

SUBSIDENCE MONITORING REPORT

1986

STAR POINT MINES

ACT/007/006

RECEIVED
MAY 04 1987

DIVISION OF
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Introduction

During the months June through September, subsidence monitoring was conducted on the surface lands above underground mining. The land surface above all full extraction mining was visually searched for evidence of surface disturbance. Monitoring points above the longwall mining area were surveyed for vertical movement. Additional monitoring points were established above Longwall Panel 5.

Mining by the longwall in Sections 12 and 13, T15S, R7E, constituted the majority of mining during 1986 with small areas of development and pillar extraction in Section 6, T15S, R8E, and Sections 11 and 12, T15S, R7E.

PMC cooperated with the Manti LaSal National Forest plan for studying the surface affects of underground mining in 1986. Aerial photographs were taken of the surface above mining to evaluate affects of subsidence.

Surface Effects

No new surface effects were observed over the older mined areas shown on Map 61 Map A in Section 17, T15S, R8E, and on Map 62. The subsidence as shown on Maps 61 Map A and Map 62 exhibited no new movement. Healing of these tension cracks and slumped areas continues as discussed in previous reports.

Table 89 summarizes data obtained during 1986 field surveys. Maximum subsidence is located over Longwall Panel 2, which was mined between November, 1984, and July, 1985. Maximum vertical downward movement of 5.72 feet is at monitoring point P117. Subsidence contours have been plotted on Map 61, Map A. As evidenced by the contours, subsidence is starting at the surface shortly (within 2 months) of the passage of the longwall face. The location of the longwall face at the time of the survey of monitoring points above Panel 4 is shown on Map 61 Map A. A cross-section is shown as Section A-A on the enclosed map entitled Subsidence Cross-Section A-A. The location of this cross-section is shown on Map 61 Map A.

A determination of the angle of draw is inconclusive. The areas south and east of the longwall panels have been mined out by U.S. Fuel Company. The area west of the longwall panels is highly faulted because of the graben structure. The north side of the longwall area remains as the only reliable area to determine the angle of draw. Control points were established during 1986 on the north side of the longwall area that should allow determination of the angle of draw. Continued field surveys will need to be conducted until movement stabilizes to determine the angle. Additional control points will be established north of Longwall Panel 7 to determine the angle of draw. Work done by J.F.T. Agapito and Associates for PMC, which is included as Exhibit 30 in the Five Year Permit Renewal Application, indicates an angle of draw of 21.5 degrees at PMC.

Two methods of ground searches were conducted during 1986. The old mining areas were searched from the air by helicopter. The longwall mining area in Sections 12 and 13 were searched from the air by helicopter and by foot. No evidence of cracking, slumping, or ground movement was found above longwall mining areas. Forest Service roads and fences were inspected and no evidence of movement or damage could be found. No other structures exist above longwall mining. The subsidence indicated by the field surveys above the longwall area is occurring as deformation of the strata with no surface fracturing.

Vegetation

There appears to be no effect on vegetation from subsidence. Grasses, trees, and shrubs at the edges of old displacements show no adverse effects. No visible changes are evident at the longwall subsidence area.

Surface Water and Groundwater

Numerous small drainages are intercepted by subsidence in the older mined areas (pre-1984). There are no erosion problems at these locations. There are no perennial streams in the areas mined to date.

A complete discussion of hydrology data and effects from mining is included in the PMC 1986 Hydrology Report. A probable hydrologic consequence determination is included in PMC's Five Year Permit Renewal Application, which was submitted in September, 1986. Water monitoring data indicates there are no adverse impacts to groundwater or surface water as a result of mining by PMC.

Surface Structures

There are no visible effects to structures above mined areas; these structures consist of a T.V. relay station, one small cabin, a PMC owned power line, fences, and unpaved Forest Service roads.

Projected Mining

Mining will continue in Section 6, T15S, R8E, in Section 12, T15S, R7E, and development mining will be started in Section 18, T15S, R8E. Development mining in Section 18 will be conducted to establish longwall mining which is scheduled to begin in 1988.

Monitoring

The Manti LaSal National Forest monitoring plan was conducted in 1986. Final results of this monitoring have not been received by PMC.

PMC has established a system of monitoring points on the surface above mining as shown on Map 61 Map A. Results of field surveys are summarized in Table 89 and subsidence contours are shown on Map 61 Map A. A cross-section through the longwall subsiding area is shown on Map Subsidence Cross-Section A-A.

Monitoring in 1987 will include those commitments outlined in the Five Year Permit Renewal Application and in the New Lands Permit Application. Monitoring in 1987 will consist of:

- 1 - Field surveying the monitoring points shown on Map 61 Map A.
- 2 - Establishing additional monitoring points above Longwall Panels 6 and 7 as shown on Map 61 Map A.
- 3 - Establishing control points above the golden eagle nests on the cliff face in Section 18, T15S, R8E, as shown on Map 61 Map A.
- 4 - Taking ground based photographs for baseline of the cliff face in Section 18, T15S, R8E, shown on Map 61 Map A, and a reference area to be picked in the field.
- 5 - Taking ground based photographs for baseline of the Right Fork of the North Fork of Miller Creek stream channel in Section 18, T15S, R8E, as shown on Map 61 Map A.
- 6 - Visual observation of the surface above all mined areas for surface affects of mining.