

# *318A: GWA Wellbore Spacing Units*

October 24, 2015



**COLORADO**  
Oil & Gas Conservation  
Commission

Department of Natural Resources

Matthew J. Lepore  
Director

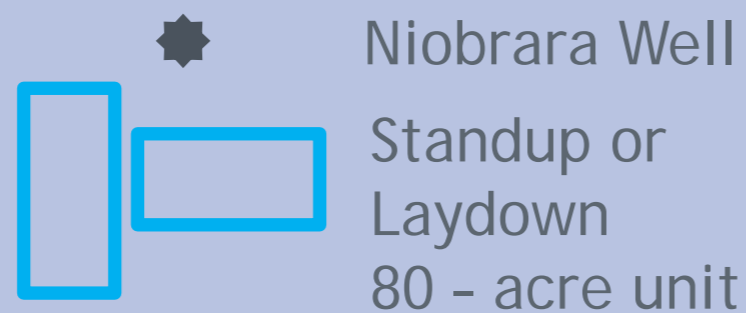
# *Well Spacing Evolution in the Denver Julesburg Basin*

1. 1992 - 1997: Niobrara Spacing
2. 1998 - 2004: Greater Wattenberg Area ("GWA") Well Location Rule 318A
3. 2005 - 2010: Revised GWA Well Location Rule 318A
4. 2011 - present: GWA Horizontal Wellbore Spacing Units for HZ Niobrara wells
5. Process to create GWA Wellbore Spacing Units
6. 2017 - What is the future of GWA Horizontal Wellbore Spacing Units?

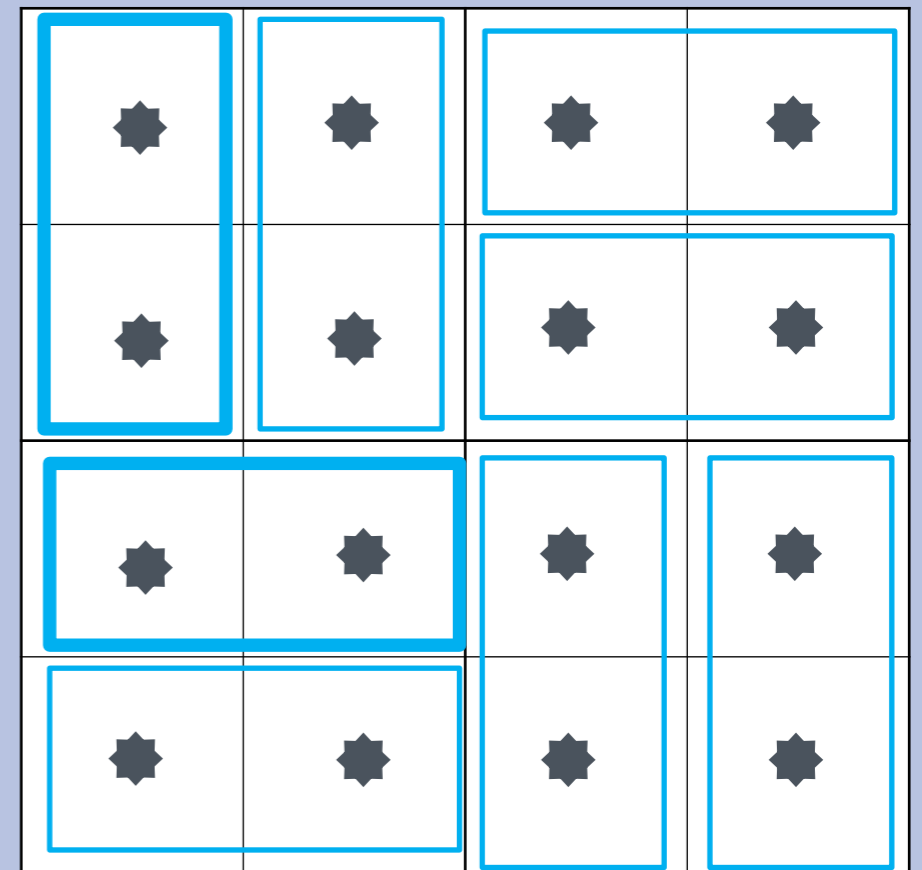
# 1. Niobrara Spacing (1992)

1. Commission order created 80 acre drilling and spacing units - standup or laydown
2. 2 wells per unit, each in center of "40 acre tract" (= quarter-quarter) with 200' tolerance
3. Center with 200' tolerance = 460' from quarter-quarter section boundary

➤ Established the 460' distance for including lands within a wellbore unit



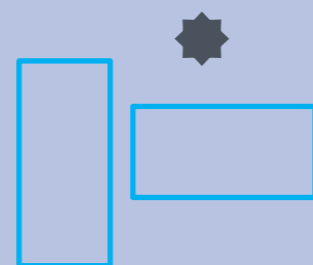
Development of a 640 acre section



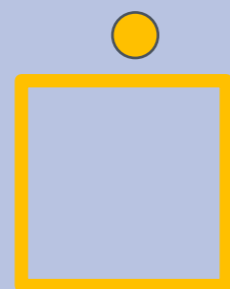
## 2. GWA Well Location Rule 318A (1998)

1. Rule provided for a 5<sup>th</sup> Niobrara well in the center of each quarter section
2. Designate a 160 acre unit for the single well
3. Created through APD process for the "Five-Spot Well"
4. The 160 acre unit "overlays" the existing 80 acre units

➤ Established the superposition of a "unit" for one well over existing units

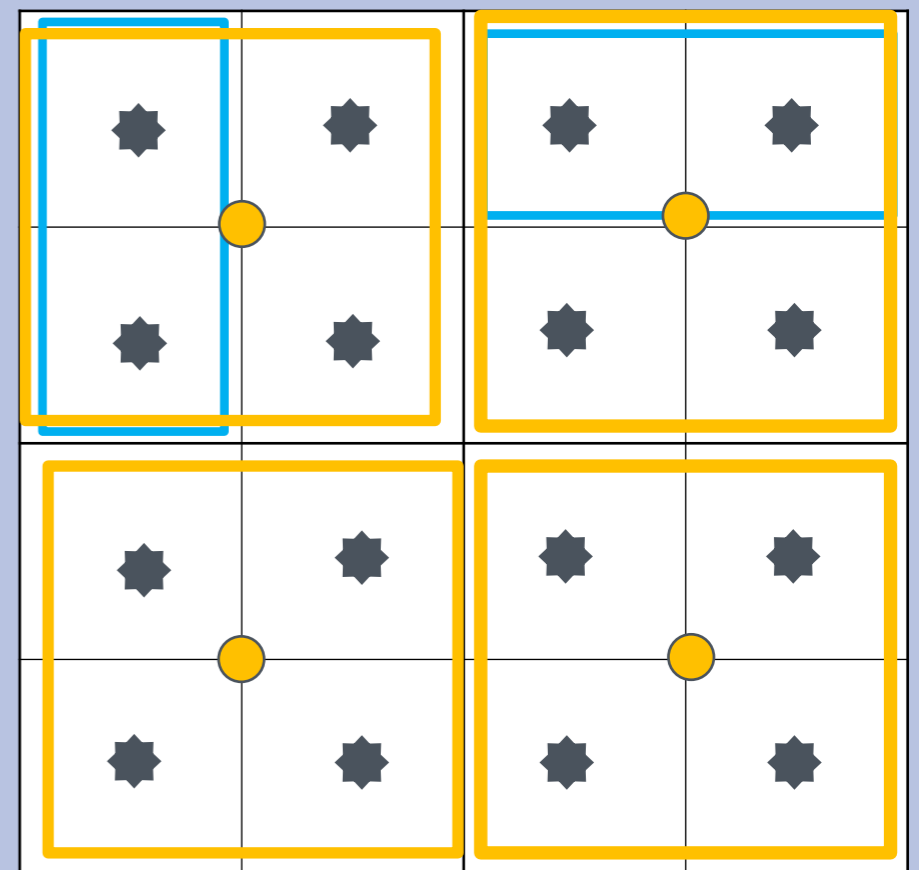


Niobrara Well  
Standup or Laydown  
80 - acre unit

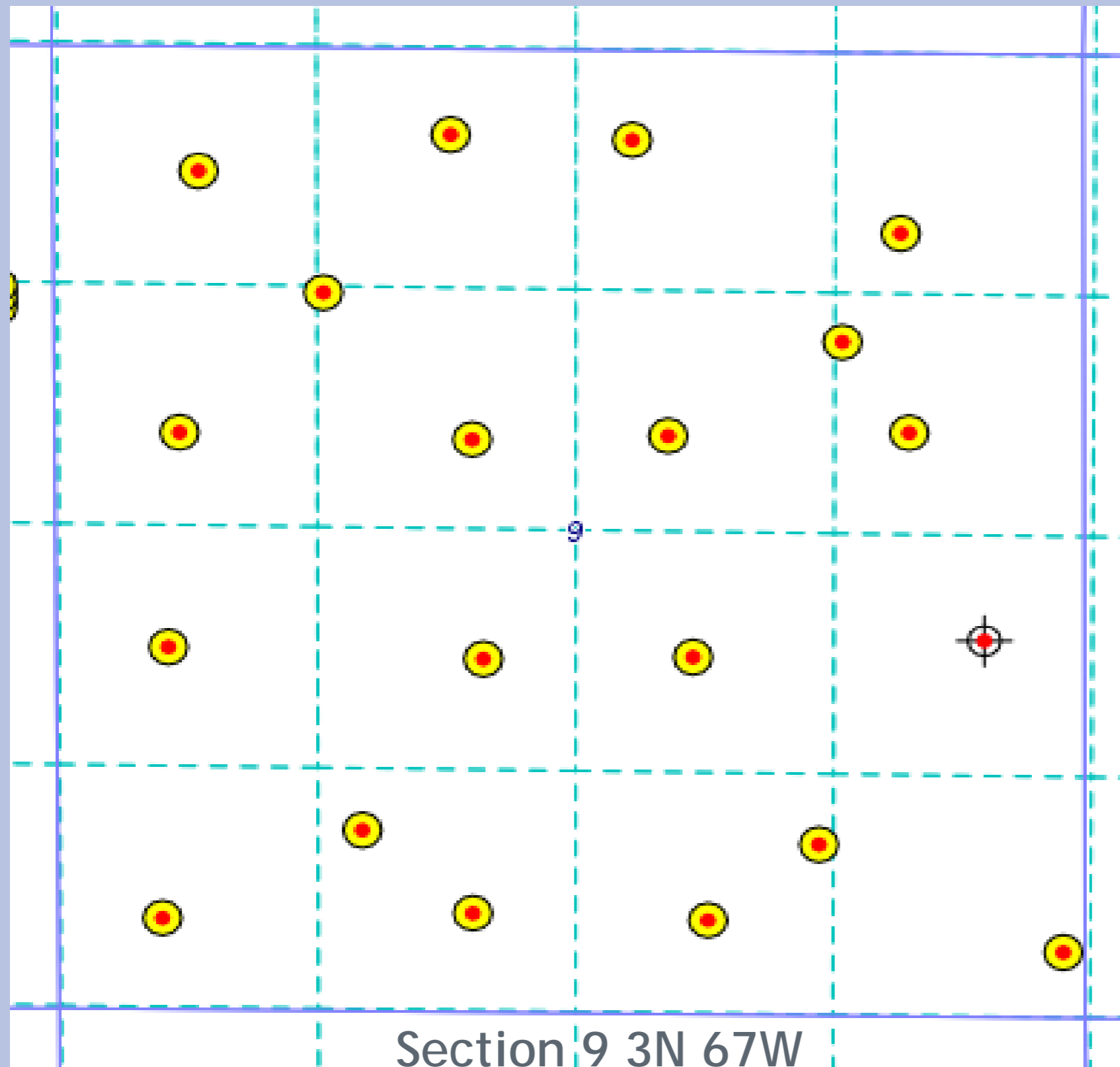


Niobrara 5-spot Well  
160 - acre unit

Development of a 640 acre section



## 2. Niobrara Development (circa 1998)

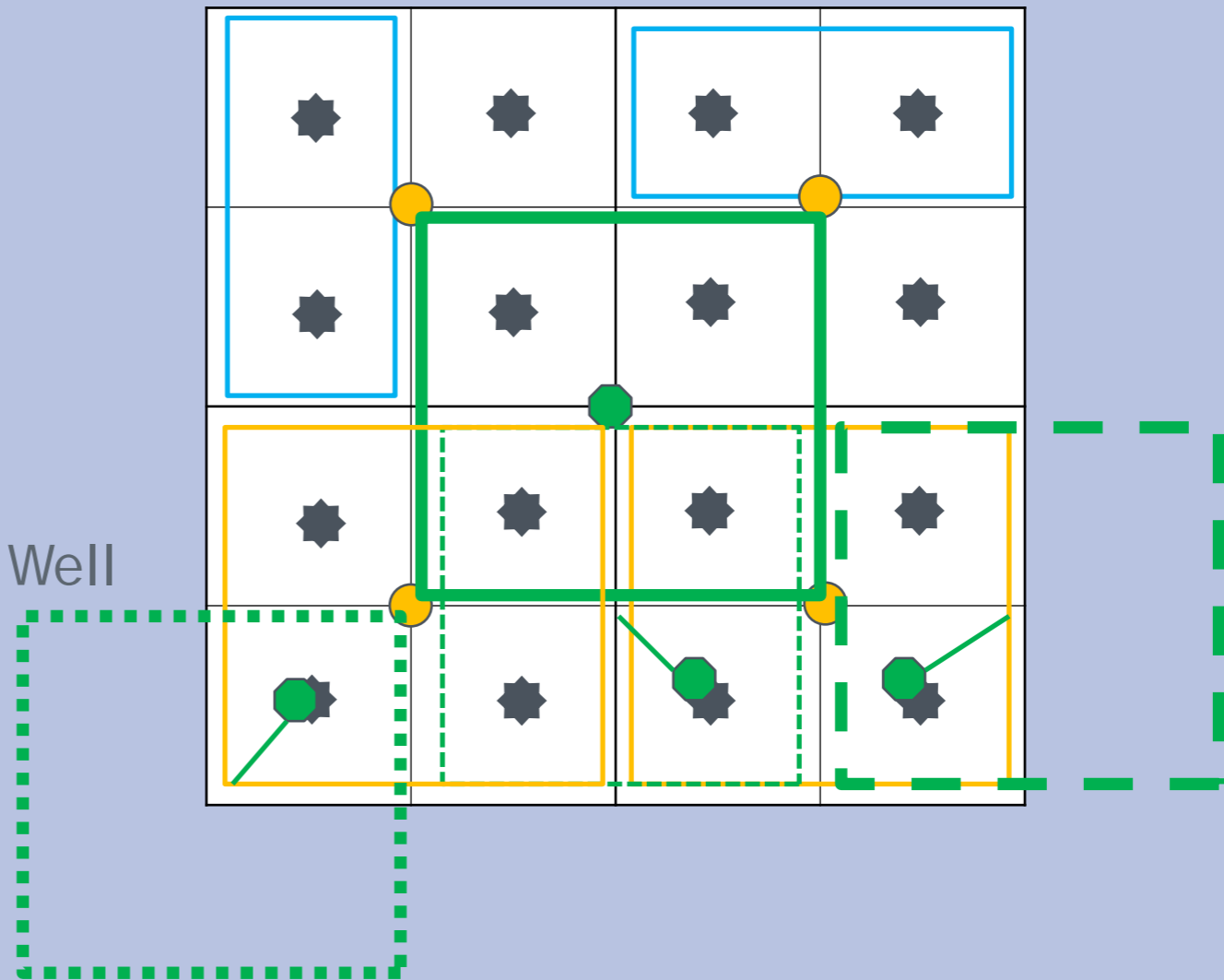
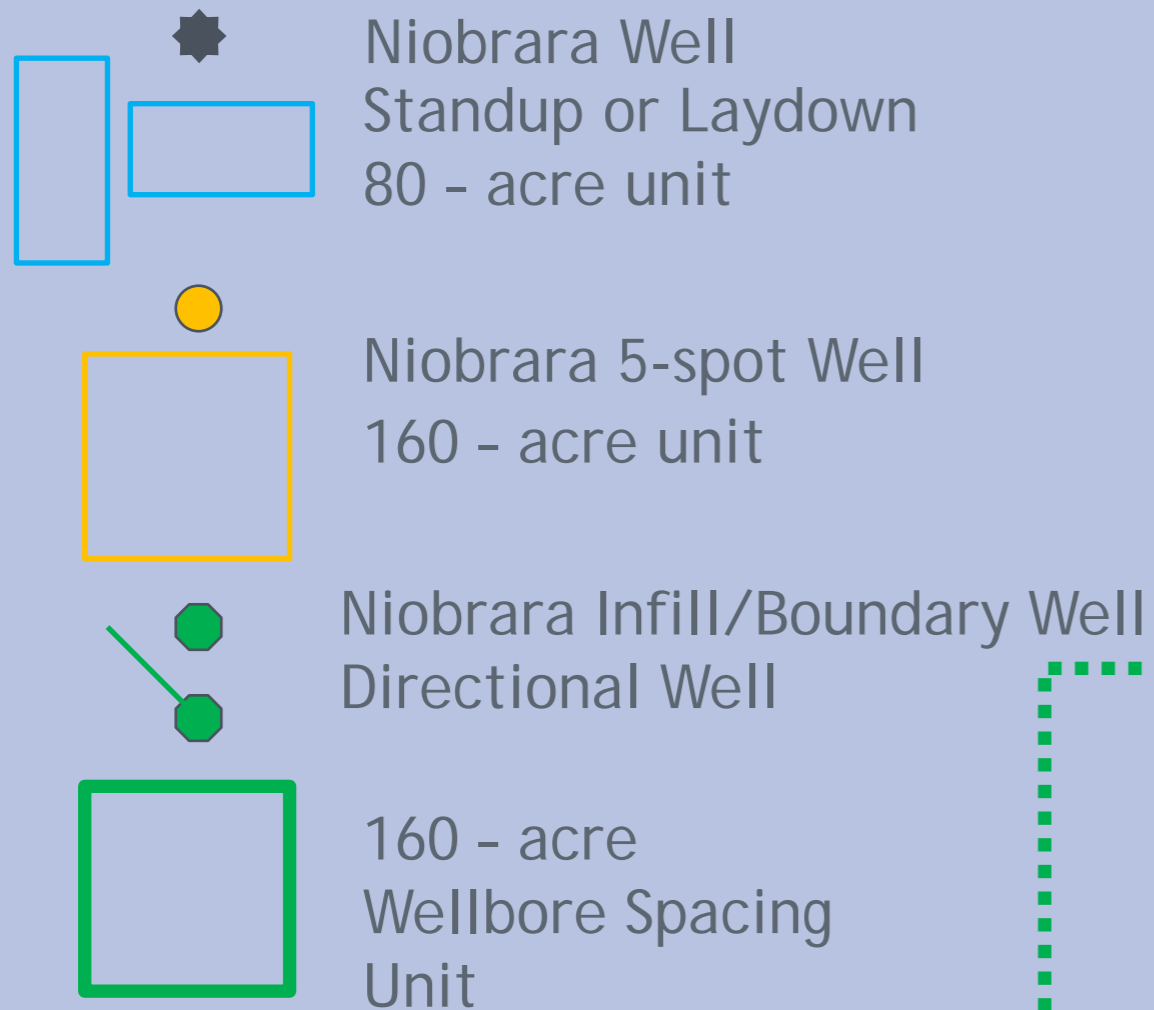


1. Wells drilled on 80 acre drilling and spacing units - standup or laydown - 2 wells per unit
2. "Five-Spot Wells" drilled at center of Quarter Section in 160 acre unit

### 3. *GWA Well Location Rule 318A (2005)*

1. Rule provided for “Infill” and “Boundary” Niobrara wells.
  2. Creates a 160 acre “wellbore spacing unit” for a single well:
    - A. Includes all quarter-quarters within 460’ of the well completion;
    - B. Requires notice to other Owners;
    - C. Approved through the APD process (no Commission hearing): and
    - D. The 160 acre unit “overlays” existing units and extends beyond a single section.
- **Established the “wellbore spacing unit” procedure to administratively create units, which will be discussed.**

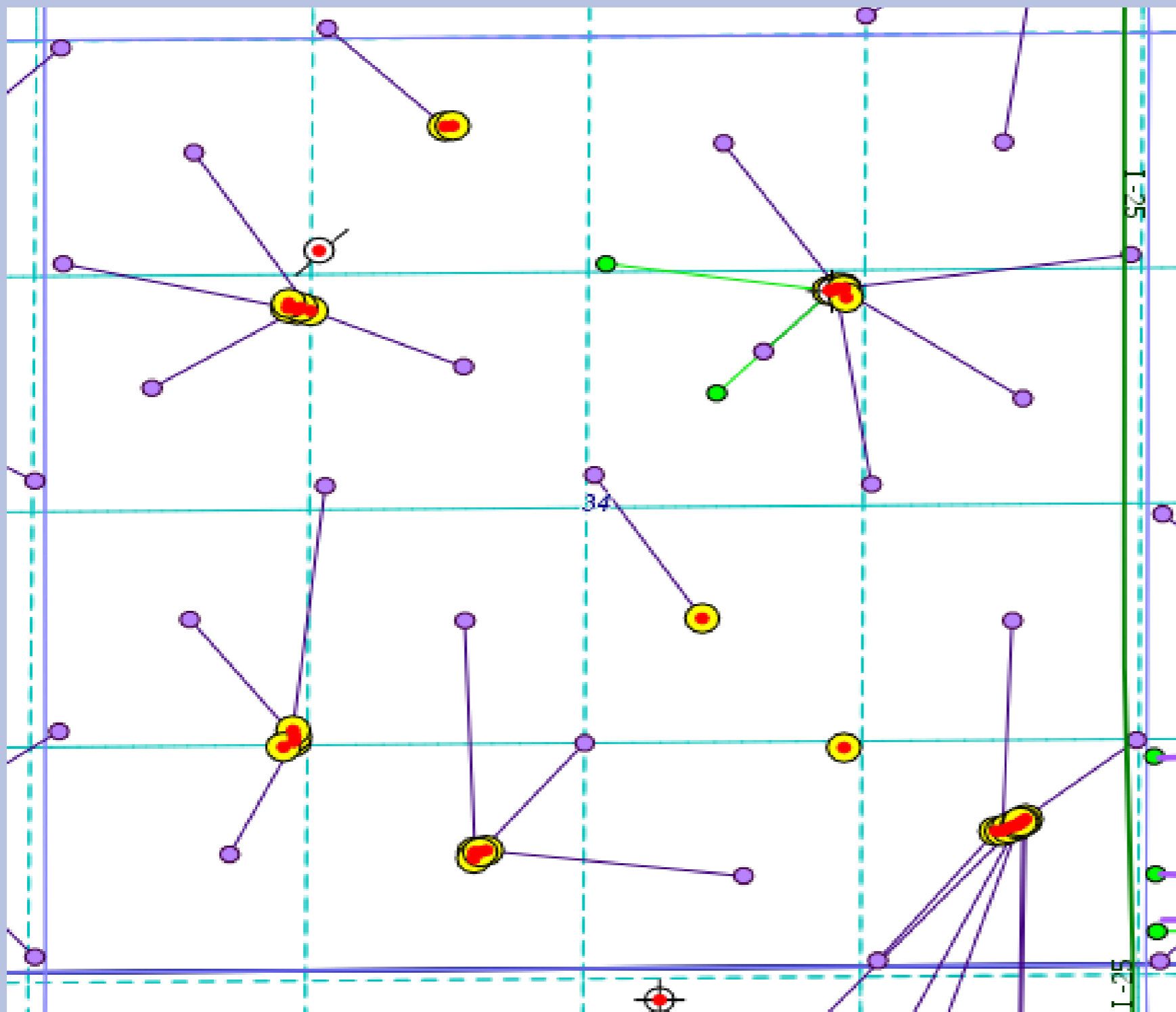
# 3. GWA Well Location Rule 318A (2005)



Development of a 640 acre section

# 3. Niobrara Development (circa 2005)

Section 34 3N 68W



1. Wells drilled on 80 acre drilling and spacing units - standup or laydown - 2 wells per unit
2. "Five-Spot Wells" drilled at center of Quarter Section in 160 acre unit
3. "Infill" and "Boundary" wells with 160 acre "wellbore spacing units"

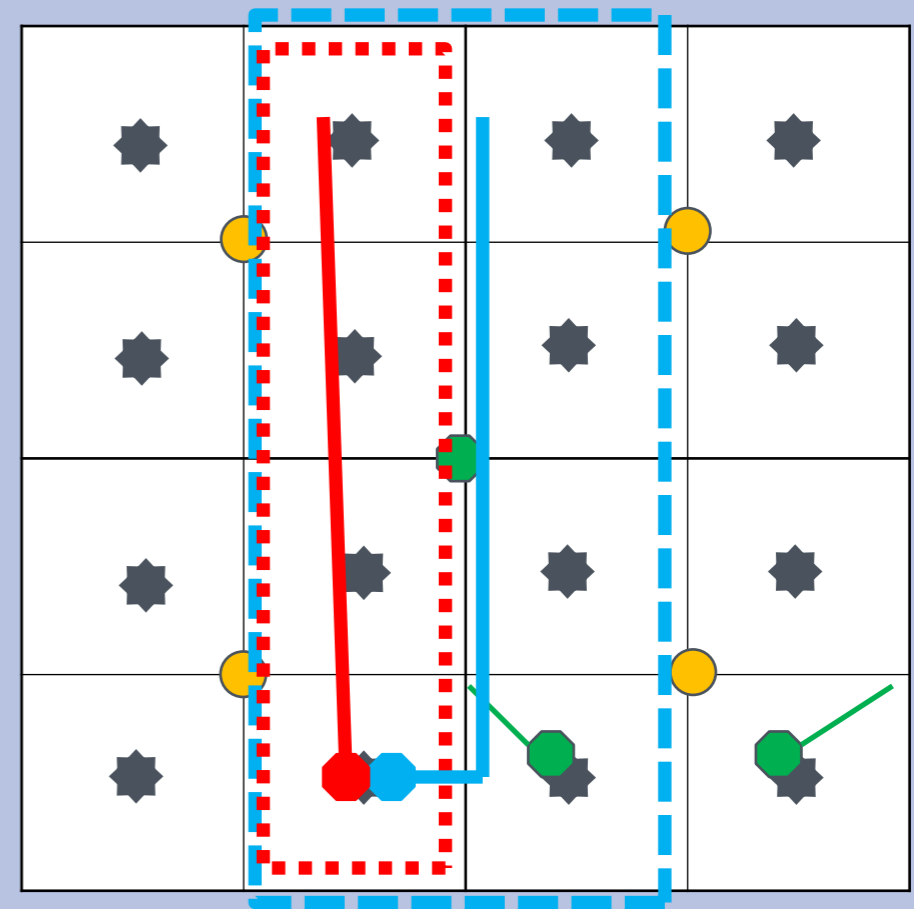


## 4. *GWA Well Location Rule 318A (2011)*

1. Rule provided for Horizontal Wellbore Spacing Units for HZ Niobrara wells.
2. Creates a “horizontal wellbore spacing unit” for a single horizontal well:
  - A. Includes all quarter-quarters within 460’ of the well completion;
  - B. Unit sizes and orientations vary according to HZ wellpath;
  - C. Requires notice to other Owners;
  - D. Created through the APD process (no Commission hearing); and
  - E. The units can “overlay” the existing units.

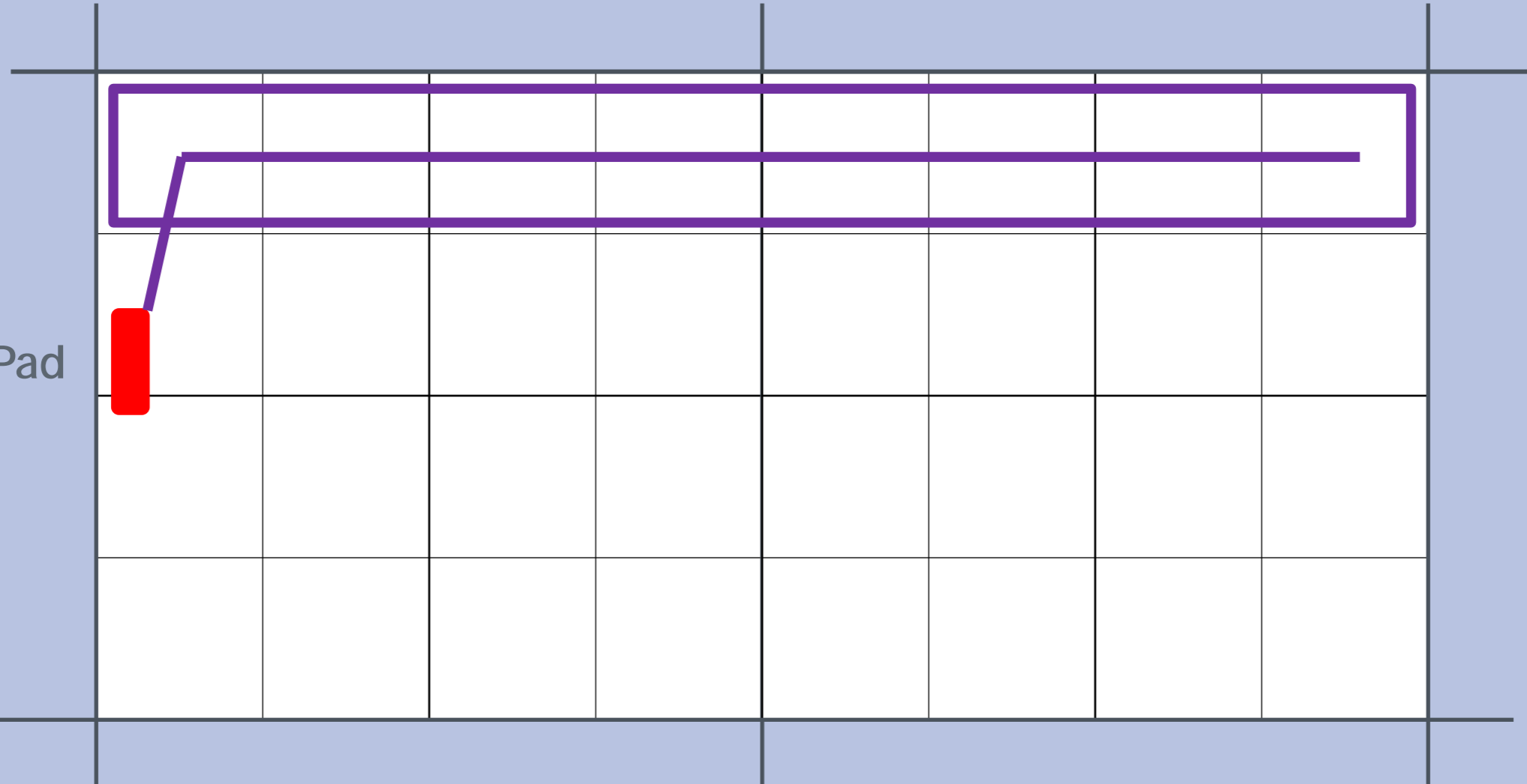
# 4. GWA Well Location Rule 318A (2011): Horizontal (HZ) Wellbore Spacing Units

- ★ Niobrara 80 - acre unit Well
- Niobrara 5-spot Well
- Niobrara Infill/Boundary Well  
Directional Well
- Niobrara Horizontal Well  
160 - acre HZ Wellbore Spacing Unit
- Niobrara Horizontal Well  
320 - acre HZ Wellbore Spacing Unit



Development of a 640 acre section

# 4. Developing HZ Wellbore Spacing Units

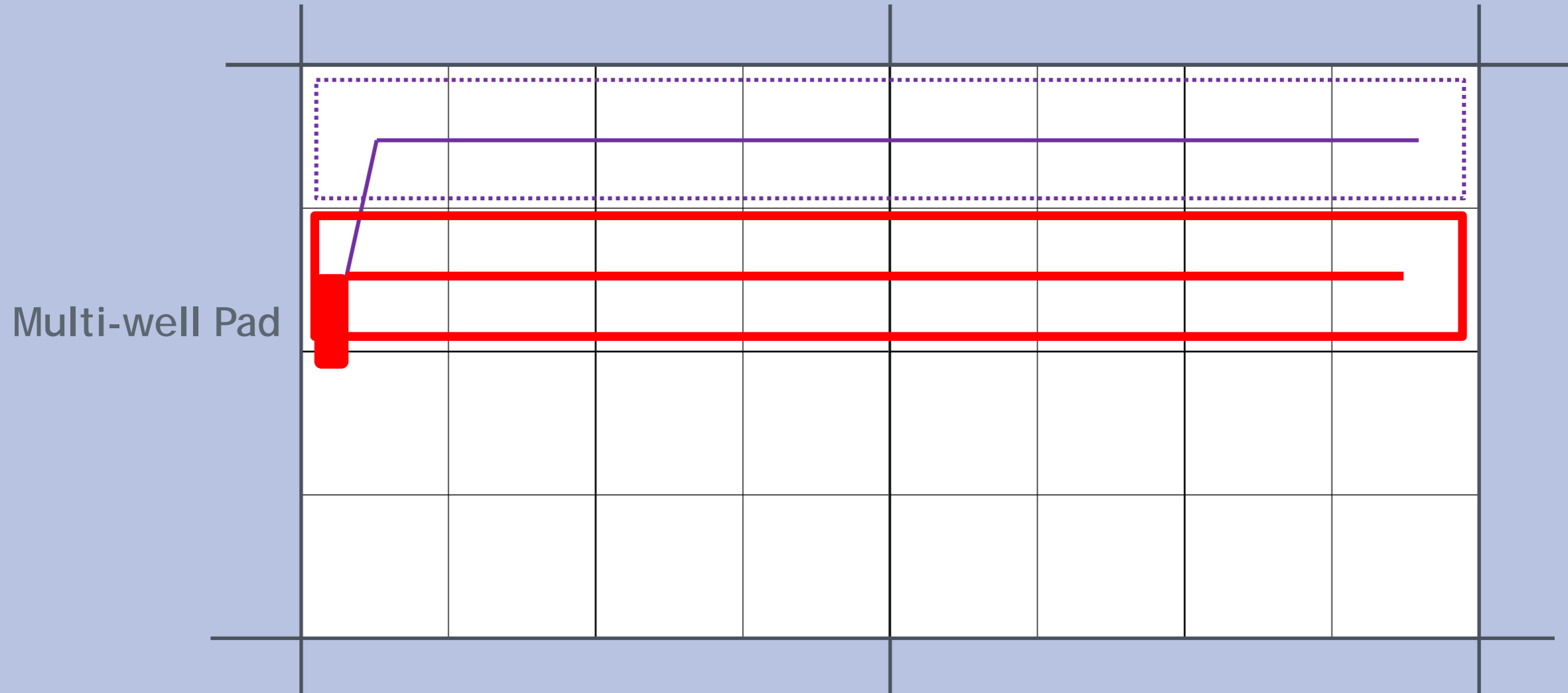


Multi-well Pad



HZ Wellbore in 320 - acre Wellbore Spacing Unit

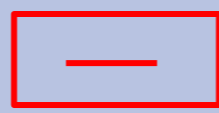
# 4. Developing HZ Wellbore Spacing Units



Multi-well Pad

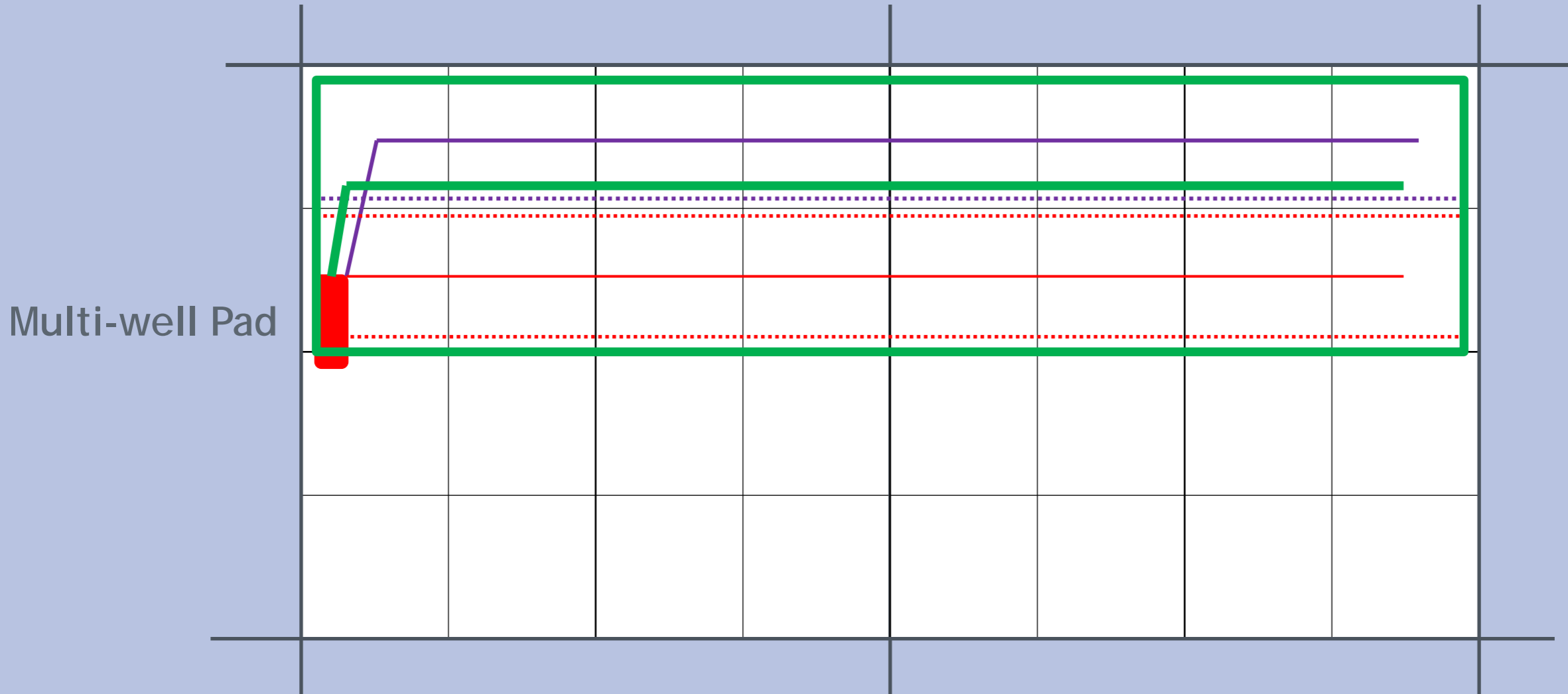


HZ Wellbore in 320 - acre Wellbore Spacing Unit



HZ Wellbore in 320 - acre Wellbore Spacing Unit

# 4. Developing HZ Wellbore Spacing Units



Multi-well Pad



HZ Wellbore in 320 - acre Wellbore Spacing Unit



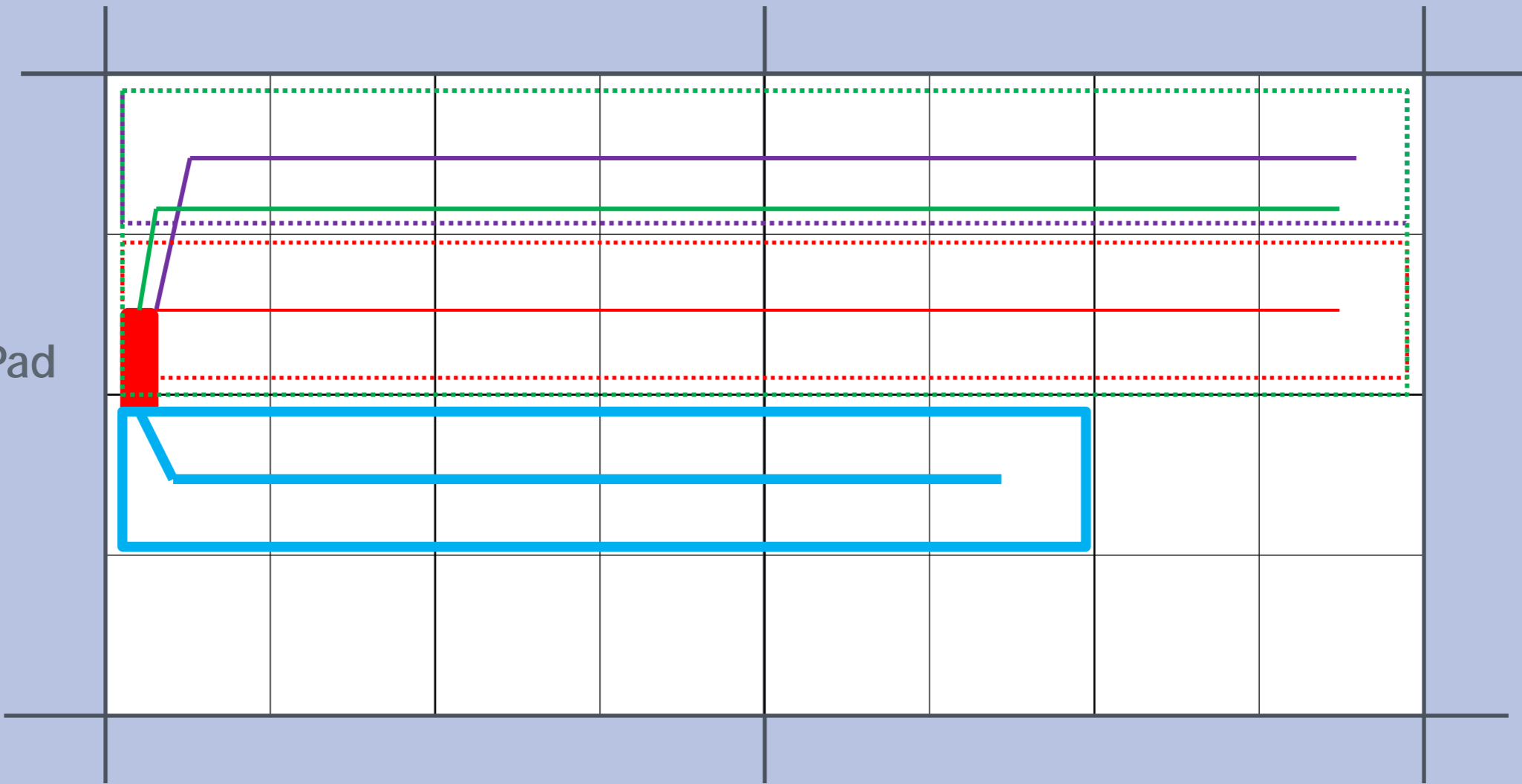
HZ Wellbore in 320 - acre Wellbore Spacing Unit



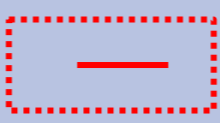
HZ Wellbore in 640 - acre HZ Wellbore Spacing Unit

# 4. Developing HZ Wellbore Spacing Units

Multi-well Pad



HZ Wellbore in 320 - acre Wellbore Spacing Unit



HZ Wellbore in 320 - acre Wellbore Spacing Unit

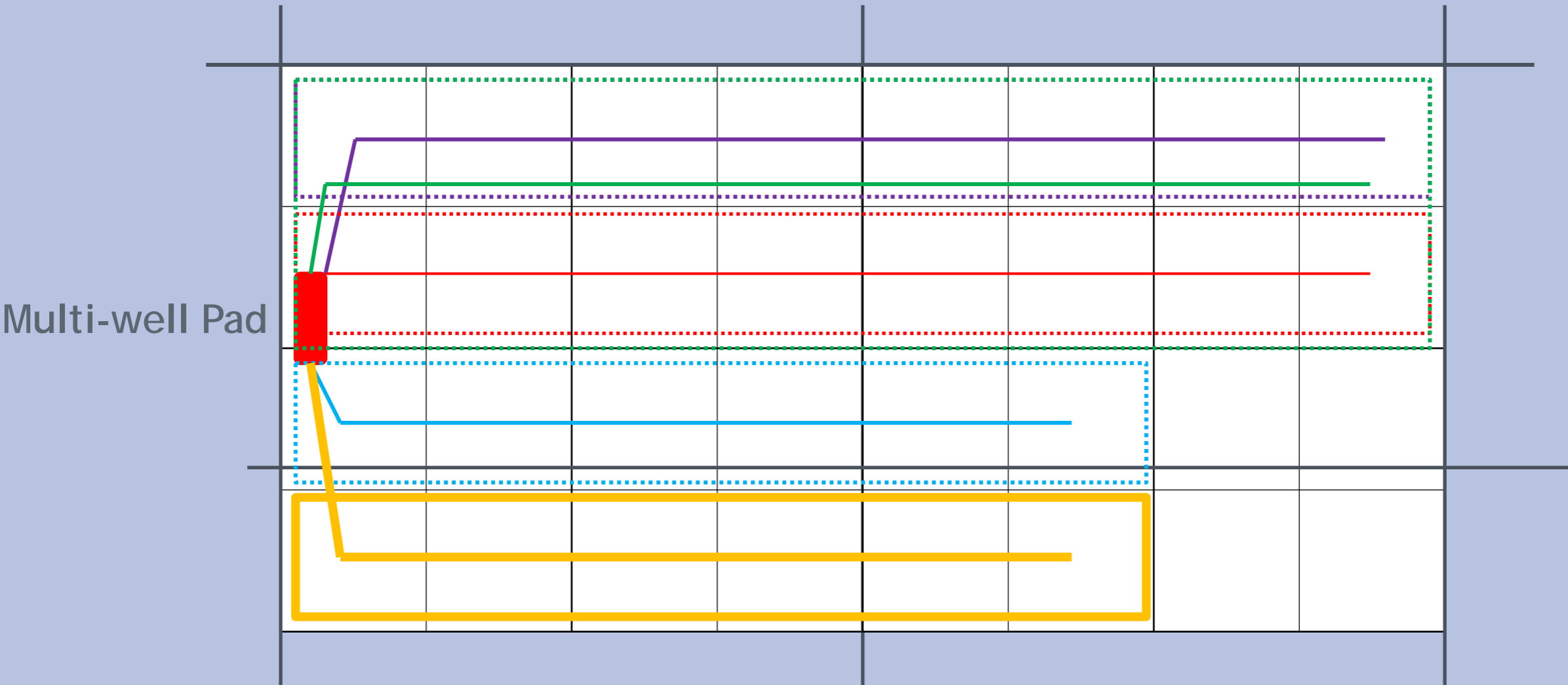


HZ Wellbore in 640 - acre HZ Wellbore Spacing Unit



HZ Wellbore in 240 - acre HZ Wellbore Spacing Unit

# 4. Developing HZ Wellbore Spacing Units



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HZ Wellbore in 320 - acre Wellbore Spacing Unit

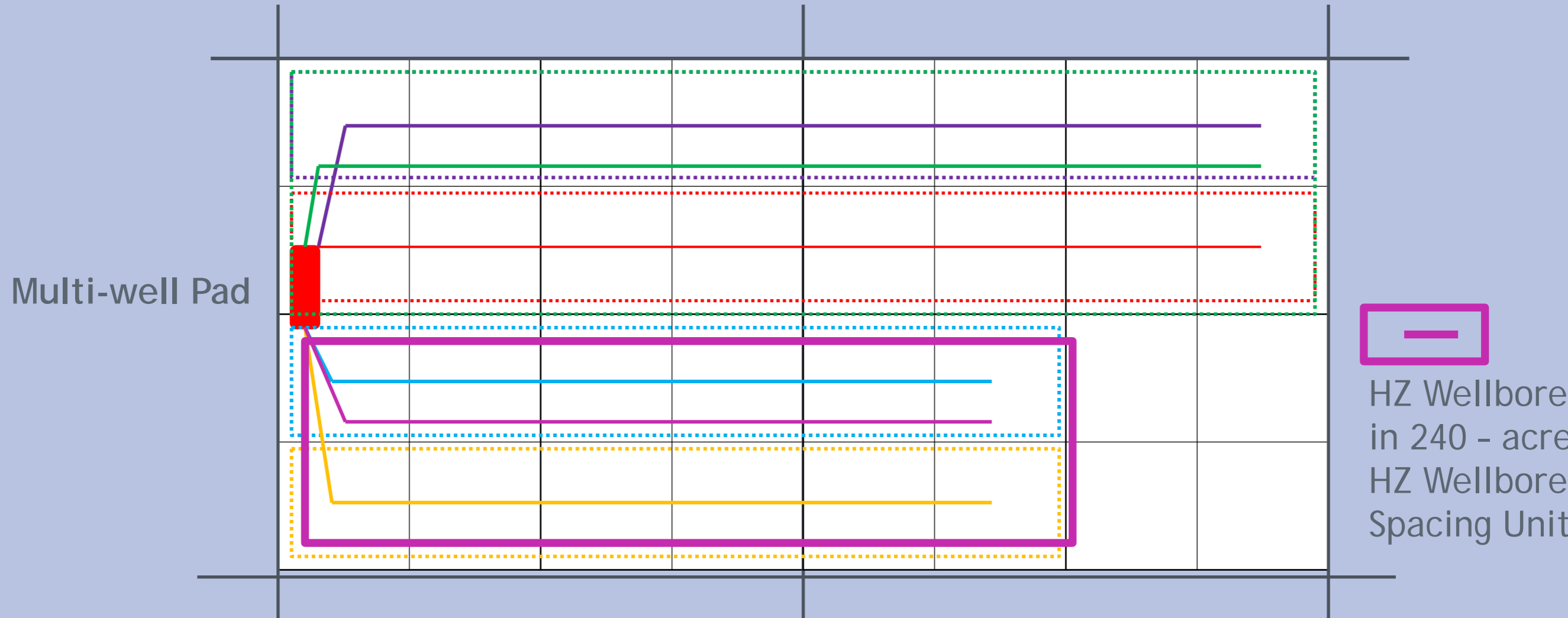
HZ Wellbore in 320 - acre Wellbore Spacing Unit

HZ Wellbore in 240 - acre HZ Wellbore Spacing Unit

HZ Wellbore in 640 - acre HZ Wellbore Spacing Unit

HZ Wellbore in 240 - acre HZ Wellbore Spacing Unit

# 4. Developing HZ Wellbore Spacing Units

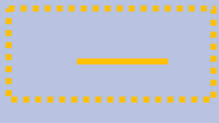


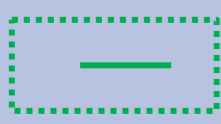
Multi-well Pad


  
 HZ Wellbore in 240 - acre HZ Wellbore Spacing Unit


  
 HZ Wellbore in 320 - acre Wellbore Spacing Unit


  
 HZ Wellbore in 320 - acre Wellbore Spacing Unit


  
 HZ Wellbore in 240 - acre HZ Wellbore Spacing Unit

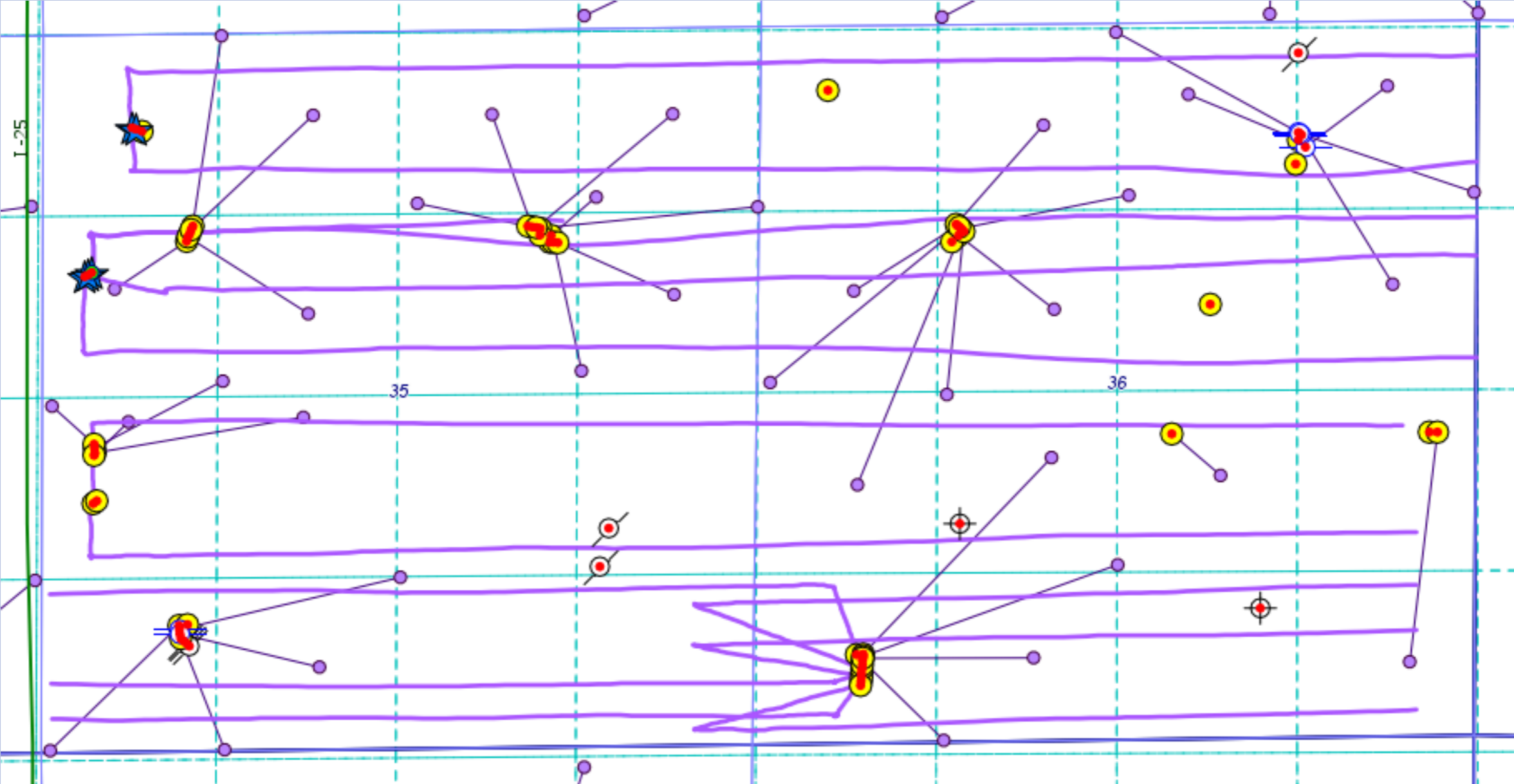

  
 HZ Wellbore in 640 - acre HZ Wellbore Spacing Unit


  
 HZ Wellbore in 240 - acre HZ Wellbore Spacing Unit



# 4. Developing HZ Wellbore Spacing Units

Sections 35 & 36 T3N R68W



# 5. *Creating GWA Wellbore Spacing Units*

1. Proposed unit includes all quarter-quarters within 460' of the well completion
2. Operator provides notice to Owners of mineral interests with a proposed unit
3. Owner has 30 days from receipt of notice to object in writing to the Operator and COGCC; Objections limited to four areas:
  - A. Deficient Notice
  - B. Operator is not an Owner of minerals within the unit
  - C. Unit will negatively impact correlative rights
  - D. Unit will cause waste

## 5. *Creating GWA Wellbore Spacing Units*

4. If no valid, timely objections are received, operator so certifies in a letter attached to the Application for Permit to Drill (APD).
5. The APD includes a description of the proposed wellbore unit.
6. Approval of the APD is the Director's administrative approval of the wellbore spacing unit.
7. Once created, the operator can apply to the Commission to pool the unit.

OR .... If a valid, timely objection is received...

## 5. *Creating GWA Wellbore Spacing Units*

- If valid, timely objection is received, operator works with the owner to have the objection withdrawn and, once withdrawn, the APD is submitted as above.

BUT...

- If the operator and owner cannot resolve the objection, the operator may request a Commission hearing on the objection.

# 5. *Creating GWA Wellbore Spacing Units*

- Commission Pre-Hearing Process:
  1. Operator files application requesting hearing and attaching objection.
  2. Hearing Officer establishes deadlines for pre-filed testimony on objection and prehearing conference for the parties to submit evidence.
  3. Hearing Officer, Staff, and Parties participate in prehearing conference.
  4. Hearing Officer issues recommendation that the objection should stand or be dismissed.
  5. Commission hears oral argument on Hearing Officer recommendation and decides

# 5. *Creating GWA Wellbore Spacing Units*

- Commission Hearing Process: Commission hears oral argument on Hearing Officer recommendation and votes to dismiss the objection or let the objection stand.
  - If the objection is dismissed, the operator submits an APD and proceeds with an administrative approval of the unit.
  - If the objection stands, the matter is scheduled for a hearing on the merits of the objection after which the Commission can:
    - Approve the unit;
    - Approve a modified unit;
    - Deny the proposed unit; or
    - Issue any other relief appropriate.

# 5. Creating GWA Wellbore Spacing Units

	Drilling and Spacing Unit	GWA Wellbore Spacing Unit
Created by:	Commission Order	Director approval of APD
Unit setbacks:	Determined by geology and engineering	460'
Overlapping units:	No	Yes
Multiple wells per unit:	Yes	No
Size:	Determined by development plan	Includes all quarter-quarters within 460' of completion
Drilling windows:	No	Yes
Authorize single boundary or well:	No	Yes
Majority operatorship:	No	No

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