



State of Utah

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September 27, 2011

Tiffany A. James
Magnum Gas Storage, LLC
3165 East Millrock Drive, Suite 330
Holladay, UT 84121

Dear Ms. James:

Subject: **Construction Permit** for Magnum Gas Storage, LLC Evaporation Ponds

On May 31, 2011, the Division of Water Quality (DWQ) received the engineering plans and specifications for Magnum Gas Storage, LLC Evaporation Ponds prepared by AMEC Registered Professional Engineer Matthew Thomas Haley. The proposed project is to construct up to three large evaporation ponds to contain brine produced from the solution mining of underground salt caverns for natural gas storage.

Because the proposed evaporation ponds are very large and will be holding a significant amount of brine, the Division of Dam Safety in the Utah Department of Natural Resources also reviewed the engineering plans and specifications. Based on their review, Dam Safety issued a Design Review Comment Letter on July 18, 2011. In response to the Dam Safety letter, AMEC provided a response document dated August 25, 2011, which was received by DWQ on August 29, 2011. Dam Safety subsequently issued an Order Granting Permit to Construct a Dam on September 20, 2011. The Dam Safety Order included some terms and conditions that the applicant is required to follow. Those same terms and conditions will be required as part of this Construction Permit.

The plans and specifications, as submitted, comply with *the Utah Water Quality Rules, (R317, Utah Administrative Code)*. A **Construction Permit** is hereby issued as constituted by this letter, subject to the following conditions:

1. *Any revisions or modifications to the approved plans and specifications must be submitted to DWQ for review and approval, before construction or implementation thereof. Please submit any changes for review and approval directly to Woodrow Campbell, P.E., of the DWQ Ground Water Protection Section.*

2. *A written operations and maintenance manual, containing a description of the functioning of the facilities, an outline of routine maintenance procedures, and all checklists and maintenance logs needed for proper operation of the system, must be submitted and approved before the final inspection and operation of the system.*
3. *The approved facilities must not be placed in service unless DWQ has conducted a final inspection, reviewed and approved the As-Built Construction Certification Report, issued a ground water discharge permit to Magnum for the evaporation ponds, and provided written authorization to place the constructed evaporation ponds in service.*

The plans and specifications for this project must be stamped and signed by a Professional Engineer currently licensed to practice in the state of Utah. The construction design, inspection supervision, and written construction certification of all work associated with this Construction Permit must be performed by a Professional Engineer licensed to practice in the state of Utah.

This Construction Permit will expire one year from the date of its issuance, as evidenced by the date of this letter, unless substantial progress is made in constructing the approved facilities or the plans and specifications have been resubmitted and the construction permit is reissued. This permit does not relieve you, in any way, of your obligations to comply with other applicable local requirements. For further assistance regarding local matters, you may contact John Vercoe of the Central Utah Public Health Department at (435) 896-5451, Ext. 329, or District Engineer John Chartier at (435) 896-5451, Ext. 314.

Because of the inherent hazard potential at lagoons and ponds, warning signs should be posted at these facilities to state the dangers of drowning and asphyxiation. Safety ropes running down the pond side slopes, and fastened to posts at the top of the dikes should be available to allow anyone trapped in the ponds to escape.

Please contact Mr. Campbell at the beginning of construction to allow periodic inspections to be scheduled.

Upon completion of the project, a final inspection and approval of the As-Built Construction Certification Report is required before the approval to operate the completed facilities can be issued. Please remain in contact with Mr. Campbell to schedule the final inspection. The Construction Certification Report with final as-built drawings must include test results for the following construction quality assurance and quality control (CQA/QC) elements:

Soil Subgrade

- Proctor Curves,
- Soil Classification,
- Field Compaction Testing, and
- Subgrade Acceptance Certification.

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Concrete or Concrete Mortar (Grout)

- Concrete Mix Verification,
- Concrete ASTM Testing Method, Frequency, and Results,
- Concrete Testing Pass/Fail Criteria, and
- Crack Inspection and Repair.

Flexible Membrane Liner

- Panel Placement Log,
- Trial Seam Test Log,
- Seaming Record,
- Seam Test Record,
- Repair Log,
- As-Built Drawing,
- Manufactures Certification including QA/QC Testing of the Rolls, and
- Professional Engineer Certification.

If we can be of further assistance, please contact Mr. Woodrow Campbell at (801) 536-4353 or wwcampbell@utah.gov.

Sincerely,

UTAH WATER QUALITY BOARD

Walter L. Baker, P.E.
Executive Secretary

WLB/WWC/RFH:

Enclosures

cc: John Chartier, District Engineer
John Vercoe, Central Utah Public Health Department
Matthew Thomas Haley, AMEC

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