Nevada Division of Environmental Protection
Bureau of Water Pollution Control - Underground Injection Control Program
901 S. Stewart St Ste 4001 Carson City Nevada 89701
Ph: 775-687-9418 Fx: 775-687-4684

Notice of Intent (NOI) – Form U210

UIC General Permits for Groundwater Remediation (Long- and Short-Term)

Attach to Completed UIC Permit Application Form U200

New application (Long-Term >6 mo.) - $1,500
New application (Short-Term <=6 mo.) - $300
Annual fee for Long-Term General Permit - $900
Plan Review fee for Modification - $200 each

Facility/Site Name: _____

NDEP BCA Facility ID: _____ **Case Officer:** _____

Petroleum Fund ID: _____ **District Health Dept. UST ID:** _____

Mark one or the other you are applying for:

- ☐ **Long-Term (more than six months)**
- ☐ **Short-Term (six months or less)**

For Short-term projects, indicate the last month of injection: _____

Mark if New or Modification Submission:

- ☐ **New**
- ☐ **Modification**

If you are seeking a minor modification (e.g. adding 1 injection well), review the items below and supply information that will cover the basics for the minor change, for the example - a new map w/location of well, well data.

An applicant can apply for inclusion under the UIC General Permit – Remediation (mark with an "X" all that apply):

CATEGORY 1 – Injection one or more of the following compounds

- ☐ Low-percentage solution of hydrogen peroxide (H_2O_2). Injection shall not exceed 350 gallons/well per month;
- ☐ Potassium and sodium permanganate;
- ☐ Ozone;
- ☐ Polysulfide;
- ☐ Nutrients: nitrate, ammonia, phosphate, vitamins;
- ☐ Carbon Sources/Electron Donors: including but not limited to acetate, lactate, glucose, and complex sugars (e.g. molasses or corn syrup, other food process byproducts (e.g. yeast), complex organic material (e.g. wood chips));
- ☐ Oxygen infusers;
- ☐ Chemical oxidation compounds;
- ☐ Surfactants; and/or
- ☐ Hydrogen releasing compounds

CATEGORY 2 –

- ☐ Injection of water that has been treated for remediation purposes to meet groundwater quality criteria.

An applicant must submit the following information:

1. **Facility/Site Map:** Attach a scaled map of the property(ies) on which the injection is proposed and the surrounding properties. The map should include but not be limited to the following:

    a. All injection wells (include open excavation and injection gallery);
    b. All major structures (i.e. buildings, streets, etc.) and property lines;
    c. All underground utilities and tank(s) within 100 feet of any on-site or off-site injection well(s);
    d. All water wells (i.e. irrigation, drinking, monitoring, dewatering) and surface bodies of water;
    e. Location of all sensitive receptors within 3,000 feet of the site (including wetlands; aquifer

recharge zones; well fields where groundwater is extracted for municipal or other beneficial use);

f. Groundwater contours (amsl) and groundwater flow direction; and

g. The description of the business, the description of businesses of all contiguous properties, and the legal property boundaries. Supply contact information for owners of all contiguous properties.

2. A copy of the approved Workplan and the Letter of Concurrence by the Bureau of Corrective Actions (BCA) or District Health Department Case Officer.

3. **For Long-term project requests only:** Collect background water samples from the farthest up-gradient well and down-gradient well for the following water quality parameters - field parameters: pH, ORP, conductivity, dissolved oxygen; lab parameters: sulfate, nitrate, total iron.

4. Current plume map (scaled) of Contaminants of Concern (COC) including those that exceed the Federal Drinking Water Standards and/or State Action Levels. All current occurrences of plume migration off the property must be thoroughly documented.

5. Depth to groundwater (range): _____

6. Depth of injection well(s), open excavation, and/or injection gallery:_____

7. Screened interval of injection well(s): _____

- ☐ Groundwater within injection well screen
- ☐ Groundwater above well screen
- ☐ Groundwater below well screen (not allowed by NDEP)

8. Volume and frequency of injection: _____
Average and maximum injection rate: _____
Concentration of chemicals at time of injection (Category 1 only): _____
Average and maximum injection pressure (30 psi. max.): _____

9. Document all observances of Light Non-Aqueous Phase Liquid (LNAPL or "free product") or Dense Non-Aqueous Phase Liquid (DNAPL) within the last 3 months at the site. Injection is prohibited in these wells. _____

10. Well construction plans and drawings that include: surface and subsurface construction details (size of the hole, type of casing, type and grade of cement), process/treatment systems, additive ports, valves and gauges, and pumps. Show how wellheads will be secured to prevent: 1) leakage of surface water or other contaminants, and 2) tampering by unauthorized persons. (For site excavations, see #13)

11. Drilling logs for injection and monitoring wells. For site excavations, please show all 3 dimensions (depth, width, length) of each excavation, and locate them on the map under #1.

12. Attach a sample scaled cross section showing well depth, screen interval, and water table (correlated at each well) for the injection and monitoring wells.

13. Screened interval of monitoring well(s): _____

- ☐ Groundwater within monitoring well screen
- ☐ Groundwater above well screen (typically not allowed by NDEP)
- ☐ Groundwater below well screen (not suitable for monitoring)

14. Attach *Affidavit of Intent to Abandon Well* from the Division of Water Resources (DWR).

15. List all permits issued by the Bureau of Water Pollution Control. Briefly describe the business at the

remediation site, the cause and nature of the contamination, and the steps taken to eliminate or reduce further contamination.

16. For technologies using chemicals with the potential for strong exothermic reactions, including hydrogen peroxide over 12%, provide the following:

1. Details on what precautions and monitoring will be taken to ensure in-situ chemicals reactions do not cause adverse impacts to water quality and property (e.g. surface asphalt, underground storage tanks, etc.), and cause migration of chemical and groundwater into underground utilities and/or to the surface.
2. Discuss the corrosive issues that could arise from certain chemicals and/or chemical reactions with underground objects subject to corrosion such as metal piping, storage tanks, etc.
3. Discuss baseline concentrations of constituents in the aquifer that can act as catalyst (e.g. iron) with hydrogen peroxide and similar chemicals.
4. All injection wells will need to be tested for hydraulic parameters with clean water to show the wells can reasonably accept the proposed injected volumes, and information provided with this NOI.

Please note that if the above information is insufficient, the bureau may require plans to be reviewed, modified and stamped by a Nevada registered Professional Engineer.

NOI INSTRUCTIONS:

The following are notes to assist with completing the NOI and the attachments to the application. Please address all sections. Complete the *UIC Permit Application – Form U200* with Owner/Operator information and signature. **Attach the NOI to Form U200**.

Enter Facility/Site Name, NDEP BCA Facility ID, Case Officer, Petroleum Fund ID (if applicable), District Health Department UST ID (if applicable). Mark with an "X" if the project is Long-Term (more than six months) or Short-Term (six months or less).

Mark with an "X" all of the injection compound(s).

1. Facility/Site Map: Attach a **scaled map** of the property(ies) on which the injection is proposed **and** the surrounding properties. The map should include all injection wells, extraction well (if applicable), all major structures and property lines, all water wells and surface bodies of water, location of sensitive receptors within 3,000 feet of the site (including wetlands; aquifer recharge zones; well fields where groundwater is extracted for municipal or other beneficial use), dewatering wells, groundwater contours (amsl), groundwater flow direction, the description of the business, the **owner** of all surrounding properties, and the legal property boundaries. Supply contact information for the owner(s) of all surrounding properties. Identify the location of remediation wells on adjacent properties. A map of the one-mile radius will not be required for the General Permit.

2. Submit a copy of the approved Workplan. The workplan must include details of routine monitoring and sampling associated with injection activities. Attach the Letter of Concurrence for the Injection Workplan from the Bureau of Corrective Actions Case Officer or the District Health Department Case Officer. Applications without the Letter of Concurrence cannot be processed. NDEP strongly suggests that injection occur only in *injection wells* and not in *monitoring wells* due to the potential for dilution of groundwater samples. If injection must occur in *monitoring wells*, the Workplan should include specifications that sampling of the monitoring wells will occur no sooner than 30 days after injection.

3. Collect background sample from one up-gradient and one down-gradient monitoring well. Sampling for metals shall be collected unfiltered and reported as total metals. If there is a turbidity issue, the well should be

further developed and evaluated. If the well water cannot be cleared up, the sample may be filtered only with a **one (1) micron filter** and all actions documented and reported.

4. Attach a current plume map (**scaled**) of the Contaminants of Concern (COC) that exceed the Federal and State Drinking Water Standards and/or State Action Levels. The map must show the most recent data for the plume. Additional historic plume maps may also be submitted if they provide further information. All current occurrences of plume migration off the property must be thoroughly documented.

5. Enter the range of depth to groundwater (bgs).

6. Enter the range of the depth of the injection wells, open excavation, and/or injection gallery.

7. Enter the screened intervals of each injection well. Note if groundwater is within, above, or below the screened interval. NDEP does not allow injection where groundwater is below the screened interval.

8. Enter the volume of injectate in gallons and enter the frequency of injection. The maximum amount of injection allowed is 350 gallons per well per month. If the project is an open excavation or injection gallery, up to 1,000 gallons hydrogen peroxide (H_2O_2) can be injected per month. If the volume is greater than these limitations, please apply for a UIC UNEV permit. Enter the average and maximum injection rate in gallons. Enter the average and maximum injection pressure. If the maximum pressure exceeds 30 psi, apply for a UIC UNEV permit. Note that surfacing of injectate and/or groundwater is prohibited by the permit.

9. Document all observances of Light Non-Aqueous Phase Liquid (LNAPL or "free product") or Dense Non-Aqueous Phase Liquid (DNAPL) within the last three months at the site. Injection is prohibited in these wells.

10. Submit well construction plans and drawings that include surface and subsurface construction details (size of the hole, type of casing, type and grade of cement), process/treatment systems, additive ports, valves and gauges, and pumps). Show how wellheads will be secured to prevent: 1) leakage of surface water or other contaminants, and 2) tampering by unauthorized persons.

11. Submit drilling logs for injection and monitoring wells.

12. Attach a sample scaled cross section showing well depth, screen interval, and water table (correlated at each well) for the injection and monitoring wells.

13. Enter the screened intervals of each monitoring well. Note if groundwater is within, above, or below the well screen. NDEP typically does not allow using monitoring wells if groundwater is above the well screen. Obviously, if groundwater is below the well screen, the well is not suitable for monitoring.

14. A plugging and abandonment plan must be submitted by attaching the *Affidavit of Intent to Abandon Well* from the Division of Water Resources.

15. List all permits issued by the Bureau of Water Pollution Control. Briefly describe the business at the remediation site, the cause and nature of the contamination and the steps taken to eliminate or reduce further contamination.