



Oil and Gas Management

Online Mechanical Integrity Assessment Training Coalbed Methane Example

PADEP: Bureau of Oil and Gas Planning and Program
Management

Division of Well Plugging and Subsurface Activities

Form A: Coalbed Methane Example

Form A Use with Examples

- Coalbed methane (CBM) wells are unique in that they typically are completed in the fresh groundwater interval
- For the purposes of the MIA Program, CBM wells are classified as gas wells

Form A: Coalbed Methane Example

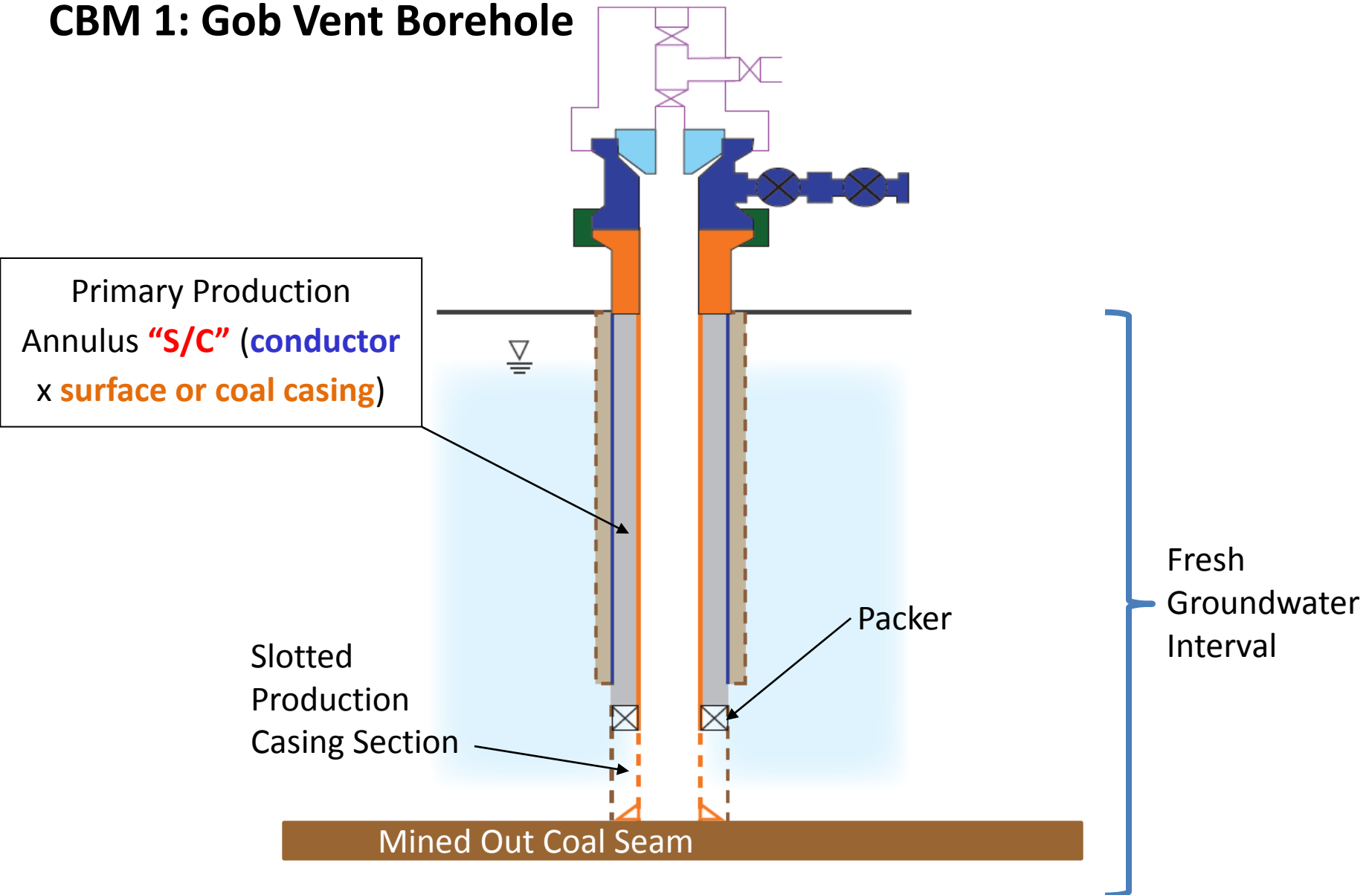
Form A Use with Examples

- ❑ Four well designs are common:
 - Gob vent boreholes
 - Vertical vent boreholes
 - Wells with separate access and production holes
 - Cased-hole completions producing from multiple seams

- ❑ For CBM wells with separate access and production holes, only the production well requires inspection, although it is recommended that the operator verify the integrity of the access hole as well

Form A: Coalbed Methane Example

CBM 1: Gob Vent Borehole



Form A: Coalbed Methane Example

CBM 1: Gob Vent Borehole

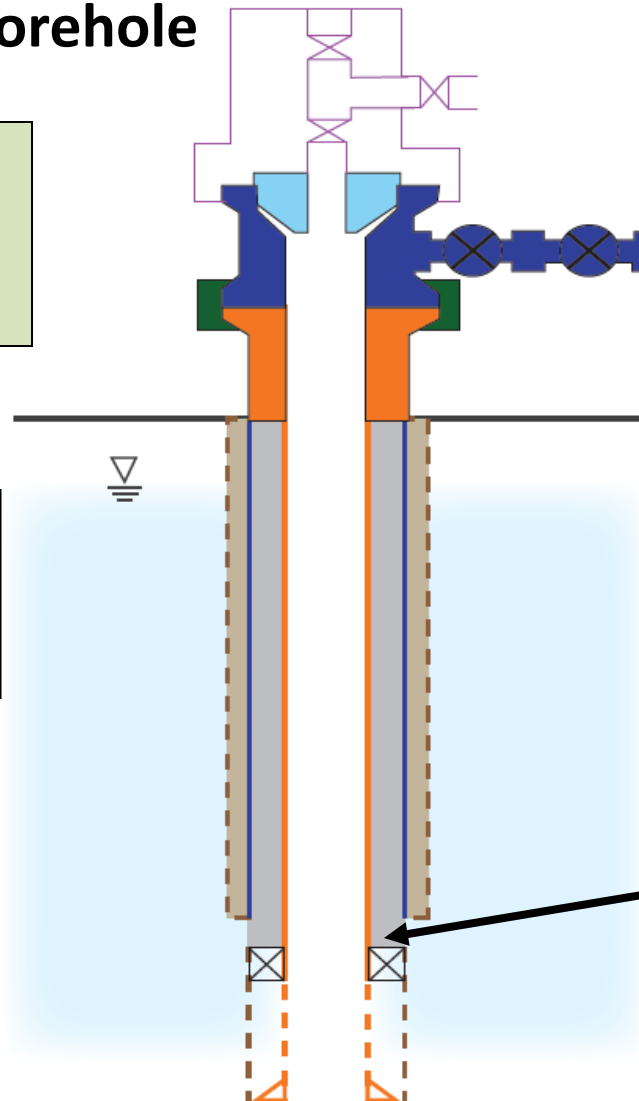
Sections 18 and 19:
Confirm safe venting (if escaping gas is noted) and complete corrosion inspection

Sections 15, 16, and 17:
Inspect for surface discharges/annular flows of gas, liquid hydrocarbons, or non-freshwater

Section 13: Primary Production Gas Pressure (measured inside primary production casing)

Section 14: Primary Production Annulus "S/C": Shut-in (pressure) or Venting (flow rate)

Mined Out Coal Seam



Form A: Coalbed Methane Example

CBM 2: Vertical Vent Borehole

Surface or Coal Annulus
"S/C" (conductor x surface
or coal casing)

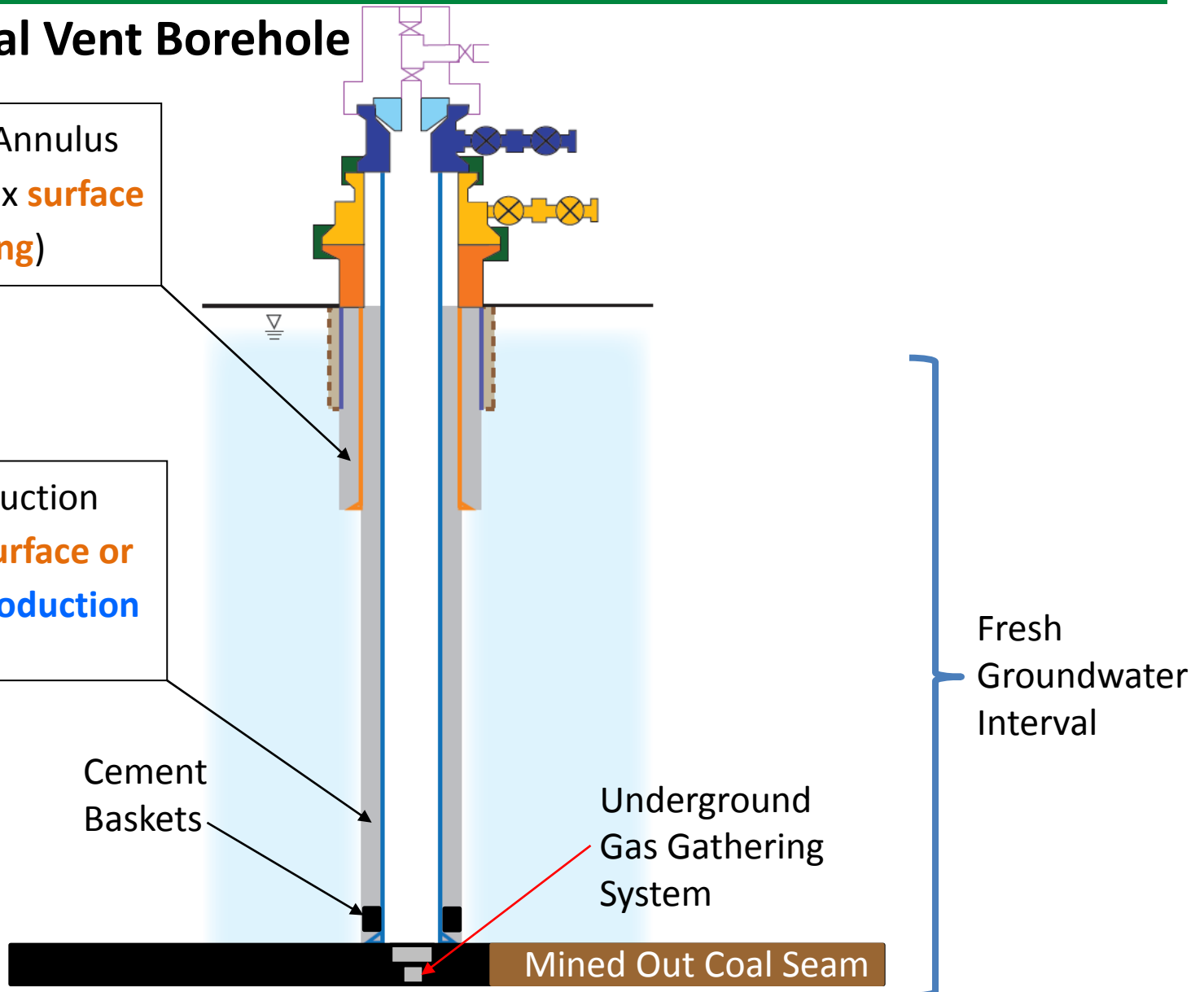
Primary Production
Annulus "P" (surface or
coal casing x production
casing)

Cement
Baskets

Underground
Gas Gathering
System

Mined Out Coal Seam

Fresh
Groundwater
Interval



Form A: Coalbed Methane Example

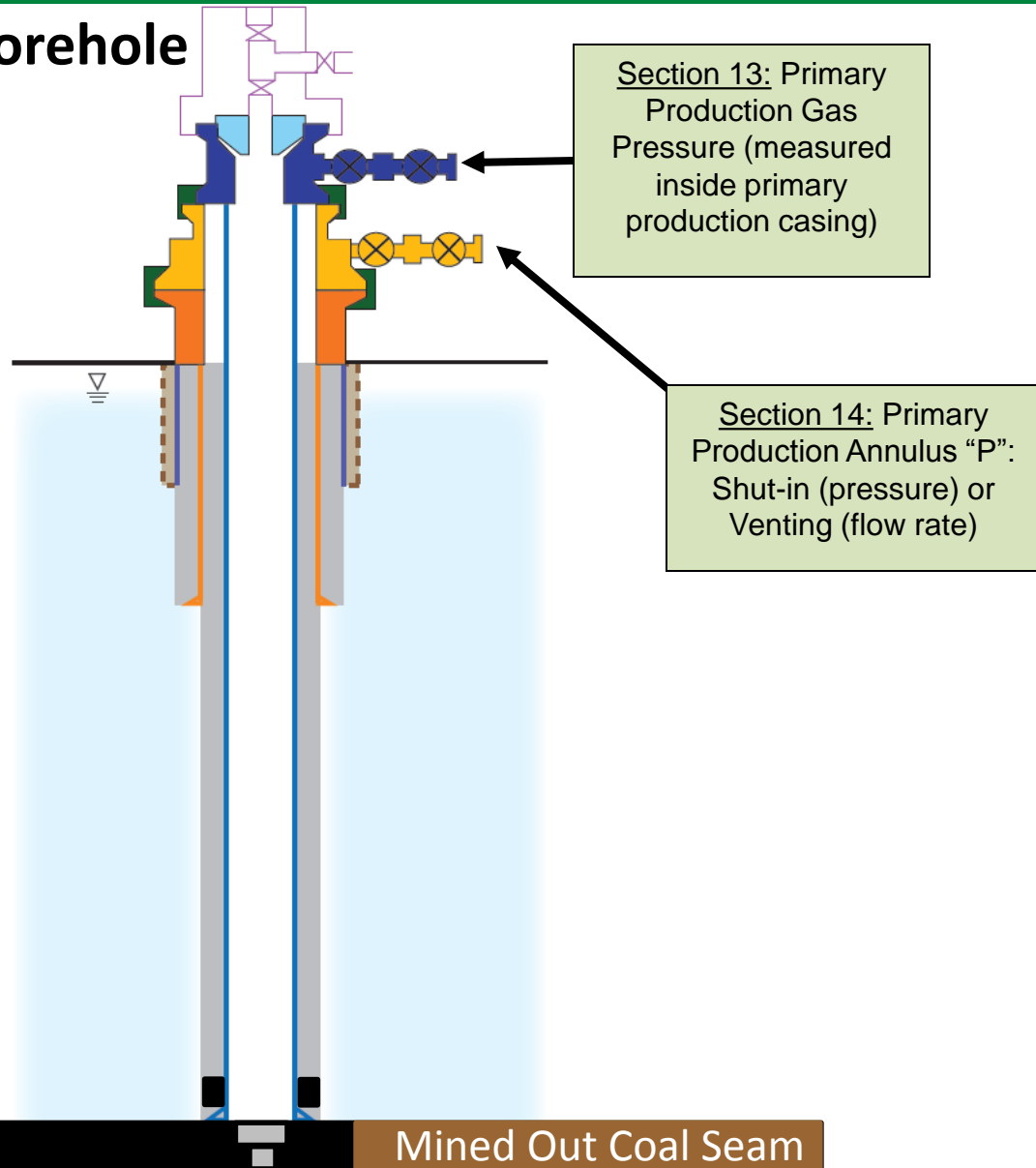
CBM 2: Vertical Vent Borehole

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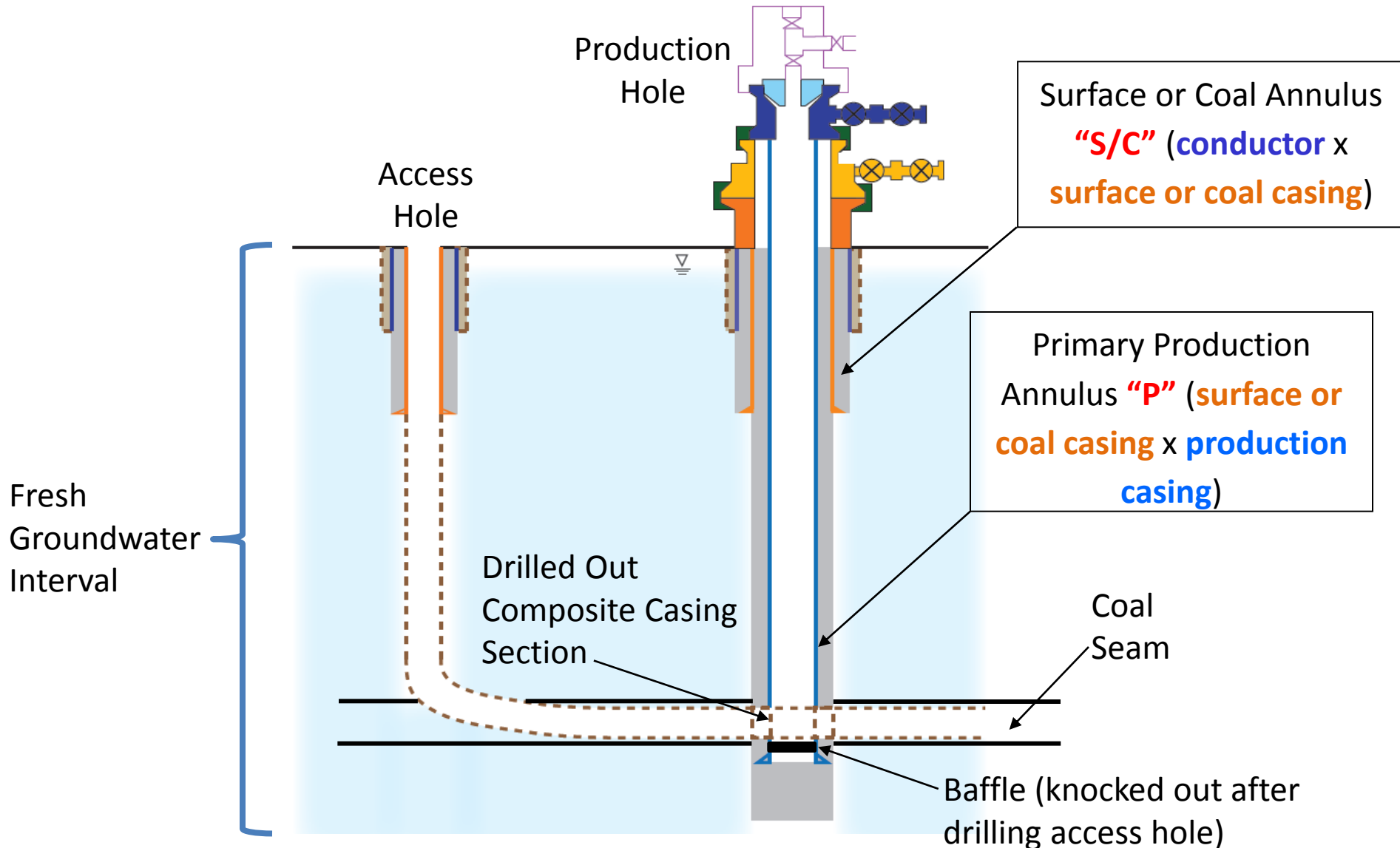
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Mined Out Coal Seam

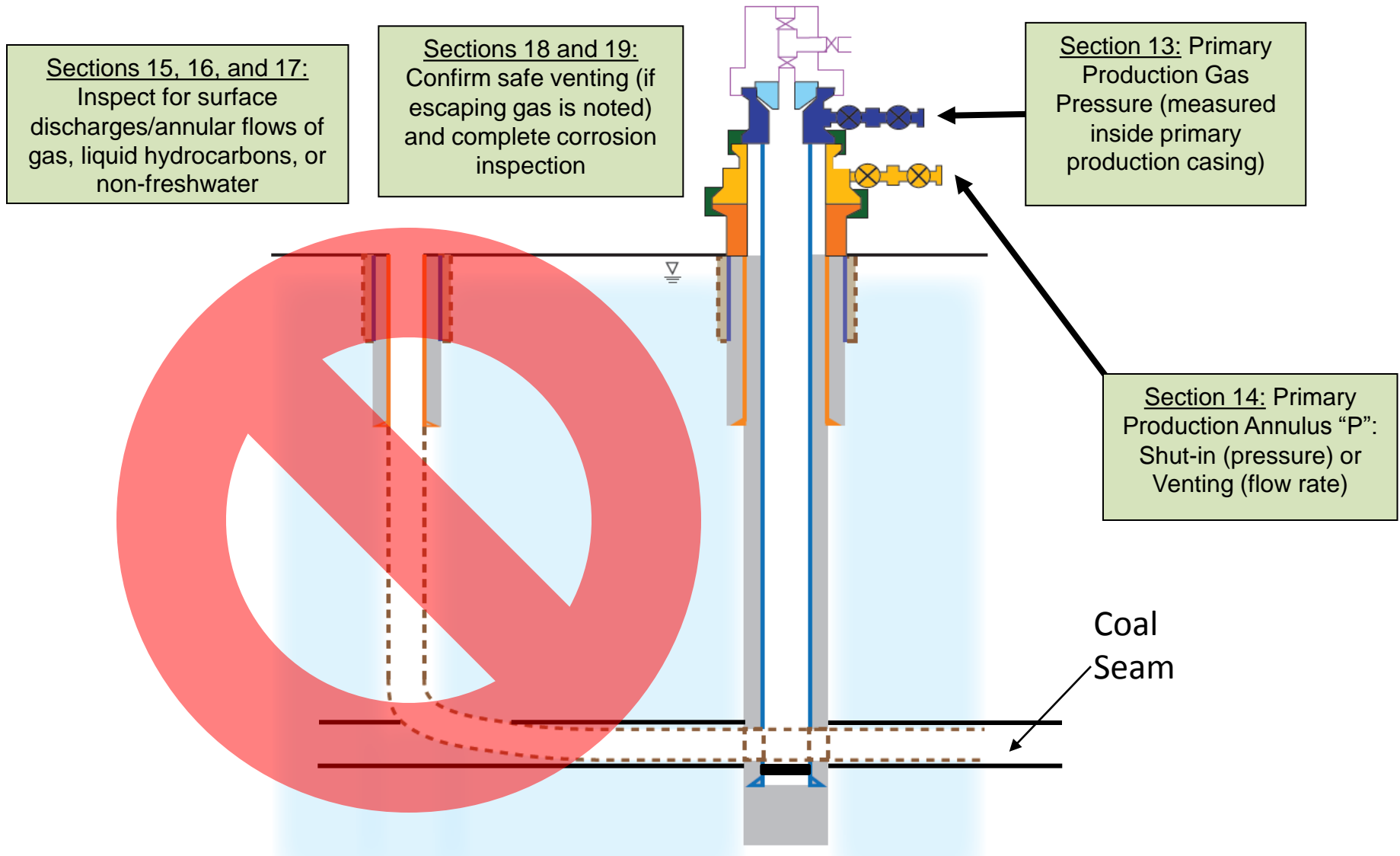
Form A: Coalbed Methane Example

CBM 3: Well with Separate Access and Production Holes



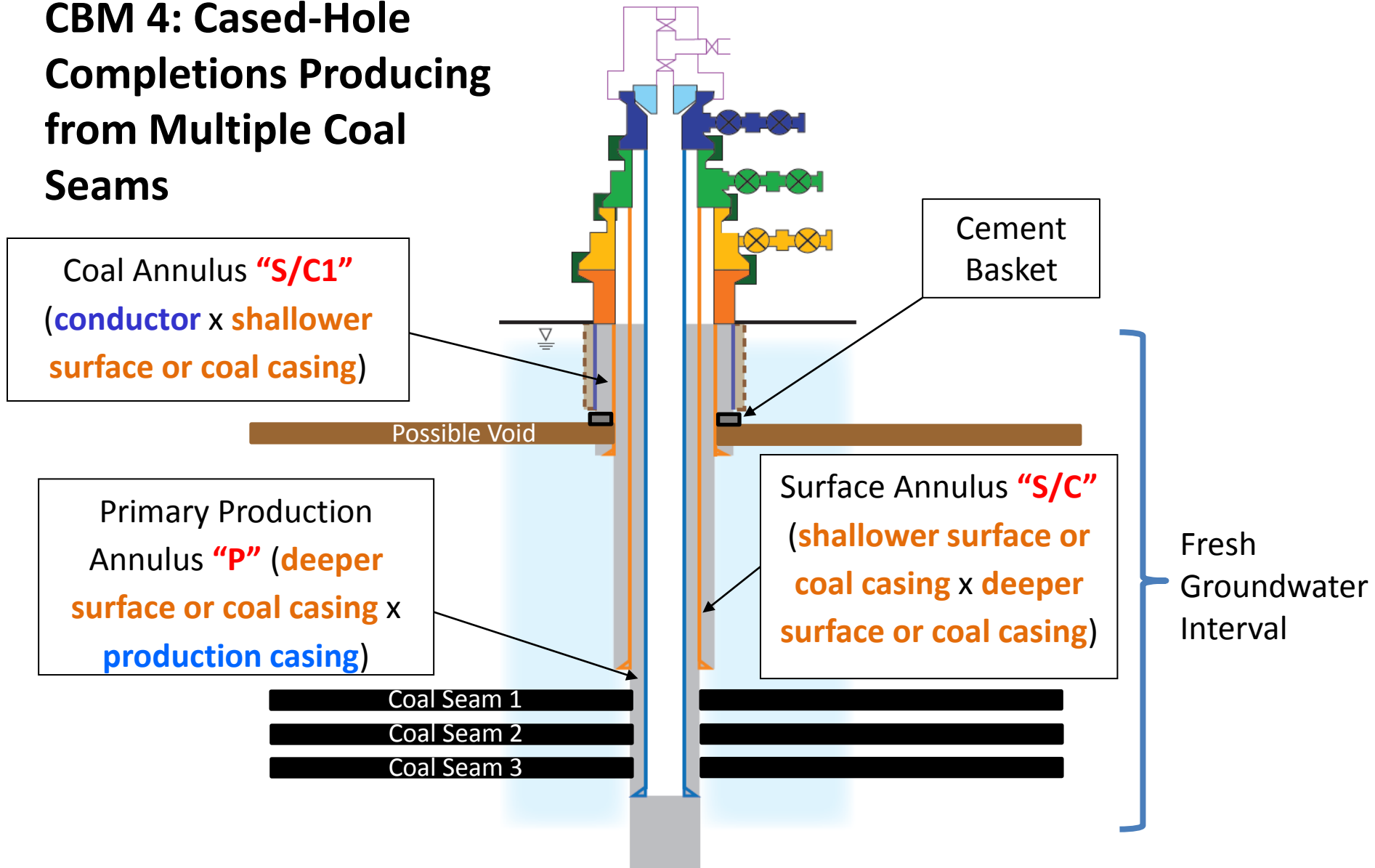
Form A: Coalbed Methane Example

CBM 3: Well with Separate Access and Production Holes



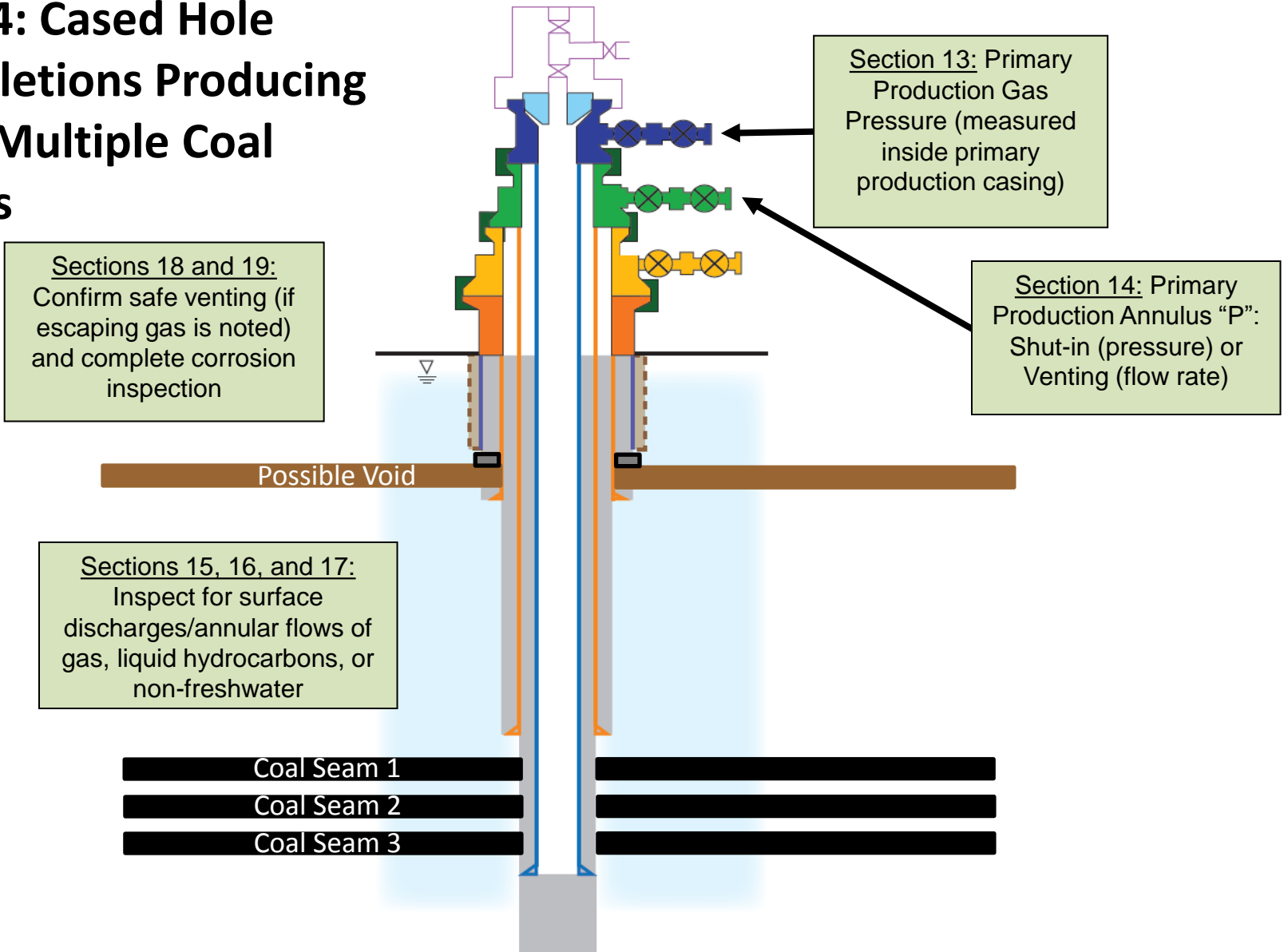
Form A: Coalbed Methane Example

CBM 4: Cased-Hole Completions Producing from Multiple Coal Seams



Form A: Coalbed Methane Example

CBM 4: Cased Hole Completions Producing from Multiple Coal Seams





pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Oil and Gas Management



Thank You

For questions, please contact:

Subsurface Activities Section

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