



PROJECT DESCRIPTION SHEET



GEOTECHNICAL AND WATER RESOURCES ENGINEERING



ZADEL PIT, ADAMS COUNTY, CO CITY OF THORNTON

RJH Consultants, Inc. (RJH) was retained by the City of Thornton (City) to perform a conceptual planning study to evaluate the feasibility of purchasing and developing the Zadel gravel pits into an exchange reservoir. The Zadel gravel pits are located in Weld County, Colorado, approximately 1.75 miles northwest of the town of Fort Lupton.

The gravel pit site was mined and the seller intended to develop a multi-cell water storage facility with an ultimate storage capacity of about 3,100 acre-feet for two property sites. The seller proposed to design and construct a compacted clay liner to convert the gravel pits into reservoirs. The City was responsible for providing facilities needed to meet their water storage and conveyance needs and RJH was selected to perform these evaluations.

RJH was responsible for the following project objectives for the conceptual-level design work:

- Identified general location and approximate sizes of City-provided water storage and conveyance facilities. These included surface water ditches, hydraulic facilities for filling and draining the reservoir (pipelines and pump stations), access roads, power supply, and groundwater management systems.
- Identified technical requirements (design criteria) for the project including reservoir source water, reservoir inflow/outflow rates, reservoir drawdown rates, hydraulic capacities of facilities, flow velocities, pump requirements, required water control components, reservoir freeboard, and groundwater impacts.
- Evaluated constructability and purchase agreement issues.
- Developed a technical review schedule for design and construction.
- Developed an Opinion of Probable Construction Cost.

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