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United States Department of the Interior

GEOLOGICAL SURVEY

WATER RESOURCES DIVISION
Room 1016 Administration Building
1745 West 1700 South
Salt Lake City, Utah 84104

August 1, 1989

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AUG 02 1989

DIVISION OF
OIL, GAS & MINING

Mr. Rick Smith
Utah Division of Oil, Gas, and Mining
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Dear Mr. Smith:

Please find enclosed a copy of the Subsidence project quarterly report.

The quarterly report is from April 1, 1989 through June 30, 1989.

Cecil Slaughter

Cecil Slaughter

Hydrologist

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AUG 02 1989

DIVISION OF
OIL, GAS & MINING

HYDROLOGIC RESPONSE TO LAND SUBSIDENCE CAUSED BY UNDERGROUND
COAL MINING, MILLER CREEK DRAINAGE, CARBON COUNTY, UTAH
QUARTERLY REPORT

April 1, 1989 through June 30, 1989

Mining Wattis Seam

Mining of the second longwall panel was completed in May 1989.
Longwall mining of the third panel began in June 1989.

Mine Water

Water continues to flow out of the gob into 3 East from X-cuts 12, 13, 16, 17, 21, and 22. In early April, the maximum flow was 5 gpm measured in X-cuts 12 and 13. In late April, the flow rate from X-cut 12 increased to approximately 100 gpm while the other X-cut flow rates remained essentially unchanged throughout the quarter. Water samples were taken at X-cuts 12 and 21 on April 26, the results are pending. Flow rate from X-cut 12 decreased from 100 gpm in early May to 45 gpm in late May. Flow rates were further reduced in June to approximately 35 gpm from X-cut 12.

Surface Water

In late April, a reconnaissance of the stream showed that water was being diverted underground across from the drillpad. Rhodamine dye was put into the stream and trace quantities of the dye were detected in water flowing from X-cuts 22, 21, and 17 underground approximately 3.5 hours later. Water samples were taken from the stream near the drillpad site and at the weir on April 26 and 27, respectively; results of the analysis are pending.

Upstream from the drillpad site, at the next confluence on the NFRF Miller Creek, water was seen coming from only the right tributary; the snow was too deep to investigate further. In May, a reconnaissance of the left tributary revealed, at an altitude of approximately 9000 feet, the stream was disappearing underground below a sandstone ledge.

To more accurately monitor the stream-water volume, a V-notch weir will be installed in July; it will replace the rectangular weir currently monitoring the stream.

Ground Water

On April 26, an attempt to measure the water level, with a steel tape, in the drillpad monitor well was unsuccessful. Rock deformation 36 feet below the surface bent or severed the casing

preventing the tape from going down the well and the transducer from being pulled out of the hole. The well is probably dry but this cannot be confirmed.

A water sample was taken from the inmine hole at X-cut 25 on April 27, results of the analysis are pending. On May 19th, the water level, measured with a steel tape, was 107 feet below surface; however the datapod sensor registered a water level of 38.5 feet below surface. The datapod was re-calibrated and re-started. The inmine monitor well is 138 feet deep, the steel tape would only go down 127 feet. The pressure transducer could only be lowered to 111 feet below surface, indicating some type of restriction in the 1 inch casing. Because longwall mining was in the vicinity of the inmine well, the pressure transducer was removed from the monitor well to prevent its loss on June 16th; the water level was 107 feet below surface, unchanged from the April 27 measurement.

Topography

Minor landslides have occurred since late February along the creek, predominantly, downstream from the drillpad to approximately 100 feet upstream of the mine breakthrough. In June, a 1/4 inch wide surface crack was observed on the south side of the canyon; the first crack seen on the south canyon slope. The crack was below a sandstone outcrop, 100 feet west of the inmine monitor well, along the trail. In addition, a crack 2 feet wide and 20 feet deep was found on the north canyon slope, northeast of the outcrop where the major landslide originated November 1988.