

MASS APPRAISAL REPORT

OIL AND GAS RESERVES

APPRAISED BY CAPITOL APPRAISAL GROUP

2018-2019

Overview

Capitol Appraisal Group, Inc. (CAGI) contracts with Appraisal Districts and other governmental entities to appraise all oil & gas subsurface, producing, mineral interests within the purview of the entity. The contractual purpose is to estimate market value as defined in Section 1.04 of the Texas Property Tax Code as of January 1 of each year and report these values to the entity. The results of our work are used as part of the tax base upon which property taxes are levied. Each mineral interest is listed on the appraisal roll separately from other interests in the minerals-in-place in conformance with the Texas Property Tax Code Sec. 25.12. Subsurface mineral rights are not susceptible to physical inspection. This condition creates the need to invoke the **Departure Provision** as Requested by the 2003 edition of the Uniform Standards of Professional Appraisal Practice Standards Rule 6-7 (f). However, the inability to physically examine the subsurface mineral rights does not appreciably affect the appraisal process or the quality of the results.

Assumptions and Limiting Factors

All appraisals are subject to the following:

1. Title to the property is assumed to be good and marketable and the ownership interest and legal description is assumed to be correct.
2. No responsibility for legal matters is assumed. Properties are appraised as if free and clear of any encumbrance and operated under responsible ownership and competent management.
3. Not every property is inspected every year.
4. All information in the appraisal documents has been obtained by Capitol Appraisal Group's employees or through other reliable sources.
5. The appraisals were prepared exclusively for ad valorem tax purposes

Data Collection

Data on the properties appraised are collected from regulatory agencies, such as the Texas Railroad Commission and the Texas Comptroller of Public Accounts, from submissions by the property operator or owner(s), or from other sources. **Submitted data from operators, taxpayers and/or their agents on the appraised properties are considered "rendition statements" and, as such, are confidential data, subject to Sec. 22.27 of the Texas Property Tax Code.** Additional data are obtained through published sources, regulatory reports, public investment reports, licensed data services, service for fee organizations and through comparable properties, if any. The state of Texas is a non-disclosure state and thus many forms of information, pertinent to the value of the properties, are not available to the appraiser.

Valuation and Analysis

The Income Method of Appraisal, as described in Section 23.012 of the Texas Property Tax Code, is the principal appraisal method used. The Market Data Comparison Method of Appraisal (section 23.013) and the Cost Method of Appraisal (section 23.011) are considered. Industry averages of reserve replacement cost and acquisition cost are used for comparative purposes. The non-disclosure nature of the laws of Texas makes market data comparison unreliable. However, if within the scope of Capitol's work assignment market sales disclosures on interests are available, then those data is considered. The nearly exclusive reliance on the income approach, using the discounted cash flow (DCF) technique adjusted for specific property risk and market conditions, is typical of the oil and gas industry. Fee for service organizations are used for survey data with respect to price expectations and discount rates, and licensed data services are used for Industry indicators detailing costs, income, acquisitions costs in dollars per barrel of oil equivalent (\$/BOE), finding and development costs (\$/BOE) and reserve replacement costs (\$/BOE) for over 100 E&P companies.

Due to the demands of Section 23.175 of the Texas Property Tax Code and the Texas Constitution, Capitol Appraisal Group, Inc. takes great care to not appraise properties in excess of their fair market value. We analyze a segment of the Petroleum Producing E&P market, determining the impact on their stock and debt value of the pricing requirements of Sec. 23.175 and also the pricing that could be reasonably anticipated from the market. Capitol Appraisal Group Inc.'s opinion of oil and gas prices is guided by the market's anticipation of those prices through the futures market, oil and gas stock prices and oil and gas industry indexes. A base discount rate is developed using the Securities and Exchange Commission (SEC) 10k Standard Measure of Value, Before Federal Income Tax (BFIT), for a grouping of 20 Exploration and Production (E&P) companies, and then matching their 10k Standard Measure of Value (BFIT), reserves and costs, through a discounted cash flow (DCF) technique. This reserve and cost match is used with Capitol's developed pricing scenario and Section 23.175 pricing directives to determine a discount rate necessary to equal the stock and debt value of the companies, as of January 1 for a given tax year.

The Weighted Average Cost of Capital (WACC) technique is also performed for a subset of these companies grouped according to the Petroleum Producing Industry Exploration and Production companies used in the *The Valueline Investment Survey*. These separate pricing scenarios and the resulting discount rates derived from using the aforementioned stock and debt techniques are applied to the universe of oil and gas properties we appraise. In seeking to avoid appraising any oil and gas property **above** its fair cash market value, Capitol Appraisal employs a market adjustment factor (MAF) to its base discount rate in order to apply property specific risk(s). These factors, which create a wide range of discount rates for the properties that Capitol appraises, are necessary to equitably evaluate disparate leases with respect to remaining reserves, price and costs. By performing two DCF income approach appraisals on each property, Capitol Appraisal provides clients with our opinion of market value, while always endeavoring to guard against appraising a mineral lease at greater than its fair cash market value. [A **jurisdictional exception** to the Discounted Cash Flow technique, as this process is described in the Statement on Appraisal Standards #2, 2003 edition of the Uniform Standards of Professional Appraisal Practice, must be taken. Section 23.175(a) of the Texas Property Tax Code both specifies the directives concerning oil and gas pricing that appraisal districts in Texas must follow and also that each appraisal district must adhere to procedure and methodology contained in manuals developed by the Property Tax Division (PTD) of the Texas Comptroller of Public Accounts. Because adherence to this Property Tax Code directive, without discretion, can result in values greater than fair cash market value, we must express caution.]

The resulting oil and gas lease value is then allocated to each owner on the lease based upon his fractional mineral ownership interest. Royalty and working interests have different impacts on their respective values, since only working interests bear the costs of lease operation. Therefore royalty mineral interest owner's values are allocated from 100% of the appraised royalty value of

the lease, according to their fractional royalty interest, while the working interest owner's value(s) are allocated from 100% of the determined working interest value of the lease, according to their fractional working interest.

Review and Testing

Each year we review the estimated market value for each mineral property appraised according to its year-to-year value change and also to industry expected payouts and income indicators. We also examine income projected to be received with the previous year's income and test that income against the lease's appraised value. Market value for income producing properties is a multiple of its monthly or annual income. Our experience through the years indicates that values typically vary within in a range of 2-5 times income, provided all appropriate income factors have been appropriately identified. Periodic reassignment of properties among appraisers and review of appraisals by a more experienced appraiser also contribute to the review process.

Application of appraisal-to-sales ratios is another method for measuring performance. However, single property sales or sales of interest(s) within a property remain difficult to obtain due Texas' disclosure laws. Furthermore many market transactions are normally for multiple properties in multiple areas and include both real and personal property, tangible and intangible. We access licensed databases providing statistical data for company and property sales to compare our efforts. We also measure our performance through comparison of valid single-property market transactions, if any, that are submitted for staff review. Lastly, Capitol Appraisal's mineral appraisal values are subject to review each year in the Property Value Study conducted by the Property Tax Division of the Texas Comptroller of Public Accounts. The Property Tax Division's review as well as comparisons to industry transactions and to single-property market value sales (when available), indicate the validity of the models, techniques and assumptions used.