury concentrations in coal throughout the United States.

- **Pg. 121, 4th paragraph- Good discussion on the role of jurisdictional agencies and mitigation to protect natural resources. This discussion corresponds well with the Council on Environmental Quality's written guidance (Questions and Answers About the NEPA Regulations, March 16, 1982) which states that "All relevant, reasonable mitigation measures that could improve the project are to be identified, even if they are outside the jurisdiction of the lead agency or cooperating agencies, and thus would not be committed as part of the RODs of these agencies. This will serve to alert agencies or officials who can implement these extra measures, and will encourage them to do so."**

BLM appreciates EPA's recognition of the discussion of jurisdictional agencies and mitigation.

- **Pg. 122, Section 4.6.4 -Please include a statement comparing the air emissions from the proposed project area to those currently occurring in the Black Butte Mine. Will haul trucks have higher emissions due to the drive on a longer route to the coal loading area? Under the current operating scenario, would moving the coal hopper, conveyor, and coal loading area closer to the proposed project area be beneficial in reducing truck exhaust emissions and the associated fugitive dust emissions from unpaved roads?**

Based on consultation with your agency, it was agreed that moving the coal hopper, conveyor, and coal loading area closer to the project area would constitute another alternative. Section 2.4.4 has been added for discussion of this alternative.

- **Pg. 126, Table 4.5 -The labels for the columns of NAAQS and WAAQS are reversed. The incorrect labeling affects the 24-hour and annual standards for sulfur dioxide (SO₂). The Wyoming 24-hour and annual SO₂ standards are 260 µg/m³ and 60 µg/m³, while the corresponding national standards are 365 µg/m³ and 80 µg/m³. Please revise the table accordingly.**

Table 4.5 has been corrected.

- **Pg. 150, Section 4.11.2.7 -We recommend that a summary of the "raptor protection and mitigation plan" be included in this section. EPA understands that mitigation measures for**

the Proposed Action are similar to those that were developed for the existing operations at the Black Butte Mine.

Please refer to Section 2.2.4.5, Section 3.7.2 and Tables 3.15 and 3.16 (table numbers revised from DEIS, formerly Tables 3.14 and 3.15) and Figure 3.15. The existing Black Butte Raptor Protection and Mitigation Plan (2005) incorporates the project area and is updated annually to include the latest raptor inventory, monitoring and prey-base analysis.

- **Pg. 164, Section 4.15.1.5 -Please clarify the statement "In these areas (private lands), the loss or damage to unidentified cultural or historical site or resources could be substantial." Does either state or federal regulations concerning cultural resources apply to private land owners?**

The Federal undertaking under BLM control addresses only leasing of coal on Federally owned lands. There would be a later undertaking and presumably consultation with the State Historic Preservation Office relative to mine permitting which is the jurisdiction of the OSM, with some authorities delegated to the WDEQ. The OSM should comply with Section 106 issues relative to that aspect of the undertaking. There are no state regulations governing cultural resources on Federal or private lands. WDEQ/LQD requires cultural and historic site analysis regardless of ownership.

EPA is rating the Proposed Action as an EC-2. "EC" (Environmental Concerns) signifies that the EPA review of the DEIS identified environmental impacts that should be avoided in order to fully protect the environment. For this project, the air quality cumulative impacts indicate a significant level of visibility impairment at the Bridger Wilderness Class 1 area. For this reason, the Proposed Action should minimize particulate and nitrogen oxide emissions wherever possible. The "2" signifies that there is insufficient information to fully assess environmental impacts that should be avoided in order to fully protect the environment. For this project, the potential reduced truck emissions, obtained by moving the coal loading area closer to the new mining area, is missing. We have enclosed a summary of EPA's rating criteria and definitions.