

Resources Preliminary Examination

June 7, 1976

1. It is a common contention among conservationists that private ranchers exploit the range and are continually degrading the quality of public and private rangeland in West Texas. Applying economic principles, describe how this is an economically rational plan for a rancher on (1) his privately owned land and (2) on public land he leases.

Degradation of the rangelands of the state is not in the best interests of society because this represents declining productivity and thus an increasing consumer cost for beef. Outline resource policies that would provide incentive to maintain or upgrade (1) private rangelands and (2) public rangeland that is leased by the private sector. In your suggested policies describe how an economic incentive is provided to upgrade rangeland. Important aspect of public rangeland is societies interest in improved productivity and an increased return to the state from the lease.

2. The Northern High Plains of Texas is rapidly developing irrigation from an exhaustible underground water supply. That development is currently progressing at a rate commensurate with a relatively high internal rate of return to agricultural producers. It is projected that the water supply will be economically exhausted at time period t . Under what conditions would society prefer a slower rate of irrigation development than is occurring. If institutional restrictions are imposed, what are the economic requirements to insure no loss of welfare.
3. There is considerable interest in economics relative to the problem of externalities.
 - (a) What are some examples?
 - (b) How do they arise?
 - (c) What are the alternative methods of dealing with externalities and the advantages and disadvantages of each method?
4. Lignite is beginning to be strip mined in eastern Texas. Land covering lignite deposits is currently used for agriculture, primarily range livestock.
 - (a) Discuss the factors and methods of evaluation you would use in advising the individual farmer with lignite deposits whether to accept a lease for mining these deposits.

- (b) Discuss the relevant social and economic impacts on the local community of large scale lignite mining operations throughout the life of the exhaustible deposit.

- (c) A last issue for society. The annual net returns from this land are \$15 per acre, but often sells for \$1000 per acre. Reclamation costs after mining operations are 5 cents per ton. There are about 40,000 tons recovered from each acre. Is the cost of reclamation justified.