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United States Department of Agriculture
Forest Service
Manti-La Sal National Forest
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File Code: 2820-4

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DIV. OF OIL, GAS & MINING

William Lamb
Bureau of Land Management
Utah State Office
P.O. Box 45155
Salt Lake City UT 84145-0155

ACT/015/018 #2
ACT/015/019 #2

Dear Mr. Lamb:

We have reviewed PacifiCorp's updated submittals regarding their applications for relinquishment of several coal leases on East Mountain within the Manti-La Sal National Forest. On several of the proposed parcels PacifiCorp has provided evidence to indicate that subsidence is substantially complete and impacts to hydrology/vegetation have stabilized, requiring no continued monitoring or mitigation. However, there are some parcels in PacifiCorp's request where continued monitoring or reclamation of surface subsidence features is necessary to satisfy lease stipulations.

A document that contains a complete discussion of our findings for each lease is attached. For those leases/parcels cleared for relinquishment, PacifiCorp must provide a certified statement identifying the type, quantity, and dates that any hazardous substance was stored for one year or more, known to have been released, or disposed of, to enable us to meet future obligations under 40 CFR 373; please provide a negative declaration that no hazardous substances were stored, released, or disposed of on federal lands. Additionally, provide a certified statement that all equipment and hazardous materials (including oil) have been removed from the underground workings to prevent contamination of ground water (Clean Water Act, RCRA, CERCLA, MLA, and SMCRA). The certified statements should be incorporated into the permanent lease files and a copy provided to the Surface Management Agency.

The Manti-La Sal National Forest consents (subject to the certifications noted above) to relinquishment of the following portions of the requested relinquishment areas based on the reports provided by PacifiCorp:

SL-066116

Remaining 360 acres of the lease not already relinquished.

SL-064607/SL-064621

Lot 12, W1/2SW1/4, T. 17 S, R. 7 E. SLM (120 acres).

SL-070645/U-02292

Parcels 1 and 2 (all of the area requested) totalling 250 acres.

U-02664

East Parcel consisting of W1/2SW1/4, SW1/4NW1/4, E1/2NW1/4NW1/4, Section 23, T. 17 S., R. 7 E., SLM (140 acres).

U-1358

SE1/4NE1/4, Section 27, T. 17 S., R. 7 E., SLM (40 acres).

U-47978

S1/2, SW1/4NW1/4, S1/2SE1/4NW1/4, NW1/4SE1/4NW1/4, S1/2S1/2NE1/4, Section 28; S1/2, S1/2N1/2, Section 29; E1/2SE1/4, SE1/4NE1/4, Section 30, T. 17 S., R. 7 E., SLM (1,030 acres).

The Manti-La Sal National Forest does not consent to relinquishment of the following areas:

SL-064607/SL-064621

E1/2SE1/4SE1/4, E1/2W1/2SE1/4SE1/4, Section 3, T. 17 S., R. 7 E., SLM (30 acres).

Subsidence data presented for this area is inconclusive, the subsidence maps conflict with each other, and the subsidence (amount and configuration) is not consistent with that expected.

Additional photogrammetric data or conventional monitoring of at least one survey point over the expected maximum subsidence area for 2 to 3 years is needed to demonstrate that subsidence is substantially complete.

U-02664

NE1/4SW1/4, W1/2SE1/4SW1/4, E1/2E1/2SW1/4SW1/4, Section 23; NE1/4SW1/4 Section 26, T. 17 S., R. 7 E., SLM (110 acres).

Subsidence data presented for this area is inconclusive, the subsidence maps conflict with each other, and the subsidence (amount and configuration) is not consistent with that expected.

Additional photogrammetric data or conventional monitoring of at least one survey point over the expected maximum subsidence area for 2 to 3 years is needed to demonstrate that subsidence is substantially complete.

U-1358

E1/2SE1/4, Section 22; NE1/4NE1/4, Section 27, T. 17 S., R. 7 E., SLM (120 acres).

Subsidence appears to be substantially complete but the lease should not be relinquished until PacifiCorp submits a reclamation plan for the cracks, conducts reclamation according to an approved plan, and vegetation is re-established according to success standards.

U-47978

S1/2S1/2NW1/4, N1/2SW1/4, Section 27, T. 17 S., R. 7 E., SLM (120 acres).

Large cracks developed over the north slope of Newberry Canyon and a graben-like area developed farther north on the ridge above Grimes Wash. The escarpment failure areas and escarpment (Castlegate Sandstone) have stabilized, but the cracks and graben have not healed sufficiently to determine if surface drainage will be diverted, causing erosion (rills/gullies) and loss of soil. More time is needed to monitor the area to determine if reclamation will be necessary.

Lot 4, SW1/4SE1/4, Section 30, T. 17 S., R. 7 E., SLM (57.8 acres).

The Miller Creek breakout lies just upstream of this lease segment on Federal Coal Lease U-083066. Mine water is (or has the potential to be) discharged into Miller Creek from this breakout and could cause impacts to the stream channel. In addition, this breakout is at a low point down-dip of the underground mine workings, therefore, water may continue to discharge at this location after the mine is closed and abandoned. Some work required to install a permanent drain, provide for water quality, and protection of the drainage channel may be required along the channel in U-47978 prior to mine closure. This portion of the lease should be retained for the life of the mine.

If you have any questions, please call Aaron Howe or Carter Reed at the Forest Supervisor's Office in Price, Utah.

Sincerely,

for
JANETTE S. KAISER
Forest Supervisor

Enclosure

cc: RO-MAM
C.Reed
D-2/3
Lowell Braxton, UDOGM

PACIFICORP PHASE I AND II FEDERAL COAL LEASE RELINQUISHMENT APPLICATION
REVIEW AND FINDINGS
MANTI-LA SAL NATIONAL FOREST
APRIL, 1997

SL-066116 - PacifiCorp has proposed to relinquish the remaining 360 acres of the original lease. BLM relinquished 160 acres of this lease that had not been mined on December 14, 1995.

The lease lies within the permit area for the DesBeeDove Mine. A single seam (room-and-pillar with pillar recovery) was mined and was completed in 1983 along a narrow corridor between the Bear Canyon fault and burned coal. The mining followed a narrow southwest-northeast trending ridge along the main east escarpment of the Wasatch Plateau.

Subsidence: PacifiCorp's 1995 subsidence maps (Figure 28) shows a maximum subsidence area of 5 feet over the approximate center of the mined area and subsidence profiles follow the general trend of mining. Maximum subsidence and the subsidence are consistent with expected subsidence in the area. Figure 29 (Area 7 Subsidence Profile) shows considerable noise in comparing the subsidence profile for each year which is expected due to the rugged topography. The 1995 profile lies well within the composite profile for the years of 1982 through 1995. No obvious subsidence features or surface cracks were identified during field reviews.

Hydrology: No pre-mining or historic springs are known in the area. The area receives very little ground water recharge and strata above the coal seam is dry. Therefore, there were no water monitoring points located within the lease.

Vegetation: No vegetation changes were evident from comparison of air photographs of the area or field inspections.

Determination: The data presented is complete and demonstrates that subsidence is substantially complete and there have been no impacts to hydrology and vegetation.

The lease should be relinquished as proposed.

SL-064607/SL-064621 - PacifiCorp applied for partial relinquishment (443.92 acres) of this 613.92 acre lease. The BLM relinquished 293.92 acres on December 14, 1995 leaving 150 acres proposed for relinquishment. PacifiCorp has not proposed relinquishment of the remaining 170 acres. The remaining area is needed to maintain main entries and provide access to potential future reserves.

Subsidence: Room-and-pillar mining was completed in 1979 in two separate

parallel sections in a single seam (Blind Canyon). They are long, narrow southwest-northeast sections that follow the trend of a topographic ridge along the eastern escarpment of East Mountain. Pillar recovery was only completed in isolated blocks within the two sections.

Section 2 Segment - Subsidence shown on Figure 13A is consistent with that expected for the type and extent of mining that occurred. The maximum subsidence zone of between 4 and 5 feet generally lies over the area where pillars were recovered. The Area 3 Subsidence Profile (Figure 14) displays that there could have been additional subsidence in 1995, especially along the north end of the profile along the steep south slope of the main or South Fork of Meetinghouse Canyon. Considering that the profile for a given year showed less subsidence than the preceding year, it appears that photogrammetric monitoring in this steep topography was only successful on a large scale (2 feet or greater). It can be concluded that subsidence in the Section 2 segment is consistent with that which is expected and is substantially complete.

Section 3 Segment - Subsidence is shown on Figure 13A and the 1994 and 1995 subsidence maps. None of the maps agree and subsidence does not seem to be centered over the blocks of coal where second mining (pillar recovery was conducted). Data submitted does not include a specific profile through the mined area. Even though this is rugged terrain, subsidence data presented does not provide sufficient data to support a determination that monitoring has been successful and subsidence is substantially complete. Conventional survey points (surveyed for 2 to 3 years) showing less than 1 foot of subsidence over the center of the second mining areas would be required to demonstrate that the area is stable.

Hydrology: No springs or perennial streams are known (pre or post-mining) within the area proposed for relinquishment. No monitoring data is needed or presented.

Vegetation: Examination of aerial photographs and observations during annual helicopter flights have not revealed any perceptible changes in vegetation.

Determination: Data presented by PacifiCorp reasonably demonstrates that subsidence in the Section 2 portion of the lease is most likely substantially complete. Data is not reasonably conclusive for the Section 3 portion.

The Section 2 portion of the lease should be relinquished.

The Section 3 portion of the lease should not be relinquished pending further monitoring or data submittal. Even though subsidence might be substantially complete for

the Section 3 portion, the data does not reasonably demonstrate that it is.

SL-070645/U-02292 - The lease relinquishment request involves two separate parcels totalling 250 acres of this 2,560 acre lease. The north parcel or Parcel 1 (90 acres) was mined (Deer Creek Mine) prior to 1979. A single seam was extracted using the room-and-pillar method in three separate east-west trending blocks of coal. Pillars were recovered in all three blocks. The south parcel or Parcel 2 (160 acres) was partially mined prior to 1993 in the old McKinnon Mine. The southern edge of this parcel was mined (single seam) in conjunction with the Deer Creek Mine up to 1981. Pillar extraction took place along the southern edge in the upper seam (Blind Canyon). A longwall panel was extracted along the southern portion of this parcel in the lower seam (Hiawatha seam).

Subsidence: Photogrammetric data presented for Parcel 1 (LR-15) does not appear to be reliable due to steep slopes and limitations of the photogrammetric method. The trends shown in the subsidence contours seem to indicate that some subsidence has occurred over the extracted coal blocks since 1980 but no new large scale subsidence has occurred in the last 3 years (maximum subsidence areas increase then decrease as compared to 1980). The subsidence data loosely matches with the mining areas and the amount of subsidence expected for a single-seam of room-and-pillar mining with pillar extraction. If it is assumed that the differences in subsidence data for each year is due to difficulties with plotting aerial photo elevation points on steep terrain, the data presented indicates that subsidence in the area is probably substantially complete.

Photogrammetric data for Parcel 2 (LR-15) seems to be more consistent and reliable, most likely due to more gentle terrain. Comparing subsidence contours presented for 1992 through 1995 (each compared to 1980) shows consistency and differences easily associated with computer generated models. The subsidence amounts (up to 7 feet above the longwall panel along the south edge) and locations seem consistent with maximum subsidence expected from the mining that occurred in the two seams. The subsidence contours indicate that subsidence is probably substantially complete.

Hydrology: No springs or perennial surface flows have been mapped in either of the parcels. The closest spring is Sheep Herder Springs (82-52) that lie approx. 1/4 mile west of Parcel 2. PacifiCorp's monitoring has shown no changes in flow or quality.

Vegetation: Photo monitoring of vegetation communities has shown no changes due to mining.

Determination: Parcel 1 lies just northwest of the surface facilities for the Deer Creek Mine and is totally surrounded by portions of Federal leases which remain within the permit area and have not been proposed for relinquishment. This parcel is eligible for relinquishment but the Division of Oil, Gas and Mining should determine if relinquishment of a small area completely within the outer boundaries of the permit area is consistent with their permit administration responsibilities.

Parcel 2 should be relinquished as proposed.

U-02664 - The lease is included in the permit area for the DesBeeDove Mine. It consists of two separated parcels (east and west parcels). Approx. 240 acres of the east parcel (two separate blocks) along the easternmost and northernmost edges has already been relinquished by BLM on 12/14/95 because no mining has taken place and this areas were not accessible for mining. Relinquishment of 250 acres is pending consisting of three separate blocks (140 acres in the east parcel and 70 + 40 acres in the west parcel).

East Parcel - Coal was mined in two seams by stacked east-west room-and-pillar panels with second mining. The east ends of panels extend into the lease relinquishment area. Mining was completed prior to 1980.

West Parcel (north block, 70 acres) - This block of coal was mined prior to 1980 in three east-west trending panels of 2 seam room-and-pillar mining with pillar recovery.

West Parcel (south block, 40 acres) - This block was mined prior to 1980 in a single seam with pillar recovery. Overburden is between 200 and 400 ft.

Subsidence: East Parcel - Subsidence data covers only the northernmost portion but seems to representative of the remaining area. Monitoring since 1980 shows approximately 2-3 feet of subsidence over the extracted area (Figures 32, 33, 33T, and 1995 Subsidence Map). The east-west profile shows that subsidence has occurred and that data is jumbled because of steep slopes. Subsidence is probably substantially complete.

West Parcel (south block) - No subsidence is shown on any of the maps for this area and the area 13 profile (Figure 42 does not extend far enough south to include this area. No data to indicate that subsidence is substantially complete. Terrain is steep and ledgey.

West Parcel (north block) - Figures 41, 42, 42T, 43, and 43T show the subsidence. It is scattered in isolated pods that is typical of room-and-pillar mining. Maximum subsidence is 2-3 feet which is less than expected over areas where two seams have been extracted and the profiles for 1993 and 1994 seem to be totally in error and there is no reasonable explanation for this since the terrain is fairly gentle. If the 1995 data is considered in comparison to previous years (not considering 1993 and 1994), the data indicates that subsidence up to 1.5 feet may have occurred. Data does not support that subsidence is substantially complete.

Hydrology: There are no springs in the immediate area. The nearest spring is to the west within the area of the lease that will not be relinquished. No impacts to hydrology have been identified.

Vegetation: No changes in vegetative communities have been monitored.

Determination: The east parcel is eligible for relinquishment. Both blocks in the west parcel require additional monitoring to demonstrate that subsidence is substantially complete. At least one more year of photogrammetric monitoring is required to for the north block to see if data reasonably matches the 1995 data and shows less than 1 foot of difference in subsidence as compared to the base year. Data is needed for the south block (conventional survey or photogrammetric), since none was presented.

U-1358 This lease is part of the permit area for the Wilberg/Cottonwood Mine and Deer Creek Mine. Mining occurred only in the northern half of the proposed relinquishment area of 160 acres. The proposed relinquishment area lies on the east escarpment of Grimes Wash right above the portal facilities for the Cottonwood/Wilberg Mine. Room-and-pillar mining with pillar recovery was conducted in two seams and was completed in 1983.

Subsidence: Large cracks occurred and a graben-like area subsided to a maximum amount of 28 feet which exceeds the extracted height of mining in both seams. This can be attributed to burned coal, outward rotation of a block of land along the escarpment, and faults. The photogrammetric subsidence data and prism monitoring data show that the area has been stable since 1990.

Hydrology: There were no mapped springs in the relinquishment area. A wet area formed in the graben and a small riparian vegetation area developed. It is possible that the graben interrupted shallow, local ground water flow resulting in development of this area. Evidence of additional springs in the area were investigated in the field in 1996. There is evidence of several small seeps to the south on the slope below the graben. It is possible that some water that

initially issued at these seeps was diverted to the new riparian area in the graben.

Vegetation: Several trees were uprooted right along the subsidence cracks and several small riparian vegetation areas have developed due to water retention along poorly drained depressions. The riparian area at the bottom of the graben can be attributed to poor drainage and ground water. No other vegetation community changes are evident from the air photographs.

Determination: Subsidence appears to be substantially complete but the lease should not be relinquished until PacifiCorp submits a reclamation plan for the cracks, conducts reclamation according to an approved plan, and vegetation is re-established according to success standards.

U-47978 - BLM relinquished that portion of the lease that lies on BLM lands south of the Forest boundary (1,347.31 acres) on 12/14/95. That portion of the lease on NFS lands remains to be relinquished (1,910.00 acres). A single seam of longwall mining was completed in 1992. Longwall panels trend east and west.

Subsidence: Photogrammetric subsidence monitoring shows a maximum of 7 feet of subsidence. An extensive area along the north slope of Newberry Canyon failed (rock spalling) due to the extraction of longwall panels parallel to the escarpment. Extensive areas of vegetation were scoured of vegetation from the Castlegate Sandstone outcrop to the Star Point Sandstone (approximately 1,000 feet measured vertically). Smaller isolated areas of escarpment failed along the south slope of Newberry Canyon and the west slope of Grimes Wash. A graben formed between two cracks on the west slope of grimes wash on the ridge that separates Newberry Canyon and the northern portion of Grimes Wash. The graben area fell approximately 2 to 3 feet below the adjacent area (this area was not detected by photogrammetric monitoring, Area 14, Figure 45). A series of large cracks (parallel to the escarpment) formed just above the escarpment along the north slope of Newberry Canyon. Except for the steep slope areas the photogrammetric subsidence data is consistent with what is expected for the type of mining and indicates that subsidence is substantially complete. Prism data indicates that the escarpments have stabilized over the areas that failed. The cracks are still visible and open at some locations (mostly vertical movement) and are healing naturally. The cracks present no danger to people, wildlife, or livestock but could be concentrating surface flow and could cause erosion. Additional observation of the area is needed to determine if filling/grading is necessary to control erosion and formation of gullies.

Hydrology: One spring is located in the relinquishment area.

Monitoring of the spring has shown no effects from mining.

Vegetation: Other than the areas affected by escarpment failures and cracks, there is no indication that subsidence has altered vegetation communities (comparison of aerial photographs).

The escarpment failures destroyed vegetation along the canyon slopes and an unknown number of individual Hedysarum occidentale var. canone (sensitive plant) was destroyed. Replanting of the disturbed area was considered, but it was decided that the rock rubbel was not significantly contributing to erosion/sediment production and that the area would best revegetate naturally. Some off-site wildlife habitat improvement was conducted in cooperation with the Utah Division of Wildlife Resources to mitigate the effects to big game winter range.

Three of 5 golden eagle nests in Newberry Canyon were destroyed by escarpment failures but no adult or young eagles or eggs were lost. Raptor monitoring has shown that the eagle territory is still being used.

Determination: PacifiCorp has shown that subsidence within the tract is most likely substantially complete. Most of the lease is eligible for relinquishment. Two small parcels of the lease should remain leased.

Do we have water samples from this discharge point?

That portion of the lease that encompasses Miller Creek (lot 4, SW1/4SE1/4, Section 30, T. 17 S., R. 7 E., SLM) due to mine water discharge into Miller Creek (NPDES Permit) and concerns for the need for continued discharge after the mine closes (ground water flows to the southwest and mine water will naturally discharge at this location),

That portion of the lease on the ridge above the north slope of Newberry Canyon where the major subsidence cracks and the graben occurred (S1/2NW1/4, N1/2SW1/4, Section 27, T. 17 S., R. 7 E., SLM).

The remaining portion of the lease should be relinquished.