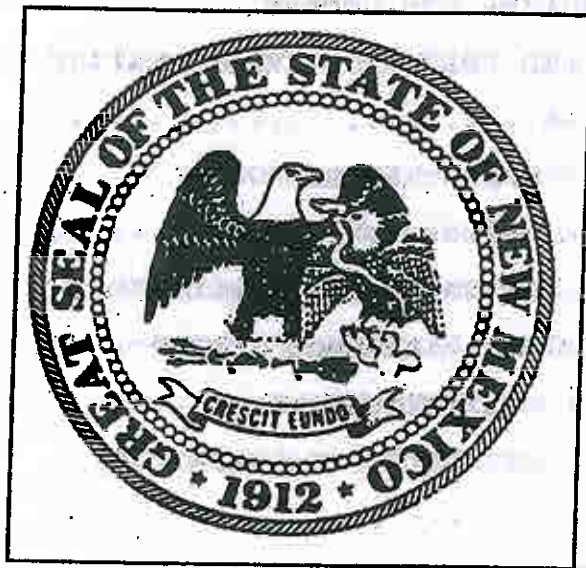


**MESILLA VALLEY ADMINISTRATIVE AREA
GUIDELINES FOR REVIEW OF WATER RIGHT
APPLICATIONS**

**PREPARED BY
THE OFFICE OF THE NEW MEXICO STATE ENGINEER
FOR INTERNAL USE**



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January 5, 1999**

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OFFICE OF THE STATE ENGINEER

MESILLA VALLEY ADMINISTRATIVE AREA
GUIDELINES FOR REVIEW OF WATER RIGHTS APPLICATIONS

FOR INTERNAL USE

INTRODUCTION

~~These guidelines for water rights administration have been~~
developed for a specific sub-area within the Lower Rio Grande
underground water basin. These guidelines are intended to address
both surface and groundwater administration within this sub-area.

This sub-area is called the Mesilla Valley Administrative Area
(MVAA) and is shown in Figure 1. The purpose of this document is
to provide guidelines to Office of the State Engineer (OSE)
personnel on general procedures to follow for processing and acting
on water rights applications filed within the MVAA, inclusive of
applications submitted pursuant to NMSA Sections 72-12-1 et. seq.
(1998), and is intended as a general guide for internal purposes to
assist in reviewing applications; however, each water rights
application will be evaluated on a case-by-case basis. Factual
differences will exist from application to application, but through
the guidelines, the OSE hopes to treat all applications fairly and
equally.

These criteria apply to applications for new appropriations,
applications for supplemental wells, and applications to change
point of diversion, and/or place and/or purpose of use.

The State Engineer has developed administrative criteria in order to assure the orderly development of water resources within the MVAA, while meeting statutory obligations regarding non-impairment to existing water rights, availability of unappropriated water, conservation of water within the state, and public welfare of the state.

These guidelines begin with administrative objectives or water resource goals to be achieved. Administrative standards which quantify allowable surface water depletions and water level declines follow. The guidelines end by outlining the application evaluation procedure.

A. ADMINISTRATIVE OBJECTIVES

The State Engineer has identified the following administrative objectives.

1. The Rio Grande stream system is fully allocated and existing rights may not be impaired by proposed appropriations. The system within the MVAA includes the Rio Grande, irrigation canals and laterals, and drains and wasteways. The primary aquifer within the MVAA is recognized as a stream-connected system in which groundwater withdrawals will ultimately result in depletions of surface water sources.

2. Local water level decline rates resulting from proposed appropriations should not impair existing rights. Local water level declines refer to drawdown at nearby wells of other

ownership.

3. The appropriation of water and/or a change in place of use, purpose of use and/or point of diversion shall not be contrary to water conservation within the state nor be detrimental to the public welfare of the state.

4. A groundwater appropriation may be granted to the extent that unappropriated water is available to the well from the aquifer at the proposed point of diversion.

5. Existing water quality for domestic, municipal, agricultural, industrial and other beneficial uses may not be impaired.

6. The existing drains system will not be impaired.

B. ADMINISTRATIVE STANDARDS

To achieve the above objectives, quantitative standards have been selected. These standards are provided below.

1. A surface water depletion of less than 0.10 acre-foot in any year due to a proposed appropriation will be deemed acceptable and no offset of this impact will be required during that year.

2. An average annual local ground water level decline rate of 1.0 foot per year or less due to a proposed appropriation in combination with the exercise of existing water rights will be deemed acceptable when addressing impacts on existing wells of other ownership.

3. Wells completed into the flood plain alluvium or within

one mile of any surface water source can have large and immediate surface water impacts. Depths to groundwater within this area are generally less than 100 feet below land surface. This zone adjacent to the surface water system is referred to as the High Impact Area (HIA) and is shown in Figure 2. The boundaries of the HIA are coincident with the area in which the depth to water is 100 feet or less (New Mexico State Engineer Technical Report No. 43, Plate 16, Wilson and others, 1981).

C. ADMINISTRATIVE CRITERIA

Administrative criteria have been developed to serve as agency guidelines on how to process and evaluate pending applications for surface and groundwater appropriations within the MVAA. Each application will be reviewed on a case-by-case basis.

1. **OFFSET OF SURFACE WATER IMPACTS** - Applications within the MVAA for groundwater appropriations that impact the surface waters beyond acceptable depletions (see B.1.) must offset 100% of the surface water depletions caused by the appropriation. All wells used to appropriate water, other than wells permitted under NMSA Section 72-12-1 (1998), must meet these requirements. An offset is achieved by acquiring a volume of water through a water right or other contractual obligation in the affected water source and releasing that water to replenish the affected volume in the source that results from exercise of the permitted groundwater appropriation. Offsets must be made before groundwater withdrawals

commence tantamount to surface water effects associated with the full exercise of the permit. Because of the uncertainty in hydrogeologic characteristics, the State Engineer will not require offsets of surface water depletions when the proposed transfer of water rights results in an increased calculated depletion of less than 3% of the total amount of water diverted and consumed. If offset requirements are not achievable, the application will be denied.

2. APPLICATION REQUIRED FOR OFFSET - Offsets may be made by filing application to change point of diversion and/or place and/or purpose of use of valid existing water rights. The State Engineer may alternatively consider other methods for offsetting as proposed by an applicant. The amount credited to offset the surface water effect will be based on the historical use of the water right and the resulting surface water impact.

3. APPLICATIONS FILED PRIOR TO IMPLEMENTATION OF THESE CRITERIA - These criteria are intended to allow the numerous applications currently on file with the Office of the State Engineer to be processed. These applications may be approved if the OSE staff requires, prior to pumping, sufficient water rights to be transferred by permit to offset the additional depletion on the Rio Grande, and the proposed application does not impair existing water rights, is not contrary to conservation of water within the state, and is not contrary to the public welfare of the

State. The applicant shall proceed with due diligence in acquiring offsetting water rights and placing the water to beneficial use.

4. OPTION TO LEASE OFFSET RIGHTS FOR APPROPRIATIONS OUTSIDE OF HIA - Groundwater appropriations located outside of the HIA may have delayed surface water depletions. Due to these possible delays, the full amount of water rights acquired for offset purposes may not be needed for those purposes during early pumping time periods. Rights not immediately needed for offset purposes may be leased and used at a different location or for a different use as provided by statute and rules and regulations governing the appropriation and use of water. Alternately, the rights, if not immediately needed, can be left at the original place of use and may continue to be exercised pursuant to their original purpose.

5. CALCULATION OF SURFACE WATER DEPLETIONS - The calculation of surface water depletions are necessary for the following situations:

- a) applications for new groundwater appropriations;
- b) applications to transfer water rights;
- c) applications to retire water rights for offset purposes;
- d) applications for supplemental wells that result in a shift of the pumping center.

Stream effects from discontinuing appropriations in b or c above may persist as surface water impacts (residual impacts) associated with the recovery of the cone of depression. In the evaluation of

the application, calculations will be performed to determine whether the residual impacts plus the impacts from the move-to well maintain an allowable level of surface water depletion. The allowable surface water depletion is the amount up to the surface water depletions associated with the use of the retired water right if the water right had continued to be exercised at its original location (Figure 3). Surface water depletions will be estimated through the use of a superposition model based on a model presented in Frenzel-Kaehler (1992), using the procedures described in Barroll (1998), or such improved successor model and procedures as they become available. The calculated reduction in evapotranspiration (ET) will be treated as a surface water depletion because of the uncertainty in ET behavior. Within the HIA, the aquifer depletion for irrigation is the product of the irrigated acreage and recognized average consumptive irrigation requirement. For HIA groundwater appropriations other than irrigation, and appropriations for all purposes outside of the HIA, the aquifer depletion is assumed to be equal to the diversion rate until a return flow plan has been accepted by the State Engineer.

6. CALCULATION ON LOCAL DRAWDOWN IMPACTS - Local drawdown effects due to a proposed appropriation will be evaluated on a case-by-case basis to ensure that impacts on the nearest wells of other ownership are maintained at an average annual rate of decline of 1.0 foot or less (this includes drawdowns due to existing uses,

criterion 7). It will be the applicants burden to show that no impairment results when drawdowns exceed 1 foot per year. In the determination of whether local drawdowns are excessive, available water columns, impacts from existing and proposed uses, and the ability to deepen wells to sustain a freshwater supply will be considered as deemed necessary. Drawdown calculations may be performed using the superposition model, or the Theis equation. The method resulting in the greater impact will govern unless site specific information indicates that a particular method would be more realistic. Aquifer parameters used to calculate drawdowns on nearby wells may be obtained from available groundwater flow models or from site specific information as deemed reasonable. The pumping rate used in the calculations will be the aquifer depletion rate described in the last paragraph of criterion 5. Over 1 foot, average annual drawdown may be allowed based on the facts of the case and the applicant showing that there will be no impairment.

7. DRAWDOWNS DUE TO EXISTING WELLS - For the purpose of determining the water level decline due to existing rights, estimates included in Papadopoulos (1987) or Lang and Maddock (1995) may be considered in addition to impacts from subsequently approved applications.

8. DIVERSION AND CONSUMPTIVE USE RATES FOR IRRIGATION WELLS
[RESERVED]

9. RETURN FLOW CREDIT - Return flow credits, for other than

irrigation uses, permit a water right owner to divert waters beyond the consumptive use amount to the extent that water diverted over and above the recognized consumptive use amount returns back to the system. Return flow credits are only allowed if specifically requested through application. The return flow credit that the State Engineer may grant will be based on demonstration that waters are actually returning to the system. For groundwater appropriations in which credit is sought for returns back to the aquifer, the applicant will be required to address location, timing and quantification of flows back to the aquifer of origination. For surface water return flow credit, the location and amount measured by the applicant as return flows to the surface water source per method approved by the State Engineer may be considered for credits. Surface water return flow credits accrued may not be carried over to the following year.

10. AVAILABLE TRANSFER AMOUNTS - For applications to change point of diversion and/or place and/or purpose of use, the quantity of water that has been historically available and consumed for beneficial purposes will be taken as the amount which may be considered for transfer to the proposed use. For applications to transfer groundwater rights, the available offset amount will also be limited to the difference between the impacts resulting from the continued use of the move-from well and the residual impacts described in item 5. For applications to transfer rights from

irrigation to other purposes, the historical consumptive use will be considered available for transfer. If surface water rights are to be transferred long distances downstream or upstream, river losses or gains may be considered. Water uses developed from wells permitted under NMSA Section 72-12-1 (1998) shall not qualify as retirement rights.

11. SUPPLEMENTAL WELLS - Wells will be classified as supplemental only if the well is drilled in the same and only the same underground stream or channel, artesian basin, reservoir or lake and does not increase the appropriation of water to an amount above the existing water right. Application for supplemental well(s) may be granted if applicable criteria have been met. These include but are not limited to the issues of local drawdown effects, surface water depletions, conservation and public welfare. Applications for supplemental well(s) for declared water rights may be approved, but only as provided for in criteria 14 and 16 below. Application for supplemental well(s) for permitted water rights that have been perfected, or are currently in development, may be approved for the total permitted water right.

12. CONSERVATION OF WATER - The State Engineer will determine whether an application is contrary to the conservation of water in the state. Water conservation issues will be addressed on a case-by-case basis. Applications and water conservation plans, if any, will be reviewed to ensure that highest and best technology

practically available and economically feasible for the intended use will be utilized to ensure conservation of water.

13. PUBLIC WELFARE - The State Engineer will determine whether an application is detrimental to the public welfare of the state. The state water planning process, statewide and local issues of concern, water quality issues, and information submitted by parties in a protested application will be considered by the State Engineer in making the public welfare determination.

14. REASONABLE QUANTITY OF WATER SOUGHT - Each application will be reviewed to determine whether the well may reasonably obtain the quantity of water sought. A determination of the availability of water from a particular point in the aquifer will be based on the transmissivity/storativity of the aquifer at that location, the proposed well casing diameter, the water column in the well, and the freshwater thickness. In addition, it will be assumed that a well capacity of at least 6 gallons per minute is required per irrigated acre and that a pump can not run more than 60% of the time, unless the applicant demonstrates that a higher percentage is reasonable.

15. 40 YEAR WATER PLAN - Municipalities, counties, public utilities supplying water to municipalities or counties, and universities must file a 40 YEAR WATER DEVELOPMENT PLAN pursuant to NMSA Section 72-1-9 (1997), when submitting application to appropriate water or an application to change place and/or purpose

of use. The plan should support the applicant's request to acquire and hold, unused, water rights provided they can show reasonably projected additional needs within forty years. At a minimum, the plan should include a summary of water rights held by the applicant; quantities of water put to beneficial use; plan of development of water rights sought; conservation measures incorporated by the applicant; and public welfare issues. The State Engineer will review the plan to determine if the proposals appear reasonable.

16. APPLICATIONS ASSOCIATED WITH PRE-BASIN WATER RIGHTS -

An application involving declared water rights for a supplemental well, replacement well, change of point of diversion, place of use, or purpose of use may be filed by the applicant. The State Engineer will entertain a proposed change only to the extent that beneficial use has occurred. At the time of action on the application, the State Engineer may characterize the amount of declared water rights recognized.

When characterizing the amount of declared water right recognized, considerations will be given to:

- a) date of commencement of works relative to date of declaration of the basin;
- b) capacities of diversion works and source of supply;
- c) existence of a water development plan, including feasibility of projected demands, in effect prior

to declaration of the basin;

- d) adherence to and diligence in following that water development plan;
- e) the amount of water beneficially used;
- f) continuity of actual beneficial use; and
- g) period of time since the basin was declared.

17. VERIFICATION OF OWNERSHIP OF TRANSFERRED WATER RIGHTS -

Determination of ownership of water rights is not within the jurisdiction of the State Engineer. Unless otherwise notified in writing, the State Engineer will proceed with application processing as if an applicant is the owner or has authorization of the owner of the water right that the applicant proposes to transfer. If a question of water right ownership or owner authorization is raised before final action by the State Engineer, the State Engineer will suspend his decision until the question is resolved by a court of competent jurisdiction or other appropriate legal authority.

18. DECLARATIONS - Any person, firm or corporation claiming to be the owner of a vested water right from any of the underground sources of the Lower Rio Grande Basin, by application of waters therefrom to beneficial use, may make and file a declaration on a form prescribed by the State Engineer. The declaration shall set forth the beneficial use to which said water has been applied; the date of first application to beneficial use; the continuity

thereof; the location of the well; if such water has been used for irrigation purposes, the description of the land upon which such water has been used for irrigation purposes; and the name of the owner. Such records or copies thereof officially certified are prima facie evidence of the truth of their contents. Declarations may be accompanied by affidavits of persons having personal knowledge of the history of the works or by other evidence tending to substantiate the claims and by copies of well logs, if available, but may be rebutted by other evidence. Beneficial uses cited in declarations will be inspected in the field by OSE staff and all works and beneficial uses will be documented.

19. 72-12-1 WELLS - The State Engineer will issue any qualified applicant a permit to drill and use a well as provided in NMSA Section 72-12-1 (1998). With the exception of wells for single household use or livestock use, all wells will be required to be metered and the permittee will be required to submit meter readings to the State Engineer. Permits issued for the drilling and use of wells pursuant to 72-12-1 are subject to such limitations as may be imposed by the courts and lawful municipal and county ordinances which are more restrictive than applicable State Engineer regulations.

20. METERING - As a condition of approval on all permits, with the exception of single household domestic permits and/or livestock use, a measuring device or meter is required and the

volume of water diverted must be reported to the State Engineer.

21. ADJUDICATION - Applications filed subsequent to the water rights being adjudicated by a court will also be subject to these criteria.

22. MAPS - Filing maps, conforming to the State Engineer's latest rules and regulation, will accompany all applications.

23. STATE ENGINEER OPTION TO REVISE GUIDELINES - As new data become available, or as conditions warrant, the State Engineer may revise these guidelines to best achieve the administrative objectives above. If any part of these guidelines is found by a court to be invalid, the remainder shall remain valid and will continue to be used for evaluation purposes.

Adopted this 5th day of January, 1999.

Thomas C. Turney
Thomas C. Turney
State Engineer

REFERENCES

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Frenzel, Peter F. and Charles A. Kaehler, 1992. Geohydrology and Simulation of Ground-Water Flow in the Mesilla Basin, Dona Ana County, New Mexico, and El Paso County, Texas. U.S. Geological Survey Professional paper 1407-C.

Hamilton, S.L. and T. Maddock III, 1993. Application of a Ground-water Flow Model to the Mesilla Basin, New Mexico and Texas. Department of Hydrology and Water Resources, University of Arizona, HWR No. 93-020.

Papadopulos, S.S. and Associates, 1987. Hydrogeologic Evaluation of Proposed Appropriation of Ground Water from the Lower Rio Grande Underground Water Basin by the City of El Paso. Consultant report prepared for the NM State Engineer Office.

Wilson, Clyde A., Robert R. White, Brennon R. Orr, and R. Gary Roybal, 1981. Water Resources of the Rincon and Mesilla Valleys and Adjacent Areas, New Mexico. State Engineer Technical Report 43.

-Example Conditions of Approval-

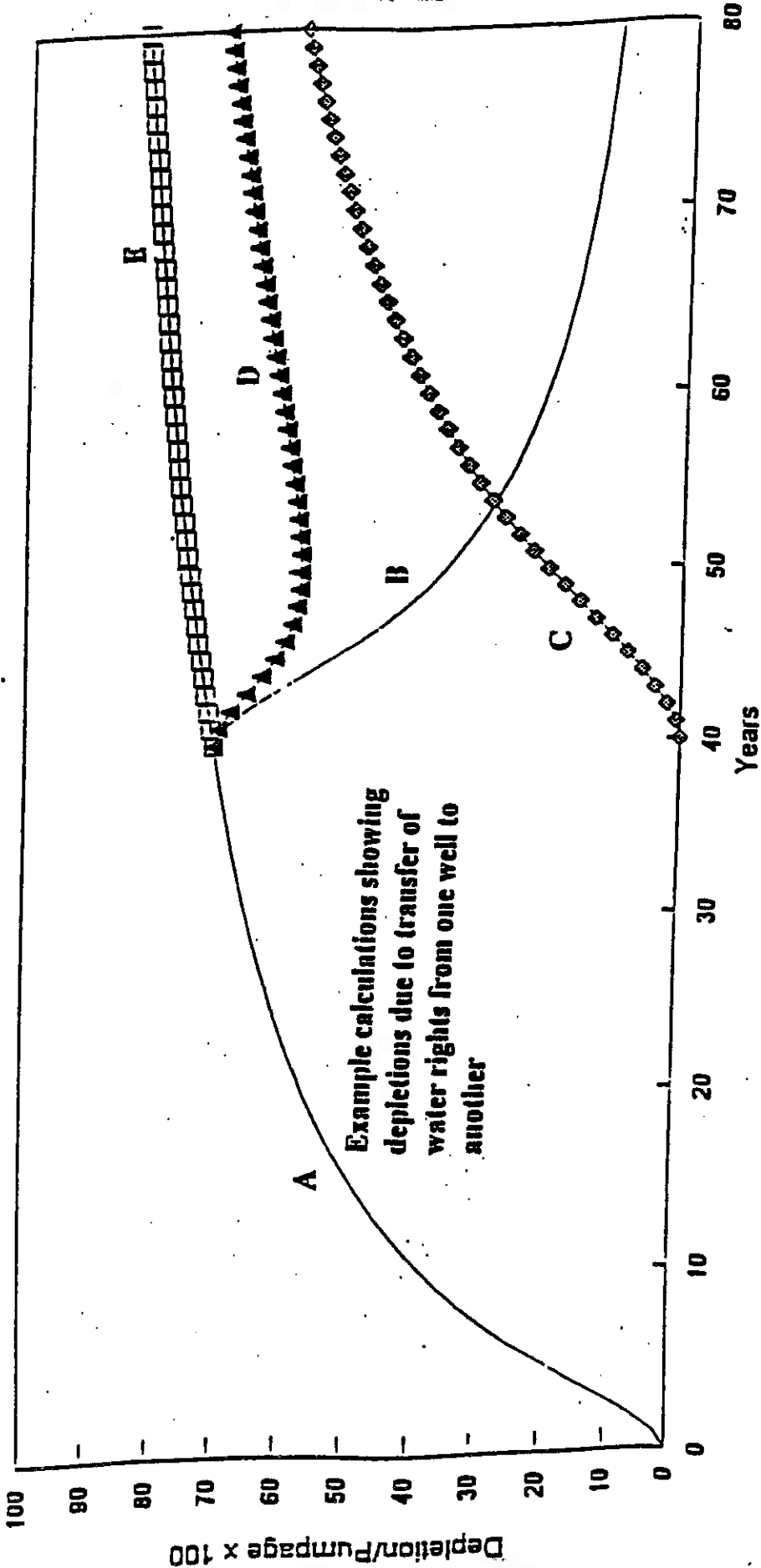
FOR APPLICATIONS IN THE LOWER RIO GRANDE BASIN

1. This permit shall not be exercised to the detriment of valid existing water rights, shall not be contrary to conservation of water within the state, and shall not be detrimental to the public welfare of the state of New Mexico.
2. The State Engineer recognizes _____ acre-feet per annum under declaration LRG-_____ and (all) (part) of said water rights are severed therefrom under this permit.
3. The diversion of water from well no(s). LRG _____ shall not exceed _____ acre-feet per annum for _____ purposes, inclusive of _____ acre-feet per annum for consumptive use. If the permit is for irrigation purposes, the diversion shall be limited to the irrigation of _____ acres of land. In all applications to appropriate, the diversion of water shall be further limited to condition no. 4.
4. Water shall not be diverted under this permit until the permittee transfers _____ acre-feet (sufficient water rights equivalent to the consumptive use anticipated to result in a surface water depletion caused by the exercise of this permit) to offset the anticipated surface water depletions. The permittee shall proceed with due diligence in acquiring offsetting water rights and placing the water to beneficial use.
5. Well no(s). LRG _____ shall be equipped with a totalizing meter(s) of a type and at a location approved by, and installed in a manner acceptable to the State Engineer. The permittee shall provide in writing, the make, model, serial number, date of installation, initial reading, units, and dates of recalibration of each meter, and any replacement meter used to measure the diversion of water. No water shall be diverted from any well unless equipped with a functional totalizing meter.
6. Records of the amount of water diverted from well no(s). LRG _____ shall be submitted, in writing to the State Engineer on or before the 10th day of the month for the preceding calendar month.
7. The permittee shall utilize the highest and best technology available and economically feasible for the intended use to ensure conservation of water to the maximum extent practical.
8. A well record for well no(s) shall be filed with the State Engineer within ten (10) days of drilling the well (s).
9. Proof of completion of Well(s) shall be filed with the State Engineer on or before (2 years).

10. **Proof of Application of Water to Beneficial Use shall be filed with the State Engineer on or before (4 years).**
11. **Old well no(s). LRG _____ shall be plugged or capped in accordance with Article 4-14 of the Rules and Regulations Governing Drilling of Wells and Appropriation and Use of Ground Water in New Mexico. A written record of the plugging or capping shall be filed with the State Engineer within ten (10) days of completion of the plugging or capping.**

Maddock Model Predicts Surface Water Depletions

for Transfer of Groundwater Rights

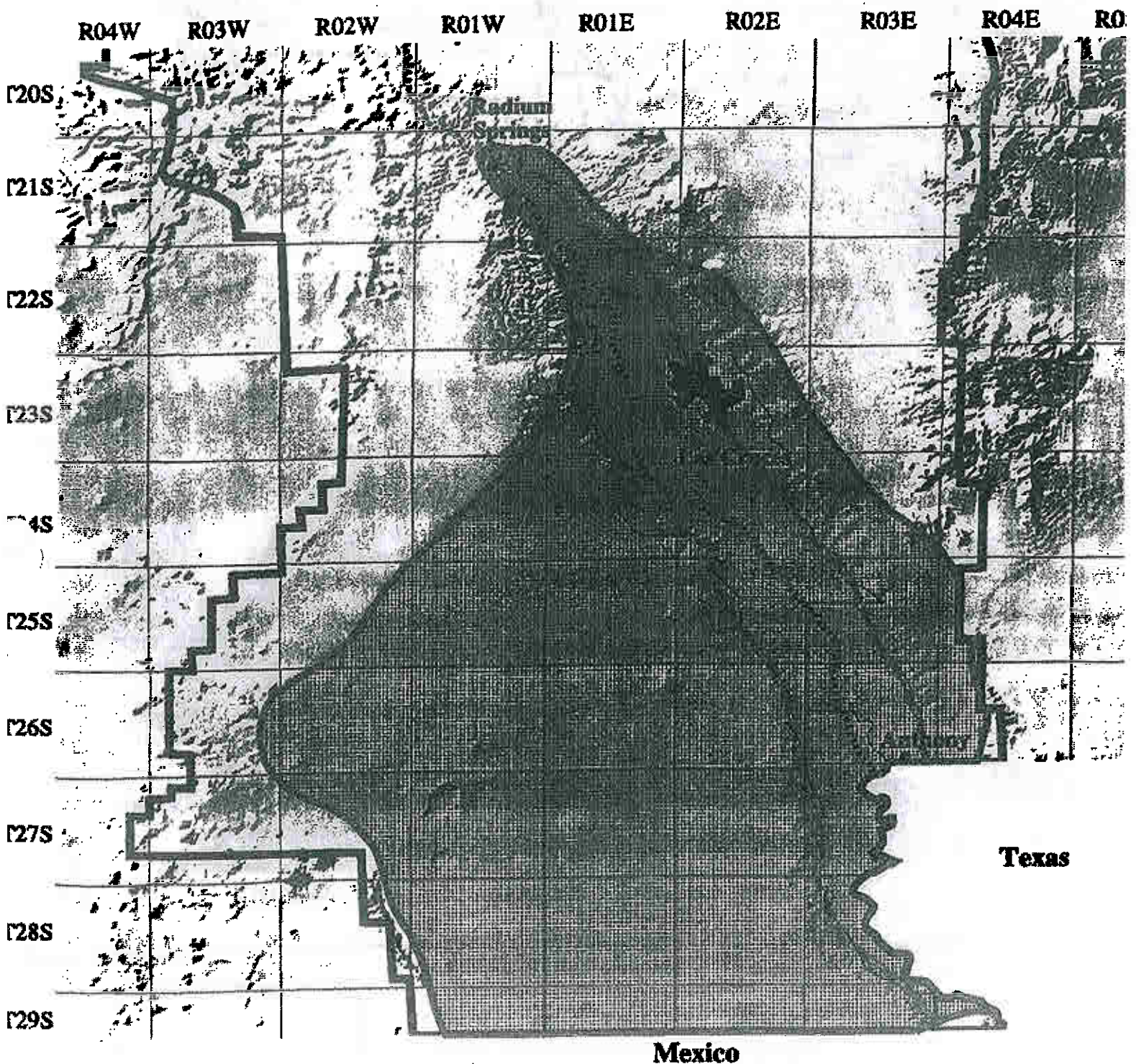


Example calculations showing depletions due to transfer of water rights from one well to another

- A - Surface water depletion due to pumping well from which water rights will be transferred (move-from well)
- B - Residual depletions due to turning off move-from well in year 40
- C - Depletion due to the pumping from a new well to which rights were transferred (move-to well) in year 40
- D - Total depletion due to the transfer (Curve B + Curve C)
- E - Hypothetical depletion resulting from the continued use of the move-from well



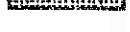
FIGURE 3

Figure 2: Location of the Mesilla Valley Administrative Area and High Impact Area



Prepared by Hydrology Bureau, 398

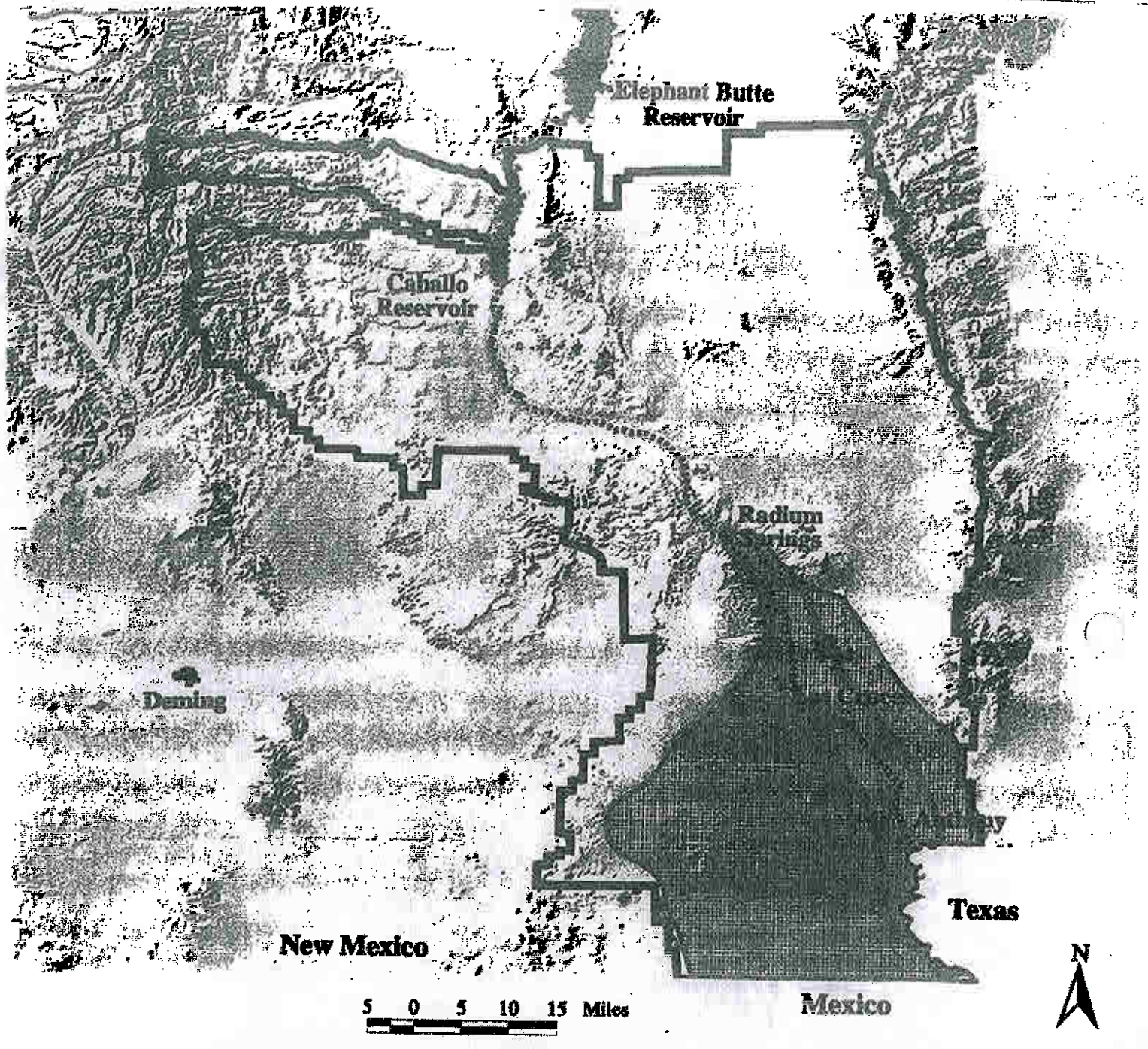
Legend

-  Lower Rio Grande Underground Water Basin
-  Mesilla Valley Administrative Area
-  High Impact Area (HIA)

Scale







Figure 1: Lower Rio Grande Underground Water Basin



Prepared by Hydrology Bureau, 3/95

Legend

-  Lower Rio Grande Underground Water Basin
-  Mesilla Valley Administrative Area
-  High Impact Area (HIA)
-  Rio Grande

