

Professional Perspective

Valuation Issues in Oil and Gas Bankruptcies

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Introduction

The Covid-19 pandemic has had a significant impact on the domestic oil and gas industry. As global crude oil demand has dropped over the past few months as a result of, among other things, a significant reduction in travel and industrial activity, so too has the price of crude oil. As a result of low oil prices, global surpluses and uncertainty surrounding OPEC production cutbacks, many domestic exploration and production (“E&P”) companies are facing unprecedented liquidity challenges that will require them to pursue restructuring strategies, including through Chapter 11. A critical issue will be the valuation of oil and gas reserves. In this article, the authors offer an overview of the different valuation methods typically applied in these circumstances and discuss valuation issues seen in oil and gas industry bankruptcies over the past few years.

Valuation Generally

Valuation is a critical, and often hotly disputed, issue in most bankruptcy cases. Enterprise valuations drive creditor recoveries, and solvency valuations are often outcome determinative for the success (or failure) of fraudulent transfer and other bankruptcy-related litigation. Despite its importance, the valuation exercise is highly subjective and “reasonable minds can and often do disagree. This is because the output of financial valuation models are driven by their inputs, many of which are subjective in nature.” *Peltz v. Hatten*, 279 B.R. 710, 737 (D. Del. 2002). Valuation has been aptly described by courts as a “guess compounded by an estimate.” *In re Tribune Co.*, 464 B.R. 126, 147 (Bankr. D. Del. 2011) (citing 7-1129 Collier on Bankruptcy § 1129.05[3][c]). As a result, valuation disputes often become a mini-battle of the experts, the reasonableness of their assumptions and their relative credibility.

Valuations in the context of oil and gas bankruptcy cases are significantly more complicated than valuations of operating companies in many other industries. Moreover, bankruptcy courts generally have considerably less familiarity with the geologic issues, engineering data, and pricing assumptions that drive the valuation exercise. As a result, the next wave of bankruptcy cases, especially those in the exploration and production industry, will almost certainly involve heavily contested valuations (or at least the credible threat of litigation to maximize recoveries).

Relevance of Valuations in Bankruptcy

Collateral and business enterprise valuations are relevant in numerous different contexts within a bankruptcy case, including plan confirmation, post-petition financing, avoidance actions, and other contexts. A brief summary of the contexts in which valuation is relevant is set forth below.

Plan Confirmation

Valuation is the primary factor that drives plan negotiations because the value of a reorganized debtor determines the distribution of value (whether cash, debt, or new equity) among stakeholders. Valuation is relevant to confirmation of a contested plan. It is necessary to value the debtor when at least one impaired class rejects the plan and the plan proponent seeks to confirm the plan pursuant to the so-called “cram down” provisions of the Bankruptcy Code. See 11 U.S.C. § 1129(b). In this context, an enterprise valuation is often necessary to determine whether senior creditors are receiving distributions in excess of their allowed claims to the detriment of junior stakeholders (subordinated debt or equity). Valuation is also relevant in the plan context when there are minority dissenting creditors in a class that votes to accept the plan. In this scenario, the plan proponent must demonstrate that the plan provides dissenting creditors with a distribution equal to at least as much as what such creditors would receive in a hypothetical liquidation. See 11 U.S.C. § 1129(a)(7)(A)(ii). This is referred to as the “best interests test” and requires an enterprise valuation showing creditor distributions under a liquidation scenario.

Priming DIP Loan and Non-Consensual Use of Cash Collateral

Secured creditors are entitled to “adequate protection” against the erosion in their collateral value. A common type of collateral value erosion arises from the (i) incurrence of senior debt due to approval of a priming or pro rata postpetition loan or (ii) non-consensual use of cash collateral. In each of these circumstances, the secured creditor is entitled to

adequate protection. See [11 U.S.C. § 363\(e\)](#) (addressing adequate protection for cash collateral use) and [§ 364\(d\)\(1\)\(B\)](#) (addressing adequate protection in connection with post-petition financing). Entitlement to adequate protection often requires a valuation of a secured creditor's collateral to determine whether the creditor is sufficiently protected with an equity cushion (as a form of adequate protection under [§ 361\(3\)](#) of the Bankruptcy Code). An equity cushion exists when the value of the collateral exceeds the value of the secured claim. Thus, a valuation of the collateral is required to determine the existence and size of the equity cushion.

Recovery of Post-Petition Interest

Secured creditors can recover post-petition interest and fees when the value of the collateral exceeds the value of the claim amount. See [11 U.S.C. § 506\(b\)](#). Valuation of collateral is therefore necessary to determine whether a secured creditor is over secured (i.e., collateral value exceeds claim amount).

Solvency

Valuation is relevant to establish the debtor's insolvency in connection with several bankruptcy-related claims.

Fraudulent Transfer. Fraudulent transfer litigation frequently involves disputes regarding valuation and solvency. These disputes arise in connection with "constructive fraudulent transfers" because the Bankruptcy Code and state fraudulent transfer law require evidence as to whether the debtor (i) was "insolvent" at the time of (or as a result of) the transaction at issue and (ii) received "reasonably equivalent value" or "fair consideration" in connection with the transaction at issue. See [11 U.S.C. § 548\(a\)\(1\)\(B\)](#). Valuation and solvency are also relevant in "actual fraudulent transfer" actions because the debtor's insolvency and the sufficiency of the consideration are well-established "badges of fraud."

Preference. Valuations to demonstrate insolvency are sometimes relevant in connection with an action to avoid a preferential transfer under [11 U.S.C. § 547\(a\)](#). The issue is less frequently disputed (as compared to fraudulent transfer litigation) because the debtor is presumed to be insolvent for a period of 90 days before the bankruptcy petition's filing. See [11 U.S.C. § 547\(f\)](#).

Breach of Fiduciary Duty. Solvency disputes often play a central role in litigation against directors and officers for breaches of fiduciary duty. In the bankruptcy context, these claims are often filed by trustees or creditors' committees seeking to enforce duties owed by directors and officers.

Recharacterization. Recharacterization is an equitable remedy that allows a court to recharacterize a debt instrument as an equity investment. See, e.g., *Cohen v. KB Mezzanine Fund II, LP (In re SubMicron Sys. Corp)*, [432 F.3d 448](#), 456 (3d Cir. 2006). Valuation is relevant because most courts apply a multi-factor test, which includes an assessment of the debtor's solvency and financial condition at the time of transaction to determine whether an investment should be considered equity. E.g., *Bayer Corp. v. MascoTech, Inc. (In re Autostyle Plastics, Inc.)*, [269 F.3d 726](#), 752 (6th Cir. 2001).

Equity Committee Formation

Valuation is relevant in connection with the formation of an equity committee. The United States Trustee is more inclined to appoint an equity committee when there is evidence that the debtor's estate is not hopelessly insolvent.

Traditional Valuation Approaches

The three traditional valuation approaches most commonly used in bankruptcy cases are the income approach, the market approach and the asset approach.

- Income approach, which attempts to estimate the present value of a future cash flow.
- Market approach, which uses data gathered from similar companies or industry transactions to apply metrics to the subject company.
- Asset approach, which establishes the net fair market value of a company's assets.

Income Approach

The discounted cash flow method is the most commonly used income approach when the subject company is expected to generate positive cash flow. The DCF method determines value based on the sum of two parts: debt-free cash flow

during the projection period (typically three to five years) and terminal value, which represents the remaining value of the company outside the projection period.

The debt-free cash flow expected to be generated during the projection period must be reduced to its present value. To do this, the debt-free cash flow is discounted by the weighted average cost of capital. The WACC is the combined cost of debt and cost of equity. The lower the WACC, the higher the present value of the cash flows. WACC starts with a risk-free rate and is built up with a number of components, including a company specific risk premium.

The terminal value is the remaining value of the company after the projection period. The terminal value can be calculated assuming a perpetual growth rate of the terminal debt-free cash flow or as a multiple of the company's terminal EBITDA.

Market Approach

Comparable Company Analysis. This approach provides an indication of the value of the business by developing valuation multiples based on the prices at which securities of similar companies trade in the public market. The market-based multiples are then applied to the historical operating results (typically the last twelve months EBITDA) of the subject business. The following is a non-exclusive list of E&P-specific metrics used in comparative company analyses per Sabine Oil's expert report in *In re Sabine Oil & Gas Corporation* (Bankr. S.N.D.Y.), submitted in December 2015:

- Adjusted Business Enterprise Value ("ABV") (market value of equity plus market value of debt less cash)/LTM EBITDA plus exploration expenses ("EBITDAX")
- Adjusted BEV/LTM Adjusted Revenue
- Adjusted BEV
 - Disputes often center on similarities of the peer companies to the subject company (e.g., size, industry, product/services, geographic region, customer base, profit margins, growth patterns). For E&P, other variables of comparability include: reserve base, natural gas v. oil mix, reserve life, area of operation.
 - According to a white paper published by Deloitte, the comparable company method "is challenging for E&P companies to use because (1) finding new resource plays is difficult, (2) multiples in the same play can vary greatly and (3) undeveloped acreage multiples from market transactions are rarely published."
 - In *In re Breitburn Energy Partners LP*, the Official Committee of Equity Securities Holders' expert conducted a comparable company analysis to anchor the low end of his valuation range for the debtors' assets. *In re Breitburn Energy Partners LP*, 582 B.R. 321 (Bankr. S.D.N.Y. 2018). The court, however, did not give it much weight, as it agreed with the criticism from the debtors' expert that the debtors' assets were not reasonably comparable in size, scale and operations to other publicly traded E&P companies used by the Equity Committee's expert.

Precedent Transaction Analysis. This approach provides an indication of value based on sale price in actual M&A transactions for comparable companies. Disputes often center on comparability of the target company with the selling company.

Other Market Approaches. Courts have rejected expert testimony using traditional valuation approaches when there is contemporaneous market evidence of value. Several cases (including decisions from the Third and Fifth Circuit, and SDNY) have looked to the subject company's equity market capitalization as determinative of value in the context of fraudulent transfer actions when there was no reason to distrust the market (e.g., fraud, thinly traded market). E.g., *VFB LLC v. Campbell Soup Co.*, 482 F.3d 624 (3d cir. 2007); *Iridium Operating LLC, et al v. Motorola, Inc. (In re Iridium Operating LLC)*, 373 B.R. 283 (Bankr. S.D.N.Y. 2007); *U.S. Bank N.A. v. Verizon Communications, Inc.*, 761 F.3d 409 (5th Cir. 2014)). We are not aware of any cases that use this approach to determine value for distribution purposes.

In an unreported decision in the Chapter 11 case of Global Geophysical (oil field services), a Texas bankruptcy court used this market approach to determine an equity cushion to support priming DIP financing on an interim basis. The court concluded that existing lenders could be primed based, in part, on the fact that subordinated debt was trading at 50% of

par, suggesting that the bond market viewed the debtor's value as sufficient to pay the senior lenders in full with a return of 50% to the junior class. The case was settled before the final hearing.

For companies with publicly traded debt, stakeholders will often cite to debt trading below par as evidence of value. It is important to note that for purposes of determining solvency, courts (including Third Circuit) have rejected the use of trading values of debt. "Unlike assets, debts are measured at their face value and not market value." *In re Lids Corp.*, 281 B.R. 535, 545 (Bankr. D. Del. 2002) (*Travellers Int'l AG v. Trans World Airlines, Inc.*, 134 F.3d at 193). Nevertheless, stakeholders regularly cite the below par trading price of debt instruments as evidence of insolvency.

Asset Approach

The "adjusted balance sheet test"/net asset value approach is sometimes used as a valuation method to determine insolvency. This test starts with the company's balance sheet, makes adjustments (upward or downward) to asset values to reflect "fair value," makes adjustments for off-balance sheet assets and liabilities and compares the aggregate asset value to liabilities.

Courts will not accept a balance sheet on its face because unadjusted balance sheets prepared according to generally accepted accounting principles ("GAAP") are imperfect for the purposes of bankruptcy insolvency analysis. Although some courts have used the adjusted balance sheet method, that method has been criticized as an unreliable methodology for valuing a going concern business.

Valuation of Oil and Gas Reserves

The primary assets of an E&P company are its oil and gas reserves. Reserve estimates are uncertain and depend primarily upon the amount of geologic and engineering data available at the time of the estimate and the interpretation of that data. The starting point for the reserve valuation is the reserve report prepared by an engineer.

Reserve Quantity

The reserve report estimates the quantity (typically expressed as barrels of oil equivalent ("boe") or thousands of cubic feet equivalent ("mcf") for gas) based on the following six categories:

- Proved Developed Producing ("PDP")
- Proved Developed Non-producing ("PDNP")
- Proved undeveloped ("PUD")
- Probable reserves
- Possible reserves
- Undeveloped reserves

Key Questions about Reserve Volumes

- How do projected volumes compare with historical production volumes? If materially different, why?
- What drilling and capital expenditures assumptions were used in developing the projections for PUDs? Probable? Possible?
- How concentrated is the production by well, by field and by region? If one or only a few wells represents a significant portion of the projected production, a risk adjustment may be warranted.

Pricing Assumptions

Once the reserves are quantified by the engineer, the next material input affecting reserve value is the pricing assumption used to determine revenue. Any hedging contracts should be factored into the pricing assumptions. According to a white paper published by Deloitte, "Generally, E&P companies use forward strip pricing as determined by the New York Mercantile Exchange ("NYMEX") or other pricing benchmarks (e.g., Brent, WTI) in their DCF models. Forward strip pricing over a period of up to five years is useful for valuation purposes since there is active futures trading activity within that time

horizon. Beyond the last date of the forward strip, a company should estimate prices by using more subjective judgments that typically involve applying an inflation factor to the NYMEX futures price. Pricing benchmarks can vary greatly depending on location. Commodity price differentials are another key metric that could affect the assumptions used in the DCF model. Oil and natural gas prices can vary as a result of multiple factors, including quality, transportation costs, and proximity to market or delivery point.”

“PVIO Value” is Not “Fair Market Value”

The SEC mandates publicly traded companies include summary reserve report information in their annual Form 10-K filings, including calculation of the PVIO value, an acronym for “present value at 10%.” Valuation experts appear to generally agree that PVIO does not represent “fair market value.”

Significant “Professional Judgment” In Reserve Valuation

Set forth below is a reserve valuation of “Proved Reserve” from January 2018 submitted by Lazard on behalf of the debtors in the Breitburn Energy Chapter 11 bankruptcy in the Southern District of New York. See *In re Breitburn Energy Partners LP*, 582 B.R. 321 (Bankr. S.D.N.Y. 2018). We have also noted differences from reserve valuations in Magnum Hunter’s 2016 bankruptcy case in the District of Delaware (*In re Magum Hunter Resources Corp et al.* (Case No 15-12533 (KG)) Dkt No. 294.); Sabine Oil and Gas’s 2015 bankruptcy case in the Southern District of New York; Samson Energy’s 2015 bankruptcy case in the District of Delaware; and discounts recommended by The Society of Petroleum Evaluation Engineers (“SPEE”) in their 34th annual survey dated June 2015.

Even though the experts are valuing different companies, the differences in key assumptions illustrate how subjectivity and professional judgment can significantly impact the valuation range. Indeed, noting the complexity of valuing such reserves, the court in Breitburn commented “[t]he competing expert opinions in these cases show how two people can look at the same assets but reach wildly disparate conclusions regarding their worth.”

The steps involved in this valuation are as follows:

- Risk adjust the value of different categories of reserves using certain discount factors.

Reserve Category	Reserve Category	Magum Hunter	Sabine	Samson	SPEE
Proved Developed Producing (PDP)	0%	Not disclosed	8%	0%	0-10%
Proved Developed Non-producing (PDNP)	25%	Not disclosed	10%	Not disclosed	5-50%
Proved undeveloped (PUD)	40%	Not disclosed	15%	10-35%	10-50%
Probable	70%		50-70%		
Possible	90%		75-90%		

- Estimate future production volumes attributable to the proved reserves and multiply by projected realized price.
- Subtract projected production taxes, ad valorem taxes, lease operating expenses, transportation expenses and capital expenses from revenue to calculate net cash flows.
- The net cash flows are then further discounted “at an industry standard 10% discount rate to estimate aggregate present value of the risk adjusted cash flows.”

Results: With respect to Breitburn's developed assets, the debtors' expert, utilized a precedent transaction analysis and concluded that the market value of the developed assets fell between \$780 and \$990 million, with a midpoint value of \$895 million. The Official Committee of Equity Securities Holders' expert opined that the developed assets were worth between \$2.013 billion and \$2.551 billion, and assumed an intermediate value of \$2.285 billion. The court sided with the debtors, and ultimately valued the developed assets at approximately \$1.025 billion. In doing so, the court cited four differing assumptions to explain the difference in the experts' opinions: initial pricing (strip vs. consensus pricing), forecasting prices out fifty years, risk-adjustments and future general and administrative expenses.

The court commented that the "most significant valuation factor was the assumptions relating to the price of oil and gas." [582 B.R. at 331](#). The debtors' expert used strip pricing which, as noted, reflects the price at which future contracts for the sale of oil and gas are traded on the New York Mercantile Exchange. In contrast, the Committee's expert used a consensus price that he based on an average of ten industry pricing forecasts. The court found the Committee expert's consensus pricing model was based on unreliable data and determined that strip pricing was more appropriate given its widespread acceptance and application in large bankruptcies, as well as the fact that the debtors used strip pricing in evaluating business opportunities on a regular basis.

The EP Energy LP bankruptcy highlights the fact that even the most accurate and thoughtful valuation analyses cannot predict black swan events, such as severe drops in energy prices. See *In re EP Energy Corporation, et al.*, 19-35654 (Bankr. S.D. Texas 2019). Before approving EP Energy's restructuring plan on March 11, 2020, the court heard testimony from opposing expert witnesses regarding the impact of the coronavirus outbreak on the oil market as it related to EP Energy's restructuring plan.

The creditors' expert opined that declining oil prices would make it difficult for EP Energy to refinance its reinstated bonds. Conversely, EP Energy's expert stated that the coronavirus impact could be brief, projecting that energy prices will stabilize within the next five years allowing an opportunity to refinance EP Energy's debts. Ultimately, the court agreed with EP Energy's expert and approved the restructuring plan. Shortly after the court's decision, several investors decided to abandon their plans to finance a portion of EP Energy's exit from bankruptcy citing the recent steep decline in oil prices.

Conclusion

Valuation in bankruptcy, especially in oil and gas, is predicated on a host of subjective assumptions and adjustments that will be ripe for disputes. They will have huge impacts on the valuation conclusions. As a result, bankruptcy courts will be faced with competing valuations that are materially far apart in their conclusions. Stakeholders will continue to use litigation valuation issues, or at least use the threat of litigation, to advance their respective positions. Investors will need to navigate these issues with credible experts to maximize their recovery.