

Pl. 49-84
Copy 1

Memo on trip to site of proposed dam north of
Clovis, N. M. Curry Co.

By
G. E. Hendrickson

OFR: 49-84

STATUS OF REPORT

Open file

Name of Report: "Memorandum on trip to site of proposed dam north of Clovis, N.M."

Author(s): Gerth E. Hendrickson
Cooperators:

OFFICE COPY
DO NOT REMOVE

Report completed: (date) 3/20/49

Criticised by: Chas. V. Theis 3/17/49
(Name) (Date)

(Name) (Date)

(Name) (Date)

(Name) (Date)

Edited by: _____
(Name) (Date)

Revision completed: _____
(Name) (Date)

Edited by: _____
(Name) (Date)

Sent to Washington: 3/22/49
(Date)

Publication requested by: _____
(Agency or Journal)

(Agency or Journal)

(Agency or Journal)

Returned from Washington: 4/11/49
(Date)

Corrections made by: Chas. V. Theis 4/7/49
(Name) (Date)

release to open file

Approved for publication by: Washington 4/7/49
(Name) (Date)

DISTRIBUTION OF MANUSCRIPT COPIES: (Planned; Name & Address) Date sent)

ORIGINAL: & 2 copies in Albuquerque office files.

COPIES: Bliss, Anderson, Stone, Neel and Washington mailed 7/5/49

MEMORANDUM ON TRIP TO SITE OF PROPOSED DAM NORTH OF CLOVIS, N. MEX.

By G. E. Hendrickson
U. S. Geological Survey

In cooperation with
The State Engineer of N. Mex.

and

The New Mexico School of Mines, Bureau of Mines

The City of Clovis is investigating a dam site to provide a recreational lake on an ephemeral arroyo called Running Water Draw about 10 miles north of Clovis. The proposed site has been mapped and the areas and capacities for various ponding elevations have been computed by Mr. George M. Neel, Registered Engineer, of Santa Fe, New Mexico. The proposed lake is about $2\frac{1}{2}$ miles long and $\frac{1}{4}$ mile wide at its widest point.

Twelve test holes have been dug along the center line of the dam. The five holes near the axis of the draw expose 5 to 7 feet of sandy clay loam at the top and are bottomed in 3 to 4 feet of medium-grained sand containing minor amounts of silt and clay. The holes farther up the slope on both sides of the draw expose sandy clay loam for the entire depth of 8 feet. Permeability tests were made of compacted samples of two of the borrow soils at the dam site and these were found to be of sufficiently low permeability for use as materials in an earth dam. No permeability tests were made of uncompacted samples to determine the possible leakage through the bottom of the reservoir. No test holes have been dug in the lake site back of the dam, and no permeability tests have been made of the surface material there.

The following data are from a brief reconnaissance of the ponding area made by Mr. L. J. Stone, Mr. H. M. Knapp, and Mr. G. E. Hendrickson on February 21, 1949:

1. The surface material over most of the ponding area is sandy clay loam.

2. Sand is at the surface in places in the gully along the draw and in at least one place higher up in the draw but still below the ponding elevation. Shallow test holes (2 to 4 feet deep) in the bottom of the gully were mostly bottomed in sand.

3. One outcrop of caliche was noted on the south side of the draw a short distance back of the dam site. Below the caliche is a small cavern through which some water might possibly be lost from the lake.

4. The water table is about 130 feet below the lowest part of the dam site.

Before the feasibility of the proposed lake can be determined, the following additional investigation is recommended:

1. Test holes should be dug and permeability tests made of the surface material in the ponding area back of the dam.

2. The effective drainage area of the lake should be determined, measurements of the runoff should be made, and the percolation, evaporation, and transpiration in the area should be estimated.

3. If runoff is to be supplemented by pumping from wells, the capacities of the wells, amount of water which must be supplied by these wells, and the cost of pumping this amount should be estimated.

Original for our files
Copies to
Stone
State Eng
Anderson
Walsh
City Eng.

ALBUQUERQUE
Rec'd.
MAR 21 1949
GW

MEMORANDUM ON TRIP TO SITE OF PROPOSED DAM NORTH OF CLOVIS

→ G. E. Hendrickson
U.S. Geological Survey
in cooperation with the State Engineer of New Mexico

The city of Clovis is investigating a dam site to provide a recreational lake on an ephemeral arroyo called Running Water Draw about ten miles north of Clovis. The proposed site has been mapped and the areas and capacities for various ponding elevations have been computed by Mr. George M. Neel, Registered Engineer, Of Santa Fe, New Mexico. The proposed lake is about 2 1/2 miles long and 1/4 mile wide at its widest point.

Twelve test holes have been dug along the center line of the dam. The five holes near the axis of the draw expose 5 to 7 feet of sandy clay loam at the top and are bottomed in 3 to 4 feet of medium grained sand containing minor amounts of silt and clay. The holes farther up the slope on both sides of the draw expose sandy clay loam for the entire depth of 8 feet. Permeability tests were made of compacted samples of two of the borrow soils at the dam site and these were found to be of sufficiently low permeability for use as materials in an earth dam. No permeability tests were made of uncompacted samples to determine the leakage over the bottom of the reservoir. No test holes have been dug in the lake site back of the dam, and no permeability tests have been made of the surface material here.

The following data are from a brief reconnaissance of the ponding area made by Mr. L.J. Stone, Mr. H.M. Knapp, and Mr. G.E. Hendrickson on February 21, 1949:

and the New Mexico School of Mines, Bureau of Mines

1. The surface material over most of the ponding area is sandy clay loam.

2. Sand is at the surface in places in the gulley along the draw and in at least one place higher up in the draw but still below the ponding elevation. Shallow test holes (2 to 4 feet deep) in the bottom of the gulley were mostly bottomed in sand.

3. One outcrop of caliche was noted on the south side of the draw a short distance back of the dam site. Below the caliche is a small cavern which might possibly lose some water from the lake.

4. The water table is about 130 feet below the lowest part of the dam site.

Before feasibility of the proposed lake can be determined the following additional investigation is recommended:

1. Test holes should be dug and permeability tests made of the surface material in the ponding area back of the dam.

2. The drainage area effective to the lake should be determined, measurements of the runoff should be made, and the percolation, evaporation, and transpiration in the area should be estimated.

3. If runoff is to be supplemented by pumping from wells, the capacities of the wells, amount of water which must be supplied by these wells, and the cost of pumping this amount should be estimated.

G. E. Anderson
Mar. 18, 1947.