

STATE OF UTAH
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WATER QUALITY
WATER QUALITY BOARD
P.O. BOX 144870
SALT LAKE CITY, UTAH 84114-4870

Ground Water Discharge Permit
Permit No. UGW270010

In compliance with the provisions of the Utah Water Quality Act, Title 19, Chapter 5, Utah Code Annotated 1953, as amended, the Act,

Magnum Gas Storage, LLC
3165 East Millrock Drive, Suite 330
Holladay, UT 84121

hereafter referred to as the Permittee, is granted a Ground Water Discharge Permit for brine evaporation ponds in Millard County, Utah. The Magnum facility ponds are located at Latitude 39° 29' 1.76" North, Longitude -112° 35' 1.69" West on the following tracts of land (Salt Lake Base and Meridian):

Name	Section	Township	Range	Allotment
Brine Pond 3	25	15 South	7 West	in South 1/2
Brine Pond 4	25	15 South	7 West	in South 1/2


Lat: 39° 29' 1.76" N Lon: -112° 35' 1.69" W

This permit is based on representation made by the Permittee and other information contained in the administrative record. It is the responsibility of the Permittee to read and understand all provisions of this permit.

The facility shall be constructed and operated in accordance with conditions set forth in the permit and the Utah Administrative Rules for Ground Water Quality Protection (UAC R317-6).

This permit shall become effective on May 1, 2018.

This permit and authorization to operate shall expire at midnight April 30, 2023.



Erica Brown Gaddis, Ph.D.
Director
Utah Division of Water Quality

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Table 2	Interim Ground Water Protection Levels
Table 3	Maximum Allowable Liner Leakage Rate

Attachments

- Appendix A** Construction Permit Plans and Specifications
- Appendix B** Groundwater Monitoring Plan, Magnum Gas Storage, LLC
- Appendix C** Brine Evaporation Ponds Operating Manual (pending publication)

PART I CONSTRUCTION PERMIT ISSUANCE

A. AUTHORIZED DESIGN AND CONSTRUCTION

As part of this ground water discharge permit, a construction permit is hereby issued to Magnum Gas Storage to construct two brine evaporation ponds (Brine Pond 3 and Brine Pond 4) and ancillary support facilities. Under authority of the Utah Water Quality Act, Section 19-5-108(1) Utah Code Ann. 1953, as amended and Utah Administrative Code R317-1, the authorized facilities will be constructed in accordance with the engineering design plans and specifications attached as Appendix A. Appendix A also includes the construction permit authorized by the Director. Part II.D of this permit describes the Best Available Technology (BAT) standards for these permitted facilities.

The authorized evaporation ponds are constructed in accordance with the engineering design plans and specifications approved by the Construction Permit. The evaporation ponds are constructed with a composite liner system with two leak detection recovery systems. The area to be lined is approximately 176 acres in brine pond 3 and 145 acres in brine pond 4. Design components include:

- 80-mil HDPE Primary Liner – a 80-mil high density polyethylene liner. Specifications for the HDPE liner are provided in the Ground Water Discharge Permit application.
- 60-mil HDPE Secondary Liner – a 60-mil high density polyethylene line with 130-mil raised drainage studs to support the primary liner will be installed.
- Leak Detection Layer – the liners will be separated by either 130-mil raised drainage studs or a 250-mil geonet geomembrane layer drainage gap between the primary and secondary HDPE liners to route leakage to the Leak Collection Recovery System (LCRS) sumps located at low points within the pond floor.
- Process Component Monitoring System (PCMS) – Collection piping and a leak detection sump will be constructed in the soil under the secondary liner of the evaporation pond. Any liquids reporting to the sump can be sampled or returned to the evaporation pond surface.

PART II SPECIFIC CONDITIONS

A. GROUND WATER CLASSIFICATION

Based on ground water quality data submitted in the permit application and offsite monitoring wells, ground water at the site is defined as Class II Drinking Water Quality Ground Water.

B. BACKGROUND GROUND WATER QUALITY

Table 1 provides background ground water quality data from wells completed in the aquifers and zones located in the vicinity of the brine pond.

Table 1: Background Ground Water Quality

Aquifer	Water Table (Nov 2017)	Water Table (Nov 2017)	Shallow Artesian (May 2013)	Deep Artesian (May 2013)
Well	B-P1-4	B-P1-9	Egg Farm	IPP
Parameter (mg/l)				
Alkalinity (as CaCO ₃)	229	299		
Chloride	103	157	64	37
Sulfate	39	60	66	27
Total dissolved solids	448	652	328	249
Calcium	20	163	17	15.2
Magnesium	22	58	7	9.2
Potassium	8	13	2	3.5
Sodium	114	149	75	48
pH (units)	8.1	7.7	7.9	7.07
Conductivity (umhos/cm)	808	1090	565	410

units = mg/L

C. GROUND WATER PROTECTION LEVELS

Ground water quality monitoring of the water table aquifer will be conducted using these monitoring wells following installation and development: GA-3, GA-4, GA-5, GA-6, GA-7, GA-8, GA-9A, GA-17, GA-18, GA-19, GA-20, and GA-21. Following an accelerated sampling program and data evaluation, this list might be modified.

Table 2 provides interim ground water protection levels for the water table aquifer, as measured in brine evaporation pond GA compliance monitoring wells. These protection levels are based on Table 1 and shallow water table aquifer water samples collected from nearby brine evaporation pond monitoring wells. These interim protection levels will be adjusted if necessary following the accelerated sampling period for newly installed monitoring wells. See Part II.H.1 for details.

Table 2: Interim Ground Water Protection Levels

Parameter	Protection Level (mg/l)
pH (units)	6.5-8.5 ^(a)
Chloride	150
Sodium	200
Total Dissolved Solids	750

(a) Class II Ground Water Quality Standard

D. PERMITTED FACILITIES AND BEST AVAILABLE TECHNOLOGY (BAT) STANDARD

1. Authorized Construction - the project facilities authorized by this permit consist of two brine evaporation ponds, Brine Pond 3 and Brine Pond 4, and ancillary support facilities.
2. BAT Performance Monitoring - Best available technology monitoring will include a minimum vertical freeboard, maximum allowable leakage rate, and maximum allowable head monitoring. These performance standards are based on *Equations for Calculating the Rate of Liquid Migration through Composite Liners due to Geomembrane Defects* (Giroud, 1997).
 - a. Minimum Vertical Freeboard – a minimum of 36 inches of vertical freeboard shall be maintained to ensure total containment of the evaporation/surge pond and peripheral ditches.
 - b. Maximum Allowable Leakage Rate – based on a pond area of 152 acres (three feet below the inside crest of the berm), the maximum allowable leakage rate through the primary HDPE liner of the evaporation/surge pond will be 441 gallons per minute. For the 125-acre pond (three feet below the inside crest of berm), the maximum allowable leakage rate through the primary HDPE liner will be 359 gallons per minute.
 - c. Maximum Allowable Head – the maximum head in each of the leak detection sumps will be managed by pumping leakage collected in the sumps back into the respective pond. Head will be kept below the top of the sump at all times, as described in Appendix C, the Brine Evaporation Ponds Operating Manual. Fluids will be pumped from the sumps such that it is not necessary to pump from the 152-acre pond at a rate greater 353 gallons per minute (21,180 gallons per hour), and from the 125-acre pond at a rate greater than 287 gallons per minute (17,220 gallons per hour). These maximum pumping rates are equivalent to the Action Leakage Rates in Part II.F.3 below.
3. Spill Containment - The permittee shall design, maintain and construct all pipelines and pumping facilities with a spill containment system that shall:
 - a. Prevent any spills or leakage from any contact with the ground surface or ground water.
 - b. Convey all spills or leakage to the evaporation pond.

Any spill that does come into contact with the ground surface or ground water that causes pollution or has the potential to cause pollution to waters of the state shall be reported in accordance with Part III.I.

E. COMPLIANCE MONITORING REQUIREMENTS

1. Compliance Monitoring Points

- a. Leak Detection - The Leak Collection Recovery System (LCRS) and the Process Component Monitoring System (PCMS) installed under the evaporation pond liners will serve as a ground water compliance mechanism and monitoring point.
- b. Compliance Wells – Monitoring wells will serve as ground water compliance monitoring points for the water table aquifer. The monitoring wells will be installed before the ponds are put into operation.
- c. Ground Water Monitoring Plan - All water quality monitoring shall be conducted in accordance with the ground water monitoring plan (Appendix B).
- d. Protection of Monitoring Wells - All compliance monitoring wells must be protected from damage due to surface vehicular traffic or contamination due to surface spills. All compliance monitoring wells shall be maintained in full operational condition for the life of this permit. Any compliance monitoring well that becomes damaged beyond repair or is rendered unusable for any reason will be replaced by the permittee within 90 days or as directed by the Director.

2. Ground Water Compliance Monitoring

- a. Water Level Measurements – water level measurements shall be made in each monitoring well prior to any well purging or collection of ground water samples. These measurements will be made from a surveyed permanent reference point clearly demarcated on the top of the well or surface casing. Water level measurements will be made to the nearest 0.01 foot.
- b. Ground Water Quality Samples - samples of ground water from compliance monitoring wells will be collected for laboratory analysis on a quarterly basis until the compliance schedule requirements of Part II.H.1 are met.
 - 1) Analysis by Certified Laboratories - analysis of all ground water samples shall be performed by a laboratory certified by the Utah Department of Health.
 - 2) Ground Water Analytical Methods - methods used to analyze ground water samples must comply with the following:
 - i) Methods cited in UAC R317-6-6.3L, and
 - ii) Method detection limits are less than Ground Water Protection Levels in Part II.C Table 2
 - 3) Analysis Parameters - the following analyses will be conducted on all ground water samples collected:
 - i) Field Parameters - pH, temperature, and specific conductance.
 - ii) Laboratory Parameters – including:
Protection Level Parameters in Part II.C Table 2

3. Leak Detection Sump Monitoring

- a. Flow Measurement – When the ponds are initially filling during periods of solution mining, the pumping rate of fluids pumped from the LCRS and PCMS sumps and returned to the brine ponds will be monitored daily and compared to the Maximum Allowable Leakage Rates in Table 3 Part II.F.3. below. After the ponds have been filled and leakage rates stabilize or decline, the pumping rate of fluids pumped from the LCRS and PCMS sumps and returned to the brine ponds will be monitored weekly and compared to the Maximum Allowable Leakage Rates in Table 3 Part II.F.3. below.
- b. Sump Fluids —fluids detected in a leak detection sump will be pumped to the evaporation pond surface to minimize maximum allowable head.

F. NON-COMPLIANCE STATUS

1. Probable Out-of-Compliance Status - The permittee shall evaluate results of each ground water sampling event to determine any exceedance of the Ground Water Protection Levels found in Part I.C above. Upon determination that a Ground Water Protection Level has been exceeded at any downgradient compliance monitoring well, the permittee shall:
 - a. Immediately re-sample the monitoring well(s) found to be in probable out-of-compliance status for laboratory analysis of the exceeded protection level parameter(s). Submit the analytical results thereof, and notify the Director of the probable out-of-compliance status within 30 days of the initial detection.
 - b. Upon exceedance of any one parameter listed in Table 2 for two consecutive sampling events, immediately implement an accelerated schedule of monthly sampling analysis, consistent with the requirements of this permit. This monthly sampling will continue for at least two months or until the compliance status can be determined by the Director. Reports of the results of this sampling will be submitted to the Director as soon as they are available, but not later than 30 days from each date of sampling.
2. Out-of-Compliance Status Based on Confirmed Exceedance of Permit Ground Water Protection Levels
 - a. Out of Compliance Status shall be defined as follows:

For parameters that have been defined as detectable in the ground water and for which protection levels have been established, out-of-compliance shall be defined as two consecutive samples exceeding the protection level.
 - b. Notification and Accelerated Monitoring - upon determination by the permittee or the Director, in accordance with UAC R317-6-6.17, that an out-of-compliance status exists, the permittee shall:
 - 1) Verbally notify the Director of the out-of-compliance status or acknowledge Director Notice that such a status exists within 24 hours of receipt of data, and

- 2) Provide written notice within 5 days of the determination, and
 - 3) Continue an accelerated schedule of monthly ground water monitoring for at least two months and continue monthly monitoring until the facility is brought into compliance, or as determined by the Director.
- c. Source and Contamination Assessment Study Plan - within 30 days after the written notice to the Director required in Part II.F.2.b.2, above, the permittee shall submit an assessment study plan and compliance schedule for:
- 1) Assessment of the source or cause of the contamination, and determination of steps necessary to correct the source.
 - 2) Assessment of the extent of the ground water contamination and any potential dispersion.
 - 3) Evaluation of potential remedial actions to restore and maintain ground water quality, and ensure that the ground water standards will not be exceeded at the compliance monitoring wells.
3. Out-of-Compliance Status Based Upon Failure To Maintain Best Available Technology - In the event that LCRS and PCMS monitoring indicates a violation of any of the construction or performance standards outlined in Part II.D of this permit, including an exceedance of leakage rates from Table 3 below, the permittee shall submit to the Director a notification and description of the violation in accordance with Part III.I of this permit. If the Maximum Allowable Leakage Rates in Table 3 are exceeded, corrective actions will be initiated following the procedures described in the attached Groundwater Monitoring Plan (Section 3.4 of Appendix B) and Brine Evaporation Ponds Operating Manual (Appendix C).

Table 3 Maximum Allowable Liner Leakage Rates

Monitoring System Component	Brine Pond 3 ¹	Brine Pond 4 ¹
LCRS sump	441 gallons per minute	359 gallons per minute
PCMS sump	14.9 gallons per minute	12.1 gallons per minute

¹The LCRS Action Leakage Rate for each pond is 80 percent of the respective Maximum Allowable Leakage Rate. Appendix C, the Brine Evaporation Ponds Operating Manual, describes the corrective action response to an exceedance of the Action Leakage Rate(s).

G. REPORTING REQUIREMENTS

1. Quarterly Ground Water Monitoring - monitoring required in Part II.E.2 above shall be reported according to the schedule in Table 4 below, unless modified by the Director:

Table 4: Compliance Monitoring Report Schedule

Quarter	Report Due Date
1 st (January, February, March)	April 30th
2 nd (April, May, June)	July 31 st
3 rd (July, August, September)	October 31 st
4 th (October, November, December)	January 31 st

2. Water Level Measurements - water level measurements from ground water monitoring wells will be reported as measured depth to ground water from the surveyed casing measuring point, and ground water elevations as converted by casing measuring point elevations.
3. Ground Water Quality Sampling - reporting will include:
 - a. Field Data Sheets - or copies thereof, including the field measurements, required in Part I.E.2.b.3 above, and other pertinent field data, such as: well name/number, date and time, names of sampling crew, type of sampling pump or bail, volume of water purged before sampling.
 - b. Laboratory Analytical Results - including date sampled, date received; and the results of analysis for each parameter, including: value or concentration, units of measurement, reporting limit (minimum detection limit for the examination), analytical method, and the date of the analysis.
4. Monthly Leak Detection Monitoring - reporting will include:
 - a. The volume of fluid pumped from the leak detection sumps, tabulated either daily or monthly, depending on the monitoring interval.
 - b. The disposition of any fluids pumped from the leak detection sump.
5. Electronic Filing Requirements - In addition to submittal of the hard copy data, above, the permittee will electronically submit the required ground water monitoring data in the electronic format specified by the Director. The data may be submitted by e-mail, compact disc, or other approved transmittal mechanism.
6. Monitoring Well As-Built Report - For each well constructed the permittee shall submit diagrams and descriptions of the final completion of the monitoring wells. The report is due within 60 days of the date of well completion. The report shall include:
 - a. Casing: depth, diameter, and type of material.
 - b. Screen: length, depth interval, diameter, material type, slot size.
 - c. Sand Pack: depth interval, material type and grain size.
 - d. Annular Seals: depth interval, material type.
 - e. Surface Casing and Cap: depth, diameter, material type, protection measures constructed.
 - f. Elevation and Well Location: ground surface elevation, elevation of water level measuring point, latitude and longitude in hours, minutes and seconds.
 - g. Well construction description, well completion description, results of well pump tests or slug tests.

H. COMPLIANCE SCHEDULE

1. Independent samples will be collected quarterly from each well according to the requirements of Part II.E.2b above, until a total of eight (8) sampling events have been completed. Sampling will then change to a semi-annual compliance monitoring frequency. A summary report of sample results shall be submitted to DWQ and the interim Ground Water Class Protection Levels of Table 2 will be adjusted if necessary to comply with UAC R317-6-4.

2. **Final Closure Plan.** In the event that the permittee decides to discontinue its operations at the facility the permittee shall notify the Director of such a decision and submit a Final Closure Plan within 180 days prior to the closure of the facility. The permittee shall resubmit Final Closure Plans within 60 days of receipt of written notice of deficiencies therein.

PART III MONITORING, RECORDING AND REPORTING REQUIREMENTS

A. REPRESENTATIVE SAMPLING

Samples taken in compliance with the monitoring requirements established under Part II shall be representative of the monitored activity.

B. ANALYTICAL PROCEDURES

Water sample analysis must be conducted according to test procedures specified under UAC R317-6-6.3.L, unless other test procedures have been specified in this permit.

C. PENALTIES FOR TAMPERING

The Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both.

D. REPORTING OF MONITORING RESULTS

Monitoring results obtained during each reporting period specified in the permit, shall be submitted to the Director, Utah Division of Water Quality at the following address no later than the 30th day of the month following the completed reporting period:

State of Utah
Division of Water Quality
P.O. Box 144870
Salt Lake City, Utah 84114-4870
Attention: Ground Water Protection Section
Electronic reporting:
<https://deq.utah.gov/ProgramsServices/services/submissions/index.htm>

E. COMPLIANCE SCHEDULES

Reports of compliance or noncompliance with, or any progress reports on interim and final requirements contained in any Compliance Schedule of this permit shall be submitted no later than 14 days following each schedule date.

F. ADDITIONAL MONITORING BY THE PERMITTEE

If the permittee monitors any pollutant more frequently than required by this permit, using approved test procedures as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted. Such increased frequency shall also be indicated.

G. RECORDS CONTENTS

Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements;
2. The individual(s) who performed the sampling or measurements;
3. The date(s) and time(s) analyses were performed;
4. The individual(s) who performed the analyses;
5. The analytical techniques or methods used; and,
6. The results of such analyses.

H. RETENTION OF RECORDS

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.

I. TWENTY-FOUR HOUR NOTICE OF NONCOMPLIANCE REPORTING

1. The permittee shall verbally report any noncompliance which may endanger public health or the environment as soon as possible, but no later than 24 hours from the time the permittee first became aware of the circumstances. The report shall be made to the Utah Department of Environmental Quality 24-hour number, (801) 536-4123, or to the Division of Water Quality, Ground Water Protection Section at (801) 536-4300, during normal business hours (Monday through Friday 8:00 am - 5:00 pm Mountain Time).
2. A written submission shall also be provided to the Director within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:
 - a. A description of the noncompliance and its cause;
 - b. The period of noncompliance, including exact dates and times;
 - c. The estimated time noncompliance is expected to continue if it has not been corrected; and,
 - d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
3. Reports shall be submitted to the addresses in Part III.D, Reporting of Monitoring Results.

J. OTHER NONCOMPLIANCE REPORTING

Instances of noncompliance not required to be reported within 24 hours, shall be reported at the time that monitoring reports for Part II.E are submitted.

K. INSPECTION AND ENTRY

The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and,
4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the Act, any substances or parameters at any location.

PART IV COMPLIANCE RESPONSIBILITIES

A. DUTY TO COMPLY

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

B. PENALTIES FOR VIOLATIONS OF PERMIT CONDITIONS

The Act provides that any person who violates a permit condition implementing provisions of the Act is subject to a civil penalty not to exceed \$10,000 per day of such violation. Any person who willfully or negligently violates permit conditions is subject to a fine not exceeding \$25,000 per day of violation. Any person convicted under Section 19-5-115(2) of the Act a second time shall be punished by a fine not exceeding \$50,000 per day. Nothing in this permit shall be construed to relieve the permittee of the civil or criminal penalties for noncompliance.

C. NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. DUTY TO MITIGATE

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

E. PROPER OPERATION AND MAINTENANCE

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

PART V GENERAL REQUIREMENTS

A. PLANNED CHANGES

The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required when the alteration or addition could significantly change the nature of the facility or increase the quantity of pollutants discharged.

B. ANTICIPATED NONCOMPLIANCE

The permittee shall give advance notice of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

C. PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

D. DUTY TO REAPPLY

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a permit renewal or extension. The application should be submitted at least 180 days before the expiration date of this permit.

E. DUTY TO PROVIDE INFORMATION

The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

F. OTHER INFORMATION

When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Director, it shall promptly submit such facts or information.

G. SIGNATORY REQUIREMENTS

All applications, reports or information submitted to the Director shall be signed and certified.

1. All permit applications shall be signed as follows:

- a. For a corporation: by a responsible corporate officer;
- b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively.
- c. For a municipality, State, Federal, or other public agency: by either a principal executive officer or ranking elected official.

2. All reports required by the permit and other information requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

- a. The authorization is made in writing by a person described above and submitted to the Director, and,
 - b. The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)
3. Changes to Authorization. If an authorization under Part IV.G.2 is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Part IV.G.2 must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.
 4. Certification. Any person signing a document under this section shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

H. PENALTIES FOR FALSIFICATION OF REPORTS

The Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both.

I. AVAILABILITY OF REPORTS

Except for data determined to be confidential by the permittee, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Director. As required by the Act, permit applications, permits, effluent data, and ground water quality data shall not be considered confidential.

J. PROPERTY RIGHTS

The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

K. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

L. TRANSFERS

This permit may be automatically transferred to a new permittee if:

1. The current permittee notifies the Director at least 30 days in advance of the proposed transfer date;
2. The notice includes a written agreement between the existing and new permittee containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,
3. The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph 2 above.

M. STATE LAWS

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, penalties established pursuant to any applicable state law or regulation under authority preserved by Section 19-5-117 of the Act.

N. REOPENER PROVISION

This permit may be reopened and modified (following proper administrative procedures) to include the appropriate limitations and compliance schedule, if necessary, if one or more of the following events occurs:

1. If new ground water standards are adopted by the Board, the permit may be reopened and modified to extend the terms of the permit or to include pollutants covered by new standards. The permittee may apply for a variance under the conditions outlined in R317-6-6.4.D.
2. If alternative compliance mechanisms are required.
3. If subsequent ground water monitoring data reveals the background water quality values in Part I Table 1 are not accurate.

APPENDIX A
CONSTRUCTION PERMIT
AND
PLANS AND SPECIFICATIONS

Mr. Stephen H. Snelgrove
Vice President of Regulatory Affairs
Magnum Gas Storage, LLC
3165 Millrock Drive, Suite 330
Holliday, Utah 84121

Dear Mr. Snelgrove:

Subject: **Construction Permit** for Brine Ponds 3 and 4

On October 9, 2017, the Division of Water Quality (DWQ) received the engineering plans and specifications for the Magnum Gas Storage Project (Magnum) Brine Ponds 3 and 4. These were prepared by Newfields Mining Design and Technical Services (Newfields) and stamped by Kevin N. Jennings a Utah Certified Professional Engineer (PE).

The following is a summary of the proposed major construction projects:

- Construction of Brine Ponds 3 and 4.

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, and provided written authorization to place the constructed facilities in service.*
4. *Construction activities that disturb one acre or more are required to obtain coverage under the Utah Pollutant Discharge Elimination System (UPDES) Storm Water General Permit for Construction Activities. The permit requires the development of a storm water pollution prevention plan (SWPPP) to be implemented and updated from the commencement of any soil disturbing activities at the site until final stabilization of the project. For more information, or to obtain permit coverage on-line, please go to: <http://www.waterquality.utah.gov/UPDES/stormwater.htm>*

The plans and specifications for this project have been 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. You may contact Central Utah Public Health Department at 435-896-5451 ext 342 or John Chartier Central Utah District Engineer at 435-896-5451 ext. 314 for further assistance regarding local matters.

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, stairs, or equivalent 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 and Moisture Testing, and
- Subgrade Acceptance Certification.

Concrete

- 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,
- Manufacturers 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 wwcampbell@utah.gov or (801) 536-4353.

Sincerely,

Erica Brown Gaddis, PhD
Director

EBG/WWC/DJH:

cc: John Chartier Central Utah District Engineer (via email w/o attachment)
Central Utah Public Health Department (via email w/o attachment)
Dave Marble Division of Dam Safety (via email w/o attachment davemarble@utah.gov)
Kevin N. Jennings, Newfields (via email w/o attachment kjennings@newfields.com)

APPENDIX B

GROUNDWATER MONITORING PLAN
MAGNUM GAS STORAGE, LLC

APPENDIX C

BRINE EVAPORATION PONDS OPERATING MANUAL (PENDING PUBLICATION)