

Regulatory Procedures & Responsibilities

Development of a natural gas well begins long before a drilling rig comes onto a location. It can take Seneca Resources Corporation three years or longer to go from the preliminary stages of 3D-seismic, geology images, to producing natural gas wells. This document focuses on the regulatory and operational processes specific to the development of an average-size, Seneca Resources well pad. The stakeholders involved in the life of the well are outlined throughout the timeline including: landowners, The Pennsylvania Department of Environmental Protection (DEP), local government and a variety of other agencies.

The natural gas industry is highly regulated from site construction to production and pipeline transportation.

Below are the state and federal organizations that Seneca works with to comply with all of these regulations.



























^{*} Timeline is a base estimate for an eight-well pad site. Timing could change differently based on several variables.



Natural Gas Well *TIMELINE**





275 DAYS



Drilling

Completions

*Assuming 8 wells per pad

hydraulic fracturing

▶ Final commissioning

▶ Report well record ●

reports/operator's

Disclose hydraulic

on fracfocus.com

Submit well completion

stimulation record

Production, Long-Term Operation & Maintenance

110 DAYS

100 DAYS

100 Days

▶ Perforation and

Drill-out

Flowback

Completions

1-30+ Years

Seismic permits

attained and data collected

Land Leasing & Title Work

Environmental Work

- ▶ Lease(s)/titles/ROW
- access acquired from
- landowners
- - Project siting
 - Wetlands search Special concern species
 - /resources search

Land Owners ● Local Officials ● PA Department of Environment Protection ● Other Agencies ●

- ▶ Water supply search ● specific permits, e.g.

65 Days

Design & complete DEP Erosion & Sedimentation Control **General Permit (ESCGP)**

- ▶ Submit Act 14 notification indicating intent to apply for coverage under the ESCGP
- for earth disturbance ▶ Archaeological search ● ▶ Apply for additional site
 - Zoning permits
 - ▶ General permits ●
 - Joint permit

100 Days

DEP Review & Approval of Earth Disturbance Permit

- ▶ Coordinate emergency response planning at unconventional well site
- per Act 9 of 2012

50 Days

Complete water sample

within 3,500 feet of

proposed well site

notifications • • •

▶ Send drilling permit

60 Days

occur throughout the timeline.

improvement plans

(patching, restoration, etc.)

E&S/PCSM • • •

7 Days 7-Day DEP Notice

In some cases, preparing and improving local roadways and

well pad access roads may be necessary. These preparations

Well Site Planning - Heavy hauling-transportation and Highway

Permitting - Project plans including upgrades and improvements,

▶ Long-Term Operations - Construction of highway maintenance items

Heavy hauling excess maintenance agreements/ heavy user

maintenance plans/ road bonds & sureties • •

Site Construction - Construction of pre-emptive highway improvements

of Earthwork

118 DAYS

21 Days

Flag Clearing Limits, Tally Trees, Clear Timber

90 Days

Site Construction

- Install perimeter stormwater runoff facilities and sediment control
- ▶ 3-day bulk earth
- moving notice Site inspection of stormwater runoff
- facilities and sediment control • • Install well cellars and
- production flowlines/ equipment

110 Days

Drilling *Assuming 8 wells per pad

Clean up ▶

- ♦ Well is spud and conductor casing is installed
- Surface casing cemented ▶ Intermediate casing cemented
- ▶ BOP installed
- Well drilled to total depth ▶ Well logging
- Production casing
- Sewage on-site permits filed
- Submit and have approved Water Management Plan, including a water reuse plan • fracturing chemicals
- ► Hazardous materials notice/reporting ●
- Drilling Commencement Notice

Wells in service to 30+ Years

Well site restoration & well servicing operations are ongoing

Production reporting

- Chemical report

After 30+ Years

Well no longer productive

- Well is plugged ▶ Site is restored to approximate
- original contours and use • •

- * Timeline is a base estimate for an eight-well pad site. Timing could change differently based on several variables.
- ** Timeline not to scale; it is for visual representation only.
- *** Phases of the natural gas development process may not always happen in immediate sequence.



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