

Editor's note: 92 I.D. 389; Appealed -- dismissed as moot, Civ.No. 86-F-2535 (D.Colo. June 30, 1988)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PETITIONERS,

v.

OFFICE OF SURFACE MINING RECLAMATION
AND ENFORCEMENT, RESPONDENT

ATLANTIC RICHFIELD CO.,
INTERVENOR

STATE OF COLORADO,
INTERVENOR

IBLA 83-757
IBSMA 81-83

Decided September 27, 1985

Petition for review of approval of permit to mine coal at the Mt. Gunnison No. 1 mine. CO
0021.

Approval of permit affirmed in part; further briefing ordered.

1. Surface Mining Control and Reclamation Act of 1977: Federal Lands:
Permits--Surface Mining Control and Reclamation Act of 1977:
Hydrologic Protection System: Generally--Surface Mining Control
and Reclamation Act of 1977: Permits: Application--Surface Mining
Control and Reclamation Act of 1977: Words and Phrases

"All anticipated mining." In the absence of either a statutory or regulatory definition of "all anticipated mining," OSM's 1981 interpretation of that phrase in secs. 507(b)(11) and 510(b)(3), 30 U.S.C. § 1257(b)(11) and 30 U.S.C. § 1260(b)(3) (1982), to include all future mining for which a permit application had been filed, as well as all present mining, was a reasonable construction. Subsequent to OSM's

interpretation, this term was defined at 30 CFR 701.5 under the heading "cumulative impact area" to include, in addition to the above, all operations required to meet diligent development requirements for leased Federal coal for which there is actual mine development information available.

2. Surface Mining Control and Reclamation Act of 1977: Federal Lands: Permits--Surface Mining Control and Reclamation Act of 1977: Hydrologic Protection System: Generally--Surface Mining Control and Reclamation Act of 1977: Permits: Application

Description of ground water basins or systems is an informational requirement which must be fulfilled by the coal mining permit applicant as part of its responsibility to provide sufficient data so the regulatory authority may make its probable cumulative impact assessment.

3. Surface Mining Control and Reclamation Act of 1977: Federal Lands: Permits--Surface Mining Control and Reclamation Act of 1977: Hydrologic Protection System: Generally--Surface Mining Control and Reclamation Act of 1977: Permits: Application

There is no merit to an argument by one challenging the 1981 issuance of a permit to mine coal that certain areas should have been included in OSM's probable cumulative impact assessment as a control watershed in the absence of a regulatory requirement for such information.

4. Surface Mining Control and Reclamation Act of 1977: Federal Lands: Permits--Surface Mining Control and Reclamation Act of 1977: Hydrologic Protection System: Generally--Surface Mining Control and Reclamation Act of 1977: Permits: Application

Neither sec. 510(b)(3), 30 U.S.C. § 1260(b)(3) (1982), nor applicable regulations require OSM to set forth the baseline data used in making its assessment of the probable cumulative impacts of all anticipated mining in the area on the hydrologic balance. The applicant for a permit has the duty to describe baseline data.

5. Surface Mining Control and Reclamation Act of 1977: Federal Lands: Permits--Surface Mining Control and Reclamation Act of 1977: Hydrologic Protection System: Generally--Surface Mining Control and Reclamation Act of 1977: Permits: Application

Neither sec. 507(b)(11), 30 U.S.C. § 1257(b)(11) (1982), nor applicable regulations require OSM to

develop information for use in its assessment of the probable cumulative impacts of all anticipated mining in the area on the hydrologic balance. OSM's obligation is to provide only that information which is available from appropriate governmental agencies. If such information is not available, the permit applicant must gather the necessary information and submit it with the application.

6. Surface Mining Control and Reclamation Act of 1977: Federal Lands: Permits--Surface Mining Control and Reclamation Act of 1977: Hydrologic Protection System: Generally--Surface Mining Control and Reclamation Act of 1977: Permits: Application

An assessment of the probable cumulative impacts of all anticipated mining in the area on the hydrologic balance does not satisfy sec. 510(b)(3), 30 U.S.C. § 1260(b)(3) (1982), where the regulatory authority fails to set forth reasons for its finding that the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area. An assessment pursuant to sec. 510(b)(3) of the Act must include, inter alia, a discussion by the regulatory authority of ground water.

7. Surface Mining Control and Reclamation Act of 1977: Federal Lands: Permits--Surface Mining Control and Reclamation Act of 1977: Hydrologic Protection System: Generally--Surface Mining Control and Reclamation Act of 1977: Permits: Approval

A determination by OSM in the issuance of a permit to conduct underground coal mining operations to allow 50-percent extraction of coal under a landslide area will be upheld where one challenging such a determination fails to present any persuasive evidence that it was error.

8. Environmental Policy Act--National Environmental Policy Act of 1969: Environmental Statements--Surface Mining Control and Reclamation Act of 1977: Federal Lands: Permits--Surface Mining Control and Reclamation Act of 1977: Hydrologic Protection System: Generally--Surface Mining Control and Reclamation Act of 1977: Permits: Application

A 1979 environmental impact statement describing both site-specific and aggregate effects of coal mining does not require supplementation in the absence of significant change in the proposed operation.

9. Surface Mining Control and Reclamation Act of 1977: Federal Lands: Permits--Surface Mining Control and Reclamation Act of 1977: Hydrologic Protection System: Generally--Surface Mining Control and Reclamation Act of 1977: Permits: Application

Sec. 510(b)(1), 30 U.S.C. § 1260(b)(1) (1982), requires that no permit shall be approved unless there has been compliance with all the requirements of the Act and the State or Federal program. Where a regulatory requirement is unsatisfied at the time of permit issuance and the regulatory authority seeks to satisfy that requirement by the imposition of a stipulation to the permit, sec. 510(b)(1) of the Act has been violated.

10. Surface Mining Control and Reclamation Act of 1977: Federal Lands: Permits--Surface Mining Control and Reclamation Act of 1977: Hydrologic Protection System: Generally--Surface Mining Control and Reclamation Act of 1977: Permits: Application

In response to the decision by Judge Thomas Flannery in In re: Permanent Surface Mining Regulation Litigation, No. 79-1144 (D.D.C. Feb. 26, 1980), suspending the term "mine plan area" in the regulations, the Department amended its regulations to limit the area for which a determination of the probable hydrologic consequences must be made by the applicant. This determination is restricted by regulation 30 CFR 784.14(e)(1) (1983) to the proposed permit and adjacent areas. This regulation was subsequently remanded to the Department by Judge Flannery in In re: Permanent Surface Mining Regulation Litigation, No. 79-1144 (D.D.C. July 15, 1985).

APPEARANCES: L. Thomas Galloway, Esq., Lee L. Bishop, Esq., Washington, D.C., for Natural Resources Defense Council, Inc.; Kent E. Hanson, Esq., Denver, Colorado, for individual petitioners; Robert E. Benson, Esq., Timothy M. Rastello, Esq., Thomas F. Linn, Esq., Peter H. Haller, Esq., Denver, Colorado, for Atlantic Richfield Company; Linda Pipo, Esq., Denver, Colorado, for the State of Colorado; Glenda R. Hudson Owens, Esq., Walton D. Morris, Jr., Esq., Office of the Solicitor, Washington, D.C., for the Office of Surface Mining Reclamation and Enforcement.

OPINION BY ADMINISTRATIVE JUDGE HARRIS

By order of February 24, 1982, the Interior Board of Surface Mining and Reclamation Appeals (IBSMA) 1/ referred for a hearing certain issues posed by the Natural Resources Defense Council, Inc. (NRDC), et al. in a petition to review the approval of coal permit CO 0021. 4 IBSMA 4, 16 (1982). This permit, issued by the Office of Surface Mining Reclamation and Enforcement (OSM) to ARCO Coal Company (ARCO), a division of Atlantic Richfield Company, on July 12, 1981, authorizes ARCO to conduct underground coal mining and reclamation operations for a period of 5 years on approximately 2,520 acres of land in Gunnison County, Colorado. This permit for the Mt. Gunnison No. 1 mine was issued pursuant to the Surface Mining Control and Reclamation Act of 1977 (SMCRA), 30 U.S.C. § 1201 (1982).

The Mining and Reclamation Plan (MRP), submitted by ARCO in accordance with 30 U.S.C. § 1266(a) (1982) and applicable regulations, estimates that some 59 million tons of recoverable coal reserves are present in the life-of-the-mine area. This area, totaling some 14,304 acres, will require 40 years to mine. Should ARCO desire to complete this 40-year project, it must seek seven additional permits over the life of the mine. 30 U.S.C. § 1256(b) (1982).

1/ By Secretarial Order No. 3092, dated Apr. 26, 1983, all of the functions and responsibilities delegated to IBSMA with respect to appeals arising under the Surface Mining Control and Reclamation Act of 1977, 30 U.S.C. § 1201 (1982), were transferred to the Interior Board of Land Appeals. 48 FR 22370 (May 18, 1983).

The aforementioned order of referral by IBSMA stated that the appeal was to be conducted so that its examination would reveal "whether the regulatory authority [OSM] was sufficiently advised in all required areas to support its permit approval." Specific regulations were identified in the order, and the Hearings Division, Office of Hearings and Appeals, was directed to address in a recommended decision whether such requirements were satisfied. 4 IBSMA at 16, 17. The burden of proof was stated to rest with petitioners.

In response to the order Administrative Law Judge David Torbett conducted a hearing on May 25 to 27 and June 15 to 16, 1982. Represented at the hearing were NRDC, individual petitioners, OSM, ARCO, and the State of Colorado. On June 24, 1983, Judge Torbett issued his decision concluding, inter alia, that OSM was sufficiently advised in all areas to support its approval of coal permit CO 0021 and recommending that approval of the permit should be confirmed. By order dated July 8, 1983, this Board established a schedule for filing exceptions to the recommended decision. NRDC et al. filed extensive objections. ARCO filed objections only to Judge Torbett's findings and conclusions on standing. Neither the State nor OSM filed any objections, although OSM filed a response to the objections of NRDC et al. Before turning to consideration of NRDC et al.'s objections, we will address two preliminary issues.

I. Jurisdiction

The surface of the 2,520 acres at issue in CO 0021 is owned partly by ARCO, other private parties, and by the Federal Government. All the subsurface coal is apparently owned by the Federal Government. In response to a

charge that IBSMA had no, or only limited, authority to review a decision of the Director of OSM, IBSMA noted:

As the mining plan included Federal land, and in the absence of a cooperative agreement, the Department has a proper interest in all of the lands included in the mining plan and permit application. 30 CFR 741.11(b) * * * [F]or permitting purposes, if there is any Federal land within what the applicant has identified as the area for which a permit is sought, all of the area is to be subjected to Departmental scrutiny under 30 CFR Part 741.

4 IBSMA at 8. Subsequently, the Governor of the State of Colorado and the Secretary of the Interior entered into a cooperative agreement, effective October 6, 1982. 30 CFR 906.30. This fact, however, has not changed the authority of the Office of Hearings and Appeals to review the permit approval decision. Article III of this cooperative agreement states: "Orders and decisions issued by MLRD [the Mined Land Reclamation Division] in accordance with the State Program that are appealable, shall be appealed to the State reviewing authority. Orders and decisions issued by the Department that are appealable, shall be appealed to the Department of the Interior's Office of Hearings and Appeals." We find, therefore, that jurisdiction is vested in the Interior Board of Land Appeals to consider this case.

II. Standing

In IBSMA's order of February 24, 1982, that Board held that six individual petitioners and four named members 2/ of NRDC had standing to seek

2/ Petitioners are Jamie A. and Dolores V. Jacobson, Mitchell N. and Sally R. Swain, and Susan L. and Carl T. Brater. The four named members of NRDC are Mark Welsh, Charles V. Worley, Bradley E. Klafehn, and Charles H. Gilman, Jr.

review of the approval of permit CO 0021. Individual petitioners had standing, IBSMA concluded, unless it was shown at the hearing that their allegations of injury were groundless in fact. ^{3/} IBSMA also held that NRDC had standing to bring this action on behalf of its members. IBSMA stated that the Administrative Law Judge should consider any evidence on standing and "may recommend a ruling in this regard." ⁴ IBSMA at 17. The Administrative Law Judge found that the individual petitioners had standing to challenge the permit and recommended that they be found to have standing (Recommended Decision at 59-61, 63).

Administrative standing requirements in this case are defined by regulation. Any person with an interest which is or may be adversely affected may request a hearing on the reasons for a decision concerning a permit for surface coal mining and reclamation operations. 30 CFR 775.11(a). The above underscored language is specifically defined at 30 CFR 700.5:

Person having an interest which is or may be adversely affected or person with a valid legal interest shall include any person--

^{3/} As support for this statement in its order IBSMA cited Warth v. Seldin, 422 U.S. 490, 501-02 (1974). The relevant language of the Court at those pages is as follows:

"One further preliminary matter requires discussion. For purposes of ruling on a motion to dismiss for want of standing, both the trial and reviewing courts must accept as true all material allegations of the complaint, and must construe the complaint in favor of the complaining party. E.g., Jenkins v. McKeithen, 395 U.S. 411, 421-422 (1969). At the same time, it is within the trial court's power to allow or to require the plaintiff to supply, by amendment to the complaint or by affidavits, further particularized allegations of fact deemed supportive of plaintiff's standing. If, after this opportunity, the plaintiff's standing does not adequately appear from all materials of record, the complaint must be dismissed."

The depositions of the Braters, the Swains, and the Jacobsons were taken on Feb. 18, 1982, and certified on Feb. 26, 1982. The depositions attempted to examine more thoroughly their allegations of fact relating to standing. These depositions were not before IBSMA but were subsequently filed with the Administrative Law Judge.

(a) Who uses any resource of economic, recreational, esthetic, or environmental value that may be adversely affected by coal exploration or surface coal mining and reclamation operations or any related action of the Secretary or the State regulatory authority; or

(b) Whose property is or may be adversely affected by coal exploration or surface coal mining and reclamation operations or any related action of the Secretary or the State regulatory authority. [Emphasis in original.]

ARCO argues, as it did before the Administrative Law Judge, that allegations of standing by individual petitioners and NRDC are groundless in fact because individual petitioners, NRDC, and its members do not use any resource that may be adversely affected by operations under permit CO 0021, nor do they own any property that is or may be adversely affected by the issuance of the permit. ARCO claims that the individual petitioners and NRDC members do not allege use of the 5-year permit area, but instead can allege use only of the life-of-the-mine area. Similarly, ARCO contends that individual petitioners' allegations of a loss of water caused by permit operations are groundless because a hydrological divide separates the 5-year permit area from individual petitioners' water supply.

Petitioners Dolores and Jamie Jacobson allege, inter alia, potential injury to the source of their water supply (Minnesota Creek) because of ARCO's use of "illegal and improper mining practices." Issuance of a permit to ARCO, these petitioners claim, would threaten excessive subsidence in the area and could reduce the volume of water available for their crops. ^{4/} Similar allegations are made by petitioners Susan and Carl Brater, who are, in addition, members of NRDC. The Jacobsons and Braters also stated in their depositions

^{4/} Affidavits of Dolores and Jamie Jacobson, Dec. 29, 1981.

that they used the mine plan area for various recreational pursuits. Petitioners Sally and Mitchell Swain state that they have regularly used the Mt. Gunnison mine area for hiking and family recreation. The Swains, who are also members of NRDC, allege that ARCO's mining threatens diminution in water quality and thereby reduces their enjoyment of the rivers and streams in the area. 5/

Review of the pertinent record in this case leads us to the conclusion that the factual allegations of individual petitioners relating to standing are not groundless in fact. 6/ Thus, there is no reason to alter IBSMA's conclusions that individual petitioners have standing and NRDC has standing on behalf of its members.

We will now consider NRDC et al.'s objections to Judge Torbett's recommended decision and findings of fact.

5/ Judge Torbett made the following findings of fact relating to standing:

"270. The Individual Petitioners and members of NRDC whose depositions are part of the record in this case (a) live near the site of the proposed Mt. Gunnison #1 Mine, and (b) use the area of the mine for various recreational and aesthetic activities.

"271. The individual Petitioners and members of NRDC whose depositions are a part of the record in this proceeding have established that their recreational and aesthetic interests might be adversely affected by the operation of the Mt. Gunnison No. 1 Mine.

"272. Four of the individual Petitioners, Mr. and Mrs. Brater and Mr. and Mrs. Jacobson, have established that they rely on irrigation water for their domestic and commercial use, and that the water has, at least in part, its origin in the life of mine area.

"273. Mr. and Mrs. Brater and Mr. and Mrs. Jacobson have established that their interest in the continued flow of irrigation water to the property might be adversely affected by possible diversion or subsidence caused by activities at the ARCO Mt. Gunnison No. 1 Mine." (Recommended Decision at 85).

6/ Whether standing exists is generally a matter dealt with at the earliest stages of litigation, usually on the pleadings. Gladstone, Realtors v. Village of Bellwood, 441 U.S. 91, 115 n.31 (1979). To the extent examination of the substantive issues raised by petitioners results in findings, based on the preponderance of evidence standard, which are adverse to their allegations, such findings do not negate our conclusion on standing.

III. All Anticipated Mining

NRDC et al. set forth numerous objections focusing on the statutory requirements of section 510(b) of SMCRA, 30 U.S.C. § 1260(b) (1982). That section states in part:

No permit * * * shall be approved unless the application affirmatively demonstrates and the regulatory authority finds in writing * * * that

* * * * *

(3) the assessment of the probable cumulative impact of all anticipated mining in the area on the hydrologic balance specified in section 507(b) has been made by the regulatory authority and the proposed operation thereof has been designed to prevent material damage to hydrologic balance outside permit area. [Emphasis added.]

Petitioners' first charge is that OSM did not consider "all anticipated mining" in its assessment of the probable cumulative impact (PCI). A review of the Cumulative Hydrologic Impact Study (CHIS) prepared for OSM by Willard Owens Associates, Inc., indicates that OSM performed a water balance for a watershed whose boundaries enclose five existing mines ^{7/} and ARCO's Mt. Gunnison No. 1 mine. NRDC et al. charge that OSM limited itself to existing mines when it should have considered additional mining, including (1) Federal coal leases under diligent development requirements and likely to be developed; (2) the expansion of existing mines by the mining of other seams; (3) the opening of the Anchor Mine (now called Bear Mine #3); and (4) the reopening of the Bowie Mine.

^{7/} These mines are: Colorado Westmoreland (Orchard Valley); Western Slope Carbon (Hawksnest); U.S. Steel (Somerset); Bear Mine (a.k.a. Bear Nos. 1 and 2 mines); and Blue Ribbon Mine.

In his recommended decision, Judge Torbett held that the phrase "all anticipated mining" embraced all present mining (including that mining anticipated under present mining permits) and all anticipated mining for which permit applications had been filed, but not yet approved (Recommended Decision at 14).

At the time that ARCO's permit was issued, July 1981, the phrase "all anticipated mining" had not been defined in the regulations. However, H.R. Rep. No. 218, 95th Cong., 1st Sess. 113 (1977), offered a brief glimpse into the legislative history of this term:

One of the written findings the regulatory authority makes in the approval or denial of an application for a mining permit addresses the impacts of mining on the hydrologic balance of the area. This finding also includes the authority's assessment of the probable cumulative impact of existing and anticipated mining on the hydrologic balance of the area affected. These specific standards are emphasized at the permit approval stage due to the critical and long-term impacts mining can have on the water resources of the area affected. [Emphasis added.]

At the hearing, Dr. Gerald Zimpfer, a geologist with MLRD and a witness for the State, explained his reasons for the assessment of five existing mines:

A Both the OSM and the State of Colorado met with the contractor in discussing what mines should be included in the CHIS and attempted to give some direction to what should be looked at in the CHIS, and what we did is we identified the mines in the general area for the Mt. Gunnison Mine and told them that we wanted them to look at an area that would logically include the impacts from those mines.

* * * * *

Q [P]etitioners contend that there has been a failure to identify and evaluate all anticipated mining.

A Okay. The Act and the regulations do not define anticipated mining.

Q Have you found a way to define it as a working definition?

A Yes. Through attempting to do this type of analysis, the State has come up with a definition that anticipated mining are those mines which are either in existence or for which we have received permit applications for. Those mines should be included in anticipated mining.

* * * * *

Q In other words, you would need specifics in order to make a reasonable calculation as to the effects of any given mining operation.

A Yes.

Q Where do you find those specifics?

A The only place I've ever found specific enough information to attempt to quantify the effects of mining is in a mining reclamation permit application.

(Hearing transcript (Tr.) at 510, 511, 514).

[1] We hold that OSM's construction of "all anticipated mining" was a reasonable one at the time of its 1981 assessment. That policy, as enunciated by Dr. Zimpfer, was not limited to existing mines, contrary to petitioners' charge, but also included those proposed mines for which an application had been filed. 8/ We discern no conflict between this policy and the legislative history set forth above.

8/ The policy, as applied to this case, did not embrace any further operations or proposed operations because no other applications had been filed. In fact, NRDC et al. do not allege that a permit application had been filed for any of the three Federal coal leases identified in its pleadings. See, e.g., NRDC et al.'s Objections to the Recommended Decision and Findings of

The need for specific information, which was the underlying rationale for OSM's 1981 policy, is ample justification for OSM's actions in this case. Dan Kimball, a former OSM Chief, Geotechnical Branch, Region 5, and a witness for NRDC et al., also stressed the need for a quantitative analysis:

The other thing that I think is important, and I think it's what we're all striving for, regulatory agencies and consultants that do work for regulatory agencies, is to keep the analysis quantitative.

In other words, I think we've all read a lot of EISs and other documents that are very qualitative in nature, and when you read the thing, you kind of end up and say, "What did I just read?" We're trying to do quantitative analyses so we can project changes down the road and try to get a feel for what the cumulative hydrologic impacts are.

fn. 8 (continued)

the Administrative Law Judge, Sept. 9, 1983 (Objections), at pp. 18-19. Nor do they allege that a permit application had been filed by any operator of existing mines contemplating mining a new seam, although some interest in mining new seams had been identified by the Department in its West-Central Colorado Coal Environmental Statement (1979) at page 25 of Vol. 1.

An application for the Anchor Mine, now known as the Bear No. 3 mine, was received by the State after the ARCO review (Tr. 514). An earlier application for the Anchor Mine had been withdrawn. (Colorado Answer Brief and Proposed Findings (Sept. 10, 1982) at 6; Tr. 515). The Bear No. 3 mine is immediately adjacent to the Bear Nos. 1 and 2 mines, and the operations of Bear No. 3 are roughly equivalent to those of Nos. 1 and 2. If ARCO's permit were granted, the Bear Nos. 1 and 2 would necessarily shut down (Tr. 515). Because information of the Bear Nos. 1 and 2 operations was available, OSM examined the impacts of these two mines, rather than those of the Bear No. 3. It believed that such an examination would suffice because, in Dr. Zimpfer's words, "The mines were almost exactly the same location, they were roughly equivalent mines, and we were going to have one or the other" (Tr. 516). We hold that OSM's approach, while indirect, was reasonable under the circumstances. The postmining impact of mines, such as the Bear Nos. 1 and 2, is specifically addressed in the preamble to regulations effective Oct. 26, 1983, defining "anticipated mining": "The comments suggesting that postmining operation impacts be considered has [sic] also been accepted. The final rule requires consideration of the entire life through bond release of all operations which are considered anticipated mining." 48 FR 43958 (Sept. 26, 1983).

No allegation of the filing of a permit application for the Bowie Mine is made by NRDC et al. They describe this mine as an inactive mine, recently purchased by the Coors Corporation, presumably for redevelopment.

(Tr. 404-05). Subsequent to OSM's PCI assessment in this case, the term "cumulative impact area" was defined at 30 CFR 701.5, and it included a definition of "anticipated mining" which reads as follows:

Anticipated mining shall include, at a minimum, the entire projected lives through bond release of: (a) The proposed operation, (b) all existing operations, (c) any operation for which a permit application has been submitted to the regulatory authority, and (d) all operations required to meet diligent development requirements for leased Federal coal for which there is actual mine development information available.

48 FR 43985 (Sept. 26, 1983). By regulation, anticipated mining now includes certain operations required to meet diligent development standards.

The preamble to this regulation reveals OSM's desire to adopt a definition which will allow it to make a "meaningful technical analysis" without the need "to speculate or use 'clairvoyance' to evaluate potential impacts." 48 FR 43956, 43958 (Sept. 26, 1983). Even though this regulation represents a position which is similar to that urged by petitioners in this case, because this regulation was not in effect at the time of the issuance of ARCO's permit, we do not apply it to OSM's actions in this case. It will, however, if still in effect, be applicable to any further Mt. Gunnison permits sought by ARCO.

IV. Identification of Ground Water Basin

[2] As set forth above, section 510(b)(3), 30 U.S.C. § 1260(b)(3) (1982), of SMCRA directs the regulatory authority to assess the probable

cumulative impact of all anticipated mining in the area on the hydrologic balance. NRDC et al. next contend that OSM failed to "identify the ground-water basin in determining the 'general area' as required by section 510(b)(3) and 30 CFR 770.5 (1981)" (Objections at 24).

A careful reading of section 510 reveals that Congress did not use the term "general area" anywhere in that section. The term is used in section 507(b)(11), 30 U.S.C. § 1257(b)(11) (1982), directing a permit applicant to include in its application a determination of the probable hydrologic consequences (PHC) of its proposed mining and reclamation operations, both on and off the mine site, with respect to the hydrological regime, including quality and quantity of water in surface and ground water systems. The same section also directs that an application contain "the collection of sufficient data for the mine site and surrounding areas so that an assessment can be made by the regulatory authority of the probable cumulative impacts of all anticipated mining in the area upon the hydrology of the area." (Emphasis added.) A proviso of section 507(b)(11) specifies that the PHC determination shall not be required until such time as hydrologic information on the general area prior to mining is made available from an appropriate Federal or State agency and that the permit shall not be approved until such information is available and incorporated in the permit. Section 510(b)(3) does, however, refer to section 507(b) in identifying the PCI assessment required of the regulatory authority.

The Department has defined the term "general area" in this manner:

General area means, with respect to hydrology, the topographic and ground water basin surrounding a mine plan area [9/] which is of sufficient size, including areal extent and depth, to include one or more watersheds containing perennial streams and ground water zones and to allow assessment of the probable cumulative impacts on the quality and quantity of surface and ground water systems in the basins. [Emphasis supplied.]

30 CFR 770.5 (1981). This definition links the term "general area" with the PCI assessment set forth in section 510(b)(3).

NRDC et al. argue that the term "general area" requires definition of the ground water basin by OSM. In support of this argument petitioners quote from that part of the preamble to final rules published March 13, 1979, relating to the definition of "general area:"

Adding further complexity is the fact that ground water and surface water basins are not necessarily geographically identical. A topographic drainage basin (watershed) will drain surface water to a discrete "outflow" point between drainage divides. However, depending upon the subsurface angle and direction of underlying geologic strata within that same topographic basin, downward percolating ground water will intersect with the geologic strata and may flow outside and into one or more other topographic basins. * * * Thus a ground water "basin" may be larger than the surface water topographic basin or watershed.

On the other hand, underlying impermeable strata may isolate the ground water from the surface water, resulting in two independent systems that limit or confound indirect-observation techniques. In this case, the ground water basin may be smaller in areal extent than the topographic basin. Often a series of

9/ In In re: Permanent Surface Mining Regulation Litigation, No. 79-1144 (D.D.C. Feb. 26, 1980, and May 16, 1980) (Memorandum opinions), Judge Flannery suspended use of the term "mine plan area" in all places it appeared in the regulations.

"perched" ground water zones can occur. * * * Thus, it is imperative that the surface water basins and the ground water basins be separately delineated because of possible differential flow directions of surface and ground water (Chow, V. T., 1964, pp. 4-23). [Citations omitted; emphasis supplied.]

44 FR 14902, 15010. We note that one such final rule, 30 CFR 783.13 (1981), employs the term "general area" in a requirement that each application for an underground mining permit contain a description of the geology, hydrology, and water quality and quantity of all lands within the proposed permit area, the adjacent area, and the general area. 10/

Our analysis of the sections of the statute and regulations cited above leads us to reject petitioners' argument. We are unable to find any support for the conclusion that OSM has a duty to identify a ground water basin for the general area. Section 507(b)(11) requires the permit applicant to include in the application a PHC determination and a "collection of sufficient data for the mine site and surrounding areas so that an assessment can be made by the regulatory authority of the probable cumulative impacts of all anticipated mining in the area upon the hydrology of the area." Similarly, the regulations require hydrological data about the general area to be included in the application.

Nowhere in the statute or regulations is there a specific requirement that OSM define the ground water basin. The regulatory definition of general area and the preamble cited by petitioners support a conclusion that description of the ground water basin is an informational requirement which

10/ This regulation was removed effective Oct. 26, 1983. 48 FR 43956, 43987.

must be fulfilled by the permit applicant as part of its responsibility to provide "sufficient data" so the regulatory authority may make its PCI assessment.

Since petitioners focus on delineation of the ground water basin as OSM's responsibility, they do not address the data presented by ARCO relating to ground water. Our examination of that data and the record in this case reveals the following.

In an effort to define the ground water system underlying the 230-square mile topographic basin identified on Exh. AR-15 as the "general area," ARCO drilled 112 holes into the 40-year life-of-the-mine area, all of them at least as deep as the F-seam which ARCO sought to mine (Tr. 697). This 40-year life-of-the-mine area occupies some 22 square miles (Tr. 868). Approximately five drill holes were completed per square mile. Such a figure is considered "an adequate number" in the experience of William H. Ford, a geohydrologist of ARCO (Tr. 770). Geophysical data in the form of electric logs and lithologic logs were examined for each of the 112 holes (Tr. 789).

Of the 112 holes drilled, 23 were completed as wells (Tr. 697; Exh. AR-13). These wells are monitored, some for flow, some for quality, and some for both (Tr. 730). The cost of completing a well is approximately \$40,000 (Tr. 810). Some 100 springs were located and, of these, 64 are monitored. Flow and quality measurements are taken quarterly for the 34 northermost springs. Forty-one different parameters are considered by ARCO in performing a quality analysis (Tr. 731; Exh. AR-8, 19).

In addition to the above data compiled by ARCO, ARCO had the benefit of geologic reports, such as a 1948 description by Vard H. Johnson of the Paonia Coal Field (Tr. 559, 784; Exh. C-2); data from the Bear Coal Company was also made available. Bear operated an underground mine in the C-seam in the immediate area of the Mt. Gunnison No. 1 mine, and ARCO studied the geology and hydrology associated with that mine (Tr. 714).

An examination of Exh. AR-13 reveals that most of ARCO's sources of data were located within the 40-year life-of-the-mine area. Few data sources are depicted outside this area and yet within the larger general area. Data revealed by the drill holes, wells, springs, literature, and existing mines indicated to ARCO that the ground water basin was composed of lenticular sandstones that would be at best only localized sources of water (Tr. 559; see also Tr. 781-82). No regional ground water basin is believed to exist, although the Rollins Sandstone, located some 400 feet below the F-seam to be mined by ARCO, is acknowledged to be a regional aquifer (Tr. 564, 871-72). Because of the limited extent of any aquifer in the sandstones of the overburden (Barren Member) (Tr. 781-82), ARCO's examination of the ground water basin of the general area was apparently concentrated in the life-of-the-mine area.

In addition, at the hearing, Dan Kimball, a witness for petitioners, stated:

A Defining the ground-water divides is much more complicated [than defining surface water divides]. It's a difficult process, particularly when we're talking about a broad area. In the majority of cases, you go out and look at all the available data you could and try to get a feeling for where the

water divide is at. It's a difficult process because you can only put in so many holes, and it's a very expensive process.

Q I take it that the surface-water general area and the ground-water general area are not necessarily identical.

A They're not necessarily identical, but in most cases if you said that the ground-water divide followed the surface-water, divide, you're pretty close, basically, because ground-water, in the majority of cases, follows surface-water topography. That's normally the way it's done.

You should try to use all available data to refine the ground-water base-line.

* * * * *

Q Does the CHIS for the Mt. Gunnison Mine properly identify the general area to be considered in this instance?

A Not knowing all the hydrologic details -- it certainly identifies the surface-water drainage. In terms of what's in the cumulative hydrologic impact study, there's nothing in the study that said there was an analysis of where the ground-water divides are. The idea that it would parallel the surface-water divide is possible, maybe rather likely.

(Tr. 413-14).

Roy Cox, a geologist with MLRD, similarly testified that it would not be unusual for ground water and surface water divides to be approximately co-extensive. This result, Cox testified, was common in an area with the geology and high degree of relief present in the area of the ARCO site (Tr. 549, 550; Exh. C-11), and he stated in this case they were "roughly" in the same location (Tr. 549).

We note that final rules published on September 28, 1983, remove the term "general area" from that portion of 30 CFR setting forth definitions.

48 FR 44344, 44391. The preamble to proposed rules announcing this change states:

In the existing rules, the size of the area for which the probable cumulative impact (PCI) assessment must be made is keyed to the definition of "general area." However, OSM has found that "general area" as presently defined is ambiguous and has not been very useful in defining the necessary extent of the area for which the PCI assessment must be made. Therefore, this definition is proposed to be deleted in another OSM rulemaking * * *. To clarify the extent of the area for which PCI assessment must be made as required by the Act and to reduce some of the confusion resulting from the application of the term "general area" in the existing regulations, OSM is proposing to define a new term: the "cumulative impact area."

47 FR 27713, 27714 (June 25, 1982). The definition of this new term speaks of surface and ground water systems rather than basins. 48 FR 43956, 43957 (Sept. 26, 1983). This change in terminology is explained in the preamble to that rulemaking as follows:

The proposed phrase "surface- and ground-water basin(s)" has been replaced with the phrase "on surface- and ground-water systems." The former phrase was inappropriate as it suggested consideration of areas which could be well beyond the reach of any impacts on hydrology that need be studied by the regulatory authority in order for it to fulfill its statutory obligations. The phrase adopted is flexible enough to allow the evaluation of the full reach of impacts on hydrologic systems without suggesting unnecessary analysis.

48 FR 43957 (Sept. 26, 1983). Thus, the Department considers "systems" to be a less comprehensive term than "basins."

V. Control Watershed

[3] Outside the general area to the east are Muddy Creek and Anthracite Creek. NRDC et al. contend that these areas should have been included in OSM's PCI assessment as a "control watershed" to establish baseline conditions. The areas are upstream of ARCO's mine.

As authority for its position that the general area should include a control watershed, NRDC et al. quote from the preamble to permanent program regulations published March 13, 1979: "Some of the difficulties in assessing cumulative impact of anticipated mining, particularly in areas where mining has been done prior to the approval of State programs, can be overcome by using unaffected or 'control' watersheds for comparative purposes." 44 FR 14902, 15010.

In the absence of a clear expression in the regulations that OSM has a duty to include a control watershed in the general area, we cannot agree with appellants. Furthermore, we note that ARCO received the benefit of data from a Geological Survey (GS) stream gauging station on Anthracite Creek in sec. 6, T. 12 S., R. 88 W., sixth principal meridian (Tr. 709). At that station, surface water is monitored for both quality and quantity. Exhibit AR-15 also reveals four other gauging stations monitoring surface water quality upstream of both Mt. Gunnison and existing mines. A discontinued GS stream gauging station monitoring Muddy Creek is also shown on this exhibit.

ARCO responded to petitioners' argument in this manner:

The water quality data in the Western Slope Carbon MRP on Anthracite Creek and the North Fork of the Gunnison includes baseline data upstream of all current and anticipated mining. Thus, there is no need to require that the Anthracite Creek and Muddy Creek be included in the general area for the purpose of collecting baseline data which is unaffected by mining. See Western Slope Carbon MRP, Appendix XIV-3, Appendix XIV-5, and Appendix XIV-7.

a. Each mine within the general area with operations along the North Fork of the Gunnison has water quality monitoring stations upstream and downstream of the operations. Western Slope Carbon MRP, Appendix XIV-7; Orchard Valley Mine MRP, Semiannual Water Quality Update Report, April - October, 1978; Somerset Mine MRP, Section 2.04 (2); and Hear. Trans. pp. 497-498 and 701-704).

(Proposed Findings and Conclusions of ARCO, Sept. 3, 1982, at 111).

Judge Torbett's recommended findings at page 21 list the Western Slope Carbon MRP, Volume 2, Appendices XIV-3, XIV-5, and XIV-6 as a source of baseline data for ground water quality and quantity.

Petitioners' response to ARCO's statement quotes from the CHIS to the effect that baseline water quality data for the North Fork of the Gunnison, site of ARCO's Mt. Gunnison No. 1 mine, is difficult to determine because of a lack of data published by GS. 11/ In a subsequent pleading, petitioners concede that surface water monitoring is occurring, but continue to argue that no monitoring of ground water quality or quantity is involved. 12/

Our review of the pleadings in this case reveals that NRDC et al. has not specifically answered ARCO's contention that the Western Slope Carbon

11/ Reply of NRDC et al. to Proposed Findings of Fact and Conclusions of Law of ARCO, Sept. 17, 1982, at 105.

12/ Objections at 31.

MRP provides the baseline data sought by NRDC et al. As the party with the burden of proof, 4 IBSMA at 16, NRDC et al. must demonstrate error in OSM's actions. Assuming, arguendo, that a "control watershed" was required for monitoring purposes, NRDC et al. have failed to meet their burden of showing that there was no control watershed.

VI. Development of Information for Assessment of
the Probable Cumulative Impact

[4] Section 510(b)(3), 30 U.S.C. § 1260(b)(3) (1982), quoted in part above, states that no permit shall be approved "unless the application affirmatively demonstrates and the regulatory authority finds in writing on the basis of information set forth in the application or from information otherwise available which will be documented in the approval, and made available to the applicant" that the assessment of the PCI of all anticipated mining in the area has been made by the regulatory authority and that the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area. Without specifically quoting from this section, NRDC et al. contend that OSM erred in failing to identify baseline conditions, assuming such data existed, in making the finding on the cumulative assessment required by section 510(b). NRDC et al. state that one can look in vain throughout the record for the regulatory authority's identification of baseline data describing the quantity and quality of ground water and surface water (Objections at 34).

A careful reading of petitioners' argument reveals no citation to authority, whether statute or regulation, for requiring OSM to identify the

baseline information used in making its PCI assessment. Regulation 30 CFR 786.19 (1981) closely tracks the statutory language underscored above, and it similarly imposes no such duty (see 30 CFR 773.15(c) (1984)). The duty to describe baseline data has been imposed on an applicant for a permit. 30 CFR 783.11. 13/ The sources of baseline data sought by NRDC et al. are set forth in ARCO's Proposed Findings and Conclusions, September 3, 1982, pages 74-78, and are repeated in Judge Torbett's recommended findings at paragraphs 53-55.

[5] In addition to the duty to identify baseline information, petitioners would impose on OSM the duty to develop information sufficient to make the PCI assessment. As authority for this proposition, petitioners cite section 507(b)(11), 30 U.S.C. § 1257(b)(11) (1982). That section states in part:

(b) The permit application shall be submitted in a manner satisfactory to the regulatory authority and shall contain, among other things--

* * * * *

(11) a determination of the probable hydrologic consequences of the mining and reclamation operations, both on and off the mine site, with respect to the hydrologic regime * * * and the collection of sufficient data for the mine site and surrounding

13/ In the Mar. 13, 1979, Federal Register at 44 FR 15065, the Department stated that 30 CFR 783.11 was the underground mining activities companion to 30 CFR 779.11 for surface mining permit applications. It was further stated that the authority, basis, and purpose for 30 CFR 783.11 was the same as that set forth in the preamble for 30 CFR 779.11. Therein, the following relevant commentary is found:

"[U]nder section 510(a) of the act, permit applicants have the burden of proving that they can mine in conformance with the requirements of the Act and, to the extent that information needed to meet that burden is not already available from secondary sources, it must be developed by the applicant as completely and accurately as possible."
44 FR 15027 (Mar. 13, 1979) (emphasis added).

areas so that an assessment can be made by the regulatory authority of the probable cumulative impacts of all anticipated mining in the area upon the hydrology of the area and particularly upon water availability: Provided, however, That this determination shall not be required until such time as hydrologic information on the general area prior to mining is made available from an appropriate Federal or State agency: Provided further, That the permit shall not be approved until such information is available and is incorporated into the application. [Emphasis supplied.]

We do not agree with petitioners that section 507(b)(11) imposes any duty on OSM to develop information for its PCI assessment. Section 507(b)(11) focuses on the obligations of an applicant for a permit. The brief legislative history available is consistent with this focus:

H.R. 2 requires that the operator make a determination of the probable hydrologic consequences of the proposed mining and reclamation operations. It is intended that the data assembled with this assessment be included in the application so that the regulatory authority, utilizing this and other information available, can assess the probable cumulative impacts of all anticipated mining in the area upon the hydrology and adjust its actions and recommendations accordingly.

Meeting such requirements will necessitate more planning and engineering on the part of the mining operator than is now generally the case. It will also involve the necessity to use trained professional persons in a number of fields: mining and civil engineering; geology; hydrology; and plant and soil sciences. Current experience, however, clearly shows that where the operators have carried out adequate planning and engineering, they have been able to identify ways of limiting environmental impacts to the mine site and have been able to conduct operations in such critical water and environmental areas as the Hanaford Creek basin in Washington. [Emphasis supplied.]

H.R. Rep. No. 218, 95th Cong., 1st Sess. 113, reprinted in 1977 U.S. Code Cong. & Ad. News 593, 646.

14/

14/ House Conference Report No. 493, 95th Cong., 1st Sess. 103, reprinted in 1977 U.S. Code Cong. & Ad. News 728, 734, provides additional legislative history of section 507:

Like the statute, regulations in effect at the time of the permit issuance (July 1981) imposed no duty on OSM to develop information. Regulation 30 CFR 783.13(a)(1) (1981) provides:

(1) Information on hydrology, water quality and quantity, and geology related to hydrology of areas outside the proposed permit area and within the general area shall be provided by the regulatory authority, to the extent that this data is available from an appropriate Federal or State agency.

(2) If this information is not available from those agencies, the applicant may gather and submit this information to the regulatory authority as part of the permit application.

(3) The permit shall not be approved by the regulatory authority until this information is made available in the application. [Emphasis supplied.]

See also 30 CFR 784.14(c) (1984). Thus, OSM's obligation is to provide only that information which is available from appropriate Government agencies. If such information is not available, the applicant must gather the necessary information and submit it with the permit application.

VII. Sufficiency of OSM's Probable Cumulative Impact Assessment

[6] Another argument advanced by NRDC et al. is the contention that OSM failed to assess or evaluate the probable cumulative impacts of all anticipated mining in the area on the hydrologic balance, as required by section

fn. 14 (continued)

"The Senate amendment included the stipulation that the determination of hydrologic consequences with respect to cumulative impacts of all anticipated mining would not be required unless data were available. The House receded with the further stipulation that the mine permit would not be approved until such information was available and incorporated into the application."

510(b)(3), 30 U.S.C. § 1260(b)(3) (1982), of the Act. A related argument also advanced is the contention that OSM failed to identify the impacts of individual coal mines in the general area on surface and ground water quality and quantity.

Section 510(b)(3) requires that an application for a permit affirmatively demonstrate, and the regulatory authority find in writing on the basis of information set forth in the application or from information otherwise available which must be documented, that the PCI assessment has been made by the regulatory authority and that the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area. OSM recited those required findings in its decision document dated July 15, 1981. See Finding No. 3, Attachment C, Exh. AR-91.

NRDC et al. charge, however, that OSM's PCI assessment consists of two sentences set forth in the CHIS performed for OSM by Willard Owens Associates, Inc. They argue that the record is devoid of any other materials that can be construed as the assessment required by section 510(b)(3). We cannot affirm OSM's findings under section 510(b)(3) if petitioners' charges are accurate. The recitation of statutory findings is insufficient if the permit record does not affirmatively demonstrate that OSM made a PCI assessment of all anticipated mining in the area and that the proposed operation has been designed to prevent material damage to the hydrologic balance outside the permit area.

Our inquiry behind the findings made by OSM is supported, we believe, not only by the terms of section 510(b), but also by the provisions of

section 514(a), 30 U.S.C. § 1264(a) (1982). That section provides that the regulatory authority shall issue a decision granting or denying a permit application and stating the reasons therefor within 60 days of an informal conference held pursuant to section 513(b). An informal conference was in fact held on May 12, 1981, in accordance with 30 CFR 786.14 (1981). (See 30 CFR 773.13(c) (1984)). Regulations implementing section 514(a) require the regulatory authority to provide "specific reasons" for its decision. 30 CFR 786.23(c) (1981). (See 30 CFR 773.15(a) and (c) (1984)).

The CHIS performed for OSM by Willard Owens Associates, Inc., consists of 30 pages and forms the final part of a Technical Environmental Analysis (TEA) compiled by Owens (Exh. AR-43). Five mines in addition to the Mt. Gunnison No. 1 mine are specifically identified in the CHIS and their locations are set forth on a map showing the general area. A water balance for the general area was performed by Owens, and it concluded that inflow to the basin (through precipitation and contributions from the North Fork of the Gunnison River) exceeds outflow (from actual evapotranspiration and removal by the North Fork) except during the months of May through September. ARCO was urged to take steps to insure that adequate storage of water existed during high runoff periods for use during lean months.

Addressing the five mines identified in note 7 herein, the CHIS states:

The mines listed on page 1 have indicated that no removal of water from the basin, due to their activities, will occur. However, it can be assumed that some may be lost, but will be of a magnitude that is substantially less than that indicated by ARCO. Consequently, impact to the North Fork of the Gunnison River will be minimal by the development of these mines.

(TEA, Exh. AR-43, at 246). Water quality is next addressed by the CHIS. Owens notes that ARCO estimates that the Mt. Gunnison No. 1 mine will discharge 38,000 gallons of treated waste water per day (gpd). Id. at 249. Because this amount, even at the North Fork's minimal flow level (63 cubic feet per second (CFS)) amounts to only 0.0589 CFS, Owens concludes that ARCO's treated effluent will have minimal impact. The CHIS states with regard to the five mines identified earlier: "It is anticipated that the five mines listed on page 1 will contribute much less than 38,000 gpd to the river. Consequently, assuming each provides secondary treatment, it is not expected that any major degradation of water quality to the North Fork of the Gunnison River will occur." Following this discussion of water quality, Owens performed a brief water balance of Minnesota Creek, whose drainage system lies in part within the Mt. Gunnison No. 1 coal lease boundaries.

Subsidence caused by underground coal extraction is the final topic of the CHIS. Owens states that surface water and ground water will both be influenced to an unknown degree by differences in both timing and physical environment. All mining will result in subsidence, Owens concludes, although surface manifestation may require many years. Without any reference to either the Mt. Gunnison No. 1 mine or the five mines identified earlier, Owens sets forth the natural phenomena influencing subsidence, the mining activities influencing subsidence, and the principal possible impacts of subsidence. Two of the five mines identified, supra, have been the subject of subsidence investigations, Owens noted, and the nearby Oliver No. 2 mine, now closed, is briefly discussed in Geological Survey Professional Paper 969. 15/

15/ C. Richard Dunrud, Some Engineering Geologic Factors Controlling Coal Mine Subsidence in Utah and Colorado (1976) (set forth at 315-58 of NRDC et al.'s Appendix, dated Aug. 2, 1982).

General recommendations for continued monitoring of surface water quality and quantity are set forth in a final section summarizing the study.

We agree with NRDC et al. that the above-described CHIS fails to assess the probable cumulative impacts of all anticipated mining in the area on the hydrologic balance. Central to this holding is the concept of a "hydrologic balance." Regulation 30 CFR 701.5 defines this term in this way:

Hydrologic balance means the relationship between the quality and quantity of water inflow to, water outflow from, and water storage in a hydrologic unit such as a drainage basin, aquifer, soil zone, lake, or reservoir. It encompasses the dynamic relationships among precipitation, runoff, evaporation, and changes in ground and surface water storage. [Emphasis supplied.]

The CHIS fails to satisfy the requirements of section 510(b) because, inter alia, it contains virtually no discussion of the impacts of mining on ground water. OSM's analysis of water quantity and quality is confined to surface water in the CHIS. ^{16/} Although ARCO argues that the MRP's of the five mines in the general area establish that there will be no cumulative impact on ground water, the duty to assess the cumulative impacts is entrusted to the regulatory authority, in this case, OSM. MRP's are prepared by permit applicants, and only OSM's objective assessment of the information therein (and whatever other data it may rely on) can satisfy the requirements of section 510.

Although it is apparent that OSM intended the TEA, of which the CHIS is a part, to be the culmination of its joint effort with the State in putting

^{16/} ARCO's witness, Dr. Arthur O'Hayre, testified that to his knowledge there is no data in the CHIS on ground water (Tr. 901).

together a technical and environmental analysis, 17/ we have searched the record to no avail for other materials which might be construed as a PCI assessment by OSM. At the hearing, State witnesses Dr. Gerald Zimpfer and Roy Cox each testified that the Mt. Gunnison No. 1 mine was designed to prevent material damage to the hydrologic balance outside the permit area, but each offered no support for his conclusion. 18/ The State's assessment of the probable cumulative impact of all anticipated mining resembled very closely the CHIS performed by Owens for OSM. 19/ No representative of OSM testified at the hearing.

For the above-stated reasons, we must reject Judge Torbett's conclusion that OSM adequately and sufficiently considered the cumulative impacts of mining and anticipated mining on the surface and ground water systems of the general area of the proposed mining operation. 20/

VIII. Subsidence

[7] During the fifth year of the permit opposed by NRDC et al., ARCO will be authorized to mine under an ancient landslide across the North Fork of the Gunnison River from the town of Somerset. Whether or not ARCO is permitted to retreat mine in that area, however, depends upon the results of subsidence monitoring and a detailed stability analysis, both of which ARCO

17/ Statement of Walter Swain, Informal Conference, May 12, 1981, at 18.

18/ See, e.g., Dr. Zimpfer's testimony at Tr. 542 stating that ARCO's mining operation within the 5-year permit area was designed to prevent material damage outside the permit area. Roy Cox addresses this subject at Tr. 591-95.

19/ Proposed decision of Colorado Division of Mined Land Reclamation, June 22, 1981, at 19-38.

20/ Recommended Decision at 21.

must perform pursuant to stipulation 41 of the permit. If subsidence monitoring or the analysis indicates that secondary extraction (i.e., pillar robbing) would adversely affect the stability of the landslide deposit above the town of Somerset, then ARCO must limit its extraction to 50 percent. 21/ The area affected consists of the three northern panels in sec. 17, T. 13 S., R. 90 W. (See Exh. AR-42).

NRDC et al. object to ARCO's mining beneath this landslide deposit and contend that issuance of permit CO 0021 violates section 516(b) of the Act, 30 U.S.C. § 1266(b) (1982). That section states in part:

(b) Each permit issued under any approved State or Federal program pursuant to this Act and relating to underground coal mining shall require the operator to--

21/ Stipulation Nos. 38 and 41 of the permit provide as follows:

"38. The regulatory authority directs ARCO to complete the installation of the subsidence monitoring network prior to the initiation of extraction of coal within the panel designated in Exhibit 3.4.8.A (of the mine plan) for subsidence monitoring. The monitoring network is designed to monitor the fifth panel from the entrance of the main portal, west from the main, within section 16. This monitoring network shall consist of substantial monuments designed to resist frost-heave, fire, and the actions of cattle and wildlife. ARCO shall submit a monument design to the regulatory authority for approval and installation shall not occur prior to approval of the monument design.

* * * * *

"41. The regulatory authority directs ARCO to complete a detailed analysis of the potential effects of slope stability upon the stability of the landslide deposit located about the town of Somerset, referenced on page 30 of Exhibit 3.4.8.A of the revised permit application. ARCO shall install and monitor an appropriate set of monuments on the landslide deposit, in order to observe potential displacement of the land form. A detailed analysis shall be completed, and the results submitted to the regulatory authority for review. No pillar recovery shall occur within the affected panels prior to receipt of regulatory authority approval. If subsidence monitoring experience or the detailed stability analysis indicate that secondary extraction would adversely affect the stability of the landslide deposit above the town of Somerset, then ARCO shall limit extraction of these panels to 50 percent. The affected panels are the three northernmost panels to the west of the mains within Section 17."

(1) adopt measures consistent with known technology in order to prevent subsidence causing material damage to the extent technologically and economically feasible, maximize mine stability, and maintain the value and reasonably foreseeable use of such surface lands, except in those instances where the mining technology used requires planned subsidence in a predictable and controlled manner. [22/]

Petitioners claim that more information should have been required prior to permit issuance. Specifically, petitioners would require evaluation of the stability of the landslide area, floor strength tests, evaluation of roof conditions, and further analysis of pillar degradation. They state that mining the landslide area could cause movement of the landslide, and they quote from a State subsidence expert that a large-scale landslide opposite the town of Somerset could dam the North Fork of the Gunnison River and flood the town (Objections at 56).

The argument advanced by petitioners is twofold: First, OSM did not have adequate justification to allow 50-percent extraction under the landslide until, *inter alia*, a proper analysis of the stability of the landslide was done; and second, assuming, *arguendo*, that 50-percent extraction is permissible, allowing retreat mining, and therefore subsidence, under the landslide without requiring a permit amendment is unlawful.

In support of its first contention, NRDC *et al.* maintain that the limitation of mining to 50 percent in an effort to prevent subsidence is

22/ 2 Section 515(a), 30 U.S.C. § 1265(a) (1982), requires that any surface coal mining operation authorized by a permit issued under an approved State or Federal program meet all applicable performance standards of the Act. One such standard, set forth at section 515(b)(21), requires the operation to "protect offsite areas from slides or damage occurring during the surface coal mining and reclamation operations."

based upon a Pennsylvania statute whose applicability to western conditions is not established by the record. The Oliver No. 2 mine is offered as an example of mining that caused subsidence despite the fact that less than 50 percent of the coal had been mined (see note 15, supra). Petitioners also contend that ARCO's pillar stability calculations assume a sound floor when, in fact, the evidence shows that clay floors are present in the area and that soft clay floors can occasion pillar failure (Tr. 640, 646). The testimony of Richard Mignona, one of the authors of ARCO's subsidence evaluation, is cited by petitioners for the proposition that ARCO did no floor strength analysis of the mine floor under the landslide.

The State and OSM respond to these charges by stating that ARCO used two state-of-the-art techniques in performing pillar stability calculations, and in each case these calculations yielded safety factors within acceptable ranges. The State's subsidence expert testified that these calculations were "verified by checking experience and existing pillars in the Bear Mine * * * under higher overburden pressure loads, some which have been in place for 20 and 30 years" (Tr. 626). Mignona testified that the 50-percent extraction method employed by ARCO is used in many areas worldwide to prevent subsidence, such as in Great Britain where mining occurs beneath cities and towns on a regular basis (Tr. 934). 23/

23/ Mignona further testified that he suggested the preventative measures incorporated into stipulation No. 41. He explained why, as follows:

"Because I realized that the concerns expressed by the agencies and some of the petitioners were valid. I'm certainly not going to do a design that's going to open up Atlantic Richfield to any future possible lawsuits or anything that's going to damage anyone else's property. I feel that I can do a better job of engineering than that."
(Tr. 935).

Regulations discussing subsidence are set forth at 30 CFR 784.20 and 817.121. 24/ Although these sections are cited by NRDC et al., no specific reference to their requirements is made. 25/

Petitioners attribute to Mignona the statement that ARCO has done no floor strength analysis of the mine floor under the landslide. 26/ In fact, Mignona testified that he had not done any calculations on floor strengths in making his calculations for the subsidence evaluation plan (Tr. 968). Left unanswered by NRDC et al., however, is whether such calculations were necessary, or even feasible, given ARCO's methods of pillar stability calculations, and the fact that the mine had not yet been opened. No positive evidence is offered by NRDC et al. in support of these issues. Thus, we are left to weigh petitioners' bare assertions against the expert testimony of witnesses for the State and ARCO. In this case we must conclude that NRDC et al. have not met their burden of showing by a preponderance of the evidence that OSM erred in approving the 50-percent extraction method. No witnesses offered by petitioners addressed why such a method would not be practical at the Mt. Gunnison No. 1 mine. As testified to by ARCO, the method is used worldwide, and 16,000 protected structures exist in Pennsylvania with only a one percent failure rate, not all of which can be traced to mine-related causes (Tr. 934). In addition, the pillar stability calculations were checked against experience in the Bear Mine.

24/ On Oct. 1, 1984, U.S. District Court Judge Thomas A. Flannery remanded 30 CFR 817.121(c)(2) to the Department for "proper notice and comment." In re: Permanent Surface Mining Regulation Litigation, No. 79-1144 (D.D.C. Oct. 1, 1984) at 11.

25/ See also regulations at 30 CFR 817.99 and 817.122 through 817.126 (1981). Each of these regulations has since been removed or amended. 48 FR 24652 (June 1, 1983).

26/ Objections at 66.

As set forth in stipulation 41, no pillar recovery shall occur within certain affected panels prior to the approval of the regulatory authority. That approval depends upon the results of subsidence monitoring and a detailed stability analysis. Prior thereto, ARCO is limited to 50-percent extraction. NRDC et al. object to this procedure, contending that the detailed stability analysis should precede any mining of the landslide area: "Testing the stability of the landslide mass, of course, can and should have been done prior to permit issuance and prior to actual mining." 27/

ARCO's witness Mignona addressed this charge in a series of questions posed by ARCO counsel:

Q Would the requirements under Stipulation 41 have logically been completed before permit issuance?

A No, because they require the monitoring in the future to determine what the effects will be.

* * * * *

Q Are the requirements for this stipulation [Stipulation 38, requiring installation of monitors on a panel in sec. 16 prior to extraction of coal] ones which could have been complied with before the permit issuance?

A Not hardly.

Q Why is that?

A It's kind of hard to measure subsidence when there is no mining.

27/ Id. at 61.

Q Stipulation 39 requires a report of the monitoring program. Once again, logically, could this have been complied with before permit issuance?

A No. Again, we don't have the monitoring to report.

(Tr. 934, 952-53).

Against the testimony of ARCO's subsidence expert Mignona, we have the statement of petitioners' counsel that a stability analysis of the landslide mass was possible prior to permit issuance. Again no evidence is offered in support of this contention. In the absence of any such evidence, we conclude that petitioners have failed to establish the necessity for such an analysis prior to issuance of the permit.

A further objection is raised to the procedures of stipulation 41. If the regulatory authority authorizes pillar recovery, NRDC et al. contend, they will be unable to contest this decision absent a permit amendment under section 511 of the Act, 30 U.S.C. § 1261 (1982). We need not decide whether or not a permit revision would be required in such an instance. That decision is for the regulatory authority. If it determines that a revision is necessary, petitioners may seek review pursuant to section 511 of the Act and 30 CFR Part 775. If, on the other hand, OSM decides that the permit revision requirements are not applicable, but that pillar recovery may proceed within the affected panels, it should issue a decision approving such recovery. Any such decision shall contain, pursuant to 43 CFR 4.1281, the right of appeal to this Board and such decision shall be served on petitioners herein.

IX. The Environmental Impact Statement

[8] NRDC et al. next contend that OSM improperly made a finding of no significant impact (FONSI) for the proposed operation, and incorrectly concluded that no supplemental environmental impact statement (EIS) need be prepared. In support of this argument, they cite section 102(2)(C) of the National Environmental Policy Act (NEPA), 42 U.S.C. § 4332(2)(C) (1982), and regulations of the Council on Environmental Quality, 40 CFR 1502, requiring that an EIS be prepared for major Federal actions significantly affecting the quality of the human environment.

The reference by petitioners to a "supplemental" EIS is a tacit acknowledgment of the West-Central Colorado Coal Environmental Statement (ES) prepared by the Bureau of Land Management (BLM) in 1979 (Exh. AR-96). This ES is a 1,400-page examination of six proposed underground coal MRP's and the aggregate impacts of these proposals in the context of other projected development in the seven-county ES area. 28/ Petitioners charge that the ES is plainly inadequate for four reasons: (1) It analyzed ARCO's 1976 mining plan which called for use of longwall mining; (2) it limits its review of the ARCO mine to those impacts occurring prior to 1990, well short of its 40-year lifetime; (3) mitigation measures suggested by OSM's permanent regulations should have been discussed; and (4) OSM has acknowledged the weakness of the hydrologic analysis therein.

28/ ES at 1.

Petitioners contend that the subsidence effects of longwall mining are different from the effects caused by room-and-pillar mining (ARCO's present method). The ES criticized by NRDC et al. addresses both mining methods. Volume II of the ES devotes nearly 100 pages to ARCO's 1976 MRP. The ES notes that ARCO proposes "to use the longwall mining method primarily, and the room-and-pillar method in certain areas." 29/ Addressing subsidence, the ES states at page 596:

A more significant impact on the mine property would be the subsidence caused by the mining operation. ARCO proposes to use room-and-pillar and longwall mining techniques in the Mt. Gunnison No. 1 Mine (see map AR 1-2). Subsidence features would be similar in nature, if somewhat different in intensity. Where differences in impacts resulting from the different mining methods can be predicted, they are noted.

A quantitative comparison of the subsidence effects caused by longwall mining and by room-and-pillar mining is set forth on pages 602 and 623 of the ES.

It is apparent from the above-quoted passage that the effects of both mining techniques were addressed in the ES. Thus, without further evidence petitioners have failed to bear the burden of proving that the ES is inadequate or should be supplemented 30/ as a result of a change in ARCO's mining technique.

As noted above, NRDC et al. contend that the ES limited review to pre-1990 impacts and for this reason is inadequate to assess the impacts of

29/ Id. at 543.

30/ Regulation 40 CFR 1502.9(c)(1)(i) requires OSM to prepare a supplement to an EIS if, inter alia, the agency makes substantial changes in the proposed action that are relevant to environmental concerns. See National Indian Youth Council v. Watt, 664 F.2d 220, 225 (10th Cir. 1981), for a discussion of "substantial changes."

mining during the 40-year life of the Mt. Gunnison No. 1 mine. Volume 1 of the ES examined the aggregate impacts of six proposed MRP's in the context of four possible levels of coal-related and noncoal-related development. 31/ Specific time frames of analysis were 1980, 1985, and 1990. Volume 2 of the ES, however, devoted 96 pages to ARCO's site specific Mt. Gunnison No. 1 MRP and in numerous instances 32/ discussed impacts occurring after 1990 and throughout all parts of the life of ARCO's mine. Many impacts are discussed only through 1990, as petitioners contend, but a majority of these are impacts which will peak by 1990 and are not likely to change appreciably during the remainder of the life of the mine. 33/ Examples of such impacts are population growth, urban expansion, reductions in vegetation, wildlife, and grazing, and upgraded community services. The ES identifies 1986 as the year in which ARCO first reaches its anticipated annual production of 2.5 million tons of coal. 34/ We cannot find that the ES is inadequate for the reason advanced by petitioners.

31/ Approximately 15.56 million tons of coal are estimated for annual production by 1990 under the "most probable level (mid-level) of development." Id. at 1. Low level of production is estimated at 4.19 million tons by 1990; high level at 33.8 million tons by 1990; and a fourth level, based on diligent development and continuous operations at 9.41 million tons per year by 1990.

32/ Post-1990 impacts are addressed in the following discussions, inter alia: Fugitive dust emissions, pp. 595, 598; topography, p. 597; subsidence, pp. 602, 604; amount of coal mined, pp. 603, 624; mine discharge, pp. 604, 610, 629; surface facilities, p. 605; livestock forage, p. 627; and residual effects of mining, p. 628.

33/ The ES states (at p. 595) that the Mt. Gunnison mine will have a 27-year life of the mine. The present MRP amends this figure and states that a 40-year life of the mine is anticipated. Despite those inconsistent figures, the boundaries of the area to be mined appear not to have changed. Compare with ES map at 576 and Exh. AR-42.

34/ Id. at 543. ARCO's present MRP calls for ultimate production of 2.8 million tons per year.

Petitioners offer no support for their contention that the ES should be supplemented as a result of OSM's later promulgation of permanent program regulations. No error in OSM's actions is, therefore, apparent. Moreover, we note that in National Indian Youth Council v. Watt, supra, the passage of SMCRA itself did not require the Department to supplement a pre-SMCRA EIS.

Petitioners' final argument as to the adequacy of the ES relies upon a quotation from the CHIS: "The West-Central Colorado Coal Environmental Statement was reviewed for possible comparative purposes. However, the data was not used because information was in terms of broad generalizations or theoretical, unsubstantiated predictions." 35/ This statement arose in the context of a discussion of mass balance for the general area. Assuming, arguendo, the truth of this statement, we do not find that a mass balance is so critical to an EIS as to cause its rejection without more. Dr. Gerald Zimpfer, a geologist and surface water hydrologist for the State, described the use of a mass balance as "somewhat irritating because it's very misleading." 36/

Each of petitioners' four arguments fails to persuade us that the 1979 ES prepared by BLM is inadequate or in need of supplementation. Moreover, we note that OSM arranged for the preparation of a TEA that was issued in June 1981. This document reflects ARCO's change to the room-and-pillar method of mining. Prepared shortly before permit issuance, the TEA discusses those topics (subsidence monitoring, buffer zones, and replacement of water

35/ Exh. AR-43 at 246.

36/ Tr. 523.

supplies) 37/ that petitioners attributed to the advent of permanent program regulations.

Case law supports OSM's decision to rely upon the 1979 ES and refrain from a further supplemental EIS where no significant change in the proposed action is made. In National Indian Youth Council v. Watt, supra, OSM issued in 1980 an environmental analysis and FONSI directed to a 1978 MRP for coal development. This MRP had been "restructured" following SMCRA's passage (1977). Environmental statements had been issued in 1976 by the Bureau of Reclamation and in 1977 by the Bureau of Indian Affairs. No supplemental EIS was required in the absence of "significant change."

Similarly in EDF v. Andrus, 619 F.2d 1368 (10th Cir. 1980), a 1973 EIS, addressing, as here, both regional and site-specific actions, was held to satisfy NEPA, even though detailed development plans were not prepared by individual oil shale lessees until 1976. At page 1377, the Circuit Court held:

Many courts have held, in accord with Manygoats [v. Kleppe, 558 F.2d 556 (10th Cir. 1977)], that if an EIS prepared for a whole program contains a reasonable, good faith discussion of each of the five NEPA requirements applicable to future actions contemplated in order to implement the program, that no separate or supplemental EIS will be required for each future component action, unless a significant change occurs in the interval.

We believe that the above-quoted passage is a well-reasoned response to petitioners' contention that an EIS is required both for the issuance of ARCO's 5-year permit and for the approval of its 40-year MRP.

37/ TEA, Exh. AR-43, at 155, 72, and 66, respectively.

Stipulations

[9] NRDC et al. contend that the following stipulations attached to permit CO 0021 show conclusively that not all substantive requirements of SMCRA were met prior to permit issuance. Such a situation, they contend, is contrary to section 510(b)(1) of the Act, which requires that all the provisions of SMCRA and the applicable State or Federal program be satisfied prior to permit issuance. 30 U.S.C. § 1260(b)(1) (1982). Stipulations have been used, in petitioners' view, to remedy defects in information in the MRP.

Stipulation #11 provides as follows:

The applicant shall conduct new pumping tests on wells completed in the Barren Member and F seam. The applicant shall use the data from these tests to compute new estimates of the cone of influence [38/] produced by mining, the quantity of mine water which may be depleted by mining. [sic] A report containing the data and the results from the above tests and calculations shall be submitted to the regulatory authority as inclusions to the permit application within 6 months of the permit issuing.

NRDC et al. assert that this stipulation seeks to remedy ARCO's failure to determine the "recharge, storage, and discharge characteristics" of aquifers, as required by regulation 30 CFR 783.15(b) (1981).

That regulation states that an "application shall contain additional information which describes the recharge, storage, and discharge characteristics of aquifers and the quality

38/ The "cone of depression" (also "cone of influence") is defined as "[t]he depression, which is approximately conical in shape, that is produced in a water table or in the piezometric surface by pumping or artesian flow." A Dictionary of Mining, Mineral, and Related Terms, U.S. Department of the Interior, 249 (1968). See also Tr. 797.

and quantity of ground water, according to the parameters and in the detail required by the regulatory authority." (Emphasis supplied.)

Roy Cox, a State geologist, testified that new pumping tests were required because ARCO did not pump the wells long enough during its first tests to overcome "casing storage," the amount of water stored within the bore hole and the casing, and, as a result, it did not get an actual measurement of the water coming out of the coal into the well (Tr. 567-68).

In response, William Ford of ARCO testified that initial pump tests were sufficient to enable ARCO to perform a worst case analysis of both the cone of influence and the rate of mine inflow (Tr. 581-82, 797-99, 801-03). Using a transmissivity value of 10 gallons per day per foot and a storage coefficient of .001, ARCO determined that the cone of influence would extend 0.2 mile in 1 year and 0.4 mile in 5 years. This value represents a worst case analysis because Ford assumed that the coal seam was saturated (Tr. 798). Ford further testified that when he recomputed the cone of influence using a more realistic approach, instead of getting 0.2 mile in 1 year, he calculated 94 feet (Tr. 800-01). A mine inflow rate, based on the worst case assumption that the Barren Member and the F-seam are one continuous aquifer, was projected to be 40 gallons per minute (Tr. 801; MRP 2.8.5.1).

Both the State Decision Document and the TEA described ARCO's discussion of the cone of influence and mine inflow as inadequate (TEA at 29; State Decision Document, Exh. A-19, at 4). However, the TEA states at page 27: "In order to establish the actual impacts mining will have upon surface

waters, ground waters, and spring flows during the 5-year permit period, and to refine predictions of impacts in subsequent permit periods, additional pump tests and extensive monitoring have been stipulated." (Emphasis supplied.)

The notion that stipulation #11 was added to refine ARCO's data is reinforced by the testimony of Roy Cox at the public hearing before the Mined Land Reclamation Board: 39/

MR. COX: I think the data is adequate as far as what they have presented to us to make our findings. There was reference in Kent Hanson's statements about pump tests. That stipulation and that statement refers to: we did not agree with the method that they used to analyze a pump test, and we thought that that value was not defined close enough for the degree of analysis which we would like to make for impacts once they open the mine.

They have given us a value for a very short pump test, which would assume in the very worst case, an increase in the permeability of that. We have a transmissivity value of 16.68 gallons per day per foot. That's for the F-seam. We also have one for the Barren Member.

All we're asking for is for them to fine tune that, as far as rerunning that test. As far as mine inflow projections, they have made mine inflow projections, and it is included within the permit. What we're asking for with the mine inflow discharge study, is to verify those findings and, also, to use another method than the one method that they used. [Emphasis supplied.]

The amount of detail necessary to satisfy regulation 30 CFR 783.15(b) (1981) is committed to OSM's discretion. ARCO's discussion of mine inflow and cone of depression exaggerated the severity of each, but allowed OSM to place an upper bound on their impacts. In our view, petitioners have failed

39/ Exhibit F, accompanying Memorandum of the State of Colorado and Atlantic Richfield Company In Support of Motion to Dismiss, Reply of Atlantic Richfield Company to Response of Petitioners, and Reply of Atlantic Richfield Company to Response of OSM (Feb. 26, 1982), at 106-07.

to show a lack of compliance with the regulation. 40/ Accordingly, we find stipulation #11 was properly included in the permit.

Stipulation #13 requires ARCO to submit, inter alia, an annual report of inflows, discharges, and consumption of water within the mine, including a mine workings map showing the location and quantity of inflows and their source (Exh. AR-91, copy of permit at 6). NRDC et al. maintain that the same deficiencies prompting stipulation #11 motivated OSM to add stipulation #13. Our discussion above of the worst case analysis provided by ARCO answers this contention (see Tr. 801-02). Stipulation #13 calls for specific data after the mine has opened in order to test ARCO's predictions of inflow, monitor the results of mining, and obtain guidance for later permit areas. As such, its purpose is not to correct deficiencies in the MRP.

The language used by OSM in stipulation #14 indicates that the field survey required therein of all springs in a described area is intended to "confirm" the sources of spring discharge and the geologic units from which the springs emanate. 41/ Petitioners argue that this stipulation also represents a failure to comply with 30 CFR 783.15(b) (1981). The State Decision Document, Exhibit A-19, at page 3 of the Findings section, reveals that ARCO submitted substantial information of the nature sought by stipulation #14

40/ We note that 30 CFR 783.15 (1981) was deleted effective Oct. 26, 1983. 48 FR 43987 (Sept. 26, 1983).

41/ Stipulation No. 14 provides:

"The applicant shall conduct a field survey of all springs between the Dry Fork of Minnesota Creek and the North Fork of the Gunnison to confirm sources of spring discharges (i.e., faults, fractures, landslides, rock falls, and bedding contacts) and the geologic units from which they emanate. The applicant shall prepare and submit to the regulatory authority a report with appropriate maps, tables, and discussion within 6 months of the permit issuance for inclusion within the permit application."

prior to permit issuance. The State then asked for a field check of this information "once the weather was suitable for field work." Id. The State notes that prior to permit issuance ARCO had provided a map of the permit and adjacent areas showing the locations of all springs superimposed on a map of known landslides, rockfalls, and lineaments (Exh. 2.8.1.V, see also AR-18), a table keyed to this map (Table 2.8.1.V), and a discussion of the occurrence and source of water flowing in springs in the permit and adjacent areas. ARCO's MRP at section 2.8.1.5 discusses the subject in additional detail. The data compiled by ARCO prior to permit issuance is ample refutation that stipulation #14 was added to remedy a defect in the MRP.

Stipulation #26 requires ARCO to submit to the regulatory authority copies of the report, exhibits, and all subsequent amendments prepared for the Gunnison County Planning Commission entitled "Protection of Minnesota Creek Water Supply." Stipulation #27 requires ARCO to include with its application a "monitoring plan" proposed to this same body. Petitioners claim that stipulations #26 and #27 reflect ARCO's failure to satisfy section 508(a)(13) of SMCRA, 30 U.S.C. § 1258(a)(13) (1982), requiring that an applicant's reclamation plan include a detailed description of the measures to be taken to assure the protection of the rights of present users of ground and surface water.

ARCO contends that the above-described report was submitted to OSM on May 19, 1981, approximately 2 months before permit issuance. Included within this report, it maintains, is the monitoring plan required by stipulation #27. Quoting from the State Decision Document at page 9, ARCO explains that the

purpose of these two stipulations is "to resolve the water issues before application is made for the second five-year permit term." 42/

NRDC et al. did not respond to ARCO's statement alleging delivery of its report and monitoring plan to OSM. Our review of this report (Exh. A-17), dated April 17, 1981, reveals monitoring plans for both subsidence and water yield. We agree with ARCO that these stipulations evidence no more than a format change in the permit application and a requirement for submission of future amendments to a report. For reasons to be explained infra at headnote 10, ARCO was not required in 1981 to submit information on the impacts of mining occurring during its second permit term.

The MRP at section 3.5.2 addresses the capping and filling of shafts, adits, and wells and also the sealing of portal tunnels. These same topics are the focus of stipulations #6 and #7, calling for "plans and specifications for the sealing of portals and capping of wells," a description "in detail of the method of capping or filling bore holes," and "plans showing how the mine openings will be sealed to prevent mine inflows upon completion of mining." NRDC et al. contend that stipulations #6 and #7 evidence ARCO's failure to comply with 30 CFR 784.13(b)(8) and 784.14(d) (1981). The regulation at section 784.13(b)(8) requires "[a] description, including appropriate cross sections and maps, of the measures to be used to seal or manage mine openings, and to plug, case or manage exploration holes, other bore holes, wells and other openings * * * in accordance with 30 CFR 817.13-817.15."

42/ ARCO Proposed Findings and Conclusions, Sept. 3, 1982, at 178. See also Exh. AR-43 at 71.

The regulation at section 784.14(d) required that each reclamation plan contain "a detailed description, with appropriate drawings, of permanent entry seals." ^{43/}

ARCO's MRP (revised March 1981) addresses these topics at page 3-97 (Exh. AR-57):

Permanent Abandonment. When no longer needed for service or monitoring activities, all shafts, adits, and wells will be effectively capped or filled. Caps will consist of a six-inch thick concrete cover, and in the case of shafts, will also be equipped with a minimum two-inch diameter vent pipe extending for a distance of at least 15 feet above the shaft collar. Filling will be for the entire depth of the shaft with earth or noncombustible materials.

The portal tunnels, at the time of abandonment will be sealed. In the coal seams, double concrete block walls will be constructed. Additionally, the portal tunnels will be filled with dirt from the concrete walls to the outside of the portal tunnels.

ARCO maintains that detailed designs could not be provided until portal construction commenced. It asserts that for this reason OSM allowed a less detailed plan to be submitted with the application and stipulated for more extensive data following the development of site-specific data.

In the preamble to regulation 30 CFR 784.13(b)(8), the Department recognizes that an applicant's need to furnish cross-sections and maps of its plans is committed to OSM's discretion:

"[C]ross-sections will be required

^{43/} The requirements of 30 CFR 784.14(d) are no longer part of the regulations. They were deleted in the revision effective Oct. 26, 1983. 48 FR 43987-88 (Sept. 26, 1983). The 1981 version of 30 CFR 784.13(b)(8) remains the same in the 1984 CFR.

only as appropriate." 44 FR 15072 (Mar. 13, 1979). A similar interpretation is applicable to 30 CFR 784.14(d) (1981). Given ARCO's explanation of its needs for hard information, a need conveyed to OSM and the State prior to permit issuance, we find no error in OSM's failure to require cross-sections and maps. We similarly find no error in OSM's acceptance of the above-quoted passage from the MRP in fulfillment of the regulations. The amount of detail sufficient to satisfy the regulations at issue here is committed to OSM's discretion. NRDC et al. correctly identify the regulations at sections 784.13(b)(8) and 784.14(d) (1981) as requiring information prior to permit issuance. ARCO did submit information prior to permit issuance, and it was not improper for OSM to find that this information satisfied the requirements of the regulations. OSM's requirement of additional information in stipulations #6 and #7 was well suited to obtain greater detail, and, in fact, ARCO subsequently filed detailed designs for the sealing of portals and the capping of wells.

Regulation 30 CFR 785.19(d) (1981) requires an applicant to submit detailed surveys and baseline data if land within the proposed permit area or adjacent area is identified as an alluvial valley floor (AVF) 44/ and the proposed mining operation may affect the AVF or waters that supply it. Among

44/ This term is defined at 30 CFR 701.5 (1981):

"Alluvial valley floors means the unconsolidated stream-laid deposits holding streams with water availability sufficient for subirrigation or flood irrigation agricultural activities but does not include upland areas which are generally overlain by a thin veneer of colluvial deposits composed chiefly of debris from sheet erosion, deposits formed by unconcentrated run-off or slope wash, together with talus, or other mass-movement accumulations, and windblown deposits."

(Italics in original.) See also section 701(1) of the Act, 30 U.S.C. § 1291(1) (1982). The definition is the same in 30 CFR 701.5 (1984).

the surveys required by this regulation are those requiring the applicant to "identify those geologic, hydrologic, and biologic characteristics of the alluvial valley floor necessary to support the essential hydrologic functions" ^{45/} of the AVF. 30 CFR 785.19(d)(3) (1981).

Petitioners argue that regulation 30 CFR 785.19(d) (1981) was not satisfied prior to permit issuance and that stipulations #3 and #5 were attached to the permit to remedy this defect. Stipulation #3 requires ARCO to demonstrate that its fresh water usage would not materially damage the quantity and quality of those waters supplying an AVF. A monitoring plan of the agricultural usage and productivity of the AVF is further required. Stipulation #5 states that ARCO's discussion of irrigation of agricultural lands in Minnesota Creek and the North Fork of the Gunnison River should be expanded to include more information on the importance of subirrigation in these areas. Additional information regarding the level of flood irrigation of the AVF is also sought. The stipulation concludes with language requiring ARCO to "prepare an investigation of the essential hydrologic functions of these areas." (Emphasis supplied.)

OSM determined that an area in secs. 13 and 14, T. 13 S., R. 91 W., and sec. 18, T. 13 S., R. 90 W., along the North Fork of the Gunnison River was

^{45/} "Essential hydrologic functions" is defined at 30 CFR 701.5 (1981) to mean "the role of an alluvial valley floor in collecting, storing, regulating, and making the natural flow of surface or ground water, or both, usefully available for agricultural activities by reason of the valley floor's topographic position, the landscape, and the physical properties of its underlying materials. A combination of these functions provides a water supply during extended periods of low precipitation." The definition is the same in 30 CFR 701.5 (1984).

an AVF. In findings accompanying the issuance of permit CO 0021, 46/ the OSM Regional Director declared:

13. With respect to the 5-year permit area a negative alluvial valley floor determination has been made. An area of the North Fork of the Gunnison has been determined to be an alluvial valley floor. The essential hydrologic functions of this area will be reestablished. Other potential alluvial valley floors lie outside the adjacent area (786.19(1)). [Emphasis supplied.]

Based on a careful reading of the underscored language, we conclude that OSM found that the essential hydrologic function of the North Fork AVF would be affected 47/ by mining and that this AVF lies in an "adjacent area." 48/ The requirements of 30 CFR 785.19(d), supra, apply when a proposed mining operation "may affect an alluvial valley floor or waters that supply alluvial valley floors." 49/

46/ Exhibit AR-91, Findings, at 3.

47/ Regulation 30 CFR 822.11(b) (1981) requires surface coal mining and reclamation operations to be conducted to reestablish the essential hydrologic functions of an AVF within an affected area. An amendment to this regulation appears at 48 FR 29822 (June 28, 1983).

48/ A definition of this term appears at 30 CFR 701.5 (1981):

"Adjacent area means land located outside the affected area, permit area, or mine plan area, depending on the context in which adjacent area is used, where air, surface or ground water, fish, wildlife, vegetation or other resources protected by the Act may be adversely impacted by surface coal mining and reclamation operations."

(Adjacent area, italics in original; emphasis supplied.) An amended version of this definition appears in 30 CFR 701.5 (1984):

"Adjacent area" means the area outside the permit area where a resource or resources, determined according to the context in which adjacent area is used, are or reasonably could be expected to be adversely impacted by proposed mining operations, including probable impacts from underground workings." (Emphasis in original.)

49/ The preamble to this regulation addresses the threshold in this way:

"(B) The Office has also accepted the recommendation of one commenter that an applicant be allowed to submit an affirmative declaration of the presence of an alluvial valley floor for consideration and action

OSM should have made its AVF determination prior to permit issuance, rather than as a finding in its permit decision. The regulations clearly contemplate that the 30 CFR 785.19(c) determination be made so that the applicant can provide the necessary information for review by OSM. In fact, 30 CFR 785.19(d) (1981) states:

(1) If land within the proposed permit area or adjacent area is identified as an alluvial valley floor and the proposed mining operation may affect an alluvial valley floor or waters that supply alluvial valley floors, the applicant shall submit a complete application for the proposed mining and reclamation operations, to be used by the regulatory authority, together with other relevant information, including the information required by paragraph (c) of this section, as a basis for approval or denial of the permit.

fn. 49 (continued)

by the regulatory authority. This affirmation can be based on appropriate information.

"The Office also considered adding a provision at the end of Section 785.19(c)(1) to specifically express the fact that areas which are hydrologically isolated from the proposed operations need not be investigated [for the presence of AVF's]. Such a provision would have been based on the same hydrologic principles as would any study of hydrologic effects. The applicant is not expected to pursue effects and interactions past hydrologic barriers or beyond points of statistical insignificance. However, such a provision would have been extremely detailed and lengthy. Instead, the Office has reemphasized that the studies are to be an 'appropriate combination' of activities based on 'site specific conditions' (see Section 785.19(c)(1)). This reiteration is meant to provide that further studies may be curtailed if a mine's location is isolated from an alluvial valley floor.

"It must be understood that if the essential hydrologic functions of an alluvial valley floor are to be preserved when the alluvial valley floor is mined, or when the alluvial valley floor is not mined, a simple affirmative declaration by the applicant based on no field data will not suffice for a complete permit application. The regulatory authority must have a basis in fact to support a written finding that the operations will be conducted to preserve the essential hydrologic functions. Thus, the declaration must have a complete identification of the essential hydrologic functions and a showing of exactly why these will not be disturbed. The requirements of Section 785.19(d) must be satisfied if land within or adjacent to the proposed permit area has an alluvial valley floor, regardless of whether the alluvial valley floor has been identified through complex field investigations or a simple affirmation." 44 FR 15089 (Mar. 13, 1979). (Emphasis supplied.)

By issuance of the permit OSM deprived ARCO of an opportunity to comply with the regulation. 50/ ARCO's position in this case has been, however, not that its pre-permit submissions satisfied the numerous requirements of 30 CFR 785.19(d), but that its mine will not affect the North Fork AVF, and, therefore, it was not required to satisfy section 785.19(d).

The TEA commissioned by OSM states that ARCO has not detailed the essential hydrologic functions of the North Fork AVF. It, therefore, recommends that a study be undertaken of this topic and that a stipulation requiring ARCO to "commit to the preparation of an investigation of the essential hydrologic functions" of the North Fork AVF be attached to the permit. 51/

Stipulation #5 appears to have been written to satisfy regulations at 30 CFR 785.19(d)(1)(i) and (d)(3) (1981), requiring that the characteristics of an AVF necessary to preserve and support its essential hydrologic functions be identified, and with regulations at section 785.19(d)(2)(iii) and (iv) (1981), involving subirrigation and flood irrigation. Likewise, 30 CFR 785.19(d)(1)(iii) and (d)(2)(ii) (1981) require data to determine whether mining will cause damage to the quality and quantity of waters supplying the AVF, and also data regarding land use and crop yields. Stipulation #3 appears to have been written to satisfy these deficiencies. Although ARCO's MRP is not altogether silent on these topics, the discussion does not focus on the North Fork AVF.

50/ In fact, ARCO, in its revised MRP (October 1981), indicates its first notification that OSM had made a "positive alluvial valley floor declaration" for the North Fork was in the permit approval itself, July 29, 1981.

51/ TEA at 203.

Petitioners are correct in their contention that regulation 30 CFR 785.19(d) (1981) requires the submittal of information prior to permit issuance. In addition, petitioners correctly charge that OSM's approval of permit CO 0021 without compliance with the aforementioned regulations violated section 510(b)(1) of the Act. As set forth above, that section states that no permit shall be approved unless the application affirmatively demonstrates, and the regulatory authority finds in writing, that there has been compliance with all the requirements of the Act and the State or Federal program. In this case OSM's failure to require that ARCO satisfy 30 CFR 785.19(d) (1981) before issuing permit CO 0021 by allowing ARCO to submit the necessary information or by allowing ARCO to establish that it was not required to do so, was error. 52/

Stipulation #8 reads as follows:

ARCO will submit, to the regulatory authority, prior to any topsoil removal, information from a soil monitoring program (conducted prior to topsoil stripping) if the monitoring program demonstrates that less than 18 inches of suitable topsoil

52/ On Aug. 4, 1980, the Department suspended 30 CFR 785.19(d)(2)(ii) and (iv) to the extent they required water analyses describing seasonal variations over at least 1 full year. 45 FR 51549. On June 28, 1983, the Department substantially revised the informational requirements of 30 CFR 785.19(d). 48 FR 29821. Judge Flannery in In re: Permanent Surface Mining Regulation Litigation, No. 79-1144 (D.D.C. Oct. 1, 1984), stated that the 1980 regulations at 30 CFR 785.19(d)(3) contained an extensive description of characteristics which support the hydrologic functions of alluvial valley floors that had to be evaluated. The 1983 regulations deleted this informational requirement. Judge Flannery found inadequate justification for such deletion, and he remanded the issue to the Secretary for further consideration (Memorandum Opinion at 38). He further remanded 30 CFR 785.19(d)(2)(i) (1983) to the Secretary to provide guidance to operators and the regulatory authority as to the type of information which would satisfy 30 CFR 785.19(d)(2)(i) (Memorandum Opinion at 39-40).

Despite all these changes, the necessity for an AVF determination prior to permit approval remains clear. See 30 CFR 785.19(d)(1) (1984).

is available for revegetation. Information from the monitoring plan will be used by the applicant and the regulatory authority to establish an approved soil handling plan.

NRDC et al. charge that this stipulation was added to ARCO's permit to remedy ARCO's failure to satisfy regulation 30 CFR 784.13(b)(4) (1981). That regulation requires each reclamation plan to contain a plan for removal, storage, and redistribution of topsoil, subsoil, and other material to meet the requirements of 30 CFR 817.21 through 817.25 (1981). 53/

The MRP at section 4.4 describes ARCO's proposal to remove, salvage, replace, and monitor soils in the minesite area. In this soil-handling plan, ARCO states that the amount of stripped topsoil has been calculated to be adequate to cover all disturbed areas with 12 to 18 inches of seedbed quality material. This prediction was preceded by a soil survey in 1976, and additional mapping occurred in 1980. 54/

In ARCO's view, the purpose of stipulation #8 was to require ARCO to prepare an alternate soil handling plan if soils were found upon construction to be inadequate to provide 18 inches of seedbed material. This view is reasonable in light of the soil handling plan set forth in the MRP. Petitioners

53/ 30 CFR 784.13(b)(4) (1984) requires:

"(4) A plan for removal, storage, and redistribution of topsoil, subsoil, and other material to meet the requirements of § 817.22 of this chapter. A demonstration of the suitability of topsoil substitutes or supplements under § 817.22(b) of this chapter shall be based upon analysis of the thickness of soil horizons, total depth, texture, percent coarse fragments, pH, and areal extent of the different kinds of soils. The regulatory authority may require other chemical and physical analyses, field-site trials, or greenhouse tests if determined to be necessary or desirable to demonstrate the suitability of the topsoil substitutes or supplements.

54/ Section 2.6.1 of ARCO's MRP; Exh. AR-11.

have failed to show a violation of section 784.13(b)(4) (1981). OSM's use of stipulation #8 is, therefore, not objectionable.

Stipulation #23 requires ARCO to submit a sediment control plan for the load site prior to initiation of construction of the loadout facilities.

NRDC et al. contend that this stipulation was added to ARCO's permit to remedy ARCO's failure to comply with regulation 30 CFR 784.14(b)(1) (1981). That regulation requires each reclamation plan to contain a plan for the control of surface and ground water drainage into, through, and out of the proposed permit area. 55/

ARCO replies that it originally submitted to OSM a general plan and enclosed a request for a small acreage exemption for the loadout site under 30 CFR 817.42(a)(3)(ii)(A) (1981). This request was denied. Thereafter, ARCO submitted a plan for use of alternate sediment control measures pursuant to 30 CFR 816.45(b) (1981). OSM denied this plan also. Finally, a detailed design of a sediment pond for the loadout facility was submitted, ARCO states. No date is given for this final submission, but architectural drawings of this pond, appearing as MRP exhibit 3.1.1.D, are dated August 4, 1981, after permit issuance. 56/

Although the TEA at 57 comments favorably on three other sedimentation ponds, there is no discussion of the loadout site sedimentation pond in that study. The first description of this pond in the MRP appears in September 1981, after permit issuance (Exh. AR-17).

55/ The reclamation plan requirements now call for a specific hydrologic reclamation plan detailing in various respects the information to be provided or the objectives to be addressed. 30 CFR 784.14(g) (1984).

56/ This exhibit is found in current versions of volume IV of the MRP at pages 90C, 91A, and 91B. See also Exh. AR-17.

The conclusion is inescapable that OSM could not have approved plans for the loadout site sedimentation pond prior to permit issuance. Its issuance of permit CO 0021 to ARCO, therefore, violated 30 CFR 784.14(b)(1) (1981).

Petitioners address three stipulations, #34, #36, and #37, in their final arguments in this section. Stipulation #34 requires ARCO to increase the size of its dry meadow reference area from 0.8 acre to 2 acres to better assess the success of its revegetation program. Stipulation #36 requires ARCO to justify the use of its proposed shrub density success standard (1,000 stems per acre) by providing the findings of the technical references used to establish this standard. Finally, stipulation #37 requires ARCO, in consultation with the State and OSM, to develop success criteria for species diversity on reclaimed areas.

Petitioners can point to no regulation requiring a 2-acre reference area, but they do cite to the TEA which found at page 143 that 0.8 acre was an inadequate size "to ensure adequate representation of this vegetation type [dry meadow] over time, in light of the effects that repeated sampling would have on this reference area community." Accidental disturbance of this larger area would be less likely, the TEA at 146 states, to have a serious detrimental effect on ARCO's ability to establish valid revegetation success standards.

Stipulation #34 appears to be OSM's effort to increase the usefulness of ARCO's dry meadow reference site by enlarging its area, and in this way

prolong its life. Petitioners have failed to show that ARCO's proposed site did not satisfy revegetation regulations at 30 CFR 817.111 through 817.116 (1981). ^{57/} We find, therefore, no objection to this stipulation.

Stipulation #36 appears to represent OSM's concern for understanding why ARCO proposed its shrub density success standard of 1,000 stems per acre. Again, petitioners can point to no regulation requiring this information. At best, they can cite the TEA at 138 for the proposition that there is little justification for the specific shrub density standard proposed. At page 144, the TEA notes that ARCO's proposed standard was recommended by the Colorado Division of Wildlife. In the absence of proof by petitioners that this stipulation is used to satisfy a pre-permit requirement, we find no error in OSM's use of stipulation #36.

A similar conclusion is appropriate for stipulation #37. Regulation 30 CFR 816.116 (1981) is cited by petitioners for the proposition that appropriate success criteria must be established prior to permit issuance. We find no such statement in this regulation, nor do we find therein any mention of species diversity. Although it is clear that the TEA found ARCO's method of measuring species diversity to be inadequate, it did so because ARCO's proposal to consider the number of species per square meter addressed only one of two components of species diversity. A means of evaluating the relative contribution of each species to the postmine plant community needs to be proposed, the TEA at 147 states, in order to allow an objective assessment of

^{57/} The Department revised the revegetation regulations on Sept. 2, 1983. 48 FR 40161.

the other component of diversity, species equitability or evenness, at the time of bond release testing. Prior to the development of new diversity standards, ARCO's standard, based on the number of species per square meter, will be used. 58/

Petitioners do not point to any regulation addressing species diversity that ARCO may have failed to satisfy. Nor do they explain whether ARCO's failure to consider one of two elements of species diversity invalidated its success criteria or simply reduced the accuracy of such by a small amount. The burden of establishing that OSM used stipulation #37 to satisfy a regulatory pre-permit requirement must be borne by petitioners. We find they have failed to meet this burden.

XI. Probable Hydrologic Consequences

[10] Section 507(b)(11), 30 U.S.C. § 1257(b)(11) (1982), states that a permit application shall contain, inter alia,

a determination of the probable hydrologic consequences [PHC] of the mining and reclamation operations, both on and off the mine site, with respect to the hydrologic regime, quantity and quality of water in surface and ground water systems including the dissolved and suspended solids under seasonal flow conditions and the collection of sufficient data for the mine site and surrounding areas so that an assessment can be made by the regulatory authority of the probable cumulative impacts of all anticipated mining in the area upon the hydrology of the area and particularly upon water availability.

58/ TEA at 135.

Regulations promulgated in 1979 sought to implement this section by requiring that an application contain a description of the geology, hydrology, and water quality and quantity of all lands within the proposed mine plan area. 30 CFR 783.13(a) (1980). The term "mine plan area" was defined to mean "the area of land and water within the boundaries of all permit areas during the entire life of the surface coal mining and reclamation operations." 30 CFR 701.5 (1981).

In In re: Permanent Surface Mining Regulation Litigation, No. 79-1144 (D.D.C. Feb. 26, 1980), Judge Thomas Flannery suspended the term "mine plan area" in regulations found at 30 CFR Parts 779, 780, 783, and 784 and directed the Secretary to revise the term in accordance with the informational requirements of the Act. Judge Flannery's reasoning is set forth at pages 35 to 36 of his February 26 opinion:

Peabody objects to the Secretary's use of the term "mine plan area." This term appears nowhere in the Act. The regulations employ the term in parts 779, 780, 783, and 784, and define the term at 30 C.F.R. § 701.5. * * * This term necessitates coal companies to supply information for areas outside the permit boundary. It also requires information covering the entire life of the mining operation. Peabody claims the Act necessitates this information in only a limited number of situations.

The court finds the government's justification for this monumental informational requirement unpersuasive. The government points to sections 507(b)(11) and 508(a)(13) of the Act. 30 U.S.C. § 1257(b)(11); 30 U.S.C. § 1258(a)(13). These sections require hydrologic information both on and off the mine site. In addition, Section 508(a)(1) requires information extending over the estimated life of the mining operation. But the myriad of informational requirements delineated in Section 507 and 508 consistently refer only to the specific land mined or the immediate permit area. The court can only draw the conclusion that Congress articulated, with specificity, those instances in which information outside the permit area was necessary.

Nor can this expansive informational requirement be justified on the ground of statutory ambiguity. The informational requirements of Sections 507 and 508 are unambiguous. Congress specified what type of information it desired in each subsection. It is arbitrary and capricious for the Secretary to examine the three most expansive informational requests, develop a regulatory definition, and apply the expansive informational requests to less extensive informational needs. The court therefore remands the definition of mine plan area found at 30 C.F.R. § 701.5.

A request by the Secretary for a clarification of this opinion elicited the following response from Judge Flannery:

The Secretary also seeks clarification of this court's suspension of the term "mine plan area." The Secretary questions whether this court's suspension of the term encompasses informational requirements whose statutory basis necessitates information either: 1) both on and off the mine site; or 2) extending over the estimated life of the mining operation.

Peabody filed an opposition to the Secretary's motion for clarification of the "mine plan area" invalidation. The court agrees with Peabody that the prior ruling is unambiguous. * * * This language [from the above quoted February 26 memorandum] can only mean that the court rejects the use of the term "mine plan area." The regulation defining that term has been remanded. In addition, the court has suspended the use of the term in all areas it appears in the regulations.

The court is fully cognizant that Sections 507(b)(11) and 508(a)(13) require information both on and off the mine site. The round I opinion also noted that Section 508(a)(1) necessitates information extending over the estimate[d] life of the mining operation. The court recognizes the possibility that some of the regulations employing the term "mine plan area" may derive authority for expansive information requirements from these statutory sections. Rather than rule on the merits of this possibility, the court deems it wise to submit this question to further rulemaking. The court therefore reaffirms its order that the Secretary "revise the term in accordance with the informational requirements of the Act." Whether some of the regulations found at 30 C.F.R. §§ 779, 780, 783, and 784 can properly utilize this term will be reviewed subsequent to the beneficial process of notice and comment. [59/] [Emphasis added.]

^{59/} In re: Permanent Surface Mining Regulation Litigation, No. 79-1144 (D.D.C. May 16, 1980) at 57-58.

By a notice in the Federal Register on August 4, 1980 45 FR 51547, 51550, the Department stated that the definition of the term "mine plan area" in 30 CFR 701.5 was suspended and, pending further rulemaking, the term as used in Parts 779, 780, 783, and 784 would be interpreted to mean permit area. On April 5, 1983, the definition of "mine plan area" was removed from 30 CFR 701.5. 48 FR 14821.

The final rulemaking contemplated by Judge Flannery's opinion was published by the Department on September 26, 1983, at 48 FR 43956. Numerous changes were made in those sections identified by Judge Flannery. Of particular interest to the case at hand is 30 CFR 784.14(e)(1) (1983) which relates to an applicant's duty to make a PHC determination: "The application shall contain a determination of the probable hydrologic consequences (PHC) of the proposed operation upon the quality and quantity of surface and ground water under seasonal flow conditions for the proposed permit and adjacent areas." (Emphasis supplied.) 60/

In a subsequent decision dated July 15, 1985, Judge Flannery remanded 30 CFR 784.14(e) and 30 CFR 780.21(f) (1984) so that "the Secretary will have an opportunity to explain why, in light of the Court's ruling, the life of the mine analysis should be in the CHIA [Cumulative Hydrologic Impact Assessment] as opposed to the PHC." In re: Permanent Surface Mining Regulation Litigation, No. 79-1144, slip op. at 16 (D.D.C. July 15, 1985).

60/ By limiting the information that must be supplied to support a PHC determination, the Department effectively construed the phrase "on and off the mine site" in section 507(b)(11) as equivalent to the "proposed permit and adjacent areas." Accord 48 FR 43971 (Sept. 26, 1983).

Although much of the argument on appeal has been focused on the impact of Judge Flannery's February 1980 decision and whether or not ARCO properly made its PHC determination for the 5-year permit area, 61/ ARCO points out that from the time it submitted its application in November 1979 until the suspension of the term "mine plan area" in 1980, its actions were guided by the regulation equating mine plan area to the life of the mine and that its permit submissions were made accordingly.

In an effort to understand the life-of-the-mine area, ARCO drilled 112 holes throughout that area and completed 23 of these sites as wells (Tr. 697). These wells are monitored for flow or quality, and some wells are monitored for both (Tr. 730). Geophysical data, consisting of electric logs and lithologic logs, were collected for each of the 112 drill holes (Tr. 789). These data were interpreted by ARCO in conjunction with the cuttings and coring of the holes (Tr. 776).

In addition to using drill holes, ARCO sought to understand the properties of the Barren Member by monitoring springs. Springs are a surface

61/ In this regard NRDC et al. charge that ARCO failed to satisfy the Act, even if the determination is limited to the permit and adjacent areas, because of ARCO's reliance on a ground water divide between the North Fork drainage and the Minnesota Creek basin. Review of ARCO's MRP Exhibit 2.8.2.A (Exh. C-11), a map of the life-of-the-mine area, the testimony of the State's ground water expert, Roy Cox, and his affidavit of Sept. 1, 1982, attached as Exhibit A to Answer Brief and Proposed Findings of Intervenor State of Colorado, filed Sept. 13, 1982, and the testimony of W. H. Ford, a geohydrologist employed by ARCO, establish the basis for ARCO's determination that such a divide exists. NRDC et al. failed to show error in this determination.

expression of ground water (Tr. 577). More than 100 springs were located by ARCO over the life-of-the-mine area, and of these 64 are monitored. Flow and quality monitoring is performed quarterly for the 34 northernmost springs, and 41 different parameters are considered by ARCO in performing a quality analysis (Tr. 731).

Geologic reports were another source of information for ARCO. The Dunrud paper, supra at n.15, provided data about subsidence in the North Fork area. Vard H. Johnson's 1948 description of the Paonia Coal Field showed core holes that bore a great similarity to ARCO's lithologic logs and cross sections (Tr. 560; Exh. C-2). Data from the Bear Coal Company were also made available. This information described the Bear underground mine, which operated in the C-seam in the immediate area of ARCO's mine (Tr. 714). Monitoring of surface waters provided yet another source of data to ARCO.

The information assembled above caused ARCO to conclude that: The Barren Member is composed of sandstones, siltstones, and shales; the sandstones are discontinuous and lenticular in nature; if they contain water, they do not contain much (Tr. 782, 784, 825); and as a result, no regional aquifer exists in the Barren Member (Tr. 564). Because of the discontinuous nature of the Barren Member sands, ARCO was unable to correlate the data it received from the drill holes it made (Tr. 781). In contrast, the coal seams lying immediately below the Barren Member are correlatable (Tr. 784). Cox testified that the F-seam itself is not an aquifer (Tr. 565). Lying below both the Upper and Lower Coal Members is the Rollins Sandstone, which ARCO states is the only regional aquifer in the general area and which it believes would not be affected by the Mt. Gunnison No. 1 mine (Tr. 564, 872).

In their initial posthearing brief, dated August 2, 1982, NRDC et al. contend that ARCO, the State, and OSM failed to evaluate the probable hydrologic consequences of the Mt. Gunnison No. 1 mine over the life of the mine. Because the PHC determination at issue here is, in accordance with section 507(b)(11), a requirement to be fulfilled by the permit applicant, we hold that insofar as NRDC et al. seek to establish error in actions by the State or OSM, such arguments are misplaced and are, accordingly, rejected. As applied to ARCO, NRDC et al. charge that ARCO failed to determine the probable hydrologic consequences of subsidence on surface and ground waters in the Minnesota Creek drainage. They further charge that ARCO did not satisfy section 508(a)(13) requiring that each reclamation plan contain a detailed description of the measures to be taken to assure the protection of the quality and quantity of surface and ground water systems, and the rights of present users to such water.

With respect to these charges, we note that in February 1981 ARCO prepared a study entitled "Subsidence Evaluation for Mt. Gunnison No. 1 Mine" (Exh. A-15). Appendix B of this report is a plan designed to prevent subsidence along the Dry Fork of Minnesota Creek, an area outside the 5-year permit boundaries, and to repair any damage or replace any water loss that may occur. Id. at 41. ARCO states that this plan was developed with board members, officers, and attorneys of all affected ditch companies. If a minor loss of water were to occur from subsidence, ARCO states that it could permanently or temporarily transfer its water rights, up to 272 acre-feet per year, to augment the loss of water. Four remedies are outlined if water loss is major. A subsidence monitoring program is planned that will establish a

network of survey monuments to monitor any vertical or horizontal displacements. Id. at 58.

In April 1981, ARCO expanded on this analysis in a report to the Gunnison County Planning Commission entitled Protection of Minnesota Creek Water Supply (Exh. A-17). Therein, ARCO discussed the drainage areas at Minnesota Creek, specifically, Horse Creek, South Prong, Lick Creek, and Dry Fork, inter alia, and noted that continuous recording stream gauges are located near each. Id. at 15. Mitigative plans have been developed, ARCO stated, that are applicable to all streams on the lease block to correct any adverse impacts of streamflow resulting from mining. Id. at 7. Thus, we find that, contrary to the charge of NRDC et al., ARCO did not limit its review of the probable hydrologic consequences of mining to the first 5-year permit area.

Petitioners have failed to show that ARCO's efforts to determine the probable hydrologic consequences of mining did not satisfy the requirement therefor in section 507(b)(11), 30 U.S.C. § 1257(b)(11) (1982).

XII. Summary of Conclusions

1. The Interior Board of Land Appeals has jurisdiction to consider the case.
2. Individual petitioners and NRDC, on behalf of its members, have standing to appeal.

3. NRDC et al. failed to show that:

- (a) OSM's construction of "all anticipated mining" was an unreasonable one in 1981;
- (b) OSM was required to define the ground water basin prior to permit issuance;
- (c) OSM had a duty to include a control watershed in the general area in order to provide baseline data;
- (d) OSM was required to identify baseline information used in making a PCI assessment;
- (e) OSM had a duty to develop information sufficient to make a PCI assessment;
- (f) OSM erred in approving a 50-percent extraction method for coal in the three northern panels in sec. 17, T. 13 S., R. 90 W.
- (g) the West-Central Colorado Coal Environmental Statement was inadequate or that a supplemental EIS for the Mt. Gunnison No. 1 mine was required;
- (h) stipulations Nos. 6, 7, 8, 11, 13, 14, 26, 27, 34, 36, and 37 were used to remedy defects in pre-permit informational requirements;

(i) ARCO's probable hydrologic consequences determination did not satisfy the requirements therefor in section 507(b)(11), 30 U.S.C. § 1257(b)(11) (1982).

4. NRDC et al. established that:

(a) OSM failed to assess the probable cumulative impacts of all anticipated mining in the area on the hydrologic balance;

(b) OSM failed to make its alluvial valley floor determination prior to permit issuance and stipulations #3 and #5 were added to the permit to elicit information required before permit approval;

(c) OSM failed to require plans for the loadout site sedimentation pond prior to permit approval and stipulation #23 was added to the permit to satisfy that requirement.

To the extent our decision does not expressly address arguments raised by the parties, those assertions have been considered and rejected.

XIII. Relief

Since we have concluded that OSM failed to take certain required pre-permit actions, we must determine the appropriate relief for such failure. NRDC et al. in their objections at pages 137-38 state as follows:

In the hearing before the Administrative Law Judge, the ALJ deferred consideration of what relief was appropriate until after he ruled on the merits of the challenge, i.e., whether the permit had been properly issued. Had the ALJ ruled that the permit had been improperly issued on one or more grounds, the parties were then to brief the issue of relief. Given the importance of the issue, both to ARCO and as a nationwide precedent, this is a rational and fair approach which has been accepted by all parties.

NRDC et al. would ask the Board to follow the same procedure. If the Board accepts one or more of NRDC et al.'s objections to the Recommended Decision, then it should establish by Order a briefing schedule to determine what relief is appropriate.

NRDC et al. represent that this procedure constituted the understanding of all the parties before the Administrative Law Judge. For that reason, we will extend an opportunity to file briefs. Within 60 days of receipt of this decision the parties may submit briefs setting forth the appropriate relief for the above-stated failures. Within 30 days of service of those briefs, the parties may file any desired responses. The Board will entertain no reargument on the merits of the present decision in those briefs.

Therefore, pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 CFR 4.1, the decision by OSM to issue permit CO 0021 is affirmed in part and further briefing is ordered concerning the appropriate relief in this case.

Bruce R. Harris
Administrative Judge

I concur:

Gail M. Frazier
Administrative Judge

ADMINISTRATIVE JUDGE IRWIN CONCURRING IN PART AND DISSENTING IN PART:

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I. Introduction

Although the majority opinion indicates a careful traverse of the record in this case, its conclusions on several issues are not ones I can share. I agree that OSM and the applicant failed to fulfill all their obligations before the Mt. Gunnison No. 1 mine permit was approved, but in my view the failures were both more numerous and more serious than my colleagues' analysis indicates. Concerning some issues I agree with their conclusions, but for different or additional reasons. So I write separately.

One prefatory note: the administrative law judge's recommended decision in this case adopted nearly wholesale the findings of fact proposed by the applicant for the Mt. Gunnison No. 1 mine permit. This is a practice of trial courts that has been condemned by appellate courts as an abdication of responsibility. See, e.g., Kelson v. United States, 503 F.2d 1291, 1294-95 (10th Cir. 1974); United States v. Forness, 125 F.2d 928, 942-43 (2d Cir. 1942). The result of the practice in this case is that the recommended decision has been virtually useless in our review of the facts and issues involved. Of course, we may exercise de novo review of a recommended decision of an administrative law judge in any case. 5 U.S.C. § 557(b) (1982); 43 CFR 4.1; U.S. Fish and Wildlife Service, 72 IBLA 218 (1983); see Containerfreight Transp. Co. v. I.C.C., 651 F.2d 668, 670 (9th Cir. 1981); Federal Radio Commission v. Nelson Bros. Co., 289 U.S. 266, 286 (1933). In this case, however, de novo review was unavoidable.

II. "All Anticipated Mining"

Section 510(b)(3) of the Act, 30 U.S.C. § 1260(b)(3) (1982), provides that no permit application shall be approved unless "the assessment of the

probable cumulative impact of all anticipated mining in the area on hydrologic balance specified in section 507(b) has been made by the regulatory authority." (Emphasis added.) Section 507(b)(11) repeats the requirement for an assessment by the regulatory authority "of the probable cumulative impacts of all anticipated mining in the area upon the hydrology of the area and particularly upon water availability * * *." 30 U.S.C. § 1257(b)(11) (1982). NRDC et al. complain that OSM failed to include all anticipated mining in its assessment.

This language first appeared in proposed surface mining legislation in the 93rd Congress in H.R. No. 11500. ¹/ The House Committee on Interior and

¹/ Surface Mining Control and Reclamation Act of 1974, H.R. Rep. No. 1072, 93rd Cong., 2d Sess. 11 (section 209(d)(5)) and 13-14 (section 210(b)(13)). The context and rationale for these requirements were set forth as follows:

"The physical parameters of the mining site and its environs must be clearly set forth in the application, so as to yield an accurate picture of the geological, hydrologic, surficial, developmental, ecological and general land use features of the landscape which will be affected directly or indirectly by the operator. Due to the movement of water through the environment, the hydrologic aspects of the application requirements will have the most profound implications for off-site residents and the community as a whole. Both the quantity and the quality of water supplies available to downstream users have been destroyed by the abysmal reclamation practices of coal operators in areas where the State laws were insufficient or not enforced."

Id. at 81.

See also H.R. Rep. No. 1522, 93rd Cong., 2d Sess. 26 (section 507(b)(11)) and 30 (section 510(b)(3)). In this version of the bill the last phrase of section 510(b)(3) read "to prevent irreparable offsite impacts to hydrologic balance" instead of "to prevent material damage to hydrologic balance outside permit area," the language of the Act.

In the 94th Congress, in S. 7, the Senate Committee on Interior and Insular Affairs inserted the words "to the maximum extent possible, using the best available technology" before "irreparable offsite impacts to hydrologic balance" in section 510(b)(3). See S. Rep. No. 28, 94th Cong., 1st Sess. 70 (1975). The Senate Committee rejected an Administration proposal to amend section 507(b)(11), however. The report sets out the Administration recommendation and the Committee response:

"10. Hydrologic data. Administration Recommendation: 'Under S. 425, an applicant would have to provide hydrologic data even where the data are already available--a potentially serious and unnecessary workload for small miners. The Administration's bill authorizes the regulatory authority to

Insular Affairs provided an extensive discussion of mining impacts on hydrologic balance in its report on the bill. ^{2/} In explaining these provisions the Committee stated:

fn. 1 (continued)

waive the requirement, in whole or in part, when the data are already available.'

"Committee Comment: The Administration's proposal appears to be based on a misinterpretation of S. 7 (Section 507(b)(11)). There is nothing to preclude the applicant from using already available data in his permit application. The language proposed by the Administration permits waivers of the 'determination of the hydrologic consequences of mining and reclamation' not just data submissions. This determination is very important, particularly in arid and semi-arid areas.

"Committee Recommendation: No amendment."

Id. at 189-90 (emphasis in original).

H.R. 25, the companion House bill, did not contain the Senate's insertion in section 510(b)(3). See H.R. Rep. No. 45, 94th Cong., 1st Sess. 22 (1975). The matter was compromised by inserting the word "significant" before "irreparable" in the House version. See S. Rep. No. 101, 94th Cong., 1st Sess., at 81 (1975).

The 1976 House of Representatives committee report on H.R. 9725 repeats its statements concerning the hydrologic impacts of mining contained in the report on H.R. 11500 in 1974. See H.R. Rep. No. 896, 94th Cong., 2d Sess. 56-60 (1976). See also H.R. Rep. No. 1445, 94th Cong., 2d Sess., 55-59 (1976), to accompany H.R. 13950.

The language of the Act resulted from the compromises in the 95th Congress between the House and Senate on H.R. 2 and S. 7, respectively, in 1977. See H.R. No. 493, 95th Cong., 1st Sess. 35 (section 507(b)(11)) and 40 (section 510(b)(3)). The compromises concerning section 507 were explained as follows:

"Section 507. Both bills detailed the information to be included in an application for coal surface mine operations. Such information included: identification of the operator and lands to be mined; past mining record; method of operation; accurate maps showing cultural, physical, and pertinent geologic data; hydrologic information; a reclamation plan and certificate of insurance. HR 2 included the provision to waive certain test boring or core sampling analysis if the data were already available and therefore unnecessary with respect to a specific application. The Senate receded.

"The Senate amendment included the stipulation that the determination of hydrologic consequences with respect to cumulative [sic] impacts of all anticipated mining would not be required unless data were available. The House receded with the further stipulation that the mine permit would not be approved until such information was available and incorporated into the application."

Id. at 103.

The compromises in the language of section 510(b)(3) did not receive special explanation. The conference report states generally: "Section 510: This section includes the provisions from both bills which set forth the standards by which permit applications are to be approved or disapproved in the permanent regulatory program." Id. See also S. Rep. No. 337, 95th Cong., 1st Sess. 103 (1977). ^{2/} H.R. Rep. No. 1072, supra note 1 at 95-102.

H.R. 11500 requires that the operator make a determination of the hydrologic consequences of the proposed mining and reclamation operations. It is intended that the data assembled with this assessment be included in the application so that the regulatory authority, utilizing this and other information available, can assess the probably [sic] cumulative impacts of all anticipated mining in the area upon the hydrology and adjust its actions and recommendations accordingly * * *. One of the written findings the regulatory authority makes in the approval or denial of an application for a mining permit addresses the impacts of the mining on the hydrologic balance of the area. This finding also includes the authority's assessment of the probable cumulative impact of existing and anticipated mining on the hydrologic balance of the area affected. These specific standards are emphasized at the permit approval stage due to the critical and long-term impacts mining can have on the water resources of the area affected. [3/] (Emphasis added.)

The most complete expression of Congressional intent for these provisions occurs immediately preceding the statement just quoted. At the conclusion of a review of several studies of the effects of mining on water resources, the Committee described the case of the Rio Puerco:

Insight into the potential problem of sedimentation in [arid and semi-arid] areas, however, can be gained through studies of the cumulative effect of past experiences with the destruction of vegetation over large areas (e.g., overgrazing, deforestation and construction). One such case is the experience of sedimentation on the Rio Puerco, a tributary of the Rio Grande River. Briefly stated the pattern presented in that situation entailed the destruction of vegetation in part of the valley [that] triggered substantial erosion and head cutting and deepening of the stream channel. This lowered the ground water levels on adjacent alluvial valley floors which resulted in further destruction of vegetation since roots could not reach the lowered water table.

Erosion increased and the cycle worsened. Over a period of years, the head cut moved up the valley. Eventually the entire alluvial floor was affected by reducing the amount of and changing the nature of the vegetation which was essential to the local economy as well as to the long-term productivity and stabilization of the land.

3/ Id. at 98-99.

While the above example is an extreme case in which little was done to manage lands to control erosion, a pattern similar to the history of the Rio Puerco could result from expanded surface coal mining in similar areas of the West without regard for hydrologic consequences (NAS, page 68-69).

The purpose of the hydrologic balance provisions of H.R. 11500 is to assure the maintenance of that balance on and off the mining site during and after the mining operation. Looking back at the Rio Puerco situation, the amount of disruption during any one year to the surface area of the basin could have been considered minimal. However, taken together and accumulating over a period of time, the disturbances resulted in a major alteration of the tributary valley.

Similarly, individual disturbances caused by mining might be considered minimal and of small geographic consequence. On the other hand, there are indications that their cumulative impact could be of long duration and of large geographic extent. [4/]

4/ Id. at 97-98. The Senate committee's most comprehensive statement on the law's hydrology provisions accompanied S. 7 in 1977:

"(2) Protection of Water Resources

"There are a number of provisions in this bill which are designed to protect the quality and quantity of water in areas where surface coal mining operations are being conducted. While coal is in abundant supply in the United States in certain areas, water is frequently a scarce or precious commodity which must be protected during the course of mining. Of course, the Committee recognizes that hydrology conditions vary from region to region. In the East, for example, heavy rainfall or high sulfur content of the coal in certain areas result respectively in heavy sedimentation and acid mine drainage. In the West, where coal seams are frequently aquifers, and rainfall is infrequent, mining results in loss of water sources and requires years, perhaps decades, for proper reclamation.

"In addition, where water is so scarce, competing land uses can complicate the regulatory agency's decision to allow mining. For example, at a time when the world is facing an acute food shortage, some of the coal in the West underlays alluvial valley floors, which are the only arable lands in such areas.

"For these reasons, the bill incorporates a number of carefully drawn provisions for the protection of any area to be mined. The provisions are not restrictive, but they are fully intended to protect the hydrological integrity of any area to be surface coal mined or impacted by such mining. The Committee fully recognizes that there is likely to be some temporary disturbance to water quality and quantity during the actual mining process, and the language of the bill reflects this understanding. Thus, the permit application requirements, reclamation standards, and provisions for designation of areas unsuitable for mining provide for the protection of scarce and vital water resources."

See S. Rep. No. 128, 95th Cong., 1st Sess. 54.

There are several indications in the language of sections 510(b)(3) and 507(b)(11) and in its legislative history that Congress intended the assessment of impacts on hydrology to be comprehensive. The phrase "probable cumulative impacts" itself contains two of them: "probable" impacts are to be assessed, not only definite impacts or even only quantifiable ones. And "cumulative" derives from the Latin for "to gather in a heap," denotes "increasing or enlarging by successive addition," ^{5/} and connotes a long period for such processes to take place. The sense of comprehensiveness and extended time is reinforced in the next phrase of the statutory provisions, "all anticipated mining," and the explanation in the Committee's report that both "existing and anticipated mining" are to be assessed. "Anticipated" in this context means mining that can be foreseen, and "all anticipated mining" emphasizes that a complete view is appropriate. This perspective is confirmed by the conclusions the Committee drew from the Rio Puerco study: although "individual disturbances caused by mining" might be considered minimal, "their cumulative impact could be of long duration and of large geographic extent." The Committee states the regulatory authority's assessment is to be based on the data submitted by the permit applicant "and other information available." Studies such as the Congress itself relied on in its report, as well as plans for mining that are required by law or are public knowledge, would be included in such information. Thus, the legislative history provides no indication that the Congress wished to qualify the scope of "all anticipated mining" and provides several indications that it should not be narrowly construed.

^{5/} The American Heritage Dictionary, Second College Edition, 348 (1982).

A. Existing Federal Leases

In conducting its assessment of the probable cumulative impact of all anticipated mining in the area on the hydrologic balance OSM considered the Mt. Gunnison No. 1 mine and 5 other existing mines. Had there been any applications for permits for other mines in the area, those mines would also have been included. OSM took this approach, reportedly, because of the view expressed by the State of Colorado's geologist that "the only place I've ever found specific enough information to attempt to quantify the effects of mining is in a mining reclamation permit application." 6/ OSM did not include anticipated mining on other Federal coal leases in the area. Again, the Colorado geologist explains why:

As for including federal leases, I believe it's very difficult to include federal leases in a quantitative manner. As I mentioned earlier when I went over my experiences, I used to work for the State of Montana writing environmental impact statements.

One of the environmental impact statements I wrote was a regional DIS [sic] in which you have to put together what is called a "high scenario" in which all the leases in this particular area would be developed by mining. What you do is you basically have to make assumptions as to how the lease is going to be mined, and on the basis of that, you attempt to project the impacts of a mine.

I did not find that, professionally, a very satisfying task. Basically, depending on what you want to assume, you can make any impact you want. It can be done, but I believe it's much easier to do it with a surface mine, like we were dealing with in the Northern Powder River Basin, than with an underground mine. [7/]

6/ Tr. at 510.

7/ Tr. at 512.

NRDC et al. quote from the Final Environmental Statement for Proposed Development of Coal Resources in West-Central Colorado (Final Environmental Statement) section that discusses the future environment if the Mt. Gunnison No. 1 mining and reclamation plan is not approved and implemented:

[T]he Federal Coal Leasing Amendment Act of 1975 requires that inactive federal coal leases be developed or forfeited; diligent and continuous development criteria must be met by June 1, 1986. Therefore, U.S. Steel, Empire Energy, and Gulf Mineral corporations are likely to begin developing their inactive federal leases in the area by 1985 to at least meet diligent development-continuous operation requirements. [8/]

These diligent development and continuous operation conditions were originally enacted as part of the Mineral Leasing Act of 1920 and were amended by section 6 of the Federal Coal Leasing Amendments Act of 1975 in an effort to discourage speculation in coal leases. 9/ At the time OSM approved the Mt. Gunnison No. 1 permit application, "diligent development" was defined to mean actual production of coal in commercial quantities by June 1, 1986, unless extended, for leases issued before August 4, 1976, and by 10 years from the effective date of any lease issued thereafter. 10/ NRDC et al. list three leases located within the area included in the cumulative hydrologic impact study that must meet conditions of diligent development and continued operation. "It is NRDC et al.'s position that coal leases in the general area which are required by law to be developed within the

8/ Exh. AR-96, Vol. 2, at 594.

9/ See 30 U.S.C. § 207 (1982) as amended by P.L. 94-377, 90 Stat. 1087. The title of this Act was later amended to be the Federal Coal Leasing Amendments Act of 1976 in recognition of when it was enacted. See Section 8, P.L. 95-554, 92 Stat. 2075.

10/ 43 CFR 3400.0-5(m) (1981).

proposed life of the Mt. Gunnison mine should have been included in the assessment." 11/

Whether a Federal coal lease should be considered as "anticipated mining" within the life of a proposed mine depends on whether it is likely it will be developed, however, not on whether it is required by law to be developed. If a lease is not developed as required by law, it is subject to cancellation. 12/ It cannot be assumed that it will be developed.

There are many possible reasons why an existing Federal lease might not be put into production by 1986. Many of the leases are small and would require additional Federal leasing or acquisition of other coal rights to form economically viable, or logical, mining units. Others are located far from transportation routes or are in areas with environmental problems. Coal quality is poor and prospective mining costs high in some cases, and there may not be a sufficient demand for the types of coal contained in some leases. [13/]

The record does not add anything to the Final Environmental Statement conclusion that the U.S. Steel and Gulf leases were likely to begin developing by 1985. As of April 1979 the Department stated, concerning leases without mine plans in the Uinta Southwestern Utah Coal Region, such as these are, that "a large part of the reserves in the existing Federal leases * * * have very little chance of entering into production by 1986." 14/ The 1981 Office of Technology Assessment (OTA) report on the development potential

11/ Objections of NRDC *et al.* to Recommended Decision and Findings of the Administrative Law Judge at 18-19. The three listed leases are: #C-068389, #C-051669, and #D-03955 (sic).

12/ 30 U.S.C. § 207 (1982); 43 CFR 3452.2-1(a) (1981).

13/ U.S. Department of the Interior, Bureau of Land Management, Final Environmental Statement, Federal Coal Management Program, April 1979, 2-38.

14/ *Id.*

of Federal leases lists the three undeveloped leases mentioned by NRDC et al. 15/ and states:

None of the Uinta region undeveloped leases are [sic] expected to be in production by 1986. For 1991 * * * [t]hree other lease blocks held by U.S. Steel in the Somerset-Paonia area have uncertain development prospects based on the expectation that they would be developed as part of a company strategy to expand coal operations to steam coal, since the coal on these blocks is not of metallurgical quality. U.S. Steel has an existing mine in Somerset that supplies its Geneva, Utah steel plants. The OTA Colorado task force estimated that, by making use of their existing loading and other facilities, surface mining production from the other leases could reach 0.5 million tons per year by 1991. Alternatively, the leases might be assigned to an independent operator. [16/]

The report does not indicate whether the Gulf Oil Corporation lease was one of eight in the region classified as a "favorable development prospect" or one of seven classified with "unfavorable development potential." [17/]

OSM's omission of these three leases from the assessment of the probable cumulative impacts of all anticipated mining in the area on hydrology cannot be and could not be justified on the grounds that without the specific information contained in an application for permit the effects of anticipated mining cannot be quantified. Although quantifiable effects are an admirable scientific ideal, they are not what is required by the statute. As Colorado's geologist acknowledged at the hearing, and as OSM has itself

15/ Office of Technology Assessment, An Assessment of Development and Production Potential of Federal Coal Leases, December 1981, Appendix B, at 414. The Gulf Oil Corporation lease is numbered D036955.

16/ Id., Appendix A at 393. OTA's methodology for classifying the development potential of leases is set forth at 40-41; it is applied at 132-34.

17/ Id.

acknowledged, ^{18/} it is possible to make an assessment based on reasonable assumptions and projections from information that is available from sources other than permit applications themselves. Further, the Congress specifically provided that the regulatory authority base its assessment in part on such information.

However, it has not been shown that these leases are likely to be developed within the life of the Mt. Gunnison No. 1 mine. The Final Environmental Statement comment that they were is based on the assumption that they would be developed because the law requires it. Such an assumption is unwarranted. Subsequent analyses indicate that the prospects for development of the two U.S. Steel leases by 1986 were nil and were at best "uncertain" by 1991. Based on this information it would be unreasonable to consider development of these leases as likely enough to be included in a study of the hydrologic effects of all anticipated mining. If Federal leases are planned for development or have favorable development potential, they of course should be regarded as within the scope of all anticipated mining. These apparently are not such leases.

B. Expansion of Existing Mines

The Final Environmental Statement states:

The proposed Federal actions analyzed in this ES [environmental statement] are the review and approval of the six M & R [mining and reclamation] plans discussed above. However, the

^{18/} See 44 FR 15029-30 and 15034 (Mar. 13, 1979); 47 FR 27714 (June 25, 1982).

most probable level of development presented in this regional volume also includes other existing or projected operations on both federal and private coal.

These operations indicate a background of coal activity in the ES area. * * * Each operation is discussed below * * *. [19/; emphasis added.]

Elsewhere the Final Environmental Statement states that if the Mt. Gunnison No. 1 mining and reclamation plan were not approved "coal mining would also increase somewhat. Several coal companies owning private coal reserves in the area may expand future operations onto adjacent federal coal." 20/

Among the operations discussed are two existing mines located within the area of the proposed Mt. Gunnison No. 1 mine that are stated as having applied for a short-term lease to mine supplemental reserves and as considering development of private coal reserves respectively:

In 1976, Colorado Westmoreland, Inc., opened the Orchard Valley Mine in Delta County 2.5 miles north of Paonia, Colorado * * *. The company has indicated that at the present rate of mining the existing reserves will be exhausted by 1979. In order to supplement these reserves, the company filed a short-term lease application, C-25079A, in 1978 for an additional 856 acres of federal coal. [21/]

The Final Environmental Statement projected production from this mine on the expectation that this new short-term lease would be approved, although it stated that "none of these projections is meant to indicate that any of the above pending actions are certain of approval." 22/

19/ Exh. AR-96, supra note 8, Vol. 1 at 24.

20/ Id., Vol. 2 at 594.

21/ Id., Vol. 1 at 25.

22/ Id. at 24.

Similarly, the Final Environmental Statement states:

U.S. Steel currently operates, on an approved M & R plan, the Somerset Mine at Somerset, Colorado * * *. U.S. Steel has 3,945 acres of private coal reserves, which they either own or lease * * *. U.S. Steel has projected that the production from the Somerset Mine should continue at the current 937,000 tons of coal annually for at least twenty years. However, the company is considering developing another portal to mine private coal reserves of the D and E seams; neither seam is mined. [23/; emphasis added.]

The process of consultation and coordination employed in preparing the environmental statement is described as follows:

A meeting was held at the Denver Regional Library in Denver on June 2, 1977, with approximately 200 people in attendance. The purpose of this meeting was to notify all coal industry people of project plans and solicit industry's preliminary coal development plans. Those in attendance were told they had until September 2, 1977, to submit their final mining plans to the USGS for review and inclusion in the West-Central Colorado Coal ES. After this deadline, all letters of intent and mining proposals were assembled into a regional package and constituted the proposed actions which are analyzed in this ES. [24/]

Thus, the Final Environmental Statement statements about the expansion of the Orchard Valley and Somerset mines are based on submissions from the companies involved. Unless Colorado Westmoreland's lease application for an additional 856 acres had been rejected, it should have been considered as anticipated mining--and, in fact, it was. 25/ Similarly, unless U.S. Steel

^{23/} Id. at 25.

^{24/} Id., Vol. 3 at 997.

^{25/} Although not part of the record, the OTA report, supra note 15, shows this lease was issued Sept. 1, 1979, and had an approved mine plan. Id. at 412. The acreage of the Orchard Valley mine shown on Exh. AR-15 indicates that both leases were considered.

had abandoned its consideration of developing another portal in order to mine the private reserves of the D and E seams, its statement is sufficiently definite and public for that project to be considered "anticipated mining" for which hydrological impacts must be assessed.

C. The Bowie Mine

NRDC et al. argue that, "on its face," the fact that Coors Corporation recently purchased the inactive Bowie mine on the North Fork of the Gunnison River, "presumably for redevelopment," "probably justified [its] inclusion * * * in the cumulative assessment." 26/ The record states only: "We [State of Colorado] recently heard rumors that Coors Corporation, which owns coal in that area, is considering reopening that mine." 27/ This is inadequate to support a presumption that Coors purchased the Bowie mine intending to reopen it within the life of the Mt. Gunnison No. 1 mine. Whether and when the Bowie mine would reopen would depend, among other factors, on the nature and extent of its reserves and other reserves that Coors owns or may acquire. The purchase of the Bowie mine could serve the purpose of obtaining long range reserves for Coors' own consumption or a speculative investment. Although the regulatory authority should inquire about the plans for mining properties that have been acquired or transferred in the area of a mine for which a permit application has been filed, absent a response that there are plans to commence within the life of the proposed mine it is not improper to exclude such a property from the "anticipated mining" for which

26/ NRDC Objections, supra note 11 at 22.

27/ Tr. 516.

an assessment must be made. NRDC et al.'s effort to include the Bowie mine within the term "anticipated mining" on the basis of the information in the record stretches the word "anticipated" beyond what is foreseeable.

D. The Anchor Mine

At the time plans were being made for conducting the assessment of the probable cumulative impact of all anticipated mining on the hydrologic balance in connection with the Mt. Gunnison No. 1 mine permit application, a permit application for the Anchor Mine (also known as the Bear No. 3 mine) had been submitted but then withdrawn. The prospective Anchor mine was adjacent to and "roughly equivalent" to the Bear Nos. 1 and 2 mines. 28/ These were existing underground mines that would be closed if the Mt. Gunnison mine opened because the latter would need part of the surface area of the former. On the theory that there would be either the two existing Bear mines or the Anchor mine, and that considering the former would "indirectly" cover the latter, it was decided to include the hydrologic impacts of the existing mines "because we knew a little more about it." 29/ NRDC et al. object to this decision on the grounds that hydrologic impacts of the existing mines would continue even if the mines were closed.

At the time the decision was made there were two existing mines and one mine that "was most likely to come on line if we approved ARCO and Bear 1 and 2 shut down." 30/ After the Mt. Gunnison mine review, another permit application for the Anchor mine was submitted in November 1981. At the time of

28/ Tr. 515.

29/ Tr. 516.

30/ Tr. 515.

the hearing in this case in 1982 approval of this later application was imminent; it is not clear from the record whether the Bear Nos. 1 and 2 mines had been shut down.

If it was "likely" that the Anchor mine would come on line if the Mt. Gunnison No. 1 mine were approved and the Bear Nos. 1 and 2 mines closed, then it seems clear as a conceptual matter that the Anchor mine should have been included as "anticipated mining" and the hydrologic impacts of the Bear Nos. 1 and 2 mines should have been taken into account as part of baseline hydrologic data. Even assuming as a practical matter that the hydrologic impacts of the Bear Nos. 1 and 2 mines and the Anchor mine were equivalent, which seems a dubious assumption, the decision that was made effectively disregarded one set of impacts.

Thus, although I do not think NRDC et al. have shown that the three Federal coal leases they identify or the Bowie mine purchased by Coors should have been included within the "anticipated mining" for which the probable cumulative impact on hydrologic balance must be assessed under 30 U.S.C. § 1260(b)(3) (1982), I do think the Anchor mine and the expansion of the Somerset mine should have been. I cannot agree with the majority that OSM's interpretation of "all anticipated mining," i.e., that it covers existing mines and mines for which permit applications have been submitted--was "a reasonable one at the time of its 1981 assessment" and did not conflict with the legislative history of sections 510(b)(3) and 507(b)(11). I think the legislative history set forth above indicates clearly that the Congress intended a significantly longer look into the future than is encompassed by

examining the hydrologic impacts only of existing mines and mines for which applications have already been filed.

III. Failure to Define Ground Water Basin for Purposes of Assessment of the Probable Cumulative Impact on Hydrologic Balance

NRDC et al. complain that the OSM assessment of the probable cumulative impact of all anticipated mining on the hydrologic balance does not identify the ground water basin in the general area for which impacts were assessed. The majority point out that the term "general area" is not used in section 510(b)(3), that it is not OSM's responsibility to identify the ground water basin but rather the applicant's duty to provide OSM sufficient data so that it can make an assessment, and that the applicant submitted considerable data about ground water in the life-of-the-mine area.

In my view the majority simply avoid the issue. Although section 510(b)(3) does not call for the regulatory authority to perform an assessment in the "general area" (it reads "in the area"), 30 CFR 786.19(c) (1981) does. 30 CFR 786.19 is the regulation parallel to section 510(b) of the Act that provides that no permit application shall be approved unless the regulatory authority finds several enumerated things in writing, including that the assessment of the probable cumulative impacts of all anticipated coal mining in the general area on the hydrologic balance has been made by the regulatory authority. "General area" is defined for purposes of subchapter G of Chapter VII of Title 30 CFR, of which 786.19 is a part, as:

General area means, with respect to hydrology, the topographic and ground water basin surrounding a mine plan area which is of sufficient size, including areal extent and depth, to include one or more watersheds containing perennial streams and ground water zones and to allow assessment of the probable cumulative impacts on the quality and quantity of surface and ground water systems in the basins. [Emphasis in original.]

30 CFR 770.5 (1981).

The issue is important because the assessment does not define what is being assessed. The cumulative hydrologic impact study states that it was performed "for the watershed whose boundaries are illustrated in Figure 1," that is, for the topographic or surface water drainage basin. ^{31/} Given the acknowledged differences between surface water drainage basins and ground water basins (or systems) and the interrelationship of the two, the failure to set forth what was included in the latter severely reduces the likelihood that OSM assessed the probable cumulative impact on the hydrologic balance of the area, and that the assessment served its purpose as a means "to protect the hydrological integrity of any area to be surface coal mined or impacted by such mining." ^{32/} The failure also renders the assessment incomplete and scientifically unacceptable, as discussed in Section V, infra.

^{31/} Exh. AR-43 (Technical Environmental Analysis) at 231. Cf. 44 FR 15010 (Mar. 19, 1979).
^{32/} S. Rep. No. 128, 95th Cong., 1st Sess. 54 (1977). "Hydrologic balance means the relationship between the quality and quantity of water inflow to, water outflow from, and water storage in a hydrologic unit such as a drainage basin, aquifer, soil zone, lake, or reservoir. It encompasses the dynamic relationships among precipitation, runoff, evaporation, and changes in ground and surface water storage." 30 CFR 701.5 (1981).

IV. Responsibility to Develop Data for the Assessment of the Probable
Cumulative Impact on Hydrologic Balance

NRDC et al. complain that there was inadequate data about the baseline conditions of ground water quantity, ground water quality, surface water quantity, and surface water quality to enable an assessment of the probable cumulative impact of all anticipated mining in the area on the hydrologic balance under section 510(b)(3). "Congress was very clear on this issue," it argues. "If adequate data does not exist to determine probable cumulative impacts, it must be developed by the regulatory authority prior to issuance of the permit. 507(b)(11)." 33/

I agree with my colleagues that the Act and the regulations place the burden of developing information adequate for OSM's assessment of probable cumulative impact on hydrology on a permit applicant. Under 507(b)(11) the applicant is to submit a "determination" of the probable hydrologic consequences of its proposed operations "so that an assessment can be made by the regulatory authority of the probable cumulative impacts of all anticipated mining in the area." As a result of the proviso agreed to by the conference committee on the basis of S. 7, "this determination shall not be required until * * * hydrologic information on the general area prior to mining is made available from an appropriate Federal or State agency." 34/ As a result

33/ Objections, supra note 11, at 36-37.

34/ H.R. Rep. No. 493, 95th Cong., 1st Sess. 103 (1977). S. Rep. No. 337, 95th Cong., 1st Sess. 103 (1977). These conference committee reports contain the statement: "The Senate amendment included the stipulation that the determination of hydrologic consequences with respect to cumulative [sic] impacts of all anticipated mining would not be required unless data were

of the House's further proviso, however, no permit may be approved "until such information is available and is incorporated into the application."

The provisos in section 507(b)(11) do not specify what Federal or state agency is "appropriate" to make available hydrologic information on the general area prior to mining. Nor do they indicate specifically what happens if such an agency does not provide such information. OSM's permanent program regulations in effect in 1981 did address these issues, however. 30 CFR 783.13(a) provides:

(1) Information on hydrology, water quality and quantity, and geology related to hydrology of areas outside the proposed mine plan area and within the general area shall be provided by the regulatory authority, to the extent that this data is available from an appropriate Federal or State agency.

(2) If this information is not available from those agencies, the applicant may gather and submit this information to the regulatory authority as part of the permit application.

(3) The permit shall not be approved by the regulatory authority until this information is made available in the application.

The regulation limits the regulatory authority's responsibility to providing information on hydrology to the extent available from an agency. It is not required to develop it.

fn. 34 (continued)

available." (Emphasis added.) The underlined reference must be regarded as mistaken. Section 507(b)(11) requires the applicant to make a determination only of "the probable hydrologic consequences of the mining and reclamation operations, both on and off the mine site." As the Senate noted in its report on S. 7: "The Committee does not mean to require the applicant to assess the probable cumulative impacts of all anticipated mining in the area, recognizing that this responsibility is properly the regulatory authority's." S. Rep. No. 128, 95th Cong., 1st Sess. 76 (1977).

The preamble explanation accompanying the identical regulation for surface mining applicants stated:

Section 779.13 will require the applicant to set forth in the application all data regarding the description of the "general area," as defined in 30 CFR 770.5. This is in keeping with Congress' intent that the applicant set forth all information necessary for the determination of the impacts of proposed operations on the hydrologic balance. (See H.R. Report No. 95-218, 95th Congress, 1st Session at 111, 1977.) However, it should be noted that for actual collection of that data, the applicant may, at his/her option, rely on State and Federal agencies for the description of areas outside the mine plan area. Section (779.13(b)(1)). Of course, if that information has not yet been collected, then the applicant either will have to collect it, or wait until government agencies make it available (Section 779.13(b)(2)-(3)), as provided for in Section 507(b)(11) of the Act.

At the initiation of the permanent regulatory programs, Section 779.13(b)'s requirements are not expected to result in the disruption of existing surface mining activities. It is expected that State and Federal agencies will have collected the necessary data in many areas by the summer of 1980, when State and Federal programs commence, especially through the efforts of the U.S. Geological Survey. If the data has not been made available and the applicant chooses not to collect, but rather to wait for government efforts, then, through 30 CFR 771.13(b), the applicant may continue to conduct existing operations under the interim regulatory program until an initial decision is made on the new permit. [35/]

A statement accompanying proposed 30 CFR 786.15(c), which became 786.19(c) in the final regulations, elaborated on the reference to the U.S. Geological Survey in the comment above:

With respect to the general assessment of all anticipated coal mining in the area, the regulatory authority is to utilize

35/ 44 FR 15029 (Mar. 13, 1979). "The discussion of issues and their resolutions in the preamble to Section 779.13 also applies to Section 783.13." 44 FR 10566 (Mar. 13, 1979).

the information provided for that task in the application under Section 780.21(c) or 784.13(c) of this Subchapter. This information may, of course, be largely derived from data collection and analysis efforts of State and Federal agencies under Section 507(b)(11) of the Act. The Office has considered how this data is to be assessed and made available to State regulatory authority [sic]. A data collection and analysis coordination project initiated by the U.S. Geological Survey is currently underway to provide for these needs and is expected to be a functioning system for the use of regulatory authorities by the time that State programs are implemented in late 1979. [36/]

The preambles to the regulations that specify what information about ground water and surface water is and may be required, 30 CFR 779.15 and 779.16 (1981), also make clear that it is the applicant that must develop data otherwise unavailable. For example, in connection with 30 CFR 779.15, OSM commented:

In areas where historic ground water data are not adequate to evaluate the ground water resources, the regulatory authority may need to require test drilling to provide adequate hydrologic data * * *. Section 779.15 * * * calls for information which may be developed from any reasonable accurate source * * *. Section 779.15(a) does not specify the methods by which the required information is to be obtained for inclusion in the application. The regulatory authority, therefore, will have broad discretion in determining the types and level of detail which it needs with respect to marginal aquifers. [37/; emphasis added.]

In connection with the requirements for surface water information, OSM commented: "To the extent that the final rules impose significant costs on the industry, it is believed that they are both necessary and tolerable." [38/; emphasis added).

36/ 43 FR 41721 (Sept. 18, 1978).

37/ 44 FR 15033-34 (Mar. 13, 1979). These comments also apply to 30 CFR 783.15 and 783.16 applicable to underground mines. 44 FR 15067 (Mar. 13, 1979).

38/ 44 FR 15035 (Mar. 13, 1979).

V. Adequacy of the Assessment of the Probable Cumulative Impact of All Anticipated Mining

Although it is an applicant's burden to provide information about ground water and surface water conditions, it is the responsibility of the regulatory authority to make an assessment of the probable cumulative impact of all anticipated mining in the area on hydrologic balance, and it must make the assessment before the permit may be approved. 30 U.S.C. § 1260(b) (1982). NRDC et al. complain that the Cumulative Hydrologic Impact Study prepared by Willard Owens Associates, Inc., fails to identify baseline conditions of ground water quantity or quality at all or of surface water quantity or quality adequately. Without an identification of such baseline conditions, argue NRDC et al., it is not possible to determine what the individual or cumulative impacts of mining will be, as required by section 510(b)(3).

39/

The subjects of the information an applicant must submit under section 507(b)(11) are numerous and complex. The information itself is voluminous. The assessment the regulatory authority must make under section 510(b) may be based on this information, as well as "information otherwise available." Although understandably no format or methodology for the assessment is set forth in the Act, this does not mean it need not be complete, logical, and scientifically acceptable. The regulatory authority's written finding under section 510(b) is like an agency's report or recommendation on a proposed action significantly affecting the quality of the human environment under 42 U.S.C. § 4332(2)(c) (1982). Like an environmental impact statement

39/ Objections, supra note 11, at 34-35.

(and for similar reasons), the assessment must "explain fully its course of inquiry, analysis and reasoning," must contain "reasoned analysis in response to conflicting data or opinions on environmental issues" (emphasis in original), and "must not be so vague, general, and conclusory that it cannot form the basis for reasonable evaluation and criticism." Minnesota Public Interest Research Group v. Butz, 541 F.2d 1292, 1299-1300 (8th Cir. 1976); Environmental Defense Fund, Inc. v. Froehlke, 473 F.2d 346 (8th Cir. 1972). For the assessment to be complete it must at least evaluate the factors enumerated in section 507(b)(11), among them the "quantity and quality of water in surface and ground water systems." For the assessment to be logical, since by its nature it deals with probabilities rather than demonstrable truths, its hypotheses or theories of causal connections must have been tested by Mill's methods of inference or other accepted means of confirmation. ^{40/} For the assessment to be scientifically acceptable its reasoning must proceed from observable facts to conclusions about those facts that are relevant and can be tested by experience. ^{41/}

In this case, the cumulative hydrologic impact study does not set forth or analyze any data about ground water quantity or quality. (Nor, as discussed in Section III, supra, does it define the ground water involved.) In order to assess the probable cumulative impact of all anticipated mining in the area on the hydrologic balance (or to conclude that the proposed operation has been designed to prevent material damage to hydrologic balance outside the permit area) it is necessary to both describe the conditions of

^{40/} Copi, Introduction to Logic (2d ed. 1961), ch. 12, "Causal Connections: Mill's Methods of Experimental Inquiry."

^{41/} Id., ch. 13, "Science and Hypothesis," at 445.

the water systems before mining and to evaluate the anticipated impacts. See Save the Niobrara River Association v. Andrus, 483 F. Supp. 844, 852-53 (D. Neb. 1979). Because the assessment in this case did neither concerning ground water, it is both incomplete and scientifically unacceptable.

The assessment is also incomplete and scientifically unacceptable because of its failure to analyze the effects of the Mt. Gunnison No. 1 mine and five existing mines in the area on hydrology, as well as the anticipated expansion of the Somerset mine and the opening of the Anchor mine, discussed in Sections II.B and II.D., supra. Without setting forth the impacts of each of these mines it is not possible to assess the cumulative impact of all anticipated mining in the area on hydrology. See Natural Resources Defense Council v. Callaway, 524 F.2d 79, 87-88 (2d Cir. 1975); National Wildlife Federation v. United States Forest Service, 592 F. Supp. 931, 942 (D. Ore. 1984).

The assessment of cumulative impacts of all anticipated mining is fundamentally inadequate, apart from its failure to address ground water and to assess the impacts of each mine. Concerning impacts on surface water quantity it states merely that "it can be assumed that some [water] may be lost" due to removal from the basin by the "mines listed on page 1," but that the amount will be "substantially less" than that "indicated by ARCO" for the "worst case scenario" for the Mt. Gunnison No. 1 mine, i.e., "224 acre-feet per year use for spraying the coal and 150 acre-feet per year use for potable water supply." "Consequently," it concludes, "impact to the North Fork of

the Gunnison River will be minimal by the development of these mines." 42/ As for the Mt. Gunnison No. 1 mine, the assessment states that development of the mine "must be coordinated so that little or no harm will occur to downstream users when water is removed from the North Fork of the Gunnison River," especially in the months of August and September. It concludes that "net impact to downstream users should be minimal--assuming ARCO provides adequate storage for water to be used during dry months." 43/

The discussion of surface water quality impacts is similarly constituted of assumptions and generalities. After simply asserting that, because the wastewater will receive secondary treatment and contribute only .059 cubic feet per second (cfs) to the 63 cfs flow at low flow of the North Fork, the Mt. Gunnison No. 1 mine's "effluent will have minimal impact," the assessment says "it is anticipated" that the five existing mines will contribute "much less" effluent, assumes that "each provides secondary treatment," and concludes that "it is not expected that any major degradation of water quality to the North Fork of the Gunnison River will occur." 44/ Concerning the runoff from waste rock to be stored by the Mt. Gunnison No. 1 mine, the assessment concludes that, because "analysis of sample rock provided by ARCO indicates that potential toxicity levels are below EPA standards," "minimal impact will occur on the North Fork of the Gunnison River" if runoff were to develop because the sedimentation ponds located below the waste piles failed. This conclusion is apparently contradicted by the statements immediately following that if the sedimentation ponds failed then there would be an

42/ Exh. AR-43 at 244-46.

43/ Id. at 244-46, 257.

44/ Id. at 249-50.

increase in both suspended solids and dissolved solids, "thus contributing to the degradation of streamflow quality," but that "it is impossible to determine" what those increases would be, so that it "is recommended that continued studies be performed in order to further evaluate this potential problem." This portion of the discussion of water quality is concluded with the revealing comment that "increased monitoring is now required by the regulatory agencies of all mines along the North Fork of the Gunnison River and the data will be forthcoming within the first 5-year period." 45/

Finally, with respect to subsidence, the assessment concedes at the outset that "there is not enough information available at present to predict the impacts which may occur throughout the district," and that "surface water and ground water will both be influenced to an unknown degree by differences in timing of mining and the physical environment." 46/ The assessment lists the possible impacts of subsidence relevant to hydrology as "change or alteration of stream channels," "alteration of spring discharges," "loss of water from surface water bodies," and "alteration of ground-water recharge and flow" and then states: "Evaluation of the impacts of subsidence upon hydrologic systems requires procurement of extensive baseline data consisting of surface-water and ground-water monitoring (quantity and quality), mine discharge, mine inflow, precipitation gaging, evapotranspiration determination, geotechnical surveying, and aquifer testing." 47/ Lacking such information, the assessment concludes lamely that subsidence causes numerous effects but

45/ Id. at 249.

46/ Id. at 254.

47/ Id. at 255-56.

that no consistent effects were determined in a U.S. Geological Survey paper about "engineering geologic" factors at some mines in the area. 48/

What is set forth above is not a summary of the assessment of cumulative impacts but virtually the complete text of language in the cumulative hydrologic impact study that does any assessing at all.

Several inadequacies are evident:

1. No effort is made to assess together the impacts on water quantity of the existing mines and the Mt. Gunnison No. 1 mine. And although amounts of water to be used by the Mt. Gunnison No. 1 mine are given (for "worst case scenarios" only), no amounts used by the existing mines or downstream users are. The assessment must therefore resort to describing quantities in vague terminology, (e.g., "some," "substantially less") and to characterizing the harm to be avoided as "little" or none and the impacts as "minimal."

2. As for water quality, the characteristics of the Mt. Gunnison No. 1 mine wastewater that will receive an unspecified kind of secondary treatment are not set forth, so that the impact of the treated effluent on the existing water quality parameters set forth in Table 6 of the assessment cannot be appraised. Nor can constituents that might not be removed by the treatment be identified. Nor does Table 6 provide any values for dissolved oxygen, total suspended solids, nitrogen, and phosphorus that the assessment acknowledges "may experience alteration," so evaluation of what the impacts on these

48/ Id. at 256.

water quality parameters will be is not possible. Further, it is not clear whether the "analysis" of the "sample rock" to be stored at the Mt. Gunnison No. 1 mine was provided by the applicant or whether the "sample rock" was. In either event, however, what the "potential toxicity" of the rock is, under what circumstances it would be toxic, and what "EPA standards" (effluent standards or water quality standards or both) are not exceeded (presumably under any circumstances) are not explained. And elsewhere the Technical and Environmental Analysis states that the "toxicity of the waste rock has not been fully determined." Exh. AR-43 at 15. In addition, no basis for assuming that the existing mines actually provide secondary treatment for their wastewater is given (is it required by their current Clean Water Act NPDES permits, or in accordance with 30 CFR 717.17(a)(1), for example?), so the validity of assuming that they do is dubious. Nor are their wastewaters described, however "much less" they are, so there is no way of knowing whether they will cause any "major degradation of water quality to the North Fork," whatever "major degradation" may mean in this context.

3. Finally, as indicated above, the assessment does not even attempt to assess impacts of subsidence on hydrology.

In my view it is questionable whether a regulatory authority may delegate to a contractor preparation of the assessment that is assigned by the statute to be "made by the regulatory authority." If it may, however, then the contractor must be given sufficient time, resources and guidance to do a proper job, and the authority may not adopt an inadequate one. Even appreciating that this assessment was one of the first prepared under the statute

cannot excuse a document that does not set forth what the existing conditions of the water systems are; does not specify what the impacts of either any or all of the anticipated mining are or will be; does not assess impacts on groundwater systems at all; and assesses impacts on surface water in a manner that is manifestly incomplete, illogical, and scientifically unacceptable. Such a document cannot be deemed an "assessment" and cannot support the "specific written findings" required by section 510(b)(3). 49/

VI. Subsidence

NRDC et al. complain that the permit for the Mt. Gunnison No. 1 mine allows mining under an old landslide that is located across the North Fork of the Gunnison River and above the town of Somerset. The stability of the landslide is unknown, argue NRDC et al., and so are the strengths of the prospective floor, pillars, and roof of the mine beneath it. Because subsidence is possible as a result of mining and because subsidence could activate the old landslide, potentially causing serious damage to the town of Somerset, NRDC et al. object to the provision of the permit (stipulation #41) that authorizes removal of up to 50 percent of three panels in this area of the mine even if an analysis of the stability of the landslide or monitoring of subsidence "indicates that secondary extraction [i.e., removal of the 50 percent remaining in pillars] would adversely affect the stability of the landslide deposit above the town of Somerset." 50/ The record does not support the safety of allowing the removal of up to 50 percent beneath the

49/ See H.R. 45, 94th Cong., 1st Sess. at 198.

50/ The full text of stipulation 41 is contained in Exh. AR-91.

landslide, NRDC et al. argue, and such mining should only be permitted after the analysis and monitoring are complete. If 50 percent or more is then allowed to be removed, this should be decided as a revision of the permit so that interested persons may participate in and seek review of the decision. 51/

The majority conclude that NRDC et al. "have not met their burden of showing by a preponderance of the evidence that OSM erred in approving the 50-percent extraction method. No witnesses offered by petitioners addressed why such a method would not be practical at the Mt. Gunnison No. 1 mine." 52/ In addition, the majority leaves it to OSM to answer the question whether allowing more than 50-percent removal of the pillars must be done by an amendment of the permit. If it must, then NRDC et al. "may seek review pursuant to section 511 of the Act and 30 CFR Part 775." If not, OSM must issue a decision containing a right of appeal to the Board in accordance with 43 CFR 4.1281 and serve it on NRDC. 53/

In my view the majority mistakenly allocate to NRDC et al. the burden of demonstrating that allowing mining under the landslide is unsafe and ignore the statutory allocation of the burden to the permit applicant of demonstrating that mining may safely occur. I do not think the applicant has carried this primary burden. And, although they have provided NRDC et al. a remedy in this case, the majority have misconstrued when changes to a permit must be done by formal revision procedures.

51/ Objections, supra note 11, at 58-78.

52/ Majority opinion at 37.

53/ Id. at 39.

Section 510(a), 30 U.S.C. § 1260(a) (1982), provides: "The applicant for a permit, or revision of a permit, shall have the burden of establishing that his application is in compliance with all the requirements of the applicable State or Federal program." ^{54/} One of the requirements applicable to underground coal mining operations is that the operator be required to "adopt measures consistent with known technology in order to prevent subsidence causing material damage to the extent technologically and economically feasible." (Emphasis added.) 30 U.S.C. § 1266(b)(1) (1982). It was the "intent of this section to provide the Secretary with the authority to require the design and conduct of underground mining methods to control subsidence." ^{55/} Two of the measures envisioned by Congress for the control of subsidence were "leaving sufficient original material to support" and "refraining from mining under certain areas except allowing headings to be driven for access to adjacent mining areas." ^{56/}

Obviously, one means of preventing damage from subsidence is to refrain from underground mining in areas where, if subsidence occurred, it could cause material damage, directly or indirectly. In an effort to avoid having to refrain from mining under the landslide area above Somerset, the applicant's revised subsidence control plan submitted in accordance with 30 CFR 784.20 proposed that "limited extraction equivalent to 50-percent recovery will be conducted in the panels" if subsidence monitoring experience and the analysis

^{54/} The information required from an applicant under section 507 is a "detailed description of measures to be taken in conformity with the Act to prevent hazards to public health and safety." H.R. No. 218, 95th Cong., 1st Sess. at 91.

^{55/} *Id.* at 126.

^{56/} *Id.*

of the slope stability "indicate that secondary extraction would adversely affect the stability of the landslide." 57/ "The remaining protection pillars will prevent caving and its resulting subsidence," the plan claimed, adding that the "adequacy of 50-percent limited mining for subsidence protection is discussed" later. 58/

The plan's discussion, however, is altogether inadequate to support the conclusion that 50-percent removal will prevent subsidence. It begins by repeating the assertion that "protection pillars amounting to 50 percent of the coal are deemed adequate to prevent subsidence and should remain stable indefinitely," 59/ and states: "This is consistent with Pennsylvania statutes (enacted in 1966) which require that subsidence in populated areas be entirely prevented by leaving 50 percent of the coal in place as protection pillars." 60/ At the hearing, hearsay testimony was offered that only one percent of the protected structures in Pennsylvania had experienced failure, and not all of those failures were attributable to mining. 61/ In neither the plan nor the hearing testimony, however, were geologic conditions, mining techniques, or other subsidence-related factors shown to be comparable to those for the Mt. Gunnison No. 1 mine.

57/ Subsidence Evaluation for Mt. Gunnison No. 1 Mine, February 1981, Exh. A-15 at 30.

58/ Id.

59/ Id. at 31.

60/ Id.

61/ Tr. 934. It was also stated that the 50-percent extraction limitation is used in Great Britain "where they mine beneath cities and towns on a regular basis." Id. Even had this information been included in the plan, rather than presented after the permit had been approved, without a demonstration of comparable conditions it is unconvincing.

The plan also quotes a U.S. Bureau of Mines report 62/ statement that the "potential for subsidence is greatest where the extraction ratio for coal has been high, often with less than 40 percent of the coal remaining as pillars." The plan states that this "indicates that an extraction percentage of up to 60 percent might be achieved without causing subsidence," 63/ and concludes by stating that "only 50% extraction is proposed for the Mt. Gunnison No. 1 mine." The context of the general statement in the Bureau of Mines report is not provided, but its conclusion that subsidence is more likely if more coal is removed makes common sense. The applicant reformulates this statement in its plan to say that up to 60 percent of removal "might be" achieved without causing subsidence. This does not, however, lead to the conclusion that "only 50% extraction" will prevent subsidence, as the plan implies.

The plan sets forth various methods for calculating pillar stability and concludes that the Mt. Gunnison No. 1 mine pillars can be expected to remain stable for the long term. 64/ At the hearing, however, it was acknowledged that it is common in the North Fork area for there to be significant amounts of clay in the floors, with the result that they may be soft. 65/ Thus, accepting the accuracy of the pillar stability calculations does not assure that subsidence might not be caused by weak floors rather than pillar degradation.

62/ A. S. Allen and J. Paone, Surface Subsidence Control, U.S. Bureau of Mines (no date).

63/ Subsidence Evaluation, supra note 57, at 31-32.

64/ Id. at 32-34.

65/ Tr. 646-47.

Finally, the plan stated that the "possibility also exists that poor roof conditions, caused by shallow overburden, would limit" the extent of mining under the landslide. 66/

As the applicant itself acknowledged, the "impact that subsidence would have on the * * * landslide is unknown. It is possible that subsidence could trigger additional movement of the surrounding mass." 67/ It is also unknown whether subsidence would occur. Perhaps it would occur because of inadequate overburden; or of soft floors; or of pillar degradation; or of mining techniques; or perhaps because of a combination of these factors.

Congress required that measures be adopted that will prevent subsidence causing material damage. Certainly the possibility of flooding the town of Somerset by triggering movement of the landslide above it would qualify as "material damage." 68/ Congress placed on the applicant the burden of establishing that the application complies with all requirements of the applicable program, including those designed to prevent subsidence causing material damage. The applicant's subsidence control plan in this case, even as supported at the hearing, leaves too many unanswered questions, too many undisputed doubts, about whether subsidence will occur and what its effects will be if it does, to reasonably conclude that the applicant has established that 50-percent removal of the pillars under the area of the landslide is a measure that will prevent subsidence causing material damage. Until that has been established by the applicant it should refrain from mining under the

66/ Subsidence Evaluation, *supra*, note 57 at 30.

67/ Id. at 30. See also Tr. 929-30.

68/ See Rec. Doc.'s 112 and 158, quoted in Objections, *supra* note 11 at 56.

area, a measure Congress explicitly foresaw. The subsidence monitoring program and the stability analysis are two means, among others, that may generate data useful in arriving at a decision whether mining may safely occur under this area, but they do not constitute measures that will prevent subsidence causing material damage. Where the Congress clearly places on a commercial enterprise the burden of proving compliance of a product or proposal with safety and health requirements, as it has done in section 510(a), this burden is not met when the data is admittedly "scanty and incomplete," as it is in this case. See North American Pharmacal, Inc. v. Department of H.,E.,W., 491 F.2d 546, 550-51 (8th Cir. 1973); Stearns Electric Paste Co. v. Environmental Protection Agency, 461 F.2d 293, 303-05 (7th Cir. 1972); Environmental Defense Fund, Inc. v. E.P.A., 548 F.2d 998, 1012-18 (D.C. Cir. 1976). The decision to include the language of the applicant's subsidence control plan as stipulation #41 of the Mt. Gunnison No. 1 mine permit that allows 50-percent removal cannot be justified.

Since a decision to allow removal of 50 percent of the pillars was improper at the time the permit application was approved, and since such a decision would be significant, any later approval of removal of up to 50 percent or more of the pillars must be accomplished in accordance with permit revision procedures, including those for public participation. Section 511(a)(2), 30 U.S.C. § 1261(a)(2) (1982), provides that the regulatory authority "shall establish guidelines for a determination of the scale or extent of a revision request for which all permit application information requirements and procedures, including notice and hearings, shall apply," and adds a provision that revisions proposing "significant alterations in the reclamation plan" shall, at a minimum, be subject to notice and hearing

requirements. The legislative history of section 511 does not elaborate on the guidelines referred to in section 511(a)(2); 69/ it gives as an example of a "significant alteration" in a reclamation plan "changes in treatment of surface and ground water." 70/ The applicable regulation, 30 CFR 741.24(c) (1981), requires an application for a revised permit "where changes or other factors constitute a significant departure from the method of mining or reclamation operations approved in the original permit," but does not set forth any guidelines for procedures that vary depending on the extent of a proposed revision. Because mining up to 50 percent or more of the panels in the area beneath the landslide would be a significant departure from mining none of them, an application to revise the permit to this extent is called for under the regulation. Because of the potential risk of material damage from subsidence due to mining underneath the landslide and because of the controverted nature of the evidence concerning whether subsidence will occur and what its effects may be, the information, notice, and hearing requirements applicable to permit applications must be applied to an application to revise the Mt. Gunnison No. 1 mine permit to allow mining underneath the landslide. Application of these procedures to such a revision is also required to realize the Congressional purposes that citizen involvement in all phases of the regulatory scheme "will help insure that the decisions and actions of the regulatory authority are grounded upon complete and full information" and that such involvement be a "practical and legitimate method of assuring the regulatory authority's compliance with the requirement[s] of the Act." 71/

69/ See, e.g., S. Rep. No. 95-128, 95th Cong., 1st Sess., at 79: "The regulatory authority is to establish guidelines for procedures which may vary depending upon the scale and extent of the proposed revision."

70/ S. Rep. No. 93-402, 93d Cong., 1st Sess., at 57.

71/ S. Rep. No. 95-128, 95th Cong., 1st Sess., at 59.

VII. Environmental Impact Statement

On July 7, 1981, the regional director of OSM made a finding of no significant impacts to the human environment from the Mt. Gunnison No. 1 mine "based on the evaluation of impacts given in the technical and environmental assessment prepared by OSM with the assistance of the State of Colorado Mined Land Reclamation Division, in the environmental analysis prepared by the Bureau of Land Management and in the lease agreement * * *. Therefore, an EIS [environmental impact statement] is not required, and I am recommending the proposed mining and reclamation plan for the Mt. Gunnison No. 1 Mine be approved." 72/

The "environmental analysis prepared by the Bureau of Land Management" is a reference to the Final Environmental Statement for the Proposed Development of Coal Resources in West-Central Colorado, completed in 1979. 73/ The mining plan for the Mt. Gunnison No. 1 mine considered in Vol. 2 of that document was submitted in August 1976 and proposed operations that would last 27 years and produce 2.5 million tons of coal per year. 74/ This plan was later revised, in part to bring it into compliance with subsequently promulgated surface mining control regulations in 30 CFR Part 700, and was finally re-submitted in March 1981. 75/ As revised, the plan called for 40 years of operations and ultimate production at 2.8 million tons of coal per year. It also proposed principally employing the room-and-pillar method of operations rather than the longwall method; in the original plan

72/ Exh. AR-91, "FONSI".

73/ Exh. AR-96, supra note 8.

74/ Id., Vol. 1 at 5, Vol. 2 at 541.

75/ Exh. AR-43, at 2.

the longwall method had been the primary method proposed and the room-and-pillar method was secondary. 76/

NRDC et al. contend that the National Environmental Policy Act requires that an environmental impact statement for the 40-year mining plan, as revised, must be prepared. The majority conclude that the Final Environmental Statement is not inadequate for failure to discuss the changes in the revised plan because it discusses the effects of both methods on subsidence and because, although it discusses several impacts only through 1990, "a majority of these are impacts which will peak by 1990 and are not likely to change appreciably during the remainder of the life of the mine." 77/ Because no significant change is involved, they conclude, no supplemental EIS is required, citing National Indian Youth Council v. Watt, 664 F.2d 220 (10th Cir. 1981).

I cannot agree. Ignoring the fact that the production level under the revised plan is somewhat higher, the life of the mine is half again as long as originally analysed, so that even if some of the impacts are not likely to change after 1990, as the majority assert, the cumulative impact over the longer period of all impacts will inevitably be greater. (By 1990 less than one quarter of the life of the mine period will have passed). Nor can the change in primary method of operations on the impacts be discounted. Although the Final Environmental Statement acknowledges generally that the subsidence effects of the longwall and room-and-pillar methods would be "similar in

76/ Exh. AR-96, Vol. 2 at 543.

77/ Majority opinion at 42, supra. The majority also state that "in numerous instances" the EIS discusses impacts "occurring after 1990". Id. These instances refer to projected impacts to the end of the life of the mine, then planned for 27 years.

nature, if somewhat different in intensity," 78/ it discusses the effects of each method, understandably, only for the area in which it is proposed 79/ and notes "differences in impacts resulting from different mining methods" only when discussing topography (and then only once). n80/ Impacts on ground water, for example, are discussed only in terms of the longwall method, 81/ and no differences in other impacts, such as amounts of waste material stored on the surface (and resulting runoff), surface water quality, and likelihood of underground fires, are mentioned, even though these impacts of underground mining are referred to in other programmatic EIS's concerning coal mining issued by the Department. 82/ Thus, both quantitatively and qualitatively, the changes from the 1976 mining plan to the 1981 mining plan constitute a major federal action that will significantly affect the environment and require a supplemental EIS. Environmental Defense Fund v. Marsh, 651 F.2d 983, 991-92 (5th Cir. 1981); see In re Upper Floras Timber Sale, 86 IBLA 296 (1985). Unlike the relatively small reduction of mining acreage, after thorough prior analysis, that was involved in National Indian Youth Council v. Watt, supra at 225, these changes in amount and kind of mining since the 1979 BLM Final Environmental Statement are "substantial" within the meaning of 40 CFR 1502.9(c)(1). That EIS is thus not an adequate evaluation of the

78/ Exh. AR-96, Vol. 2 at 597.

79/ Id. at 602. Room-and-pillar mining was proposed "for irregular areas along the coal outcrop." Otherwise, longwall mining was proposed. See Map AR1-2, id. at 544.

80/ Id. at 597, 602, 623.

81/ Id. at 603-604.

82/ U.S. Department of the Interior, Office of Surface Mining Reclamation and Enforcement, Permanent Regulatory Program Implementing Section 501(b) of the Surface Mining Control and Reclamation Act of 1977, Final Environmental Statement, OSM-EIS-1, January 1979, at BII-64, BIII-37-38; U.S. Department of the Interior, Bureau of Land Management, Final Environmental Impact Statement, Proposed Federal Coal Leasing Program, FES 75-80, 1975, at 1-49 through 1-51.

impacts of the revised, 40-year Mt. Gunnison No. 1 mine plan. Nor does OSM's preparation of the Technical Environmental Analysis in 1981 satisfy the need for a supplemental EIS, since it only discusses the impacts of the first 5 years of the plan. Cady v. Morton, 527 F.2d 786, 795 (9th Cir. 1975). OSM's decision not to prepare a supplemental EIS may not have been merely expedient, but given a 50-percent increase in the life of the proposed mine and a fundamental change in the predominant method of mining, it certainly was not reasonable.

VIII. Special Stipulations

The Mt. Gunnison No. 1 mine permit contains 50 special stipulations. 83/ Most of them were included as a result of the Technical Environmental Analysis. The introduction to that document sets forth as a preferred alternative approval of the mining and reclamation plan with stipulations. Alternative 2, approval without stipulations,

"could be chosen if no conditions or possible environmental consequences exist that were not adequately addressed in the applicant's submittal * * *. These stipulations are the result of physical inspections of the proposed mine area, evaluation of expressed concerns, and technical evaluations made by professionals in many fields * * *. Serious adverse environmental consequences and loss of resources may occur if this alternative is adopted."

the Technical Environmental Analysis concludes. 84/

83/ Exh. AR-91, "Permit" at 4-13.

84/ Exh. AR-43, at 6.

NRDC et al. object that many of these special stipulations call for information or analysis that section 510(b) of the Act and the regulations require must be provided or performed before a permit is approved. The majority accept this objection as to stipulations 3 and 5 concerning alluvial valley floors 85/ and as to stipulation 23 concerning a sediment control plan for the loadsite, 86/ but reject the objection as to stipulations 6 and 7; 8; 11; 13; 14; 26 and 27; and 34, 36, and 37.

I think the objection is valid also for stipulations 6 and 7. The majority conclude that because the preamble to 30 CFR 784.13(b)(8) (1981) indicates that cross sections would be required only as appropriate, 87/ a similar interpretation should be given to the requirements of 30 CFR 784.14(d) (1981). The preamble to the latter regulation, however, indicates that the descriptions it calls for are important:

The specific details of seals and downslope barriers are to be shown under Section 784.14(d). This information will be used to determine if the applicant will comply with 30 CFR 817.13-817.15, 817.50, and 817.131-817.132. Particularly important for the regulatory authority will be sufficient soils, geologic, and hydrologic data to assess whether mine entries can be reasonably expected to hold seals for the long-term period after cessation of mining, in view of historic experience with the difficulties in maintaining those seals without leakage or collapse.

* * * * *

If these plans cannot establish that all drainage will be held within the underground workings, then the applicant would be required to demonstrate that any discharges to surface waters will meet both effluent limitations and water quality standards, without treatment, or to propose adequate plans for the use of necessary treatment facilities to ensure that mine

85/ Majority opinion at 52-57, supra.
86/ Id. at 59-60.
87/ 44 FR 15072 (Mar. 13, 1979).

drainage is discharged out of the underground working in accordance with Sections 817.41-817.42 and 817.50 of Subchapter K. (See H.R. Rep. No. 95-218, 95th Cong., 1st Sess., at 127 (1977); Commonwealth v. Barnes and Tucker Co., 455 Pa 392, 319 A2d 871 (1974), affd. after remand, 472 Pa 115, 371 A2d 461 (1977). [88/]

Since this information is required for section 510(b) of the Act, 89/ it should have been provided before the permit was approved.

IX. Scope and Adequacy of the Determination of Probable Hydrologic

Consequences

Under section 507(b)(11), 30 U.S.C. § 1257(b)(11) (1982), a permit application must contain "a determination of the probable hydrologic consequences of the mining and reclamation operations both on and off the mine site." NRDC et al. complain that the application for the Mt. Gunnison No. 1 mine improperly limited this determination to the five year term of the permit rather than the forty-year life of the mine. It did so because OSM substituted the term "permit area" for "mine plan area" in 30 CFR 783.13 after the latter term was suspended in 1980 by the U.S. District Court for the District of Columbia. 90/ OSM did not substitute the definition of "permit

88/ Id.

89/ The authority for 30 CFR 784.14 is given as "the same as for 30 CFR 780.21, and in addition, Section 516 of the Act." Id. The preamble to 780.21 begins:

"This Section provides for the methods by which proposed activities are to be conducted to protect the hydrologic balance. Authority for this Section is found in Sections 507(b), 508(a), 509, 510(b), 515(b), 517, 701, 702, and 717(b) of the Act.

"Information submitted pursuant to this Section will enable the regulatory authority to perform the assessment required by Sections 507(b)(11), 508(a)(13), and 510(b)(3) of the Act and 30 CFR 786.19(c), and to determine whether the proposed surface mining activities will be conducted in accordance with the following requirements of Subchapter K * * *."

44 FR 15056 (Mar. 13, 1979).

90/ 45 FR 51550 (Aug. 4, 1980). The definitions are set forth in 30 CFR 701.5 (1981).

area" for "mine plan area" by rulemaking in accordance with 5 U.S.C. § 553 (1982), however, so the governing law applicable at the time the application was submitted is section 507(b)(11) itself and provisions related to it. ^{91/} Since section 510(b)(3) calls for an assessment of the probable cumulative impact of all anticipated mining in the area on the hydrologic balance, and 507(b)(11) requires the applicant to make its determination "so that [the 510(b)(3)] assessment can be made by the regulatory authority," it follows that the hydrologic consequences of the life-of-the-mine area are what must be determined under section 507(b)(11), since that area is clearly included within the "all anticipated mining" for which the section 510(b)(3) assessment must be made. Without such a determination a proper assessment cannot be made. This is consonant with the legislative history of sections 507(b)(11) and 510(b)(3) set forth in full in Section II, supra. It is the applicant that will have (or must obtain) information about the scope of its complete mining plan, so it must therefore make a determination of its effects, although the regulatory authority may take "information otherwise available" into account in making its assessment.

The majority conclude the applicant did not limit its review of the probable hydrologic consequences of mining to the area of the first 5-year permit and that NRDC et al. have failed to show that the applicant's efforts to determine these consequences did not satisfy the requirements of section 507(b)(11). They do so on the basis of reviewing and accepting the applicant's

^{91/} Even under the definition of "permit area," of course, OSM had discretion to consider areas in addition to those on the approved application maps and the affected area. 44 FR 14920 (Mar. 13, 1979).

suggestion that "much of the data" it submitted before OSM's August 1980 notice substituting the term "permit area" for "mine plan area" "did cover the life of the mine area." 92/

The applicant did in fact submit considerable data concerning hydrology in the life-of-the-mine area. But it does not--and could not--claim that it did so for all of the hydrologic consequences set forth in section 507(b)(11). It concedes, for example, that as a consequence of OSM's August 1980 notice it did not submit data concerning the Minnesota Creek basin because that basin is not in or adjacent to the area of the initial permit and the applicant believes the basin is separated from the life-of-the-mine area by a ground water divide. 93/

Nor does the applicant claim it made any "determination" about the probable hydrologic consequences in the life-of-the-mine area. Congress regarded the determination required by section 507(b)(11) as "very important, particularly in arid and semi-arid areas." 94/ For the determination to serve as one of the bases for the regulatory authority to make its section 510(b)(3) assessment it must be something more than a pastiche of data submissions or a recital of conclusory statements or both. At the least it must cover all the consequences enumerated in section 507(b)(11) for the life-of-the-mine area. In my view the record cannot support a conclusion that the applicant met this requirement.

92/ Proposed Findings and Conclusions Submitted by Atlantic Richfield Company, Sept. 3, 1982, at 143.

93/ Id. at 144.

94/ S. Rep. No. 28, 94th Cong., 1st Sess. at 190.

X. Conclusion

Although the applicant, OSM, and the State of Colorado cooperated in preparing and reviewing the permit application for the Mt. Gunnison No. 1 mine, some significant prerequisites before a permit may be approved were not fulfilled. While this is regrettable, administrative review proceedings were not provided by section 514 of the Act as a means for explaining away such failures or shifting blame for them, but for assuring that the Act's substantive and procedural requirements have been and will be met. When these requirements have not been met, the consequences must be borne by the parties responsible, not the community at large or its apparently abstract, diffuse, or remote interests that the statute was enacted to protect. Where administrative review indicates inadequacies, those inadequacies must be confronted and remedied, not ignored, discounted, or excused in order to salvage as much as possible of the regulatory authority's decision and get on with the proposed mining operation.

Because my conclusions about the impediments to approving the Mt. Gunnison No. 1 mine permit differ from those of my colleagues, I request that the parties brief any additional or different remedies that would be appropriate to my conclusions. The remedies proposed should be responsive to present circumstances.

Will A. Irwin
Administrative Judge

