INTERNAL REVENUE SERVICE
NATIONAL OFFICE TECHNICAL ADVICE MEMORANDUM
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District Director

Taxpayer's Name:

Taxpayer's Identification No:
Years Involved:
Date of Conference: No Conference Held

LEGEND:

Reservoir =

State =

a =

A =

b =

Project B =

c =

Project C =

d =

e =

f =

ISSUE:

Does the vaporization of oil in the apex and expanded gas cap regions of the Reservoir constitute a qualified tertiary recovery method for purposes of § 43 of the Internal Revenue Code?

CONCLUSION:

The vaporization of relict oil and condensate in the apex and immobile oil and condensate in the portion of the expanded gas cap unswept by the cyclic gas injection is a qualified tertiary recovery method not described in § 1.43-2(e)(2) of the Income Tax Regulations or in a revenue ruling. Accordingly, the vaporization project is a qualified tertiary recovery project because it otherwise meets the requirements of § 43 and the regulations thereunder.

Because, however, Project C is used to implement more than one qualified enhanced oil recovery project (the vaporization project and the miscible injection projects) and also is used for other activities (the waterflood project and the cyclic gas injection project), any costs paid or incurred during a taxable year for Project C are required under § 1.43-4(a)(2) first to be allocated among the qualified projects and the other activities to determine the qualified enhanced oil recovery costs for the taxable year. The qualified enhanced oil recovery costs then must be allocated among the qualified projects to determine the qualified enhanced oil recovery costs for each project for the taxable year. Any reasonable allocation method may be used.

FACTS:

Taxpayer is engaged in the production of oil and gas from the Reservoir, which is located in State. The gas cap of the Reservoir, at the time of discovery, contained gas, relict oil, and condensate in the gaseous state. As gas migrated to the apex and oil drained downward, the gas cap of the Reservoir expanded. Relict oil remained in the gas cap at the apex of the Reservoir.

Prior to a, Taxpayer initiated several projects to maximize the recovery of oil from the Reservoir. Since production began, Taxpayer has re-injected gas recovered from the crude oil into the expanded gas cap to maintain pressure (“cyclic gas injection”.) A waterflood project also was initiated in those areas of the Reservoir that lacked sufficient gas cap pressure support. In addition, several miscible gas injection projects have been implemented.

As the gas/oil ratio increased in the produced oil, Taxpayer needed additional gas handling facilities. A was initiated in b. Project B was initiated in c to increase the gas handling capability of the surface facilities. Project C, which is the subject of this ruling, was approved in c and was fully commissioned in d. Project C involves the

acquisition of tangible property and well drilling activities that may relate to all of the projects implemented by Taxpayer. Taxpayer uses Project C to process gas for re-injection in connection with its cyclic gas injection project, its miscible gas injection projects, and its waterflood project. Taxpayer's miscible gas injection projects are qualified enhanced oil recovery projects. Since e, Taxpayer has injected processed lean gas from Project C into the Reservoir to vaporize relict oil and condensate in the apex and immobile oil and condensate in the portion of the expanded gas cap unswept by the cyclic gas injection (the vaporization project.)

Vaporization of oil is one of the benefits of the cyclic gas injection; consequently, some vaporization of oil has been occurring in the Reservoir since production began. The incidental vaporization of oil that occurs as a result of cyclic gas injection is separate and distinct, however, from vaporization of oil as an enhanced oil recovery method. As an enhanced oil recovery method, vaporization of oil involves the injection of lean hydrocarbon or nonhydrocarbon gas into the Reservoir. The injected gas is undersaturated at reservoir conditions. As the gas migrates through the Reservoir from the injection wells to the producing wells, it remains in constant contact with a residual hydrocarbon liquid phase (*i.e.*, oil fluids in the original and expanded gas caps.) The injected gas will have a tendency toward thermodynamic equilibrium with the residual hydrocarbon liquids with which it comes into contact. This is a continuous process as the gas cycles through the Reservoir. The net result of this equilibrium reaction is to enrich the cycled gas by vaporization of intermediate and heavier hydrocarbons from the liquid phase into a vapor phase.

Taxpayer represents that the vaporization project is expected to result in the recovery of more than d barrels of oil, which otherwise would not have been recovered.

LAW AND ANALYSIS:

Section 43(a) provides a credit in an amount equal to 15 percent of certain costs paid or incurred by a taxpayer in connection with a qualified enhanced oil recovery project.

Section 43(c)(2) defines the term "qualified enhanced oil recovery project" to mean any project that: (1) involves the application (in accordance with sound engineering principles) of one or more qualified tertiary recovery methods (as defined in § 193(b)(3)) that reasonably can be expected to result in a more than insignificant increase in the amount of crude oil that ultimately will be recovered; (2) is located within the United States (within the meaning of § 638(l); and (3) with respect to which the first injection of liquids, gases, or other matter commences after December 31, 1990.

Section 1.43-2(e)(1) defines the term "qualified tertiary recovery method" to mean any one or combination of the tertiary recovery methods described in § 1.43-2(e)(2) or a method not described in § 1.43-2(e)(2), which has been determined by revenue ruling to be a "qualified tertiary recovery method." A taxpayer may request

a private letter ruling that a method not described in § 1.43-2(e)(2) or in a revenue ruling is a qualified tertiary recovery method. Generally, the methods identified in revenue rulings or private letter rulings will be limited to those methods that involve the displacement of oil from the reservoir rock by means of modifying the properties of the fluids in the reservoir or providing the energy and drive mechanism to force the oil to flow to a production well.

Section 1.43-2(e)(3)(ii) provides that the term "qualified tertiary recovery method" does not include the increase or maintenance of pressure by injection of hydrocarbon gas into the reservoir from which it was originally produced.

Section 1.43-4(a)(2) provides that any cost paid or incurred during the taxable year for an asset which is used to implement more than one qualified enhanced oil recovery project is allocated among the projects in determining the qualified enhanced oil recovery costs for each qualified project for the taxable year. Similarly, any cost paid or incurred during the taxable year for an asset which is used to implement a qualified enhanced oil recovery project and which also is used for other activities (for example, an enhanced oil recovery project that is not a qualified enhanced oil recovery project) is allocated among the qualified enhanced oil recovery project and the other activities to determine the qualified enhanced oil recovery costs for the taxable year. See § 1.613-5(a). Any reasonable allocation method may be used. A method that allocates costs based on the anticipated use in a project or activity is a reasonable method.

Section 1.613A-7(k) provides that a secondary or tertiary process is a process applied for the recovery of hydrocarbons in which liquids, gases, or other matter is injected into the reservoir to supplement or augment the natural forces required to move the hydrocarbons through the reservoir. However, no process that must be introduced early in the productive life of the mineral property in order to be reasonably effective (such as cycling of gas in the case of a condensate reservoir) is a secondary or tertiary process.

Enhanced oil recovery methods, also referred to as tertiary recovery methods, are generally applied to increase or maintain production from mature oil fields. The regulations under § 43 provide that cyclic gas injection, that is, the maintenance of pressure by injection of hydrocarbon gas into the reservoir from which it was originally produced, is not a qualified enhanced oil recovery method. Similarly, in describing secondary and tertiary production, the regulations under § 613A state that any process that must be introduced early in the productive life of the reservoir to be reasonably effective is not a secondary or tertiary process. The *Petroleum Engineering Handbook*, (Howard B. Bradley, editor-in-chief, 1987 edition, Society of Petroleum Engineers) in its references to gas injection pressure maintenance (See chapters 36, 42, 43 and 44) concludes that generally the optimal time to begin pressure maintenance is early in the life of the reservoir.

Since production began, Taxpayer has re-injected gas recovered from the crude oil into the expanded gas cap to maintain pressure. Some vaporization of oil has occurred as a result of this cyclic gas injection and will continue to occur for the life of the cyclic gas injection project. The incidental vaporization of oil that has occurred, or will occur in the future, as a result of the cyclic gas injection is not a qualified tertiary recovery method, however, because cyclic gas injection is not a qualified tertiary recovery method.

On the other hand, the vaporization project in this case targets relict oil and condensate in the apex and immobile oil and condensate in the portion of the expanded gas cap unswept by the cyclic gas injection. The injection of lean gas into the unswept portion of the Reservoir causes the relict oil, the condensate, and immobile oil to vaporize. The movement of the gas to the production wells provides the energy and drive mechanism. Thus, although vaporization of oil is not a tertiary recovery method specifically listed in § 1.43-2(e)(2), it is a qualified tertiary recovery method because it involves the displacement of oil from the reservoir rock by means of modifying the properties of the fluids in the reservoir, as well as providing the energy and drive mechanism to force the oil to flow to a production well.

The vaporization project is a qualified enhanced oil recovery project within the meaning of § 43(c)(2) because: (1) it involves the application (in accordance with sound engineering principles) of one or more qualified tertiary recovery methods that reasonably can be expected to result in a more than insignificant increase in the amount of crude oil that ultimately will be recovered; (2) it is located within the United States; and (3) the first injection of liquids, gases, or other matter commenced after December 31, 1990. In accordance with, § 1.43-3, a petroleum engineer must certify, under penalties of perjury, that the vaporization project meets the requirement of § 43(c)(2)(A). The petroleum engineer's certification must include an adequate delineation of the portions of the Reservoir that were not swept, and will not be swept, by the cyclic gas injection project and the waterflood project.

Because Project C is used in connection with the cyclic gas injection project and the waterflood project, neither of which is a qualified enhanced oil recovery project, as well as the miscible injection projects and the vaporization project, all of which are qualified enhanced oil recovery projects, § 1.43-4(a)(2) requires that costs associated with Project C for a taxable year first must be allocated among the qualified projects (the miscible injection projects and the vaporization project) and the other activities (the cyclic gas injection project and the waterflood project) to determine the qualified enhanced oil recovery costs for the taxable year. The qualified enhanced oil recovery costs then must be allocated among the qualified projects to determine the qualified enhanced oil recovery costs for each project for the taxable year.

CAVEAT(S)

A copy of this technical advice memorandum is to be given to Taxpayer. Section 6110(k)(3) of the Code provides that it may not be used or cited as precedent.