Underground Injection Control Program

PERMIT

Class I Nonhazardous Waste Injection
Permit No. CA1020002

Well Names:
A-72T, B-122, WW3, WW4, WW5 and WW6
Kern County, California

Issued to:

Sunrise Power Company, LLC
P.O. Box 81617
Bakersfield, CA 93380-1617

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## PART I. AUTHORIZATION TO INJECT

Pursuant to the Underground Injection Control (UIC) regulations of the U.S. Environmental Protection Agency (EPA) codified at Title 40 of the Code of Federal Regulations (CFR), Parts 124, 144, 145, 146, 147, and 148,

Sunrise Power Company, LLC
P.O. Box 81617
Bakersfield, CA 93380-1617

is hereby authorized to operate a Class I nonhazardous waste injection well facility with six injection wells. The wells are to be located within the boundaries of the Midway Sunset Oilfield in Kern County, California.

Authorization to drill and construct the wells will be issued by EPA after the requirements of Financial Responsibility in Part II, Section F of this permit have been met. EPA will grant authorization to inject after the requirements of Part II, Section C.1 of this permit have been met. Injection will be authorized into the Tulare formation for the purpose of disposal of industrial nonhazardous fluids produced during the operation of an electrical power generating plant. The types of fluids to be injected are limited to cooling tower blowdown wastewater (using source water from West Kern Water District); plant area wash wastewater; demineralizer resins regeneration wastewater; plant and equipment drains wastewater; filter backwash wastewater; and non-oil-contaminated storm runoff wastewater.

All conditions set forth herein are based on Title 40 Parts 124, 144, 145, 146, 147 and 148 of the Code of Federal Regulations.

This permit consists of 21 pages plus the appendices, and includes all items listed in the Table of Contents. Further, it is based upon representations made by Sunrise Power Company, LLC (the permittee). It is the responsibility of the permittee to read, understand and comply with all terms and conditions of this permit.

This permit and the authorization to inject are issued for a period of up to ten (10) years unless terminated under the conditions set forth in Part III, Section B.1. of this permit.

Issued this _____ day of _____

This permit shall become effective three (3) days after the date of issuance.

_____
Alexis Strauss, Director
Water Division, EPA Region IX

## PART II. SPECIFIC PERMIT CONDITIONS

### A. WELL CONSTRUCTION

1. Casing and Cementing The Well Construction Plans submitted with the permit application are hereby incorporated into this permit as Appendix A, and shall be binding on the permittee. Notwithstanding any other provisions of this permit, the permittee shall case and cement the wells to prevent the movement of fluids into or above underground sources of drinking water. The following specifications apply to the injection wells:

   (a) WELL A-72T:
   Location: Latitude (+)35.20042; Longitude (-)119.54594

   Conductor pipe: 12-3/4 in OD line pipe from ground surface to 40 ft. cemented to surface.

   Long String Casing: 4-1/2 in OD, 11.5#, J-55 LTC casing from ground surface to TD at approximately 1,000 ft. Cemented to surface.

   Perforations (approximate depths) are within the Upper Tulare formation:
   510-555, 570-610, 640-720, 750-820, 850-900 ft. with 4 shots per foot density (rat hole approximately 100 ft. below perforations).

   MONITORING WELL 30F0072T:
   Location: Latitude (+)35.20054; Longitude (-)119.54583

   Conductor pipe: 12 in O.D. schedule 40 line pipe extends from ground surface to 41 ft.

   Long String casing: 7 in, 23#, K-55 steel casing pipe extends from surface to approximately 910 ft below ground surface. Cemented to surface. Bridge plug set at 882 ft with cement plug in hole to Total Well Depth (TD) at 966 ft.

   5-1/2 in. liner within plugged-back portion of the hole is 17#, K-55 from 884-966 ft.

   Perforations will be in the different sand lobes of water disposal at depths of approximately 490, 515, 550, 580, 620, 660, 735, 780, 825, 850 and 890 ft with one shot per designated depth.

   (b) WELL B-122:
   Location: Latitude (+)35.19941; Longitude (-)119.5466

Conductor pipe: 12-3/4 in OD line pipe from ground surface to 40 ft. Cemented to surface.

Long String Casing: 4-1/2 in OD, 11.5#, J-55 LTC casing from ground surface to TD at approximately 1,000 ft. Cemented to surface.

Injection perforations are 480-520, 550-590, 605-675, 730-800, 820-870, 880-900 ft with 4 shots per foot density (rat hole approximately 100 ft. below perforations).

MONITORING WELL 30F0122:
Location: Latitude (+)35.19948; Longitude (-)119.54669

Conductor pipe: 16 in O.D. schedule 40 line pipe, 55#, extends from ground surface to 41 ft.

Surface casing: 10-3/4 in, 32.75#, H-40 surface casing extends from ground surface to 403 ft. below ground surface. Cemented to surface.

Long string casing: 7 in, 23#, K-55 steel casing pipe extends from surface to TD at approximately 2,990 ft below ground surface. Cemented to surface. Old perforations at 2790-2830 and 2865-2875 ft. will be plugged with cement from 2690-2990 ft. A cast iron bridge plug with 100 ft cement on top will be set from 1000-1100 ft. Mud will be placed in the hole between the cast iron bridge plug and the top of cement at 2690 ft. Mud properties (density, viscosity, gel sheer strength, etc.) will conform to California Division of Oil, Gas, and Geothermal Resources requirements and specifications.

Perforations are within the Upper Tulare formation:
(Old perforations to be plugged exist at 2790-2830 ft and 2865-2875 ft.)
Proposed perforations will be in the different sand lobes of water disposal at depths of approximately 530, 550, 585, 610, 650, 685, 715, 765, 800, 860 and 885 ft with one shot per designated depth.

(c) WELLS WW3, WW4, WW5 and WW6:
Location:

WW3 Latitude (+)35.19838 ; Longitude (-)119.54424
WW4 Latitude (+)35.19685 ; Longitude (-)119.54380
WW5 Latitude (+)35.19636 ; Longitude (-)119.54191
WW6 Latitude (+)35.19501 ; Longitude (-)119.54053

Conductor pipe: 12 in O.D. schedule 40, extends from ground surface to 50 ft.

Long String casing: 7 in, 23#, J-55 steel casing pipe extends from surface to approximately 500 ft below ground surface, depending on exact top of Tulare

formation. Cemented to surface.

Slotted Liner: 5-1/2 in, 17#, J-55 extends from approximately 470-900 ft below surface. String consists of approximately 30 ft blank casing on top and 400 ft slotted casing on bottom.

MONITORING WELLS FOR WELLS WW3, WW4, WW5 and WW6:
Monitoring wells adjacent to wells WW3, WW4, WW5 and WW6 are required to be installed prior to injection unless a review of performance and results obtained from wells 30F0072T and 30F0122 proves sufficient to allow EPA to determine that alternative monitoring requirements are appropriate.

2. Tubing, Packer and Monitoring Equipment Specifications
Injection will take place through the tubing strings.

WELL A-72T:
The 4-1/2 in, 12.75 #/ft, J-55 tubing string extends from surface to the packer. The packer shall be a 7 in packer and will set in tension at approximately 450 ft, or at a depth such that there is at least 50 ft of space between the end of tubing and the top perforation.

WELL B-122:
The 2-7/8 in, 6.5 #/ft, J-55 tubing string extends from surface to the packer. The packer shall be a 5-1/2 in tension packer and will set in tension at approximately 420 ft, or at a depth such that there is at least 50 ft of space between the end of tubing and the top perforation.

WELLS WW3, WW4, WW5 and WW6:
The 4-1/2 in, 12.75 #/ft, J-55 tubing string extends from surface to the packer. The packer shall be a 7 in tension packer and will set at approximately 420 ft, or at a depth such that there is at least 50 ft of space between the end of tubing and the top of the liner.

3. Injection Intervals Injection shall be permitted for the Upper Tulare formation, which is expected to occur at depths corresponding to the perforation depths assigned to wells 30F0072T and 30F122. Minor alterations of the depths of injection zone intervals and therefore, the casing setting depths for wells A-72T, B-122, WW3, WW4, WW5 and WW6 are expected to be realized upon drilling. These alterations and other rework operations that may occur later in the course of operation of the wells must be properly reported (EPA Form 7520-12) and the permittee must demonstrate that each well has mechanical integrity in accordance with Part II, Section C.2 before any injection is authorized.

4. Monitoring Devices The permittee shall install and maintain in good operating

condition:

(a) A tap prior to the injection wellhead for the purpose of obtaining representative samples; and

(b) Devices to measure injection pressure, annulus pressure, flow rate, and injection volumes.

(c) Monitoring Well 30F0072T:
Capillary Pressure Monitoring Equipment: 1/8 in capillary tubing; 1.66 in OD Quartz pressure chamber with accuracy to 0.01 psi; 5 ft of 1-1/2 in OD sinker bar. Pressure chamber depth approximately 765 ft.

(d) Monitoring Well 30F0122:
Capillary Pressure Monitoring Equipment: 1/8 in capillary tubing; 1.66 in OD Quartz pressure chamber with accuracy to 0.01 psi; 5 ft of 1-1/2 in OD sinker bar. Pressure chamber depth approximately 765 ft.

(e) Monitoring Wells For Wells WW3, WW4, WW5 and WW6:
Monitoring wells adjacent to wells WW3, WW4, WW5 and WW6 shall be constructed with the same or equivalent Capillary Pressure Monitoring equipment that is installed in monitoring wells 30F0072T and 30F0122. A review of performance and results obtained from wells 30F0072T and 30F0122 may prove sufficient to allow EPA to impose alternative requirements for monitoring equipment.

5. Proposed Changes and Workovers The permittee shall give advance notice to the EPA Region IX Water Division Director (Director) of any planned physical alterations or additions to the permitted injection wells. Any changes in the well construction will require prior approval of EPA and a permit modification under the requirements of 40 CFR §144.39. In addition, the permittee shall provide all records of well workovers, logging, or other subsequent test data, including required mechanical integrity testing, to EPA within sixty (60) days of completion of the activity. Appendix B contains samples of the appropriate reporting forms. Demonstration of mechanical integrity shall be performed within thirty (30) days of completion of workovers or alterations and prior to resuming injection activities, in accordance with Part II, Section C.2.

## B. CORRECTIVE ACTION

No corrective action for wells located within the Area of Review will be required pursuant to 40 CFR §144.55 and 40 CFR §146.7.

## C. WELL OPERATION

1. Prior to Commencing Injection Injection operations may not commence until construction is complete and the permittee has complied with items (a), (b), (c), (d), (e) and (f) as follows:

   (a) During construction of the wells (A-72T, B-122, WW3, WW4, WW5 and WW6), information relating to ground water at these sites shall be obtained and submitted to the Director. This information will be used to demonstrate either the presence and characteristics of, or the lack of, any underground sources of drinking water.

   (i) The permittee shall provide well log and grab water samples as evidence.

   (ii) The Director may require minor alterations to the construction requirements based upon the information obtained during well drilling and related operations if the proposed casing setting depths will not completely cover the base of the confining formation.

   (b) The permittee must submit notice of completion of construction to the Director. After final construction of the wells, injection may not commence until the Director has inspected or otherwise reviewed the injection wells and notified the permittee that it is in compliance with the conditions of the permit.

   (c) The permittee shall demonstrate that all the wells have mechanical integrity in accordance with Part II, Section C.2 of this permit. The permittee may not commence injection until it has received written notice from the Director that such a demonstration is satisfactory. The permittee shall notify EPA of its intent to demonstrate mechanical integrity at least thirty (30) days prior to such demonstration.

   (d) The permittee shall supply evidence of financial assurance in accordance with Part II, Section F of this permit in a form that is approved by the Director.

   (e) The permittee shall perform a hazardous waste determination according to 40 CFR § 262.11 (Hazardous Waste Determination). The permittee shall maintain copies (or originals) of all records relating to the hazardous waste determination and make such records available for inspection. The permittee shall perform an additional hazardous waste determination whenever there is a process change or a change in fluid chemical constituents or characteristics.

(f) A sample of the injectate shall be taken by an individual with the proper expertise and sent to a laboratory with proof of certification from the State of California. Operation of the injection facility is temporarily granted for the two (2) weeks following initial operations to allow for sample analyses to be performed and the results submitted to EPA. The results of the analyses shall demonstrate that the injectate does not meet the definition of hazardous waste as defined in 40 CFR Part 261.

2. Mechanical Integrity

(a) Methods for Demonstrating Mechanical Integrity

(i) Pressure test:
A demonstration of the absence of significant leaks in the casing, tubing and/or packer shall be made by performing a pressure test on the annular space between the tubing and long string casing. This test shall be for a minimum of thirty (30) minutes at a pressure equal to the maximum allowable injection pressure. A well passes the mechanical integrity test (MIT) if there is less than a five (5) percent decrease/increase in pressure over the thirty (30) minute period. A pressure differential of at least 350 pounds per square inch (psi) between the tubing and annular pressures shall be maintained throughout the MIT.

(ii) Injection profile survey:
A demonstration that the injectate is confined to the proper zone shall be conducted and presented by the permittee and subsequently approved by EPA. This demonstration shall consist of a radioactive tracer and a temperature log or other diagnostic tool or procedure as approved by EPA. See Appendix E. Additionally, at least thirty (30) days prior to the running and subsequent presentation of these demonstrations, the permittee shall submit the plans for procedures and specifications to EPA for discussion and approval.

(iii) Continuous pressure monitoring:
The tubing/casing annulus pressure and injection pressure shall be monitored and recorded continuously to an accuracy within 1 psi. The average, maximum, and minimum monthly results shall be included in the quarterly report to the Director unless more detailed records are requested by the Director.

The monitoring wells shall be equipped with a quartz capillary pressure chamber which shall be monitored and recorded continuously to an accuracy of 0.01 psi. The results shall be plotted

on a graph of pressure versus time at intervals sufficiently representative of reservoir conditions and shall be included in the quarterly report to the Director unless more detailed records are requested by the Director.

(b) Schedule for Demonstrations of Mechanical Integrity

(i) A pressure test shall be conducted no less frequently than once every five (5) years from the effective date of this permit, in accordance with 40 CFR §146.8 and paragraph (a)(i) above.

An injection profile survey shall be conducted no less frequently than once every year from the effective date of this permit, in accordance with 40 CFR §146.8 and paragraph (a)(ii) above.

Mechanical integrity shall also be demonstrated any time that a workover is conducted, the packer is unseated, the construction of the well is modified or when loss of mechanical integrity becomes evident during operation.

(ii) It shall be the permittee's responsibility to arrange and conduct the mechanical integrity demonstrations. The permittee shall notify the Director of its intent to demonstrate mechanical integrity at least thirty (30) days prior to each demonstration. Results of the test shall be submitted to the Director as soon as possible but no later than sixty (60) days after the demonstration.

(iii) In addition to any demonstration made under paragraph (i) above, the Director may require a demonstration of mechanical integrity at any time during the life of the wells.

(c) Loss of Mechanical Integrity If (1) the well fails to demonstrate mechanical integrity during a test or (2) a loss of mechanical integrity becomes evident during operation or (3) a significant change in the annulus or injection pressure occurs during normal operating conditions, the permittee shall notify the Director in accordance with Part III, Section E.11 of this permit. Furthermore, injection activities shall be terminated immediately and operation shall not be resumed until the permittee has taken necessary actions to restore mechanical integrity to the well and EPA gives approval to recommence injection.

3. Confining Layer

Information on the confining layer, such as its characteristics, its thickness and its local structure will be obtained and updated during drilling of the injection wells.

The Tulare clay is the portion of the Tulare formation which appears from existing well control data to be extensive, with good continuity both laterally and vertically.

4. Injection Pressure Limitation

(a) Injection pressure measured at the wellhead shall not exceed 75 psi for injection into the Tulare formation, based on a fracture pressure gradient of 0.60 psi per foot of depth as measured at the top perforation. In no case shall pressure in the injection zone during injection initiate new fractures or propagate existing fractures in the injection zone or the confining zone. In no case shall injection pressure cause the movement of injection or formation fluids into an underground source of drinking water.

(b) A pressure falloff test shall be conducted annually, unless data from monitoring wells or other information demonstrate the need for additional tests and/or an increased frequency of tests. The permittee must submit a proposal for pressure falloff test procedures at least sixty (60) days before the planned test and must receive EPA approval prior to the test. The proposed procedures must generally conform to EPA regional guidance but must be adapted for the specific conditions at this facility. Appendix F contains examples of EPA regional guidance.

5. Injection Rate Limitation

(a) The injection rate shall not exceed 15,500 barrels per day (651,000 gallons per day) at any time.

(b) The permittee may request an increase in the maximum rate allowed in paragraph (a). Any such request shall be made in writing to the Director.

(c) Any request for an increase in injection rate shall demonstrate to the satisfaction of the Director that the increase in volume will not interfere with the operation of the facility or its ability to meet conditions described in this permit and will not change its well classification.

6. Injection Fluid Limitation

(a) The permittee shall not inject any hazardous waste as defined by 40 CFR Part 261 at any time.

(b) Injection fluids shall be limited to only waste fluids authorized by this permit and produced at the facility. No fluids shall be accepted from other sources.

## D. MONITORING, RECORDKEEPING, AND REPORTING OF RESULTS

1. Monitoring Program

(a) Continuous monitoring devices Temperature, annular pressure, and injection pressure shall be measured at the wellhead. Injection rate shall be measured in the supply line immediately before the wellhead. The permittee shall continuously monitor and record the following parameters:

| Parameter | Monitoring Frequency | Instrument |
|---|---|---|
| injection rate (gallons per minute) | continuous | digital recorder |
| injection total volume (gallons) | continuous | digital totalizer |
| injection pressure (psig) | continuous | digital recorder |
| annular pressure (psig) | continuous | digital recorder |
| injection fluid temperature (degrees Fahrenheit) | continuous | digital recorder |
| quartz capillary pressure (psig) | continuous | digital recorder |

(b) Calibration and Maintenance of Equipment All monitoring and recording equipment shall be calibrated and maintained on a regular basis to ensure proper working order of all equipment.

(c) Quarterly Monitoring. Fluids will be analyzed to yield representative data on their characteristics. The permittee shall take samples at or before the wellhead for analysis. The results of the tests shall be submitted to EPA on a quarterly basis. The permittee shall not inject any hazardous waste as defined by 40 CFR Part 261 at any time. The permittee shall utilize the applicable analytical methods described in Table I of 40 CFR §136.3, or in Appendix III of 40 CFR Part 261, or in certain circumstances, other methods that have been approved by the EPA Administrator.

Methods/Constituents:

Geochemical (Appropriate EPA Methods for Sodium, Calcium, Magnesium, Barium, Total Iron, Chloride, Sulfate, Carbonate, Bicarbonate, Sulfide, Total Dissolved Solids, pH, Conductivity, and Specific Gravity)

Metals (Appropriate EPA Methods for Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc)

VOCs (EPA Methods 8010/8020 or 8240)

Semi-VOCs (EPA Method 8270)

2. Recordkeeping

(a) The permittee shall retain records concerning:

(i) the nature, volume and composition of all injected fluids until three (3) years after all the wells have been plugged and abandoned.

(ii) all monitoring information, including all calibration and maintenance records and all recordings for continuous monitoring instrumentation, 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 five (5) years after all the wells have been plugged and abandoned.

(b) The permittee shall continue to retain the records described in paragraphs (a)(i) and (a)(ii) after the specified retention periods, unless it delivers the records to the Director or obtains written approval from the Director to discard the records.

(c) The permittee shall maintain copies (or originals) of all observation records throughout the operating life of the well and make such records available for inspection at the facility. The permittee shall continue to retain such records unless it obtains written approval from the Director to discard the records.

3. Reporting of Results

The permittee shall submit short and accurate quarterly reports to the Director containing the following information:

(a) Average, maximum, and minimum monthly values for the continuously monitored parameters specified for the injection wells in Part II, Section D.1.(a), unless more detailed records are requested by the Director.

(b) Results of the quartz capillary pressure chambers of the monitoring wells shall be plotted on a graph of pressure versus time at intervals that EPA determines to be

sufficiently representative of reservoir conditions. These shall be included in the quarterly report to the Director unless more detailed records are requested by the Director. Results shall also be provided in electronic form.

(c) Fluid characteristic analyses for parameters specified in Part II, Section D.1.(c).

(d) A narrative description of all non-compliance that occurred during the reporting period.

Quarterly report forms, as specified in Appendix B, shall be submitted for the reporting periods by the respective due dates as listed below:

| Reporting Period | Report Due |
|---|---|
| Jan, Feb, Mar | Apr 28 |
| Apr, May, June | Jul 28 |
| July, Aug, Sept | Oct 28 |
| Oct, Nov, Dec | Jan 28 |

Copies of the monitoring results and all other reports required by this permit shall be submitted to the following address:

U.S. Environmental Protection Agency, Region IX
Water Division
Ground Water Office (WTR-9)
75 Hawthorne St.
San Francisco, CA 94105-3901

## E. PLUGGING AND ABANDONMENT

1. Notice of Plugging and Abandonment The permittee shall notify the Director no less than sixty (60) days before conversion, workover, or abandonment of the well. The Director may require that the plugging and abandonment be witnessed by an EPA representative.

2. Plugging and Abandonment Plans The permittee shall plug and abandon the wells as provided in the Plugging and Abandonment Plans in Appendix C. EPA reserves the right to change the manner in which a well will be plugged if the well is modified during its permitted life or if the well is not consistent with EPA requirements for construction or mechanical integrity. The Director may require the permittee to estimate and to update the estimated plugging cost periodically. Such estimates shall be based upon costs which a third party would incur to plug the wells according to the Plugging and Abandonment Plans in Appendix C.

3. Plugging and Abandonment Report Within sixty (60) days after plugging the well, the permittee shall submit a report on Form 7520-13, provided in Appendix B, to the Director. The report shall be certified as accurate by the person who performed the plugging operation and the report shall consist of either: (1) a statement that the well was plugged in accordance with the Plugging and Abandonment Plans, or (2) where actual plugging differed from the Plugging and Abandonment Plans, a statement specifying the different procedures followed.

4. Cessation of Injection Activities After a cessation of injection operations for two (2) years, the permittee shall plug and abandon the wells in accordance with the Plugging and Abandonment Plans, unless it:

   (a) Provides notice to the Director;

   (b) Has demonstrated that the wells will be used in the future; and

   (c) Has described actions or procedures, satisfactory to the Director, that will be taken to ensure that the wells will not endanger underground sources of drinking water during the period of temporary abandonment.

## F. FINANCIAL RESPONSIBILITY

1. Demonstration of Financial Responsibility The permittee is required to demonstrate and maintain financial responsibility and resources sufficient to close, plug, and abandon the underground injection operation as provided in the Plugging and Abandonment Plans.

   The permittee shall post a financial instrument such as a surety bond or other financial assurance for each well in the amount of $50,000.00 to guarantee closure. Authority to drill and construct any well will not be given until the financial instrument has been posted and approved by EPA.

2. Insolvency of Financial Institution The permittee must submit an instrument of financial responsibility acceptable to the Director within sixty (60) days after either of the following events occurs:

   (a) the institution issuing the bond or financial instrument files for bankruptcy; or

   (b) the authority of the trustee institution to act as trustee, or the authority of the institution issuing the financial instrument, is suspended or revoked.

## G. DURATION OF PERMIT

This permit and the authorization to inject are issued for a period of up to ten (10) years unless terminated under the conditions set forth in Part III, Section B.1 of this permit.

## PART III. GENERAL PERMIT CONDITIONS

### A. EFFECT OF PERMIT

The permittee is allowed to engage in underground injection well construction and operation in accordance with the conditions of this permit. The permittee shall not construct, operate, maintain, convert, plug, abandon, or conduct any other injection activity in a manner that allows the movement of fluid containing any contaminant (as defined by 40 CFR §144.3) into underground sources of drinking water, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR Part 141 or may otherwise adversely affect the health of persons. Furthermore, any underground injection activity not specifically authorized in this permit is prohibited. The permittee must comply with all applicable provisions of the SDWA and 40 CFR Parts 144, 145, 146, and 124. Such compliance does not constitute a defense to any action brought under Section 1431 of the SDWA, 42 U.S.C. § 300i, or any other common law, statute, or regulation other than Part C of the SDWA. Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of State or local law or regulations. Nothing in this permit shall be construed to relieve the permittee of any duties under all applicable laws or regulations.

### B. PERMIT ACTIONS

1. Modification, Revocation and Reissuance, and Termination of the Permit The Director may, for cause, modify, revoke and reissue, or terminate this permit in accordance with 40 CFR §§124.5, 144.12, 144.39, and 144.40. Also, the permit is subject to minor modifications in accordance with 40 CFR §144.41. The filing of a request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance by the permittee, does not stay any permit condition. The Director may also modify, revoke and reissue, or terminate this permit in accordance with any amendments to the SDWA if the amendments have applicability to this permit.

2. Transfer of Permit This permit is not transferable to any person except after notice is provided to the Director and the permittee complies with the requirements of 40 CFR §144.38. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the SDWA.

### C. 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.

## D. CONFIDENTIALITY

In accordance with 40 CFR §§2 and 144.5, any information submitted to EPA pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice.

## E. GENERAL DUTIES AND REQUIREMENTS

1. Duty to Comply The permittee shall comply with all applicable UIC Program regulations and all conditions of this permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit issued in accordance with 40 CFR §144.34. Any permit noncompliance constitutes a violation of the Safe Drinking Water Act (SDWA) and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. Such noncompliance may also be grounds for enforcement action under the Resource Conservation and Recovery Act (RCRA).

2. Penalties for Violations of Permit Conditions Any person who violates a permit requirement is subject to civil penalties, fines, and other enforcement action under the SDWA and may be subject to enforcement actions pursuant to RCRA. Any person who willfully violates a permit condition may be subject to criminal prosecution.

3. Need to Halt or Reduce Activity Not a Defense It shall not be a defense, for the 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.

4. Duty to Mitigate The permittee shall take all reasonable steps to minimize and correct any adverse impact on the environment resulting from noncompliance with this permit.

5. 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 includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit.

6. Property Rights This permit does not convey any property rights of any sort, or any exclusive privilege.

7. Duty to Provide Information The permittee shall furnish to the Director, within a time specified, 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.

8. 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:

   (a) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this permit;

   (b) Have access to and copy, at reasonable times, any records that are kept under the conditions of this permit;

   (c) Inspect and photograph at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

   (d) Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the SDWA, any substances or parameters at any location.

9. Signatory Requirements All applications, reports, or other information submitted to the Director shall be signed and certified by a responsible corporate officer or duly authorized representative according to 40 CFR §144.32.

10. Reporting of Noncompliance

   (a) Anticipated Noncompliance 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) 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 to the Director no later than thirty (30) days following each schedule date.

   (c) Twenty-four Hour Reporting

1. The permittee shall report to the Director any noncompliance which may endanger health or the environment. Information shall be provided orally within twenty-four (24) hours from the time the permittee becomes aware of the circumstances. The following information must be reported orally within twenty-four (24) hours:

   i. Any monitoring or other information which indicates that any contaminant may cause an endangerment to an underground source of drinking water; and

   ii. Any noncompliance with a permit condition, or malfunction of the injection system, which may cause fluid migration into or between underground sources of drinking water.

2. A written submission of all noncompliance as described in paragraph (c)(1) shall also be provided to the Director within five (5) days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

(d) Other Noncompliance At the time monitoring reports are submitted, the permittee shall report in writing all other instances of noncompliance not otherwise reported. The permittee shall submit the information listed in Part III, Section E.11.(c) of this permit.

(e) Other Information If the permittee becomes aware that it failed to submit all relevant facts in the permit application, or submitted incorrect information in the permit application or in any report to the Director, the permittee shall submit such facts or information within two (2) weeks of the time such facts or information becomes known.

11. Continuation of Expiring Permit

(a) 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 submit a complete application for a new permit at least 180 days before this permit expires.

(b) Permit Extensions The conditions and requirements of an expired permit continue in force and effect in accordance with 5 U.S.C. §558(c) until the effective date of a new permit, if:

(i) The permittee has submitted a timely and complete application for a new permit; and

(ii) The Director, through no fault of the permittee, does not issue a new permit with an effective date on or before the expiration date of the previous permit.

# APPENDIX A - WELL CONSTRUCTION PLANS

# APPENDIX B - REPORTING FORMS

## APPENDIX C - PLUGGING AND ABANDONMENT PLANS

Upon completion of injection activities the wells shall be abandoned according to State and Federal regulations to ensure protection of Underground Sources of Drinking Water.

## APPENDIX D - FINANCIAL RESPONSIBILITY

The mechanisms for financial responsibility as required in Part II.F of this permit shall be submitted to the Director prior to receiving authorization to inject.

## APPENDIX E - Temperature Logging Requirements

## U.S.E.P.A. REGION IX

A Temperature "Decay" Log (two separate temperature logging passes) must satisfy the following criteria to be considered a valid Mechanical Integrity Test (MIT) as specified by 40 CFR §146.8(c)(1). Variances to these requirements are expected for certain circumstances, but they must be approved prior to running the log. As a general rule, the well should have been injecting for at least 6 months prior to running a temperature decay progression sequence of logs.

(g) With the printed log, provide also a 3-1/2 inch diskette in LAS format which contains the logging headings and raw data for both logging runs (one data reading per foot depth) unless the logging truck is equipped with an analog panel as the processing device.

(2) The heading on the log must be complete and include all the pertinent information, such as correct well name, location, elevations, etc.

(3) The total shut-in times must be clearly shown in the heading. Minimum shut-in time for active injectors is 12 hours for running the initial temperature log, followed by a second log, a minimum of 4 hours later. These two log runs will be superimposed on the same track for final presentation.

(4) The logging speed must be kept between 20 and 50 ft. per minute (30 ft/min optimum) for both logs. The temperature sensor should be located as close to the bottom of the tool string as possible (logging downhole).

(5) The vertical depth scale of the log should be 1 or 2 in. per 100 ft. to match lithology logs (see 7(b)). The horizontal temperature scale should be no more than one Fahrenheit degree per inch spacing.

(6) The right hand tracks must contain the "absolute" temperature and the "differential" temperature curves with both log runs identified and clearly superimposed for comparison and interpretation purposes.

(7) The left hand tracks must contain (unless impractical, but EPA must pre-approve any deviations):

- (a) a collar locator log,
- (b) a lithology log:
  - 1) an historic Gamma Ray that is "readable", i.e. one that demonstrates lithologic changes without either excessive activity by the needle or severely dampened responses; or
  - 2) a copy of an original SP curve from either the subject well or from a representative, nearby well.
- (c) A clear identification on the log showing the base of the lowermost Underground Source of Drinking Water (USDW). A USDW is basically a formation that contains less than 10,000 ppm Total Dissolved Solids (TDS) and is further defined in 40 CFR § 144.3.

# APPENDIX F - FALLOFF TESTING GUIDELINES