

**WEST VIRGINIA DIVISION OF ENVIRONMENTAL  
PROTECTION, OFFICE OF OIL AND GAS  
AND  
WEST VIRGINIA OIL AND GAS  
CONSERVATION COMMISSION**

**Policy Statement**

**Deep Well Drilling Procedures  
And Site Safety Plan Requirements**

The drilling of wells to new and untapped producing horizons has increased significantly in the past year. The recent trend involves the drilling of wells to depths of 10,000-14,000 feet with the potential for encountering very high pressures and volumes.

The Office of Oil and Gas and the Oil and Gas Conservation Commission have the required authority and believe that it is necessary to issue this Policy setting forth minimum requirements for necessary equipment and procedures that must be addressed in a Safety Plan ("Plan") which shall be submitted and approved prior to drilling a deep well. A deep well shall be any well which meets the definition as provided for in Chapter 22C, Article 9 of the West Virginia Code.

A site specific Safety Plan must be submitted with each deep well application or no later than one week prior to spudding. Approved Plans shall be maintained and available at the drilling rig at all times. The Safety Plan shall, at a minimum, address the following items:

**Siting Requirements**

1. The Plan shall indicate the location of the access road, pit, flare line, and nearby dwellings, and take into consideration the prevailing wind direction.

**Site Safety Plan**

1. A pre-spud meeting shall be held prior to beginning drilling operations and include personnel to be employed and involved in the drilling operations and including the district oil and gas inspector or other designated Office of Oil and Gas representative. The Plan shall list all persons involved in the pre-spud meeting.
2. The Plan should provide a system for the checking in of personnel and visitors to the drilling location to allow for an accurate headcount of personnel at any time.

3. The Plan shall include an evacuation plan for the removal of personnel from the drilling location and residents in the surrounding area should the need arise.
4. The Plan shall include a schedule for conducting safety meetings on a regular basis.
5. The Plan shall include a list of the nearest emergency response personnel and the phone numbers for each.

### **Casing Requirements**

1. The Plan shall provide details on the location of all freshwater, saltwater, oil and gas producing, hydrogen sulfide producing, "thief", and high pressure and volume zones known to the operator.
2. The Plan shall include a detailed casing and cementing program that employs a minimum of three strings of casing which are of sufficient weight and quality for the anticipated conditions to be encountered. The casing setting depths shall be sufficient to cover and seal off those zones as identified above.

### **BOP Requirements**

1. The Plan shall provide a listing of all BOP equipment with types, sizes and ratings to be utilized and available during the drilling of the deep well.
2. The Plan shall provide a procedure and schedule for testing of BOP equipment.
3. The Plan shall provide a schedule of when BOP equipment is to be installed and operational. BOP equipment shall be installed on the innermost string of casing after the surface casing.
4. The Plan shall include a listing of all approved BOP trained and actively certified personnel that will be involved in the drilling operation to assure that a trained person is present during the drilling operations.
5. The Plan shall include a system of maintaining a detailed record of significant drilling events such as lost circulation, hydrogen sulfide gas, fluid entry, abnormal pressures, etc. The district oil and gas inspector or the designated Office of Oil and Gas representative shall be notified as soon as possible of any unusual drilling events such as hydrogen sulfide gas or large kicks that occur during drilling operations. Any encounter of hydrogen sulfide gas shall require mandatory immediate notification of the Office of Oil and Gas.
6. The Plan shall include a schematic and description of the wellhead assembly to be placed on the well upon completion.

### **Well Flaring Operations**

1. The Plan shall specify the size, construction and length of the flare line and the method that will be used to anchor the flare line along with a description of the choke assembly.
2. The Plan shall specify the system to be used for lighting the flare and what will serve as back-up igniters. All gas diverted through the manifold shall be

burned. Notification shall be given to the local fire department prior to lighting of the flare if possible, otherwise as soon as possible.

3. The Plan shall specify the minimum distance of clearing of flammable material beyond the end of the flare line.

### Well Killing Operations

1. The Plan shall include an inventory of all materials that will be on-site for the mixing of mud. Inventory shall include the amount of mixed mud, mixed mud weight, amount of additional weighting material such as barite or bentonite and the volume of water for mixing.
2. The Plan shall specify the number and type of mixing units that will be utilized for the mixing of mud.

### Hydrogen Sulfide Operations

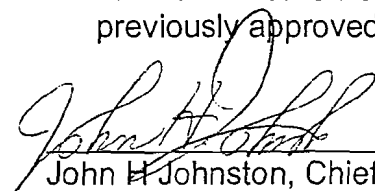
1. The Plan shall specify the equipment and methods to be utilized for the monitoring, detection and warning of hydrogen sulfide gas during drilling operations and shall specify the location of the monitoring and detection equipment.
2. The Plan shall provide a statement of the training to be provided or that has been provided for all personnel that will be involved in the drilling operations.
3. The Plan shall specify the personal protection equipment that will be maintained on location.
4. The Plan shall specify the method of notification of hydrogen sulfide presence and how access will be controlled.

### Notification

1. The Plan shall specify a method of notification to all residents and emergency personnel that may be affected by specific events during the drilling process. Such events may include the presence of hydrogen sulfide, flaring, etc.

### Plan Modification

1. The Office of Oil and Gas must approve all changes and modifications to previously approved plans.

  
John H. Johnston, Chief, WVOOG

Date: 3/20/01

  
Barry K. Lay, Commissioner, WVOGCC

Date: 3/22/01