

# GRAND COUNTY, UTAH

## ORDINANCE 476, 2008

### EVAPORATION POND FACILITIES FOR PRODUCED WATER DISPOSAL STANDARDS

**WHEREAS**, the Grand County General Plan (General Plan) was adopted by the Grand County Council on August 5, 1996, with Resolution 2301 and updated April 6, 2004 with Resolution 2654;

**WHEREAS**, the Grand County Land Use Code (LUC) was adopted by the Grand County Council (County Council) on January 4, 1999 with Ordinance 299, and amended on February 19, 2008 with Ordinance 468 for the purpose of regulating land use, subdivision and development in Grand County in accordance with the General Plan;

**WHEREAS**, Grand County serves to protect and maintain the health, safety, and welfare of all its citizens and visitors;

**WHEREAS**, Grand County seeks to ensure that evaporation pond facilities are planned, located, designed, and operated to facilitate compatibility with surrounding uses;

**WHEREAS**, Grand County desires to adopt best management practices and regulations to provide clear guidelines and requirements for the development of evaporation pond facilities;

**WHEREAS**, the Planning Commission reviewed the draft evaporation pond facilities ordinance in a public hearing on June 11, 2008, August 13, 2008, (continued to August 27, 2008), and on September 10, 2008 recommended approval;

**WHEREAS**, due notice was given that the County Council would meet to hear and consider adoption of the evaporation pond facilities ordinance; and

**WHEREAS**, the County Council has heard and considered evidence and testimony presented with respect to these amendments, and has determined that adoption of the evaporation pond facilities ordinance is in the best interests of the citizens of the Grand County, Utah and these amendments are consistent with LUC Sec. 1.5, Purpose.

**NOW, THEREFORE, BE IT ORDAINED BY THE County Council OF GRAND COUNTY, UTAH, THAT** the use-specific standards of the Grand County Land Use Code are hereby amended by the adoption of subsection 3.2.4.B to read as follows, and the subsequent renumbering of the subsections as follows:

**B. Evaporation Pond Facilities for Produced Water Disposal**

Evaporation pond facilities for produced water disposal may be approved by conditional use permit pursuant to Sec. 9.11 Conditional Use, which includes a site plan (Sec. 9.17). Approval of such facilities shall in all cases be subject to the annual review requirements of Sec. 9.11.7C. Drilling muds and tank bottom waste shall not be accepted. Other Resource, Conservation, and Recovery Act (RCRA) exempt waste may be accepted.

**1. Location**

Evaporation pond facilities for produced water disposal shall only be considered on sites identified on the mapped area titled "Evaporation Pond Facilities Overlay Map" and attached as Exhibit "A" In addition the following shall apply;

- a. No site shall be located within one mile of any existing residence or RR, SLR, LLR, or MFR zone districts; any irrigated farm lands; or any national or state park;
- b. No site shall be located within sight of the scenic by-way Highway 128;
- c. No site shall be located within 1/2 mile of perennial or intermittent stream (as identified by USGS) surface waters and/ or regulatory wetlands;
- d. No Site shall be in a designated sole source aquifer zone.
- e. Approved sites for such facilities shall be a minimum 40 acres in size;

- f. All ponds shall be located a minimum of 500 feet from the down gradient property line to allow additional monitoring wells to be placed on the site if deemed necessary by the County Engineer.

**2. Baseline Data**

The applicant shall collect and submit the following baseline data prior to the issuance of a zoning development permit and /or building permit. Air and water sampling plans shall be approved by County.

- a. depth to groundwater;
- b. ground water flow rates;
- c. direction of flow;
- d. permeability of soils;
- e. wind patterns (reflecting diurnal and seasonal changes); and
- f. air quality test data, completed by an independent and state certified lab, to include sampling for sulfur containing compounds, volatile organic compounds (VOCs) and partial list of semi-volatile organic compounds (SVOCs) as approved by the County Engineer.
- g. water quality test data, include information on ground water, well sites, and surface water within a 1/2 mile radius of the proposed site, completed by an independent and state certified lab to include sampling for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), total extractable petroleum hydrocarbons (TRPHs), pH, conductivity, anions, and metals.
- h. Sufficient samples of the insitu materials shall be submitted demonstrating the permeability rate of the subsurface strata below a proposed site. The depth of the sampling shall be sufficient to span a depth of material that would be saturated over a ten year period. The insitu materials shall have a permeability rate of less than  $1 \times 10^{-6}$  centimeters per second

**3. Cumulative Maximum Annual Emission Tonnage**

The estimated cumulative emission tonnage of all permitted and proposed evaporation ponds within Grand County shall not exceed 50 tons per year of any one of the following components each of which shall be calculated separately: nitrogen oxide, methanol, particulate matter, and VOC's.

**4. Drainage Plan**

A drainage report and drainage plan, prepared by a Utah-registered engineer, shall demonstrate compliance with Sec. 6.7, with consideration of natural drainage and drainage during construction.

**5. Transportation Plan**

Transportation routes selected shall utilize roads and/or highways with sufficient capacity as determined by Grand County as a part of the review process and approved by the County Road Supervisor. Selected transportation routes shall not result in a significant reduction or degradation in the service level of such roads or highways. Where the service level of affected roads and highways is unknown, the applicant shall be responsible for the cost of traffic engineer studies performed by a Utah-licensed engineer to establish such service levels. "Significant" means a change of a letter grade in the level of service on such road and/or highway. Traffic engineering studies shall include an analysis of the traffic mix. Route selection to and from such sites and facilities shall consider the following factors:

- a. Methods by which produced water will be transported to and from the site;
- b. Road types, design, and service capacity (including future maintenance needs and costs);
- c. Extent to which weather renders such roads and/or highways hazardous;
- d. Load capacity of such roads including during saturated inclement weather conditions;

- e. Accident rates, to determine if proposed transportation routes are more or less hazardous than the average for similar type roads and/or highways. It is the applicant's duty to mitigate any increased possible risk to such roads and/or highways, the traveling public, and any increased future maintenance and repairs costs to Grand County or the State of Utah;
  - f. Number and proximity of residential, school and hospital structures, and pedestrian ways, along proposed routes;
  - g. Safety, noise and traffic disruption;
  - h. Number and frequency of intersections per linear mile, or other measure as determined by Grand County during the application process, between the entrance of a facility and the nearest federal, state or county highway or road;
  - i. Where roads are inadequate, as determined by Grand County, to support or absorb the additional proposed traffic, road and/or highway improvements shall be provided at the applicant's expense, consistent with County standards and/or satisfactory to the County Engineer based on national or state standards; the County Engineer may rely on standards adopted by the Utah Department of Transportation;
  - j. Maintenance agreement for County roads accepted and signed by the County Road Department and/or the County Council;
  - k. Additional bonding may be required to adequately cover road maintenance costs during operation and at final closure of the site; and
  - l. A UDOT highway access permit shall be approved for each facility with direct access to a state highway. Turn lanes, frontage road(s), curb and gutter shall be provided by the applicant if required by UDOT.
- 6. Operation and Access**
- a. Approved sites shall be fully operational and have all applicable county, state, and federal permits prior to accepting produced water. An operational certification letter shall be issued by the County prior to receiving any production water.
  - b. An operator shall be on site for a minimum of one hour daily. An operator shall be on site during all receiving operations.
  - c. Federal, state, and county officials shall be allowed on the premises for the purpose of conducting site visits without prior notification;
  - d. Federal, state, and county documents shall be maintained on site and made available for review of federal, state and county authorities.
  - e. Any measurable or visible layer of oil that accumulates on the surface of an evaporation pond shall be removed daily.
  - f. Spray evaporation systems shall be operated such that all spray-borne suspended or dissolved solids remain within the perimeter of the pond's lined area.
  - g. No application of production water shall be used on the ground for any purpose including construction water or dust control without approval of a Utah Division of Water Quality surface discharge permit.
  - h. Fluids from such facilities shall at no time contaminate waters of the U.S. nor discharge without prior written consent from all applicable authorities.
- 7. Safety Requirements**
- No person conducting activities subject to this regulation may cause or allow pollution of surface or subsurface water.
- a. Smoking shall be allowed in designated areas only and appropriate signage shall be maintained.
  - b. Signs stating non-potable water and warning of potential drowning hazards shall be posted adjacent to all ponds.

- c. Signs providing emergency contact information shall be provided at the facility entrance, receiving areas, and adjacent to all ponds.
- d. Ropes, ladders, and/or other means of escape shall be provided along the perimeter of the ponds to allow a person to climb out of a pond in the event of an accident.
- e. Pits or ponds intended to have hydrocarbon products on the surface shall be netted to prevent wildlife access. Netting structures shall be constructed so that the netting is prevented from sagging into the pit fluids and perimeter netting extends to the ground to prevent wildlife entry. Netting shall be monitored by the onsite operator to ensure proper working order.
- f. A wildlife deterrent device, such as a "hazing canon", shall be placed on site at strategic locations to keep wildlife away from open ponds.
- g. The applicant shall submit to the Utah Division of Wildlife Resources all required information for comment, which will be provided to the County.
- h. Perimeter fencing shall be installed to keep wildlife and agriculture stock off the premises, height of fencing as recommended by the Utah Division of Wildlife Resources.
- i. All ponds shall have a 2-foot minimum freeboard, unless as calculated below.
- j. The total on-site pond volume shall provide enough additional storage for emergency emptying of any pond. Evaporation ponds will be allowed to contain a maximum volume calculated as follows:

$$\frac{N-1}{N} \times (N \times V1) = V$$

Key: N = total number of evaporation ponds  
 V1 = volume in the smallest evaporation pond  
 V = total volume

- k. The equation in subsection 8. j., above, shall be used to determine the maximum volume in each evaporation pond in lieu of a 2-foot minimum freeboard requirement and to ensure that a pond can be emptied for repair in the event that a leak is detected. The applicant shall provide for prevention of loss of any produced water from the ponds via wave action. Facilities shall provide a written emergency repair plan that clearly indicates the procedure for emptying a pond. All holding tanks for materials associated with operations shall be constructed completely above ground and within a curbed or bermed containment area to provide sufficient volume for the total volume of all tanks. No open top tanks shall be permitted.
- l. Ponds shall be double lined in accordance with state regulations. The top liner shall be synthetic and a minimum of 60 mils thick. The second liner may be constructed of either a synthetic or natural material meeting the permeability of Sec. 2.h above.
- m. If a pond specific leak is detected, the pond shall be emptied immediately and the source of the leak repaired.
- n. If contaminants are found to exceed permissible levels in perimeter monitoring wells or allowed volumes in any area of the facility are exceeded, the facility shall cease accepting new waste immediately and direct customers to another regional/state approved facility. The County Engineer shall be notified within one working day of the occurrence and the cause shall be corrected to the satisfaction of the County Engineer and applicable state agencies prior to resuming operations.

**8. Monitoring Plan**

Air and water sampling plans shall be approved by County, paid for by the applicant and shall, at a minimum, include:

- a. Quarterly air quality testing shall be conducted by an independent and state certified lab and the results shall be provided to the County from the lab in writing within 30 days. Testing shall include sampling for sulfur containing compounds, volatile organic compounds (VOCs), and a partial list of semi-volatile organic compounds (SVOCs) and shall identify the total tonnage of emissions.
- b. Quarterly water quality testing shall be conducted by an independent and state certified lab and the results shall be provided to the County from the lab in writing within 30 days. Testing shall include sampling to determine the amount of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and total extractable petroleum hydrocarbons (TRPHs). The sampling point for this testing shall be the outflow point of any hydrocarbon separator.

**9. Referral Agency**

Applications for such uses shall be referred to such agencies and persons as the Administrator deems appropriate, including but not limited to: the State of Utah Department of Environmental Quality, Division of Oil, Gas, and Mining (DOGMA), Division of Air Quality, Division of Water Quality, and Division of Wildlife Resources.

**10. Reclamation Plan**

A detailed reclamation plan shall demonstrate that upon cessation of operations restoration of the site shall be completed to a condition as natural as practical, or to the site's original or other beneficial condition as approved by the County Council and consistent with Sec. 6.9.9(F), Restoration of the Grand County Land Use Code. The reclamation plan shall include but not be limited to the following:

- a. Removal of the structures at the facility.
- b. Removal and disposal of any remaining waste including contaminated soil and pond liner.
- c. Re-grading of the site to the approximate original contour or approved beneficial condition / future use.
- d. Erosion control and re-vegetation of all disturbed areas within the approved site.
- e. The County may approve an alternative decommissioning plan as recommended by the County Engineer provided that the remaining materials are rendered incapable of causing pollution.

**11. Bonding**

Each applicant shall be financially capable of constructing, operating and properly closing each site, use and/or affected land, including proper post closing and/or demobilization, and reclamation to the satisfaction of the County. Each applicant shall post sufficient security based on a cost estimate to be prepared by a professional engineer and to be approved by the County Engineer. The cost estimate shall include all costs associated with closure and site remediation for the permitted facility. The method of security shall be approved by the County Clerk, County Attorney, and County Council prior to the issuance of a conditional use permit as recommended by the County Engineer. Final reclamation shall be accomplished within one year of the cessation of the permitted activity/facility and/or use. Such security shall be in accordance with state requirements found in Utah Administrative Code R649-9 Waste Management Disposal. Security estimates shall be prepared by a professional engineer and submitted for review and approval by Grand County. Estimates shall be recalculated every 5 years and shall account for the value of bonds held by the State of Utah for a particular facility.

**12. Operational Status**

Grand County shall be notified in writing at least 30 days prior to any change in ownership or operator status. Furthermore, Grand County shall be notified of any permit revisions,

equipment upgrades or downgrades, and/or process changes integral to the operation of the facility. If the facility is sold to a different owner, the new owner shall assume all requirements of the county permit.

**13. Conflict with State and/or Federal Requirements**

If any conflict arises in the interpretation of this code and state or federal requirements the most restrictive requirement shall govern.

**14. Fees**

**15. In addition to application fees required by Sec. 9.1.3E, which shall apply to the initial application and to each annual application, the applicant shall pay monitoring fees in accordance with the Grand County fee schedule. Technical Review**

If County staff does not have the technical expertise or the practical ability to devote the necessary time and effort, as determined by the County Council, the County may engage such additional expertise and/or consultants to assist the County and/or to provide technical review of an application under this section, including assessing the accuracy of technical reports and studies. The applicant shall reimburse the County for the cost of such assistance prior to approval of applicable County permits and before commencement of the activity. The County may require that the applicant provide cash or equivalent security to guarantee that the costs of such consultants and expertise is borne by the applicant, especially where the permit is not granted, or is granted with conditions to which the applicant objects.

**16. Existing Evaporation Pond Facilities**

Existing evaporation pond facilities shall not be deemed to be in noncompliance of this subsection B, due to actions taken by adjacent land owners.

**BE IT FURTHER ORDAINED BY THE COUNTY COUNCIL** that LUC Article 10, Definitions is hereby amended by the adoption of the following definitions

Term	Definition
Evaporation Pond	Surface impoundment used for the purpose of containing, treating and evaporation of produced water.
Evaporation Pond Facility	Both private and commercial centralized produced water facilities not including individual pits at well locations.
Produced Water	The water (brine) brought up from the hydrocarbon bearing formation strata during the extraction of oil and gas, and can include formation water, injection water, and any chemicals added down hole or during the oil/water separation process.
Drilling Mud	A water-based suspension of clays pumped into an oil or gas well during drilling in order to seal off porous rock layers, equalize the pressure, cool the bit, and flush out cuttings.

**BE IT FINALLY ORDAINED BY THE COUNTY COUNCIL** that LUC Sec. 3.1, Use Table, is hereby amended by the editorial addition of Evaporation Ponds for Produce Water Disposal to the list of Industrial Uses in the use table, and by the designation of such use to be allowed by Conditional Use Permit in the RG district and the HI district.

**PASSED, ADOPTED, AND APPROVED** by the Grand County Council in open session this 16<sup>th</sup> day of December, 2008, by the following vote:

Those voting aye: Ciarus, McNeely, Graham, Langianese, Lewis, Holyoak

Those voting nay: Greenberg

Those Absent: .....

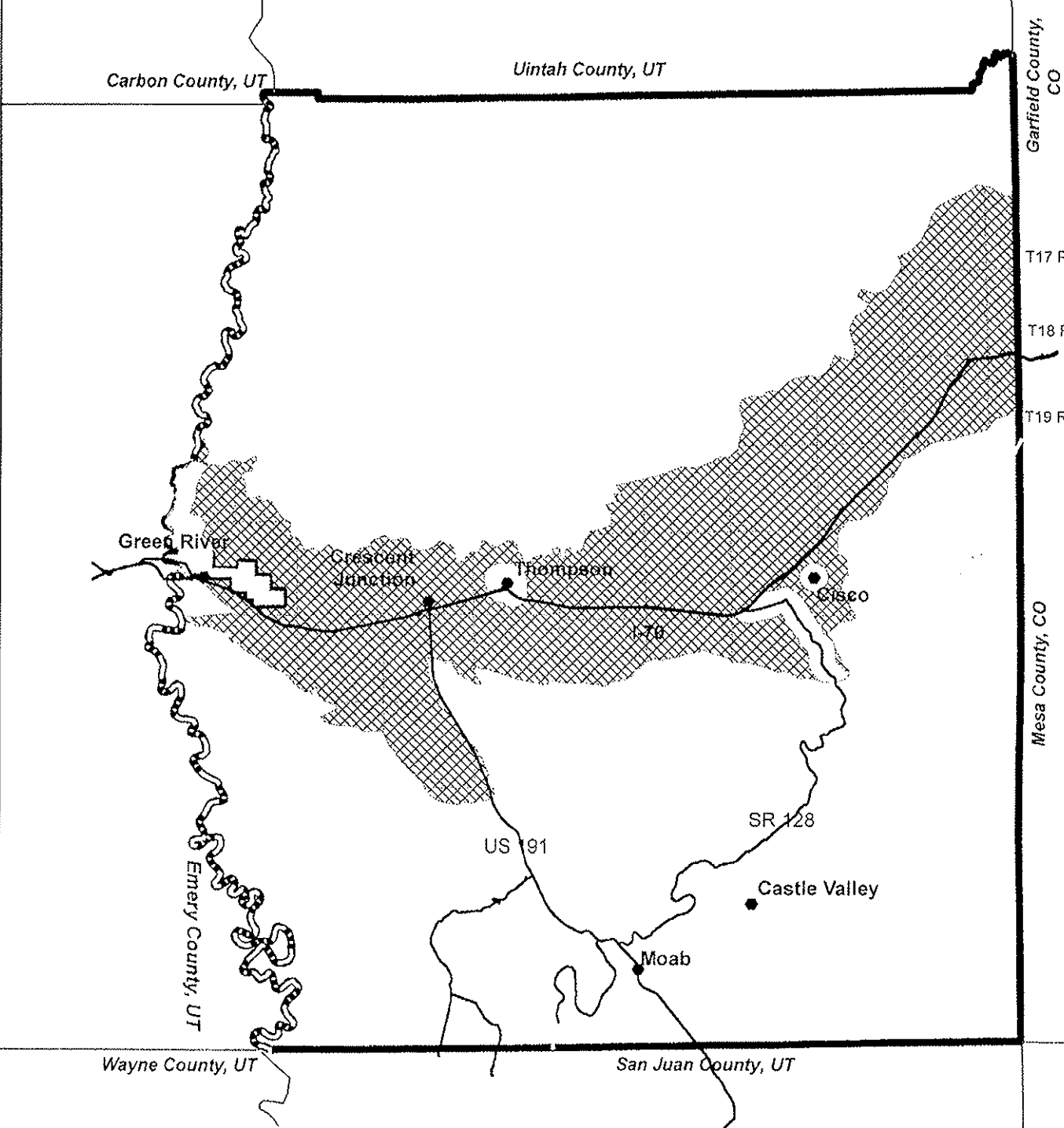
Grand County Council

ATTEST:





Diane Carroll  
Diane Carroll, County Clerk


Gene Ciarus  
Gene Ciarus, Chairman

**Exhibit A: Evaporation Pond Facilities Overlay Map**  
**Adopted by Ordinance 476 2008**



**Legend**

-  Evaporation Pond Facilities Overlay Area
-  County Boundary
-  Major Roads
-  Rivers

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December 16, 2008  
 Community Development Department