

(4) The importance of the receiving water area to the surrounding biological community, including the presence of spawning sites, nursery/forage areas, migratory pathways, or areas necessary for other functions or critical stages in the life cycle of an organism;

(5) The existence of special aquatic sites including but not limited to marine sanctuaries and refuges, parks, national and historic monuments, national seashores, wilderness areas and coral reefs;

(6) The potential impacts on human health through direct and indirect pathways;

(7) Existing or potential recreational and commercial fishing, including finfishing and shellfishing;

(8) Any applicable requirements of an approved Coastal Zone Management plan;

(9) Such other factors relating to the effects of the discharge as may be appropriate;

(10) Marine water quality criteria developed pursuant to section 304(a)(1) of the Clean Water Act; and

(b) The applicant has an approved monitoring plan (§971.603) and the resources and other capabilities to implement it.

#### § 971.602 Significant adverse environmental effects.

(a) *Determination of significant adverse environmental effects.* The Administrator will determine the potential for or the occurrence of any significant adverse environmental effect or impact (for the purposes of sections 103(a)(2)(D), 105(a)(4), 106(c) and 109(b) (second sentence) of the Act), on a case-by-case basis.

(b) *Basis for determination.* Determinations will be based upon the best information available, including relevant environmental impact statements, NOAA-collected data, monitoring results, and other data provided by the applicant or permittee, as well as consideration of the criteria in §971.601(a).

(c) *Related considerations.* In making a determination the Administrator may take into account any TCRs or other mitigation measures.

(d) *Activities with no significant adverse environmental effect.* NOAA believes that exploration-type activities,

as listed in the license regulations (15 CFR 970.701), require no further environmental assessment.

(e) *Activities with potential for significant adverse environmental effects.* NOAA research has identified at-sea testing of recovery equipment, the recovery of manganese nodules in commercial quantities from the deep seabed, and the construction and operation of commercial-scale processing facilities as activities which may have some potential for significant adverse environmental effects.

(f) *Related terms, conditions and restrictions.* Permits will be issued with TCRs containing environmental requirements with respect to protection (pursuant to §971.419), mitigation (pursuant to §971.419), or best available technology requirements (pursuant to §971.423), as appropriate, and monitoring requirements (pursuant to §971.424) to acquire more information on the environmental effects of deep seabed mining.

#### § 971.603 At-sea monitoring.

(a) An applicant must submit with its application a monitoring plan designed to enable the Administrator to assess environmental impacts and to develop and evaluate possible methods of mitigating adverse environmental effects, to validate assessments made in the EIS, and to assure compliance with the environmental protection requirements of this part.

(b) The monitoring plan shall include a characterization of the proposed mining system in terms of collector contact, benthic discharge and surface discharge.

(c) The monitoring plan shall include determination of (1) the spatial and temporal characteristics of the mining ship discharges; (2) the spatial extent and severity of the benthic impact, including recovery rate and pattern of benthic recolonization; and (3) any secondary effects that result from the impact of the mining collector and benthic plume.

(d) The monitoring of benthic impact shall involve the study of two types of areas, each selected by the permittee in consultation with NOAA, which

areas shall be representative of the environmental characteristics of the permittee's site:

(1) An impact reference area, located in a portion of a permit area tentatively scheduled to be mined early in a commercial recovery plan; and

(2) An interim preservational reference area, located in a portion of a permit area tentatively determined: to be non-mineable, not to be scheduled for mining during the commercial recovery plan, or to be scheduled for mining late in the plan.

Reference areas may be selected provisionally prior to application for a commercial recovery permit.

(e) The following specific environmental parameters must be proposed for examination in the applicant's monitoring plan:

- (1) Discharges—
  - (i) Salinity, temperature, density.
  - (ii) Suspended particulates concentration and density.
  - (iii) Particulate and dissolved nutrients and metals.
  - (iv) Size, configuration, and velocities of discharge.
- (2) Upper water column—
  - (i) Nutrients.
  - (ii) Endangered species (observations).
  - (iii) Salinity, temperature, density.
  - (iv) Currents and direct current shear.
  - (v) Vertical distribution of light.
  - (vi) Suspended particulate material advection and diffusion.
  - (vii) In-situ settling velocities of suspended particulates.
  - (viii) Zooplankton and trace metals uptake.
  - (ix) Fish larvae.
  - (x) Behavior of biota, including commercially and recreationally valuable fish.
- (3) Lower water column and seafloor—
  - (i) Currents.
  - (ii) Suspended particulate material advection and diffusion.
  - (iii) In-situ settling velocities of suspended particulates.
  - (iv) Benthic scraping and blanketing, and their impacts and recovery.

(f) The monitoring plan shall include provision for monitoring those areas impacted by the permittee's mining ac-

tivities, even if such areas fall outside its minesite, where the proposed activities have the potential to cause significant adverse environmental effect or irreparable harm in the outside area.

(g) After the Administrator's approval of the monitoring plan, this plan will become a permit TCR. The monitoring plan TCR will include, to the maximum extent practicable, identification of those activities or events that could cause suspension or modification due to environmental effects under §971.417, or permit revocation in the event that these effects cannot be adequately mitigated. The TCR also will authorize refinement of the monitoring plan prior to testing and commercial-scale recovery, and at other appropriate times, if refinement is necessary to reflect accurately proposed operations or to incorporate recent research or monitoring results.

(h) If test mining is proposed, the applicant shall include in the monitoring plan a monitoring plan for the test(s) as well as a strategy for using the result to monitor more effectively commercial-scale recovery. This monitoring shall address concerns expressed in the PEIS and in the permit EIS.

(i) The monitoring plan shall include a sampling strategy that assures: that it is based on sound statistical methods, that equipment and methods be scientifically accepted, that the personnel who are planning, collecting and analyzing data be scientifically well qualified, and that the resultant data be submitted to the Administrator in accordance with formats of the National Oceanographic Data Center and other formats as may be specified by the Administrator.

(j) Pursuant to section 114(1) of the Act, the Administrator intends to place observers onboard mining vessels, not only to ensure that permit TCRs are followed, but also to evaluate the effectiveness of monitoring strategies, both in terms of protecting the environment and in being cost-effective (See §971.1005), and if necessary, to develop potential mitigation measures. If modification of permit TCRs or regulations is required to protect the quality of the environment, the Administrator may modify TCRs pursuant to §971.414, or the regulations pursuant to §971.804.