



# Alaska Department of Revenue Tax Division

---

Property Tax Workshop – AS 43.56.060(d)-(e) Depreciation  
July 11, 2017

Jim Greeley, State Petroleum Property Assessor  
Alaska Department of Revenue  
Updated 7/12/2017



---

# Alaska Supreme Court & Use Value

- Pursuant to 43.56.060(e) TAPS appropriately assessed under a use value standard
  - Special Purpose Property
  - Limited Market
  - Sole use of the cost approach appropriate

---

# Use Value and Other 43.56 Property

- AS 43.56.060(d) – Production Property
  - Same facts and circumstances as TAPS
    - Production property is also special purpose
    - Production property resides in the same limited market
    - Sole use of the cost approach not just applicable to production property, but required by statute (unlike TAPS provisions that also allow for income and sales based valuation approaches)
  - Use value standard applies to production property
  - Same for pipeline assessments other than TAPS

# DOR Former Depreciation Methodology

AS 43.56.060(d)-(e)

- Phased out by DOR over the last four years with municipal and taxpayer review and input
  
- Breakdown Method
  - Three steps:
    - RCN Less:
      - Age/Life Depreciation (straight line based on economic life)
  
      - Functional Obsolescence (cost to cure deduction)
  
      - External Obsolescence (measure of a property's super-adequacy)
        - Scaled relationship of the property's current handling of hydrocarbons and the property's handling capacity
          - $(\text{Property Current Handling} / \text{Property Handling Capacity})^{\wedge} \text{SF}$

# DOR Former Depreciation Methodology

AS 43.56.060(d)-(e)

## ➤ Issues

- Basis in market value principles as opposed to use value principles.
- Patchwork of market value tools used to render use value assessments.
- Age/Life depreciation effectively measuring wear and tear, which is not especially relevant under a use value standard and not well connected to proven reserves as required by statute
- Functional obsolescence also not well connected to proven reserves as required by statute
- External obsolescence was being measured from aspects of the property itself, as opposed to influences external to the property

# DOR Current Depreciation Methodology

AS 43.56.060(d)-(e)

## ➤ Scaled Production Methodology

- Depreciation measured directly from the reservoir the property serves in one of two ways (depending on reservoir phase):

1. Pre-Decline Phase (ramp up or plateau production)

- One percent depreciation per year

OR:

2. Decline Phase (10% or more off peak or plateau production)

- Scaled production methodology:
  - $(\text{Reservoir Current Production} / \text{Reservoir Historic Peak Production})^{\text{SF}}$
  - Current production = previous CY production
- Floor depreciation 20% for operating production/pipeline property

# DOR Current Depreciation Methodology

AS 43.56.060(d)-(e)

## ➤ Scaled Production Methodology

- Based on use value principles
- Depreciation measured directly from the reservoir the property serves
- Solves for all forms of depreciation in one step
  - For example:
    - Captures loss in value from decreased availability of proven reserves as the reservoir the property serves is depleted over time
    - Adjusts correspondingly as new reserves are proven
    - Captures effect of the property's changing utilization over time
    - Application of the scaling factor ensures the property RCN is never over depreciated at any one point in time

## ➤ Entering its fifth year of use by DOR

\* Care must be taken in applying the scaled production methodology to ensure that non-reservoir influences do not improperly affect the depreciation measurement.

# DOR Current Depreciation Methodology

## Hypothetical Numerical Example

### ➤ Scaled Production Methodology

- Production facility built and reservoir peak oil production reached in a few years at 50,000 barrels of oil per day
- After fifteen years reservoir is producing 20,000 barrels of oil per day
- Factor applied to the production facility RCN for the fifteenth year to calculate depreciation on a percent good basis:

$$\left[ \frac{20,000}{50,000} \right] ^{.69} = 53.14\%$$

- Percent good is the inverse of depreciation, where here 53.14% good equals 46.86% depreciation (100% - 53.14% = 46.86%)

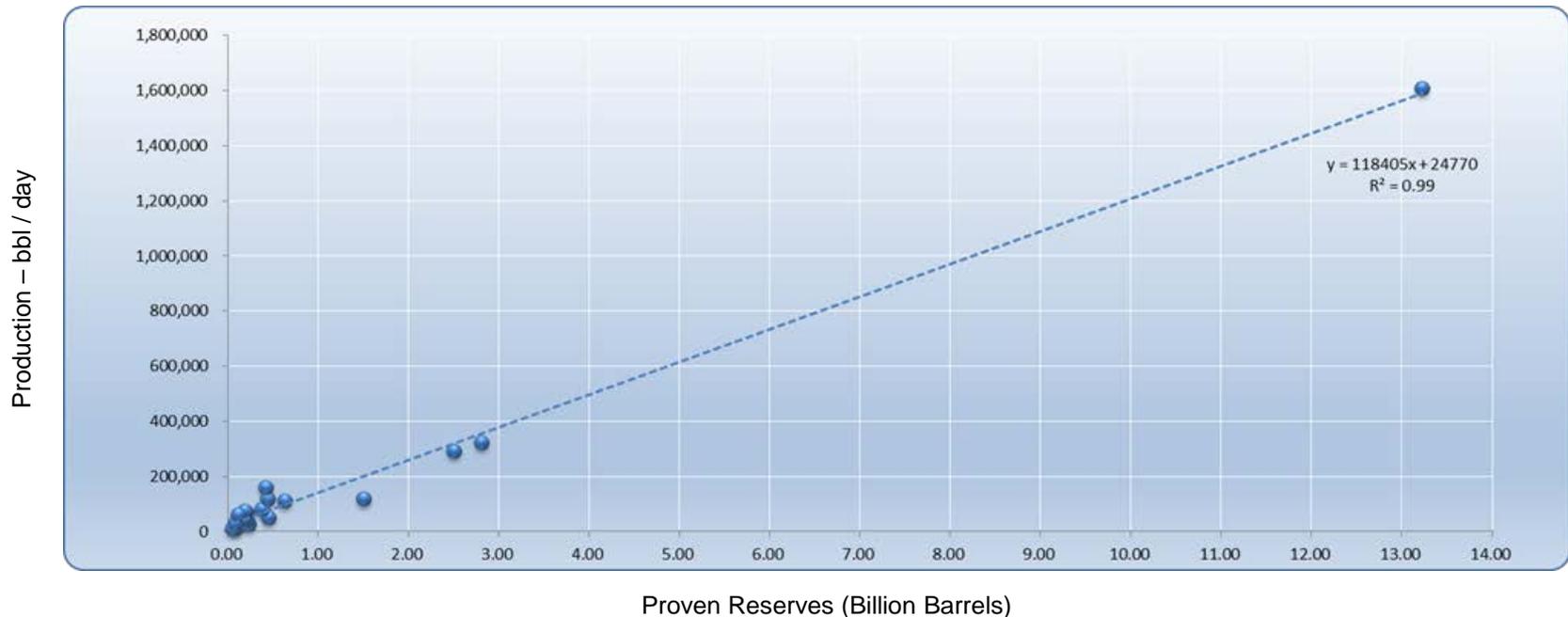
# Correlation of Production & Proven Reserves

	<u>Peak Rate Anticipated</u>	<u>Peak Rate Historical</u>	<u>Peak Rate Used</u>	<u>Reserves/1b</u>	<u>Proven Reserves</u>	<u>Time Frame</u>
Pikka (Nunashuk)	120,000		120,000	1.50	1,500,000,000	2016
Ooguruk	14,000		14,000	0.08	80,000,000	2009
Milne Point		49,963	49,963	0.44	439,000,000	1998
Kuparuk		323,010	323,010	2.80	2,798,000,000	1998
P. Bay		293,412	293,412	2.50	2,500,000,000	2009
P. Bay		1,607,984	1,607,984	13.23	13,226,000,000	1998
Nikaichuq	28,000		28,000	0.22	220,000,000	2009
Endicott		110,937	110,937	0.63	626,000,000	1998
P. Bay WEO	40,000		40,000	0.20	200,000,000	2014
Mustang	9,000		9,000	0.04	44,000,000	2015
Alpine	80,000		80,000	0.37	365,000,000	1997
Lisburne		44,083	44,083	0.16	162,000,000	1998
Alpine		119,992	119,992	0.43	429,000,000	2010
Northstar		68,520	68,520	0.20	200,000,000	2007
Pt. McIntyre		160,961	160,961	0.41	408,000,000	1998
Niakuk	29,666		29,666	0.08	75,000,000	1998
Northstar	75,000		75,000	0.18	175,000,000	2001
Liberty	60,000		60,000	0.11	105,000,000	2015

\* Sample of peak or plateau production and proven reserve scenarios for several Alaska North Slope fields over various time periods. Data obtained from various public sources including but not necessarily limited to: company announcements, company presentations, press articles, and historic production data which is available from several sources including but not limited to the Alaska Oil and Gas conservation Commission.

# Correlation of Production & Proven Reserves

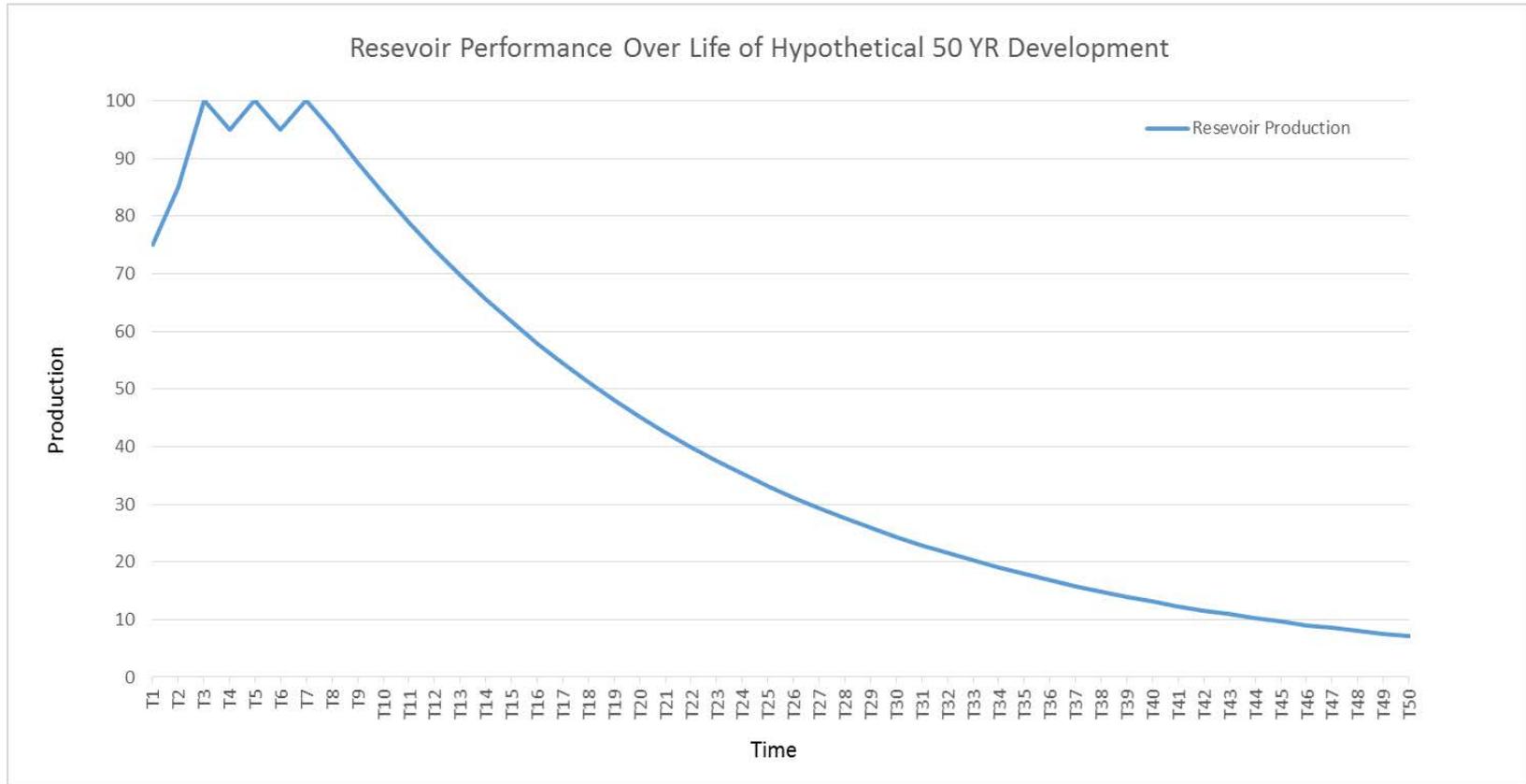
$$R^2 = .99$$



\* Sample of peak or plateau production and proven reserve scenarios for several Alaska North Slope fields over various time periods. Data obtained from various public sources including but not necessarily limited to: company announcements, company presentations, press articles, and historic production data which is available from several sources including but not limited to the Alaska Oil and Gas conservation Commission.

# Scaled Production Methodology

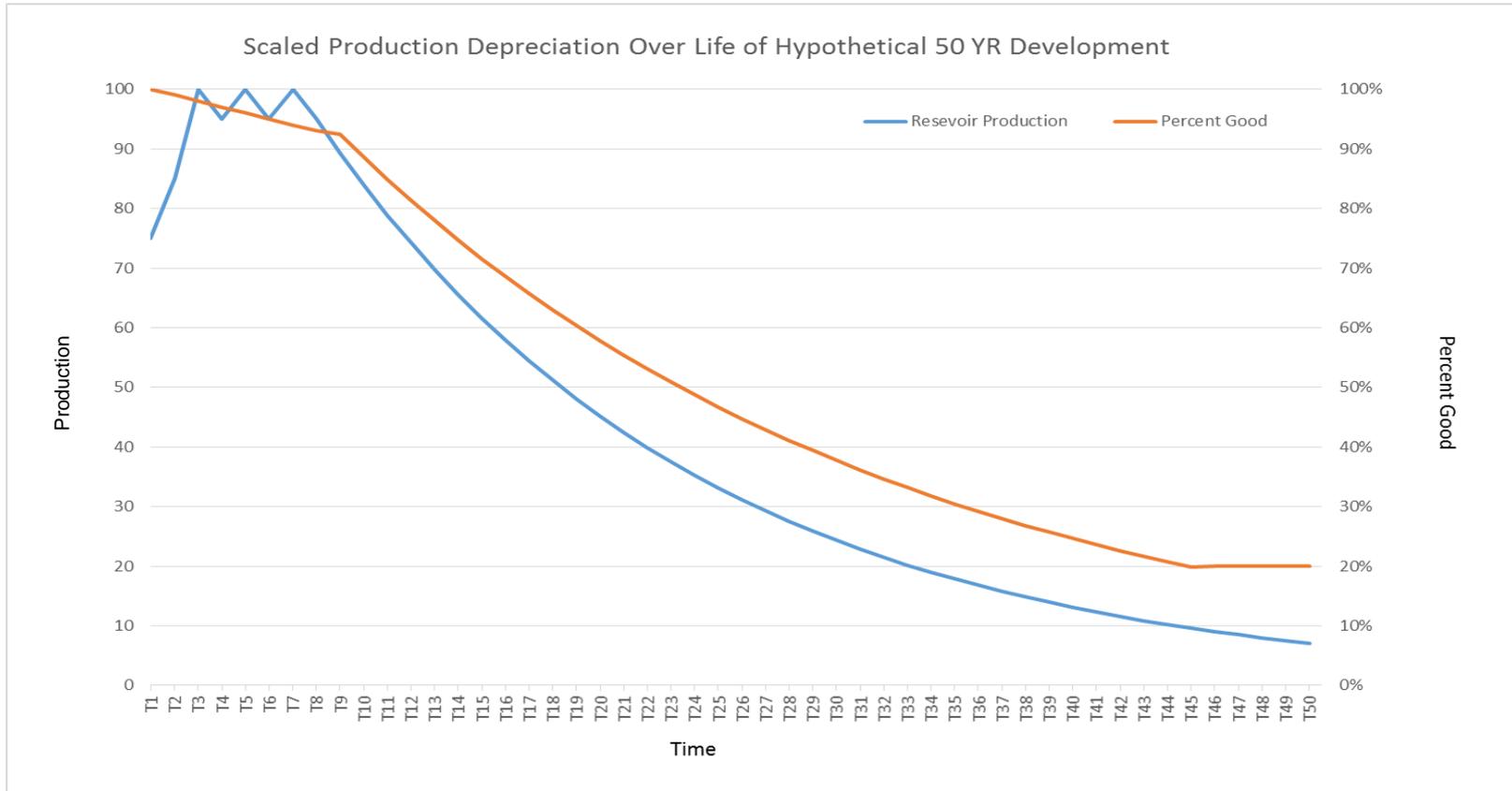
Expected Depreciation Over the Life of a Hypothetical 50yr Development



\* Hypothetical scenario based on a two year ramp up phase, a five year plateau production phase, and then a six percent annual decline.

# Scaled Production Methodology

Expected Depreciation Over the Life of a Hypothetical 50yr Development



\* Hypothetical scenario based on a two year ramp up phase, a five year plateau production phase, and then a six percent annual decline.

# Benefits of Depreciation Under the Scaled Production Methodology

- Methodology is based upon historical and factual data that is easy to obtain and verify
- Methodology is not theoretical, subjective, or opinion driven
- Methodology is based upon data that is publically available
- Methodology is 100% transparent
- Methodology is stable and predictable
- Methodology works for both oil and gas properties
- Methodology is economically testable and can indicate the proven reserves basis assessments are based on
- Methodology is accurate. When production increases, method has upward pressure on values. When production decreases, method has downward pressure on values
- Methodology is defensible
- Methodology is efficient to administer
- Methodology is easy to forecast for purposes unrelated to AS 43.56 property tax (municipal and taxpayer planning)
- Methodology peer reviewed by the Alaska Association of Assessing Officers
- Favorable feedback over last four years of methodology implementation from both municipalities and taxpayers