

Definitions of Proved Reserves for Property Evaluation

Society of Petroleum Engineers of AIME

Proved Reserves – The quantities of crude oil, natural gas and natural gas liquids which geological and engineering data demonstrate with reasonable certainty to be recoverable in the future from known oil and gas reservoirs under existing economic and operating conditions. They represent strictly technical judgments, and are not knowingly influenced by attitudes of conservatism or optimism.

Undrilled Acreage—Both drilled and undrilled acreage of proved reservoirs are considered in the estimates of the proved reserves. The proved reserves of the undrilled acreage are limited to those drilling units immediately adjacent to the developed areas, which are virtually certain of productive development, except where the geological information on the producing formations insures continuity across other undrilled acreage.

Fluid Injection—Additional reserves to be obtained through the application of fluid injection or other improved recovery techniques for supplementing the natural forces and mechanisms of primary recovery are included as “proved” only after testing by a pilot project or after the operation of an installed program has confirmed that increased recovery will be achieved.

When evaluating an individual property in an existing oil or gas field, the proved reserves within the framework of the above definition are those quantities indicated to be recoverable commercially from the subject property at current prices and costs, under existing regulatory practices, and with conventional methods and equipment. Depending on their development or producing status, these proved reserves are further subdivided into:

1. **Proved Developed Reserves**—Proved reserves to be recovered through existing wells and with existing facilities.
 - a. Proved Developed Producing Reserves—Proved developed reserves to be produced from completion interval(s) open to production in existing wells;
 - b. Proved Developed Nonproducing Reserves—Proved developed reserves behind the casing of existing wells or at minor depths below the present bottom of such wells which are expected to be produced through these wells in the predictable future. The development cost of such reserves should be relatively small compared to the cost of a new well.
 2. **Proved Undeveloped Reserves**—Proved reserves to be recovered from new wells on undrilled acreage or from existing wells requiring a relatively major expenditure for recompletion or new facilities for fluid injection.
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SPE Board Adopts Committee Report on Reserves Definitions

Editor's Note: The following "Definitions of Proved Reserves for Property Evaluation" represents the culmination of more than two years' work by a special 12-man SPE Committee appointed in 1962 under the chairmanship of John J. Arps with Arps Consultants in Dallas, Tex. The document was officially adopted by the SPE Board of Directors at its last meeting in Billings, Mont., on June 10-11, 1965.

Composed of members working in all segments of the petroleum industry, the SPE Committee determined at the outset that it would be concerned only with "proved reserves", omitting the so-called "probable" and "possible" categories. A search of the literature revealed that at least eight different sets of definitions were being used, but Committee members agreed that the one used by API's Committee on Petroleum Reserves for its annual nationwide survey of blocked out reserves was the best known and had apparently served as a pattern for many of the others. Thus, to achieve the desired standardization without adding to an already confused situation, the Committee decided to develop a set of definitions which would be substantially identical to that of API, while at the same time giving consideration to the specific requirements of property evaluation as they pertain to their development and producing status.

As a result of close coordination between the two organizations during the past year, the latest API definitions for proved reserves, published on page 6, Vol. 19 of the "Annual API Reserves Survey" booklet, dated Dec. 31, 1964, have been changed substantially to achieve the desired degree of agreement with the SPE document published below.

1962 Special Committee on Definitions of Proved Reserves for Property Evaluation

- 4 consultants: JJ Arps (Geologist), WS Eggleston, CH Keplinger, EG Trostel (D&M)
- 1 professor: JM Campbell (PE Chair – OU)
- 3 oil companies: DV Carter (Mobil), M Muscat (Gulf – research physicist), WF Burke (Lone Star Gas)
- 2 bankers: CR Dodson, (United Calif. Bank), WW Wilson (Continental Illinois Bank)
- 2 insurance companies: KM Fagin (SW Life Insurance), JF King (Mutual Life Insurance)

Considered at least 8 different sets of definitions. Finally agreed to create SPE definitions "substantially identical" to those of the API Committee on Petroleum Reserves and as to be used by API in their 12-31-65 "Annual API Reserves Survey". Such agreement resulted through joint API-SPE reserves committee meeting in 1964. Arp's motion to adopt these definitions passed; 7 yeas, 3 nays, 2 abstentions. Approved by SPE June 10-11, 1965.