

KANSAS UNDERGROUND INJECTION
CONTROL PERMIT
CLASS III INJECTION WELL

Pursuant to the provisions of Kansas Statutes Annotated (65-164, 65-165, 65-166, 65-170g and 65-171d) and Kansas Administrative Regulations (Chapter 28, Article 46 and Chapter 28, Article 43),

Owner: Morton International, Inc., Morton Salt Division

Owner's Address: 1000 Morton Drive
South Hutchinson, Kansas 67505

Telephone No: (620) 669-6439

Facility Name: Morton Salt Company

Facility Location: Hutchinson, Kansas

Well Identification: NW3-5

Well Location: SENWNE 22-23-6W, Reno County, Kansas
Approximately 4485' fsl and 1610' fel in SE/4

is authorized to use the above captioned well to mine salt from the Hutchinson Salt member of the Wellington formation by solution mining methods.

The permittee shall comply with all conditions in this permit, federal and state regulations governing Class III injection wells and the requirements of the Kansas Department of Health and Environment (KDHE).

This permit shall become effective _____, will supersede the previous UIC Permit KS-03-155-156, and will expire _____.

FACILITY DESCRIPTION: The facility is a salt production plant.

Secretary, Kansas Department of Health and Environment

Date

I. INJECTION LIMITATIONS, MONITORING, REPORTING, AND TESTING REQUIREMENTS

- A. The permittee is authorized to mine salt at this facility by solution mining methods. Mining shall be confined to the Hutchinson Salt member of the Wellington formation and the salt solution mining operations (cavity development) shall not extend into the upper forty (40) feet of the salt deposit.
- B. This well is part of a gallery salt solution mining system consisting of wells NW3-1, NW3-2, NW3-3, NW3-4, NW3-5 and NW3-6.
- C. The operation of the well shall be controlled, limited and monitored by the permittee as specified in this permit. All monitoring reports shall be submitted to KDHE no later than twenty-eight (28) days after the last day of the quarter for which the monitoring data are being reported. All monitoring data required for reports shall be submitted on forms prescribed by KDHE. Monitoring reports and other information required by this permit shall be directed to:

Kansas Department of Health and Environment
 Bureau of Water
 1000 SW Jackson St. Ste. 420
 Topeka, Kansas 66612

D.

Injection and Operational Parameters	Injection or Parameter Limitation	Measurement or Analysis Frequency	Reporting Requirement	Sample or Measurement Type
Wellhead Injection Pressure (inches mercury or pounds per square inch gauge)*	165 psig	Weekly	Quarterly	Gauge or Continuous Recording Device**

* This parameter shall be measured and recorded weekly for each well or gallery system.

** The gauge or continuous recording device shall at all times be maintained operational and shall at all times be located to properly measure the activity being monitored.

- E. The injected and withdrawn liquid volume shall be metered continuously and recorded weekly and the minimum and maximum injection pressure shall be measured continuously and recorded weekly for each well or gallery system. All information shall be reported in the quarterly monitoring report submitted to KDHE. Calculations of the withdrawal/injection ratio shall be included in the quarterly report. The gauges, meters or continuous recording devices shall at all times be maintained operational and shall at all times be located to properly measure the activity being monitored.
- F. The chemical and physical characteristics of the injected and withdrawn liquid for the gallery system shall be determined at least once annually. A chemical analysis of a characteristic sample shall include at a minimum, pH, total dissolved solids, hardness, alkalinity, chloride, sodium and sulfate. The results of these analyses shall be submitted with the quarterly monitoring report submitted to KDHE. All analyses required by this permit shall be conducted by a Kansas Certified Laboratory.
- G. An annual report of salt solution mining activities shall be submitted to KDHE. The report shall include a discussion of activities on drilling, plugging, gamma logging, sonar caliper surveys, mechanical integrity testing and an estimate of the percent of useful life remaining for each active well.
- H. When calculations based upon a model theory approved by KDHE indicate that fifty (50) percent of the useful life of the well has been reached, the well shall be checked by the permittee to determine the dimensions of the cavity. The dimensions shall be determined thereafter upon growth increments of each ten (10) percent of useful well life. A sonar caliper survey shall be used for this purpose. The results of such surveys shall be submitted to the Bureau of Water within thirty (30) days of test completion.
- I. The thickness of the salt roof shall be determined at least once every two (2) years by conducting an expanded gamma ray log or other KDHE approved log. The results shall be submitted to the Bureau of Water within thirty (30) days of test completion.
- J. The surface elevation of the wellhead shall be determined annually. Results of the elevation survey shall be submitted to the Bureau of Water within thirty (30) days of completion.
- K. The following shall also be reported to KDHE by the permittee:
1. Immediate notification of KDHE of all spills associated with the operation of the well or gallery system.

2. The results and interpretation of mechanical integrity tests and any other tests of the injection well or the cavity within thirty (30) days of completion.
3. Any abnormal liquid loss specific for the system shall be orally reported immediately to KDHE. A written report shall also be provided to KDHE within five (5) days of the permittee becoming aware of the circumstances.
4. 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 in any report to KDHE, the permittee shall submit such facts or corrected information to KDHE within five (5) days of becoming aware of the circumstances.

II. MECHANICAL INTEGRITY TESTING

A hydraulic pressure mechanical integrity test (MIT) to check for internal integrity of the casing shall be conducted at least once every five (5) years. Whenever KDHE believes that because of a downhole problem the continued use of the well constitutes a threat to human health, or the fresh and/or usable waters or the soils of the state, or the release of injected or withdrawn fluid into an unauthorized zone is occurring, the permittee shall be required to immediately cease operation of the well and the gallery system and conduct an MIT on the well. If determined necessary by KDHE, an MIT shall be conducted when there has been a well workover. An MIT plan shall be submitted to KDHE for review and approval prior to conducting any MIT. No MIT work shall commence until approval of the MIT plan has been obtained from KDHE. The MIT shall be witnessed by KDHE. If the well fails an MIT, the requirements of Section III. Part B. of this permit shall be implemented by the permittee. The results and interpretation of a mechanical integrity test shall be submitted to KDHE within thirty (30) days of test completion.

III. ANOMALOUS OPERATIONAL DATA, LOSS OF MECHANICAL INTEGRITY

- A. If anomalous operational or monitoring data indicating a loss of mechanical integrity occurs, the permittee shall: 1) immediately investigate and identify the cause of the anomalous data and, 2) notify KDHE within twenty-four (24) hours of becoming aware of the circumstances. The results of this investigation shall be reported to KDHE within twenty-four (24) hours of completion. If the well appears to be lacking mechanical integrity, the permittee shall:
 1. Immediately cease operation of the well and the gallery system.

2. Take all steps required by KDHE to determine the presence or absence of mechanical integrity. If the well is determined to have mechanical integrity, operation of the well and the gallery system may resume after the permittee has obtained authorization from KDHE.
- B. If a loss of mechanical integrity is determined pursuant to Section III. Part A. of this permit or as the result of a MIT, the permittee shall:
1. Immediately cease operation of the well and the gallery system.
 2. Notify KDHE within twenty-four (24) hours of the determination.
 3. Take all steps determined necessary by KDHE to determine whether there may have been a release of fluid into any unauthorized zone. If there is evidence there may have been a release into an unauthorized zone, the permittee shall orally notify KDHE within twenty-four (24) hours of the determination. A written notice shall also be provided to KDHE within five (5) days of the determination including a description of the release.
 4. Comply with any immediate corrective or remedial action specified by KDHE. If determined necessary by KDHE, the permittee shall submit to KDHE a remediation and corrective action plan and implementation schedule for review and approval. Work shall not commence until approval of the remediation and corrective action plan has been obtained from KDHE.
 5. Restore and demonstrate mechanical integrity to the satisfaction of KDHE. A plan for any well workover or MIT shall be submitted to KDHE for review and approval. Work shall not commence until the permittee has obtained approval of the workover or MIT plan from KDHE.
 6. Operation of the well and the gallery system shall resume only upon authorization from KDHE.

IV. PLUGGING, ABANDONMENT

The well shall be plugged and abandoned upon reaching the end of its useful life or when determined necessary by KDHE to protect human health, or the fresh and/or usable waters or soils of the State. The permittee currently has a plugging and abandonment plan on file with KDHE. The permittee shall revise and update the plugging and abandonment plan when required by KDHE. The permittee shall notify KDHE at least sixty (60) days prior to plugging and abandonment of the well.

With the notice, the permittee shall submit a revised and updated plugging and abandonment plan to KDHE for review and approval. The permittee shall conform to all plugging and abandonment requirements of state and federal regulations and KDHE. The well shall be plugged in a manner to prevent fluid migration and to protect soils and fresh or usable water from pollution. Plugging and abandonment work shall not commence until approval of the plugging and abandonment plan has been obtained from KDHE. The report of plugging and abandonment and related information shall be submitted to KDHE within thirty (30) days after completion of the plugging operation on forms provided by KDHE.

V. FINANCIAL RESPONSIBILITY FOR PLUGGING AND ABANDONMENT

The permittee shall maintain financial responsibility and financial resources to close, plug and abandon the underground injection well and appurtenances in a manner required by KDHE. The permittee shall show evidence of financial responsibility to KDHE by the submission of a surety bond or other adequate financial assurance such as financial statements or other materials acceptable to KDHE. Financial assurance documents shall be revised and updated when required by KDHE. The permittee currently demonstrates financial assurance by a financial test.

VI. CONSTRUCTION REQUIREMENTS

A. The well shall be cased and cemented such that: 1) injected or withdrawn fluid does not cause deterioration of the water quality of fresh and/or usable water zones, 2) the loss of fresh and/or usable water due to downward migration is prevented, and 3) the release of injected or withdrawn fluids into an unauthorized zone is prevented.

Borehole, casing, tubing and cement specifications for the well:

Bore Hole Size	Casing or Tubing Size & Material	Weight lbs/ft	Casing Seat Depth	Type of Cement & Additives	Number of Sacks of Cement
14 ¾"	10 ¾" - Steel	40.5	227'	60/40 Pozmix w/3% CaCl ₂ and 2% gel	175
9 7/8"	7" - Steel	20	630'	Common w/2% CaCl ₂	175

N/A = Not Applicable

VII. SCHEDULE OF COMPLIANCE

None

VIII. STANDARD CONDITIONS - ATTACHMENT I

In addition to the specified conditions stated herein, the permittee shall comply with the provisions of Attachment I.

IX. OTHER CONDITIONS

None