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Tom Mearns
LPB



United States Department of the Interior



GEOLOGICAL SURVEY

WATER RESOURCES DIVISION

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

RECEIVED
OCT 16 1990

Attachment #2

DIVISION OF
OIL, GAS & MINING

October 12, 1990

Mr. Lowell P. Braxton
Utah Division of Oil, Gas, and Mining
3 Triad Center, Suite 350
Salt Lake City, UT 84180-1203

Re: Continuation of "Hydrologic Response To Land Subsidence Caused by Underground Coal Mining, North Fork of the Right Fork Miller Creek Drainage, Carbon County, Utah" Project, UT-197

Lowell

Dear Mr. Braxton:

This letter is in response to your letter dated September 14, 1990, in which you informed both the U.S. Geological Survey (USGS) and Cyprus Plateau Mining Co. that you will not require the monitor well requested by USGS, at the existing drill-pad site, to be drilled. In addition, you have requested that the USGS submit a proposal for work to be conducted after October 1, 1990.

The primary objective of this study is to determine the effects of longwall mining and the resulting subsidence on overlying ground-water and surface-water regimes in an area where overburden thickness ranges between 300 to 1,000 feet. To accomplish this objective, water-quality data for aquifers adjacent to the coal seams and data from the North Fork of the Right Fork of Miller Creek were to be collected prior to, during, and after longwall mining of the Wattis and Middle seams. Without a monitor well completed in the aquifer above the coal seams, we lack the ability to determine if the ground-water system recovers or returns to a new state of equilibrium after the completion of longwall mining of the Wattis and Middle seams. Because we lack the ability to directly monitor ground water above the coal seams after the completion of longwall mining, the final phase of the study can not be completed. The recovery of the hydrologic system possibly can be evaluated, less directly, by changes in streamflow and spring discharge. Because we feel that these data likely won't be adequate to define recovery of the hydrologic system, and because Cyprus Plateau presumably will be collecting these kinds of data, we prefer not to be involved with the final phase of the study.

*Tom please review & discuss with me by 10-22 Thy/June



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In light of these developments, the USGS proposes that the initial report previously scheduled to be completed at the end of the second year, discussing the immediate impacts of mine-induced subsidence on the ground- and surface-water systems, be the final report documenting the part of the study that we conducted. A preliminary draft of the report will be given to Cyprus Plateau Mining Co. and Utah Division of Oil, Gas, and Mining (UDOGM) for a technical review, on or about November 1, 1990. This draft will include data collected prior to and during longwall mining of the Wattis seam through July 1990.

We propose not to publish the report at this time, but to periodically update the report with data collected during longwall mining of the Middle seam. When data collection ends, after the completion of longwall mining of the Middle seam, the report will be completed and submitted for the USGS review process (with technical review by UDOGM and Cyprus Plateau Mining Co.) on or about September 1992.

Also enclosed are an updated budget and work schedule for the two years remaining in the project.

Please inform us if you concur with our proposed revised level of involvement in the study. If you have any questions, just call me at (801) 524-5663.

Sincerely,

H. L. Case III
District Chief

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

Tentative Schedule
FY 1991
October 1, 1990 - September 30, 1991

October 1990 — November 1990

Prepare report on immediate impacts of underground coal mining of the Wattis seam on ground water and surface water. This report will be completed and given to UDCGM and Cyprus Plateau Mining Co. for technical review, on or about November 1, 1990.

An additional monitoring well (uphole) will be drilled above the Middle coal seam. The ground water, in the Middle coal seam monitor wells, will be sampled prior to longwall mining of the Middle seam.

Conduct a reconnaissance of NFRF Miller Creek.

Joint and fracture systems will be mapped and photographed at various points along the stream channel and canyon slopes to document changes from June 1990.

Remove datapod and enclosure from drill-pad site.

Service datapod at weir.

December 1990 - September 1991

Update report with information (water levels, chemical analyses of water samples from wells, springs, mine inflows, and Miller Creek) collected during the Middle seam mining.

Conduct monthly trips to service equipment and monitor longwall mining of the Middle coal seam.

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

COST ESTIMATE FY 1991

<u>ITEM</u>	<u>AMOUNTS</u> <u>(DOLLARS)</u>
Salary-Project Chief & other personnel	30,108
Transportation	4,900
Subsistence	1,000
Training	--
Misc. Equipment	200
Publication Cost	--
Water Quality Analyses	-- *
Instrumentation	--
Total	<hr/> 36,208

* Water analyses collected by the Geological Survey and analyzed by Cyprus Plateau Mining using ACZ Laboratories Inc.

REVISED COST ESTIMATE-OVERALL PROJECT

FY	1989	1990	1991	1992
Salary-Project Chief W/Others	38,525	30,108	30,108	20,000
Travel	3,984	1,500	4,900	1,600
Subsistence	2,522	3,115	1,000	1,900
Training	155	-	-	-
Misc. equipment	1,027	820	200	-
Publication costs	-	1,650	-	4,000
Water quality analyses	1,347	-	-	-
Drilling materials	3,064	-	-	-
Instrumentation	30,825	13,770	-	-
Contracting-personal services	6,187	-	-	-
Contracting-helicopter services	15,641	-	-	-
TOTAL	103,277	50,963	36,208	27,500
Amount contributed by each organization				
UDOGM	60,615	25,481	18,104	13,750
USGS	42,662	25,482	18,104	13,750