

**BEFORE THE STATE ASSESSMENT REVIEW BOARD
STATE OF ALASKA**

In the Matter of:)	
)	Appeal of Revenue Decision
THE TRANS-ALASKA PIPELINE SYSTEM)	No. 13-56-02
)	
Oil & Gas Property Tax (AS 43.56))	OAH No. 13-0474-TAX
<u>2013 Assessment Year</u>)	

CERTIFICATE OF DETERMINATION

The State Assessment Review Board (Board) convened from May 13, 2013 through May 22, 2013, to hear and deliberate on the AS 43.56 appeals of the 2013 assessment of the Trans-Alaska Pipeline System (the TAPS).¹ The Board certifies that the value of the TAPS on January 1, 2013 was \$11,874,014,300.

I. Introduction

The subject of this appeal is the Division's Revenue Decision number 13-56-02, which set a \$7.1638949 billion assessed valuation for the TAPS as of January 1, 2013. The Division arrived at its assessed valuation using the appraisal method known as the cost approach. In this consolidated appeal, the Owners argued that the value of TAPS in 2013 was no more than \$2.25 billion.² The Municipalities argued it was at least \$13.0 billion.³

Under AS 43.56.130(f), the Board cannot adjust the Division's assessed valuation unless the evidence in the record shows that this valuation is unequal, excessive, improper, or otherwise contrary to the standards set out in AS 43.56. The Board has found that the Division's valuation was improper and was contrary to the standards of AS 43.5 because:

¹ Chair Don Martin McGee, and members James I. Mosley and Ronald E. Brown heard the appeal, constituting a quorum as required by AS 43.56.130(b). Administrative Law Judges Mark T. Handley and Neil Slotnick from the Office of Administrative Hearings assisted the Chair. Under AS 44.64.020(6) and 44.64.030(b), the Office of Administrative Hearings provides administrative law judges to advise the Board at the request of the Commissioner of Revenue.

² TAPS Owners' Appeal of Alaska Department of Revenue Decision No. 13-56-02 at 6.

³ Municipalities' Appeal from Alaska Department of Revenue Decision No. 13-56-02 at 14.

- The Division did not present persuasive evidence to support its decision to not adopt the replacement cost study prepared by the cost study team that prepared the cost studies that were adopted by the Superior Court. The evidence demonstrated that the work of the Pro Plus cost study team has been sufficiently vetted to warrant the team's 2013 cost study being adopted as the starting point for valuation of TAPS.
- The Division chose to blend two replacement cost studies. In these circumstances, this was not a proper appraisal methodology.
- The Division adopted a contingency percentage that was not supported by the evidence.
- The Division used a weighted-average cost of capital for determining the cost of financing construction, which introduced a new and unnecessary issue—the cost of equity and the proportion of equity financing. One hundred percent debt financing during construction should be assumed when estimating the Replacement Cost New (RCN).
- The Division did not properly account for the proven reserves of oil that will be transported through the TAPS. The Division departed from the Superior Court's factual finding of the size of the proven reserves, but did not present facts to support its alternative finding of significantly fewer proven reserves. The Division also rejected the Superior Court's decline curve for forecasting long-term oil recovery, and again did not present persuasive evidence that supports its selection of an alternative decline curve.
- The Division applied both age-life depreciation and scaling, which may over-depreciate the TAPS and result in a valuation that is less than full and true value.

After correcting these items, the Board has determined that the 2013 assessed valuation of the TAPS should be adjusted to \$11,874,014,300.

A. Description of the Property

The TAPS is an 800-mile long, 48-inch diameter, crude-oil pipeline stretching from the oil fields of the North Slope to the port terminal in Valdez, Alaska. The TAPS includes pump stations, buildings, materials, supplies, machinery, tanks, terminal facilities, and other related property. The TAPS is the only conduit for the transportation of oil from America's most productive petroleum region. Construction of the TAPS was completed in 1977. Upon completion, the predicted economic life of the TAPS was approximately thirty years. Thirty-three years later, in 2010, the Alaska Superior Court held that the expected economic life of the TAPS was still at least thirty-seven years in the future.

Portions of the TAPS are located in the municipalities of the City of Valdez, the Fairbanks North Star Borough, and the North Slope Borough, and in the Unorganized Borough of Alaska. TAPS taxable property is also located in the Municipality of Anchorage, the Matanuska-Susitna Borough, the City of Cordova, and the City of Whittier.

B. Names and Addresses of Each Owner of the TAPS

1. BP Pipelines (Alaska) Inc., PO Box 190848, Anchorage, AK 99519-0848
2. ConocoPhillips Transportation Alaska, Inc., PO Box 110360 Anchorage, AK 99510-0360
3. Exxon/Mobil Pipeline Company, PO Box 2220, Houston, TX 77252-2220
4. Koch Alaska Pipeline Company, LLC, PO Box 2913, Wichita, KS 67201-2913
5. Unocal Pipeline Company, 14141 Southwest Freeway, Sugar Land, TX 77478

C. Parties Appealing

The parties to the appeal are the TAPS Owners and the following municipalities: North Slope Borough, Fairbanks North Star Borough, and City of Valdez.⁴

D. Consolidation and Coordination of Appeals

The Owners' and the Municipalities' appeals of Revenue Decision No. 13-56-02 were consolidated and the different owners and the different municipalities each coordinated the presentation of their cases.⁵

II. Historical Context of the Board's Review of the 2013 TAPS Assessed Value

The valuation of the TAPS involves five different entities: the Board, the Division, the Municipalities, the Owners, and the Superior Court. The role of each has evolved over the years.

⁴ The Owners were represented by attorneys James M. Seedorf, F. Steven Mahoney, Michael R. Garatoni and Nicholas Bajwa. Assistant Attorneys General Kenneth J. Diemer and Kelly McCann represented the Alaska Department of Revenue Tax Division (the Division). The municipalities appealing the Division's 2013 TAPS assessment (the Municipalities) were represented by attorneys Robin O. Brena and Laura Gould for the Fairbanks North Star Borough, William M. Walker and Craig Richards for the City of Valdez, and Mauri Long and Jessica Dillon for the North Slope Borough.

The history of how each entity has been involved in the valuation helps explain why the assessment has not been constant, but has changed over the years as new parties participate and new information is brought forward.

A. 2001-2004 TAPS Assessments

In the years before 2001, the Division and the Owners negotiated an agreed valuation of the TAPS with little, if any, participation by the Municipalities or the Board. In 2001, however, both the Municipalities and the Owners participated in proceedings with the Division in assessing the value of TAPS, and both appealed the Division's assessment to the Board.

In 2001, the Division considered three different valuations. First, it considered its own valuation, using the appraisal methodology called the income approach. This methodology projects the future income of an income-producing property and then discounts that income stream to its present worth. The Division called its valuation the "TAPS Tariff Settlement Agreement Income Model" (TSM), and it was based on the assumption that future TAPS tariffs would be set in accordance with the TAPS Tariff Settlement Agreement between the Owners and the State of Alaska. The Division used the Division's future TAPS throughput projections to arrive at a projected income stream. The TSM estimate resulted in a valuation of the TAPS at \$3.017 billion.

Next, the Division considered two appraisals prepared by the parties: one at \$2.9 billion from Tegarden & Associates, Inc., for the Municipalities, and one at \$2.1 billion from Shank & Kinnard (Shank), for the Owners. Both of these appraisals valued the TAPS at less than the TSM estimate, due in part to the appraisers' attempts to reconcile their income approach estimates with values that resulted from other methods of valuation. The Division, in turn, attempted to reconcile these two appraisals with its TSM estimate, arriving at a \$2.75 billion assessed valuation of the TAPS.

On appeal to the Board, the Owners argued that more weight should be given to the two other valuation methodologies also used by their expert, the cost approach and the comparable

⁵ See Pre-Hearing Order issued April 29, 2013.

sales approach. A cost approach estimates what it would cost to build or replace a property new, and then adjusts for factors such as depreciation, obsolescence, and inflation. A comparable sales approach uses recent sales of similar properties, or partial sales of the same property, to estimate value. In their appeal, the Municipalities argued that the state improperly lowered its valuation of the TAPS from \$3.017 billion to \$2.75 billion. The Municipalities also argued an alternative legal theory that an assessment of \$5.9 billion was appropriate based on a cost approach using straight-line depreciation of the TAPS.

In 2001, based on the evidence, the Board concluded that an income approach was the most reliable methodology for calculating the 2001 TAPS assessed value. The 2001 comparable sales value estimates were unreliable because they were based on sales that were not arms-length transactions and involved very small ownership interests that might not be representative of the value of the property. And without a replacement cost study for the TAPS, the 2001 cost approach value estimates were based on the original cost of the TAPS, which was a very poor indicator of the 2001 value of the TAPS.⁶

The Board concluded that the Division's reduction of the 2001 TSM valuation to \$2.75 billion through the reconciliation process resulted in an improper assessed value. The Board found that the Division had improperly reconciled the Division's methodology with less accurate methodologies, and improperly attempted to bring the valuation closer to a projected graph line of historical negotiated TAPS valuations. The Board ordered that the 2001 TAPS assessed value be adjusted to \$3.017 billion.

From 2001 through 2004, the assessed valuation of the TAPS remained at \$3.017 billion as a result of negotiated agreements between the Division, the Owners, and the Municipalities.

⁶ At the 2008 TAPS hearing, the Owners' Appraiser Kathy G. Spletter, ASA, testified that it is not appropriate to trend a cost study more than five years, because after five years trending becomes too inaccurate for any particular property, and a new cost study is needed to establish an accurate value using a cost approach.

B. 2005 TAPS Assessment

In 2005, the Division determined that it could no longer rely on the income approach methodology to determine the value of TAPS. The TAPS tariff was no longer a reliable basis of value because a decision by the Regulatory Commission of Alaska (RCA) had lowered the tariff for intrastate shipments of Alaska North Slope (ANS) oil. This action made the future of the tariff income-stream uncertain. Accordingly, the Division decided to look at a replacement cost new less depreciation (RCNLD) cost approach, which was how it already valued almost all other Alaska oil pipelines.

In response to a request from the Division, the Owners contracted with Mustang Engineering, L.P. (Mustang) to conduct a replacement cost study of the TAPS. The Municipalities, in turn, contracted with R.W. Beck, Inc., (Beck) to review the Mustang replacement cost study. Beck produced its own replacement cost report and a TAPS valuation estimate based on the Mustang report and on some of its own investigations. Relying on both the Mustang and the Beck reports, the Division set a \$3 billion assessed valuation for the TAPS under the RCNLD approach.

On appeal, the Board reiterated its 2001 finding that it would be improper for the Division to adjust its best estimate of the TAPS value by giving significant weight to approaches to valuation that were not reliable. The Board agreed with the Division that the 2005 value of the TAPS could no longer be accurately measured by the tariff income approach because the regulated tariff income stream did not reflect the total economic value of the TAPS. The Board concluded that, although the Division's 2005 assessed valuation of the TAPS at \$3.0 billion was at the low end of an acceptable value range, it should not be adjusted.

C. 2006 TAPS Assessment

In 2006, the Division assumed that the data and methodology used to calculate the TAPS' \$3.0 billion assessed value for 2005 had been correct. The Division made adjustments to the 2005 TAPS data to account for value changes that had occurred over the following twelve months to

arrive at a value of \$3.641 billion. Both the Owners and the Municipalities appealed the Division's assessed valuation to the Board. The Owners argued that the 2006 TAPS value was approximately \$1.5 billion. The Municipalities argued the TAPS assessed valuation should be set at no less than \$6 billion.

On appeal, the Board accepted the Division's approach, except that it added back deductions the Division had made for the construction costs of capitalized interest, ad valorem tax, and a reasonable program manager profit amount. The resulting value was \$4.3062718 billion. The Municipalities and the Owners appealed this decision to the Superior Court for a trial de novo. The Superior Court's decision was issued in 2010, upheld these added costs, and is discussed below.

D. 2007 TAPS Assessment

In 2007, the Division again started its valuation using the final assessed valuation from the previous year, which was based on the 2005 Mustang cost study. The Division made adjustments to the data used in the 2006 valuation, and followed the methodology approved by the Board in 2006 to account for value changes. The Division also revisited the issue of the value of the TAPS Right-of-Way, as suggested by the Board in its 2006 determination. And in an attempt to correct the historic overestimates of short-term future throughput, the Division adjusted its throughput projections by removing oil that would come from projects in its "under evaluation" category. The Division determined that the 2007 value of TAPS was \$4.578 billion.

Both the Owners and the Municipalities appealed the Division's valuation to the Board. The Board determined that the Division had not properly dealt with the Right-of-Way valuation, and concluded that the 2007 value of the TAPS was \$4.588895312 billion. The Board also expressed its concern about the Division's frequent use of the term "conservative" in reference to some assumptions and estimates in its TAPS valuation. The Board reminded the Division that the object of an assessor valuing property under Alaska Statute 43.56.060(e)(2) is to make the best estimate of value, not to make a conservative estimate of value, or the lowest estimate of value within an acceptable range of possible values. The Board found for the third year in a row that the

Division's assessed valuation was at the low end of an acceptable range of value for the TAPS. The 2007 decision was appealed to the Superior Court.

E. 2008 TAPS Assessment

In 2008, the Division determined that the 2005 Mustang cost study was no longer reliable because of its age. Before the Division had commissioned a new study, however, the Municipalities informed the Division that they would contract with a consulting firm, Pro Plus, to obtain a re-costing of the 2005 Mustang study. The Division used the results of the Pro Plus study as the primary basis for its 2008 valuation of the TAPS of \$7.16589746 billion, which was appealed to the Board.

The Board found that the Division's decision to generally rely on the 2008 Pro Plus cost study was reasonable, but the Board agreed with the Owners that the 25 percent contingency in the RCN of the Pro Plus study was excessive, and reduced it to five percent. The Board also determined that in 2008, the Division had extended the economic end-life of the TAPS from 2042 to 2045 without a rational justification, and had improperly excluded \$171,653,367 for access roads and \$65,000,000 for salvage value of construction camps. After making adjustments to correct for these problems, the Board concluded that \$6.15447972 billion should be the 2008 assessed value of the TAPS. The Board's 2008 decision was appealed to the Superior Court.

F. 2009 TAPS Assessment

For 2009, the Municipalities provided an updated and more detailed Pro Plus replacement cost study of the TAPS, and the Owners provided an updated Mustang cost study. The Division determined that the 2009 Pro Plus study was more accurate than the 2009 Mustang study. The Owners and the Municipalities timely appealed the informal conference decision setting the 2009 assessed value for the TAPS at \$7.71506816 billion.

On appeal, the Board reversed itself on the issue of the appropriate contingency factor. After consideration of the evidence and testimony, the Board found that the Municipalities had shown that the risk accounted for in its 25 percent contingency factor was justified and was not

accounted for in other places within the 2009 Pro Plus cost study. The Board recalculated the RCN using a 25 percent contingency factor and 10 percent for Owners' costs. The Board concluded that its adjusted value of \$9.0458952 billion should be the 2009 assessed value of the TAPS. The Board's 2009 decision was appealed to the Superior Court, and the 2007-09 appeals were consolidated for one trial de novo.

G. 2010 TAPS Assessment

For the 2010 TAPS assessment, the Division originally used the 2009 RCN with adjustments. After an informal conference, the Division adjusted the 2010 valuation for the TAPS to \$9.20346143 billion. The Division's valuation was appealed to the Board, and at the 2010 hearing, the Owners argued that the 2010 TAPS value was no more than \$1.4 billion. The Municipalities argued the TAPS assessed valuation should be set at \$11.8119595 billion.

The Owners submitted a new cost study that had been prepared by Stantec, a Canadian engineering firm, which estimated the cost of a thirty-inch diameter pipeline. The Owners argued that under current throughput, a thirty-inch pipe would be more efficient than the 48-inch diameter TAPS, and argued that the Stantec study should be the basis of the RCNLD appraisal. The Board determined that it would not have been proper to base the 2010 RCN on the Stantec cost study of a hypothetical pipeline at 30 inches. The Board found that this redesign of the assessed property would have mechanical characteristics and a route that would be too different from the existing pipeline and its capabilities to provide a useful estimate of the 2010 value of the TAPS. The Board found that that the pipeline designed in the Stantec cost study did not have equal utility to the TAPS on the 2010 assessment date. The Board concluded that it would not have been proper to ignore the value of the potential future use of the TAPS by failing to include the value of its flexibility to increase throughput capacity to transport existing petroleum reserves that are potentially recoverable. The Board found that the 30-inch diameter pipeline used for the Stantec study would not perform similarly to the TAPS at the TAPS' legally required maximum throughput capacity.

After the hearing, but before the Board's deliberations were complete, the Alaska Superior Court issued an initial decision following trial de novo on the appeal of the 2006 Assessed Valuation of the Trans-Alaska Pipeline System.⁷ The Court set its adjusted value of TAPS for 2006 at \$9.977934 billion. The Board then reviewed the Court's decision on the 2006 TAPS assessment before it completed its deliberations on the 2010 assessment. The Board determined that while the Division's \$9.20346143 billion valuation for 2010 was fundamentally sound, there were two components of that valuation that were improper and should be adjusted.

The Board found that the Division used the wrong method to calculate the cost of ad valorem taxes during construction, and that the Division failed to provide a coherent methodology for its determination of the economic end-life of the TAPS. Specifically, the Board found, as the Court found in its decision on the appeal of the 2006 assessment, that the well-by-well analysis that the Division had used for its 2010 end of life estimate was not reliable and did not account for all of the proven reserves. The Board adjusted the end-life estimate based on the pool-by-pool analysis used by the Municipalities. The Board concluded that no adjustment needed to be made to the Division's scaling calculation, despite a slight difference in the way that the Court and the Division addressed the issue of accounting for super-adequacy through scaling.

H. Final Superior Court Decision on 2006 TAPS Assessment

After reconsideration, the Alaska Superior Court, in October 2010, issued its final decision.⁸ The Court's final 2006 valuation of the TAPS was \$9.977 billion—a value much larger than the Board's 2006 valuation, but one that closely tracked the Board's and the Division's valuations in later years when they had the information provided from the more detailed cost studies. The Court found that the RCN produced by Pro Plus was reliable, despite the challenges

⁷ Alaska Superior Court Case No. 3AN-06-8446-CI. The initial decision was later amended after reconsideration.

⁸ *Amended Decision Upon Reconsideration Following Trial De Novo* (Alaska Superior Court No. 3AN-06-8446-CI; Oct. 26, 2006).

made to that cost study by the Owners. The Court set its adjusted value of TAPS for 2006 at \$9.977934 billion.

I. 2011 TAPS Assessment

For the initial TAPS assessment for 2011, the Division relied on the Owners' updated Stantec cost study for a 30-inch diameter pipeline, and did not use the updated Pro Plus cost study. The Division issued a Notice of Assessment, setting the 2011 assessed value for the TAPS at \$6.71365707 billion, which reduced the Court's 2006 value by almost a third. The Owners and the Municipalities timely appealed the 2011 assessment to informal conference.

At the informal conference, the Division reversed course and used the updated Pro Plus cost study for the RCN, after adjusting the interest rate during construction. The Division used the Court's methodology for applying a super-adequacy scaling adjustment. However, the Division made significantly different findings on projected throughput and minimum mechanical throughput, which resulted in an end of economic life estimate of 2040, in contrast to the Court's finding a few months earlier that end of economic life for TAPS for AS 43.56 assessment purposes was 2047. The Division set the 2011 assessed value for the TAPS at \$7.9329798 billion.

The Owners and the Municipalities timely appealed the Division's Revenue Decision to the Board. After the hearing on the 2011 TAPS appeal, the Board found that the Division's valuation was improper because the Division, without adequate evidence or reasoning, failed to give the findings and conclusions in the Superior Court's decision on the 2006 TAPS appeal proper weight in making its economic end-life calculation for the 2011 assessment. The Division's assumptions for both the minimum throughput and projected throughput components of that calculation were inconsistent with the Court's findings. After correcting these items, and the resulting end-life estimate, the Board has determined that the 2011 assessed valuation of the TAPS should be adjusted to \$8,671,720,679.

J. 2012 TAPS Assessment

The Board merely issued a notice of stay and remand of the parties' appeals of the 2012 TAPS assessment in accordance with a stipulation to stay the appeal before the Board and remand the appeal to the Department of Revenue filed by the parties.

K. Superior Court Decision regarding 2007-09 Consolidated Appeals

On December 30, 2011, the Superior Court issued its Decision Following Trial De Novo for the 2007, 2008, and 2009 Assessed Valuations of the Trans-Alaska Pipeline System. The trial in that consolidated appeal lasted 11 weeks.⁹

For all three assessment years on appeal, the Court rejected the Owners' request that the valuation be based on the income method of appraisal, and affirmed that the basis of the valuation should be the cost method, based on an RCNLD.¹⁰ The Court carefully analyzed the two competing cost studies that were in evidence, the Stantec 30 inch pipe cost study and the Pro Plus 48 inch pipe cost study.¹¹ The Court was generally critical of the Owners' Stantec cost study, the replacement design, the cost estimates within the study, and reliability of the testimony of the expert witnesses who defended the study. The Court found, as the Board had, that that the Stantec 30 inch pipeline designed in the study did not have equal utility to the TAPS.

In general, the Court found the Pro Plus approach to be reasonable, the Pro Plus witnesses credible, and the Pro Plus cost study reliable.¹² The Court accepted the Pro Plus cost study as the basis for assessing value for all three years, except that the Court identified eleven specific errors in the Pro Plus cost study, and reduced Pro Plus's estimated RCN by 10 percent.¹³

After examination of the evidence, including a 2004 low-flow study held by the Owners that had not been provided to the Board, or even to the Court in the earlier appeal for 2006, the

⁹ *Decision Following Trial De Novo*, (Alaska Superior Court No. 3AN-06-08446 CI (Dec. 30, 2011) at 1 ¶ 3.
¹⁰ *Id.* at 52 ¶ 153.
¹¹ *Id.* at 55-123.
¹² *Id.* at 122-23 ¶¶ 363-65.

Court concluded that the minimum throughput for TAPS was 100,000 barrels per day.¹⁴ After consideration of confidential information regarding oil reserves on the North Slope, the Court applied age-life depreciation based on the reserves estimated by the Municipalities' expert.¹⁵ Similar to 2006, the Court then applied a scaling factor to adjust for economic obsolescence.¹⁶ The Court found the value for 2007 was \$8.941 billion, 2008 was \$9.644 billion, and 2009 was \$9.249 billion.¹⁷

III. 2013 Valuation

A. Prehearing proceedings

For the TAPS assessment process for 2013, the assessor made a real effort to bring the parties together and to make the process of estimating the 2013 assessed value more open. Unfortunately, these efforts were not completely successful.

As part of this process, the Division asked the Owners to have Stantec do a 48-inch diameter pipeline RCN cost study. Stantec did the requested cost study and the Division made a side-by-side comparison of the components of the Pro Plus and Stantec 48-inch diameter pipeline cost study. This comparison led the Division to conclude that there was an error in Pro Plus' estimation of the material costs for the Vertical Support Members (VSMs) for the above-ground portions of the pipeline. This discovery led Pro Plus to take on a detailed investigation on this component of the RCN. This discovery also was a factor in the Division's decision to not use the 2013 Pro Plus cost study as the basis for the 2013 assessed valuation.

The Division issued an assessment setting the 2013 value of the TAPS at \$7.2 billion. The Owners and the Municipalities appealed. During the informal conference process, the Division was not convinced that the Pro Plus team had adequately addressed the issues that led to its admitted over-valuation of the material costs for the VSMs. For its appeal to the Board, the

¹³ *Id.* at 123 ¶ 367.

¹⁴ *Id.* at 150 ¶ 438.

¹⁵ *Id.* at 177 ¶ 511.

¹⁶ *Id.* at 183-84 ¶ 536.

¹⁷ *Id.* at 213 ¶ 599.

Municipalities filed an updated Pro Plus cost study that included downward adjustments to the VSM cost estimates and contingency.

The Division issued a 38-page informal conference decision setting the 2013 assessed value of the TAPS at \$7,163,894,900. The Owners and the Municipalities appealed this informal conference decision. The Division later filed minor recommended adjustments to the assessed valuation in the informal conference decision, but the original informal conference decision is the assessment on appeal.

In the informal conference decision, the Division used its RCN estimate based on the assessor's blending of information and estimates contained within the Stantec and Pro Plus cost studies. The Division added a 20 percent contingency, which the Division explained it had developed in 2008 for mass appraisal purposes. The Division did not include a large portion of the future throughput that was projected in the Court findings when calculating the economic end-life of the TAPS for depreciation. The Division, for the first time, used a weighted average cost of capital (WACC) to estimate the cost of interest during construction.

Prior to the hearing, the Acting Chair met with the parties for a prehearing conference and issued a prehearing order. Later, the Board met by teleconference without the Chair to take up a motion to disqualify the Chair. The motion had been filed by the Division and joined by the Owners and briefed by the parties. The Board voted to deny the Owners' motion.

The Board met later by teleconference to rule on other prehearing motions, and the Board met again without the Chair, to take up another motion on his disqualification.

At the beginning of the hearing, the Board voted on additional pre-hearing motions. After a three-day hearing, the Board took the appeals under advisement and deliberated in executive session. Because the Board made findings that required major adjustments to the Division's assessment, the Board's deliberations were not completed until May 22, 2013.

B. The Municipalities met their burden of proof that the initial assessment is not entitled to deference

The assessor's opinion of the 2013 value of the TAPS is entitled to deference. The Board will not apply its independent judgment to adjust the assessor's opinion unless the appellants meet their burden of showing the assessor's opinion is unequal, excessive, improper, or not in accordance with the standards set out in AS 43.56. With regard to the TAPS, the Board and the assessor have the advantage of having recent Superior Court orders that provide findings, guidance, and legal rulings on many of the issues in dispute. As the Board explained in its 2011 Certificate of Determination,

The Division's assessor has the legal authority to [choose] a method, evaluate the information and arrive at a conclusion of value. His conclusion is entitled to a presumption of correctness. An alternative opinion that is better reasoned should not be substituted for the assessor[']s unless there is an error, incorrect foundation in fact, wrong application of appraisal principal, error in calculation, fraud or willful misrepresentation.

The assessor in turn should seek to follow a precedent established in a similar case by the Court or the Board. If the assessor believes that the facts in the assessment are distinguishable in ways that support a different result than that indicated by prior precedent, the assessor should first acknowledge the prior precedent and explain why it is not being followed in the present case. Similarly, if the Division determines that it should not follow the direction set in a prior appeal, the Division should clearly acknowledge that it is doing so and explain its reasoning.¹⁸

1. The assessment is not unequal

An assessment is unequal if the taxing authority treats one taxpayer differently than other similarly-situated taxpayers. No party to this appeal has asserted that the assessment is unequal. The Board has some concerns about equality, however, because all other AS 43.56 operating pipelines are valued on their original cost, trended forward to 2013, using the Marshall & Swift index, less depreciation. Only the TAPS is valued using Replacement Cost New Less Depreciation (RCNLD). Yet, the TAPS is also the only pipeline property for which the assessor has been provided cost studies. As this Board has noted in the past, the RCN provides a sound basis for

applying the cost method of appraisal to the TAPS. Trending forward original cost, however, becomes less and less reliable over time. Given the age of the TAPS and its complicated, unique, and expensive construction, TAPS would be particularly unsuited to trending its original cost forward. The assessor is not required to ignore the evidence in an attempt to make assessments equal, and the Board defers to his decision to rely on an RCNLD estimate for the cost approach to appraising the TAPS, even though, for all other AS 43.56 property, the cost approach is applied by using the original cost.

2. The assessment is not excessive and the Board defers to the assessor's decision to rely only on the cost approach

The Owners assert that the assessment is excessive, and demonstrate that the income approach would result in a lower value. Here, consistent with standard assessment technique, the assessor considered all appraisal methodologies—the income method, the comparable sales method, and the cost method—before setting value. For the reason expressed by the assessor, the Superior Court, and the Board's previous decisions, the Board finds that the income and sales methods are not appropriate methodologies to value the TAPS.

With regard to the income method, the TAPS was not built for the tariff income that it would generate. It was built to transport oil that was owned by the Owners' affiliate companies. TAPS is worth considerably more to the Owners than the present value of the tariff income that it will generate, and if it was necessary to replace the TAPS, the Owners would spend much more than that number in order to replace the TAPS. With regard to the sales method, there have been no sales of comparable property, so no comparisons can be made to determine value.

To test its conclusion that its assessment is not excessive, the Board has compared its assessment with the value the TAPS would be given if the original cost was trended forward using the Marshall and Swift Index. That number, without depreciation, is over \$30 billion.¹⁹ The Board's recalculated replacement cost is \$22.82 billion, without depreciation. Therefore, the

¹⁸ 2011 Certificate of Determination at 33.

¹⁹ Municipalities Exhibit D at MUN13-002994.

Board concludes that the Owners have not met their burden of proof to show that the assessment was excessive.

3. The assessment was improper and not in conformance with the standards of AS 43.56

As explained below in greater detail, the Board finds that the Municipalities have met their burden of proof in showing that the assessment was improper and not in conformance with the standards of AS 43.56. Applying the expertise of the Board members to the evidence presented at the hearing, the Board finds that it was a fundamental error for the assessor to set aside the findings and the evidence considered persuasive by the Superior Court without providing a justification for doing so. This error is most conspicuous in the decision of the assessor to not adopt the Pro Plus cost study as the basis for the assessed valuation, when the Superior Court had clearly and carefully described the evidence that supported the Pro Plus cost study team's work. An additional fundamental error was the decision of the assessor to adopt his own estimate of proven reserves, without providing any justification for rejecting the Superior Court's estimate. The Board considers this a fundamental error because having the best estimate of the value of the reserves is crucial to producing a defensible estimate of TAPS. Given that there are errors that require adjustments under the standard of review, the Board will use its independent judgment to examine the evidence and make findings on the best estimates for the components of an adjusted assessed valuation. Where appropriate, the Board will defer to the assessor's decision in the choice of appraisal methodology, and will give careful consideration of, and the appropriate deference to, factual findings made by the Superior Court.

C. The Pro Plus cost study, and its associated contingency factor, should be the basis of the 2013 RCNLD

The Board is persuaded by its review of the Court decisions and by the Municipalities' and the Owner's presentations that the following adjustments to the Division's 2013 assessment should be made.

1. The assessment improperly blended cost studies

In reaching its RCN estimate, the Division adjusted the estimates from the Pro Plus and Stantec 48-inch diameter cost studies, and then blended the results from the two “corrected” studies. The Board finds that the Division’s blending in these circumstances was not consistent with acceptable appraisal practices, and it led to an assessed value that was not a reasonable estimate of the full and true economic value of the TAPS. Accordingly, the Board finds that the (RCN) estimate used by the Division in developing its assessed valuation of the TAPS for 2013 was improper.

This is the first time that the Division has substituted its own estimate of the replacement cost of the TAPS, rather than relying on an actual cost study as the basis of its RCNLD assessed valuation of the TAPS. The \$12.572159171 billion RCN before contingency estimate in the informal conference decision was not the product of a cost study. That RCN was obtained by blending the components of two very different cost studies.

At the hearing, Robert B. Podwalny, who has done several TAPS appraisal reports for the Municipalities, including their 2013 appraisal, explained that even blending two good cost studies would result in bad cost study. The Board is concerned that the integrity of the original cost study will be lost when components are re-estimated by a party who did not participate in the research or development of the original study, and when one study is blended with another study. The Board finds that in these circumstances, the Division should not have tried to blend the Stantec and Pro Plus Cost studies, and that it did not succeed in its attempt to arrive at a reliable RCN using this approach.

2. The Division’s improperly estimated contingency

An example of the problems inherent in the blending of cost studies is the choice of the contingency to apply to the blended costs. The contingencies used in the Stantec and Pro Plus cost study were different, and were specific to those studies. The Division, however, used a contingency in its RCN that was not derived from the cost or contingency estimates of either the Stantec or the Pro Plus studies, a 20 percent contingency.

The Division explained that it had concluded that a 20 percent contingency was reasonable for its blended cost estimate, based on “some analysis” that the Division had done “on contingency as a general matter for application in a mass appraisal process in 2008, that also could be applied to the TAPS, which indicated that 20% is reasonable.”²⁰ In support of its 20 percent contingency estimate, at the hearing the Division presented evidence on a small and not necessarily representative sample of cost over-runs on Lower 48 construction projects. The Division did not, however, provide any information on the contingencies contained in the estimated costs that were over-run. This evidence did not add to the Board’s confidence in the Division’s contingency number. In the end, the Division’s presentation had very limited persuasive value other than to generally support a contingency above thirty percent for large construction projects.²¹

In making an estimate of a component of a valuation, such as contingency, when the assessor does not have the expertise to make that estimate, the assessor must seek out the special expertise required. To be reliable, the contingency, especially a contingency for a large and unique Alaska project like the TAPS, needs to be specifically developed for the cost estimate it is applied to in the development of an RCN. The Board concludes that the Division did not use a reliable contingency for its RCN estimate.

3. The Division should not have relied on the Stantec cost study

The Board finds that the Stantec Cost study that the Division used as a basis for its own cost study had obvious deficiencies. For example, the production estimates in that study were unobtainable. Although the Stantec team believed they could meet this rate, because welding teams are able to proceed at this rate, the Board was impressed with the testimony of the Municipalities’ expert witness R. Dale Morris, who explained that trenching and river crossings, not welding, would be the primary determinants of the pace of construction. The Board also finds

²⁰ Division’s Exhibit b-10 (ICD) at DOR000218.

²¹ See Division’s Exhibits k-4 at DOR002506, k-5 at DOR002507. In preparing these exhibits, the contingency in the estimated cost was not added to the over-run percentages when estimating the hindsight contingency percentage for these projects.

no justification for the marginal differences in major estimated cost components, such as pipeline installation costs, between Stantec’s own 30-inch and 48-inch studies.²²

Given the Superior Court’s findings in regard to the reliability of specific components of the Stantec 30-inch study, the Board did not expect the Division to accept this Stantec cost study without rigorous examination. Here, the close correlation in costs between the 48-inch and the 30-inch studies should have alerted the assessor that it would not be prudent to incorporate the Stantec 48-inch study in his RCN estimate.²³ Reliance on this study would result in a step back toward the historical undervaluation of the TAPS reflected in the Superior Court’s findings and adjustments to the 2006-2009 assessments.

4. The updated 2013 Pro Plus cost study provides the best RCN estimate

Because the Division’s blending methodology was improper, the Board must evaluate the evidence in order to determine the best cost study on which to base the estimate of the RCN. The Municipalities provided the Board with an updated RCN estimate that included corrections to its overestimate of VSM costs, and a reduction in contingency as a result of this correction. The Board finds that the Municipalities met their burden to show that the updated Pro Plus cost study provided a reliable estimate of the 2013 RCN for the TAPS. The Board finds that this estimate also addressed the concerns that led to the Court’s 10 percent reduction of the Pro Plus cost estimate in the appeal of the 2007 – 2009 assessments.

The Board was impressed with the efforts that the Pro Plus Team made to get the VSM estimate right after the mistake, which was not earlier identified by any of the parties, despite years of scrutiny of Pro Plus Cost studies, was discovered. Neither the Owners nor the Division developed a VSM estimate that was as reliable as the VSM estimate that Pro Plus used in its updated cost study. The Board finds that no adjustments should be made to the updated Pro Plus 2013 RCN estimate.

²² See Municipalities’ Exhibit D at MUN13-002954.

²³ See 2007-09 Decision at 82 ¶ 248.

5. The 2013 Pro Plus contingency of 35 percent is reasonable

The Court found that using any contingency of less than 25 percent for the Pro Plus studies for 2007 through 2009 would have resulted in an improper valuation of the TAPS.²⁴ The Court's designation of 25 percent as the lowest acceptable contingency to apply to the costs in those studies, and the discussion that precedes that designation, implies that the 25 percent contingency used by Pro Plus for those years was merely the lowest percentage in an acceptable range that could have reasonably been applied to those costs.²⁵

The Court also explained that a standard approach to determine contingency is to find the P50, or 50 percent level of confidence that the project will cost more or less than the estimated cost.²⁶ The Court noted that this sweet-spot in the Pro Plus Monte Carlo analysis for the estimated costs for TAPS was 36 percent for 2007, 39 percent for 2008 and 37 percent for 2009.²⁷ The Court found that Dr. Crownshaw presented a comprehensive and well documented analysis, supported by extensive evidence in the record, and that he followed the recommended procedures of the Association for the Advancement of Cost Engineering in developing his contingency findings.²⁸

The Court also noted that although Dr. Crownshaw determined that the substantially higher contingencies were appropriate, Pro Plus chose to use a 25 percent contingency for 2007 - 2009. The decision to use 25 percent, rather than the percentages that represented the P50 case, was based on the experience and consensus of the Pro Plus Team. The Court noted that while there was testimony that the Pro Plus Team was entirely comfortable with the 25 percent contingency, Dr. Crownshaw's analysis indicated that the use of that low contingency meant that there would be at least an 84 percent chance that the cost of the TAPS construction would exceed the Pro Plus estimate.²⁹

²⁴ 2007-09 Decision at 121, ¶ 361.

²⁵ See 2007-09 Decision at 110-21, ¶¶ 336-361.

²⁶ 2007-09 Decision at 110, ¶ 336.

²⁷ 2007-09 Decision at 122, ¶ 336.

²⁸ 2007-2009 Decision at 112, ¶ 341.

²⁹ See 2007-2009 Decision at 110-121, ¶¶ 336-361.

For the 2013 Pro Plus RCN estimate, Dr. Crownshaw concluded that 25 percent contingency was too low because the Monte Carlo simulation predicted an 84 percent chance that the actual costs would exceed the Pro Plus direct costs. Dr. Crownshaw concluded that Pro Plus should use 35 percent contingency, the P50, even though direct project experience and the consideration that the Monte Carlo simulation does not quantify all uncertainties indicate that the 35 percent contingency estimate is low.³⁰

Having reviewed the Court's discussion and findings on contingency, and the evidence in the record, the Board finds the choice of a 35 percent contingency factor in the 2013 updated Pro Plus cost study was reasonable, and was not effectively rebutted by the Owners or the Division. In reaching this conclusion, the Board considered, and rejected, the concern that the uncertainties that were accounted for in the 35 percent contingency factor were already accounted for in other parts of the Pro Plus cost study. The Board, based on its review of the evidence presented of historical cost over-runs on similar projects, further finds that the 35 percent contingency factor in the 2013 Pro Plus cost study was within the range that would be expected for a TAPS RCN estimate.

D. The cost of financing during construction should be interest only

For past valuations of the TAPS, the Board and the Superior Court have determined that the value of the TAPS includes the value of interest paid during construction. For each of the years that the Board has based its valuation on replacement cost, the cost of financing a new pipeline was measured as the cost of debt. In 2013, however, the assessor determined that the cost of financing should be measured by the combined cost of debt and equity, using an estimate of the appropriate weighted average cost of capital, which is referred to as a "WACC." The Municipalities agree that WACC is the correct way to determine the cost of financing, but they disagree with the assessor's choice of the cost measures that make up a WACC, finding in particular that the Owners would have a higher cost of debt and equity, and a higher ratio of debt to equity for a TAPS construction project, than those computed by the assessor. The Owners argue that the cost of financing should

³⁰ See Municipalities' Exhibit D at MUN13-002933.

be based only on the cost of debt, and assert that the cost of debt for the 2013 RCN should be LIBOR + 200 basis points, or around 3 percent.

The Board agrees that the cost of financing construction of the TAPS should include an imputed cost for any equity that an owner would contribute to the project. The Board does not agree, however, that the WACC is an appropriate way to measure the cost of financing. Although WACC is an important number in finance theory, it is usually computed for use in internal financial decision-making or by regulatory agencies in making calculations of appropriate rates of return. As these proceedings demonstrate, however, determining the appropriate WACC for financing a replacement TAPS would add an unnecessary element of uncertainty and controversy to the assessment. The TAPS is a unique project, and the cost of equity and proportion of equity that would be required in a replacement TAPS is unknown. The simplest way to calculate the cost of financing during construction of an RCN for the TAPS is to impute 100 percent debt as the estimate of value.

In determining the cost of debt, the Board will use the estimated cost of debt as of the lien date for an integrated oil company. Pipelines in the Lower 48 will have lower costs of debt because a pipeline-only business is less risky than the business of an integrated oil company; here, the producers were the entities that acquired and backed the financing of TAPS. Therefore, it is appropriate to use the producers' cost of debt to determine the interest that will be paid during construction. That cost is 4.63 percent,³¹ which is what the Board has applied to determine capitalized interest.

E. Age-life depreciation is still an appropriate methodology for depreciating TAPS

The RCNLD methodology for applying the cost method of appraisal generally requires that the appraiser deduct depreciation from the replacement cost new calculation, in recognition that the actual property being appraised is not new. Alaska Statute 43.56.060(e)(2) instructs the Division and the Board to assess AS 43.56 transportation equipment, such as the TAPS, at its "full and true value" with "due regard to the economic value of the property based on the estimated life of the

proven reserves of gas or unrefined oil then technically, economically, and legally deliverable into the transportation facility.”³² The Department of Revenue’s regulations provide that “the full and true value of pipeline property in operation is its economic value based upon the estimated life of proven reserves of the gas or oil then technically, economically and legally deliverable.”³³

Since 2006, the TAPS has been depreciated by a straight-line modified age-life depreciation methodology, where the modification is that the Division uses the effective age of the TAPS, based upon investment in the infrastructure, instead of actual age. Modified age-life is a valid method for computing depreciation, it is consistent with the governing regulation and statute, and it has been affirmed by this Board and the Superior Court.³⁴ Therefore, the Board will defer to the assessor’s decision to apply modified age-life depreciation again in 2013, and accepts the assessor’s calculation of the TAPS’ effective age for purposes of age-life depreciation. As explained below, however, the Board does not agree with the assessor’s determination of the remaining age of the TAPS, which is an element of age-life depreciation.

F. The estimate of the proven reserves should be based on the proven reserves found by the Superior Court

To calculate age-life depreciation requires a calculation of both the effective age of the TAPS and its remaining age. The remaining age of the TAPS is not a function of its physical life. The TAPS is very well maintained, and as long as it is maintained, it will not wear out. The remaining life of the TAPS, therefore, depends on when the supply of oil will be so diminished that it will no longer be economical to ship oil on the TAPS.

To calculate the remaining age of the TAPS, the assessor must estimate the amount of proven reserves and the expected throughput of oil. Estimating proven reserves is a very important step whenever a taxing entity is assessing equipment used to extract mineral resources. A fundamental issue in appraising is that the value of equipment that is used to extract mineral resources is tied to the value of the minerals. Especially in Alaska, once the mineral reserves have

³¹ See Municipalities’ Exhibit F at MUN13-003138.

³² AS 43.56.060(e)(2).

³³ 15 AAC 56.110(c).

³⁴ *E.g.*, 2007-09 Decision at 131 ¶ 391.

no value, the equipment dedicated to extract those minerals has no value. If the minerals are extremely valuable, the equipment dedicated to extract the resource will have more value, capped by the cost to replace the equipment. As the mineral resources becomes depleted, the value of the equipment will decline, although not necessarily in a straight line. Because of the importance of the value of the mineral, it would be improper for an assessor to ignore the best evidence of the value of the mineral when assessing the value of the equipment used to extract the mineral.

Here, the Board finds that the assessor did not base his estimate of the proven oil reserves that will be shipped through the TAPS on the best evidence. The best evidence of proven reserves remains the Superior Court's estimate. After a nine-week trial involving presentation of evidence regarding the amount of oil that could technically, economically, and legally be delivered from the North Slope, including confidential evidence that was never presented to this Board, the Superior Court determined that as of the lien date for 2009, the North Slope reserves were 7.077 billion barrels, with Point Thompson's reserves removed for legal reasons. Since that date, 0.9114 billion barrels of oil have been produced by the 2013 lien date.³⁵ In addition, as the parties agree, the reserves at Point Thompson have become legally producible during that time, which adds 0.2846 billion barrels to the proven reserves. Assuming no additional oil has been discovered or otherwise become proven reserves, that would leave 6.45 billion barrels of oil as the proven reserves. Yet, the assessor's methodology for estimating the end-of-life for TAPS results in a production estimate of only 3.86 billion barrels of proven North Slope reserves.³⁶ The assessor's methodology leaves 2.59 billion barrels of TAPS throughput unaccounted for.

In the ICD, the Division defends the assessor's departure from the Superior Court's factual findings by asserting that the Superior Court's "use of the confidential reserves data resulted in a clear misapplication of that data and error."³⁷ Neither the ICD nor the assessor's testimony, however, provided an explanation of the nature of the error. The Court found that the best estimate of the proven reserves was "BPXA's confidential documentation with respect to those fields in

³⁵ Division Exhibit c-9 (DOR000290).

³⁶ Division Exhibit c-29 (DOR000317.)

³⁷ ICD at 6 (Division Exhibit b-10 at DOR000194).

which it has an interest.”³⁸ The assessor did not present any evidence to show that this was an error, and the Board has not been presented with any credible evidence that reserves were less than the amount determined by the Superior Court. No expert testified that he or she had uncovered evidence to show that the Superior Court was wrong. For the assessor to fail to use the best evidence from the Superior Court trial, without providing justification for that decision, was improper. And to not take every step to obtain the best evidence of the value of the minerals that would be shipped on the TAPS was a fundamental error in assessing the value of the TAPS.

Estimation of reserves will change from year to year, and the Board is not requiring that the assessor use the Superior Court’s precise number. But if an expert comes forward with an estimate that is significantly different from the Superior Court’s estimate, the Board would expect the assessor to require the expert to provide cogent explanations and facts to explain why the expert’s estimate is higher or lower than the Superior Court’s.

On this record, the Board has been presented with three estimates for the number of proven reserves. The Owners, through Shaun Hoolahan, have estimated 3.04 billion barrels. The Division, through Frank Molli, has estimated 3.86 billion barrels. The Municipalities, through Dudley Platt and Bill Van Dyke, have estimated 5.84 billion barrels. The Owners’ and the Divisions’ estimates are significantly lower than the estimate accepted by the Superior Court, with no explanation for why over 2.5 billion barrels are no longer proven reserves. For this reason, and because, as explained further below, Mr. Platt’s pool-based methodology is Superior to the Division’s well-based methodology, the Board accepts Mr. Platt’s estimate of 5.84 billion barrels of proven reserves on the North Slope.

G. The best estimate of end-of-life for the TAPS was that made by Mr. Platt

Once the recoverable reserves have been determined, two questions remain to determine end-of-life. First, at what flow rate will the TAPS be shut down? Second, when will production reach that flow rate? Because no persuasive evidence answering either of these questions was

³⁸ 2007-09 Decision at 170 ¶ 494.

presented to the Board, the Board will adopt the findings of the Superior Court on both of these questions.

Turning to the question of the flow rate at which the TAPS will be shut down, no expert at the hearing gave a firm opinion on this question. The Owners' witnesses provided credible testimony that any flow rate below 300,000 barrels per day will require additional investment to cure problems that will be caused by icing and waxing. According to the Owners, the current best thinking of how to approach these problems has moved away from adding heat, and is now focused on removal of water. If the de-water option is implemented, the investment required to make low-flow possible might be made by the TAPS owners, or it might be implemented as a specifications requirement, which would require the producers to make the necessary investment before the oil is placed in the TAPS.

After hearing evidence and reviewing studies, the Superior Court found that TAPS would continue to operate until throughput reached 100,000 barrels per day. The Municipalities argued that TAPS would very likely continue to operate below 100,000 barrels per day, and the Owners argued for a shut-in number of 200,000-300,000 barrels per day because no actual solution has been selected to cure the problems that will occur below 300,000 barrels per day. Although both of these arguments are plausible, neither provides a compelling reason to abandon the 100,000 barrel-per-day lower limit estimate made by the Superior Court. Even though the primary methodology discussed in the studies on which the Superior Court based its opinion—addition of heat—may no longer be the preferred choice, the testimony establishes that it is more likely than not that the TAPS will continue to operate to at least a throughput of 100,000 barrels per day. The existence of low-flow studies shows that the Owners are investing to mitigate the problems of low-flow. As the testimony at the hearing demonstrated, further studies will bring changes and improvements in technology and approaches to mitigating this problem, all of which shows that the problem can and will be addressed.

With regard to the rate of production of the oil reserves, the Board has not been provided any testimony that would justify a departure from the Superior Court's reliance on Mr. Platt's methodology to determine the end-of-life of the TAPS. The Board acknowledges that the Owners

and the Division have established that Mr. Platt has in the past consistently overestimated the near-term production of reserves. Both the Owners' expert, Mr. Hoolahan, and the Division's expert, Mr. Molli, showed superior ability to estimate current production. Yet, their better predictive capability in the short term is not surprising because their methodologies rely on current production data to estimate short term production. Although they use different methodologies, with Mr. Molli using a well-based depletion curve, and Mr. Hoolahan relying on the changes in the percentage of water produced, in the short term, their methodologies are accurate because they rely on recent data. Both testified, however, that they did not give as much weight to their long-term predictions.

The shape of the decline curve in the future is a different question than predicting short term production. For predicting future production, Mr. Molli's reliance on only the wells that are already drilled or immediately planned would likely lead to a forecast of a premature end-of-life because new additional wells, which he did not consider in his forecast, will prolong the life of a field. Mr. Hoolahan admitted that his methodology did not predict production more than a few years into the future—he was relying on the Division's forecasts for his estimate of end-of-life. That leaves the Board with only Mr. Platt's estimates, which are based on pool-level forecasts, taking into account the constraints that affect production and that future wells will be necessary to prolong the life of the field. As the Superior Court found, the pool method is a better methodology for estimating long term production.³⁹ Because nothing in this hearing refutes that finding, this Board adopts Mr. Platt's estimate of when production will reach the lower limit, 100,000 barrels per day, which is 2066.

Given that the TAPS will cease production in 2066, and accepting the Division's finding that the TAPS began operation mid-way in 1977, the TAPS was 35.5 years old on the lien date. It had 53 years remaining, for a total life of 88.5 years. Percent depreciated, under the age-life method, is 35.5 divided by 88.5, or 40.1 percent. This means that the TAPS is 59.9 percent good. A scaling adjustment and a deduction for functional obsolescence is still reasonable even though age-life depreciation is intended to account for all forms of depreciation

³⁹ 2007-09 Decision at 162 ¶ 471 (“Based on the evidence presented at trial, this Court finds that for determining the economic life of TAPS, a pool-based analysis is generally preferable to a well-based analysis”).

Appraisers generally recognize three reasons for depreciating a property: physical wear-and-tear, functional obsolescence, and economic, or external, obsolescence. Best practice includes an examination of all three types of depreciation, so that all depreciation is accounted for, and no element of depreciation is double-counted.

Age-life depreciation is not specific to any one type of depreciation. It is a catch-all method of estimating depreciation that includes all three types depreciation. When applying age-life, the property should be carefully examined to determine whether any element of the three types of depreciation is not fully accounted for in age-life depreciation, and to ensure that no element is double-counted.

1. Physical deterioration

With regard to physical depreciation, the Board is confident that all forms of physical depreciation are included in the 40.1 percent deduction from the RCN for age-life depreciation. The TAPS is very well maintained, and the expectation is that it will be well maintained into the future. No additional deduction is necessary for physical deterioration.

2. Functional obsolescence

Functional obsolescence applies to an element internal to the property that does not provide an economic return or is obsolete because of new technology. To the extent that the TAPS has functional obsolescence that is incurable, or for which the cure may occur in the future, that obsolescence is captured by the deduction for age-life depreciation, and no further deduction is necessary.

An additional deduction may be allowed for the cost to remediate functional obsolescence that is curable and for which the cure is fully identified, the cost to cure is known, and the cure is scheduled to take place or already underway. The concept here is that the cost to cure functional obsolescence would not be included in the RCN, so the RCN may overestimate value to the extent of the cost to cure the functional obsolescence. Only known and definite expenses are allowed as a deduction. The Board is concerned that deductions for functional obsolescence in addition to the age-life deduction might over-depreciate the TAPS. Therefore, for the 2013 assessment, the only project for which the Board will approve an additional deduction for functional obsolescence is the

replacement of the pipe at Pump Station 1. This project is definite and is underway. In recognition that some of the functional obsolescence from this project is accounted for in the age-life depreciation deduction, the Municipalities' expert, Mr. Podwalny, calculated that the deductible portion of the expense of the pipe repair is \$48,895,000.⁴⁰ This amount will be included in the assessment as an additional deduction. Additional deductions for other projects are not allowed because they are already accounted for in the RCN or the age-life depreciation.

In the past, the Board has allowed a scaling deduction for functional obsolescence. Scaling is the use of a formula that compensates for "super-adequacy." The concept is that if the TAPS is too large, a formula is employed to allow a deduction that scales the TAPS' capacity down to a smaller size. The Board agrees with the Superior Court that no scaling is necessary for functional obsolescence. As the Superior Court found, the 48-inch pipe has utility even though today's average daily throughput could be handled by a smaller pipe. Therefore, it is not functionally obsolescent.

3. Economic (external) obsolescence

Given the current supply of oil, using a 48-inch pipe as the basis for an RCN may include some economic or external obsolescence. Economic or external obsolescence recognizes that a factor, or factors, external to the property may have made some aspect of the property obsolete. Typically, external obsolescence focuses on market factors like supply and demand.

The Superior Court reasoned that the curtailment of the supply of oil was a factor external to the TAPS that made some of the capacity of the TAPS economically obsolete.⁴¹ For the 2007-2009 assessments, the Court calculated that the projected average throughput would vary from 740,000 barrels per day to 691,000 barrels per day.⁴² The Court reasoned that because the RCNs for those years were based on a pipe and a VMT that was designed for 1.42 million barrels per day, as well as pumps designed for 1.1 million barrels per day, the RCN costs needed to be scaled back. Therefore, the Superior Court applied a scaling factor to scale down the value of the RCN. That

⁴⁰ Municipalities Exhibit F at MUN13-003118, 003142.

⁴¹ 2007-09 Decision at 181-82 ¶ 525.

⁴² 2007-09 Decision at 184, ¶ 531.

factor ranged from 25.4 to 27.7 percent for the pipe and VMT, and from 16.3 to 18.9 percent for the pumps.⁴³

In the assessment, the Division followed the Superior Court's lead and applied a scaling factor to account for external obsolescence. The Division used a peak throughput number for the numerator and a blended capacity number for the denominator, based on the throughput capacity for the two RCNs.⁴⁴ The resulting fraction was then scaled using an exponent of 0.45.⁴⁵

The Board agrees that the current lowered throughput is a form of economic obsolescence. The Board is concerned, however, that the application of both scaling and age-life depreciation to the RCN may double-count the economic obsolescence created by the capacity of the TAPS being too large for the supply of oil. It may be that age-life depreciation of the TAPS anticipates some or all of the economic obsolescence. Oil field output is expected to decline with age, and given that age-life depreciation is based on the economic life of the proven reserves, it seems logical to expect that age-life depreciation would account for some or all of the effect of diminished supply. The Board suggests that in the next assessment cycle, the assessor may wish to study this issue, and obtain opinions from independent experts on whether the two deductions result in an over-depreciation of the TAPS.

For the 2013 assessment, however, the Board will apply a scaling deduction. Several factors support use of a scaling factor, including the facts that lower throughput is an element of value and both the Superior Court and the assessor reached the conclusion that scaling was necessary. In addition, as the assessor noted, the scaling factor "is buffered with application of a .45 exponent, due to the reality that costs, project sizes, and volumetric throughputs do not have a linear relationship."⁴⁶

In determining the denominator of the scaling factor, the Board will use the mechanical capacity of the replacement TAPS, not augmented by the use of drag-reducing agents. This is because, to the extent that there is any super-adequacy, it is in the actual capacity of the TAPS

⁴³ 2007-09 Decision at 184 ¶ 531.

⁴⁴ Division Exhibit b-10 at 36 (DOR000224).

⁴⁵ *Id.*

itself, not in any extra capacity that could be created by external efforts that involve increased operating expenses. The Board finds that the maximum mechanical capacity of the replacement TAPS is 760,000 barrels per day.⁴⁷

The Board is aware that the Superior Court did not adopt this line of reasoning; but, in this case, the Board deliberately departs from the Superior Court’s methodology and reasoning for three reasons. First, the Superior Court’s decision was not consistent in its reasoning on the appropriate denominator. The Court refused to use the maximum possible capacity (2.1 million barrels per day) as the denominator for the same reason that the Board has refused to use the maximum design capacity here—because to reach that number requires the use of external measures, like the drag-reducing agent.⁴⁸ Yet, the Court rejected that argument when it increased the Board’s and the assessor’s denominator from 1.1 million to 1.42 million.⁴⁹ That is not consistent. Second, to the extent that some or all of this external obsolescence is addressed by age-life depreciation, the smaller denominator for the scaling factor would minimize the double-counting. Third, the replacement TAPS would not be super-adequate at a throughput of 760,000 barrels per day. Therefore there is no need to scale the replacement TAPS for a higher capacity than 760,000 barrels per day.

In calculating the numerator of the scaling factor, the Board will follow the methodology of the Superior Court and use the average daily expected throughput for the tax year.⁵⁰ As the Board stated earlier, both the Division’s expert, Mr. Molli, and the Owners’ expert, Mr. Hoolahan, have a better track record than the Municipalities’ expert, Mr. Platt, for estimating the current year throughput. Therefore, the Board will use the estimate for the expected 2013 throughput offered by Mr. Molli, 548,559 barrels per day, to use in the numerator. This results in a scaling adjustment of 13.64 percent.

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Id.

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Municipalities’ Exhibit F at MUN13-003122.

⁴⁸

2007-09 Decision at 183, ¶ 534.

⁴⁹

2007-09 Decision at 183, ¶ 534.

⁵⁰

The Division’s ICD uses a numerator that purports to be the “peak” throughput for 2013. Division Exhibit b-10 at 36 (DOR000224). Peak throughput may be the correct methodology, but the Division did not offer any support for this number at the hearing or argument as to why this numerator is better than one used by the Superior Court.

IV. Final assessment

The final assessment for 2013, and the methodology for the computation, is described in the following table:

Item	\$\$
RCN DIRECT COSTS (from Pro Plus)	\$12,497,038,300
PROJ MGT COSTS(from Pro Plus)	\$937,277,900
OWNER COSTS(from Pro Plus)	\$1,249,703,800
TOTAL RCN	\$14,684,020,000
LAND & ROW	\$182,493,800
TOTAL W / ROW	\$14,866,513,800
CONTINGENCY (from Pro Plus)	35%
WITH CONTINGENCY	\$20,069,793,630
AD VALOREM TAXES (Board calculation)	\$975,102,500
INTEREST(Board calculation)	\$1,775,019,963
SUB-TOTAL	\$22,819,916,093
MINUS ADJ ROW	\$246,366,630
RCN FOR DEPR	\$22,573,549,463
AGE-LIFE DEPR (Board calculation)	40.1%
\$ DEPR	(\$9,051,993,335)
% GOOD	59.9%
DEPR RCN	\$13,521,556,128
SCALING ADJ (Board calculation)	13.64%
SCALING ADJ \$	(\$1,845,013,471)
SUB-TOTAL	\$11,676,542,657
ADDITIONAL F.O.(from Podwalny)	(\$48,895,000)
SUB-TOTAL	\$11,627,647,657
ADD BACK ROW	\$246,366,630
TOTAL VALUE	\$11,874,014,287
ROUNDED	\$11,874,014,300

V. Conclusion

In its decision on the 2007 - 2009 TAPS assessments, the Alaska Superior Court found that the Board's certificates of determination on the 2010 and 2011 assessments "reflect careful consideration of this Court's rulings from the 2006 tax year to the tax years at issue before the Board, thereby according some degree of predictability of outcome in this complex and highly contentious process."⁵¹ Based on the evidence presented, and the arguments and briefing of the parties for the 2013 assessment, the Board concludes that the Division failed to give adequate weight to the Court's findings and conclusions. The Board reiterates its view that taxpayers and municipalities should be able to place some reliance on the findings and conclusions of the Board and the Superior Court, especially in light of the extensive litigation of prior year assessments.

The Division adopted several new approaches to valuing the TAPS in 2013, and it continued to rely on sources of information that were rejected in the Court's finding, without providing the Board with justification for departing from the Court's findings. Instead of relying on the cost study prepared by the cost team that prepared the cost studies in prior years that have been vetted and approved by both the Board and the Court, the Division, for the first time, developed its own RCN, including its own contingency factor, without employing the requisite expertise for such an undertaking. The Division employed an improper methodology by blending the two cost studies, and relied heavily on a cost study that contained obvious flaws.

The Division again relied on throughput projections based on a well-by-well analysis to estimate the economic end-life of the TAPS despite the findings by the Board and the Court that pool-by-pool based analysis was the proper methodology. The Division again used a production forecast that failed to account for billions of barrels of proven reserves that the Board and Court found to be available for transportation through the TAPS.

⁵¹ See Court decision for 2007-2009 at paragraph 49.

The Division, for the first time, used a WACC instead of a straight interest calculation for the estimated cost of interest during construction, without an adequate justification for adding this new and unnecessary layer of complexity and controversy to this component of the RCN calculation.

The Municipality provided the Board with an excellent updated Pro Plus cost study of the TAPS Replacement Cost New as of January 1, 2013. This RCN is the basis of the Board's adjusted assessed value. Applying the standard of review in AS 43.56.130(f), the Board finds that adjustments must be made to the Division's 2013 assessed valuation of the TAPS, set at \$7,163,894,900. Having made the additional adjustments discussed in this decision, the Board concludes that \$11,874,014, 300, is now set as the 2013 assessed value of the TAPS.

Pursuant to AS 43.56.130(g), I, on behalf of, and as Chair of, the State Assessment Review Board, certify to the Department of Revenue, State of Alaska, that the Board has made its determination as stated in this Certificate of Determination.

Judicial review of this decision may be obtained by filing an appeal in the Alaska Superior Court in accordance with Alaska Rule of Appellate Procedure 602(a)(2) within 30 days after the date of this decision.

DATED this 29th day of May, 2013.

Signed

Don Martin McGee, Chair
State Assessment Review Board

[This document has been modified to conform to the technical standards for publication.]