

# Well Plugging and Abandonment Services

Civil & Environmental Consultants, Inc. (CEC) understands that operators are looking for an economical solution to reduce liabilities associated with abandoned wells. CEC offers integrated solutions that streamline the process and efficiently navigate the regulatory framework for the well decommissioning process.



#### STREAM AND WETLAND DELINEATIONS

Streams and wetlands can impact the overall feasibility and economics of well abandonment. CEC has extensive experience working with regulatory agencies to address and solve these issues. CEC can complete delineations prior to well plugging activities to minimize liability and maintain compliance under Sections 404 and 401 of the Federal Clean Water Act.

## THREATENED AND ENDANGERED SPECIES

CEC scientists regularly perform reviews of well sites and advise clients on the potential presence of endangered species. If necessary, CEC can assist in developing avoidance measures or site-specific plans that satisfy state and/or federal regulatory requirements.

#### SPILL PREVENTION, CONTROL, AND COUNTERMEASURE (SPCC) PLANS

CEC develops SPCC plans and designs secondary containment systems to address compliance issues. Using a team approach to identify operation and management objectives, CEC engineers and scientists then apply regulatory knowledge and experience to develop site-specific solutions that minimize financial risks.

#### **EROSION AND SEDIMENT CONTROL (E&SC) PLANS**

CEC has a proven track record of successfully obtaining local, state, and federal E&SC permits and/or regulatory approvals required for well plugging and decommissioning projects.

### **HIGHWAY PERMITS**

CEC's transportation engineers have wide-ranging knowledge and experience with state, county, and local requirements. CEC's experience includes obtaining highway occupancy permits and negotiating road maintenance agreements for access to remote sites where wells to be decommissioned are often located.

## **FLOODPLAIN PERMITS**

Work within mapped floodplains can be subject to additional regulation. CEC offers a team of qualified and experienced professionals with sound solutions to address regulatory requirements of local ordinances.

## LOCAL, STATE, AND FEDERAL PERMITTING

CEC's experienced engineers and scientists can help navigate regulatory and permitting requirements for the well decommissioning process. Encroachments within jurisdictional aquatic features typically require state and/or federal permits. Based on the size of the disturbed area required, projects may also require additional E&SC permits, including ESCGP-3 (in Pennsylvania) or NPDES permits (in Ohio and West Virginia).



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#### **WELL MONITORING**

CEC has a highly qualified staff of environmental professionals who can provide air monitoring for methane and hydrogen sulfide at wellhead locations. Monitoring is essential to ensure a safe working environment before, during, and after well abandonment activities. Air monitoring is conducted using appropriate field instruments, such as a photoionization detector or flame ionization detector, and techniques to screen for potential organic and inorganic vapors.

## **WELL ABANDONMENT SUPPORT SERVICES**

We maintain good working relationships with drilling contractors knowledgeable in the well abandonment process, as well as state and federal agency officials, to establish a successful approach and execution of what can be a challenging task. Plugging a well can involve creation of liquid and/or solid waste that must be managed in accordance with state and federal environmental regulations. CEC's experienced environmental staff have the knowledge and expertise to characterize and manage all types of waste, including:

- brine:
- · wastes generated during plugging activities;
- waste profiling and manifesting for transport and disposal of liquid; and
- solid wastes.

Our project oversight and coordination support services include preparing and submitting a Notice of Intent to plug the well and preparing applicable general permits for activities associated with well plugging, including necessary stream crossings, access road construction, and gravel pads that provide access for drill rigs and support vehicles.

Following completion of well plugging, CEC's environmental staff oversee subcontractors conducting well site restoration activities, including access road and pad removal, site re-grading and re-seeding, and removal of erosion and sedimentation controls at project completion. CEC then submits the Certificate of Well Plugging, thus completing the well plugging and well site restoration requirements.