

**EXHIBIT 2073**

**EDUCATION**      B.S., Civil Engineering, University of Nevada, Reno; 1982  
Graduate Studies, Water Resources Engineering, Texas A&M University;  
1983-1985  
Studies, Landscape Architecture, University of Nevada, Las Vegas; 1999

**REGISTRATION**    Professional Engineer, Nevada, Texas, Utah and Arizona  
Water Rights Surveyor, Nevada

### **PROFESSIONAL HISTORY**

1996 – Present      Principal Engineer, Broadbent & Associates, Inc.  
1993 – 1996        Principal Engineer, Montgomery Watson  
1991 – 1993        Supervising Engineer, Montgomery Watson  
1986 – 1991        Senior Project Engineer, The MARK Group, Engineers and Geologist,  
Inc.  
1985 – 1986        Hydraulic Engineer, U.S. Army Corps of Engineers

### **SUMMARY**

Mr. Roy has more than 20 years of experience in civil and environmental engineering projects. This work has included ground-water assessments, flood studies, water quality analyses, underground storage tank design and installation, and environmental permitting and reporting. He has performed environmental and civil engineering services for developers, mining companies, power companies, water purveyors and state and local governmental agencies.

Mr. Roy's management experience includes major ground-water developments for municipalities, commercial developers and golf courses. This has included ground-water basin yield analyses, well siting, well design and construction and water rights permitting. He has installed more than 20 large-diameter production wells and has managed major ground-water recharge programs in southern Nevada.

Mr. Roy has designed fuel storage and dispensing facilities for fleet bus installations, golf course maintenance facilities and for major heating oil installations. This work has included overflow protection, double-wall tanks and piping, leak detection, and fuel inventory management equipment.

Mr. Roy has also prepared civil designs for wastewater treatment facilities, pumping stations, Casino Developments and golf courses. This work has included roadway design, wastewater treatment plant expansion, utility extension and coordination with local agencies.

**SELECTED PROFESSIONAL EXPERIENCE**

**Water Supply** - Mr. Roy has performed water supply studies for mining, industrial and commercial developments throughout Nevada. This work has included aquifer yield studies, well design, pumping equipment design, and pipeline design. Projects include:

- **Water Supply Engineering for Primm, Nevada**
- **Well Design and Equipping (500 hp), North Las Vegas, Nevada**
- **16-inch Pipeline beneath Interstate 15, Primm, Nevada**
- **Well Equipping and Three Booster Pumps, Nevada Ready Mix, Las Vegas, Nevada**
- **Review of Boulder City Water Supply, MGM Grand, Inc., Boulder City, Nevada**

**SELECTED PROJECTS:**

**City of North Las Vegas Artificial Recharge Program** - Mr. Roy was the project manager for the development of the Artificial Recharge Program for the City of North Las Vegas. He was responsible for permitting, well testing, well construction specification preparation, construction management, cost estimating, pumping equipment design and installation of three production/recharge wells and two recharge wells. This project started with a review of the water available to the City and a review of the potential recharge sites in the service area. Test wells were constructed to assess the potential in selected areas. During the development process, he was responsible for the preparation of annual recharge reports and water rights filings.

**Primm Water Supply** - Mr. Roy has been the project manager for the ground-water development for Primm, Nevada since 1990. This has included review of exiting data on the Ivanpah basin, preparation of basin yield calculations, preparation of reports for the State Engineer's Office in support of water rights filings, and the construction of production wells. The Primm development is comprised of three hotel-casinos and the Primm Valley Golf Course. Ground-water impact reports were prepared in support of the golf course to detail the impact of pumping 1,500 acre-feet annually from the Ivanpah Basin in San Bernardino County, California. Presentations were made to the San Bernardino County Planning Commission and the Board of County Supervisors. Specifications were prepared and three wells were constructed and equipped. This work included negotiations for right-of-way with the Bureau of Land Management, preparation of an Environmental Assessment, and preparation of Stormwater Pollution Prevention Plans.

**Las Vegas Valley Water District Ground-Water Well Construction** - Mr. Roy was the project manager for construction management services for the Las Vegas Valley Water District in support of their major construction programs. He was responsible for contractor supervision during the construction of 15 deep (1,300 feet), large diameter (24-inches) municipal wells. The wells were constructed by three different contractors under multiple contract document packages. This work spanned three years and included both production and recharge wells. Other responsibilities included, shop drawings review, material inspection, construction method review, aquifer testing and contractor pay requests review and approval.

**Wildhorse Golf Course Environmental Water Supply** - Mr. Roy was the project manager for the development of an integrated water supply for an existing 18-hole golf course complex. This included permitting and construction of supplemental ground-wells as well as interaction with the State Division of Environmental Protection (DEP) on the wastewater discharge permit for effluent reuse for the 127-acre irrigation project. He instituted a water quality monitoring program and interpreted results for the client and prepared reports to the state DEP.

**Las Vegas Valley Water District Cooperative Water Project** - Mr. Roy was a task leader in the development of ground-water assessment reports for six basins in the southern and eastern portions of the state of Nevada. These reports were prepared in support of the water rights applications made by the Las Vegas Valley Water District. Extensive literature and field surveys were made for each of the basins to assess existing ground water occurrence and development. MODEFLOW models for each basin were prepared and each basin model was linked to the adjacent models for an accurate and consistent picture of the ground-water system. Mr. Roy assisted in the modeling and was responsible for final coordination of reports and presentations of the modeling results.

**MGM Grand, Inc., Boulder City, Nevada** - Mr. Roy provided engineering design assistance in the selection of a site to construct two gold courses. Three separate sites were initially reviewed as to suitability for course construction. The sites were reviewed for infrastructure costs (roads, waterlines, electrical supply), flooding, soil type, surroundings and size. After review of the sites, an 800-acre site in Boulder City, Nevada was selected.

During the negotiation of lease and water rate terms, Mr. Roy reviewed the water system for Boulder City, estimated project water demands, prepared conceptual golf course drawings, met with the Division of Wildlife on environmental issues, coordinated with the Nevada Department of Transportation for access to the property, and developed schedules and cost estimates for course and clubhouse construction. This work included preparation for presentations at City Council meetings public meetings and presentations for Boulder City TV.

Mr. Roy managed the preparation of boundary mapping and topographical mapping of the site and coordinated with the golf course architect, Rees Jones, Inc. He walked the site with representatives of Rees Jones, Inc. during the preparation of routing plans. He prepared flood control reports for the site and coordinated drainage improvements. Mr. Roy managed the design phase of this project including grading plans, roadway design, commercial septic systems, and onsite utility services for the maintenance facility and clubhouse. During construction of the course Mr. Roy provided engineering support for revisions and limited construction management services.

**Primadonna Resorts, Inc., Primm Valley Golf Club, Primm, Nevada** - Mr. Roy was the engineering project manager for the development of the Tom Fazio designed "Lakes Course" for Primadonna Resorts at Primm, Nevada. He was in charge of the engineering services for the initial project concept through the opening of the course. This included all engineering feasibility and permitting prior to actual golf course construction, presentations before the Board of County Supervisors, ground-water reports and environmental documents, geotechnical investigations, flood studies and aerial mapping.

During the design phase he was responsible for grading plan preparation, flood control design, golf course site drainage, water use projections, and permitting with San Bernardino County. He prepared applications for rights-of-way with the California Department of Transportation and the U.S. Bureau of Land Management. He was in charge of the construction of three ground-water wells, pumping equipment, and pipelines to provide irrigation water for the course. He was responsible for the design of septic systems and above-ground fuel storage facilities.

**O.B. Sports, Angel Park Golf Course Complex, Las Vegas, Nevada** - Mr. Roy was responsible for the development of a plan to reduce the cost of irrigation water for the Angel Park Golf Course in Las Vegas, Nevada. The course was interested in the potential for storing treated water in the underlying ground-water aquifer during the winter and extracting during the summer to reduce irrigation water costs. This project included an analysis of existing water supply and storage systems, course water demands and irrigation systems and included recommendations on required improvements to storage ponds and pumping stations. A test recharge well was constructed and tested.

**Spanish Trails, Spanish Trails Golf Course, Las Vegas, Nevada** - Mr. Roy was responsible for the development of a plan to reduce the cost of irrigation water for the Spanish Trail Golf Course in Las Vegas, Nevada. The course was interested in the potential for storing treated water in the underlying ground-water aquifer during the winter and extracting during the summer to reduce costs. This project included an analysis of existing water supply and storage systems and the making of recommendations on required improvements to storage ponds and pumping stations. A test recharge well was constructed and tested.

**Mizuno, Inc., Royal Kenfield Country Club, Henderson, Nevada** - Mr. Roy managed the engineering services performed during the renovation of the Showboat Country after it was purchased by Mizuno, Inc. This work included continued coordination on environmental permits and ground water rights. He assisted in the negotiation of a new contract for the use of effluent for the course and prepared pre-designs for the improvement of effluent storage reservoirs and pump stations. The complete course was refurbished and a new clubhouse was started.

**Showboat, Inc., Showboat Country Club, Henderson, Nevada** - Mr. Roy managed the engineering services performed during the renovation of the Showboat Country Club in Henderson, Nevada. This included the development of an alternative water supply to the existing treated wastewater effluent, the design of wells and pumping equipment, the construction of wells and pipelines, environmental permitting, water rights permitting, and drainage work.

One scope of work was comprised of the permitting, was comprised of the permitting, design, construction and initial operation of three ground-water wells. This included two test borings to 800 feet using air-rotary methods. After review of the test information, the production wells were designed and constructed. Pumping equipment and approximately one mile of PVC pipe was installed.

Coordination with the Nevada Department of Environmental Protection (NDEP) and the Clark County Sanitation District was performed to continue the use of treated effluent on the course. This included the development of an effluent management plan, review of the irrigation and

effluent storage system, inspection of approximately 15 miles of pipe from the Sanitation District, and permit applications with NDEP.

The transfer of water rights to the course was completed to allow the use of the constructed wells. 160 acre-feet of certificated water rights were purchased and an *Application to Change of Point Diversion* was filed with the State Engineer's office. Applications were also filed to obtain *Revokable Ground Water Rights* for additional irrigation water. This allowed for a back-up water system and for the blending of ground water with the treated effluent.

**Black Mountain Golf Country Club, Henderson, Nevada** - Mr. Roy directed the engineering layout and design drawings for the addition of 9 holes of golf to this existing golf course in Henderson, Nevada. The project architect is Williams-Gill from Abilene, Texas. This has included modifications to the existing effluent water supply system, modifications to existing potable water pump stations and processing through the City of Henderson. Construction is currently underway on this project. This project also included preparations of a Master Utility Plan for Black Mountain Golf Course Addition. This included water use analysis for the golf course, estimation of lake levels, anticipated irrigation needs, reuse water estimates as well as establishing existing facilities by researching records at the City of Henderson and inventorying facilities at the project site.

**Red Ridge Golf Course, Boulder City, Nevada** - Mr. Roy is currently directing the engineering and layout feasibility for 27 holes of golf in Boulder City, Nevada. This has included direction of surveying and aerial topography of the site, direction of limited geotechnical investigations directed at construction methods, and initial routing of 27 holes. He has collected information on water supply and flood control for the site and coordinated with the developer.

**NDOT ROW Negotiations** - Prepared conceptual designs and negotiated with NDOT on the addition of a new left-hand turn lane on Highway 93 for the new entrance to the Hacienda Hotel and Casino in Boulder City, Nevada. This included meetings with NDOT design section, coordination with the right-of-way section, completion of an encroachment permit.

**NDOT Coordination on Highway 93/95 Interchange** - Coordinated opening of control of access at the Highway 93/95 Interchange with NDOT, the Public Utilities Commission and the State Lands Department to allow for the extension of Veteran's Drive in Boulder City Nevada.

**Hacienda Bridge Design** - Prepared the hydrology and hydraulics studies for the design of the extension of Hacienda Road across I-15 near the Luxor. This included design of bridge drainage as well as routing of off-site flows beneath the bridge structure and calculation of scour depth on the bridge piers.

**Southern Segment of the Las Vegas Beltway Predesign** - Prepared the hydrologic and hydraulic analysis of the drainage aspects of the proposed beltway between Windmill Road and I-515. This included the sizing of culverts beneath the beltway as well as the handling of the drainage flow from the roadway section.

**North Railroad Detention Basin, Boulder City, Nevada** - Mr. Roy is directing the hydrology portion of this Clark County Regional Flood Control District (CCRFCD) Facility for the City of

Boulder City. Analysis met the CCRFCD Design Manual and included PMF determination and hydraulic analysis of the recommended basin design.

**Floodplain Investigations** - Mr. Roy has performed hydrologic and hydraulic studies for both rural and urban areas. This has included the application of Hec-1, WSPG and HecRas computer programs. He has prepared studies for the Army Corps of Engineers, the Clark County Regional Flood Control District, the City of Las Vegas and Clark County Department of Public Works. These projects have included flood control master plans, the preparation of the Hydrologic Criteria and Drainage Design Manual for CCRFCD, and predesigns for regional storm drain systems and detention basins. Projects include:

- **Flood Control Master Plan Update for Moapa Valley, Clark County, Nevada**
- **Flood Control Master Plan Update for Bunkerville, Clark County, Nevada**
- **City-Wide Hydrology Study, Las Vegas, Nevada**
- **Neighborhood Flood Control Project, Rancho and Washington, Las Vegas, Nevada**
- **Neighborhood Flood Control Project, Sahara and Rainbow, Las Vegas, Nevada**
- **Hydrologic Criteria and Drainage Design Manual, Clark County, Nevada**
- **Predesign for the Lone Mountain Detention Basin, Clark County, Nevada**
- **Predesign for the CAM-10 Detention Basin, Clark County, Nevada**

**Wetland Studies** - Mr. Roy has been a project team member for the preparation of Environmental Impact Statements, Environmental Assessments and other environmental documents. He was the project engineer for the design of 5 acres of wetlands mitigation performed by Lake Las Vegas on Las Vegas Wash. He was also a member of the project team for the preparation of the Las Vegas Wash Wetlands Park Master Plan and EIS. For this project he was responsible for the preparation of section on surface waters, ground waters, water rights and ground-water quality. He developed alternatives to a river intake for Nevada Power Company's Reid Gardner Power Plant in Moapa, Nevada. This project was directed at protecting the Moapa Dace, an endangered species inhabiting the upper Muddy River. Negotiation meetings were held with the U.S. Fish and Wildlife Service and the Army Corps of Engineers. Projects include:

- **Wetlands Mitigation Design, Lake Las Vegas, Clark County, Nevada**
- **Las Vegas Wash Wetlands Park Master Plan, Clark County, Nevada**
- **Las Vegas Wash Wetlands Park EIS, Clark County, Nevada**
- **Nevada Power Company Muddy River Intake Study, Clark County, Nevada**

**Permitting/Applications Support** - Mr. Roy has coordinated projects and permits through the Nevada Division of Water Resources, Nevada Division of Environmental Protection, the U.S. Fish and Wildlife Service, the Nevada Division of Wildlife, the U.S. Army Corps of Engineers, and the Federal Emergency Management Agency, as well as most local agencies. Project issues have included the Moapa Dace, the Desert Tortoise, Mine Development, small diversion dams, water rights and roadways. Projects include:

- **404 Permitting for Castle Mountain Project Roadways, San Bernardino County, California**
- **Small Dam Permitting and Negotiations with USFWS, Nevada Power Company, Clark County, Nevada**

- **Release Permit Applications and Erosion Control Monitoring for Releases at Lake Las Vegas, Clark County, Nevada**
- **Wetlands Mitigation Design, Lake Las Vegas, Clark County, Nevada**
- **BLM Right-of-way for Wells and Pipelines, San Bernardino County, California**